PD-AAS-302

AGENCY FOR INTERNATIONAL DEVELOPMENT

PROJECT DATA SHEET

1. TRANSACTION CODE: A (A = Add, C = Change, D = Delete) — Amendment Number: _____ — DOCUMENT CODE: 3

2. COUNTRY/ENTITY: ASIA/REGIONAL

3. PROJECT NUMBER: 498-0276

4. BUREAU/OFFICE: ASIA/TR/EFE 04

5. PROJECT TITLE (maximum 40 characters): Forestry Research and Development

6. PROJECT ASSISTANCE COMPLETION DATE (PACD): MM 09 DD 30 YY 91

7. ESTIMATED DATE OF OBLIGATION (Under "B." below, enter 1, 2, 3, or 4): A. Initial FY 85 B. Quarter 4 C. Final FY 89

8. COSTS ($000 OR EQUIVALENT $1 =)

A. FUNDING SOURCE	FIRST FY 85 B. FX	C. L/C	D. Total	LIFE OF PROJECT E. FX	F. L/C	G. Total
AID Appropriated Total						
(Grant)	(500)	( )	(500)	(2 500)	( )	(2 500)
(Loan)	( )	( )	( )	( )	( )	( )
Other U.S. 1. AID S&T Bureau			2,002	9,323		9,323
Other U.S. 2. Asia mission	-		-	1,410		1,410
Host Country						-
Other Donor(s)						-
TOTALS	500		2,502	13,233		13,233

9. SCHEDULE OF AID FUNDING ($000)

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	C. PRIMARY TECH. CODE 1. Grant	2. Loan	D. OBLIGATIONS TO DATE 1. Grant	2. Loan	E. AMOUNT APPROVED THIS ACTION 1. Grant	2. Loan	F. LIFE OF PROJECT 1. Grant	2. Loan
(1) 103	740	160		-	-	500	-	2,500	
(2)									
(3)									
(4)									
TOTALS									

10. SECONDARY TECHNICAL CODES (maximum 6 codes of 3 positions each): 067 | 876 | 968

11. SECONDARY PURPOSE CODE:

12. SPECIAL CONCERNS CODES (maximum 7 codes of 4 positions each)

A. Code	BS	BL	R/AG	TECH	ENG		
B. Amount							

13. PROJECT PURPOSE (maximum 480 characters)

To strengthen Asian capabilities to plan, manage and implement research on forestry, agroforestry and rural development, with emphasis on multi-purpose trees.

14. SCHEDULED EVALUATIONS: Interim MM 05 YY 88 | Final MM 05 YY 90

15. SOURCE/ORIGIN OF GOODS AND SERVICES: ☐ 000 ☐ 941 ☐ Local ☐ Other (Specify) _____

16. AMENDMENTS/NATURE OF CHANGE PROPOSED (This is page 1 of a _____ page PP Amendment)

17. APPROVED BY — Signature: Barry Sidman — Title: Director, ASIA/TR — Date Signed: MM 04 DD 04 YY 85

18. DATE DOCUMENT RECEIVED IN AID/W, OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION: MM DD YY

AID 1330-4 (8-79)

PROJECT AUTHORIZATION

Name of Country/Entity: REGIONAL

Name of Project: Asia Regional Forestry Research and Development
Project No. 498-0276

1. Pursuant to Section 103 of the Foreign Assistance Act of 1961, as amended, I hereby authorize the Asia Regional Forestry Research and Development Project (the "Project") involving planned obligations of not to exceed Two Million Five Hundred Thousand United States Dollars ($2,500,000) in grant funds over a five-year period from date of authorization, subject to the availability of funds in accordance with the A.I.D. OYB/allotment process, to help in financing foreign exchange and certain local currency costs for the Project. The planned life of the Project is six years from the date of initial obligation.

2. The Project, which will constitute part of a joint effort with the A.I.D. Bureau of Science and Technology (S&T) Forestry/Fuelwood Research and Development Project (No. 936-5547), is intended to strengthen Asian country capabilities to plan, manage, and implement research on forestry, agroforestry and rural development, with particular emphasis on multi-purpose trees. In view of the significant S&T contribution ($32.8 million) to be approved by the Administrator, on which our regional project is dependent, my authorization is subject to, and effective upon, the Administrator's approval of the S&T project.

Project grant funds will assist in financing, inter alia, technical assistance, training, research grants and certain supplies and equipment.

3. The Agreements which may be negotiated and executed by the officers to whom such authority is delegated in accordance with A.I.D. regulations and Delegations of Authority shall be subject to the following essential terms and covenants and major conditions, together with such other terms and conditions as A.I.D. may deem appropriate.

4. Source and Origin of Commodities, Nationality of Services. Commodities financed by A.I.D. under the Project shall have their source and origin in the United States except as A.I.D. may agree otherwise in writing. Except for ocean shipping, the suppliers of commodities or services shall have the United States as their place of nationality, except as A.I.D. may agree otherwise in writing. Ocean shipping financed by A.I.D. under the Project shall, except as A.I.D. may agree otherwise in writing, be financed only on flag vessels of the United States.

Signature _____
Charles W. Greenleaf
Assistant Administrator
Bureau for Asia and Near East

5/31/85
Date

Clearances:	Date	Initial
ANE/ASIA/PD, Peter Bloom	5/30/85	
ANE/ASIA/DP, John Westley	5/24/85	
ANE/ASIA/EA, David Merrill	5/28/85	
ANE/ASIA/TR, Barry Sidman	5/29/85	

GC/ANE/ASIA:HEMorris:hp:5/20/85

ASIA/Regional Forestry Research and Development Project (498-0276) Project Paper

TABLE OF CONTENTS:

I. SUMMARY AND RECOMMENDATIONS

A. Recommendations

It is recommended that a Section 103 DA grant of $2.5 million be authorized for the ASIA/Regional Forestry Research and Development Project(498-0276) which has a Project Assistance Completion Date (PACD) of September 30, 1991.

B. Summary Project Description

The goal of the Asia Forestry Research and Development project is to meet the needs of Asian countries for fuelwood and other tree products; for improved land, water, and human resource management; and for increased employment and income. The purpose of this project is to strengthen Asian capabilities to plan, manage, and implement research on forestry, agroforestry and rural development, with emphasis on multipurpose trees.

This project is part of a joint effort with the Science and Technology Bureau to implement the Agency's policy on research. Forestry/fuelwood is one of the Agency's four research priorities and the S&T Bureau has prepared a project to support a global effort in this area. The S&T Bureau is seeking approval from the Administrator for a ten-year, $40 million effort to support research programs in Asia, Latin America and Africa. Over the initial five-year period (FY85 to FY89), the S&T Bureau will provide $9,323,000 in support of activities in Asia from the global Forestry/Fuelwood Research and Development project (936-5547). This Asia regional project will provide $2.5 million over the five years and Asia missions will provide an estimated $1,410,000 in buy-ins to the central support contract.

Asia Bureau resources from this project and S&T Bureau resources will be combined to support the following activities in Asia:

(1) Research Policy, Planning and Management. This component will assist countries and missions in preparing and assessing forestry, agroforestry, and related social and economic research policies, programs and projects. Through regional training, it will increase national management capabilities in forestry, agroforestry, watershed and natural resource management.

(2) Network Development and Research. This project will support existing and new networks for research on multipurpose trees. A Land and Forest Resource management network will be developed that will focus on the social and economic issues in forestry, agroforestry, and rural development. It will also support the development of a number of networks on specific multipurpose tree species that can be introduced in agroforestry and farming systems.

The July 1984 Workshop of the International Union of Forestry Research Organizations in Sri Lanka developed a plan of action for research on multipurpose tree species. From over 120 multipurpose tree species, 20 were selected for research networking. The Workshop

grouped these into 10 proposed networks covering 3 major ecological zones. The networks will involve: (a) workshops to plan and review research; (b) field site visits and peer-review meetings and evaluations; (c) short-term, specialized technical research support; (d) professional development in research methodology and management; (e) publication and information management and exchange; (f) specialized research inputs and support.

Missions, host countries and other donors will be looked to support major in-country research costs and longer-term institutional development.

The proposed allocation of Asia Bureau, S&T Bureau and Asia mission funds (not including most Asia mission research funding) is as follows:

Component	ASIA BUREAU	S&T BUREAU	ASIA MISSIONS	TOTAL
1. Research Policy, Planning and Mgt.	475	2,727	-	3,202
2. Network Development and Research	1,850	3,290	1,410	6,550
3. Global Research	-	1,051	-	1,051
4. Senior Advisor	-	620	-	620
5. Evaluation	175	510		685
6. Contingency	-	1,125	-	1,125
Total	2,500	9,323	1,410	13,233

C. Summary Findings

This project is ready for implementation and is considered socially, financially, and economically sound, and administratively and technically feasible.

D. APAC Concerns and Design Guidelines

The concerns and design guidelines which were raised at the APAC review of the PID (See ANNEX E) are summarized below and are addressed in the Project Paper as indicated.

Bureau and Mission Staff.

The first issue was a concern about the demands of the new initiative on Bureau and mission staff. The ASIA/TR/EFE Division will be the Asia Bureau technical manager of the project. To manage this project, the Division will need to fill the forestry advisor position. As for mission staff, missions have significantly increased their capabilities in forestry and natural resources over the past several

years. These mission staffs are already working on at least 18 projects involving forestry or agro-forestry research components. This project will complement and help them to perform their responsibilities better by making available information and services easily and expeditiously.

ADC Proposal . The APAC asked that project design consider a possible ADC role in the project. This has been done and the PP design considered the development of a cooperative agreement with ADC (now part of Winrock International) to implement a Land and Forest Resource Management network in Asia, building on ADC's existing network of institutions and advisors in natural resources and agricultural economics. Missions were asked to comment specifically on the ADC proposal and their experience with ADC. While their comments were generally favorable, the project paper does not propose a separate cooperative agreement but instead incorporates the development of a Land and Forest Resource Management network into the scope of work for the Forest Research Services Contractor.

Procurement and Obligation Mechanisms. Project paper development was to work out the mechanism for procurement and obligation. Mission comments stressed simplifying management as much as possible. Two main vehicles were arrived at for acquiring the necessary management and technical services: (1) a level of effort contract with an organization to provide overall technical support to missions and the regional research networks in forestry research policy, planning, management and implementation.; and (2) a personal services contract with an individual for the position of Asia Field Coordinator. The S&T and Asia Bureaus will co-fund the prime contractor while the Asia Bureau alone will fund the PSC.

Bilateral Forestry Activities Versus Regional Forestry Research and Development Concept

Mission responses to the project (See ANNEX F) have been cautiously supportive. Pakistan and Bangladesh indicated interest in buy-ins to the central support contract. The absence of a demand for buy-ins at this point should not be interpreted as a lack of support for the objectives and activities proposed in the project. The regional networking concept is ultimately seen as stimulating and supporting national efforts and is particularly important for those countries that are just beginning to develop some research capability. The project should also help to improve the management of the research components of the mission projects since it will expose them more to peer review. Focused mission discussion on these issues will result in the development of a group of AID project officers with a broad understanding of this common theme.

Evaluation

The APAC expressed concern that an evaluation plan be developed that would provide a clear indication of whether the projects, and particularly the proposed networks, were established and operating effectively. The evaluation plan provides benchmarks and criteria for determining the progress of the project components.

II. BACKGROUND

A. Problem

The Asia region appears to be at a crossroads in the management of its renewable natural resources. On one hand, a growing awareness is apparent as to the need for measures to protect and enhance the natural resource base if sustained agricultural and industrial development is to be achieved. New environmental and forestry ministries and natural resource management centers are being created throughout the region and analysis of trends in the depletion of forest, wildlife, soil and water resources are receiving increased attention at the highest levels of government. Yet, on the other hand, powerful economic, demographic and ecological forces are at work that seem overwhelming in relation to the organizational and resource capabilities of institutions seeking to implement effective natural resource management programs. This project rests on the basic assumption that AID can and should play an increased role in promoting improved natural resource management policies and capabilities in Asia. It focuses on the role of trees and forestry in various land use systems, including farming systems, agroforestry, and watershed management schemes. It supports the transition that is occuring in Asian forestry toward a more people-oriented production process aimed at meeting needs for energy, food, fiber and fodder, as well as for water and soil conservation.

Trees and forests serve multiple purposes in Asian countries. They play an integral role in the farming systems of rural Asia. They are a primary source of fuel for cooking and heating. Although most of the fuelwood used in the rural, domestic sector is non-commercial and local in origin, commercial fuelwood marketing systems are well-developed and supply urban, commercial, and industrial consumers. Forests provide raw material for the pulp and paper industries in most Asian countries. Many small rural industries rely on wood and forest products (e.g. bamboo and rattan) for their farm tools, furniture and handicraft products. Trees are of course an important source of food for people and animals. Herbs and other forest flora provide medicines and nutrients for local and international use. The genetic diversity of tropical rain forests is a well-known fact but knowledge of the potential is in its infancy. Trees and forests play a vital role in the hydrological cycle in terms of water retention, soil stability and temperature moderation.

The problem of tree crop and forest management in Asia is a multi-dimensional one. At the basic level, deforestation is occuring faster than afforestation or reforestation. Some of this deforestation is occuring as a result of pressures to clear land for agriculture and settlement, i.e. such as in the hill areas of Thailand, Mahaweli area of Sri Lanka, or the upland areas of Java and Luzon. Commercial extraction is an important cause in certain areas, such as Kalimantan, Sabah and Sarawak, Northern Thailand, and Mindanao in the Philippines. Fuel requirements for cooking and for such rural industries as tobacco and tea drying, brick and tile curing are increasing demands for wood. Rising prices of kerosene and LPG over the past several years have mitigated the transition of rural and some urban consumers to commercial fuels. The construction industry in most Asian countries represents another end-use sector characterized by growing demand for wood. In general, the data available on the supply and demand for wood and projections of future requirements are inadequate and of questionable validity, as is knowledge on the impact of deforestation on the poor and landless. Some evidence exists that the poor in South Asia are being forced increasingly, due to wood scarcities, to use dung and agricultural residues for fuel. The impact of this "energy involution" process on soil constitution and quality is unknown but the long-term implications for agricultural productivity are of serious concern. The implications of forest destruction in the upper watersheds are also ominous and increases in flooding, soil erosion, and sediment load in rivers and reservoirs have been documented in several countries.

The nature and magnitude of Asian governments' responses to the problem of deforestation varies greatly within the region. At least six institutional approaches are being pursued. The first involves programs by forest departments themselves to reforest public lands. The second approach includes extension activities under which forest departments provide local villages and sometimes private farmers with seedings and other inputs necessary for the development and management of woodlots and farm plantings, e.g. in India and Nepal. A third model is the development by farmers of wood plantations on denuded public lands leased by the government.(e.g. Philippines). Financial support is provided to these farmers and the wood is sold to rural electric cooperatives as fuel for an electric power plant. Under a fourth general model, technical and financial support is provided to irrigation cooperatives (e.g., Philippines) or farmers (e.g. India),so they can install wood-based gasifiers for use with their diesel pumpsets and grow, on locally-available public or private lands, the wood needed to run these systems. A fifth institutional vehicle, relating to the management of watersheds above major hydro facilities, is for the national power or irrigation authority to conduct its own reforestation program in the specific watersheds (e.g. Pakistan). Finally, governments have established programs to lease denuded public lands to private industrial organizations for tree planting and harvesting.

The research and education facilities in Asian countries to support these emerging forestry programs are extremely limited and generally oriented towards traditional forest protection and commercial planting and extraction. Knowledge of indigenous and exotic short-rotation species for planting in the new forestry programs is limited and research on production and management of these species is just beginning. Most of the 'social forestry' or wood energy programs are motivated by a desire to improve the welfare of the poor farmer. But support for the analysis and evaluation of the needs of these groups and the impact of programs on them is lacking in virtually every country.

B. Policy Considerations

Forestry policies in Asian countries are in tremendous flux and the environment in which this project is being planned is one of considerable institutional uncertainty. Several key policy considerations stand out:

1. Institutional Conflict

A basic policy issue in several countries relates to whether responsibility for forestry should be taken out of the ministry of agriculture and be given to a new ministry of forestry or new ministry of environment/natural resources. This debate was resolved in favor of a new Ministry of Forestry in Indonesia and such a step was recently taken in India with the creation of a new Ministry of Environment and Forests. The entrance of energy ministries and environmental ministries into the tree planting business has created problems of coordination and planning in several countries. The need and potential for increased public and private investment in non-industrial forestry areas is likely to generate continued conflict for control of this sector and increased pressure on forestry departments by these groups for access to public lands under their authority.

2. Investment in Forestry and Forestry Research

Related to the above situation is the issue of the magnitude of national investments in forestry and forestry research. Despite the serious deforestation occurring in virtually every Asian country and the growing demands for fuelwood and wood products, government investment in forestry remains extremely small, generally less than 1% of the government development budget. This major discrepancy needs to be corrected and options explored for accelerating investment in the large tracts of land classified as forest but which are really not productive. The Philippines and other Asian countries are beginning to provide access and leases to public lands and increased support for tree crop and agro-forestry activities. This support is crucial to stabilizing upland areas and increasing overall wood

energy supplies. The importance of short-rotation, multipurpose trees that are well-adapted to these sites is clear.

3. Integration of Forestry and Agricultural Research

Asian countries, with AID and other donor support, have put considerable resources into agricultural research. A fairly extensive network of agricultural research institutions has developed that have links with international centers of excellence(e.g. IRRI and ICRISAT). In forestry, it is generally true that neither strong national research institutes nor international centers of excellence exist. The following serious policy question therefore arises: given the increasing transition in forestry toward a concern with the role of tree crops in farming systems and the substantial capital investment already present in the agricultural research facilities, does it make sense to attempt to build forestry research into this existing system? Several agricultural research institutes and universities in India are, for example, developing "agro-energy" centers that will focus on agro-forestry, biological nitrogen fixation, integrated pest management, aneorobic digestion, and other organic recycling techniques.

As yet, the international agricultural centers have not made any serious efforts in the agro-forestry direction. But the need to strengthen the links between forestry and agricultural research institutions is clear and will be a priority of this project.

4. Forestry Extension and the Use of Research

There are a set of issues relating to the role of forestry extension activities in Asian countries. The first basic question is whether investment in building a forestry extension organization to work with farmers is desirable. If trees are considered to be one of several crops that a farmer might plant, then it is reasonable to question whether existing agricultural extension organizations are not a better vehicle for the dissemination of technical information. This question also goes back to the issue of what are the priorities for research and how do the results of the research get disseminated quickly to the farmer and rural community. Incorporation of forestry into the job of the agricultural extension worker may be easier than the training of a new cadre of forestry extension workers and the breaking down of traditional perceptions of the forester as a policeman. The economic costs and benefits as well as institutional feasibility of this approach needs to be addressed. It is a researchable issue that will be dealt with in this project.

5. Distributional Impact of Forestry Programs

As with the "green revolution" before it, critics of social or community forestry programs are alleging that the benefits from these programs are going largely to the wealthy farmers, who have land to plant trees on or can afford the seedlings. And that, instead of increasing fuelwood availability and employment for the poor, what is happening is that the richer farmers are growing polewood for a lucrative urban/industrial markets on agricultural land. Employment is consequently reduced compared with agricultural production and harvesting, and lands that were previously available for the poor to graze their animals are now being planted to trees and protected from animal destruction. These are serious questions that require a concentrated research effort. The capacity to address these issues and the political will does not normally exist in the forestry departments or the managers of the wood energy organizations. Other institutions and approaches need to be developed to pursue these questions of distributional impact.

C. Relation to AID Policy and Strategy

Agency policy emphasis on forestry is clearly presented in the recently approved AID Energy Policy Paper, in the Policy Determination (PD-6) of April 26, 1983 on Environmental and Natural Resource Aspects of Development Assistance, and in the Policy Determination (PD-7) of May 16, 1983 on Forestry Policy and Programs. The Energy Policy Paper directs AID to "undertake a major fuelwood research initiative with support from both central and regional bureaus." PD-6 directs AID to pursue programs in "watershed protection, soil stabilization, social forestry, establishment or enhancement of natural areas or reserves, coastal zone management, and identification of plant and animal species in remote areas designated for development." PD-7 on Forestry stressed the broad objective of improved forest and woodland management within "a comprehensive plan for natural resource management, environmental protection and conservation." The principal policy elements include the improvement in country policies that will help reverse deforestation, development of human and organizational capabilities, expansion of the role of private enterprises, and close coordination with other donor programs, as well as AID programs in agriculture, energy, environment and private sector. "The critical role of applied and adaptive research in the development and transfer of technologies for meeting fuelwood needs will be stressed." Fuelwood research has been designated by the Administrator as one of the four research priorities of the Agency.

Energy and natural resources is a principal sector in the Asia Regional Strategic Plan. A unifying theme is policy and management of forest and bioresource systems. Policy dialogue, the development

of centers of excellence in training and research, and the promotion of private sector investment are the top priorities. A major goal is the establishment, in cooperation with the S&T Bureau, of a fuelwood research network in Asia.

This project is an integral component of this Asia strategy. The project will:
(a) improve the planning and management of mission programs and projects in this sector;
(b) help Asia missions identify and address key technical and social research issues;
(c) complement the major emphasis on rainfed agriculture and water management in the Asia strategy;
(d) provide a means for promoting exchanges of information among Asian countries and AID/Asia missions;
(e) focus Agency and Bureau resources on a problem of key short and long-term importance to the Asia region and the Asia Bureau.

Virtually every mission in Asia has or is planning activities in forestry and agroforestry research. Below is a brief listing of major existing or planned projects.

Pakistan

391-0481. Forestry Planning and Development: Major component will finance farm and energy forestry research at Pakistan Forest Institute in Peshawar. Director of the Institute has been actively involved in AID and IUFRO meetings.

India

386-0475. Madhya Pradesh Social Forestry. Small research program with species trials and management techniques is being developed. Only minor expatriate involvement thus far.

386-0478. Maharashtra Social Forestry. Proposal for field research program is being developed. Project includes provision of forestry support unit involving several foreign forestry advisors.

386-0474. Alternative Energy Resources Development. Two million dollars is allocated to support research and institutional development at two national biomass research centers -- the National Botanical Research Institute and the Madurai Kamraj U. The emphasis is on fast-growing species suited to these different agro-climatic zones within India.

386-0470. Agricultural Research. One of the proposed subprojects under this umbrella research project is agroforestry. It has not yet been defined.

386-0488. Forestry Research, Education and Training. This project was proposed as a $18 million project beginning in FY85. It appears it will slip to FY86 due changes in the bureaucratic responsibilities for forestry

Sri Lanka

003-0055. Reforestation and Watershed Management. This project includes training in forestry research but at present includes very little in the way of research support. An evaluation report of the project is being finalized that will discuss the development of national research capabilities.

Nepal

367-0132. Resource Conservation and Utilization. Project involves pilot field planting, training of foresters, development of Institute of Renewable Natural Resources with major emphasis on forestry, and establishment of soil and water conservation research site.

367-0149. Agricultural Research and Production. A FY85 agricultural research project is planned that will include an agro-forestry research component. A PP for this project is being prepared.

Bangladesh

388-0051. Agricultural Research II. This project has supported a minor effort on fast-growing trees as part of an overall farming system approach.

388-0065. Agricultural Research III. This project is proposed in FY86 and will strengthen efforts recently begun under Ag Research II in horticulture, fast-growing trees, and livestock feed.

388-0062. Homestead Agroforestry Research and Development. A major new project is planned in FY85 to support a program research and training on the role of trees in village homestead areas. The Bangladesh Agricultural Council will coordinate a program involving the Forestry Research Institute, the Bangladesh Agricultural University, the Department of Agricultural Extension. Tree crop research will be integrated with the BARC's cropping/farming system site research.

Thailand

493-0340. Science and Technology Development. Under the biotechnology research component of this project, applied research in tissue culture on multipurpose trees is planned.

Philippines

492-0366. Rainfed Resources Development. This umbrella project contains a significant agroforestry research component and plans for a biotechnical research component. The preliminary definition of research priorities for multipurpose trees fits extremely well with major priorities of the proposed network research program .

492-0375. Rural Energy Development. This large wood energy project provides an invaluable opportunity for applied research on fast-growing trees. The mission is preparing an amendment to this project that may include support for a field research effort.

Indonesia

497-0198. Applied Agriculture Research. This project contains a $1 million forestry research component to support a program in East Kalimantan. A institutional design report is being implemented.

497-0311. Upland Agriculture and Conservation. This new project contains some funding for analysis of the social aspects of upland farming systems involving tree crops as well as support for applied field demonstrations involving silvipasture and agroforestry systems.

ASEAN

498-0258.03. ASEAN Watershed Project. This $3 million project supports the establishment of a watershed research network among ASEAN countries. The network will focus on research on sustained yields, soil erosion reduction, and improve water quality and includes training in research methods and management of forest resources in upland areas.

Burma

482-0012. Agriculture Research and Development. This FY85 project may include some research activities in agroforestry.

It is clearly evident from the above that although this proposed project is innovative and forward-looking, there is already a major base of mission interest and program activity to build on.

D. Other Donor Assistance.

Until recently, donor support for forestry research in Asia on multipurpose trees has been extremely limited. The British, Australians Japanese and Canadians have been the most active countries in providing assistance.

ODA is providing silvicultural research assistance and research information and planning assistance to Nepal and India. Topics for research include selection of MPTS, nursery establishment techniques and seed collection research. In India, ODA is assisting the Forestry Research Institute at Dehra Dun in developing a computerized bibliographic file on multipurpose trees as well as other forestry informations. ODA also plans a major initiative in Eucalyptus research for farm forestry and social forestry in Karnataka.

The Australian Development Assistance Bureau has provided assistance under its project to Nepal on the establishment of species trials, improved management of natural forests, and the evaluation of research on fodder trees. It has also begun to develop an applied research program in Sri Lanka. The ADAB is considering setting up a regional Forest Tree Improvement program for the ASEAN countries.

Japanese JICA and OECF have supported the construction of forestry research institutes in Thailand and Indonesia as well as tree species trials in Thailand, the Philippines, Malaysia and Brunei. They are developing an increased interest in arid zone forestry research. The research institute in Indonesia may develop into a regional center for the ASEAN region, according to Japanese officials.

Another regional center has just been established with support from the Canadians in Thailand. It is the ASEAN Forest Tree Seed Center. It is being developed in close cooperation with Kasetsart University. Canadian IDRC has established two highly successful Asian regional networks focusing on improving research on bamboo and rattan. These networks are discussed in the project analyses section and are candidates for inclusion within the overall IUFRO networking process for multipurpose tree species in Asia. IDRC supports a regional technical coordinator in Singapore, who supports these networks and other forestry research.

In addition to these bilateral efforts, the World Bank, Asian Development Bank and FAO are all taking an increasing interest in research. The World Bank has supported strengthening of national research institutions in India, Nepal, Bangladesh, Indonesia, and China, with primary emphasis on multipurpose tree species. It is also providing assistance for the design and implementation of forestry research sector reviews and planning strategies. The World Bank together with the UNDP provided core support to the IUFRO's new program for strengthening forestry research in developing countries and the hiring of a LDC Forestry Research Coordinator. IUFRO is currently planning to follow-up the recent Kandy meeting on research in multipurpose tree species with the creation of an IUFRO Asia Research Coordinator.

The Asian Development Bank has been discussing the idea of creating an Asian Social Forestry Training Center in the region, possibly in Thailand. The ADB is considering support for a research program in the Philippines aimed at helping solve key management problems in the NEA dendrothermal energy program.

FAO does not finance forestry research per se but has sponsored an ad hoc working group on forestry research that has developed an assessment of the forestry research needs in the region.

E. Lessons Learned

A number of lessons have been learned from experience with agricultural and forestry research projects and networking activities that would seem to have relevance for this project.

One conclusion is the importance of developing the capacity of national research institutions. Vernon Ruttan comments: "By the mid-1970s, it had become increasingly clear that the productivity of the international agricultural research system was severely constrained by the limited capacity of many national systems and that the adaptation and dissemination of the knowledge and technology generated at the international institutes was dependent on the development of effective national systems." Although there exists no developed international forestry research system comparable to the CGIAR system in agriculture, there is an established body of knowledge and experience in tree breeding and research that is not being applied in most Asian countries. There exists the International Union of Forestry Research Organization (IUFRO), which is an informal, non-governmental forestry research network that supports the exchange of technical information through periodic working group meetings. Participation in IUFRO activities has been principally from the industrial countries, but a developing countries coordinator has recently been added to the staff.

Although international research networks (i.e. CGIAR) have shown to have been helpful in improving the quality of national research efforts, the priority of forestry and agricultural research in national resource allocation decisions has generally been low. Considerable attention needs to be given therefore to building political and financial support for increased investment in forestry and related research and for providing the career opportunities and incentives to attract and sustain good scientists.

Networking projects can often run into difficulty because the people and resources are not available in-country to support the research vital to the progress of the overall network. The operation of the network becomes characterized by repetitious meetings and discussions over what research needs to be done rather than a continuous exchange of the advances from research in progress on these priorities. Although the CGIAR network is a highly formalized system, the experience no doubt contains some lessons for AID to ponder in considering

the establishment of a regional research networks on multipurpose trees. A CGIAR review identified the following as key ingredients for an effective network:

(1) the scope of research is well defined;
(2) the problem is shared by all the participating countries;
(3) activities are restricted to a geographic region, thereby facilitating communications;
(4) participating institutions are involved as equal partners;
(5) each participant gains from the association and therefore enthusiastically supports it;
(6) participating institutions have funds to collaborate fully;
(7) the lead institution has sufficient capability to provide strong and enlightened scientific direction.

The experience with agricultural research in Asia has clearly demonstrated the need for a strong social science research capability that is interacting with the biological and technical disciplines. IRRI has developed a social science research staff in its lead role in the Asian Farming Systems Network. At the national level though, departments of agriculture and forestry usually have difficulty supporting researchers in the technical disciplines much less in the social sciences. Yet such expertise is critical to the identification of research priorities and "clients" for the research and to the dissemination and effective utilization of research results.

Finally, it is important to note that research components of forestry projects funded by the World Bank and AID as well, seem to have garnered less attention and experienced more difficulty in implementation than the operational tree planting components. (N.B. This statement does not reflect on the success of tree planting components but rather comments on priority received.) This project seeks to address this problem and improve the priority and management of research activities.

III. DETAILED PROJECT DESCRIPTION

A. Project Goal and Purpose

The goal of the Asia Forestry Research and Development project is to meet the needs of Asian countries for fuelwood and other tree products; for improved land, water and human resource management; and for increased employment and income. The purpose of the project is to strengthen Asian capabilities to plan, manage and implment research on forestry, agroforestry and rural development, with emphasis on multipurpose trees. This purpose will be achieved through (1) improved policy formulation, planning, and management of forestry and agro-forestry research; and (2) support and development of networks of scientists and institutions in Asia and the OECD countries focused on land and forest resource management and the assessment, improvement and management of multipurpose tree species for use in agroforestry, watershed management, and wood energy schemes.

B. Project Outputs

At the end of five years, the project will have achieved the following results:

(1) increased Asian government commitment to research on multipurpose trees and their role in agroforestry, farming and other land use systems;
(2) expanded the number of multipurpose trees species that are available for use in social or rural forestry/agroforestry programs;
(3) developed improved seed supplies of selected multipurpose tree species;
(4) strengthened the capacity of Asian countries to address the social and economic issues in agroforestry and rural tree crop production and management systems;
(5) developed improved techniques for managing stands of fast-growing, multipurpose trees;
(6) formed an international community of interest in multipurpose tree species research and established several viable research networks with wide-spread donor support.

C. Major Components

The above results will be achieved through the following two components. These components are identical to those in the S&T global project and resources from both projects will be combined to support the component activities described below.

1. Research Policy, Planning and Management.

This component will assist Asian countries in developing a better understanding of the importance of research on multipurpose trees in meeting their development needs and in helping them formulate policies, programs and projects for enhancing this research.

The following activities will be supported:

a. Country Specific Forestry Research Sector Assessments and Plans

AID's involvement in the joint World Bank, ODA, and AID review of Forestry Research, Education and Training in India is an example of the productive role AID and other donors can play in helping to identify priorities for institutional and policy reform as well as technical emphases for research and project development. Several other assessments and planning assistance activities will be carried out over the five years. This assistance may also be rendered as part of agricultural, energy, or natural resource/environmental sector assessments. USAID/Thailand expressed some interest in this kind of support for their planned assessment and policy dialogue on natural resources.

b. Institution Specific Research Management Guidelines and Plans

Asian countries could benefit from assistance in how to develop viable research institutions in forestry and agro-forestry. In some cases, this assistance will involve working with national forestry research institutes to develop a new emphasis in their program on multipurpose tree species. In other cases, it may address the issue of integrating forestry into agricultural system research, an issue USAID/Indonesia stressed in their comments. Such assistance could complement resources that Asia missions have programmed for institutional development or help missions develop the concept for a forestry or agro-forestry research activity.

This activity will produce general guidelines for institutional development as well as institution-specific plans. Special focus will be placed on providing assistance to the members of the research networks in general organizational and program planning.

c. Information Management Systems

Program and project planning can be advanced through effective and rapid reporting and dissemination of research results. With powerful microcomputers we now have the technological capacity to develop consistent and flexible information management systems. No effective system or repository of research exists for forestry in Asia. Madamba, Suree and others have made limited attempts to catalogue Asian research on multipurpose trees but these have been individual efforts with little institutional support. The one exception is CSIRO's efforts in Australia to develop a comprehensive data base on Eucalytus. The 1984 IUFRO Workshop in Kandy served to point out the need for more systematic collection, storage and dissemination of research on multipurpose trees. This project will work with researchers and institutions to develop such a system.

This work will complement the efforts currently underway in both Central America (CATIE) and in Africa(ICRAF). This effort will initially be centered at Kasetsart University in Thailand, which is sponsoring with Canada,the ASEAN Tree Seed Center, and which has a large reference library in the School of Forestry. Formal links with the Commonwealth Forest Institute in the U.K. and CISRO in Australia will be developed in the design of the system to ensure that compatibility and efficiency are maximized.

d. Regional Planning, Evaluation and Training

The 1984 IUFRO meeting in Sri Lanka was the first concerted attempt by Asian scientists to set priorities in multipurpose tree species research. The meeting developed an Action Plan for research in multipurpose species that has been circulated to governments and donors for consideration. This project will continue support for IUFRO and other regional planning efforts in multipurpose tree species research. AID will cooperate with IDRC, the World Bank, Asian Development Bank and other institutions in this effort.

In order to improve the quality and effectiveness of forestry/fuelwood programs and projects in Asia, better feedback is required on specific experiences with these programs. This information is critical to the process of setting research priorities and in determining what kinds of social, economic, and technical information is of greatest need. This joint project with S&T will support systematic case analysis of rural forestry and agroforestry projects to help identify successful approaches and issues for research attention. USAID/Pakistan stressed the importance of better analysis and evaluation of the experience to date in social forestry programs. This type of research is key to evaluating the issue of the distributional impact of the introduction of new tree species and production technologies.

Another important aspect of this component is the training of a cadre of experts from Asian countries in the planning and management of research in forestry, agroforestry and natural resources. The objective is to begin developing a core group within any one country that has a shared and informed perspective on the economic, social, technical and environmental issues involved in the planning and implementation of forestry and related natural resource projects. A regional course will be developed and carried out over the five-year period. USAID/India supported this training activity and indicated training as an area where India would be likely be interested in participating. Philippines stressed need for short-term training abroad linked with on the job training at research stations outside the Philippines. Case materials from other activities within this component , the World Bank's Economic Development Institute, FAO and other sources will be used. Participants will come from private, public, and voluntary organizations in the forestry, energy, environmental, financial, and agricultural sectors. Models of the forestry and bioresource system, such as that being developed by IIED with AID/Asia support, for use on micro-computers will be developed for instructional purposes and for application in analyzing policy and program decisions in specific countries of the region. The role of trees in farming systems will be an important analytical consideration of the training curricula.

2. Network Development and Research

This component will support the development and strengthening of Asian research networks in (a) land and forest resource management and (2) assessment, improvement and management of multipurpose tree species. In both areas, the project will build on existing networking activities.

a. Network on Land and Forest Resource Management

Asian research into the management of land and forest resources for the benefit of people is in the nascent stages. Informal groups, such as the Agro-Ecosystems Working Group, have been established. But understanding of the social/economic as well as environmental implications of growing pressures on the land, forest and natural resource base of Asian countries is extremely limited. Such

information is critical to supporting the kind of policy dialogue missions such as Thailand and Pakistan wish to pursue with host governments.

This joint project with S&T aims at developing a well-reasoned research program in the social, economic and environmental aspects of land and forest resource management in Asia. This effort will require significant attention to building an increased human resource capacity to carry out this research and translate it into effective policies and programs.

The program will consist of the following main activities:

-- research awards to Asian scientists and managers for field research and policy analysis;
-- short-term training in Asian institutions for young, prospective scientists and managers;
-- limited graduate training in U.S. programs;
-- workshops, seminars, and publications to support information exchange, research planning, and methodology development.
-- technical assistance to scientists and institutions in the network in research design, implementation, and evaluation.

Illustrative issues that may be addressed as part of this network program include:

(1) management approaches for converting marginal or commercial lands into tree crops or agroforestry systems;
(2) the participation of small farmers and the landless in rural tree crop and agroforestry schemes and the distribution of benefits to these groups from such activities;
(3) the nature of the wood and tree product marketing systems and the employment of the poor in these systems;
(4) current and tranditional ethnobotany systems and their potential for enhancement and dissemination; and
(5) sustainable upland farming systems and tne role of trees and tree crops in providing income and promoting soil conservation.

The prime contractor would field a professional and experienced social scientist or economist in Thailand who would be the network advisor. This professional would be based at Kasetsart University.

b. Networks on Selected Multipurpose Tree Species

It is becoming increasingly apparent that the research base for effective rural and social forestry programs is inadequate. Although the attention in these programs is on short-rotation trees that can meet fuel, fodder, raw material and other needs, few species have been explored sufficiently for efficient utilization in research programs, much less rural tree planting programs. Substantial gains in productivity can be achieved by the selection of the best-adapted provenances for prevailing environmental conditions; and further gains are possible through genetic improvement. As developed at the April 1984 Asia Forestry/Fuelwoood Conference in Bangkok, AID will support a regional research networking program on the assessment, improvement and management of multipurpose tree species. The goals of this research are as follows:

-- Species Assessment: screening species and matching site characteristics and cultural practices with species to achieve the highest level of product goals within the constraints of the species-site interaction.

-- Species Improvement: refining the species' capability to meet maximum levels of productivity and reducing the constraints imposed by the cultural/environmental factors.

-- Species Management: defining the cultural practices most appropriate to achieve optimum levels of production in the variety of models suggested by the land-use classification.

The 1984 IUFRO Meeting in Kandy on Multipurpose Trees endorsed a networking approach based on intensive research on individual species. The Asian forest scientists at the meeting narrowed a list of over 120 multipurpose tree species down to 20 that account for over 75 percent of all multipurpose tree planting in the region. These species were then grouped into 10 proposed networks covering 3 major ecological zones. The most important genera selected for networking were Acacia, Prosopis, Eucalyptus, Azadirachta, Bamboo, Dalbergea, Populus, Albizzia, Tamarix, Casuarina, Sesbania, Leucaena, Gliricidia, Alnus, Celtis, Prunus, Grewia, Robinia, Salix, and Pinus.

The Workshop identified specific research institutions that would participate in the research networks identified and made a start on identifying lead institutions and scientists who would participate. These proposed networks are presented below. Mission responses indicate that species identified by IUFRO meeting are appropriate for network emphasis. Dhaka indicated support for existing IDRC-supported bamboo network; Pakistan cited Dalbergia sissoo, Prosopis spp.pp, Robinia pseudoacacia, Alnus nepalenses, Leucaena l., and Acacia spp as amenable to support. Priority species in Philippines were identified as Albizia, Leucaena, rattan, bamboo, Acacia, Casurina and Alnus. New Delhi mentions Eucalytus, Acacia, Albezia Prosposis and Dalbergia sissoo as most amenable to support. Jakarta noted that Glyricidia and Sesbania are commonly-used species that were not included in IUFRO'S top ten. These will be included as part of the feasibility study.

This project will support the development of at least three viable networks over the five-year period. For each network, the project will finance:

-- meetings and site visits to plan, report, observe and evaluate research by network participants;
-- newsletters, research reports and other publications pertaining to the proposed research, research in progress, completed research, and research methodologies;
-- special training in research management; methodologies; techniques essential to the production of quality research;

PROPOSED SPECIES NETWORKS

(1) Network species	(2) Leader	(3) Co-Leader(s)	(4) Participating Countries	(5) Lead Inst.	(6) Participating Inst.	(7) Participating International Agencies	(8) Most Likely Source of External Aid Funding: For strengthening of National Research capabilities	(9) Most Likely Source of External Aid Funding: For supporting region Network activities
1. Acacia sp.	1. India (a) A.nilotica (b) A.auriculiformis (c) A.senegal (d) A.tortilis	2. Malaysia (a) A.mangium	Indonesia (a+b) Thailand (a+b) Philippines (a+b) Taiwan (b) & (e) Bangladesh (a+b+c) PNG (b+e) Nepal (b) Sri Lanka (b+e) Pakistan (a+e+d) China (b+e)	3 7	1,2,4,6 8,9,10 11,12,13 14,16,18, 19 29,21	UNDP ODA ICRAF CSIRO GTZ E-W Center FAO	GTZ IDRC USAID UNDP ODA(India) IBRD World Bank	USAID UNDP
2. Bamboo	1. Bangladesh	2. China (Utilisation) 3. Thailand (Harvesting and Seed)	All countries (except PNG)	1,2 21	All (except 5 & 13)	IDRC ODA FAO	IDRC ODA	IDRC USAID UNDP
3. (a) Albizia (b) Leucaena	1. Philippine	2. Taiwan (Leucaena)	Leucaena (All countries & U. of Hawaii) Albizia India Bangladesh Nepal Malaysia China Taiwan Pakistan PNG Sri Langka	14 (b) 15 (a) 19 (b)	Leucaena All except 8,9,10, 17 Albizia 1,2,3 7,8,10 11,12, 13,14, 16,18	ODA(CFI) GTZ ICRAF E-W Centre FAO	GTZ(M'sia) USAID World Bank	USAID UNDP

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
4. Eucalyptus spp.	1. India E.camaldulensis E.microtheca	2. Indonesia E.deglupta E.urophylla	All Countries	3 6	All	UNDP USAID ODA FAO	World Bank	UNDP
5. (a) Dalbergia sissoo (b) Morus alba (c) Populus spp.	Pakistan	-	Bangladesh(a) Nepal - India Indonesia (b) China (c) Sri Lanka (a)	12	1,2,3,6 18,22	GTZ FAO	GTZ(China) USAID World Bank	USAID UNDP
6. Azadirachta & Melia spp.	Thailand		India Bangladesh Nepal Pakistan Philippines Malaysia Taiwan Sri Lanka Indonesia	21	1,3,6,7 8,11,12, 14,15 18,19,20	IDRC FAO	IDRC World Bank	IDRC USAID UNDP
7. Rattan	1. Malaysia	2. Philippines	Indonesia Thailand Bangladesh India Taiwan PNG Sri Lanka China Pakistan	7 14	1,2,3,4 5,6,8,9 10,12,13, 15,17 18,19, 20,21	IDRC FAO	IDRC World Bank	IDRC USAID
8. Prosopis cineraria	India	-	Pakistan China	3	2,12,22	UNDP USAID ODA ICRAF FAO	IDRC World Bank	USAID
9. Salix spp. & Robinia pseudoacacia	India	-	Nepal China Pakistan	3	2,11, 12,22	GTZ FAO	GTZ(China) World Bank	USAID UNDP
10.(a) Alnus nepalensis (b) Grewia oppositifolia	Nepal	-	Pakistan China India Philippines(a)	11	2,3,12 14,16,22	GTZ FAO ICRAF	GTZ(Pakistan) World Bank	USAID UNDP

Participating Institutions

Code	Address
1.	Forest Research Institute, Chittagong, Bangladesh
2.	Tropical Forest Research Institute, Canton, Peoples Republic of China
3.	Forest Research Institute & Colleges, P.O. New Forest, Dehra Dun, India.
4.	Kerala Forest Research Institute, Peechi 680 653, Kerala, India
5.	Forest Products Research & Development Centre, P.O. Box 84, Bogor, Indonesia.
6.	Forest Research & Development Centre (FRDC), P.O. Box 66, Bogor, Indonesia.
7.	Forest Research Institute, Kepong, Selangor, Malaysia
8.	Forest Research Centre, P.O. Box 1407, Sandakan, Sabah, Malaysia
9.	Faculty of Forestry, Malaysia Agricultural University, Serdang, Selangor, Malaysia.
10.	Forest Research Branch, Forest Department, Kuching, Malaysia.
11.	Department of Forest, Babar Mahal, Kathmandu, Nepal

12. Pakistan Forest Institute,
Peshawar, Pakistan

13. Forest Research Division,
Department of Primary Industry
(Forest Management Research Branch)
P.O. Box 5055,
Boroko,
Papua New Guinea

14. Forest Research Institute (FORI),
College, Laguna,
Philippines

15. College of Forestry,
University of the Philippines at Los Banos,
P.O. Box 434, College,
Laguna, Philippines

16. Bureau of Forest Development,
Diliman, Quezon City,
Philippines

17. Isabela State University,
Philippines.

18. Forest Department,
Research Branch,
P.O. Box 509,
Colombo 2,
Sri Lanka

19. Forest Research Institute,
Taipei, Taiwan

20. Royal Forest Department,
Bangkok, Thaialnd

21. Faculty of Forestry,
Kasetsart University,
Bangkok, Thailand.

22. Chinese Academy of Forestry,
Beijing,
Peoples Republic of China

-- expert consultancies from U.S. or other OECD institutions to Asian institutions to review and advise on research projects;
-- special small research grants to network participants that would supplement support from host governments, AID mission projects, or other donors and enable the participating scientist/institution to carry out the network's overall work plan;
-- special "twinning" relationships between centers of excellence that will involve a more intensive interaction of researchers than is normally the case in the networks.

In a similar manner to the Land and Forest Management Network, this project will fund a long-term Species Network Advisor through the Asia Research Support Contractor. This individual will also be located in Thailand at Kasetsart University and will work with host country institutions, other donors,the IUFRO Asia Coordinator, and selected AID missions in developing the specific species networks. This role will be critical to the synchronization and coordination of research activities under the network with the research activities under AID and other donor programs.

As a preproject activity, ST/FNR will fund a small cooperative agreement with NIFTAL/NFTA Nitrogen Fixing Tree Association to assess which network(s) AID should initially support. Important potential species for concentration, e.g. Acacia, are nitrogen fixing and we believe that the combination of NIFTAL/ NFTA is in a good position to determine which species are most important to focus on initially and most feasible to network. NIFTAL is an AID-supported research program of the University of Hawaii which has focused primarily on non-woody legumes. They will be giving greater emphasis in the future to leguminious trees.

The NFTA is based in Hawaii and has extensive contacts with researchers on nitrogen-fixing trees. Its current activities include publication of research reports, newsletters and other reports; encouragement and conduct of scientific research; sponsorship of workshops and seminars; provision of technical assistance; collection and dissemination of germ plasm; support and establishment of arboreta; and encouragement of the utilization of nitrogen-fixing trees, especially by small farmers.

Over the long-term, the project will fund an Asia Forestry Research Service Contractor, who will provide support to AID missions and the species networks on the full-range of technical and social research issues. Missions will be able to buy into this contract for services or even for the implementation of a research component of a project. (See below for a fuller description.)

IV. IMPLEMENTATION PLAN

A. Implementation Schedule

The project will be implemented according to an annual work plan developed in collaboration with mission personnel, network participants and other donor project managers. The following is the anticipated schedule for the initial year of the project.

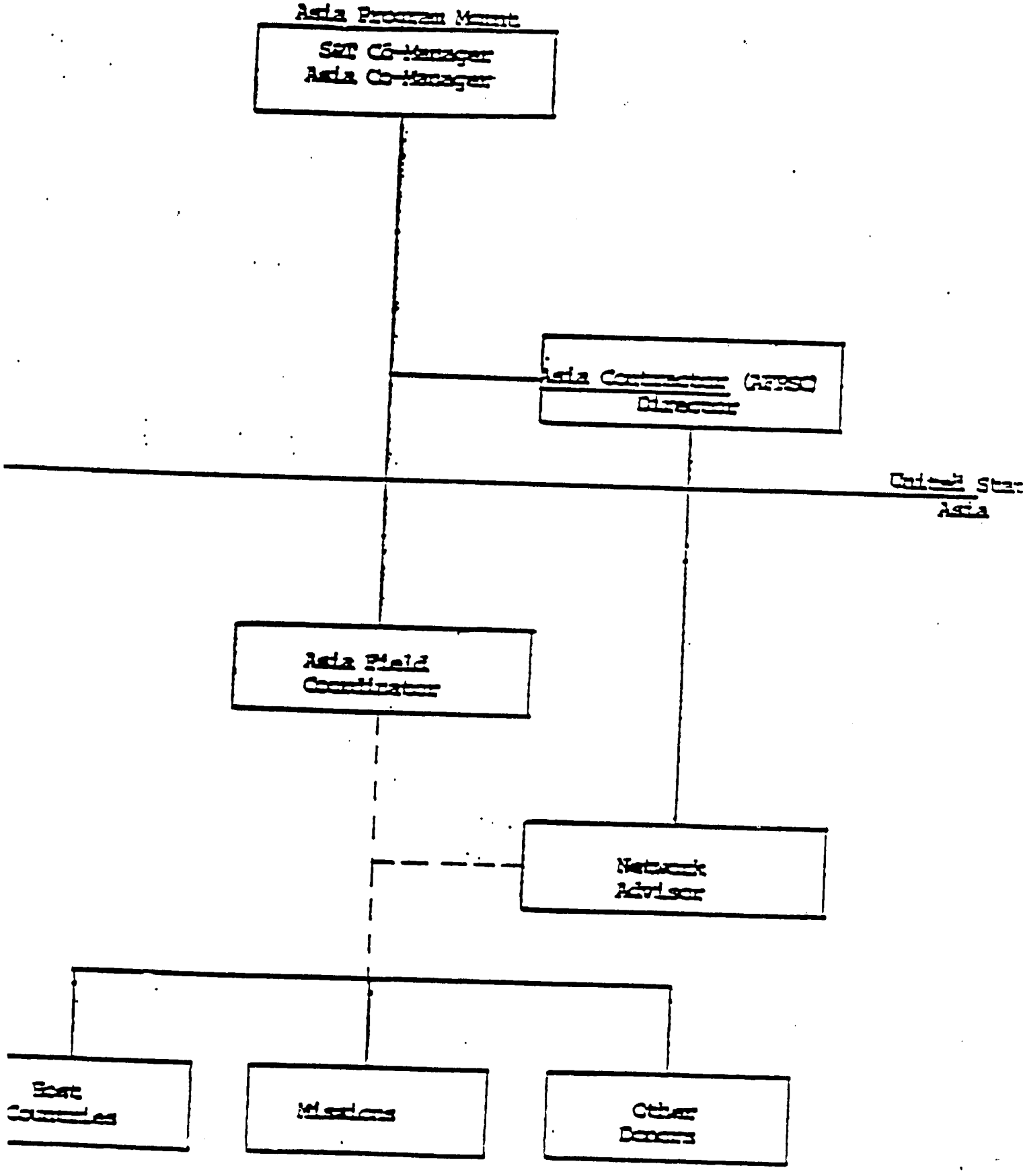
-- May 1985: Project Approved;
-- April 1985: Work Plan for remaining CY85 finalized with Missions;
-- June 1985: RFP for Asia Research Support Contract Issued;
-- June 1985: Advertisement for Asia Field Coordinator(PSC) in Thailand;
-- June 1985: Identify mission liaison officers for project and work with them in developing prospective activities;
-- July 1985: Finalize agreement between AID and Kasetsart U. and make arrangements for assignment of field management team;
-- July 1985: Cooperative Agreement with NFTA/NIFTAL Concluded;
-- August 1985: IUFRO Board Meeting in Malaysia -- Program discussed with interested donors;
-- August 1985: PSC Contract Concluded;
-- September 1985: Asia Forestry Research Support Contract concluded
-- November, 1985: Workplan for CY86 developed with Missions;
-- January, 1986: Small Inter-Network planning meeting.

B. Administrative and Monitoring Arrangements

The successful implementation of this project depends on a spirit of cooperation between the two Bureaus. The Asia activities will be co-managed by project managers from ST/FNR and ASIA/TR/EFE. ST/FNR will be the overall manager of the Global Forestry Research and Development project. ST/FNR and ASIA/TR/EFE will both appoint assistant project managers in case the principal managers are absent. The global project will have an Oversight Committee composed of representatives of the Regional Bureaus, S&T, PPC and SER. This Oversight Committee will meet at least quarterly. The Asia Program Managers will manage the contracts with NIFTAL/NFTA, the PSC coordinator, and the Asia Forestry Research Services Contractor. S&T will have lead management responsibility for the NIFTAL/NFTA cooperative agreement and the Asia Forestry Research Services Contractor; ASIA/TR will take the lead on the PSC contract.

A three-person project field team will be stationed in Thailand. This team will include the (1) Asia Field Coordinator;(2) Species Network Advisor; and (3) Land and Forest Management Network Advisor. The Field Coordinator will be responsible for liaison with missions, host-country institutions, and representatives of other donor agencies involved in forestry research projects. This individual will play a critical role in defining the direction of the AID field program and in orchestrating the planning of technical support activities. The Field Coordinator will be under a personal services contract. This professional will have the capability to assess

Figure 2
Proposed Organizational Arrangements



policy issues in the forestry sector and work with missions in developing policy and programatic dialogues with host country officials. This individual will spend approximately 40% of his time in Thailand and will be a resource for the Thailand mission in the planning and implementation of their natural resource assessment. The Field Coordinator will be co-located with the Species Network Advisor and the Land and Forest Management Network Advisor who will report to the Field Coordinator. The Species Network Advisor will be supplied by the Asia Forestry Research Services Contractor. This advisor will be a specialist in multipurpose tree species research and will be responsible for establishing AID's program in support of specific tree species networks. This task will involve helping to identify participating institutions, facilitating network organization and development of a technically sound work plan, and arranging for the technical and financial support necessary to carry out the work program of the several different species networks. The Land and Forest Management Network Advisor will also be financed by the Asia Forestry Research Services Contractor. The Advisor will have similar responsibilities to the Species Network Advisor. Although the three long-term individuals have distinct responsibilities, it is important for them to work as a team. It will be accomplished through co-locating them at Kasetsart University in Thailand. Annex I contains the text of a draft Agreement between Kasetsart University and AID that has been favorably reviewed with the Vice-Rector of Kasetsart University. Under this proposed five-year agreement, Kasetsart U will work with AID in developing an Asian research network on multipurpose trees and will provide office space for the three long-term advisors and senior and junior faculty support to the program. In addition to the long-term advisors, the project will provide technical and financial support for a regional research information base and to enable Kasetsart to play an active and leading role in the Asia research networks.

The Asia Field Coordinator will clear plans and requests to AID/W program management for technical assistance and network support. The Field Coordinator must have strong diplomatic and administrative skills in order to help overcome bureaucractic and coordination problems.

USAID/Thailand will administratively manage only the Personal Services Contract. The Asia Program Managers will provide the technical management. Activities in Thailand involving activities with Thai government organizations will be carried out only after concurrent by the Thailand mission and activities relating to the mission dialogue with the RTG on natural resources will be under the direct supervision of the responsible mission officer. The Asia Field Coordinator will have access to mission cable facilities but will generally use commercial channels when cabling network participants and AID/W. The Coordinator and network advisors will notify in advance all AID missions of travel to a particular AID country and will not travel without formal mission clearance.

Funds for the support of network activities will be channelled through the Asian Forestry Research Services Contractor.

Grants and other support will given only after appropriate country and AID mission clearance.

Each Asia mission will designate a Project Liaision Officer for the project who will be the point of contact for the project field team and will participate in annual meetings of the overall AID project staff. This meeting will prepare a workplan for the year, defining mission support requirements and financial involvement in the project. Missions will be able to buy services from the Asia Forestry Research Services contractor and may even wish the contractor to carry out the technical management of a forestry/fuelwood research project or component of a larger agricultural or energy project. In the special case of India, arrangements may be made to include special technical assistance monies in this project as a complement to mission project funding for non-technical assistance activities. The mission is working to build in this project's technical assist with the new Forestry Research and National Social Forestry projects. Missions will cooperate in facilitating access to information on the research programs and projects that they are supporting and in promoting a cooperative relationship between the contractors for their country projects and the Asia Forestry Research Support Contractor, NIFTAL/NFTA and other contractors.

C. Procurement Plan

Current plans are to use the following mechanisms to implement the project.

1. Asia Forestry Research Services Contractor

A Cost/Reimbursement/Level of Effort contract will be let by competitive bidding for a five-year period. At the end of this period it will be competitively bid for a second five-year period. The principal tasks of this contractor will be:

(1) support the planning and implementation of the species networks;
(2) support national research planning, management and evaluation activities;
(3) provide administrative support to the Bureaus and the Species Network Advisor;
(4) conduct regional training;
(5) mobilize a team of experts in different disciplines (forest economics, silvaculture, social science, rural and institutional development, genetics, soil sciences, agronomy, etc.) that can support network, mission and national programs;
(6) develop an Asia regional forestry/fuelwood research and development information.

The criteria for selecting this contractor will include:
(1) management experience and capabilities;

(2) technical competence in research on multipurpose trees, including experience in Asia, ability to provide continutiy of technical support, capabilities in developing information systems;
(3) experience in developing research and training networks in Asia;
(4) policy analysis capabilities on a wide range of natural resource development issues;
(5) knowledge and access to forestry research insittutions in the U.S. and other OECD countries;
(6) ability to communicate easily and effectively with AID/W project management team and with coordinators in Asia.

Consideration will be given to establishing certain subcontracts for 8a implementation, e.g. for the regional training course. The contract may also have provision for the incorporation of the cooperative agreements under the umbrella management of the Asia Forestry Research Services contractor in the future.

2. Personal Services Contract. A competitive announcement will issued for a forestry and natural resource policy specialist who would work under an AID direct PSC contract. The person will be based at Kasetsart University in Thailand and serve as field coordinator for the project. The contractor will assist the Asia Bureau Project Director in planning, implementing and monitoring project activities in the Asia region. The assignment will involve close cooperation with Asia missions and coordination with the other project contractors.

It will be necessary to draw on the special expertise of countries in the region or other OECD countries for suppc t of

networking activities and other project activities. Those countries have unique expertise in tropical forestry and multipurpose trees that has been developed over decades. The Commonwealth Forestry Institute in the U.K. and the Council of Scientific and Industrial Research Organizations in Australia are two organizations that have world-renown experts in eucalytus and other relevant species and data bases that are essential to the success of this project. A 935 Geographic Code waiver is included in the S&T Bureau project paper.

D. Evaluation Plan

The evaluation approach to this project is conditioned by a concern for the results of the project's activities on: (1) the situation in individual countries; (2) the regional relations between and among participating countries and institutions; and (3) the catalytic impact of the networks' programs on the policies and programs of individual countries. A key issue is how will we know when a network is effective and accomplishing more than would be possible without its existence?

The S&T and Asia Bureau project managers will prepare a written evaluation report each year. An appropriate time would seem to be following the annual workplan meeting with mission staff.

As stated in the S&T project paper, substantive evaluations will be conducted in years 3, 5.

In Year 3 the focus of the evaluation will be of the quality, quantity and timing of project inputs to achieve the desired outputs.

Specific output targets to be achieved by the PACD include the following:

-- the establishment of at least three functioning multipurpose tree species research networks on;
-- the establishment of at least 6 well-designed species trial plots;
-- the exchange of seeds, clones or other genetically improved plant materials among at least 3 countries in each network;
-- the completion of at least 20 case studies of the social and economic impact of rural forestry programs;
-- a thorough analysis on the roles and approaches to extension and dissemination of information on short-rotation species;
-- at least two demonstration activities to test innovative approaches to land management;
-- the creation of a computerized regional data base on forestry research at Kasetsart U.;

-- a 50% increase in the forestry research budgets of at least three countries in the region;
-- the preparation of forestry/natural resource sector assessments in at least three countries;
-- the creation of an effective consultative mechanism for coordination of donor assistance to forestry research in the region;
-- the education of a least five additional forestry research specialists in each major AID/Asia country participating in the research networks.

During the first year, a baseline survey will be conducted that will collect information on multipurpose species trials in the region; the staff resources, research facilities, and budgetary expenditures of Asian research institutions and government departments in forestry and natural resource management; the approaches, private and public, used to disseminate seeds, saplings and cultural practice information; and the variety of management approaches in place for reforestation of marginal, barren, or communal lands.

The project will seek to develop in one or more Asian network institutions the capability to evaluate the research process from a regional perspective. Kasetsart University is a logical candidate for this role given its technical forestry staff, the presence of the AID-supported technical advisors in Thailand, and the work of the ASEAN Tree Seed Center in Bangkok in monitoring the development of improved genetic material.

The Asia Forestry Research Services Contractor will work with an interdisciplinary monitoring and evaluation group at Kasetsart U. An overall plan for survey, assessment and monitoring will be developed no later than a year and a half after the signing of the agreement with Kasetsart U.

The Year 5 evaluation will focus on the accomplishment of outputs and the validity of assumptions made during project design. Deficiencies identified in Year 3 will be reevaluationed. The implications for future Asia Bureau participation in the joint effort will be assessed.

The process of evaluating the project will be joined at strategic times with the review by the IUFRO Asia Coordinator and the IUFRO Board of Governors of the overall program of research on multipurpose trees. A joint donor review may also be merited at some future time. This review may wish to address whether the effectiveness of the networking approach justifies establishing a regional center for multipurpose tree species research.

The Year 3 evaluation will also review the effectiveness of the workplan process; explore the nature of LDC institutions' and mission' commitments; determine if countries are working well

together; consider the significance of scientific information developed; and assess the priority national governments are placing on multipurpose tree species research.

V. PROJECT ANALYSES

A. Technical Analysis

This section will discuss the role of multipurpose trees in Asia and the importance of research to improve availability and productivity of these species. The perceived priorities for research will be presented as well as some indication of the existing research pro- grams and networking efforts.

1. Role of Multipurpose Trees in Asia

Trees are an important natural resource in Asia. Trees are intrinsi- cally multipurpose, serving economic, environmental and social functions. Economic and demographic pressures are placing increasing demands on existing forests and tree crops in Asia. Deforestation is outstripping reforestation and afforestation efforts. This process is the result of many factors: demand for agricultural land, inap- propriate agricultural and grazing practices, needs for fuel for cooking and heating; demands for commercial timber and forest products. This project is concerned with the improved management of land and forest resources and with the direct role that trees play in enhancing the Income and living condition of rural farmers and the rural lanless in Asia. In this context, we are motivated to identify trees that can serve the multiple needs of these people and the com- munities in which they live and work. A partial listing of needs includes: fuel, fodder, crop protection, fertilizer, building poles, fruit and nuts, cash income, timber, medicinal products, shade and amenity. Due to the short-run perspective and needs of the Asian rural population, commercial tree species with long (e.g. 30 years) gestation periods are not appropriate for planting in these conditions. We are therefore primarily oriented in this project toward trees with shorter rotations (less than 10 years), although some fruit trees with longer rotations may be included.

Madamba reviewed existing knowledge on 50 species of multipurpose trees in the humid tropics, 20 in the tropical highlands, and 28 in the semi-arid tropics known to have multiple uses. Table V-1 shows the number of these species used in seven different ways. Note that nearly all the species were used for fuel.

TABLE-V-1 Survey of Multipurpose Trees By Use

Use/Ecozone------	Humid Tropics	Tropical Highlands	Semi-Arid Zones
1.Fuel	44	18	28
2.Construction	33	18	22
3.Food	21	7	10
4.Fodder	15	6	17
5.Small industry	33	11	18
6.Shelterbelts N-Fix	28	14	23
7.Oil, Ind. Compds	20	5	16
Species Surveyed	50	20	28

More than 50 percent of Asian farmers have less than one hectare to cultivate, and more than 90 percent have less than five hectares. The issue of the role of trees is therefore necessarily dealt with in the framework of an agroforestry system. In theory, the management of an agricultural system concerns the trade-off between the requirements for productivity and for the sustainability of the system. Agricultural crops can provide the service function for sustaining the system, for example, by using grass barriers against soil erosion, or using agricultural legumes for maintaining site fertility by mulching, green manuring, and fallowing. They are however inadequate in providing the production function because they meet only the goals of food production and do not address the goals of wood and minor tree product production. In contrast, agroforestry systems play a critical role in meeting both the production and service functions. The management of an agroforestry system addresses the goal of maximizing food production subject to the constraints of providing an adequate level of wood production and sustaining the system.

The issue is though not always the optimal mix of food and tree crops, since much of the land in rural Asia is degraded and the soil is too poor for food crops. Thus, we are particularly interested in what species are best suited for these adverse land conditions and how they can by introduced into the farming practices of people living in these areas.

The larger problem is one of land management, especially since a substantial amount of available wood and land is either under the legal control of the government or communally owned by local communities. A central focus of the project will be on the role of trees in systems of common property management. Asian governments are providing through social forestry and other programs services to village groups for projects that increase the sustainable productivity of non-private land and water resources. Local communities contribute their time and labor to implementing these projects and to developing systems for allocating the benefits. How to improve systems for the collaborative management of programs for planting multipurpose trees on common lands is an important question for field research.

2.Need and Potential Contribution of Research

As suggested above, planners and implementors of programs to promote the increased planting of multipurpose trees in Asia face a bewildering array of possible species that may be suitable for a country or specific region or site. The National Academy of Sciences (1980-1083) published a compendium of nearly 700 species suitable for fuelwood and other purposes, grouped by three major ecological zones: humid tropics, tropical highlands, and arid/semi-arid regions. Detailed information from careful research is only available on a few species and then generally at the species and not at the provenance level. Many species that are indigenous to specific Asian countries and are of importance to rural populations have not been studied at all. In agriculture, certain crop varieties have had the benefit of thousands of years of explicit, phenotypic selection. The same process has not been applied to tree populations, and results are slower in coming. Based on the results achieved in manipulating the genetic resources in annual agricultural crops, forestry scientists expect that similar results could be achieved eventually in perennial forestry crops. Most of the work in forest genetics has been directed at economic species of industrial forestry. The demand for multipur- pose tree species in the new social forestry initiatives means that tree improvement work must virtually start from scratch, with the exception of some fuelwood species and some agricultural plantation species such as rubber, palm oil, and some fruit trees like mango. Biological and social research on multipurpose tree species is vital for several basic reasons.

(1) It is needed to identify those multipurpose species best suited to specific locations in Asia and to meeting the economic and social needs of rural communities in these locations.

(2) It can achieve large gains in productivity of specific species, thereby increasing the economic benefits from production of multipurpose trees and the acceptability by Asian farmers of planting these trees on their lands.

(3) It can adapt through genetic manipulation species to adverse conditions (e.g. saline soils) or increase the yield of a particular tree product (leaves, branches and twigs or fruit), thereby dramatically increasing the potential area for planting of multipurpose trees and the ability of the trees to meet the priority needs of the farmer or community.

(4) It can develop technologies for the low-cost, mass-production of seeds and for desired species and the most effective and socially acceptable techniques and approaches to nursery establishment and management.

(5) It can devise strategies and demonstration projects for overcoming major social and institutional barriers to the introduction of multipurpose species.

(6) It can create new models of social organization and management of agroforestry and common property systems that will allow the more rapid social and economic development of rural Asia and the improvement of the natural environment and resource base.

The potential productivity increases appear to be especially significant. Brister states: "Provenance trials have demonstrated conclusively that large gains in productivity can be made simply by identifying and using the seed source most adapted to the planting locality." In Nigeria, the best provenance of E. camaldulensis after five years of provenance trials had a mean annual increment of 17.3 cubic meters per hectare and the poorest 5.1 (FAO, 1979). In the Congo and Brazil, the yields of Eucalyptus plantations have been increased by up to 80 percent by selection of the best seed sources (Chaperon, 1978: Brune and Zobel, 1981).

3.Strategy and Priorities for Multipurpose Tree Species Research

The strategy for silvicultural research on multipurpose species is well-established and consists of species assessment and choice; species improvement and species management. These emphases are defined as follows:

-- species assessment/choice. The matching of site characteristics and cultural practices with species to achieve the highest level of product goals within the constraint of the species-site interaction.

-- species improvement: refining the species' capability to meet maximum levels of productivity and reducing the constraints imposed by the cultural/environmental factors.

-- species management: defining the cultural practices most appropriate to achieve optimum levels of production in the variety of models suggested by the land-use classification.

Species Assessment/Choice

Choice of species is an empirical process, where theoretical ideas are formulated and conclusions reached from experimental results. A formalized approach to choice of species probably cannot be circumvented. The general process is usually first to test species indigenous to the region and then to bring exotic species into the trial process. The technical approach is as follows:

(1) A local site description is prepared that includes:

-- latitude, topography;

-- physical properties of the soil, including the presence of hardpans and argyllic horizons;

-- an overall assessment of soil fertility and chemical properties;

-- a classification of the internal drainage characteristics of the soil profile;

-- a local climate description, including annual rainfall, yearly distribution of rainfall, annual temperature regimes, and their relationship to growing and dormant season;
-- an assessment of ground and other competing vegetation.

(2) A review is made of the silvicultural characteristics of the potential species of choice, using the same elements of (1) above in the species' nome range.

(3) A selection is made of those species which appear on paper to have a high probability of success and a rejection of the remainder.

(4) Trial plantings are undertaken of the selected species in replicated blocks of small size, monitored for survival and growth over several years.

(5) Further selection is made based on the above experimental results, and plantings are implemented on a larger scale.

It is extremely important that social/economic considerations be introduced into this assessment and choice process. Foresters in Asia have frequently tried to introduce tree species that will produce a volume of timber and are well-suited to a particular site, but are not desired by the local population. One of the first activities of this project will be to develop a set of criteria screening potential species that includes social and economic factors. Of particular importance are:

-- preferences of farmers and villagers for certain types of trees;

-- demand for wood and tree products in the area;

-- potential earnings from sales of different tree products;

-- land use system and the availability of marginal or communal lands;

-- types of agricultural crops grown and animals raised and the uses of agricultural residues;

-- uses of wood and tree products by the poor and landless and dependence by these groups on communal lands for animal grazing, fuelwood, etc.;

-- nature of the wood and tree product marketing system and the employment of the poor in this system;

-- nature of village decision-making processes over use of land and distribution of grasses and tree products from these lands.

The 1984 IUFRO Asia Workshop on Improving the Productivity of Multipurpose Species performed a preliminary screening of multipurpose species by climatic zone. The top priority species for research by zone were thought to be:

TABLE V-2 1984 IUFRO ASIA WORKSHOP LISTING OF TOP PRIORITY SPECIES BY ZONE

	Moist/Wet	Arid/Semiarid	Mountainous
1.	E. camaldulensis	E. camaldulensis	Pinus spp.
2.	Acacia mangium	Populus spp.	Bamboos
3.	L. leucocephala	Bamboos	Alnus spp.
4.	Acacia auriculiformis	Acacia nilotica	Robinia pseudoacacia
5.	Bamboos	Prosopis cineraria	Populus spp.
6.	-	-	Salix spp.

It is important to note that this list, while including species that

account for over 75 percent of all multipurpose tree species planting in Asia, was developed by forest scientists and does not reflect the results of a screening process involving social scientists nor explicit consideration of social/economic needs. This project will reevaluate this ranking in terms of what information exists on the use of these trees in rural Asia and the importance of these species for small farmers, ethnic and tribal groups and the poor and landless.

Species Improvement

Very little information exists on provenance, seed sources, and tree improvement work with multipurpose tree species. Furthermore, the set of selection criteria differs from the examples available in the literature, which consist almost entirely of stem volume and pest resistance. The criteria for multipurpose tree species selection and breeding will be not only stem volume (for fuelwood), but also size of crown and weight of foliage (for fodder), heavy branching (for fuelwood from prunings), and abundance of fruit production. Some examples of the this type of selection with multipurpose tree species can be found, notably the work on Leucaena species and varieties for nitrogen fixation and fodder, and on Casuarina species and their use on saline and littoral sites, and on the symbiotic relationship with species of Frankia for nitrogen fixation. CSIRO Scientists in Australia are actively pursuing research on provenance and seed sources for over 600 species of Acacia and 40 or more Casuarina species, both genera being capable of nitrogen fixation. Dreyfus and Dommergnes (1981) report on the value of stem nodulation on Sesbania rostrata, which thrives on inhospitable sites, and discuss the need for genetic research to transfer this valuable characteristic to other Sesbania species through inter-specific breeding.

Much is being made of the benefits of nitrogen fixing trees in agroforestry. The species and strains of Rhizobium, however, are known to be sensitive to drought, soil temperature, soil pH, and competition from other soil bacteria. There are documented reports (Graham and Harris, 1981) of nitrogen fixing legumes having no effect on crop improvement or increased nitrogen in either the soil or associated crop biomass.

Soil phosphorus availability is a critical factor in nitrogen fixation by Rhizobial innoculants, and many vesicular-arbuscular mycorrihizae help make phosphorus available. If prognostications on the value of multipurpose tree species in agroforestry are to be realized, intensive research will be required on the complex system of inter-relationships within the genetic resources of the proposed species.

The gains achieved through provenance research are expanded into population improvement through research on second and subsequent generations. This is achieved through controlled polination, cross breeding, hybridization, and seed production from seed orchards. Although conventional methods of forest tree selection, breeding, and

progeny testing have proved to be profitable, the time involved in producing successive generations of improved seed is still appreciable. An important activity in accelerating the process of tree improvement is the vegetative propagation of recognizable desireable clones, either through cuttings or tissue culture. For example, 34 clones expressing salt tolerance have been identified by CSIRO. Vegetative propagation methods, once established, can be passed onto farmers so they can regenerate their own crops either for use or for sale The methods appropriate to multipurpose tree species have to be identified.

Tissue culture holds great promise for mass production of seedlings in which desired traits can be "fixed" in the genotype of the clone or species. Although research in the United States suggests that tissue culture production of seedlings is very nearly competitive with nursery produced stock, this is an issue that needs to be considered in the Asian context.

At the IUFRO meeting, tree breeding and vegetative proprogation were considered to be of high importance for nearly all the priority species in TABLE V-2.

Species Management

The management of multipurpose tree species for rural development is very complex in the range of opportunities, although not necessarily complicated for an individual site. The complexity arises from the variety of possible inputs and constraints. A hypothetical example follows in which six factors are chosen to define the context for species management, and reasonable levels of each factor are proposed.

TABLE V-3 FACTORS INFLUENCING THE MANAGEMENT OF A MULTIPURPOSE TREE SYSTEM

Factor	Number of Levels
1. Broad agri-climatic zones	3
2. Local soil, topographic, climatic combinations	5
3. Agricultural systems	5
4. Number of agricultural crops cultivated	4
5. Number of purposes trees selected	3
6. Number of suitable MPTS for locality	20

In this example, there would be 18,000 possible combinations to be covered by appropriate management models. It is impossible to anticipate all the management models which could be proposed. This section suggests a logical framework within which the goals of species management can be identified and presents a few examples of typical management activities.

Management systems will differ according to both the nature of the location and the nature of the system of agriculture used. As discussed above in section A.1., multipurpose tree species serve two functions: production (e.g. fruits, wood, forage) and service (e.g. shade, erosion control, site fertility). Multipurpose trees may play a critical role in sustaining agriculture in an agroforestry system. While the presence of trees on the farm may reduce the annual crop yields, they may compensate for this by providing longer periods of cropping and thereby produce a net long-term gain. Although there is some evidence to support this assertion, further research is needed. One specific hypothesis is that if the deeper rooting trees can cycle nutrients through the site with little competition for nutrients and water in the crop rooting zone, then the net worth of trees in their service function will show a positive balance in the long run.

Commergues(1983) presents the following data on nitrogen fixation by trees in the tropics.

TABLE V-4 Nitrogen Fixation by Species and Zone

Species	Zone	N-Fixation
Leucaena Leucocephala	Humid tropics	500kg/ha/yr
Acacia mearnsii	Tropical highlands	200 " " "
Casuarina equisetifolia	Arid Zone	58 " " "
Casuarina littoralis	Humid tropics	218 " " "

Another issue is the value of annual legumes as green manure crops within arable cropping systems. Prussner (1982) reports that the effect of the foliage from K8, K28 and K67 varieties of Leucaena Leucocephala used as green manure for corn in the Philippines is the same as that from NPK fertilizer applied at the rate of 90/40/40 kg/ha. Rainfed upland rice (IR36 variety), when green manured with these Leucaena varieties, gave yields similar to those fertilized with NPK at 80/30/30 kg/ha.

Management models for multipurpose trees species as sources of fodder can also be formulated. In Nepal, an FAO rural development project emphasizes the importance of livestock fed on tree fodder. A buffalo will eat up to 2.5 tonnes, comprising 27% tree fodder. At the Catle Research Institute, Bogor, forage containing 10 percent of K28 increases the weight gain of male pigs by 10 percent and female pigs by 36 percent, compared to forage containing no K28 foliage. Increasing the K28 component to 30 percent decreased the weight gain.

A third important management issue is the effect of shelterbelts and windbreaks on soil erosion, evaporation and local site amelioration for improved crop yields, Considerable empirical evidence exists from the United States supporting the increased yields per acre from windbreaks. In summary, the manner is which multipurpose tree species contribute to the physical and chemical properties of soils, nutrient cycling and benefits to crops, mulching, composting, and soil protection, have hardly been addressed. The whole topic of nutrient requirements and site deterioration under coppice systems of management is equally

important. The use of applied fertilizers is of major interest and careful research is needed to determine optimal treatments for each site/species combination. Other important information needed in formulating management strategies includes: yield changes through different pruning and pollarding techniques, the management of pure and mixed stands of multipurpose trees species, the management options for nursery work, site preparation, planting dates, establishment practices, spacing, thinning, weed and pest control.

The 1984 IUFRO Meeting in Kandy clearly demonstrated the perceived importance of species management research for species in all three zones.

TABLE V-5: IUFRO Meeting Ranking of Important Management Research Topics

Zone	Activity	Species
Moist/Wet	Spacing,Thinning, Rotation	Eucalyptus ssp. L. leucocephala A. mangium A. auriculiformis Albizzia ssp.
Arid/Semi-Arid	Nutrient Cycling and Nutrient Flux	Acacia nilotica Populus spp. E. camaldulensis Bamboos
Arid/Semi-Arid	Tree/Crop Interface	Prosopis cieraria A. nilotica Populus ssp. E. camaldulensis Bamboos
Arid/Semi-Arid	Shelterbelts/Windbreaks	P.cieraria A. nilotica E. camaldulensis Bamboos Morus alba Dalbergia sissoo
Arid/Semi-Arid	Irrigated Farming Systems	E. camaldulensis Bamboos A.nilotica Dalbergia sissoo Morus spp.
Mountainous	Establishment/Early Tending	Alnus spp.Bamboos Pinus spp. Robinia p. Populus ssp. Salix ssp.
Mountainous	Site preparation tech.	Populus spp. Pinus spp. Bamboos Alnus spp. Salix spp.

The important role that social/economic research has to play in the development of appropriate management models is clear. Agroforestry techniques will differ according to methods of agriculture employed, crops and food sources being cultivated, the technical prowess of the farmer, the social system of the farmers and communities, the land tenure situation, the availability of markets and distribution systems and much more. There are a wide range of considerations on both the input side and the output side that revolve around how local communities and farmers manage their land and natural resource systems and who has access and control over these resources and the benefits from their exploitation. Species management research therefore must be solidly based on the analytical development of farming systems theory as well as that in the natural resource management field.

4. Forestry Research Capabilities and Programs in the Asia Region

Forestry research institutions in the developing countries of Asia/Pacific region in general have a core of trained scientists who have conducted research on a wide range of forestry problems in the past. In conducting this research they have been hampered by lack of strong policy support in recognizing the potential importance of scientific research in forestry; inadequate funding and facilities to do needed kinds of research; lack of opportunities for career advancement in research and for professional development training; and the lack of strong incentives for developing regional coordination of forestry research programs.

As a consequence, existing forestry research institutions are not adequate to meet the challenge stemming from the rapid growth in social forestry programs using multiple purpose trees. An urgent need exists to : (1) expand forestry research within the region through existing research institutions; (2) improve the capabilities of existing forestry research institutions within the region; and (3) accelerate the transfer of existing knowledge about multi-purpose trees and the use of fast-growing trees for fuelwood to the field foresters and rural people who will establish and manage the new forests.

Below is a brief review of forestry research programs in selected countries.

Thailand

The Royal Thai Forestry Department operates a major forestry research facility in Bangkok -- the Central Forest Research Laboratory and Training Center. The Japanese have provided a new, well-equipped laboratory, with facilities and equipment for conducting research on tree seeds, soils, forest ecology, biochemistry and soil microbiology, among others. The lab is understaffed and underutilized. The Japanese will be continuing their assistance and will be emphasizing training; a team of several Japanese foresters will be on long-term assignment to the laboratory.

The Royal Thai Forestry Department has carried out a series of studies on bamboo. In 1983, they received a grant from IDRC to set up a bamboo project and became part of the IDRC bamboo network. The objectives of the bamboo project include: (1) establish living collection of all native bamboo species in Thailand; (2) develop appropriate techniques for seed collection, processing and storage; (3) develop effective silvicultural methods for natural stands and plantations of bamboo.

Close to the laboratory is Kasetsart University, which has a large well-trained forestry faculty. Over 30 faculty have Ph.Ds with a substantial number trained in the United States. Kasetasart U. is a major training ground for foresters in the Royal Thai Forestry Department as well as industry. Faculty at Kasetsart have a number of research projects with the RTFD and with industry. For example, they are working with the Thai Plywood Company, which has established trials of more than 60 tree species to select those species providing suitable raw materials for wood industries. These trials include a series of Eucalyptus species and provenance trials established in 1982, using seeds provided by CSIRO of Australia. The Thai Plywood Company has also established a seed production area, a clone bank, and a seed orchard. They have studies coppicing, cutting, tissue culture, and several silvicultural treatments for selected species.

Kasetsart University is also playing a lead role in the new ASEAN-Canada Forest Tree Seed Center, located at Muaklet, Saraburi. This center will assist ASEAN member countries in their reforestation efforts by coordinating and implementing forest tree research, promoting the use of improved tree seed, and providing information about seed supplies. The Centre has developed a plan for a research program, but the activities are just beginning. Species trials involving 50 species at two by two spacings has been established. The Center has also developed a gene conservation area for two species.

The AID mission in Thailand is discussing with Kasetsart University the possibility of work in tissue culture under the new Science and Technology project. This project proposes to work closely with Kasetsart University in the development of the regional networks and to locate the field management team (AID field coordinator and the two network advisors) at the university.

Philippines

The Forest Research Institute is the principal forestry research institution in the Philippines. Although under the Bureau for Forest Development of the Ministry of Natural Resources, FORI program comes under overall research scrutiny of PCARRD. FORI is carrying out field trials and genetic analyses on a number of fast-growing species. Under the Rainfed Program, USAID has been working to improve the management and organization of FORI but the shortage of local funds is having a serious impact on FORI and other agricultural research programs in the

Philippines. The mission has developed with FORI a set of guidelines for forestry research under the Rainfed Resources Development Project. In general, " research projects should be focused on generating biotechnical technologies that are responsive to the more important problems in the uplands of RRDP regions." The guidelines identify the following priority research areas:

-- soil/site relationship of agroforestry species
-- species assessment trials and improvement
-- assessment, evaluation and improvement of community-based agroforestry schemes and practices
-- product/process development/improvement of agroforestry/forestry products for small and community-based industries;
-- rangeland development for water production and small scale and/or cooperative-oriented type of livestock production.

AID has also supported a small research program with the Dendrothermal Energy program of the National Energy Administration . Under a technical assistance contract, a U.S. company has helped establish 4 species trial sites involving over 20 species. The sites were chosen to simulate dendrothermal plantation conditions(marginal soil, steep termmain, low rainfall conditions). The contractor is also developing three yield models, each utilizing different sampling procedures. During 1983/84, foresters have collected data at 20 plantations and over 100 plots are used in the yield analysis. USAID is currently discussing the continuation and expansion of this important field research effort.

India

The Forest Research Institute of Dehra Dun, and its four regional research centers at Bangalore, Burnyhat, Coimbatore, and Jabalpur, conduct research on a broad spectrum of subject areas in forestry. These include:

(1) forestry research -- ecology, economics, forest influences, genetics, logging, management, mensuration, plant physiology, silviculture and soils;
(2) biological research -- disease and insect surveys, entomology, forest pathology, systematic botany, wood anatomy, and wildlife;
(3) forest products research -- cellulose and paper, composite wood, finishing, forest products chemistry, precision instrumentation, sawmilling, timber engineering, timber mechanics, wood preservation, wood seasoning, and woodworking.

The challenge for Dehra Dun and well as other institutions in India is to shift its research program from traditional fields to give emphasis to multipurpose trees and the issues of their use in social forestry programs. A recent Scientific Advisory Committee to the India Cabinet has recommended that because of the rapidly escalating scale of forestry development and the need for major institutional reforms, threshold be established an Indian Council of Forestry Research and Education, analogous to the Indian Council for Agricultural Research.

USAID, the World Bank, ODA and other donors are preparing projects in support of this new emphasis on forestry research. Progress has been slow in activating the new Council. A 1983 joint World Bank, AID and ODA review of forestry education, training, and research recommended the pursuit of an All-India Coordinated research network and suggested the following major topics as possible emphases: fuelwood biomass research; fodder trees; watershed land use management; forest product utilization; and wood-based energy technologies.

Under the Indo-US Science and Technology Initiative, a program of cooperative research has been approved. This program is coordinated by the US Forest Service on the US side and the Department of Science and Technology on the Indian side. The initial phase of the program will focus on three major areas: species selection, testing and improvement; cultural systems for short rotation forestry and agro-forestry; and application of tissue culture as a biotechnological tool in the efficient propagation of woody plants. A range of Indian institutions will be involved in the three sub-areas, including the National Botanical Research Institute in Lucknow and Madurai Kamraj University in Madurai. These institutions have been designated national biomass research centers and AID's Alternative Energy Resources Development project has funds allocated to support the research and development programs of these institutes. The Indian Grassland and Fodder Research Institute at Jhansi UP is also a proposed participant in the fodder research activity. This institute as carried out a preliminary study of the use of Leucaena and Sesbania foliage as a source of green manure; the results suggest a strong indication of potential increases in crop yields from these species. India also has a highly developed capability in tissue culture both at the National Botanical Research Institute and at the National Chemical Laboratory in Pune.

Pakistan

The Forest Research Institute in Peshawar is one of the oldest and most well-establish centers for research in the Asia region. The Institute has carried out excellent research in Populus ciliata, Pinus and other tree species and on irrigated plantations, agro-forestry schemes, and shelterbelts. Social forestry is new to Pakistan and the FRI is interested in developing an improved capacity to address the technical and economic issues.

The new $30 million USAID project contains a major component to strengthen the FRI research capabilities in energy and farm forestry. The PP states: "a comprehensive long-range farm and energy forestry research program will be developed to provide improved understanding of the advantages and disadvantages of alternative approaches to enhancing agricultural productivity through on-farm tree crop management... This component will be supported by. technical assistance and training... and will be carefully coordinated with the /other/operational activities.... Working with the PFI Research Review Committee and the

Technical Committee of the Pakistan Agricultural Research Council ..., the PFI professionals charged with implementing the research component and the technical assistants will make the final determination of the research priorities that will be pursued under the program."

It is expected that major elements of the program will include: economic research on economic returns of different cropping systems; applied sociological research on the implications of land tenure and social patterns for the design of farm forestry programs; the design and yield of farm forestry systems; species trial and seed supplies; ecological studies on soil conservation measures for alternative sites in the barani region; hydrological studies, particularly related to the management of irrigated plantations.

Bangladesh

The Bangladesh Forest Research Institute in Chittagong has a small but well-trained staff of US Ph.D.s in forestry. Despite limited resources, the Institute has carried out some excellent work in bamboo as well as Eucalyptus, Acacia, Casurina, Melaleuca. The Seed Orchard Division has several centers throughout the country. IDRC has provided substantial technical and financial assistance. USAID is proposing a new On-Farm Forestry project that will enable the Institute to expand and accelerate research in areas of direct relevance to Bangladesh's small farmers. The PID proposes to help establish an Agroforestry Office within the Silviculture Division of BRFI which will direct and coordinate agroforestry research at the Silviculture Research Stations and farming system sites. Working closely with the Bangladesh Agricultural Research Council, the project will stimulate the spread of agroforestry cells at farming system sites throughout the country. Some relevant research as already been done at the Silviculture Research Stations. Some 15-20 proven species/provenances have already been identified and are immediately available for on-farm and homestead trials.

Nepal

Research is underway on multipurpose trees at the Institute of Renewable Natural Resources at Tribhuvan University with substantial support from Great Britain. Over thirty species have been planted to study their survival, growth, and yield. Studies of the growth and survival of nitrogen-fixing trees, including Dalbergia, Acacia, and Leucaena, have been established. A farm-forestry project is underway to select and test useful native and exotic multipurpose trees. USAID's Resource Conservation and Utilization project is training Nepalese foresters in research management and a restructuring of the project is underway to give greater emphasis on panchyat forestry.

Sri Lanka

The budget and personnel allocated to forestry research in Sri Lanka is extremely limited. Yet some successes have been realized from research

on species like Sesbania grandiflora, Leucaena leucocephala and Casuarina equisetifolia. USAID's Reforestation and Watershed Management project has helped to develop a institutional development plan for the forestry school at China Bay and is providing degree training to a core of Sri Lankan foresters in the United States. Several of these individuals will hopefully be available when they return to work on applied research issues in support of the country's social forestry program.

Indonesia

Indonesia has recently created a new Ministry of Forestry, separate from the Ministry of Agriculture. A major division of the new Ministry will be concerned with research and an increase in research expenditures is expected to support the establishment of a series of research stations around the country. Japanese and USAID funding for a research and training center in East Kalimantan is already in place and the Indonesian government is interested in the possibility of an international forestry research center in this region. The importance of forestry research has increased as a result of the diasterous forest fire in Kalimantan that destroyed over 3 million hectares of tropic rain forest. The Ministry is preparing a plan for reforestation and reclamation of the area as a basis for requesting donor assistance. Interest in watershed management research and upland agroforestry and silvipasture research is also becoming more critical as population pressures destroys vital watershed forests. The Forest Research Institute at Bogor has considerable expertise in the fields of nursery and plantation establishment and is beginning to work on some fuelwood and multipurpose species.

B. Economic Analysis

Very few if any studies exist that attempt to calculate the economic value of trees to a nation or society. Figures exist on wood imports and exports and on the value added in wood processing industries or in fruit production. But the economic importance of wood for cooking, heating, fodder production, and soil and water conservation is a complex calculation that few have tried.

The analysis that follows focuses heavily on one major use of trees -- the use of wood and other tree biomass for fuel, since approximately 85% of all wood is used for fuel in Asia. The level of dependence of countries on fuelwood for energy has historically been associated with the level of economic development. (See Chart I). Wood represented 91% of total US national energy consumption in 1850 as against 1% in 1975.

The following sections describe briefly the fuelwood situation in Asia and illustrate the potential economic returns from a program of research.

CHART I

Renewable Energy Review Journal: Vol. 5, No. 2, December 1983

FUELWOOD CONSUMPTION AND SUPPLY

The level of dependence of countries on fuelwood has historically been associated with the level of economic development achieved. For example, in the United States in 1850, woodfuels constituted about 91% of total national energy consumption. In 1975 the figure had dropped to 1% (Griffen and Steele, 1980, p. 11). As economic development proceeds it is generally observed that fuelwood consumption decreases as it is replaced by more convenient commercial fuels and electricity. Fig. 1 illustrates that developing countries are much more dependent on fuelwood than industrialised countries, with levels of dependency generally, increasing with lower levels of economic development as represented by GNP per capita.

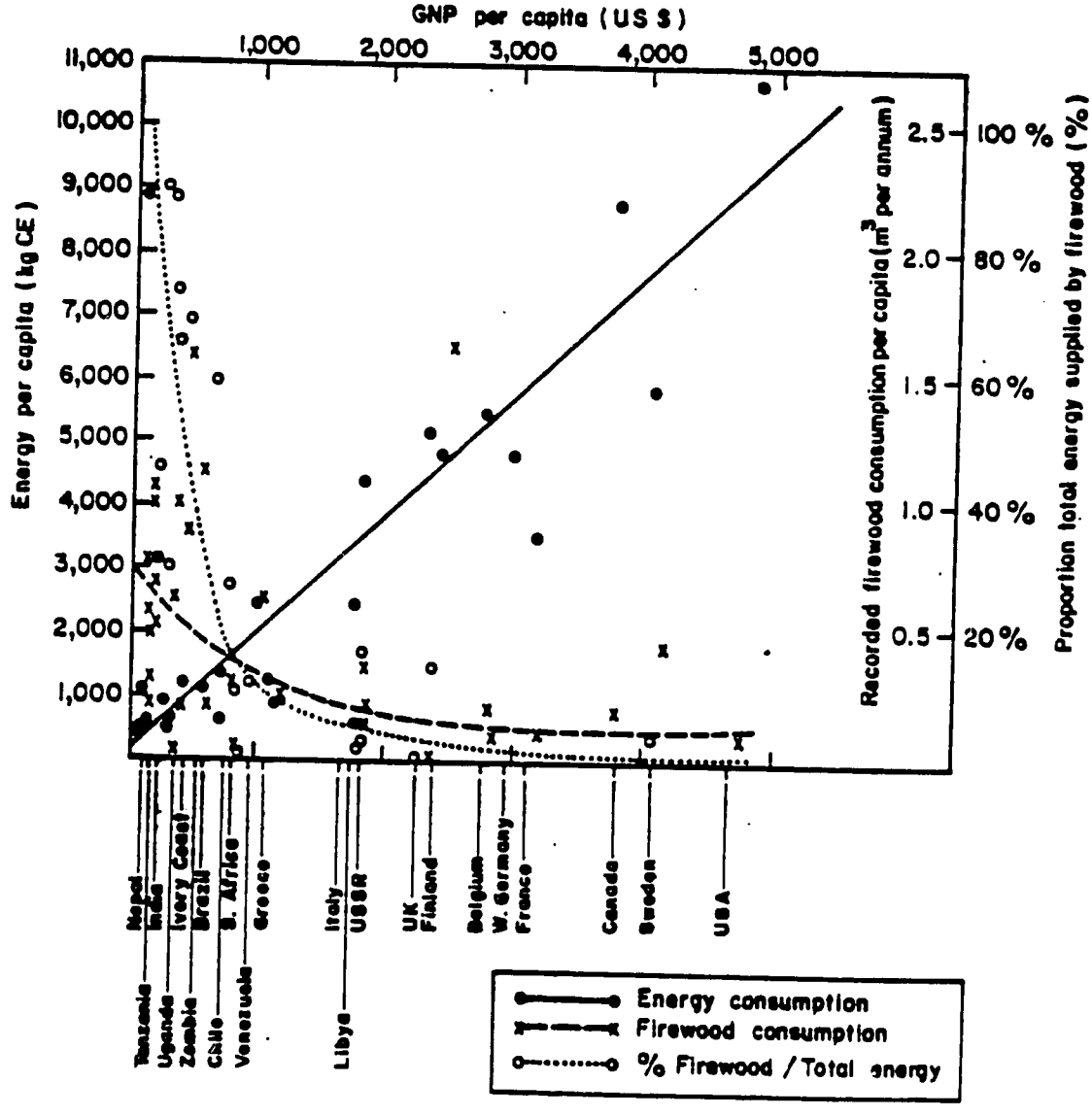


Fig. 1 Estimated trends in energy and firewood usage. Source: Wiersum [1979].

The Fuelwood Situation in Asia

Asian developing countries rely on wood and agricultural residues for a substantial share of their energy requirements, principally in the household and small industry sectors. Chart II shows traditional energy use in AID/Asia countries compared with conventional energy consumption. FAO calculated that in 1980, 860 million people in the region were facing severe hardships in meeting their fuelwood needs. FAO projects that this number will double over the next 15 years.

Several questions are critical to evaluating the seriousness of the problem and reasonableness of such crisis projections.

One question is whether incomes of the poorer groups will increase enough that they will be able to shift to modern fuels (e.g. kerosene, LPG, and electricity), as Malaysia, S. Korea and Taiwan have done.

Another is whether oil prices will remain soft or will again increase sharply in real terms.

The availability of energy substitutes, particularly in remote areas, is another key determinant of fuelwood consumption as is the cost of energy conversion devices (i.e. more efficient stoves).

And of course, the access of villagers to free or low-cost woodlots and supplies is central to the continued preference for wood fuels.

Gosh reported to the FAO Regional Energy Development Programme on the prevailing fuelwood situation in the Asia region (excluding China). The results of his study show that only 12.7 percent of the population of the region in 1980 had a positive balance of wood fuel supply over consumption. Taking into consideration the factors of population increase, an estimate of the cnage to alternative forms of fuel, current rates of deforestation, and using 1976-80 average rates of fuelwood planting, the proportion of the population in this positive balance situation would increase only to 13.2 percent by the year 2000. The following tables present Gosh's estimates of fuelwood balances.

Taking these estimates for the year 2000, the volume of wood required to redress the negative balances shown is 523.4 million cubic meters. Yields from fuelwood plantations at an 8-year rotation age may range from 50 cubic meters per hectare on poor sites to 200 cubic meters per hectare on better sites. If the volume of fuelwood required were to be met entirely from plantation of trees with these production rates, the area of forest required annually would be 7 million and 2.6 million hectares respectively. To sustain fuelwood requirements would therefore require a land area of from 56 to 21 million hectares and, given a cost range from $450 to $700 per hectare for establishing fuelwood plantations in Asia, would cost between $9.45 and $39.2 billion. This rough estimate suggests the importance of improving the productivity and reducing the management costs of fast-growing, multipurpose trees.

CHART II

ENERGY CONSUMPTION IN AID/ASIA COUNTRIES: 1978

COMMERCIAL & TRADITIONAL (MILLION TONS OIL EQV.)

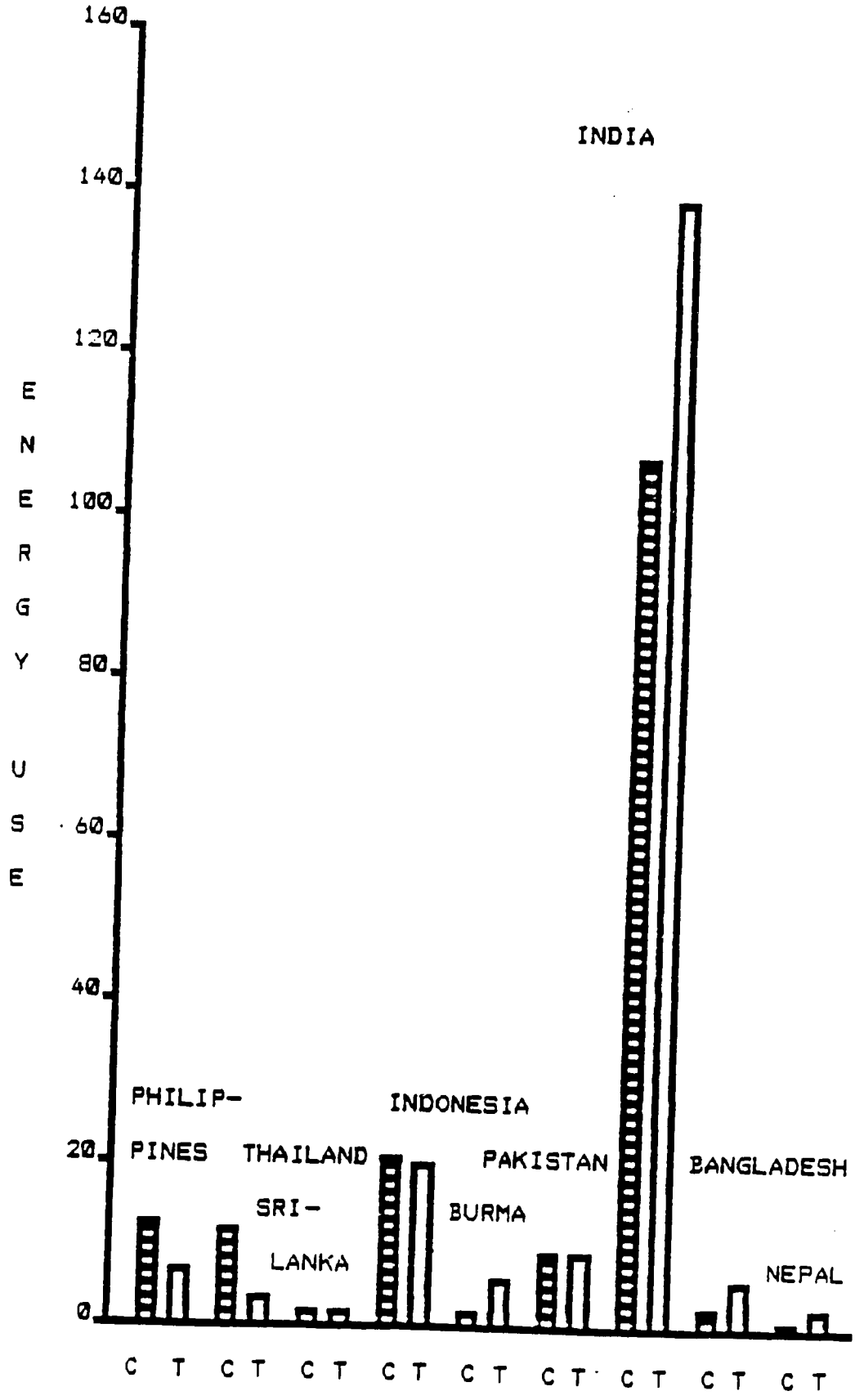


Table V-5 Overall Fuelwood Balance in Asia 1980

Category of Country	Level of Needs	Supplies	Average Balance	Balance in absolute terms in rural areas
	m^3/capita/yr	m^3/capita/yr	m^3/capita/yr	$m^3 \times 10^6$
1. Arid zones	0.3-0.5	0.02-0.03	-0.38	- 3.6
2. Mountainous zones	1.3-1.8	0.22-0.26	-1.31	- 37.3
3. Low population dry zones	0.2-0.7	0.16-0.20	-0.20	- 77.8
4. High population humid zones	0.3-0.9	0.24-0.28	-0.34	-140.3
5. Moderate population forest zones	0.5-0.9	0.75-0.80	-0.08	+ 11.8
6. High population forest zones	0.9-1.3	1.00-5.00	+2.00	+257.4

Table V-6 Fuelwood Balance in Asia Foreseeable in Year 2000

Category of Country	Level of Needs	Supplies	Average Balance	Balance in absolute terms in rural areas
	m^3/capita/yr	m^3/capita/yr	m^3/capita/yr	$m^3 \times 10^6$
1. Arid zones	0.3-0.5	0.01-0.02	-0.4	- 6.3
2. Mountainous zones	1.2-1.7	0.10-0.14	-1.38	- 63.2
3. Low population dry zones	0.2-0.7	0.14-0.18	-0.3	-141.3
4. High population humid zones	0.3-0.83	0.19-0.23	-0.4	-264.9
5. Moderate population forest zones	0.5-0.85	0.45-0.50	-0.2	- 47.7
6. High population forest zones	0.85-1.20	0.70-4.00	+1.3	+283.8

Potential Economic Returns from Forestry Research

Research affects different management activities in different ways. The use of research results may change:

(a) the kinds of inputs required or outputs produced;
(b) the amount of inputs used our outputs produced;
(c) the values of inputs and outputs;
(d) the timing of inputs and outputs;
(e) the distribution of costs and benefits among people within society.

Research to select fast-growing multiple purpose tree species through species and provenance trials would produce information that permits a more careful matching of species to sites. The use of this information may not change planting or management costs very much, if at all, but it may enhance tree survival and increase tree growth and yield on a given site and increase the quantity of output. It may shorten the time it takes to produce full yields of merchantable products. It also may change the kinds of products produced, for example by introducing trees that produce fodder as well as fuelwood. Proper selection of provenances may reduce future losses from insects and disease, thus increasing usable output.

Research on nursery management and tissue culture may reduce costs of producing acceptable planting materials. It may improve the quality of planting stock and thus enhance survival and perhaps reduce disease and insect losses. Site preparation research may lead to improved seedling survival and increased growth of the established trees. It may reduce soil and nutrient losses. Adoption of new site preparation techniques may increase the costs of stand establishment.

Research to improve tree management practices through improved spacing, thinning, rotation selection, harvesting methods, species composition, and integration with agricultural operation, may simultaneously change costs, yields, products, and the timing of costs and benefits.

Research on tree protection should lead to decreased losses of trees and an increase in the quantity and quality of tree outputs. It also may change the timing of yields. It will certainly change the costs of tree growing, generally trading increased protection costs for increased future outputs. However, it could lead to more efficient protection for a given investment, or to a reduced cost of achieving a given level of protection.

Research aimed at sustaining soil and land productivity may increase present costs of tree growing to obtain future increases in yields that might otherwise decline due to soil depletion. It might also lead to the enhancement of soil productivity by finding ways to improve the nutrient balance in soils to better meet the nutritional needs of the tree crops.

Socio-economic research may identify social-institutional barriers to the adoption of new technologies in forestry, suggest ways to overcome these barriers, and explore opportunities for increasing the extent of technology application. By expanding the potential scope of application, the effectiveness of other research activities is enhanced. Socio-economic research may identify marketing opportunities for tree crops, thus improving the distribution of income-generating activities among rural people. Environmental research may identify opportunities for avoiding tree-growing practices that have adverse environmental effects, or reducing these effects. Improved project evaluations may increase the efficiency and effectiveness of investments in tree-growing, thus making better use of limited investment funds.

Illustrative Economic Analysis: Eucalyptus Research in India

To illustrate the potential costs and benefits of a research program on multiple purpose tree species, we assume that a Eucalyptus research network is formed and that a series of field trials are undertaken in a variety of sites in Arid/Semi zones of several Asian countries. One of the participating countries is India, with which the World Bank has recently begun developing a Eucalyptus research program.

Under the network program, India in 1985 would establish 40 hectares of research plots for Eucalyptus species and provenances at a cost of $500 per hectares, or a total cost of $20,000 for the year. From 1986 through 1991, these established plots would be protected, tended, and monitored, data would be collected and analyzed, and supplementary plots would be established as needed. The cost for doing this would be $20,000 per year. From 1992 through 1994, the most promising Eucalyptus species and provenances would be selected and enough planting stock of these Eucalypts would be developed to meet the need for large-scale field planting in 1995. We assume that this could be done for $20,000 per year. The total cost of this 10-year investment in Eucalyptus research and development would be $20,000 each year for 10 years, for a total investment of $200,000. This budget does not include the cost of nursery operations, because it is assumed that these new species or provenances will replace existing ones already being grown for field use.

Annual plantings of new and improved species will begin in 1995 and will continue each year until 2025. We assume conservatively that only 80 percent of the area planted each year would survive to produce fuelwood. Once established, the plantations will be maintained indefinitely. Fuelwood cuttings would begin 5 years after planting, and would produce the same yield of fuelwood at each cutting every 5 years thereafter. The first annual harvest of fuelwood from the plantations with improved species will be made in the year 2000, 15 years after the start of the research program. Each year from 1995 to 2025 the annual planting program will expand the area of fuelwood plantations by the amount of planted area that survives. To provide a termination point for this analysis we assume that after 2025 no new plantations will be established. For this evaluation, yields after the year 2034 will be ignored.

Almost all of the expenses of establishing, maintaining, managing, and harvesting the plantation would tend to remain the same regardless of the productivity of the trees planted.

Vivekanandan has stated that there is considerable variation among provenances of Eucalyptus camaldulensis, and that certain provenances are excellent choices for dry climatic conditions. He cites average growth rates for northern India in dry conditions of between 7 and 11 cubic meter per hectare per year. Under more favorable climatic and site conditions other Eucalyptus species can yield from 20 to 35 cm/ha/year. With this much variation among Eucalyptus species and provenances it seems reasonable, and conservative, to estimate that a series of Eucalyptus species and provenance trials could result in the choice of species and provenances that on drier sites would increase firewood yields by at least 1 cm/ha/yr. over species and provenances currently used. This would be an increase of less than 20 percent in the yields cited above. This incremental yield is assured in this analysis.

The present values of the costs (PVC) of this 10-year research program, discounted for a range of interest rates (i) are:

i	PVC
0.10	$122,892
0.15	$100,376
0.20	$ 83,850
0.25	$ 71,410
0.30	$ 61,830

To illustrate the potential impact of such a research program in an actual setting, we will use data from the USAID Project Paper on the Madhya Pradesh Social Forestry Project in India. The MP Social Forestry Project proposes to increase the supply of firewood, fodder, fruit, small timbers, and other minor forest products in fuel deficient regions of the state. In the 39 districts of MP covered by the Project, the projected deficit of fuelwood is 8 million cubic meters per year by the year 2000. With an assumed realized mean annual increment (MAI) of about 4 cm/ha/yr, a total of 1.96 million hectares of fuelwood plantation would be needed to meet fully this need.

MP is proposing a planting program to begin reducing this anticipated fuelwood deficit. This program would establish forest plantations near villages, and along road, rail, and canal sides. By the end of 6 years this program is expected to be establishing 20,000 ha/yr. When added to the expected Forestry Department planting of 33,000 ha/yr, and other private and community plantings, about 65,000 ha/yr. of new plantations will be established each year in the 39 districts of MP by the end of the 6-year program. For analysis we will assume that once this level of planting is achieved, it will be continued until the year 2025, when it will be terminated.

These plantations would be harvested periodically for fuelwood, beginning five years after planting. We will ignore the production of fruit, fodder, poles, and other products from the plantations and assume that this will be unchanged by our research program. In other words, we will insist that the research program be justified in terms of increased yields of fuelwood alone.

We are not evaluating the feasibility of the MP planting program. We assume that it will be carried out using the available planting stock, whether or not the species trials research is carried out. The Project Paper proposed establishing four different types of multiple purpose tree plantations, with different mixtures of tree species:

Type of Plantation	% of All Area Area Planted	% Planted to Eucalyptus	Eucalyptus Area as % Total
Model I	40%	8%	3.2%
Model II	10%	8%	0.8%
Model III	30%	12%	3.6%
Model IV	20%	20%	4.0%
All Plantations	100%		11.6%

The area planted each year is 65,000 hectares. Of the total area planted, 11.6% is planted to Eucalyptus, or 7,540 hectares. Of this are planted to Eucalyptus, 80 percent survives, or 6,032 hectares. We will assume that of the approximately 6,000 hectares of Eucalytpus trees that become established each year, that 5,000 hectares will have improved species and provenances that will produce an increase in mean annual increment of 1 cm/ha/yr. With a cutting for fuelwood every 5 years, the improved trees would produce an additional 5 cm/ha at each cutting.

The overall program schedule would then look as follows:

-- 1985: Research program is started. Large-scale planting of unimproved trees is underway.
-- 1992: Improved species and provenances selected.
-- 1995: Improved stock available for large-scale planting programs. First plantation with improved stock planted; of these, 5,000 ha of improved Eucalyptus trees survive to become established.
-- 1996: Annual planting of improved stock continues, adding 5,000 ha of improved Eucalyptus trees each year.
--
-- 2000: First annual fuelwood harvests from plantations with improved stock.
--
-- 2024: Last plantation with improved stock established. Annual fuelwood harvests continue.
--
-- 2034: Last harvest of fuelwood to be included in the research evaluation.

We also assume that of the 65,000 ha planted each year, only 80% or about 50,000 ha would survive to be harvested. With this level of survival, after four decades of planting MP would have about 2 million ha of multiple purpose tree plantations by the year 2025. Of this, 150,000 ha would have improved species or provenances of trees under out program assumptions.

With the improved trees these plantations would make available to the rural people of India an additional 50,000 cubic meters of fuelwood annually by the year 2005. By 2015 this additional volume will have risen to 100,000 cubic meters annually, and by 2025, 150,000 cubic meters per year.

The economic value of fuelwood in the MP area given in the report is Rs 0.15/Kg. Using a current (September 1984) exchange rate of $0.086/Rupee, and the conversion value of 800 Kg/cm used in the MP project paper, the gross economic value of firewood in this area would be $10.32/cm. For this analysis we will assume that the current economic value of firewood in MP is $10.00/cm, and use this value unadjusted for inflation to estimate a real, uninflated rate of return on the research investment.

The following tabulation shows the additional volume and value of fuelwood expected to be harvested each year from the plantation with improved species, over what would have been harvested had the improved species not been used.

TABLE V-7
Additional Annual Fuelwood Harvested

Years	Volume(1000cm)	Value($10/cm)
2000-2004	25	250
2005-2009	50	500
2010-2014	75	750
2015-2019	100	1,000
2020-2024	125	1,250
2025-2029	150	1,500
2030-2034	150	1,500

The present values of these benefits (PVB) from this research program, discounted for a range of interest rates, are shown in the following table.

TABLE V-8

Present Values of Benefits from Eucalyptus Trials

i	PVB
0.10	$1,360,520
0.15	391,968
0.20	134,935
0.25	51,016
0.30	22,271

The present values of research costs and benefits are graphed in Chart III and the internal rate of return can be see as the point where discounted benefits equal discounted costs -- 23%. This return on a research investment of $20,000 per annum would appear high enough to justify the research investment program outlined above.

Even if the costs of the research program were twice as high as estimated, the rate of return would still be 18%. Or if the increase in yields were only 0.5 cm/ha/yr, the investment would still yield almost 18%. Yields could fall to 0.26 cm/ha/yr. and the IIR would be 15%. Varying the number of hectares planted with improved Eucalyptus species from 5,000 to 1,300 per year, the investment would still earn 15 percent. If twice as much area were stocked with higher-yielding trees, the research investment would yield a 28% rate of return. And to conclude this sensitivity analysis, if future values of fuelwood dropped from the current $10 per cubic meter to $2.60 per cubic meter, the investment would still earn 15 percent.

In summary, it seems reasonable to conclude that such a research program would pay for itself, even if the results were used nowhere else but in Madhya Pradesh. If we include potential yield increases for fodder and timber products, the return may be even greater. And given the fact that Eucalyptus accounts for a large proportion of the short-rotation trees being planted in social forestry program in Asia, a regional research network program that developed a range of superior seed for Eucalyptus species and provenances adapted to various conditions within the region would seem well worth a 10-year investment of several million dollars.

C. Social/Institutional Analysis

The following provides an overview of some of the major social and institutional issues related to forestry and multipurpose tree species production and management in Asia.

CHART III

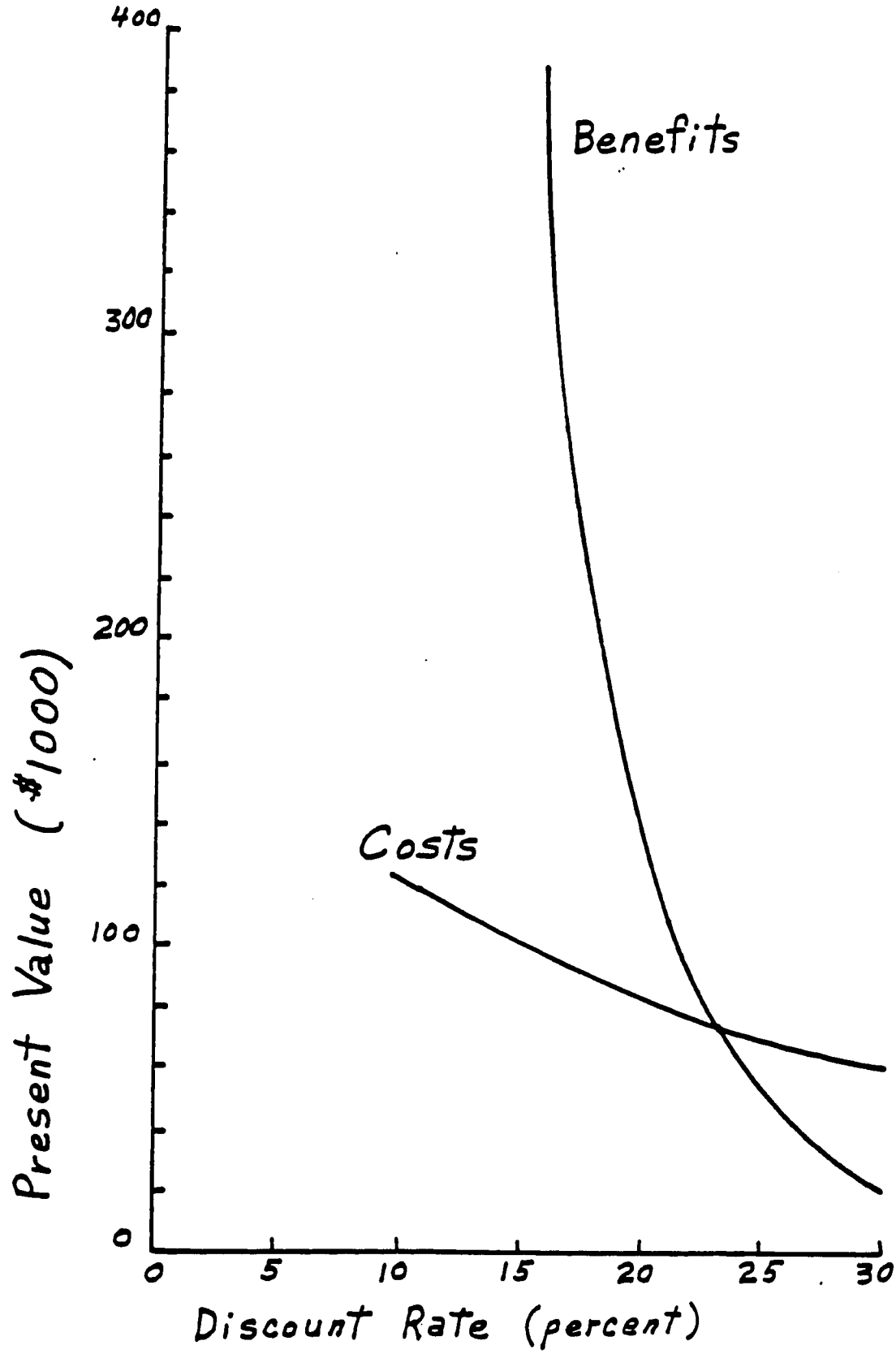


Figure 1. Present values of costs and benefits for a proposed Eucalyptus species/provenance trials research program in India, with the results applied to increase fuelwood yields from a social forestry project in Madhya Predesh.

1. Importance/Role of Multipurpose Trees to Target Social Groups

B. P. Srivastava, former Inspector General of Forests of India has described the multiple purposes of trees and forests:

> Apart from providing the basic need for fuelwood, forests influence community stability by providing
>
> - small timber for households, agricultural implements;
> - gums, resins, honey, medicinal herbs, tannings, dyes, etc.;
> - food in the form of fruits, nuts, berries, roots, shoots, mushrooms, etc.;
> - cattle and livestock fodder;
> - self-employment and income through a series of agriculture supportive activities like lac cultivation, silk rearing, basket making, bee-keeping, sale of firewood, supply of raw material for handmade paper, etc., (Srivastava, 1980:7).

The significance of these multiple uses of forests and trees in the lives of Asian peoples is contrasted with the relatively uncontrolled destruction of the resource base that provides the goods and services so highly demanded.

These needs and realities are particularly acute for the poor, landless and women. It is often assumed that merely growing more trees will help these typically marginal and unrepresented peoples. Yet as Eckholm states :

> With forest products, as with food, merely growing more produce is not necessarily sufficient to eliminate deprivation. Who does the producing, and how the benefits are distributed are equally crucial considerations ... with wood, as with other resources, buying power rather than need, determines the allocation of the traded products (Eckholm, 1979:34).

Traditionally, forest lands with no determined ownership have been used by the landless. Land tenure is obviously insecure, so annual crops are the most rational land use alternative. Forests are, thereby, increasingly devastated to clear land for the landless. Yet, there is concern that even if food is produced, there will be no fuel to cook it. The situation in India is characteristic of many areas of Asia:

> As India's population grows, more and more trees are cut and not replaced. In rural areas where people gather their own wood for fuel, the situation is becoming desperate. Nearly every village in India is surrounded by a circle of land stripped bare of trees. As a result, most women and children, the traditional wood-gathers, must now walk often over rough ground, to find firewood that was available nearby just a few years ago. Even worse are the tens of thousands of "headloader" families who make their living carrying firewood and other forest products to sell at local markets. As the forests vanish, so does their livelihood (Tolles, 1983:1).

The significance of this picture of the landless particularly is strengthened when figures show that 90 percent of the rural labor force in Pakistan, Bangladesh, and Java are landless or near-landless. Fifty percent of the rural labor force in Sri Lanka and the Philippines are landless (Esman and Associates, n.d.). The dependence of these people in many areas on fuelwood for cooking and on forest products for limited commercialization must be understood by national and international forestry programming. Additionally, the role of forests and trees in providing off-farm rural employment opportunities should be carefully investigated.

Women are another group that merit more attention. Not only are they the major collectors and domestic users of wood, they are a major component in the agricultural labor force. They are planters, harvesters, maintainers, transporters, marketers, and consumers of wood. When looking at the total production goals of households, it is necessary to identify and enhance the role of women in the achievement of production goals, in this case specifically insofar as forestry activities contribute to rural production systems (Bhatty, 1980, Hoskins, 1979; Carloni, 1983).

2. Social Impacts of Fuelwood Use and Shortages

The impacts of use and production of multipurpose fuelwood trees have not been well documented.

One important impact is on health. Smoke is considered to be a major hazard from the burning of wood in stoves or open fires. Carbon, tars from hydrocarbons, and other substances are released through the combustion process. Some research indicates that women innale as much benzo(a) pyrene as they would if they smoked twenty packs of cigarettes a day. Irritation of the eyes and respiratory diseases such as bronchitis have been documented from studies of wood use for domestic consumption (Foley and Moss, 1983).

While smoke has been determined to have detrimental impact on health, this smoke also has been considered to be useful in ridding smoke-filled houses of termites and other pests. Pests, however, are another consideration when put into the context of wood production rather than wood consumption. Rambo (1984) explains:

> The incidence of many serious human diseases in the tropics, such as malaria and scrub typhus, is closely related to the nature of land use. In Indochina and Malaysia, for example, malaria is largely absent from both undisturbed forests and fully-developed permanent agricultural areas. In contrast, it is endemic in upland areas where shifting cultivation is practised. This reflects the fact that the vector mosquito breeds in clear sunlit streams, precisely the habitat created by the opening of swidden plots... Agroforesty projects, unless properly designed may create equally unfavorable habitats for disease vectors (Rambo, 1984:44).

The nutritional aspects of forests and trees must also be considered. Ganguli (1980) points out that forests contribute to nutrition by providing a source of fruits, nuts, mushrooms, and other foods that add to a balanced diet. Rambo (1984) emphasized this by suggesting that agroforestry projects can contribute to the diets, especially of children, when they emphasize the production of fruit trees. These agroforestry projects can also have an adverse effect if they focus on tree cash crops. Rambo describes a case in Malaysia:

> ... many settlers in Malaysia's FELDA rubber planting schemes actually suffer from malnutrition despite a per capita cash income twice the national rural average. This is because all their efforts are concentrated on production of industrial crops for sale with families buying all of their food at the market. As a consequence, they eat a diet of rice and tinned sardines with virtually no fresh fruits or vegetables... (Rambo, 1984:44).

Thus, in the rare case where trees successfully compete against agricultural crops, these considerations must be addressed by project designers.

Another issue related to wood fuel and diet is when shortages of fuel for cooking occur. Hoskins (1979) reports that women change household cooking and eating habits. More raw foods, for example, are found in the diets of people in Nepal because of fuel shortages. These shortages are also affecting the amount of boiled water that people consume which has obvious nutritional and health impacts.

Income distribution is another impact that must be looked at in production systems where multipurpose trees are found. There is a need to better understand the economics of multipurpose species production. This concept should be broadened to include the distribution of benefits in general because the scope of benefits goes considerably beyond income. These benefits might include higher standard of living, prestige, improved health and nutrition, power over decision-making, greater independence, confidence, and so forth.

These are all positive aspects of a production system where trees actually contribute to rural development. For example, Rambo (1984) reports that a fuelwood production scheme in Java was of most benefit to the poor since it provided them with fuel. In this case, the rich were not particularly concerned since they used kerosene for domestic energy.

On the other hand, Douglas (1982) suggests that:

> ... experience in Bangladesh shows that schemes directed at market supply in general have a tendency to deliver maximum benefit to richer groups and minimal or no benefits to poorer people. The dilemma therefore, becomes one of devising schemes which will deliver at least some significant measure of improvement in the fuel/energy flow to those most in need <u>within</u> the social and political constraints that apply.

In India, the production of eucalyptus in criticized by some because: its production is less labor intensive than other crops (therefore, landless workers are not in as much demand as they are in the production of other agricultural crops); it burns quicker as a wood fuel, thus more is needed for cooking; it is in great demand for paper and rayon production so that it is too expensive generally for domestic use. The argument here is that the production of this fast growing species has increased the gap between the rich and the poor in certain areas (Shiva and others, 1982).

Other changes in the distribution of benefits are found when trees become a cash crop. In many societies, women are the primary

beneficiaries of wood until it enters a market economy. It is then that men become more involved and receive the monetary benefits. Again, however, it is more than income that is affected. Rambo states that:

> In contrast to many traditional Southeast Asian agricultural systems, where work is equally divided between males and females and where consequently women enjoy a relatively high social status, forestry is often exclusively a male activity. To the extent that this sexual division of labour is followed in community forestry projects, the status of women can be adversely affected. (Colfer, 1981), for example, has shown how the introduction of chain saws into forest - living Dyak communities in Kalimantan threatens the status of women in these swidden farming communities, since only men are able to use the new technology (Rambo, 1984:43-44).

Conflicts over use of land for forest and tree production are important. For example, in Nepal, the demand for food is causing deforestation as people cut forests to clear land for crop production. This land is also demanded for livestock (cattle, pigs, goats, etc.) that are required for food, milk, transportation, draft power and the like (Wallace, 1983).

Other resource conflicts are human and financial. Human resources are needed for the planting, maintenance, harvesting, marketing, etc., of trees. These human resources are often involved in other agricultural pursuits and the seasonality of planting food crops and tree crops frequently causes conflicts in the diversion of people from planting one to planting the other.

Economic conflicts arise because of the delay between investment and profit since, even with fast growing species, actual harvesting is delayed from two to five years depending upon the end use (Hoskins, 1979). Incentive structures must be better understood to reduce these conflicts.

3. Land Use Issues and Incentives for Forest Management and Reforestation

Access to forests and trees is one of the most significant issues related to forest management, tree planting, and distribution of benefits. Those forests that are protected by Forestry Departments are basically inaccessible to rural inhabitants except through illegal action. Other lands are inaccessible insofar as tenure is insecure or where there is a difference between de facto and de jure tenurial patterns. And, in some places, access to trees themselves is difficult because of ownership laws. On the other hand, there are issues of common property access and free access to forest resources that must be considered. These land use issues are closely tied to

incentives that might be used to encourage the management of natural forests or the planting of trees. Markets for the products of forests and trees exist already in places where they are no longer considered to be free goods. And, potential markets can be developed as the supply increases.

Forestry Departments in many LDCs are perceived in negative terms by rural inhabitants, The impact on forests has concomitantly been negative. In India, concessionaires have been contracted by the government to cut trees. Reaction has, in some cases, been strong such as in the village of Reni in 1974. Twenty-seven women from the Uttar Pradesh village protected the forest from being cut. Women from otner villages have since followed suit (Anon:, 1983).

Another account describes reaction of some tribal people of central and eastern India who have traditionally subsisted on forest lands. With government policy emphasizing commercial exploitation and with corruption among officials, huge areas of forests are cut annually. One report states that:

> The tribal inhabitants of the Singhbhum district are resisting the replacement of the Shorea Robust, locally known as the Sal tree, which is used for cattle fodder, for construction and for making farm and household tools, by teak, which is purely commercial timber. After a year of petitioning the Government, it was reported, the tribal people of the district began destroying teak saplings in Government nurseries and forestry buildings to press their demands. A confrontation in 1980 resulted in the deaths of 16 people, including three policemen (Anon, 1982).

Similar cases of conflict over land use are cited in Papua-New Guinea (Waiko, 1975) and other countries.

There are also internal conflicts on land owned by a single household or a village. For example, in Thailand, land in northeastern Thailand is managed for various purposes. Most intensive use and management is of areas for rice and home garden herbs and vegetables. Less intensive management ranges from cassava to livestock to fruit trees. Forests, which are used for fuel, construction poles, fodder, medicines, foods, and other products, have

the least intensive management. Romm and Zinke, (1982:12) state that:

> The intensity of management is generally below that required to sustain the resource and usually foretells the eventual clearance of the land for agriculture. In a typical sequence, a forest area is first cut for large timbers and subsequently for the making of charcoal. As it is opened, it is used increasingly for grazing, which effectively stops the regeneration of trees. It is later cleared partially for cultivation of extensive crops like kenaf or cassava. In final stages, it may be bunded roughly for extensive rice cultivation and, if suitable, it may eventually be developed for intensive rice management.

Thus, agriculture is a major competitor for land in spite of the fact that forests provide many important products to meet the basic needs of households. This is true of most areas in Asia not just the one in Thailand characterized here.

Not only are there conflicts over uses of land in communities but also conflicts over access among local users of forest lands themselves. The issues of land and tree tenure which this consideration implies are perhaps some of the most significant in determining the success of forestry project objectives. A project evaluation in Pakistan points out the importance of this:

> Contrary to expectations, Shamlat land appeared not to be truly community land in the cases examined during field work. Significant changes have taken place gradually over time in most of Azad Kashmir. These have resulted in a dual and divergent status: while, legally, Shamlat continues to be considered community land, in real life it is operated and used as private land. This finding is bound to modify the assumptions about the projects developmental consequences that were made when the planting of the Shamlat land was originally planned (Cernea, 1981:16).

This difference between de jure and de facto tenure is reflected in the response to tree planting. While designed as a community forestry activity, the project actually had to go to individual farmers who would plant on their own land and would thereby accrue the benefits. Project evaluators discovered that these were principally large landowners. The situation therefore became one where:

> It appears that the tracts of Shamlat land being offered for planting -- and assumed by the project to generate benefits for village communities -- have surreptitiously changed their tenurial status, and in fact are managed on a strictly private basis. Their de facto owners hope to get their "Shamlat" lands planted at full government expense, and without making any repayment commitments (Cernea, 1981:19).

This access to land has facilitated farmer response to tree planting. The plight of landless peoples and women were discussed above but must be emphasized once again here. Their access to land particularly is a serious problem in Asia.

While access to land and trees is an important concern, it is one of a vast and complex array of factors that determine how and why people manage and/or plant tree resources. The incentives for management and planting are equally complex. Romm (1980) describes a number of these factors --

1. Appropriate technologies that are more productive
2. Ecological sustainability
3. Profitability
4. Security of benefits
5. "Insurance" against risk (e.g., guaranteed prices, technical assistance
6. A functioning administrative structure
7. Policy support (e.g., tax relief for allocation of land to tree planting)

Specific policy and management oriented research is critical to this effort. Wallace presents an example of a systematic approach to prescriptive policy analysis research. The following chart outlines options Wallace considered in assessing Nepal's forestry policies.

Table V-Possible additions to Nepal's existing forest policies.

Policies	Is the policy economically efficient?	Is the policy politically acceptable?	Is the policy administrativel feasible?
Demand-side			
Regulate use			
Through taxes	No	No	No
Through quotas	No	No	No
Subsidize substitutes			
Biogas	Yes	Yes	Yes
Others	No	Yes	Yes
Subsidize improved stoves	Yes	Yes	?
Supply-side			
Subsidize private planting	Yes	Yes	Yes
Provide government investment	Yes	Yes	No

Change management			
More govenment control	Yes	No?	No
More community control (Panchayat Forests, Panchayat Protected Forests)	Yes	Yes?	Yes
More private control	Yes	No	Yes

(Wallace 1983:226)

These options are further clarified when looked at in the context of the problems which they are actually designed to address. These are outlined in the following:

Conceptual Solutions for Deforestation Problems

Problem	Single Ownership	Taxes or Quotas	Subsidies or Direct Government Investment	Subsidies for Substitutes	Investment Subsidies for Efficient Use
Common-Property					
Overuse	Yes	Yes	No	Yes	Yes
Fast Use	Yes	Yes	No	Yes	Yes
Wrong Consumption Mix	Yes	Yes	No	Yes	Yes
Under-Investment in Reforestation	Yes	No	Yes	No*	No*
Under-Investment of Land in Forestry	Yes	No	Yes	No*	No*
Under-Investment Information	Yes	No	Yes	No	No
External Environmental Effects					
Overuse	Yes (overall)	Yes	No	Yes	Yes
Under-Investment	Yes (overall)	No.	Yes	No*	No*
Inefficient Use	No	No	No	No	Yes

(Wallace, 1981:100).

4. Species Assessment Research and Social Impact Analysis

The link between species assessment research and social impact assessment is described by Hasan (1978) in discussing the Bangladesh experience in resettlement of shifting cultivators:

> Suggestions have been made to grow fast-growing forest trees during the fallow periods to augment income of the cultivators in the form of firewood, building poles, pulpwood, etc. From the viewpoint of the state establishment of nigh yielding forest plantations, with the help of shifting cultivation, has proven economically very useful. If the cultivator has to grow and harvest his own trees, its usefulness has to be assessed from his point of view not the state (Hasan, 1978:2).

This suggests that if the tree is mainly desired for firewood, it is most appropriate to select and manage principally for multiple stem production. If the primary purpose is construction poles, species selection and management should be for a straight trunk. The acceptability of a species will depend upon preferences, profit, or other factors upon which the planter bases his/her decision to plant. There are many examples around the world where undesirable trees were not planted or were destroyed because of superstition, previous negative experience, competition between trees and agricultural crops, and so forth.

Thus, we must assess the potential of the human and natural systems. We must understand what is demanded and what is actually a resource to local peoples. We must also assess who is likely to gain or lose and at what cost. And, we must assess how those resources will be distributed.

5. Institutional Barriers to Multipurpose Tree Species Research

Historically, forestry institutions in Asia have focussed on the "protection of the interest of the state. The forest has been the resource base for war and defense, the buffer zone between states, and the source of goods and services for a ruler's survival" (Gibbs and Romm, 1982:3-4) and "...since the Western tradition was virtually identical, the colonial era changed none of the fundamentals, merely adding one new dimension, a cash market for timber. Colonial governments also reinforced recognition of the value of timber revenues to the state's treasure" (Gibbs and Romm, 1982:4).

Priority has always been placed on commercial timber production, and in the past decade seventy-five percent of the world's hardwoods (e.g., teak) have been supplied by the nations of Southeast Asia. This emphasis has led forestry institutions and agencies to be custodial and protection-oriented.

It is only recently that these institutions have begun the process of directing themselves to development functions. For example, social forestry is being touted in India, community forestry in Nepal, and agroforestry in the Philippines. There is more emphasis being placed on extension, growth of small forest industries, and forest planning as part of national economic development strategies.

While positive, these changes in forestry institutions and agencies are only a start. Institutional barriers persist. Rhetoric about forestry for rural development far exceeds institutional ability to translate it into action. Traditional bureaucratic attitudes, negative incentives (bribes to forest officeals), and lack of human and financial resources are principal reasons. In few Asian countries (Malaysia, f.i.) are the links between national planning and forestry institutions strong. The inability of economists and other social scientists and foresters to communicate exacerbates already existing problems. Policy analysis in forestry agencies is extremely weak which leads to limited support. Issues such as land and tree tenure and their impact on forestry programs are poorly understood as are those related to local decision-making economic mechanisms, delivery systems, and distribution of benefits (Gibbs and Romm 1982).

There are many obstacles to planning and conducting biophysical and socio-economic research that focusses on forestry. The institutional capacity to undertake research on multipurpose species must be enhanced by looking at these obstacles (see following list) and taking measures to overcome them.

Obstacles to research planning and execution caused by external and internal forces
(identified by EWC Forestry Research Directors Workshop)

Group 1

External	Internal
Lack of political support status of and state of research.	Lack of relevant research and programme, inflexibility of plans.
Lack of qualification of recruitments.	Lack of leadership and motivating forces.
Lack of stability of training staffing.	Ineffective or lack of on job training procedures.
Lack of material support by government and department (funds and facilities).	Excess of bureaucratisation/ centralization.

Lack of incentives to scientists (money, recognition, rewards advanced training, public appearances, travel).

Interagency rivalry.

Intra and interdepartmental antagonism.

Inappropriate priorities of government and departmental policy.

Brain-drain to private business or abroad

Deficiencies in the educational systems, lack of competence in basic cultural abilities of school leavers (logic writing, motivation) and of technical and general competence and understanding of university leavers.

"Ivory Tower Syndrome" (institutional, disciplinary, geographic and personal isolation).

Dissipation of efforts and activities into meaningless projects and inefficient administrative work.

Lack of feeling or relevance.

Lack of proper procedures of problem analysis, designing monitoring and reviewing.

Lack of proper data and record filing, storing and retrieving procedures (files in shambles and incomplete data identification and processing.

Group 2

External	Internal
Lack of understanding of the principles of scientific work.	Lack of understanding of the interdependencies between the polit and scientific sectors.
Lack of public recognition of relevance and urgency.	Lack of communication "scientific researcher: practitioner", no feec
Lack of political support of scientific research (science as alibi for foregone conclusions and decisions, short-term interests).	Lack of initiative to use media anc other popular means for disseminat: results.

Lack of willingness to accept the risk of uncomfortable results on the part of politicians or other donors.	Lack of provision for result transfer in research projects proposals "Ivory Tower Syndrome", use of unintelligible jargon in writing, isolation from reality, of avoidance non-scientific audiences.
Traditional thinking and attitudes.	
Dogmatic, empirical approaches in practice dominating	Lack of understanding of the relationships between scientific research, technical development and practical application.
No provision of suitable demonstration and verification trials.	Lack of experience, lack of knowledge in information science.
Lack of compatibility of donor's objectives and scientific research needs.	

(Source: Bruning, 1982)
(Source: Report of Ad Hoc Study Group on Forestry Research. 1984).

Many Asian foresters will readily admit that the real problems they must deal with are social, economic, and institutional, not technical. Yet in few forestry institutions are there social scientists or economists to address these "real" problems. Even if they do exist, there is the problem of the public with whom they communicate. For example, surveys of local people in India suggest that trees were most important for shade, agricultural implements, and fruit. These responses did not reflect a significant shortage of fuelwood in the region because the surveyors did not question the women whose main job it was to collect the ever more scarce wood (Agarwal, 1983). While some research is being done, there is still a great deal of distrust and political opposition to social scientists and social surveys.

This is a critical period of transition for forestry practices. It is a period of diverting efforts and investments into new activities that focus on forests and trees and their role in broader socio-economic development. The success of these efforts depends upon improved knowledge about social, economic, and institutional constraints to forestry and multipurpose species research. It is a period that when sensitively done, socio-economic research can provide a substantial contribution to capturing existing knowledge, reconceptualizing and assessing the nature of problems (institutional, organizational, policy, social, structural, economic, technological, and biophysical) and the context in which they exist, and understanding the factors (e.g., behavioral, normative, management) impinging upon the successful design and implementation of forestry and multipurpose species programs (Burch, 1983). This will require a commitment to improving the problem solving capability of national and international research institutions. More strategic approaches must be developed to strengthen existing institutions or create a new one if appropriate.

Creativity must be nurtured in the scientific community through investments in research and incentives for researches. Training will be required. Political backing is an important prerequisite to forestry as an activity in socio-economic development. Regional cooperation is required through twinning and networking. International development assistance is essential. And, time is key to successful efforts (Report of the Ad Hoc Study Group on Forestry Research, 1984).

D. Financial Analysis

The activities described in Part III of this paper will be financed by a combination of Asia Bureau, S&T Bureau and Asia mission funds. A total expenditure of $13,233,000 is estimated over FY85-89. The estimated cost over a ten-year period for the program in Asia is $26,880,000 out of a world-wide program of $40,000,000.

Tables V-12 and V-13 show the costs over the first five years by component, activity, and source.

TABLE V-12
SUMMARY OF ESTIMATED ANNUAL COSTS BY COMPONENT OVER 5 YEARS

	S&T	ASIA	Missions	Total
1. Research Planning & Manage.				
Country Plans				602
Inst'l Plans				600
Information Management System				500
Reg. Plan, Eval. & Training				1,500
Total Comp. I	2,727	475		3,202
2. Network Dev. & Research				
Meetings & Site Visits				2,477
Newsletters & Publications				400
Training & Education				1,313
Special Res. Support				600
Network Coord.				1,760
Total Comp. II	3,290	1,850	1,410	6,550
3. Global Research				
Tech. Assessments				341
Integration				710
Total Comp. III	1,051			1,051
4. Senior Technical Ad.	620			620
5. Evaluation	685	175		685
6. Contingency	1,125			1,125
Grand Totals	9,323	2,500	1,410	13,233

(000s)

Table V-13

	Year 1				Year 2				Year 3				Year 4				Year 5				5 year Total			Total
	S&T	A	M	Total	S&T	A	M	Total	S&T	A	M	Total	S&T	A	M	Total	S&T	A	M	Total	S&T	A	M	
I Research Planning & Management	115	-	-	115	603	150	-	753	603	100	-	703	703	125	-	828	703	100	-	803	2727	475	-	3202
II Network Development Research	1228	500	42	1770	728	300	342	1370	578	650	342	1570	483	100	342	925	273	300	342	915	3290	1050	1410	6550
II Global Research Support	239	-	-	239	203	-	-	203	203	-	-	203	203	-	-	203	203	-	-	203	1051	-	-	1051
IV Sr. Tech. Ad.	160	-	-	160	160	-	-	160	100	-	-	100	100	-	-	100	100	-	-	100	620	-	-	620
V Evaluation	-	-	-	-	-	25	-	25	250	50	-	300	-	50	-	50	260	50	-	310	510	125	-	635
VI Contingency	260	-	-	260	235	-	-	235	210	-	-	210	210	-	-	210	210	-	-	210	1125	-	-	1125
Totals	2002	500	42	2544	1929	475	342	2746	1944	800	342	3086	1699	275	342	2316	1749	450	324	2541	9323	2500	1410	13233

S&T - Bureau for Science and Technology

A - Bureau for Asia

M - Asia Missions' "buy-ins"

Table V-14 ·

Table 2- Inputs by Procurement Mechanism

	1 S&T/ASIA	2 S&T/ASIA	3 S&T/ASIA	4 S&T/ASIA	5 S&T/ASIA	SUB TOTAL S&T/ASIA	S&T/ASIA TOTAL	Mission Contribution	TOTAL
COMPONENT 1									
AFRSC	115 -	603 150	603 100	703 125	703 100	2727 475	3202	-	3202
COMPONENT 2									
AFRSC	1228 200	728 300	578 300	483 -	273 300	3290 1100	4390	1410	5800
PSC	- 300	- -	- 350	- 100	- -	- 750	750	-	750
COMPONENT 3									
AFRSC	239 -	203 -	203 -	203 -	203 -	1051 -	1051	-	1051
EVALUATION	- -	- 25	250 50	- 50	260 50	510 175	685	-	685
CONTINGENCY	260 -	235 -	210 -	210 -	210 -	1125 -	1125	-	1125
Sr. Tech Advisor	160 -	160 -	100 -	100 -	100 -	620 -	620	-	620
SUBTOTAL	2002 500	1929 475	1944 800	1699 275	1749 450	9323 2500	11823	1410	13233
TOTAL	2502	2404	2744	1974	2199		11823	1410	13233

AFRSC - ASIA FORESTRY RESEARCH SERVICES CONTRACTOR

PSC - PERSONAL SERVICES CONTRACTOR

64b

The procurement approach outlined in section IV.C. calls for a personal services contract(PSC) and a level-of-effort contract for an Asia Forestry Research Services Contractor.

The estimated funding for these contracts is indicated in Table V-14, by component and contractor for each year.

Table V-15 provides detailed breakouts of estimated costs for each contract.

Chart V-15

ASIA FORESTRY RESEARCH SERVICES CONTRACT

FIVE YEAR BUDGET

Component 1

Consultants

Sociologist		Economist	
Marketing Specialist		Pest Management Specialist	
Training Specialists		Geneticist	
Policy Specialist		Silviculturist	
Natural Resource Planner		Soils Specialist	
Statistician		Mensurationist	
Hydrologist		Agronomist	
Consultant Subtotal	50 pm		342,000
Transportation, Travel and Per Diem			250,000
Meetings			850,000
Publications			100,000
Training			1,500,000
Equipment			150,000
Other Direct Costs			10,000
Component Total			3,202,000

Component 2

Salaries		
Asia Director	60 pm	300,000
Fringe Benefits		66,000
Allowances		---
Overhead (70%)		256,000
	Subtotal	622,000
Species Network Advisor	60 pm	275,000
Fringe Benefits		61,000
Allowances		100,000
Overhead (70%)		232,000
	Subtotal	668,000
LAF Network Advisor	60 pm	275,000
Fringe Benefits		61,000
Allowances		100,000
Overhead (70%)		232,000
	Subtotal	668,000
Consultants		
Sociologist Economist Pest Management Specialist Geneticist Silviculturist Timber Management Specialist Soils Specialist Training Specialist Statistician Mensurationist Hydrologist Agronomist		
Consultant Subtotal	54 pm	380,000

Transportation, Travel and Per Diem	370,000
Meetings	1,063,000
Special Research Support	300,000
Publications	400,000
Training/Equipment (= $150,000 of total)	979,000
Other Direct Costs	350,000
Component Total	5,800,000

Component 3

Salaries		
R&D Director	30pm	138,000
Fringe Benefits		30,000
Allowances		---
Overhead (70%)		117,000
	Subtotal	285,000
Consultants:		
Training Specialists DBMS/Modeling Specialists Computer Programmers		
Consultant Total	20 pm	97,000
Transportation, Travel and Per Diem		100,000
Meetings		100,000
Equipment		50,000
Publications		100,000
Workshops		118,000
Data Base Support		200,000
Component Total		1,051,000
	Grand Total	10,053,000

PERSONAL Services Contract (PSC)
Asia Field Coordinator
($750K over 5 yr.)
(000's)

	Total	S&T	Asia
-Coordinator Salaries, fringe, allowances	600	-	600
-Travel, per diem	100	-	100
-Supplies, Equipment and other direct costs	50	-	50
Totals	750		750

The mission and host government contributions to this overall effort will be substantial. The initial estimate of mission's buy-ins of $1,410 million over 5 years or $280,000 per year seems very conservative given the level of current mission funding in this area. Below is a rough cut at mission project funding that may support the project's overall objectives and selected components.

Table V-16 Current & Possible
Mission Funding for Forestry R & D

Country USAID	Estimated HC	Estimated
Pakistan:		
391-0481 Forestry Planning and Development	1,692	1,456 ?
India:		
386-0475 Madhya Pradesh SF	300	200
386-0478 Maharashtra SF	1,000	0
386-0474 Alt. Energy Res. Dev.	1,695	630
386-0485 Forestry Res. Education & Training	5,000 est.	5,000 est
386-0495 National Social For.	200 est.	300 est.
Sri Lanka:		
383-0055 Reforestation and Watershed Management	200	
Nepal		
367-0132 Resource Conservation and Utilization	50	?
367-0149 Agricultural Research and Production	100	?

Bangladesh:		
388-0051 Agricultural Res. II	100	?
388-0062 On Farm Forestry Research	3,000	3,000 ?
Thailand		
493-0340 S & T Development	500 (est.)	?
Philippines		
492-0366 Rainfed Resources Development	1,500	?
492-0375 Rural Energy Development	1,000	?
Indonesia		
497-1098 Applied Agricultural Research	1,000	?
497-0311 Upland Agriculture and Conservation	2,000	?
ASEAN		
498-0258.03 ASEAN Watershed Project	3,000	?
Rough Estimated Total	24,687	

E. Environmental Analysis

No environmental assessment is required, according to AID's revised Environmental Procedures, 22CFR Part 216.2(c)(2), as the project consists of analyses, studies, research, training, and information transfers.

FORESTRY/FUELWOOD RESEARCH AND DEVELOPMENT PROJECT

(936-5547)

April 5, 1985

TABLE OF CONTENTS

TABLE OF CONTENTS (cont'd)

TABLE OF CONTENTS (cont'd)

EXECUTIVE SUMMARY

SUMMARY AND RECOMMENDATIONS

A. RECOMMENDATIONS

This Project Paper proposes a $40,000,000, ten-year AID project to improve forestry/fuelwood research and forestry research capabilities in Asia, Latin America, and Africa. It is recommended that $32.8 million of S&T sections 103 and 106 funds be authorized for a ten year global program in forestry/fuelwood research and development. The first phase of this project will be a joint effort in Asia. It is recommended that $19,680,000 of S&T Sections 103 and 106 funds be authorized for a ten-year program of work in Asia and that an amount of $9,323,000, be authorized to finance the first five years of this effort. These resources will be combined with $2,500,000 from Asia Bureau and $1,410,000 from Asia missions over the first five years. The ten year commitment from S&T to Africa and LAC is a combined sum of $13.12 million. It is estimated that the contribution to the program from the Bureaus and Missions of LAC and Africa will be a total of $2.2 million over ten years. It is recommended that $2,002,000 of S&T funds be obligated in FY 85. Subsequent phases involving Latin America and Africa will be prepared after project activities in both regions have been discussed and agreed upon by the respective Bureaus, Regional Offices and Missions.

The proposed funding from S&T Bureau and Region Bureaus and Missions is shown in table 1.

Table 1
Proposed Funding for Forestry/Fuelwood Research
and Development Program
($ 000)

	ASIA		LAC	AFR	Life of Project LOP
	Total 5 yr	Total 10 yr			
Asia Bureau	2,500	5,000	-	-	5,000
S&T/FENR	7,643	18,000	6,000	6,000	30,000
S&T/RD	1,680	1,680	560	560	2,800
Other	1,410	2,200	-	-	2,200
Total	13,233	26,880	6,560	6,560	40,000

B. SUMMARY DESCRIPTION

Virtually every Mission in Asia has, or is planning, activities in forestry and agroforestry research. For example, the Alternative Energy Resources Development Project of India has two million dollars allocated to support research and institutional development. Pakistan's Forestry Planning and Development Project has a major component which will finance farm-and energy-forestry research. These Mission level activities in Asia are viewed ascomplementary to the total forestry/fuelwood research and development effort being proposed by this Project. Without these Mission activities, F/FRED would have little chance of success. And, it is anticipated that existing and planned research through Mission projects will be enhanced by contributions from the Central and Asian components of the Project.

1. General

This is a new project that has grown out of the collaborative effort of S&T/FENR and S&T/RD and the Regional Bureaus in response to the Agency Administrator's designation of fuelwood as a major research priority. In each particpating region, the S&T project will help organize and implement a research network among several countries experiencing common development problems in the forestry/fuelwood area. The project will concentrate on the Asia region initially but participation by the Bureau and Missions for LAC and the Bureau and missions for Africa is anticipated in later phases.

In Phase I, the project will utilize the Central and Asian components to systematically advance research and research capabilities in the area of fuelwood/multi-purpose tree species in developing countries.

To achieve this objective, project activities will enhance Asian research and research capabilities in multi-purpose tree species. Network support activities will include develop improved research methods and information management; and monitoring agreed upon collaborative research programs; holding workshops and conferences; training; technical services for problem solving and publications. An important objective of this project is to provide increased opportunities for sustained employment of the rural poor and to increase incomes derived from tree and forest products.

The project, entitled Forestry/Fuelwood Research and Development Project (F/FRED), was developed in response to documented fuelwood needs in developing countries and to the identification of LDC fuelwood research needs in each of the three regions. Project content and design are based on (a) field assessments of current

research on fuelwood in developing countries; (b) reviews of the Fuelwood Research Implementation Plan developed by S&T in collaboration with the Regional Bureaus; (c) the Project Implementation Document (PID); (d) a workshop in Washington, D.C.. on Human Factors Affecting Forestry and Fuelwood Production; (e) consultant assistance in the Project Paper background preparation (f) a planning conference in Bangkok in April 1984 with Mission representatives, Asian scientists, and technical experts; and (g) the results of a research planning conference sponsored by the International Union of Forest Research Organizations (IUFRO).

2. Project Goal and Purpose

The project goal is to meet basic needs of developing countries for fuelwood and other tree products; for improved land, water and human resource management; and for increased employment and income. The purpose is to enhance forestry/fuelwood research and research capabilities through: a) improved formulation, planning and management of forestry/fuelwood and agroforestry research; b) support and development of networks of scientists and institutions in LDC countries focused on the assessment, improvement, and management of fuelwood/multi-purpose tree species; and c) enabling LDCs to address their critical forestry/fuelwood needs through better use of forestry and agriculture related-research information.

3. Project Activities

Project activities can be grouped into three interrelated components as follows:

-- Research Planning and Management: assist Missions and Regional Bureaus in promoting development of country specific national fuelwood/forestry plans and programs; provide training and other assistance to strengthen key LDC institutions to carry out national forestry/fuelwood research and development plans.

-- Network Development and Research: develop improved research methods and information management; developing and monitoring agreed upon collaborative research programs; conducting workshops and conferences; special research support through grants and loans; purchase of commodities essential to the conduct of research and support for publication of results; supplying expertise, mostly short-term, to host countries to assist them in project design and management; fuelwood research assessments; appraisals and evaluations; and behavioral, institutional and human resource evaluation.

Global Research: Develop state-of-the-art papers and other technology assessments; assist in integrating, structuring and evaluating currently available information; evaluate fuelwood/multi-purpose tree species as components of agroforestry or other farming systems approaches to define new research needs. Global research areas will be:

a) Multi-purpose/fuelwood tree selection and improvement
b) Biotechnology
c) Environmental models
d) Socio-economic methods and tools
e) Socio-economic research

The sequence of these components is based on the logic that:

1) Component I (Research Planning, and Management) addresses elements at the institutional and country level;

2) Component II (Species Network Development and Research Support), is the major focus of the project and addresses networking and research support at the regional level; and

3) Component III (Global Research Support) links Asia, Latin America, and Africa in relevant activities at the global level.

4. Project Output

At the end of ten years, the project will have achieved the following results:

1. Increased LDC government commitment to research on multi-purpose/fuelwood tree species;

2. Expanded the number of multi-purpose/fuelwood tree species available for use in social or rural forestry programs;

3. Developed improved seed supplies of selected multi-purpose/fuelwood tree species

4. Strengthened the capacity of Asian countries to address the social and economic issues in rural tree crop production and management;

5. Developed improved techniques for managing fast-growing multi-purpose trees;

6. Formed an international community of interest in multi-purpose tree species research and established several viable research networks with wide-spread donor support.

5. Feasibility

According to the Food and Agriculture Organization (FAO) estimates, the rate of deforestation in the tropics is about 11.3 million hectares annually of which 6.1 million hectares is in closed productive forests. With increasing populations in most LDCs, the rate of deforestation is expected to increase even more. More than 85 percent of wood harvested in Asia is utilized for fuelwood. In Africa, 92 percent is used for fuel. According to FAO estimates, 1.4 billion people live in areas with fuelwood shortages. This is projected to increase to 3 billion people by the year 2000. In Central America alone, 14 million people live in areas where fuelwood suppy is considered "critical."

Although difficult to quantify, new technologies developed through research are an effective means for increasing productivity. Studies of forest productivity gains in the U.S. are encouraging. For example, effective management techniques can increase productivity by 3-5 percent while a program of species/tree selection and improvement, site preparation and management can increase productivity by 20-30 percent in a single generation. Analyses indicate that similar gains can be achieved through activities conducted under this project. Analyses also indicate that the project is technically, administratively and socially feasible and has excellent potential for providing growth in the LDCs.

This project should generate significant country involvement, private sector participation and increased employment opportunities. It will provide gains in forestry/fuelwood productivity and potential gains in increased thermal efficiency through selection for species that produce greater caloric output when burned. Environmentally, the project will have a favorable impact through increased production of trees that contribute to soil stability, watershed conservation, energy supply and other goods and services, and reduced loss of natural tropical forest and biological diversity.

6. Evaluations

In addition to annual management reviews by the S&T Project Manager and Senior Technical Advisor and Regional Bureau managers, substantive evaluation with Mission participation will occur in years 3, 5, 8, and 10.

7. Organizational Arrangement

The umbrella Project Manager for AID will be a senior forest research manager in S&T/FENR (see Fig. 1). The Project Manager will be assisted by a Senior Technical Advisor designated by S&T/RD.

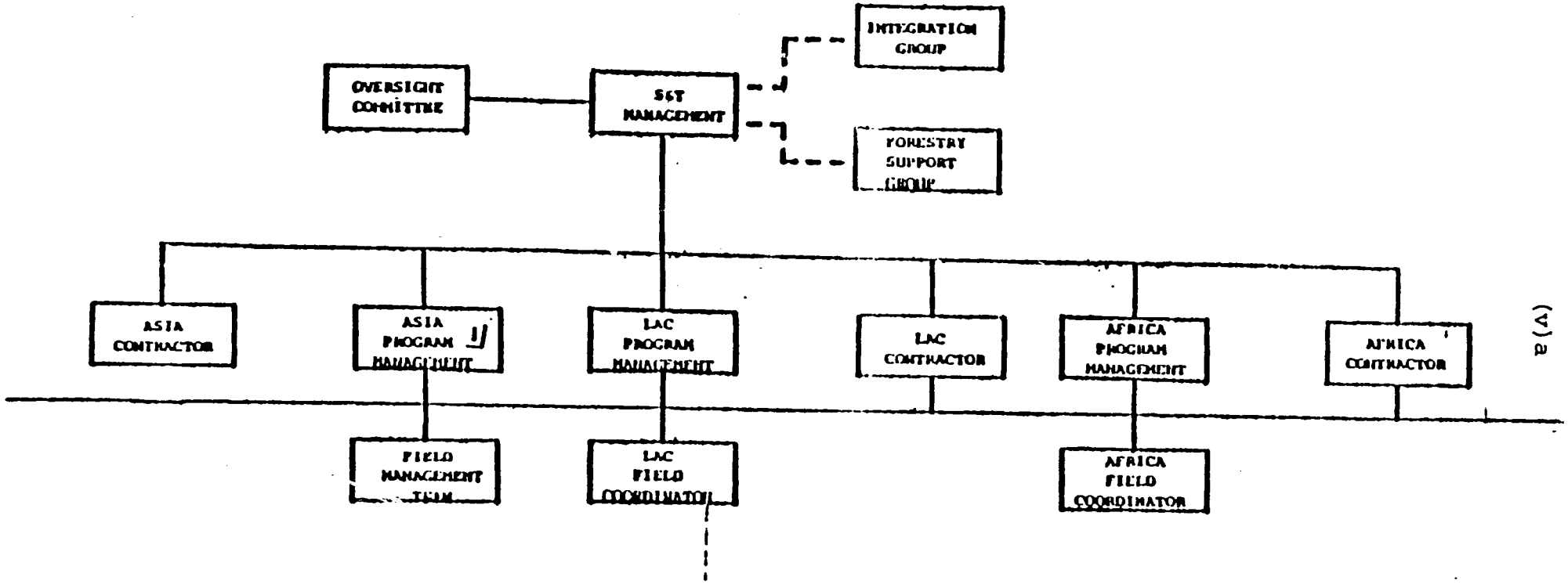


FIGURE 1

Proposed Organization for the Forestry/Fuelwood R&D Project

1/ See Figure 2 for details

An AID Oversight Committee, composed of a representative from each regional bureau will be created. The Project Manager and Senior Technical Advisor will also be Oversight Committee members, the former as Chairperson. Arrangements for joint management of project activities in each region will be established as described for Asia (see Figure 2). As the project moves to other regions, amendments to this Project Paper will be made. They will be taken to a Joint Sector Council meeting for review.

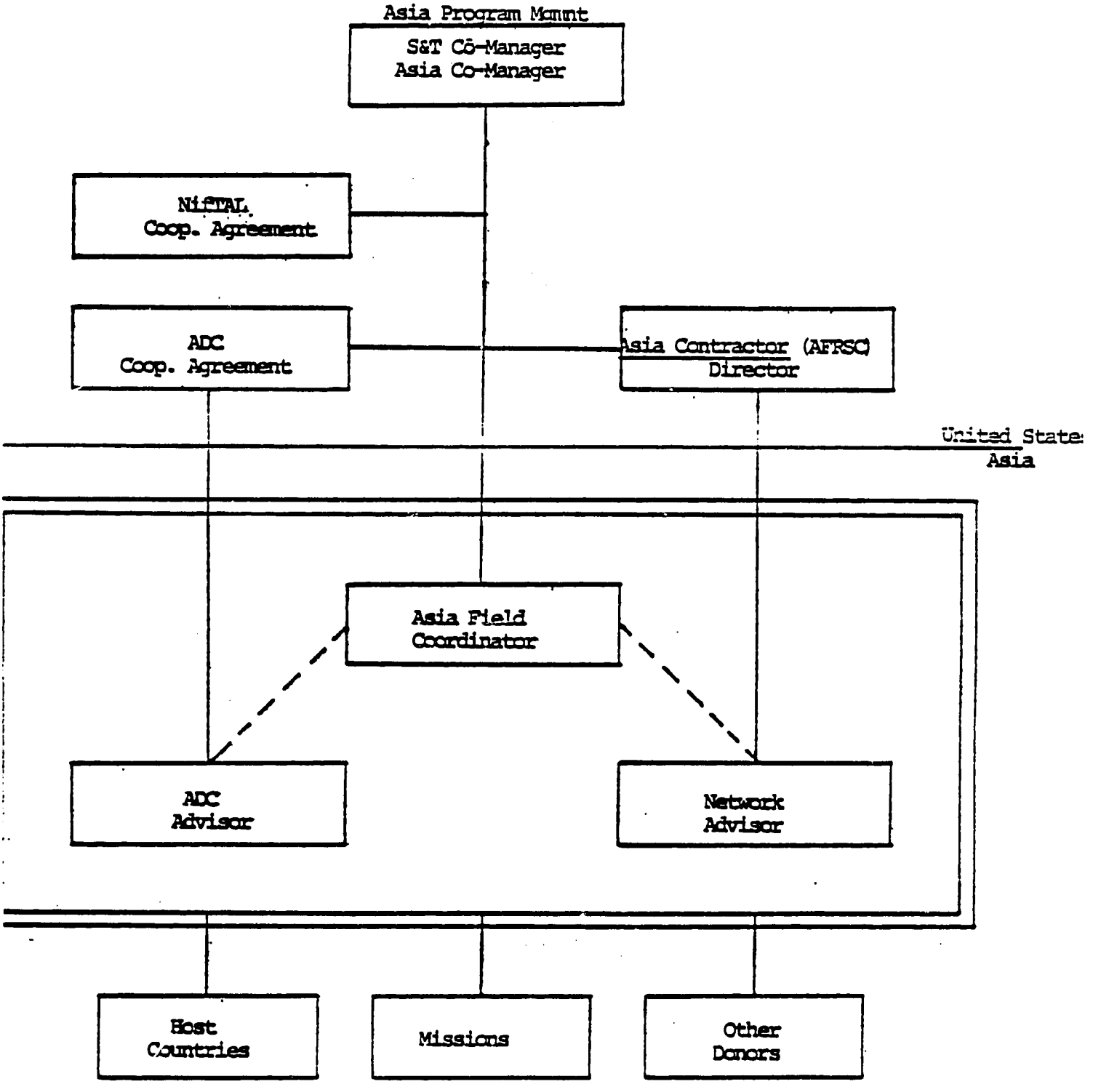
Contracts will be concluded for technical support to each regional program. The scope of work and budget of the initial contract will be subject to the approval of S&T/FENR, S&T/RD and the Asia Bureau. Representatives of each of these offices will participate on the Request For Proposal review committee. Subsequent contracts for LAC and Africa will be subject to the review and approval of S&T, the respective bureaus, and regional offices.

The contractor (s) will designate a U.S. based regional director, i.e., an Asia Director, who will be responsible for planning and executing project logistics and for project administration generally. This individual will be subject to approval by the Asia Program Management Team.

To facilitate network development and planning in close collaboration with Missions, a Project Field Coordinator will be stationed in each region. This individual will be under the administrative management of the Regional Office or, as in Asia, under the administrative management of a Mission Director. The Asia Field Coordinator will serve as a link between the Asia Project Managment Team, the U.S. based support contractor and participating Missions and host country institutions.

Provision is made for Regional Bureaus and Missions to buy into the project to obtain additional services.

Figure 2
Proposed Organizational Arrangements



I. PROJECT RATIONALE AND DESCRIPTION

The Forestry/Fuelwood Research and Development Project will be a joint effort by the Bureau for Science and Technology and the Regional Bureaus, over a 10-year period, to assist the Less Developed Countries (LDCs) meet their needs for fuelwood and other tree and forest products; for informed management of natural and human resources; and for increased employment and income.

A. Rationale

Growing population pressures and the resulting increase in activities caused by shifting agriculture farmers, fuelwood collectors, stockmen clearing for pastures and commercial loggers are leading to increased rates of tree cutting and to loss of forests and biological diversity. Current reforestation, afforestation, and natural regeneration programs cannot replace the losses.

The worldwide decrease in forest land area requires a strong program to provide people in the less developed countries (LDCs) with information, technical services, and institutional support to meet their critical needs through sustainable forestry and tree cropping activities, wise conservation of the remaining forests, and reforestation to develop economic forests. Much of the technology in use for these purposes and the human factors involved are not sufficiently understood and research is necessary to develop appropriate technologies.

According to Food and Agriculture Organization (FAO) estimates, the annual rate of deforestation in the tropics is about 11.3 million hectares of which 6.1 million hectares is in closed productive forests. With increasing populations in most LDCs, the rate of deforestation is expected to increase. More than 85 percent of wood harvested in Asia is utilized for fuelwood. In Africa, 92 percent is used for fuel. According to FAO estimates, 1.4 billion people live in areas with critical fuelwood shortages. This is projected to increase to 3 billion people by the year 2000. In Central America alone, 14 million people live in areas where fuelwood supply is considered "critical."

Government policies regarding the management of forests and land utilization are inadequate in many LDCs because of insufficient information, lack of planning, and general misconceptions and misinformation that exist regarding forests and trees. Forest management in many LDCs focuses on control and police functions rather than on development and support. In addition, planting of trees on farms producing agricultural food crops (on-farm forestry) needs better understanding. Uncontrolled and non-sustainable tree cutting is an indicator of more fundemental social and economic conditions, including population pressure, access to land resources, and tree ownership laws.

Therefore, a critical need exists to increase understanding of the complex biophysical and human factors affecting the management of forests and other natural resources and to apply current and newly developed technologies for the production of fuelwood and other goods and services in the developing countries. To address this need, the Agency for International Development (AID) initiated a Research Priorities Implementation Plan (RPIP) activity that focused on causative factors of fuelwood shortages in the LDCs. A panel of experts identified the following high priority fuelwood production research topics: Multi-purpose/Fuelwood Species Assessment and Trials, Soil-Site Relationships of Fuelwood Species, Fuelwood Species Biotechnology, and Biomass Systems Analysis. Field observations by the Bureau for Science and Technology (S&T) and Regional Bureau teams in selected countries in Asia, Latin America/Caribbean (LAC), and Africa, (AFR) further refined these research topics, and On-Farm Forest Management was added as a high priority research topic. Species assessments and soil/site relationships were considered to have the highest priority by the Missions.

The capacity for LDCs to conduct forestry research must be developed. Vernon Ruttan, a noted economist, states that by the mid-1970s, it was increasingly clear that the productivity of the international agricultural research system was severely constrained by the limited capacity of many national systems and that the adaptation and dissemination of the knowledge and technology generated at the international institutes was dependent on the development of effective national systems. Although there is no developed international forestry research center comparable to the Consultative Group for Interntional Agricultural Research (CGIAR) centers for agriculture, there is an established body of knowledge and experience in tree breeding and research that could be applied in the LDCs.

Although difficult to quantify, new technologies developed through research are an effective means for increasing productivity. Studies of forest productivity gains in the U.S. are encouraging. For example, effective management techniques can increase forest productivity by 3-5 percent while a program of species/tree selection and improvement, site preparation, and management can increase productivity by 20-30 percent in a single generation of trees. Analysis indicates that similar gains can be achieved through activities conducted under this project. Analysis also indicates that the project is technically, administratively, and socially feasible and has excellent potential for providing growth in the LDCs.

Although the international research centers have been helpful in improving the quality of national research efforts, the priority of forestry research has generally been low in the national resource allocation decision process. The political and financial support necessary to attain increased investment for forestry can be augmented by stronger and well networked forestry institutions.

Networking projects will be successful only if the institutions and resources are available in-country to support the research to be networked. A CGIAR review identified the following as key ingredients for an effective network:

(1) the scope of research is well defined;
(2) the problem is shared by all the participating countries;
(3) activities are restricted to a geographic region, thereby facilitating communications;
(4) participating institutions are involved as equal partners;
(5) each participant gains from the association and therefore enthusiastically supports it;
(6) participating institutions have funds to collaborate fully;
(7) the lead institutions have sufficient capability to provide strong and enlightened scientific direction.

The success of agricultural research clearly demonstrates the advantages for strong social science research intergrated with the biological and technical disciplines. Social science expertise is particularly essential to the identification of research priorities and of clients for the research and to the effective dissemination and utilization of technology developed by research.

A number of LDC forestry institutions needs to concentrate scarce resources on urgent and well-defined forestry problems. This project will provide opportunities to strengthen research quality and to increase the utility of research results by supporting regional research strategies on common themes and by supporting those local, national, and regional research and development institutions with the greatest potential to carry out the strategies.

The capacity for local, national, and regional institutions to conduct quality forestry/fuelwood and associated socio-economic research varies considerably. For each country participating in this project, it will be necessary to: (1) identify the institutions involved in forestry research; (2) determine their forest and tree resource problems from a biophysical and socio-economic viewpoint; (3) identify research strategies that address these urgent problems; and (4) determine, establish, and strengthen linkages between research institutions and policy-makers to guide forestry development within the context of the forest resource base and the broader socio-economic development policies.

Relation to AID Policy and Strategy

Agency policy emphasis on forestry is clearly presented in the recently approved AID Energy Policy Paper, in the Policy Determination (PD-6) of April 26, 1983, on Environmental and Natural Resource Aspects of Development Assistance, and in the Policy Determination (PD-7) of May 16, 1983, on Forestry Policy and Programs. The Energy Policy Paper directs AID to "...undertake a major fuelwood research initiative with support from both central

and regional bureaus." PD-6 directs AID to pursue programs in "...watershed protection, soil stabilization, social forestry, establishment or enhancement of natural areas or reserves, coastal zone management, and identification of plant and animal species in remote areas designated for development." PD-7 stressed the broad objective of improved forest and woodland management within "...a comprehensive plan for natural resource management, environmental protection and conservation." The principal policy elements include the improvement in country policies that will help arrest deforestation, development of human and organizational capabilities, expansion of the role of private enterprise, and close coordination with other donor programs and with AID programs in agriculture, energy, environment, and the private sector. "The critical role of applied and adaptive research in the development and transfer of technologies for meeting fuelwood needs will be stressed." Fuelwood research has been designated by the AID Administrator as one of the four research priorities of the Agency.

Energy and Natural Resources Sectors are important components of the Asia Regional Strategy Plan. The unifying theme is policy and management of forest and bioresource systems. Policy dialogue, the development of centers of excellence in training and research, and the promotion of private sector investment are high in priority. The establishment of a fuelwood research network in cooperation with the S&T Bureau is a major goal of the Strategy Plan for Asia.

B. General

1. Project Description.

This project paper proposes a $40,000,000, ten-year AID project to improve forestry/fuelwood research and research capabilities in Asia, Latin America, and Africa. The first phase will be directed to Asia. Subsequent phases involving Africa and Latin America will be initiated after project activities in both regions have been discussed and agreed upon by the respective Bureaus, Regional Offices and Missions. The S&T project, entitled Forestry/Fuelwood Research and Development Project (F/FRED), was developed in response to documented fuelwood needs in developing countries and to the identification of LDC fuelwood research needs in each of the three regions. Project content and design are based on: (A) field assessments of current research on fuelwood in developing countries; (B) reviews of the Fuelwood Research Implementation Plan developed by the S&T Bureau in collaboration with the Regional Bureaus; (C) the Project Implementation Document (PID); (D) A workshop in Washington, D.C. on Human Factors Affecting Forestry and Fuelwood Production; (E) Consultant assistance in preparing background for the PP (F) A planning conference in Bangkok in April, 1984, with Mission representatives, Asian scientists, and technical experts; and (G) the results of a research planning conference sponsored by the International Union of Forest Research Organizations (IUFRO).

This project has grown out of the collaborative effort of S&T/FENR, S&T/RD, and the Regional Bureaus in response to the Agency Administrator's designation of fuelwood as a major research priority.

The Central and Asian components of the project will:

(1) improve the planning and management of Mission programs and projects in this sector;

(2) assist Asia Missions to identify and address key technical and social research issues;

(3) complement the major emphasis on rainfed agriculture and water management in the Asia strategy;

(4) provide a means for promoting exchange of information among Asian countries and AID/Asia Missions; and

(5) focus Agency and Bureau resources on a problem of urgent short and long-term importance to the Asia region and the Asia Bureau.

Virtually every Mission in Asia has, or is planning, activities in forestry and agroforestry research.

The three components of this project: (A) Research Planning and Management; (B) Network Development and Research; and (C) Global Research, are interrelated and mutually supportive. Each component is briefly outlined as follows:

A. Research policy, planning and management activities will assist Missions and Regional Bureaus in development of country-specific national fuelwood/forestry plans and programs. Additionally, these activities will provide training and other assistance to strengthen key LDC institutions for better implementation of national forestry/fuelwood research and development plans.

(1) Country-specific forestry research sector assessments and plans will assist at least five LDC governments in each region to formulate and design: (a) national forestry/fuelwood research programs that address biological, sociological, and economic research topics and (b) institutional and management mechanisms through which countries can formulate policies, programs, and projects that enhance research program implementation. Specific assistance will include: technical assistance in defining research policy needs and issues; training curricula in research techniques and data interpretation; workshops for host and donor institutions to disseminate research results; and joint donor program reviews and preliminary project identification.

AID's involvement with World Bank and The Overseas Development Administration (ODA) in the joint review of Forestry Research, Education, and Training in India is an excellent example of the productive role donors can play in technical assistance programs. Several other assessments and planning assistance activities will be carried out over the next five years. Discussions on potential assessment activities are currently underway with Indonesia.

(2) Institutional-specific guidelines and plans for research management and development will vary from one institution to another. Some countries have quite sophisticated forestry research organizations that function effectively while others have no research organization at all or one that is ineffective or moribund. This unfortunate situation propels many countries toward short-term remedies rather than investment in long-term forestry research to find practical solutions to their problems. As a consequence, current forest policy in many countries favors short-term solutions that may provide some immediate economic relief but are frequently inconsistent with long-term wise management.

High quality research, whether applied or basic, needs to be institutionalized and consistently supported over time. Organizations supporting research must develop procedures that include user groups to determine priority levels for research so that limited resources are always directed at the most important problems. The priority structure must be flexible to permit revision of priorities over time and adjustment of resources.

Another contributing factor to the lack of strong forestry research and development organizations is the apparent division of responsibility between National forestry organizations which decide policy and programming and Provincial or local government organizations that operate independently and do not necessarily follow central programming directions. Other important factors include: the lack of technology transfer mechanisms for research results; the poor image that characterizes research and reduced rewards and incentives for research scientists; and multiple agency involvement in forestry and forestry-related issues.

A major problem confronting many LDC forest institutions is the organization of effective mechanisms to meet the demands of the various publics for forest and tree goods and services. A vital component of this problem is the development of a research organization that can function effectively to achieve better forest management that maximizes forest values.

Assistance in Asia will involve working with National forestry research institutes to develop new emphases in their program directed toward multi-purpose tree species. In other cases, assistance may address the issue of integrating forestry with agricultural research. Such assistance could complement resources that Asia Missions have already programmed for institutional development and could help Missions develop the concept for forestry or agroforestry research activity.

(3) Regional research planning, evaluation, and related training will emphasize establishment of regional research priorities; mechanisms for collaborative regional research, including networks; the development of regional information management systems; and improved understanding of essential elements of effective research planning and management. In Asia, this effort will follow recommendations made at the Sri Lanka IUFRO Conference. This meeting was the first attempt by Asian scientists to jointly develop priorities. The meeting resulted in an Action Plan for research on multi-purpose tree species. The Plan has been circulated to governments and donors for consideration. This project will continue support for other regional planning efforts for forestry research in cooperation with the International Development Research Center (IDRC), the World Bank, Asian Development Bank, and other institutions. This project will assist in the identification of successful approaches to evaluate the impact of introducing new tree species.

Another important component is the training of a cadre of Asian expertise in the planning and management of forestry and natural resources research. The objective is to develop a core group within a country that has a shared and informed perspective on the economic, social, technical, and environmental issues involved in the planning and implementation of forestry and related natural resource projects. A regional course will be developed and carried out over a five-year period. Case materials from other Project activities from the World Bank's Economic Development Institute, FAO, and other sources will be utilized. Participants will come from private, public, and voluntary organizations in the forestry, energy, environmental, financial, and agricultural sectors. Models of the forestry and bioresource system, such as that being developed by the International Institute for Environment and Development (IIED) for use on microcomputers, will be developed or adapted for instructional purposes and for analysis of policy and program decisions in specific Asian countries.

(4) Information management systems include a recent survey of forestry research and related data base activities by major European donors (See Annex C, Rose, 1984). The survey indicates that forestry data bases are usually isolated, uncoordinated and not based on an organization-wide policy for such activities. The 1984 IUFRO Workshop in Sri Lanka also pointed up the need for more systematic collection, storage, and dissemination of research on multi-purpose trees. There is no effective system or repository of forestry research in Asia. Madamba, Suree, and others have made limited attempts to catalogue Asian research on multi-purpose trees. These have been individual efforts with little institutional support. An outstanding exception is the Commonwealth Scientific and Industrial Research Organization (CSIRO) activity in Australia to develop a comprehensive data base on Eucalyptus.

This Project can serve a unique function by supporting the development of an integrated approach to the management of regional and global forestry/fuelwood research information. Data base activities supported by this Project, such as the multi-purpose tree species data base being developed by the International Council for Research in Agroforestry (ICRAF), will provide information management systems that support research coordination, networking, training, and technical backstopping activities at all levels. This data base will: facilitate the flow of information between countries and regions, improve selection of high priority research problems, reduce unwanted redundancy in field research, establish standards for conducting research, and increase output from field projects. In addition, the system will provide for information flow from projects to lead network institutions or regional centers to provide a rational basis for planning, decision-making, and policy formulation.

Initially, the Project will help to assemble and organize data relevant to project implementation and network establishment. Similar data bases are currently under development in Central America (CATIE), Australia (CSIRO), and in Africa (ICRAF) and will be consulted to ensure as much coordination and uniformity as possible. This activity will be centered at Kasetsart University in Thailand. Kasetsart supports the Association of South East Asian Nations' (ASEAN) Tree Seed Center with Canadian assistance and has a large reference library in their School of Forestry. Formal links with the Commonwealth Forest Institute (CFI) in the United Kingdom (U.K.) and CSIRO in Australia will be developed in the design of the system. Distinct frameworks for data organization will be designed to accommodate different levels of decision making. Data base design workshops will be organized at different levels (project, national, regional, etc.) to coordinate data base design.

Data bases will be condensed information systems--not massive, uninterpreted reference collections. Data summaries and information will flow from individual projects in multiple countries to regional centers where integration and information management activities are located. Information will be further condensed and compiled into regional and global data bases available to all users upon request. Transfer of technology will be facilitated by the availability of condensed, well organized, and readily accessible summaries of key information about specific problems.

Computerized reference libraries and documentation centers will be developed. The development of a project specific reference library with a physical collection of all documents will facilitate access to documents by project scientists. Room will be provided to house these collections. The collections will include the unpublished project (AID as well as others such as UNFAO) documents which typically are not part of established reference libraries. Physically, the collection will reside where the contractor(s) is (are) located.

A mechanism will be developed for getting all relevant documents from the field level to the regional offices. Abstracting and highlighting of results will be undertaken by the scientist utilizing standard formats developed by the project. The regional offices and the Washington office will be responsible for maintaining and updating the regional and global reference library respectively. The latter should be available to the regional offices.

Reference libraries are most useful if they can be linked within a data base design with information summaries that show relevant, highly condensed contents of these references in tablular or other form. This is more useful than simple retrieval possibilities by key words, author, etc.

The design of these computerized reference libraries will follow some of the well established guidelines on technical reporting, e.g., NTIS. Use of standardized codes such as the Universal Decimal Classification (UDC) will be strongly encouraged. Beyond these considerations, the format and selection of specific fields, e.g., author, title etc. can be kept quite fexible. The availability of microcomputer software for total text searching facilitates searches for any user specified key word even if key word indexes were not developed.

The computerized reference libraries will be built up around the materials relevant to the problems in the F/FRED project. These libraries will grow, therefore, dynamically as reports are generated in field projects and as requests for specific information are received. Early in the project the search of existing libraries with fine collections on tropical forestry such as the Institute of Tropical Forests in Puerto Rico, the Forest Products Laboratory in Madison, Wisconsin and at several universities such as Yale, Florida and others will be made. Mechanisms will be set up to meet requests for documents promptly through mailing if possible of abstracts, text surrogates and microfiche. At the least, it will be possible to indicate where key documents are maintained and how they can be obtained.

The Project Manager's office will have access to major computer reference libraries such as AGRICOLA, AIDS, CRIS, SSIE, BIOSIS and CAB.

B. Network development and research activities will: (1) improve research methods and information management; (2) develop and monitor collaborative research programs; (3) organize and conduct workshops and conferences; (4) purchase commodities essential to research management and furnish support for publication of research results; (5) supply needed expertise, mostly short-term, to host countries to assist in project design and management; (6) assess, appraise, and evaluate research and evaluate behavioral, institutional, and human resources. The Project will aiso provide support for the establishment and/or maintenance of local, national,

regional, and global networks of forestry and associated socio-economic research activities. Research networks comprised of national forestry, energy, and associated socio-economic research institutions in each Region are the primary means for identifying common methods, for structuring synergistic research activities, for quickly communicating and exchanging information, for making rapid research adjustments, and for accelerating progress in common research areas. Linkages between LDC scientists and institutions and U.S. scientists and institutions (twinning) or with institutions in other developed countries will be encouraged to stimulate progress toward Project objectives. The Project will identify and strengthen linkages between: (1) forestry research and socio-economic research institutions; (2) forestry research and agricultural research and extension agencies; (3) forestry research institutions and National policy makers; and (4) AID and other donors. This work will be carried out in collaboration with projects developed in the Regional Bureaus for Asia, Africa, and LAC. Whenever possible, this effort will also be linked with related ongoing and proposed Mission projects (e.g., the Energy Resources Conservation and Development Project in Dominican Republic; the Forestry Research, Training and Extension Project being designed in India).

In Asia, this Project will support the development and strengthening of Asian research networks on: (1) Multi-purpose Tree Species, and (2) Land and Forest Resource Management. In both areas, the Project will build on existing network activities.

(1) Networks on Selected Multi-purpose Tree Species

The research base is not adequate for effective rural and social forestry programs in the LDCs. The attention in this Project emphasizes short-rotation trees that can meet fuel, fodder, raw material, and other needs. Very few species have been explored sufficiently for efficient utilization in research programs, much less rural tree planting programs. Substantial gains in productivity can be achieved by the selection of the best-adapted provenances for prevailing environmental conditions. Further gains are possible through genetic improvement. As developed at the April 1984 Asia Forestry/Fuelwood Conference in Bangkok, AID will support a regional research networking program on the assessment, improvement, and management of multi-purpose tree species. The goals of this research are as follows:

a. Species Assessment: Species will be screened and matched with site characteristics, cultural practices and client analysis to achieve the highest level of product goals within the constraints of the species-site interaction.

b. Species Improvement: Species' capability will be refined to meet maximum levels of productivity and reduce the constraints imposed by cultural/environmental factors.

c. Species Management: Appropriate cultural practices will be defined to achieve optimum levels of production in the variety of models suggested by the land-use classification.

The 1984 IUFRO workshop in Kandy on Multi-purpose Trees endorsed a networking approach based on intensive research on selected individual species. Asian forest scientists at the meeting compiled and analyzed a list of over 120 multi-purpose trees growing in the region. These species were then grouped by genera into 10 proposed networks, covering three major ecological zones. Selected genera were Acacia, Prosopis, Eucalyptus, Azadirachta, Bamboo, Dalbergia, Populus, Albizzia, Tamarix, Casuarina, Sesbania, Leucaena, Gliricidia, Alnus, Celtis, Prunus, Grewia, Robinia, Salix, and Pinus. Under the terms of the Cooperative Agreement with NIFTAL - University of Hawaii: NFTA, two to three species networks will be recommended to the Asia Forestry Research Services Contractor for development.

The workshop identified research institutions that would participate in the research networks and made a start on identifying scientists to participate. Socio-economic research also will be integrated into the Species and Land and Forest Management network activites.

(2) Network on Land and Forest Resource Management

Asian research on the management of land and forest resources for the benefit of people is not well developed. Informal groups, such as the Agro-Ecosystems Working Group, have been established, but understanding of the social/economic as well as environmental implications of growing pressures on the forest and natural resource land base of Asian countries is limited.

This Project includes a component to jointly develop a well-reasoned research program in the social, economic, and environmental aspects of land and forest resource management in Asia. This joint effort (Asia Bureau, S&T/FENR, S&T/RD) will require significant attention to building an increased human resource capacity to carry out the needed research and then translate it into effective policies and programs.

A cooperative agreement will be concluded with the Agricultural Development Council, Inc., (ADC)/Winrock International to develop this network and program. Building on its existing network of economists and natural resource planners in Asia (Bangkok, Nepal, Indonesia, Bangladesh, and the Philippines), the ADC will establish a regional program focusing on systems for managing land, trees, and other local common-property resources. The program will consist of the following main activities:

a. research awards to Asian scientists and managers for field research and policy analysis;

b. short-term training in Asian institutions for prospective scientists and managers;

c. limited graduate training in U.S. programs;

d. workshops, seminars, and publications to support information exchange, research planning, and methodology development; and

e. technical assistance to network scientists and institutions in research design, implementation, and evaluation.

ADC will provide a professional and experienced social scientist to be the network advisor in Thailand.

(3) Network Meetings and Site Visits

Networking will provide a mechanism for implementing R&D results, research methods, and management techniques. The process will include a series of network and theme meetings, such as planning conferences designed for discussion of work plans, budgetary needs, methodological issues to standardize research, and comparability of results. Site visits will provide an opportunity for collaborators from other countries to see facilities and experiments at the host institution and, more importantly, will provide for peer group review. Formal and informal meetings will be scheduled as needs are identified by members of the network. The intent is to develop and share a knowledge base, to build upon that knowledge base during the life of the Project, and to institutionalize the process for continuing use in the future.

(4) Newsletters and Publications

Newsletters will be developed to convey network information on past and current events as well as to provide advance information on future network activities. Publications will describe results of completed research and research methodologies. All such documents will meet AID requirements for publications.

(5) Training

The training components of the Project will be focused on the design and conduct of research, the interpretation of results, and the administration of research. Specific examples of R&D training to be supported by this project include: (a) species selection and improvement, (b) vegetative propagation techniques, (c) use of human resource systems model(s) in research problem identification, (d) understanding the complexity and interactions of biophysical and socio-economic variables, (e) cost/benefit analyses of forestry/fuelwood projects, (f) soil/site analysis, (g) data base management systems applications, and (h) managing technical and scientific activities. Specific training activities will be determined by members of the network(s) and will address specific

objectives within the scope of the Project. Training will be directed at different audiences i.e., administrators, policy makers, scientists, and practitioners.

(6) Special Research Support

These activities are intended to supplement support from the various Missions, LDC governments, and other bilateral and multilateral donors. They include support to network research activities by providing technical assistance, institutional twinning, and commodities (i.e., computers). Prior contact with Missions and host country institutions indicates their needs for technical assistance to approach a number of forestry/fuelwood problems. To meet these needs, the Forestry/Fuelwood Research and Development Project will provide the following:

(a) Short-term Assignments. These will include short-term technical assistance to species research network participants to advance the development and implementation of research work plans, to plan and design new projects, and to monitor and evaluate ongoing projects. In Asia, this will include expert consultancies from U.S. or other Organization for Economic Cooperation and Development (OECD) institutions to provide review and advise on research projects in Asian institutions.

(b) Long-term Assignments. Long-term technical assistance will normally be supported by the Missions but may, under special circumstances, be provided through this Project.

(7) Network Coordination.

In addition to the preceding activities, there will be a continuing need to work with LDC research administrators and scientists, with Mission representatives, and with contractor representatives to ensure day-to-day cooperation and coordination of network activities, both within and among the networks that will be operating in each region. In response to this perceived need, the Project includes support for a long-term Field Project Coordinator (see Annex A). This individual will be critical to the synchronization and coordination of AID research activities and will provide for coordination with other donor projects.

C. Global Research will include responsibility for: (1) developing state-of-the-art papers and other technology assessments; (2) developing research models as a basis for integrating and structuring currently available information; and (3) using research models to evaluate fuelwood/multi-purpose tree species as components of agroforestry or other farming systems approaches. The project will develop, collect, analyze, and synthesize research information from all regions to encourage and support activities in selected research areas that have global application. Synthesis of research information on a global scale will provide numerous opportunities for technology assessments, for refining the focus on research

needs, and for integrating existing and new information to develop research models for further evaluation and refinement of research needs.

(1) Global Research Areas

(a) Multi-purpose/Fuelwood Tree Selection and Improvement. Multi-purpose tree selection offers significant productivity gains to LDCs to meet increasing demands for energy, slope stabilization and erosion control, forage, and revitalization of degraded environments.

Much of the information currently available on multi-purpose trees has been condensed into two National Academy of Sciences (NAS) publications on firewood crops. This Project will develop a multi-purpose tree species data base, supplementing the two NAS publications with information assembled by ICRAF in Africa and by CATIE in Central America.

The project will develop guidelines for tree improvement research and development activities to improve the knowledge base of native species. In addition, methods will be developed for selecting and testing native and exotic species and for attaining genetic improvement. A discussion of the various steps that might be included in the guidelines is provided in Annex C.

In addition to the data base and guidelines, the Project will provide additional training through workshops, on-site technical backstopping, and continuing follow-up during the Project. These activities will ensure that a complete understanding of multi-purpose tree selection principles can be developed and transmitted to others (see Annex C).

(b) Biotechnology. Over the last 30 years, powerful new technologies, based on tissue culture and cell genetics research, have dramatically increased the potential to manipulate inherited characteristics of plants, animals, and microorganisms. These new biotechnologies have great potential to improve productivity of multi-purpose fuelwood species which perform better in adverse conditions (especially climatic stress), which better resist diseases and attacks by insects, and which fix nitrogen more efficiently.

The development of regional biotech laboratories, supported cooperatively and with the help of international agencies, is crucial if the developing world is to participate fully in the new biotechnologies. Education, infrastructure, and support need to be addressed to enable less-developed countries use the information coming out of regional biotech facilities.

The most promising research areas for near-term applications of plant cell and tissue culture techniques are clonal propagation, reduction of disease, germplasm exchange and conservation, and gene

transfer by wide hybridization. Clonal propagation offers an immediate opportunity for forest plants to reproduce large quantities of selected or elite plants, to increase the supply of limited plant material, and to reduce the time required to introduce selected genetic traits into trees.

Investigations on tissue culture, genetic engineering, and advanced generation breeding of multi-purpose fuelwood trees will be sponsored at one or more institutions within the U.S. and at selected LDC facilities. This will facilitate future production of sufficient quantities of high quality seed or vegetative material for multi-purpose trees such as Acacia, Albizia, Leucaena, Prosopis, etc. that will be needed for plantation establishment (see Annex C)

This Project will develop documents that support technical assistance functions such as: (a) a state-of-the-art manual on biotechnology, (b) guidelines on other promising techniques identified in the state-of-the-art manual, (c) guidelines on tissue culture, and (d) workshops on biotechnology.

c) Environmental Models - Several environmental models have been reviewed to determine if they are suitable, either singly or in combination, for use when considering introductions of exotic species of fuelwood or multi-purpose trees into new geographical areas. If one or more of these models can be used to predict the probability of making successful introductions with greater reliability, then costly "trial and error" introductions would be reduced or eliminated, and use of exotic species could be considered a viable alternative to strict reliance on native species.

Environmental models that were looked at closely include the Koppen System, the Thornthwaite Classification System, the Global Environment Monitoring system, the Holdridge System, and the Benchmark Soils System. Except for the Benchmark Soils System, each relies on techniques that relate climax vegetation to long-term climatic patterns. The Benchmark Soils System relies on soil classification to indicate soil property relationships among broad groupings of soils at the family level.

A potentially workable system would be a combination of the Holdridge System to describe bioclimatic zones and the Benchmark Soils System to describe existing soil conditions as a basis for predicting the use of exotic species in new geographical areas. A computer based system to accomplish this has been developed by the Commonwealth Scientific and Research Organization (CSIRO) in Canberra, Australia, but this new system should be further evaluated before it is recommend for broad operational use.

d) Socio-economic Methods and Tools - Adapting available methodologies such as rapid reconnaisance techniques or accessing tools such as the Human Relations Area Files and other archives will enhance the contribution of trees and forest in meeting rural development goals. For example, the Haiti Agroforestry Outreach

project was designed after an anthropological analysis of reforestation and soil erosion projects that had been implemented in the country over the previous 25 years. Anthropologists recomfirmed that the major motivation for farmers to participate was increased income, and this became the rationale for the project design. It assumed that agroforestation was the practice that farmers would adopt and sustain because of its potential to increase rural income.

These tools and methods will be needed to support short-term research efforts that will key into species selection, improvement and management and into project design analyses as well as long-term studies which monitor and evaluate socio-economic variables and policy implications of forestry for rural development. Socio-economic factors that will be investigated include: (1) perceptions, values, roles, behaviors, participatory systems and patterns of social organization of people involved in forestry activities; (2) distributive mechanisms for land and forest resources; (3) economic mechanisms, such as credit subsidies and other incentives, affecting the adoption or rejection of forestry/fuelwood projects and, in particular, economic factors affecting the selection of specific multi-purpose tree species; and (4) institutions that regulate access and use of forest and tree resources and deliver a variety of forestry-related services.

e) Socio-Economic Research - This project will develop socio-economic research guidelines and encourage research to address various levels of information need. The kinds of research supported will be diagnostic, comparative, or experimental. Diagnostic questions might include: Who uses what forest resources with what frequency, in what magnitude, for what purpose, when? Comparative questions for planning might include: What strategies for local participation have been successful under what conditions and how might this relate to the context in which forestry planning is currently taking place? Experimental or quasi-experimental research will help establish specific cause-and-effect relations as a basis for policy actions and might include research on incentive structures as they effect resource management decisions. The purpose of these questions is to identify factors that facilitate or constrain the implementation of projects or that most likely will lead to project success or failure or to positive or negative social and economic consequences. For example, on-going locally based monitoring is best performed at the community level. Listening surveys may obtain best information at the household level. Review of available literature and documentation may be best at the national level.

(2) Regional Bureau Project Development.

(a) Latin America and Caribbean (LAC) Bureau. The F/FRED Project Manager traveled to Costa Rica in April 1984 at the invitation of the Regional Office for Central America and Panama (ROCAP) to participate in a review of the ROCAP/CATIE Fuelwood and Alternative Energy Sources (Lena) project. Participants in the

review recommended that the project be extended or that a new project be developed to encompass recommended new research directions. Opportunities for linking the new or revised project with the F/FRED project were discussed thoroughly.

The links with the new Lena project will be established through network support activities to improve research methods, develop guidelines to facilitate standardized approaches to experimental designs, and analyze global needs for information management. The network will develop and monitor collaborative research programs, schedule workshops and conferences to exchange information and to set new research priorities, provide training and necessary technical services and commodities.

In October 1984, ROCAP requested S&T/FENR to participate in the development of a PID for the Lena II project. During those sessions, F/FRED linkages were further discussed and are now incorporated in the PID. Additionally, both the F/FRED Project Manager and the Senior Technical Advisor have been invited to participate in drafting the Lena II project paper in May 1985.

Other potential areas for collaboration will be investigated as the design of the LAC component progresses. Additionally, mechanisms for integrating other sources of grant funds must be identified. Some longer-term training might be facilitated in the region by F/FRED. Information dissemination capabilities might be enhanced by building on the CATIE information base. The initial focus of F/FRED will probably be in Central American countries, then in South American and Caribbean countries. Mangrove ecology (Ecuador, Panama), agroforestry (Haiti, Costa Rica), and watershed management (Panama) might be three areas of potential networking as well as the future link with the proposed S&T/LAC initiative on Fragile Lands.

(b) Africa Bureau (AFR): Initial support in Africa will be through a Cooperative Agreement with the International Council for Research in Agroforestry (ICRAF).

During the 1985 ABS review sessions, an S&T/FENR proposal for a new project on "On Farm Forestry" focused on Africa was recommended for inclusion under F/FRED. Since that time, Africa Bureau has developed a "Forestry and Fuelwood Strategy Paper" that includes six components, three of which are closely allied to F/FRED. These will provide opportunities for cooperation and coordination for research to improve tree yields and study alternative on-farm tree planting systems.

A second AID funded, IUFRO forestry research planning conference will be held in Africa in November 1985. Perspectives developed at this meeting will assist in formulating a project paper amendment for Africa that will recognize that region's highest priority research problems and needs.

An important aspect of potential research activity in Africa is donor coordination. For example, the World Bank and the French may focus on institution-building activities while F/FRED focuses on networking and research management. Mission-funded forestry research in countries such as Senegal, Niger, Mali, and Burundi furnish opportunities for networking that should be included in the design of this component. Support activities, such as training of researchers and long-term technical assistance (project design, backstopping field staff, and monitoring results), must be included. The role of FAO, or other multilateral organizations, and overall donor coordination must be discussed to improve existing institutions as an important first step in increasing forestry research capabilities in Africa.

2. Logframe. (See following page.)

The log frame sets out the Narrative Summary of the Project, the Objectively Verifiable Indicators, Means of Verification, and Important Assumptions.

3. Objectives.

The Project objective is to enhance forestry/fuelwood research and research capabilities through: (a) improved formulation, planning, and management of forestry/fuelwood and agroforestry research; (b) support and development of networks of scientists and institutions in LDC countries focused on the assessment, improvement, and management of fuelwood/multi-purpose tree species; and (c) to enable LDCs to address their critical forestry/fuelwood needs through better use of forestry and agriculture-related research information.

To achieve this objective, Project activities will be designed to develop or refine (a) host-country activities in forestry/fuelwood research to assist policy makers, planners, managers, scientists, and practitioners to understand the role of research in forestry/fuelwood management systems; (b) an interdisciplinary approach to management of forestry/fuelwood systems; (c) the socio-economic dynamics of the interrelationships between fuelwood producers, users, government agencies, and the environmental milieu in which these groups operate; and (d) the institutional capabilities of organizations involved in forestry/fuelwood research and management training programs.

Within each participating region: (a) institutions will be identified and linked to carry out complementary research activities that address regional priorities; (b) a strategy with common research priorities will be agreed upon; and (c) research will be enhanced through strategy and networking workshops, conferences, training programs, and publications.

AID 1020-20 (1-78)

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Project Title & Number: Forestry/Fuelwood Research and Development (936-5547

Life of Project:
From FY 85 to FY 94
Total U.S. Funding $40MM
Date Prepared:

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Program or Sector Goal: The broader objective to which this project contributes: The project goal is to meet basic needs of developing countries for fuelwood and other tree products; for improved land, water and human resource management; and for increased employment and income.	**Measures of Goal Achievement:** --Increased goods and services from the forest --Improved forest and natural resource management --Direct benefits to locals --Improved levels of living	--Status of world forests (FAO, UNEP) --Forest products utilization patterns in LDCs (FAO country reports) --Forestry research institutions upgrade and research being conducted --On-sight inspections by project staff --Project principles in use a decade or more after project initiation --AID project evaluations --Reports from LDC governments, missions and contractors	**Assumptions for achieving goal targets:** --Rational policies on forestry, Fuelwood and natural resource management exist --Tech transfer and extension efforts translate research into field effectively so that farmer can benefit from research
Project Purpose: The purpose is to build LDC capacity to develop and use forestry and agriculture-related research information to address fuelwood and other critical development needs.	**Conditions that will indicate purpose has been achieved: End of project status.** --Increased LDC government commitment to research fuelwood; --Expanded the number of multi-purpose fuelwood tree species available; --Developed improved seed supplies of selected multi-purpose/fuelwood tree species --Strengthened the capacity of countries to address the social and economic issues in rural tree crop production and management; --Developed improved techniques for managing fast-growing multi-purpose trees; --Established several viable research networks with wide-spread donor support	--AID PIR reports --Annual project assessment, monitoring and evaluation reports of project director --Adaptation and application of research tools and methodologies --Project records --Contractors' workplan and vouchers --Mission consulting requests --Seminars, workshops, etc.	**Assumptions for achieving purpose:** --Collaborative and complementary funding with Bureaus, Missions and other donors --Host country support of foresty/fuelwood research and development activities
Outputs: --Research policy guidelines, DBHS (methods and tools) --Critical socioeconomic variables affecting forestry/fuelwood determined and theories revised --Regional forestry/fuelwood networks established --Multi-purpose species selection, improvement and management --National forestry research programs enhanced	**Magnitude of Outputs:** --Research methods and tools developed for use in regional networks and 125 LDCs --Networks estab.: 3 --Personnel trained: 100 --Species selected and improved:10 --National forestry research plans: 5	--Printed studies --AID PIR and PFAR --Quarterly progress reports of project director	**Assumptions for achieving outputs:** --Demand for output exists --Contractor able to provide adequate quantity of quality personnel --Linkages formed between LDC forestry institutions and U.S. --Relevant social science knowledge and expertise exists or can be developed
Inputs: --AID Funding S&T/FENR 30 S&T/RD 3 Bureaus/USAIDs 7 Total 40 --AID/W personnel for project management --Complementary funding of field research costs by USAIDs, LDC, other donors --Funding of complementary regional bureau forestry/fuelwood research projects	**Implementation Target (Type and Quantity)** ($000s) 10 yr. Program ASIA / LAC / AFR / LOP S&T/FENR 18.000 / 6.000 / 6.000 / 30.000 S&T/RD 1.680 / 560 / 560 / 2.800 Other 7.200 / - / - / 7.200 TOTAL 26,880 / 6,560 / 6,560 / 40,000	--Project Records	**Assumptions for providing inputs:** --LDCs will provide facilities and personnel AID/W, USAIDs, LDC, and other donor funding for research is forthcoming --LDC emphasis on forestry --Agreement on common themes for research is reached

-184-

102

4. Inputs.

In Phase I, the project will utilize the combined resources of the S&T and Asia Bureaus to systematically advance research and research capabilities in the area of fuelwood/multi-purpose tree species in developing countries.

Inputs are detailed in Tables 2 and 3. Pages 23A and 23B

5. Outputs.

Project outputs can be grouped into three interrelated components as follows:

-- Research Planning and Management: assist Missions and Regional Bureaus in promoting development of country-specific national fuelwood/forestry plans and programs; provide training and other assistance to strengthen key LDC institutions to carry out national forestry/fuelwood research and development plans.

-- Network Development and Research: improving research methods and information management; developing and monitoring agreed-upon collaborative research programs; conducting workshops and conferences; purchase of commodities to support these activities such as creating a computer capability with appropriate hardware and software and including workshop and conference materials; support for publication of results; supplying expertise, mostly short-term, to host countries to assist them in project design and management; fuelwood research assessments; appraisals and evaluations; and behavioral, institutional and human resource evaluation.

Global Research: Developing state-of-the-art papers and other technology assessments; development of research models as a basis for integrating and structuring currently available information; use of research models to evaluate fuelwood/multi-purpose tree species as components of agroforestry or other farming systems approaches to define new research needs.

At the end of ten years, the project will have achieved the following results:

1. Increased LDC government commitment to research on multi-purpose/fuelwood tree species;

2. Expanded the number of multi-purpose/fuelwood tree species available for use in social or rural development programs;

3. Developed improved seed supplies of selected multi-purpose/fuelwood tree species

4. Strengthened the capacity of countries to address the social and economic issues in rural tree crop production and management;

5. Developed improved techniques for managing fast-growing multi-purpose trees;

6. Formed an international community of interest in multi-purpose tree species research and established several viable research networks with wide-spread donor support.

6. Assumptions.

This project rests on the basic assumption that AID can and should play an increased role in promoting improved forestry/fuelwood research, management, policies, and capabilities. It focuses on the role of trees and forestry in national development.

A critical assumption is that the sustained availability of fuelwood and other goods and services from forests and trees can be improved through strengthening forestry research and forestry research institutions in the LDCs. The primary philosophy behind this project is to coordinate and facilitate research which will be funded by other donors, bilateral programs, and host country governments. In addition to enhanced skills and knowledge of LDC scientists and technicians, attitudes and behavior at all levels within host countries should be modified to reflect modern management concepts and a sensitivity to and ability to integrate socio-economic variables. Attainment of the projected project outputs will depend in large part on the quality and experience of the contractor. The competitive bid process will be used to assure selection of the best available expertise.

There are three important assumptions: (1) that adequate funding will be available; (2) that suitable contractors can be located; and (3) that research networks to mobilize LDC personnel and institutions are currently available or can be developed. The first assumption is not assured but this is a high priority project within the Agency and the assumption must be considered plausible. The second assumption is also valid. Many potential contractors have already expressed interest and are developing critical masses of expertise in anticipation of a Request For Proposal. In regard to the third assumption, a planning conference held in Bangkok in April, 1984, documented willingness of LDC scientists to participate in both bilateral and multilateral networks to strengthen research on multi-purpose tree species. This willingness was reemphasized at an International Union of Forestry Research Organizations workshop on multi-purpose trees held in Sri Lanka in July 1984.

A great deal of information on species adaptability and species networking has been accumulated by developed countries in the region. For example, Australia has a very active Eucalyptus network in operation and it is of critical importance for the success of this project to tap these existing resources.

Goal. A basic tenet is that the rural and urban poor are the primary clients and users of the innovations and technology produced. While the project could be considered successful if research provided for increased production of forest/fuelwood resources, it would be considered more so if this technology could be transferred to the rural and urban poor and implemented on an operational basis. The project design, which will rely heavily on information management, will do much to focus research on high priority needs and thereby accelerate multi-purpose tree production systems to meet fuelwood and other needs for the rural and urban poor.

This project recognizes that extension efforts will be needed to transfer the information and technologies to the local populations. It is important to note that many of the Mission projects which will be linked to this project have extension components. These will be the primary mechanisms for transferring the lessons and technologies from the F/FRED common theme project. This project does respond to the Youngs' Panel which recommends that an effective means be found for "recalling and focussing appropriate technical information on problems in developing countries where such information could be useful in problem solution."

There are a set of issues relating to the role of forestry extension activities in Asian and other countries. The first basic question is whether investment in building a forestry extension organization to work with farmers is desirable. If trees are considered to be one of several crops that a farmer might plant, then it is reasonable to question whether existing agricultural extension organizations are not a better vehicle for the dissemination of technical information. This question also goes back to the issue of what are the priorities for research and how do the results of the research get disseminated quickly to the farmer and rural community. Incorporation of forestry into the job of the agricultural extension worker may be easier than the training of new cadre of forestry extension workers and the breaking down of traditional perceptions of the forester as a policeman. The economic costs and benefits as well as institutional feasabilty of this approach needs to be addressed. It is a researchable issue that will be dealt with in this project.

7. <u>End-of-project Status</u>.

End of project status will find an array of research projects ranging from simple species selection trials to highly sophisticated projects in biotechnology. This overall status will be greatly dependent on the point in time that project services are provided and the forestry research milieu in the recipient

countries. Because of the nature of this project, the expectation is for some regional organizations to have developed the institutional capability to effectively conduct training courses and special studies as well as to assume a lead role in networking activities.

Research and development activities in the area of multi-purpose fuelwood research will have been stimulated by the activities of this project. Indicators of this might be new multi-purpose fuelwood and related research proposals and projects and coordination activities among international donors.

II. COST ESTIMATES AND FINANCIAL PLAN

A. General

The recurrent costs of forestry/fuelwood research are the salaries, materials, utilities, maintenance, etc., that continue for the duration of the research effort. The Forestry/Fuelwood R&D project acknowledges these costs and will follow AID policy on recurrent costs. That is, the S&T project will determine the most appropriate response to the recurrent cost problem. These responses are project design and policy reform.

For project design, F/FRED managers and contractors will work with LDC governments, USAID Missions and other donors in assuring that components dealing with recurrent costs are economically feasible. For policy reform, F/FRED will encourage policy dialogue on the allocation of resources for forestry/fuelwood research. F/FRED will not provide recurrent costs support (e.g. salaries of researchers), but will work with USAIDs and other donors in determining appropriate and permissible levels of this support. The USAIDs and other donors will be dealing with specific recurrent costs in countries where they fund research activities. The development of the information management system through F/FRED will reduce the potential recurrent costs of networking by permitting electronic communication as the project evolves, thus reducing the costs of meetings, etc. Additionaly, as the process become institutionalized actual costs should be reduced and absorbed by participating institutions.

B. Shared Funding

1. S&T/ASIA

A consolidated budget is presented in Table 1. Contributions from S&T Bureau and Asia Bureau have been disaggregated in Table 2, to provide estimated annual costs by component over the first five years.

TABLE 1. Proposed Funding

	ASIA		LAC	AFR	Life of Project LOP
	Total 5 yr	Total 10 yr			
Asia Bureau	2,500	5,000	-	-	5,000
S&T/FENR	7,643	18,000	6,000	6,000	30,000
S&T/RD	1,680	1,680	560	560	2,800
Other	1,410	2,200	-	-	2,200
Total	13,233	26,880	6,560	6,560	40,000

Table 3 provides detailed input budgets. These input estimates were developed by using records and experience from other projects in S&T Bureau. As indicated earlier, outputs are directly related to each of the three project components and represent elements that are critical to a research network support project. Person months to accomplish each output and its costs have been developed from project records which have produced similar outputs.

Component 2, Network Development and Research includes funding for the support of research networks with commodities, maintenance and technical assistance.

Virtually every Mission in Asia has, or is planning, activities in forestry and agroforestry research. For example, the Alternative Energy Res urces Development Project of India has two million dollars allocated to support research and institutional development. Pakistan's Forestry Planning and Development Project has a major component which will finance farm and energy forestry research. These Mission level activities in Asia are viewed as complementary to the total forestry/fuelwood research and development effort being proposed by this Project. Without these Mission activities, F/FRED would have little chance of success. And, it is anticipated that existing and planned research through Mission projects will be enhanced by contributions from F/FRED and the Asia Forestry Research and Development Project.

There will be LDC input to the project in the form of participating trainees' salaries and logistical support. These contributions are difficult to estimate.

2. S&T/LAC & AFR

In each participating region, the S&T project will help organize and implement a research network among serveral countries experiencing common development problems in the forestry/fuelwood

Table 2- Inputs by Procurement Mechanism

	1 S&T/ASIA	2 S&T/ASIA	3 S&T/ASIA	4 S&T/ASIA	5 S&T/ASIA	SUB TOTAL S&T/ASIA	S&T/ASIA TOTAL	Mission Contribution	TOTAL
COMPONENT 1									
AFRSC	115 -	603 150	603 100	703 125	703 100	2727 475	3202	-	3202
COMPONENT 2									
AFRSC	1228 200	728 300	578 300	483 -	273 300	3290 1100	4390	1410	5800
PSC	- 300	- -	- 350	- 100	- -	- 750	750	-	750
COMPONENT 3									
AFRSC	239 -	203 -	203 -	203 -	203 -	1051 -	1051	-	1051
EVALUATION	- -	- 25	250 50	- 50	260 50	510 175	685	-	685
CONTINGENCY	260 -	235 -	210 -	210 -	210 -	1125 -	1125	-	1125
Sr. Tech Advisor	160 -	160 -	100 -	100 -	100 -	620 -	620	-	620
SUBTOTAL	2002 500	1929 475	1944 800	1699 275	1749 450	9323 2500	11823	1410	13233
TOTAL	2502	2404	2744	1974	2199		11823	1410	13233

AFRSC - ASIA FORESTRY RESEARCH SERVICES CONTRACTOR

PSC - PERSONAL SERVICES CONTRACTOR

Table - 3 Inputs by Components
(000s)

	Year 1				Year 2				Year 3				Year 4				Year 5				5 year Total			Total
	S&T	A	M	Total	S&T	A	M	Total	S&T	A	M	Total	S&T	A	M	Total	S&T	A	M	Total	S&T	A	M	
I Research Planning & Management	115	–	–	115	603	150	–	753	603	100	–	703	703	125	–	828	703	100	–	803	2727	475	–	3202
II Network Development Research	1228	500	42	1770	728	300	342	1370	578	650	342	1570	483	100	342	925	273	300	342	915	3290	1850	1410	6550
III Global Research Support	239	–	–	239	203	–	–	203	203	–	–	203	203	–	–	203	203	–	–	203	1051	–	–	1051
IV Sr. Tech. Ad.	160	–	–	160	160	–	–	160	100	–	–	100	100	–	–	100	100	–	–	100	620	–	–	620
V Evaluation	–	–	–	–	–	25	–	25	250	50	–	300	–	50	–	50	260	50	–	310	510	175	–	685
VI Contingency	260	–	–	260	235	–	–	235	210	–	–	210	210	–	–	210	210	–	–	210	1125	–	–	1125
Totals	2002	500	42	2544	1929	475	342	2746	1944	800	342	3086	1699	275	342	2316	1749	450	324	2541	9323	2500	1410	13233

S&T – Bureau for Science and Technology

A – Bureau for Asia

M – Asia Missions' "buy-ins"

area. The project will concentrate on the Asia region initially, but participation by the Bureau and Missions for LAC and the Bureau and Missions for Africa is anticipated in later phases. Estimated S&T funds available for LAC and Africa Bureaus combined are shown below for the first five years.

			$000,s			
YEAR	1	2	3	4	5	TOTAL
	398	771	1,156	2,500	2,352	7,177

III. IMPLEMENTATION PLAN

Because each phase involves a large and disparate geographical region, it is anticipated that a different set of procurement mechanisms will be needed for each region beginning with Asia in the first year. This does not necessarily preclude, however, participation of Asia contractors from bidding for those portions put out to bid when the LAC and Africa phases are initiated.

In preparing this procurement package for Asia, a number of different concerns, constraints, and procurement alternatives were considered. Potentially, the project will need a contractor and/or cooperator in each region. Because of the strong emphasis on integrating biophysical and socio-economic factors, the major contractor will be required to bring together strengths in a range of disciplines. The Request for Proposals (RFP) will require competitors to discuss their institutional capabilities to work both within and across disciplines. In the Asia region, there will be direct integration of socio-economic considerations in each of the Species Networks and in the Land and Forest Management Network.

The following procurement elements were developed with the above consideration in mind, and specific details on selection criteria and responsibilities are found in Appendix 1

A. Contracting Modes

1. Contractor (Asia Forestry Research Services Contractor; AFRSC)

A Cost Reimbursement/Level of Effort Contract will be let by competitive bidding for a five-year period. At the end this period, it will be competitively bid for the second five years.

A cost Reimbursement/Level of Effort contract will:

(a) permit the development of institutional capacity

(b) permit flexibility in the selection of field sites and the adaptation of research efforts

(c) reduce paperwork and streamline the procedure for Bureau/Mission add-ons.

Level of Effort Contracts awarded to date have had the following characteristics. They:

(a) provide for research, development, and assessment in project related areas which will strengthen the contractor's performance capabilities.

(b) allow the contractor to provide technical services within the project areas that result from the research or are identified by Missions.

(c) permit the identification of field sites and the development of implementation plans.

(d) establish total estimated costs, at the time of contract award, based upon levels of effort.

(e) permit incremental funding up to the limit of the total estimated contract cost.

2. Personal Services Contractor (PSC)

An individual will be given a Personal Services Contract to work as the Project Field Coordinator in the Asia region. This individual will be under the administrative direction of a field Mission (i.e., Thailand) and under program direction of the ASIA Project Management Team in AID/W. This contract will be funded entirely from Asia Bureau funds and will be administratively managed through that Bureau.

3. Cooperative Agreements (CAs)

The purpose of the Cooperative Agreements is to strengthen the recipient's program of cooperation with LDC institutions, to identify and resolve forestry/fuelwood research issues, and to develop approaches that reduce or eliminate practices that result in deforestation.

Recipients of Cooperative Agreements will work collaboratively with LDC institutions, AID/W Project Management, the Regional Bureaus, and AID Missions. An annual workplan will be required that will specify the level of effort required for the various targeted outputs and the mix of personnel/disciplines needed to accomplish each task. The annual work plan is not intended to be a rigid document but will encourage:

(a) a clear understanding of the overall allocation patterns against project outputs;

(b) a clear statement at a point in time of staff obligations for specified outputs;

It will also provide the basis for S&T/FENR, S&T/RD, and the Asia Bureau, support activities over the year.

Agreements between the cooperators and the project will specify expectations for cooperation and coordination between the cooperators and the major contractor. An evaluation will be conducted near the end of the CAs to determine if a subcontract for additional work should be negotiated with the major contractor.

Two CAs are planned: (1) One with the Agricultural Development Council (ADC)/Winrock International to implement the Land and Forest Management Network activity for a three (extendable to five) year period. Prime responsibility for management of this CA lies with the Asia Bureau and will be jointly funded by S&T and Asia Bureau. The S&T/RD Senior Technical Advisor will play the lead role in S&T in co-management of technical aspects of this Cooperative Agreement. (2) The second with the Nitrogen Fixation by Tropical Agricultural Legumes Project (NIfTAl - University of Hawaii; NFTA) for a nine-month period for the detailed feasibility analysis and design of one or more species networks. Prime responsibility for management and funding of this CA lies with S&T.

Each of these two organizations has the unique capability to carry out the terms of the agreements as set out below. NifTA/University of Hawaii/NFTA is the sole known organization that has worked closely with research institutions in Asia in the areas of fast growing multi-purpose tree species networking. The agricultural Development Council Inc./Winrock International is the sole known organization that has developed networks of research institutions in Asia in social, economic and environmental aspects of land and forest management.

The criteria for implementor(s) selection, qualifications, and responsibilities appear in Appendix 1.

B. Management

1. Overall Management

Because the problems related to forestry/fuelwood research and development are global and expertise is widely dispersed, a major problem confronting the project is how to effectively utilize this expertise. There are essentially two options available. The first is to implement the project on a regional basis over time but maintain the global aspects of the project through effective networking and a single project management team. The second is to implement three separate regional projects. We consider the first option to be more feasible from the standpoint of cooperation, coordination, integration, networking potential, and the most efficient use of available resources. Coordination between the tree regional contractors will be carried out as appropriate.

Both S&T/FENR and S&T/RD have agreed to work cooperatively and are following models developed previously within the Agency. This combination assures close integration of the biological and socio-economic approaches needed for successful implementation of the project at all levels.

The S&T, F/FRED Project Manager will be a senior forest research manager in S&T/FENR (see Fig. 1) and will be the overall manager of the global project involving all three regions. The Project Manager will be assisted by a Senior Technical Advisor designated by S&T/RD. In the absence of the S&T/FENR Project Manager, the S&T/RD Advisor will take the lead in project management activities. This global project will have an Oversight Committee, composed of a representative from each regional bureau, the Project Manager, and Senior Technical Advisor. The Project Manager will be chairperson of the Oversight Committee.

Management of the project will involve the active participation of two S&T Directorates, as well as the regional bureaus. Involvement of these various entities will ensure that project outputs will be relevant to Mission and LDC needs and that services provided will be of high quality. At the same time, it is imperative that a single individual, in this case the S&T/FENR Project Manager, be responsible for successful execution of all project tasks. This is consistent with the usual mode of AID project management. Active involvement of other offices and bureaus also is not new and this approach will be reenforced in Phase I implementation by working jointly with Asia Bureau to oversee interactions between this project and the Asia/Regional Forestry Research and Development Project (498-0276).

Similarly, from the contractor's point of view, even though this project will require high levels of flexibility, coordination, and cooperation, the line of authority will be clear. It will be the responsibility of the Project Manager to resolve any problems, tensions, or difficulties that may arise during the implementation and tenure of this project.

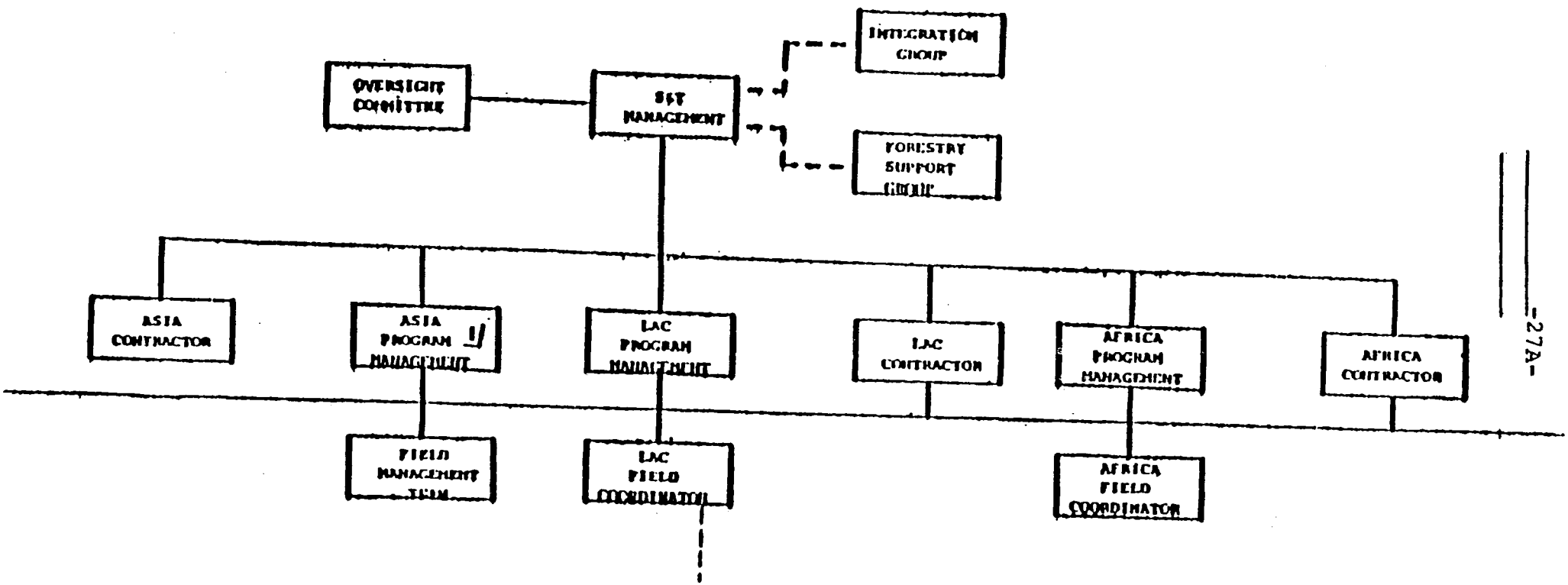


FIGURE 1

Proposed Organization for the Forestry/Fuelwood R&D Project

1/ See Figure 2 for details

Finally, the procedure for selecting contractors for each phase, through competitive bidding, is the option preferred by federal procurement regulations. The competitive process is expected to yield the best possible proposals.

2. S&T/ASIA Project Management

Prime responsibility for this project lies with S&T. As project activities are phased in Latin America and Africa, new Cost Reimbursement/Level of Effort Contracts may be competitively bid for work in these regions or Cooperative Agreements let.

The contractor will establish an Integration Group in the United States as part of the activities planned for Asia. This group will monitor and integrate global research information relevant to the program in Asia and provide a global perspective in the development of guidelines for project networks, information management systems, R&D project design and training.

Coordination of field activites in Asia will be the responsibility of a field management team consisting of the Project Field Coordinator and advisors to the two research networks. This team will work with representatives of host countries and missions to implement components of the Asia program. A more detailed description this relationship is provided in Annex A.

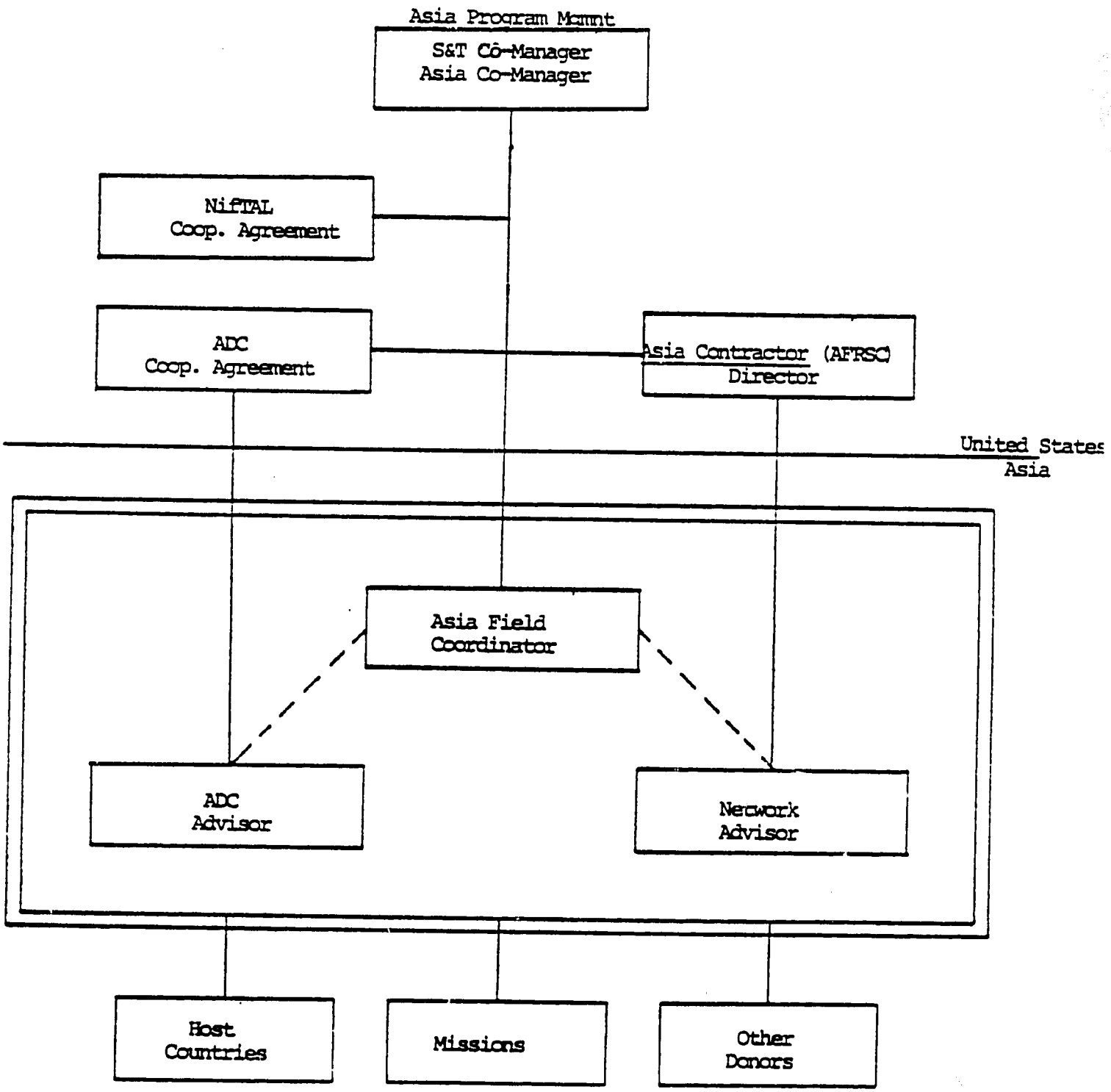
The project will be implemented in Asia according to an annual work plan developed in collaboration with mission personnel, network participants and other donor project managers. The following is the anticipated schedule for the initial year.

March, 1985:	Project approved;
April/May, 1985:	Work plan, format and outline developed with Missions;
April/May, 1985:	RFP for Asia Research Services Contract issued;
June/July, 1985:	Project Field Coordinator in Thailand;
July, 1985:	Cooperative agreements concluded;
July-September, 1985:	Network organizational meetings;
September, 1985:	Asia Forestry Research Service Contractor in place;
November, 1985:	Workplan for FY 86 developed with Missions;
January, 1986:	Inter-network planning meeting.

3. S&T/LAC & AFR Project Management

Arragements for joint management of project activities in each region will be established as described for Asia (see Figure 2). As the project moves to other bureaus, amendments to this PP will be made. They will be taken to a Joint Sector Council meeting for review. Project Management costs will be borne by the respective Offices and Bureaus in Washington.

Figure 2
Proposed Organizational Arrangements



IV. PROJECT MONITORING

A. S&T/ASIA

1. Project Work Plans

All contrators and cooperators will submit the annual work plan to S&T/FENR, S&T/RD, and the Asia Bureau each year for review. The workplan will contain, at a minimum: a summary of past work, a budget projection (for the coming fiscal year), a schedule of intended activities by category and anticipated level of effort; a justification of proposed research; and a schedule of planned outputs.

2. Contractor Periodic Reports

a. Quarterly

All contractors and cooperators will be required to submit progress reports to the Project Manager each quarter.

b. Annual

All contractors and cooperators will be required to submit annual progress reports to the Project Manager.

3. Site Visits

These will consist of visits to participating network institutions by members of the field management team each year of the project and with members of a project evaluation team in years 3, 5, 8, and 10. The purpose of these site visits will be to review project activities and network participation, including facilities, research management, research per se, personnel, and collaborative efforts. Ideally, each participating institution will be visited at least once each year.

B. S&T/LAC & AFR

The reporting procedures for the AFR and LAC components will be developed as the activities in these regions come on line. The general guideline will be to follow AID reporting procedures.

C. Evaluation

1. Yearly Management Review

The Project Manager and the Senior Technical Advisor, with Regional Bureau coodinators, will conduct annual management reviews and summarize their findings on a Project Evaluation Summary (PES) form for the record. Results of the reviews will be used to make adjustments in the project as appropriate.

2. Substantive Evaluations

In addition to annual management reviews by the S&T Project Manager, the Senior Technical Advisor and Regional Bureau managers, substantive evaluation with Mission participation will occur in years 3, 5, 8, and 10. These substantive evaluations will be conducted under the guidance of the joint S&T and Regional Bureau Oversight Committee. The following outlines the general nature of the evaluations of F/FRED.

1. Year 3 - This evaluation will assess the quality, quantity, and timing of project inputs to achieve desired outputs. Quantitative evaluation will concentrate on numbers of networks established, numbers of guidelines and manuals produced, etc. Qualitative evaluation will review effectiveness of workplan process; explore the nature of LDC institutions and mission commitment; determine if countries are working together; scientific achievements and increased productivity; development of meaningful research; Mission commitment to research policy changes; national research policies in place; institutional changes such as human, financial and extension services.

2. Year 5 - This evaluation will be to assess the accomplishment of outputs and to examine the validity of assumptions made during project design. Deficiencies identified in year 3 will be reevaluated.

3. Year 8 - This evaluation will examine the probability of attaining the project purpose, or reasons for variance.

4. Year 10 - This will be an evaluation to assess the long term impact of the project.

Evaluations of the Asia component are characterized by the following:

The S&T and Asia Bureau project managers will prepare a written evaluation report each year. An appropriate time would be following their participation in the annual workplan meeting with Mission staff.

In Year 3 the focus of the evaluation will be of the quality, quantity and timing of project inputs to achieve the desired outputs. Key indicators for quantitative analysis will be:

-- number of networks developed and workplans in place;

-- increases in staff and budgets of participating institutions;

-- number of species trial plots established since the project began;

-- number of case studies of land and forest management systems completed;

-- the amount of support contributed by other donors and AID missions for in-country research activities;

-- productivity of seed from different species and provenances;

-- use of improved seed in national programs.

During the first year, a baseline survey will be conducted by the Asia Forestry Research Services contractor that will initialize these variables.

Qualitative evaluation will review the effectiveness of the workplan process; explore the nature of LDC institutions and Missions' commitments; determine if countries are working well together; evaluate the significance of scientific information developed; review the priority national governments are placing on multi-purpose tree species research. The year 5 evaluation will focus on the accomplishment of outputs and the validity of assumptions made during project design. Deficiencies identified in Year 3 will be reevaluated. The implications for future Asia Bureau participation in the joint effort will be assessed.

The process of project evaluation will be coordinated, at strategic times, with reviews by the IUFRO Asia Coordinator and the IURFO Board of Governors of the overall program of research on multi-purpose trees. A joint donor review may also be merited at some future time.

The project itself will seek to develop in one or more Asian network institutions the capability to evaluate the research process from a regional perspective. Kasetsart University is a logical candidate for this role given its technical forestry staff, the presence of the AID-supported technical advisors in Thailand, and the work of the ASEAN Tree Seed Center in Bangkok in monitoring the development of improved genetic material.

V. ANALYSES

A. Technical Analysis

1. Timeliness. During the next decade, AID has an opportunity to make a lasting impact on rural development in LDCs through improved knowledge of the human and natural ecosystems in which forest/fuelwood production and management take place.

2. Appropriateness. The project is designed to: address major common themes in forest/fuelwood production which transcend political boundaries, strengthen host country research capacity, provide sustained support where a long-term research effort is needed, strengthen regional research linkages, use and enhance the comparative advantages of each institution in the network, and create a resource pool unattainable by each country working by itself.

A central aim of the project is to understand the complexity and interrelatedness of socio- economic and biophysical factors in forestry. Technical information can most effectively be applied where there is an understanding of social, economic, and institutional factors that influence the wise use of resources.

No one country within a region has the human and financial resources to deal with the research issues that have regional significance. Few national programs have the interdisciplinary capability to address regional issues. The fundamental concept in the regional approach is to develop a cadre of scientists which can respond to regional needs while contributing to their national programs.

This is a research and development project. It will provide R&D guidelines, facilitate networking, support training in research design and management, and enhance information management capacity. Through these activities, the project will strengthen the capabilities of LDC institutions to conduct and manage research on forestry and fuelwood issues.

This project will assist missions with projects where economic analyses have been conducted and where economic analyses need to be conducted.

Project inputs have been costed-out. It is, however, difficult to cost-out project outputs. The project involves a large number and range of activities that will be implemented under a variety of conditions. The emphasis on networking requires a degree of flexibility that makes it difficult to project estimates of economic benefits. There are several levels on which the economic benefits of this project may accrue.

As an example, improved upstream watershed forest management may require similar basic inputs by upstream farmers and downstream farmers, but the benefits occuring externally to the upstream farmer's field may be different. In this case, the external effect may be in reduced upstream erosion which thereby may reduce sedimentation in a downstream reservoir. Thus, the benefit may not accrue directly to the farmer upstream but will undoubtedly accrue to the wider downstream society that uses and benefits from the reservoir's existence.

Perhaps the most important benefit is found in improved cost effectiveness of forestry/fuelwood production investments derived through improved design and implementation of projects based upon capturing and systematizing knowledge . This is a cornerstone of the project, and it is anticipated that the project will yield much larger benefits relative to costs over the long term.

Very few, if any, studies exist that attempt to calculate the economic value of trees to a nation or society. The economic importance of wood for cooking, heating, fodder production, and soil and water conservation is difficult to quantify.

In general, research affects different management activities in different ways. The use of research results may change the:

(a) kinds of inputs required or outputs produced;
(b) amount of inputs used for outputs produced;
(c) values of inputs and outputs;
(d) timing of inputs and outputs;
(e) distribution of costs and benefits among people within society.

Each of these prospective changes can affect the present value of inputs and outputs, and thus change the economic viability of a given forestry project. This result will in turn affect the economic evaluation of the research program.

The introduction of new technologies typically produces a complex of effects. It may alter both the costs of inputs and the values of outputs, and also change the distribution of costs and benefits over time and among people. Only a careful analysis can evaluate the net benefits of the introduction of a new or modified technology. The effects of new technologies cannot be easily generalized or anticipated.

B. Economic Analysis

The economic mechanisms affecting the adoption or rejection of fuelwood projects must be examined. For this, it is important to understand what people value. Where individual land area is limited, the opportunity costs of choosing one option (i.e. agricultural cash cropping) over another (i.e. tree planting) must be better understood. In many areas of Africa, Food for Work is being used as an incentive to get people to plant trees, but it is not at all certain whether those people will maintain the trees once planted unless the food continues as payment. In the Dominican Republic, national policy against tree cutting has had the ironic impact of providing no incentive for tree planting, since if one cannot cut to derive benefit, there is no incentive to plant. Thus, a range of incentives (tax cuts, subsidies, credit, etc.) is needed to encourage both the reforestation and the management and wise use of existing forests and trees in all countries.

The following is an illustrative economic analysis of eucalyptus research in India.

Under the hypothetical Network Program, India, in 1985, would establish 40 hectares of research plots for Eucalyptus species and provenances at a cost of $500 per hectare, or a total cost of $20,000 for the year. From 1986 through 1991, these established plots would be protected, tended, and monitored; data would be collected and analyzed; and supplementary plots would be established as needed. The cost for doing this would be $20,000 per year. From 1992 through 1994, the most promising Eucalyptus species and provenances would be selected and enough planting stock of these

Eucalypts would be developed to meet the need for large-scale field planting in 1995. We assume that this could be done for $20,000 per year. The total cost of this 10-year investment in Eucalyptus research and development would be $20,000 each year for 10 years, for a total investment of $200,000. This budget does not include the cost of nursery operations, because it is assumed that these new species or provenances will replace existing ones already being grown for field use.

Annual plantings of new and improved species will begin in 1995 and will continue each year until 2025. We assume conservatively that only 80 percent of the area planted each year would survive to produce fuelwood. Once established, the plantations will be maintained indefinitely. Fuelwood cuttings would begin 5 years after planting, and would produce the same yield of fuelwood at each cutting every 5 years thereafter. The first annual harvest of fuelwood from the plantations with improved species will be made in the year 2000, 15 years after the start of the research program. Each year from 1995 to 2025 the annual planting program will expand the area of fuelwood plantations by the amount of planted areas that survives. To provide a termination point for this analysis we assume that after 2025 no new plantations will be established. For this evaluation, yields after the year 2034 will be ignored.

Almost all of the expenses of establishing, maintaining, managing, and harvesting the plantation would tend to remain the same regardless of the productivity of the trees planted.

Vivekanandan, a Sri Lankan researcher, has stated that there is considerable variation among provenances of Eucalyptus camaldulensis, and that certain provenances are excellent choices for dry climatic conditions. He cites average growth rates for northern India in dry conditions of between 7 and 11 cubic meter per hectare per year. Under more favorable climate and site conditions other Eucalyptus species can yield from 20 to 35 cm/ha/year. With this much variation among Eucalyptus species and provenances it seems reasonable, and conservative, to estimate that a series of Eucalyptus species and provenance trails could result in the choice of species and provenance that on drier sites would increase firewood yields by at least 1 cm/ha/yr. over species and provenances currently used. This would be an increase of less than 20 percent in the yields cited above. This incremental yield is assured in this analysis.

A general methodology for this type of problem is to consider the research costs as an investment that will produce increased yields over some period of time over some area. Standard compound-discount interest rate multipliers are used to determine the present value of both the discounted costs and the discounted returns. These are then used to evaluate the proposed research project as an investment, using different investment criteria, such as internal rate of return and present net worth.

The present values of the costs (PVC) of this 10-year research program, discounted for a range of interest rates in percent are:

Interest rate	PVC
0.10	$122,092
0.15	$100,376
0.20	$ 83,850
0.25	$ 71,410
0.30	$ 61,830

To illustrate the potential impact of such a research program in an actual setting, we will use data from the USAID Project Paper on the Madhya Pradesh (MP) Social Forestry Project in India. The MP Social Forestry Project proposes to increase the supply of firewood, fodder, fruit, small timbers, and other minor forest products in fuel deficient regions of the state. In the 39 districts of MP covered by the Project, the projected deficit of fuelwood is 8 million cubic meters per year by the year 2000. With an assumed realized mean annual increment (MAI) of about 4 cm/ha/yr, a total of 1.96 million hectares of fuelwood plantation would be needed to meet fully this need.

MP is proposing a planting program to begin reducing this anticipated fuelwood deficit. This program would establish forest plantations near villages, and along road, rail, and canal sides. By the end of 6 years this program is expected to be establishing 20,000 ha/yr. When added to the expected Forestry Department planting of 33,000 ha/yr, and other private and community plantings, about 65,000 ha/yr. of new plantations will be established each year in the 39 districts of MP by the end of the 6-year program. For analysis, we will assume that once this level of planting is achieved, it will be continued until the year 2025, when it will be terminated.

These plantations would be harvested periodically for fuelwood, begining five years after planting. We will ignore the production of fruit, fodder, poles, and other products from the plantations and assume that this will be unchanged by our research program. In other words, we will insist that the research program be justified in terms of increased yields of fuelwood alone. We are not evaluating the feasibility of the MP planting program. We assume that it will be carried out using the available planting stock, whether or not the species trials research is carried out.

The Project Paper proposed establishing four different types of multiple purpose tree plantations, with different mixtures of tree species:

Type of Plantation	% of Area Planted	% Planted to Eucalyptus	Eucalyptus Area as % Total
Model I	40%	8%	3.2%
Model II	10%	8%	0.8%
Model III	30%	12%	3.6%
Model IV	20%	20%	4.0%
All Plantations	100%	48%	11.6%

The area planted each year is 65,000 hectares. Of the total area planted, 11.6% is planted to Eucalyptus, or 7,540 hectares. Of this area planted to Eucalyptus, 80 percent survives, or 6,032 hectares. We will assume that of the approximately 6,000 hectares of Eucalytpus trees that become established each year, 5,000 hectares will have improved species and provenances that will produce an increase in mean annual increment of 1 cm/ha/yr. With a cutting for fuelwood every 5 years, the improved trees would produce an additional 5 cm/ha at each cutting.

The overall program schedule would then look as follows:

-- 1985: Research Program is started. Large-scale planting of unimproved trees is underway.

-- 1992: Improved species and provenances selected.

-- 1995: Improved stock available for large-scale planting programs. First plantation with improved stock planted; of these, 5,000 has of improved Eucalyptus trees survive to become established.

-- 1996: Annual planting of improved stock continues, adding 5,000 ha of improved Eucalyptus trees each year.

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-- 2000: First annual fuelwood harvests from plantations with improved stock.

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--2024: Last plantation with improved stock established. Annual fuelwood harvest continue.

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--2034: Last harvest of fuelwood to be included in the research evaluation.

We also assume that of the 65,000 ha planted each year, only 80% or about 50,000 ha would survive to be harvested. With this level of survival, after four decades of planting MP would have about 2 million ha of multiple purpose tree plantations by the year 2025. Of this, 150,000 ha would have improved species of provenances of trees under our program assumptions.

With the improved trees these plantations would make available to the rural people of India an additional 50,000 cubic meters of fuelwood annually by the year 2005. By 2015 this additional volume will have risen to 100,000 cubic meters annually, and by 2025, 150,000 cubic meters per year.

The economic value of fuelwood in the MP area given in the report is Rs 0.15/Kg. Using a current (September 1984) exchange rate of $0.086/Rupee, and the conversion value of 800 Kg/cm used in the MP project paper, the gross economic value of firewood in this area would be $10.00/cm.

The following tabulation shows the additional volume and value of fuelwood expected to be harvested each year from the plantation with improved species, over what would have been harvested had the improved species not been used.

Additional Annual Fuelwood Harvested

Years	Volume (1000cm)	Value ($10/cm)
2000-2004	25	250
2005-2009	50	500
2010-2014	75	750
2015-2019	100	1,000
2020-2024	125	1,250
2025-2029	150	1,500
2030-2034	150	1,500

The present values of these benefits (PVB) from this research program, discounted for a range of interest rates, are shown in the following table.

Presen Values of Benefits from Eucalyptus Trials

Interest Rate%	PVC
0.10	$1,360,520
0.15	391,968
0.20	134,935
0.25	51,016
0.30	22,271

The present Values of research costs and benefits and the internal rate of return can be seen as the point where discounted benefits equal discounted costs--23%. This return on a research investment of $20,000 per annum would appear high enough to justify the research investment program outlined above.

Even if the costs of the research program were twice as high as estimated, the rate of return would still be 18%. Or if the increase in yields were only 0.5 cm/ha/yr, the investment would still yield almost 18%. Yields could fall to 0.26 cm/ha/yr. and the IIR would be 15%. Varying the number of hectares planted with improved Eucalyptus species from 5,000 to 1,300 per year, the investment would still earn 15 percent. If twice as much area were stocked with higher-yielding trees, the research investment would yield a 28% rate of return. And to conclude this sensitivity analysis, if future values of fuelwood dropped from the current $10 per cubic meter to $2.60 per cubic meter, the investment would still earn 15 percent.

In summary, it seems reasonable to conclude that such a research program would pay for itself, even if the results were used nowhere else but in Madhya Pradesh. If we include potential yield increases for fodder and timber products, the return may be even greater. And given the fact that Eucalyptus accounts for a large proportion of the short-rotation trees being planted in social forestry program in Asia, a regional research network program that developed a range of superior seed for Eucalyptus species and provenances adapted to various conditions within the region would seem well worth a 10-year investment of several million dollars.

Finally, there is the question of recurrent costs. However, because much of the emphasis in this project will be on networking, the question can be rephrased to ask what are the recurrent costs involved in networking. This is not a trivial question but it appears that networking costs will be greatest at the time of implementation but as the project matures and the process becomes institutionalized actual costs should be reduced and absorbed by participating institutions. The development of systems for managing informa- tion will also contribute to the reduction in recurrent costs in networking. Recurrent costs in information management should not occur if microcomputers are used almost exclusively.

C. Social Analysis

1. Nature and Impact of Social Science Research

The research to be managed by this project and which focuses on biophysical, social, economic and institutional issues and their integration will enhance the ability of AID planners, LDC foresters, and other practitioners to design and implement forestry and fuelwood projects or components of projects to meet rural development needs. The project outputs are listed in the Outputs section of the project paper. In general, it will concern itself with improved multi-purpose fuelwood species selection and improvement, species management and cultural practices to enhance productivity, socio-economic methods and tools, and applied socio-economic theory. The Forestry/Fuelwood project will encourage a major effort to interrelate the socio-economic and biophysical factors involved in forestry and fuelwood production to increase productivity and to enhance income opportunities. This will be done in the Asia Region through socio-economic research support in each of the species networks as well as in the Land and Forest Management Network. The avenues for integration in the LAC and Africa components will be carefully designed as Phases II and III come on line.

Some of the general issues that must be addressed are briefly described in the following discussion:

People's perceptions, values, roles, behavior and participatory systems and how they shape the decision-making process can be construed as constraints and potentials to forestry/fuelwood project success. Forestry Departments in many LDCs are perceived in negative terms by rural inhabitants. The impact on forests has concomitantly been negative. In India, concessionaires have been contracted by the government to cut trees. Reaction has, in some cases, been strong such as in the village of Reni in 1974. Twenty-seven women from the Uttar Pradesh village protected the forest from being cut. Women from other villages have since followed suit. In Africa it is important to discern priorities such as this and to understand how to thereby link extension efforts between trees and soil and water conservation.

Values are another issue that must be understood. In may areas of countries like Peru and Haiti, livestock is considered to be a "Bank." The value of the livestock can be drawn upon to enhance the family's status or to actually help the family survive in time of great need. This issue of the value of livestock is significant to many fuelwood projects because livestock grazing is a major competitor on

marginal land that might otherwise go to fuelwood/forestry production. Thus, status issues must be understood to develop more appropriate agrosilvipastoral systems.

Roles are another improtant variable, thus women are a group that merit more attention. Not only are they the major collectors and domestic users of wood, they are a major component in the agicultural labor force.

Participatory systems is another issue. It combines many of the preceding aspects to help us understand why people do or do not participate in fuelwood projects. What problems people perceive, what they value, what roles they have, and how they behave lend insight about how and why they organize themselves to participate in a fuelwood effort. It is also important to understand how the farmer, as in Costa Rica, makes a decision to plant or not to plant. To do this, there is a set of variables of need, risk, value, etc. that need to be identified so that more effective projects can address these variables in project design.

In many areas of Africa, the pattern of local social organization (e.g. community) may regulate lands on which planting is done; require communal action for maintenance of these lands, and allocate resources to these lands. In Peru, a major problem in project success has been the turnover of local community authorities every two years. It is important to understand that the success of communal woodlots is probably much more limited where communal organization does not exist since the dynamics of an "aggregate" of people is frequently different than that of a "community."

Socio-economic research may identify social-institutional barriers to the adoption of new technologies in forestry, suggest ways to overcome these barriers, and explore opportunities for increasing the extent of technology application. By expanding the potential scope of application, the effectiveness of other research activities is enhanced. Socio-economic research may identify marketing opportunities for tree crops, thus improving the distribution of income-generating activities among rural people.

2. Likelihood of Sustaining and Disseminating Results and Benefits

The collaboration of LDC and developed country scientists and institutions will be initiated or enhanced by support for networking, research planning and management, and global research activities. This project will concentrate on developing the capability of LDC institutions to address the forestry/fuelwood problems of their own country. In order

to disseminate the results and spread the benefits of this project, there will be a communications component that will be directed toward scientists (to enhance and systematize learning through publications, workshops, seminars, and other training) and policy makers (through policy dialogue on important issues related to forestry/fuelwood production and resource decision making).

3. Impact on Target Population

a) Impact on Primary Audience--The primary audience of this project is the cadre of working professionals who can further the evolution of their national research programs' ability to address the forest and fuelwood production and management problems of their countries. This includes foresters, researchers, and other personnel from agricultural, forestry, planning, and other institutions. The effort is oriented toward structuring and strengthening national forestry/fuelwood research capability within each region.

There are a number of good forestry researchers and institutions in the LDCs. However, there are a number of gaps in the field of forestry/fuelwood production and management that will be addressed through this project. For example, the capacity to conduct tissue culture research on multi-purpose tree species in most LDC research institutions is limited. This capacity will be strengthened. Forestry practitioners with social science training are relatively few. In the U.S., this kind of multi- and interdisciplinary expertise is scattered thinly among many universities and other institutions. Forestry practitioners in LDCs would benefit greatly from the opportunity to share their experiences in workshops and through periodic publications. There is a need to train LDC nationals in forestry and associated socio-economic research principles and methods, for ultimately it is these professionals who are charged with the responsibility of fostering improved forestry and fuelwood production and management in their countries. In some cases, efforts at bureaucratic reorientation will be initiated; in others, where changes are already taking place (e.g., where Social Forestry programs have been established), efforts will be strengthened. In short, this project will address the needs for building national capacity and regional networks through the specific activities described in Part I.

b) Impact on Secondary Audience

1) General Audience--The secondary audience that will receive benefits from this project through the strengthening of host country capabilities in forest and fuelwood production and management are the rural poor,

urban poor, small rural industry, and urban industry. The anticipated impacts are:

-- Improved agricultural productivity and net income
-- Improved forest management
-- Improved multipurpose/fuelwood species
-- Improved methods to meet energy and other basic human needs
-- Improved equity in access to tree and forest resources
-- Improved conservation of water and soil resources
-- Improved and new technologies that fit socio-economic context
-- Increased local participation in tree planting and natural forest management
-- Improved cost effectiveness of forest/fuelwood investments through
-- improved design and implementation of projects based on research
-- oriented more toward the use of local knowledge to meet local needs
-- and better monitoring and evaluation to systematize and increase our learning.

As mentioned earlier, this project does not have an extension component, per se. However, many of the participating Mission projects which have a small forestry research component are larger agriculture projects with extension components. Thus, individual projects with extension activities will have access to more useful information that can be packaged and flow directly to the general population.

2) Role of Women--A specific segment of this secondary audience that will receive benefits from this project is women. They are initimately concerned in many LDCs with questions related to forestry and fuelwood. This project will specifically encourage research looking at the role of women, the division of labor in the household, preferences, participation in tree planting and maintenance, etc. Some of the literature on women in development suggests the kind of questions that might be asked. For example, what is the relationship between resource scarcity (e.g., availability of fuelwood) and household productivity? What is the relationship between women's interest, time availability, and perception of benefits in the trees planted by their husbands and their own level so performance in maintaining those trees once planted? This may be directly related then to survival rates (if biological factors such as climatic conditions and seed viability, are assumed to be equal across cases). The question about women's knowledge of and values related to specific species must be looked at relative to the acceptance of those species. Other questions about the introduction of certain technologies (e.g., chain saws) must be addressed in terms of their potential negative impact of displacement, of women from forestry activites. Issues of women's

access and control over tree and forest products as competitive with other household and agricultural production activities, allocation of time for fuelwood collection incentives for production, etc. must be investigated. The objective of this focus will be to increase the sensitivity of researchers, foresters, policy makers, and others to the role of women in the production, protection, and consumption of the goods and services provided by forests and trees. Special focus will be placed on the production goals of households. This focus will draw researchers and decision-makers to look at the role of women in the production system and attempt to enhance the achievement of total production goals, in this case, insofar as forestry activities contribute to rural production systems.

The nature of this Social Soundness Analysis is very broad since it attempts to draw brush strokes across global issues. Social, Economic, and Institutional Analyses in the Asia Bureau Forestry Research and Development Project and future regional efforts as they come on line provide the details needed for more careful analysis of the issues at hand in each region. The Annex on Human Factors in Forestry and Fuelwood also outlines more specific social, economic, and institutional considerations.

4. Social and Economic Aspects of Forestry/Fuelwood in Asia

The following provides an overview of some of the major social, economic and institutional issues related to forestry and multi-purpose tree species production and management in Asia. It is not intended as a comprehensive dealing with these problems. It does suggest, however, the kinds of problems that researchers, planners, foresters, politicians and others must concern themselves with in designing and implementing forestry and multi-purpose tree species production and management programs.

a) Importance/Role of Multi-purpose Trees to Target Social Groups

B. P. Srivastava, former Inspector General of Forests of India has described the multiple purposes of trees and forests:

- "Apart from providing the basic need for fuelwood, forests influence community stability by providing
- small timber for households, agricultural implements;
- gums, resins, honey, medicinal herbs, tannings, dyes, etc.;
- food in the form of fruits, nuts, berries, roots, shoots, mushrooms, etc.;
- cattle and livestock fodder;
- self-employment and income through a series of agriculture supportive activities like lac cultivation, silk worm

> rearing, basket making, bee-keeping, sale of firewood, supply of raw material for handmade paper, etc.," (Srivastava, 1980:7).

The significance of these multiple uses of forests and trees in the lives of peoples of the Third World is contrasted with the relatively uncontrolled destruction of the resource base that provides the goods and services so highly demanded. Since the turn of the century two-thirds of the forests of the Philippines have been cut; one half of India's since 1950; one half of Thailand's since 1970; only one half of one percent of Pakistan's forests remains. All Asian countries are importers of pulp and paper products in spite of their wood production potential. And, fuelwood has to be shipped from over 100 km to Delhi because of increasing scarcity (Gibbs and Romm, 1982). These figures paint a broad picture of the needs and realities of Asian peoples with regard to trees and forests.

These needs and realities are particularly acute for the poor, landless and women. It is often assumed that merely by growing more trees will help these typically marginal and unrepresented peoples. Eckholm states, however, that:

> "With forest products, as with food, merely growing more produce is not necessarily sufficient to eliminate deprivation. Who does the producing, and how the benefits are distributed are equally crucial considerations ... with wood, as with other resources, buying power rather than need, determines the allocation of the traded products" (Eckholm, 1979:34).

Traditionally, forest lands with no determined ownership have been used by the landless. Land tenure is obviously insecure, so annual crops are the most rational land use alternative. Forests are, thereby, increasingly devastated to clear land for the landless. Yet, there is concern that even if food is produced, there will be no fuel to cook it.

The significance of this is strengthened when figures show that 90 percent of the rural labor force in Pakistan, Bangladesh, and Java is landless or near-landless. Fifty percent of the rural labor force in Sri Lanka and the Philippines are landless (Esman and Associates, n.d.). The dependence of these people in many areas on fuelwood for cooking and on forest products for limited commercialization must be understood by national and international forestry programming. Additionally, the role of forests and trees in providing off-farm rural employment opportunities should be carefully investigated.

b) Social Impacts of Fuelwood Use and Shortages

A major use of wood in Asia is for domestic energy consumption. In Indonesia 77.55 percent of the total domestic energy consumed comes from fuelwood and wastes (Ghosh, 1984). In Nepal

eighty-seven percent of the energy needs are provided from fuelwood. The implications of this use are important to understand as well as the impacts of shortages when and where they occur.

The impacts of use and production of multipurpose fuelwood trees have not been well documented. The impacts on health are basically defined in terms of smoke emissions and pests.

Smoke is considered to be a major hazard from the burning of wood in stoves or open fires. Carbon, tars from hydrocarbons, and other substances are released through the combustion process. Some research indicates that women inhale as much benzo(a) pyrene as they would if they smoked twenty packs of cigarettes a day. Irritation of the eyes and respiratory diseases such as bronchitis have been documented from studies of wood use for domestic consumption (Foley and Moss, 1983).

While smoke has been determined to have detrimental impact on health, this smoke also has been considered to be useful in ridding smoke-filled houses of termites and other pests. Pests, however, are another consideration when put into the context of wood production rather than wood consumption. Rambo (1984) explains:

> "The incidence of many serious human diseases in the tropics, such as malaria and scrub typhus, is closely related to the nature of land use. In Indochina and Malysia, for example, malaria is largely absent from both undisturbed forests and fully-developed permanent agricultural areas. In contrast, it is endemic in upland areas where shifting cultivation is practised. This reflects the fact that the vector mosquito breeds in clear sunlit streams, precisely the habitat created by the opening of swidden plots... Agroforesty projects, unless properly designed may create equally unfavorable habitats for disease vectors" (Rambo, 1984:44).

The nutritional aspects of forests and trees must also be considered. Ganguli (1980) points out that forests contribute to nutrition by providing a source of fruits, nuts, mushrooms, and other foods that add to a balanced diet. Rambo (1984) emphasized this by suggesting that agroforestry projects can contribute to the diets, especially of children, when they emphasize the production of fruit trees. These agroforestry projects can also have an adverse effect if they focus on tree cash crops. Thus, in the rare case where trees successfully compete against agricultural crops, these considerations must be addressed by project designers.

Another issue related to wood, fuel, and diet is when shortages of fuel for cooking occur. Hoskins (1979) reports that women change household cooking and eating habits. More raw foods, for example, are found in the diets of people in Nepal because of fuel shortages. These shortages are also affecting the amount of boiled water that people consume which has obvious nutritional and health impacts.

Income distribution is another impact that must be looked at in production systems where multi-purpose trees are found. There is a need to better understand the economics of multi-purpose species production. This concept should be broadened to include the distribution of benefits in general because the scope of benefits goes considerably beyond income. These benefits might include higher standard of living, prestige, improved health and nutrition, power over decision-making, greater independence, confidence, and so forth.

These are all positive aspects of a production system where trees actually contribute to rural devlopment. For example, Rambo (1984) reports that a fuelwood production scheme in Java was of most benefit to the poor since it provided them with fuel. In this case, the rich were not particularly concerned since they used kerosene for domestic energy.

On the other hand, Douglas (1982) suggests that:

> "... experience in Bangladesh shows that schemes directed at market supply in general have a tendency to deliver maximum benefit to richer groups and minimal or no benefits to poorer people. The dilemma therefore, becomes one of devising schemes which will deliver at least some significant measure of improvement in the fuel/energy flow to those most in need <u>within</u> the social and political constraints that apply."

In India, the production of eucalyptus is criticized by some because: its production is less labor intensive than other crops (therefore, landless workers are not in as much demand as they are in the production of other agricultural crops); it burns quicker as a wood fuel, thus more is needed for cooking; it is in great demand for paper and rayon production so that it is too expensive generally for domestic use. The argument here is that the production of this fast growing species has increased the gap between the rich and the poor in certain areas (Shiva and others, 1982).

Other changes in the distribution of benefits are found when trees become a cash crop. In many societies, women are the primary beneficiaries of wood until it enters a market eocnomy. It is then that men become more involved and receive the monetary benefits. Again, however, it is more than income that is affected. Rambo states that:

> "In contrast to many traditional Southeast Asian agricultural systems, where work is equally divided between males and females and where consequently women enjoy a relatively high social status, forestry is often exclusively a male activity. To the extent that this sexual division of labour is followed in communtity forestry projects, the status of women can be adversely affected. Colfer, 1981, for example, has shown how the introducion of chain saws into forest - living Dyak

communities in Kalimantan threatens the status of women in these swidden farming communities, since only men are able to use the new technology" (Rambo, 1984:43-44).

Thus, there are many issues related to the distribution of income and other benefits from natural forest management and activities dealing with the production of multi-purpose/fuelwood tree species in Asia that must be addressed.

At the same time that one looks at benefits, one must also consider resource conflicts between forest management and tree production and other land uses. For example, in Nepal, the demand for food is causing deforestation as people cut forests to clear land for crop production. This land is also demanded for livestock (cattle, pigs, goats, etc.) that are required for food, milk, transportation, draft power and the like (Wallace, 1983).

Other resource conflicts are human and financial. Human resources are needed for the planting, maintenance, harvesting, marketing, etc., of trees. These human resources are often involved in other agricultural pursuits and the seasonality of planting food crops and tree crops frequently causes conflicts in the diversion of people from planting one to planting the other.

Economic conflicts arise because of the delay between investment and profit since, even with fast growing species, actual harvesting is delayed from two to five years depending upon the end use (Hoskins, 1979). Incentive structures must be better understood to reduce these conflicts. Conflicts between industrial forestry and other forestry practices are discussed in Lundgren and Brister's (1984) paper.

Thus, resource conflicts are important concerns that merit more attention. The whole range of social and economic aspects of forest management and tree production must be given greater attention in the design of forestry projects. This is why the Ad Hoc Working Group on Forestry Research stated that there are:

"(i) three main tropics that require the greatest attention, and these are: research related to the contribution of forestry of rural development, i.e., the contribution of forestry to meeting the production, income and employment needs of rural people.

(ii) research related to energy production and use, into ways and means of increasing the productivity of trees to produce maximum biomass and energy yields, and into conserving wood resources by more efficient use of wood for energy.

(iii) research related to more effective conservation and management of tropical forest ecosystems with special ecosystems and with special reference to protection of the environment."

The answers to these common concerns across Asia are not merely technical ones, because the complexity of the human resource system in which forests are managed and trees are produced requires better understanding as well of the social, economic and intitutional issues affecting management and production activities.

c) Land Use Issues and Incentives for Forest Management and Reforestation

Access to forests and trees is one of the most significant issues related to forest management, tree planting, and distribution of benefits. Those forests that are protected by Forestry Departments are basically inaccessible to rural inhabitants except through illegal action. Other lands are inaccessible insofar as tenure is insecure or where there is a difference between de facto and de jure tenurial patterns. And, in some places, access to trees themselves is difficult because of ownership laws. On the other hand, there are issues of common property access and free access to forest resources that must be considered. These land use issues are closely tied to incentives that might be used to encourage the management of natural forests or the planting of trees. Markets for the products of forests and trees exist already in places where they are no longer considered to be free goods. And, potential markets can be developed as the supply increases.

Forestry Departments in many LDCs are perceived in negative terms by rural inhabitants. The impact on forests has concomitantly been negative. In India, concessionaires have been contracted by the government to cut trees. Reaction has, in some cases, been strong such as in the village of Reni in 1974. Twenty-seven women from the Uttar Pradesh village protected the forest from being cut. Women from other villages have since followed suit (Anon:, 1983).

Another account describes reaction of some tribal people of central and eastern India who have traditionally subsisted on forest lands. With government policy emphasizing commercial exploitation and with corruption among officials, huge areas of forests are cut annually. One report states that:

> "The tribal inhabitants of the Singhbhum district are resisting the replacement of the Shorea robusta, locally known as the Sal tree, which is used for cattle fodder, for construction and for making farm and household tools, by teak, which is purely commercial timber. After a year of petitioning the Government, it was reported, the tribal people of the district began destroying teak saplings in Government nurseries and forestry buildings to press their demands. A confrontation in 1980 resulted in the deaths of 16 people, including three policemen" (Anon, 1982).

Similar cases of conflict over land use are cited in Papua-New Guinea (Waiko, 1975) and other areas.

In other countries, other responses to Forestry Department actions have varied depending on the circumstances. Wallace describes the situation in Nepal where:

> "Until 1957, when the forests were nationalized, villagers controlled the use of the forests in their localities. Following nationalization, the government was unprepared to assume the technical and administrative responsibilities of forest ownership. Besides, villagers reacted negatively to nationalization, believing that their traditional rights of access and use had been curtailed. As a result, local responsibility for forest protection disappeared. Whereas previously there had been communal responsibility for managing the forest, after nationalization no one took responsibility for managing the resource. Moreover, because there were no land records, villagers had a strong incentive to destroy the forest so that land could be claimed as private property after it was cleared and cultivated," (Wallace, 1983:224).

While there are conflicts between Forestry Department land use and that of local inhabitants, there are also internal conflicts on land owned by a single household or a village. For example, in Thailand, land in northeastern Thailand is managed for various purposes. Most intensive use and management is of areas for rice and home garden herbs and vegetables. Less intensive management ranges from cassava to livestock to fruit trees. Forests, which are used for fuel, construction poles, fodder, medicines, foods, and other products, have the least intensive management.

Thus, agriculture is a major competitor for land in spite of the fact that forests provide many important products to meet the basic needs of households. This is true of most areas in Asia not just the one in Thailand characterized here.

Not only are there conflicts over uses of land in communities but also conflicts over access among local users of forest lands themselves. The issues of land and tree tenure which this consideration implies are perhaps some of the most significant in determining the success of forestry project objectives.

The difference between <u>de jure</u> and <u>de facto</u> tenure is reflected in the response to tree planting. While designed as a community forestry activity, the project actually had to go to individual farmers who would plant on their own land and would thereby accrue the benefits. Project evaluators discovered that these were principally large landowners. The situation therefore became one where:

> "It appears that the tracts of <u>Shamlat</u> land being offered for planting -- and assumed by the project to generate benefits for village communities -- have surreptitiously changed their tenurial status, and in fact are managed on a strictly private

basis. Their de facto owners hope to get their "Shamlat" lands planted at full government expense, and without making any repayment commitments" (Cernea, 1981:19).

This access to land has facilitated farmer response to tree planting. The plight of landless peoples and women have been briefly discussed, but must be emphasized once again here. Their access to land, particularly, is a serious problem in Asia.

While access to land and trees is an important concern, it is one of a vast and complex array of factors that determine how and why people manage and/or plant tree resources. The incentives for management and planting are equally complex. Romm (1980) describes a number of these factors --

1. Appropriate technologies that are more productive
2. Ecological sustainability
3. Profitability
4. Security of benefits
5. "Insurance" against risk (e.g., guaranteed prices, technical assistance
6. A functioning administrative structure
7. Policy support (e.g., tax relief for allocation of land to tree planting)

Burch (1983:10) emphasizes this point:

"Species trials and even more super trees may not really matter if farmers have already been convinced, chosen and planted a particular species -- say Ipil-Ipil. They have now a time period, and institutional structure, a certain level of knowledge, some reasonable markets, etc. They cannot be expected to jump on the next super tree bandwagon, no matter how much better adapted the new species may be. Farmers are conservative -- because it is the only means of subsistence survival. To try new risks requires a cushion of wealth and comfort usually denied our target 'beneficiaries'."

d) Species Assessment Research and Social Impact Analysis

The link between species assessment research and social impact assessment is described by Hasan (1978) in discussing the Bangladesh experience in resettlement of shifting cultivators:

"Suggestions have been made to grow fast-growing forest trees during the fallow periods to augment income of the cultivators in the form of firewood, building poles, pulpwood, etc. From the viewpoint of the state establishment of high yielding forest plantations, with the help of shifting cultivation, has proven economically very useful. If the cultivator has to grow and harvest his own trees, its usefulness has to be assessed from his point of view not the state" (Hasan, 1978:2).

This suggests that if the tree is mainly desired for firewood, it is most appropriate to select and manage it principally for multiple stem production. If the primary purpose is construction poles, species selection and management it should be for a straight trunk. The acceptability of a species will depend upon preferences, profit, or other factors upon which the planter bases his/her decision to plant. There are many examples around the world where undesirable trees were not planted or were destroyed because of superstition, previous negative experience, competition between trees and agricultural crops, and so forth.

Thus, we must assess the potential of the human and natural systems. We must understand what is demanded and what is actually a resource to local peoples. We must also assess who is likely to gain or lose and at what cost. And, we must assess how those resources will be distributed.

Understanding links is an essential aspect of understanding the complexity and interrelatedness of the total human resource system. This system is the complex of biophysical factors, resource practices and socio-economic factors and the processes (ecological, social, economic, etc.) which prevail in a specific context. By understanding the factors, and how they link, and the processes, planners can better analyze existing systems to enhance opportunities and reduce constraints, analyze proposed systems to determine the cultural fit of proposed activities, and to compare systems (Grandstaff, 1984) to arrive at generalizations for future planning. Ghosh (1982) described the contemporary scene of rural forestry in India as the:

> ". . . complex imprint of past history. ... The forest environment as juxtaposed to society may be interpreted to include the interface between the two. In some respects these are reasonably discrete areas, nevertheless interrelated and interdependent though often in conflict" (Ghosh, 1982:28).

It is important to keep in mind that the very nature of forestry itself, like that of other natural resource practices, is social. It engages people in highly complex social organizations to establish, maintain, protect, produce, and distribute goods and services provided by forests and trees (Parker and Burch 1984). This systemic perpective will enhance the ability of planners to design projects in Asia that are basic to the understanding of the multiplicity of factors involved in forestry activities.

D. Institutional Analysis

The following provides an Institutional Analysis that focuses on the Asia Region. Institution Analysis for the LAC and Africa regions will be done as future phases of the project are designed.

Historically, forestry institutions in Asia have focussed on the "protection of the interest of the state. The forest has been the

resource base for war and defense, the buffer zone between states, and the source of goods and services for a ruler's survival" (Gibbs and Romm, 1982:3-4) and "...since the Western tradition was virtually identical, the colonial era changed none of the fundamentals, merely adding one new dimension, a cash market for timber. Colonial governments also reinforced recognition of the value of timber revenues to the state's treasure" (Gibbs and Romm, 1982:4).

Priority has always been placed on commercial timber production, and in the past decade seventy-five percent of the world's hardwoods (e.g., teak) have been supplied by the nations of Southeast Asia. This emphasis has led forestry institutions and agencies to be custodial and protection-oriented.

It is only recently that these institutions have begun the process of directing themselves to development functons. For example, social forestry is being touted in India, community forestry in Nepal, and agroforestry in the Philippines. There is more emphasis being placed on extension, growth of small forest industries, and forest planning as part of national economic development strategies.

While positive, these changes in forestry institutions and agencies are only a start. Institutional barriers persist. Rhetoric about forestry for rural development far exceeds institutional ability to translate it into action. Traditional bureaucratic attitudes, negative incentives (bribes to forest officials), and lack of human and financial resources are principal reasons. In few Asian countries (e.g. Malysia) are there strong links between national planning authorities and forestry institutions. The inability of economists and other social scientists to communicate with foresters exacerbate already existing problems. Policy analysis in forestry agencies is extremely weak and leads to limited support. Issues such as land and tree tenure and their impact on forestry programs are poorly understood as are those related to local decision-making economic mechanisms, delivery systems, and distribution of benefits (Gibbs and Romm 1982).

The institutional capacity to undertake research on multi-purpose species must be enhanced by looking at these obstacles (see below) and taking measures to overcome them.

Obstacles to research planning and execution caused by external and internal forces

Identified by Forestry Research Directors Workshop, Honolulu, 1982

[While it must be realised that the external and internal forces interaction and are not independent of each other, the separation is still useful because the internal forces can be directly manipulated while the external forces require different strategies to affect them.]

Group 1

External	Internal
Lack of political support status of and state of research.	Lack of relevant research and programme, inflexibility of plans.
Lack of qualification of recruitments.	Lack of leadership and motivating forces.
Lack of stability of staffing.	Ineffective or lack of on job training procedures.
Lack of material support by government and department (funds and facilities).	Excess of bureaucratisation/ centralization.
Lack of incentives to scientists (money, recognition, rewards advanced training, public appearances, travel).	"Ivory Tower Syndrome" (institutional, disciplinary, geographic and personal isolation).
Interagency rivalry.	Dissipation of efforts and activities into meaningless projects and inefficient administrative work.
Intra and interdepartmental antagonism.	Lack of feeling or relevance.
Inappropriate priorities of problem government and departmental policy.	Lack of proper procedures of analysis, designing monitoring and reviewing.

Brain-drain to private business or abroad.	Lack of proper data and record filing, storing and retrieving procedures (files in shambles and incomplete data identification and processing.
Deficiencies in the educational systems, lack of competence in basic cultural abilities of school leavers (logic writing, motivation) and of technical and general competence and understanding of university leavers.	

Group 2

External	Internal
Lack of understanding of the principles of scientific work.	Lack of understanding of the interdependencies between the political and scientific sectors.
Lack of public recognition of relevance and urgency.	Lack of communication "scientific researcher: practitioner", no feedback.
Lack of political support of scientific research (science as alibi for foregone conclusions and decisions, short-term interests).	Lack of initiative to use media other popular means for disseminating results.
Lack of willingness to accept the risk of uncomfortable results on the part of politicians or other donors.	Lack of provision for result transfer in research projects proposals "Ivory Tower Syndrome", use of unintelligible jargon in writing, isolation from reality, of avoidance non-scientific audiences.
Traditional thinking and attitudes.	
Dogmatic, empirical approaches in practice dominating	Lack of understanding of the relationships between scientific research, technical development and practical application.
No provison of suitable demonstation and verification trials.	Lack of experience, lack of knowledge in information science.

Lack of compatibility of donor's objectives and scientific research needs.

(Source: Bruning, 1982)
(Source: Report of Ad Hoc Study Group on Forestry Research. 1984).

Many Asian foresters will readily admit that the real problems they must deal with are social, economic, and institutional, not technical. Yet in few forestry institutions are there social scientists or economists to address these "real" problems. Even where they do exist, there is a tendency to focus on the farmer alone, omitting the role of other family members. For example, surveys of local people in India suggest that trees were most important for shade, agricultural implements, and fruit. These responses did not reflect a significant shortage of fuelwood in the region because the surveyors did not question the women whose main job it was to collect the ever more scarce wood (Agarwal, 1983). While some research is being done, there is still a great deal of distrust and political opposition to social scientists and social surveys.

There are some institutions in Asia where more multidisciplinary research is being done (e.g., University of the Philippines at Los Banos, Dehra Dun Forestry Institute in India, and Kasetsart University in Thailand). As a result there has been a trend away from conventional production forestry (which was concerned mainly with technical solutions) which has created an increasing need for forestry practitioners who better understand people and their relationship to trees (Rambo, 1984).

Gibbs and Romm (1982) describe the nature of this move away from traditional forestry. They state that:

> "Throughout Asia, government forestry institutions are evolving rapidly from a purpose of state custodianship toward more specialized developmental functions. The effects of this can be seen in the progressive division of functions, organizations and approaches that are emerging from a common custodial heritage" (Gibbs and Romm, 1982:4).

They give as examples the new strength of private and public corporations for economically sound commercial forestry production, new community fuelwood projects in every Asian nation except Malaysia, forestry extension programs, and new policies to encourage forestry for regional development.

The very nature of the "new" forestry for local development emphasis is documented by FAO and other donor organizations. Barin Ganguli (1980:36), now at the Asian Development Bank, suggests that:

"The main thrust of research should ... be on sociology and extension methodology which will aim to identify 'demonstration' centres to be used as growth centres for motivation, to devise means to capture the experience of the Forest Department and people, to enable the programme to be successful for local development and devise means to translate these experiences into action programmes."

This is a critical period of transition for traditional forestry in Asia. It is a period of diverting efforts and investments into new activities that focus on the role of forests in socio-economic development. The success of these efforts depends upon improved knowledge about social, economic, and institutional constraints to forestry and multi-purpose species research. Socio-economic research can provide a substantial contribution to capturing existing knowledge, reconceptualizing and assessing the nature of problems (institutional, organizational, policy, social, structural, economic, technological, and biophysical) and the context in which they exist, and understanding the factors (e.g., behavioral, normative, management) impinging upon the successful design and implementation of forestry and multipurpose species programs (Burch, 1983). However, this will require a commitment to improving the problem solving capability of national and international research institutions. More strategic approaches must be developed to strengthen existing institutions or create new ones if appropriate. Creativity must be nurtured in the scientific community through investments in research and incentives for researchers. Training will be required. Political backing is an important prerequisite to forestry as an activity in socio-economic development. Regional cooperation is required through twinning and networking. International development assistance is essential. And, time is key to successful efforts (Report of the Ad Hoc Study Group on Forestry Research, 1984).

E. Environmental Analysis

Several environmental models have been reviewed to determine if they are suitable, either singly or in combination, for use when considering introductions of exotic species of fuel-wood or multi-purpose trees into new geographical areas. If one or more of these models can be used to predict with greater reliability the probability of making successful introductions, then costly "trial and error" introductions would be reduced or eliminated, and use of exotic species could be considered a viable alternative to strict reliance on native species.

Environmental models that were looked at closely include the Koppen System, the Thornthwaite Classification System, the Global Environment Monitoring system, the Holdridge System, and the Benchmark Soils System. Except for the Benchmark Soils System, each relies on techniques that relate climax vegetation to long-term climatic patterns. The Benchmark Soils System relies on soil

classification to indicate soil property relationships among broad groupings of soils at the family level.

A potentially workable system would be a combination of the Holdridge System to describe bioclimatic zones and the Benchmark Soils System to describe existing soil conditions as a basis for predicting the use of exotic species in new geographical areas. A computer based system to accomplish this has been developed by the Commonwealth Scientific Industrial and Research Organization (CSIRO) in Canberra, Australia, but this new system should be further evaluated before it is recommended for broad operational use.

No environmental assessment is required, according to AID's revised Environmental Procedures, 22CFR Part 216.2(c)(2), as the project consists of analyses, studies, research, training, and information transfers.

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147

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148

Glossary

ADC	Agricultural Development Council, Inc.
AFR	Africa Region
AID	Agency For International Development
AID/W	Agency For International Development In Washington
CATIE	Centro Agronomico Tropical de Investigaciones y Ensenanza
CFI	Commonwealth Forestry Institute
CGIAR	Consultitative Group For International Agricultural Research
CSIRO	Commonwealth Scientific And Industrial Research Organization.
DBMS	Data Base Management Systems
EN	Energy and Natural Resources Directorate
FAO	Food and Agriculture Organization
F/FRED	Forestry/Fuelwood Research and Development
FENR	Forestry, Environment, and Natural Resources
HR	Human Resources Directorate
ICRAF	International Center For Research In Agroforestry
IDRC	International Development Research Center (CANADA)
IUFRO	International Union Of Forest Research Organizations
LAC	Latin America And The Caribbean Region
LDC	Less Developed Country
LOP	Length Of Project
MPTS	Multi-Purpose Tree Species
NFTA	Nitrogen Fixing Tree Association
NifTAL	Nitrogen Fixation by Tropical Agricultural Legumes

PSC	Personal Services Contractor
RD	Rural and Institutional Development, Office Of
RFP	Request for Proposal
RSSA	Resource Services Support Agreement
S&T	Bureau For Science And Technology

APPENDIX 1

IMPLEMENTOR(s) SELECTION CRITERIA, QUALIFICATIONS, AND RESPONSIBILITIES

The following outlines the selection criteria, qualifications, and responsibilities for all procurement mechanisms.

A. Implementor(s) Selection and Qualifications

1. Contractor(AFRSC)

The following four criteria will be used to select the Asia contractor: personnel qualifications, organizational capacity, technical approach, and institutional experience.

The following factors will be considered in evaluating these criteria:

(a) Personnel Qualifications.

(1) Previous long-term field experience in developing countries, especially Asia, in forestry research, networking, research management, and implementation and management of projects.

(2) Expertise to accomplish the varied activities of the project; adequate explanation of where expertise is found in bidding institution(s) and how it will be made accessible.

(3) Skills of staff in areas of required expertise with a reputation for innovative networking, research planning and management, training, global research, information management, research, and implementation.

(b) Organizational Capacity

(1) Capacity to manage a complex project of this type including: overall planning, task development, task assignment and tracking, cost control and management mechanisms for making staff available on flexible time schedule, hiring temporary staff, and subcontracting for needed services.

(2) Ability to provide support staff and facilities at the headquarters of the project.

(3) Ability to rapidly assemble skilled teams for field assignments with adequate administrative and scientific back-up support.

(4) Capacity to produce a sound work plan for the effective use of resources to accomplish project objectives; for inter-institutional bids, the ability of institutions to jointly manage and allocate tasks.

(c) Technical Approach

(1) Technical competence in research disciplines related to selection, improvement, and management of multi-purpose tree species.

(2) Technical competence in developing information management systems.

(3) Policy analysis capabilities on a wide range of natural resource issues.

(4) Ablility to provide an inter-disciplinary and integrative approach to meeting the goal and purpose of the project.

(5) Ability to address: (i) complex biophysical and socio-economic issues related to development in LDCs and (ii) related problems in agriculture, energy, environment, and forestry which contribute to the fuelwood problem.

(d) Institutional Experience

(1) Experience in long-term or large-scale technical assistance programs in Asia or, as a second preference, in assistance programs in other regions.

(2) Experience in networking, planning, and management of research, research support, and implementation of forestry/fuelwood projects in developing countries.

(3) Experience in working collaboratively with host-country institutions, and experience in strengthening such institutions.

(4) Experience in the management of workshops, seminars, information exchange, and coordination of research efforts.

(5) Institutional experience in addressing the role of women, the landless, and other marginal groups.

2. Personal Services Contractor (PSC)

(a) Doctorate degree in forestry or forestry-related specialty.

(b) At least five-years experience in forestry research beyond the doctorate level with at least two additional years experience in management of interdisciplinary research.

(c) Familiarity or experience with projects or programs in international forestry, agroforestry, and fast-growing multi-purpose trees.

(d) Experience in dealing tactfully and diplomatically with high-level officials in goverment agencies and host-country universities.

(e) Demonstrated skills in written and oral communication.

(f) Willingness to be stationed overseas

3. Cooperative Agreement with the Agricultural Development Council, Inc. (ADC)

(a) Broad experience in development and management of social science networks.

(b) Familiarity with existing social science/natural resource-related networks in Asia and with key social scientists and institutions in the region.

(c) Strong administrative support.

(d) Sufficient background in social science related aspects of forestry and natural resources to evaluate capabilities of LDC institutions for participation in the Species Networks and the Land and Forest Management Network.

(e) Demonstrated ability to work cooperatively in a multidisciplinary team.

4. Cooperative Agreement with NifTAL - University of Hawaii; NFTA

(a) Broad experience in the development and management of biological networks.

(b) Familiarity with existing forestry and forestry-related networks in Asia, primary forestry research institutions in Asia, and key scientists working in the region.

(c) Strong administrative support to assist the Asia contractor (AFRSC) in acquiring knowledge of research on fast-growing, nitrogen-fixing, and multi-purpose tree species.

(d) Broad experience in, and knowledge of worldwide testing efforts to improve genetically fast-growing, nitrogen-fixing, and multi-purpose tree species.

(e) Sufficient background in forestry research and research management to evaluate the research capabilities of LDC institutions for participation in Species Networks.

(f) Demonstrated ability to work cooperatively in a multidisciplinary team.

5. Senior Technical Advisor

(a) Masters Degree or higher in social ecology or closely related specialty.

(b) Two years or more field experience in a developing country working in social ecology or related area.

(c) Research management experience.

(d) Familiarity or experience with social science aspects of projects or programs in international forestry, agroforestry, or fast-growing, multi-purpose tree species.

(e) Experience in dealing tactfully and diplomatically with officials in government agencies and host-country universities.

(f) Demonstrated skills in written and oral communication.

B. Implementor(s) Responsibilities

1. Contractor (AFRSC)

General Guidelines: The contractor will be responsible for:

(a) Research planning and management

(b) Species and Socio-economic Network development and support in coordination with other cooperators and contractors

(c) Global research support (integration of information from regional research networks and other data sources, and technology transfer) See Pages 13 - 18

Specific Contractor Responsibilities

(a) Research Planning and Management

(1) Country-Specific Forestry Research Sector Assessments and Plans - The contractor will assist LDC governments in Asia in formulating and designing: 1) national forestry/fuelwood research programs that address biological, sociological, and economic research topics; and 2) institutional and management frameworks that help countries formulate policies, programs, and projects that enhance research program implementation. Specific assistance will include: technical assistance in defining research policy needs and issues; training curricula in research techniques

and data interpretation; conducting workshops for host and donor investigators for dissemination of research results; and participation in joint donor program reviews and preliminary project identification.

(2) Institutional Specific Guidelines and Plans for Research and Management: The contractor will work with LDC institutions to develop a quality research organization (e.g. adequate facilities, trained personnel) that can function effectively to conduct research on multi-purpose/fuelwood species and related forestry and socio-economic issues to facilitate achievement of forestry management objectives in rural and agricultural development.

The contractor will work with National forestry research institutes to develop a new emphasis in their program on multi-purpose/fuelwood tree species with strong integration of biophysical and socio-economic factors.

The contractor will work with institutions to address the issue of integrating forestry into agricultural systems research. This will complement resources that Asia Missions have programmed for institutional development and will assist Missions in developing concepts for forestry or agroforestry research activity.

(3) Regional Research Planning, Evaluation, and Related Training: The contractor will assist in the establishment of regional research priorities; mechanisms for collaborative regional research, including networks; the development of regional information management systems; and improved understanding of essential elements of effective research planning and management. In Asia, this effort will follow recommendations made at the Asia International Union of Forest Research Organizations (IUFRO) conference held in Sri Lanka.

The contractor will assist in the identification of successful approaches to evaluate the impact of introducing new tree species.

The contractor will be responsible for developing and conducting training courses for a cadre of experts from Asian countries in the planning and management of research in forestry and natural resources. The objective is to begin developing a core group within any one country that has a shared and informed perspective of the economic, social, technical and environmental issues involved in the planning and implementation of forestry and related natural resource projects.

In developing the training program, the contractor will utilize models of the forestry and bioresource systems for instructional purposes and/or application in analyzing policy and program decisions in specific countries of the region.

(4) Information Management Systems - The contractor will develop an integrated approach to the management of regional and global forestry/fuelwood research information. The contractor will assist in the continuing development of data base activities, such as the multi-purpose tree species data base being developed by the International Council for Research in Agroforestry (ICRAF). The contractor will provide guidelines for information management systems that support research coordination, networking, training, and technical backstopping activities at all levels within countries and will facilitate the flow of information horizontally, between countries within the region.

The contractor's responsibility here is to improve selection of priority research problems, reduce redundancy in field research, establish standards for conducting research, and increase output of useable data from field projects. The contractor will assist lead network institutions in providing rational bases for planning, decision-making and policy change.

The contractor will develop or adapt frameworks for data organization to accommodate varying levels of decision making and will conduct data base design workshops which will be organized for different levels (project, national, regional, etc.).

The contractor will facilitate the transfer of technology by making available condensed, well organized and readily accessible summaries of key information on specific subjects related to the Project objectives.

(b) Network Development and Research Support:

As a start-up activity of this project a Cooperative Agreement with NifTAL - University of Hawaii; NFTA will be initiated to evaluate each of the ten species networks identified at the IUFRO meeting in Sri Lanka for their feasibility to succeed as a network and to meet project goals. The Cooperator will provide recommendations to AID/W project management on priorities of species networks for development and research support from AID. AID/W project management will then provide the contractor with guidelines for implementation of from one to three species networks.

The contractor will assist in the establishment and/or maintenance of National and regional networks of forestry/fuelwood and associated socio-economic research activities. The contractor will facilitate linkages between LDC and U.S. scientists and institutions (twinning) and with institutions in other developed countries. The contractor will identify and strengthen linkages between forestry research institutions and socio-economic research institutions, between forestry research institutions and agricultural research and

extension agencies, between forestry research institutions and national policy makers, and between AID and other donors. The contractor will work in collaboration with projects developed in the Asia Regional Bureau and with ongoing and proposed Mission projects.

The contractor is responsible for the following activities in implementing the species networks:

Network Meetings and Site Visits - The contractor will implement the networks with a series of network and theme meetings such as planning conferences, which will provide forums for discussing work plans, budgetary needs, and methodological issues related to standardization and comparability of results. The contractor will facilitate site visits as an opportunity for collaborators from other countries to see at first hand the facilities and experiments at the host facility and, more importantly, provide for peer group review. The contractor will schedule these formal and informal meetings as needs arise and as they are identified by members of the network.

Newletters and Publications - The contractor will develop newsletters to convey network information on past and current events as well as to provide advance information on upcoming network activities and to assist in the publication of completed research results and research methodologies. They will meet all AID requirements for newsletters and publications.

Training - The contractor will design the training component of this project to address issues related to the design and conduct of research, the interpretation of results, and the administration of research. The contractor will work with members of the networks to determine specific training activities and will address specific objectives within the scope of this project. The contractor will direct training directed at different audiences, i.e. administrators, policy makers, scientists, and practitioners.

Special Research Support - The contractor will provide special support through short and long-term technical assistance. This will be supplementary to support from the various missions, Asia Bureau, LDC governments and other bilateral and multilateral donors.

Network Coordination - Over the life of the project, the contractor will work with LDC research administrators and scientists, with mission representatives and with representatives of other donor organizations to coordinate network activities, both within and among the networks that will be operating in each region. The contractor will work with the long term Field Project Coordinator to perform these functions.

(c) Global Research

The contractor will develop, collect, analyze and synthesize research information from all regions to encourage and support activities in selected research support areas that have global application, such as multi-purpose/fuelwood tree selection and improvement; biotechnology; environmental models; and socio-economic research guidelines, methods and tools.

In the selected global research areas, the contractor will develop guidelines, state-of-the-art manuals, workshops for the exchange of information, and special training.

The contractor will utilize these functional global research areas to ensure exchange of information across the various species networks through the use of special workshops, meetings, or publications directed at these functional areas (e.g. biotechnology, soil fertility).

The contractor will synthesize research information on a global scale to: (1) provide technology assessments, (2) refine research needs, and (3) integrate both existing and new information for the development of research models that will define and evaluate further research needs.

Contractor Professional Staff (Figure 2, Page 28A)

1. Director, Asian Forestry Research Services Contract (AFRSC)

The Director, AFRSC will be:

(a) located in the Washington, D.C.area in proximity to the offices of the Project Manager.

(b) responsible for all contract obligations on a day-to-day basis (full time)

(c) responsible for reporting to the S&T Project Manager for global activites and to the Asia Project Management Team for Asia activities.

2. Research and Development (R&D) Director

One specialist (half-time) responsible for global concerns relative to Data Base Management Systems (DBMS) modeling and integration and with short-term technical backstopping from specialists in R&D design, networking, and training.

3. Species Network Advisor

The Species Network Advisor will be:

(a) a specialist in tree species networking

(b) responsible for establishing 2-3 proposed Multi-purpose Tree Species (MPTS) Networks in support of MPTS research

The Species Network Advisor will:

(a) help to identify and involve participating institutions and scientists

(b) facilitate network organization and management

(c) participate in the development of technically sound workplans

(d) arrange for administrative and technical support to carry out research and development programs of the several different species networks

(e) collaborate with the ADC Land and Forest Management Network Advisor

(f) in advance, through the Personal Services Contractor, notify all AID Missions of travel to a particular AID country.

(g) develop a mechanism for forming cross cutting linkages with various IUFRO networks in Asia.

4. Other specialists for short-term assignments as listed in the AFRSC contract.

5. AFRSC will be expected to subcontract services from developed country consultants and organizations if they have unique talents that enhance the accomplishment of project purposes. This will be permitted following a nationality waiver on geographic code 935.

2. Personal Services Contrator (PSC)

(a) Responsibilities:

(1) Assists the Director, AFRSC in planning, implementing and monitoring project activities in Asia region.

(2) Serves as the liaison with Asia Missions, host-country institutions, and representatives of other donor agencies involved in forestry/fuelwood research to facilitate link up to the F/FRED project.

(3) Provides leadership for contractors and cooperators in implementing new networks and providing support for those already in existence. Members of team report directly to him/her.

(4) Helps lead network institutions in developing and strengthening species networks.

(5) Coordinates all field activities of contractors and cooperators.

(6) Works closely with network institutions and Missions to help: (a) develop quality research proposals to address high priority research needs; (b) coordinate all network projects including those involving other donors in region; and (c) promote effective networking, technology transfer, and institution building.

(7) Works closely with Project Manager in AID/W.

(8) Provides support to AID missions and the species networks on the full range of technical and socio-economic research issues.

(9) Provides acceptable written reports as specified in his contract.

(10) Provides assistance to the AFSRC contractor in developing annual plans of work for technical assistance and network support for review and approval in Washington.

(b) Conditions:

The PSC will:

(1) reside in Thailand.

(2) have access to Mission cable facilities but will generally use commercial channels when cabling network participants and AID/W.

(3) be funded by Asia Regional Project and will report directly to the Project Management AID/W.

(4) obtain clearance from all AID missions in advance of travel to a particular country.

3. Cooperative Agreements

(a) The Agricultural Development Council, Inc., will:

(1) Develop and coordinate a well-reasoned research program in social, economic, and environmental aspects of land and forest management in Asia.

(2) Build increased human resource capability to carry out this research and translate it into effective policies and programs in conjunction with ongoing or soon to be developed species research networks.

(3) Build on existing network of economists and natural resource planners in Asia (Thailand, Nepal, Indonesia, Bangladesh, and the Philippines).

(4) Establish a regional program focusing on systems for managing land, trees, and other local common property resources and integrate with ongoing or soon to be developed species research networks.

The program will consist of the following main activities:

(1) Research awards to Asian scientists and managers for field research and policy analysis.

(2) Short-term training in Asian institutions for young, prospective scientists and managers.

(3) Limited graduate training in U.S. programs.

(4) Workshops, seminars, and publications to support information exchange, integration, research planning, and methodology development.

(5) Technical assistance to scientists and institutions in the species research networks in research design, implementation, and evaluation

(b) Cooperate with the Nitrogen Fixation by Tropical Agricultural Legumes Project (NifTAl - University of Hawaii; NFTA)

General Responsibilities:

(1) As a start-up activity of F/FRED, AID considers this 9-month CA as a means to begin immediate review of potential networks and to provide an entry point for the primary contractor. This preliminary network evaluation work will gain valuable time while the process of selecting a primary contractor is being completed; will provide a mechanism for identification of on-the-ground needs and capabilities of LDC institutions, existing networks, and socio-economic factors which might influence success; and will provide an opportunity to familiarize LDC institutions, USAID Missions, and other donors with F/FRED.

(2) During the first six months, the Cooperator will coordinate all field evaluation and data collection with the Agricultural Development Council, Inc. (working under a

separate Cooperative Agreement), including travel and meetings.

(3) During the second phase of 3-months' work, the cooperators will coordinate reporting activities and development of recommendations and provide AID/W project management with a comprehensive report.

Specific Tasks:

(1) Select individuals from NifTAL and the Nitrogen Fixing Tree Association (NFTA) who will be permanently assigned to the 9-month activity.

(2) Prepare a joint work plan with ADC. This work plan will include evaluation criteria for:

-- Lead network institutions
-- Secondary participating institutions
-- Personnel
-- Facilities
-- Equipment
-- Existing and planned research programs
-- Ongoing research projects
-- Proposed research projects
-- Government support (e.g., policy, budget)
-- Areas of biophysical and socio-economic research interest
-- Past experience with species research and level of experience
-- Training capabilities
-- Training needs
-- Existing information management systems
-- Research planning and management capabilities
-- Quality of overall R&D design capabilities
-- Field research capability
-- Communications capability (telex, cable, phone).
-- Technology transfer capability (publications)
-- Level of participation in existing networks
-- Opportunities and constraints to expand participation in international workshops, etc.
-- Other donor support (existing and anticipated)
-- USAID bilateral project potential (energy, forestry, agricultural projects that can be tapped) for research funding and extension of results
-- Opportunities for agricultural and other non-forestry institution participation

(3) Travel to AID/W for workplan review and approval by the Asia project management Team.

(4) Travel to host countries to evaluate capabilities (based on workplan) of existing and proposed multi-purpose tree species networks identified at the Sri Lanka IUFRO meeting.

(5) Provide report of analysis of networks, including analysis of network support activities that will be needed for each species network over the first five years and a preliminary estimate of expected achievements and costs. This should include the need for workshops, training, education, information needs, and technical assistance.

4. Senior Technical Advisor

Responsibilities to the F/FRED Project:

(a) Provide technical and training support to S&T's Forestry/ Fuelwood Research and Development (F/FRED) Project.

(b) Act as the Senior Technical Advisor to the Project Manager in her/his areas of expertise.

(c) Help identify, organize, and synthesize existing social science theoretical and methodological knowledge related to forestry and natural resource activities in LDCs with special emphasis on fuelwood production and help identify gaps that can be addressed by interdisciplinary research efforts in the field.

(d) Write technical papers, analyses and studies in her/his field of expertise to assist the Project Management Team and the Asia Field Team.

(e) Provide technical support, especially on social ecology.

(f) Participate in evaluations of the F/FRED Project and related forestry/fuelwood projects in her/his area of expertise.

(g) Review and comment upon Project initiatives in areas of expertise and attend formal reviews of documents as a technical resource person.

(h) Serves as technical resource person on intra-agency and external consultative groups in areas of expertise.

(i) Identifies external technical resources in social ecology, rural sociology, natural resource economics, and related fields as required by Agency entities in Washington and by Missions.

(j) Provides technical assistance to field Missions in identification, design, implementation, and other elements of the project cycle in areas of expertise under the F/FRED Project.

(k) Initiates contact with non-Bureau personnel and promotes use of Project resources consistent with work plans and within personnel and financial constraints.

(l) Keeps abreast of literature and current practices in fields of expertise in order to ensure state-of-the-art approaches in projects/activities.

(m) Serves as expert advisor to the Project on social ecology.

ANNEX B

UNCLASSIFIED

Department of State

OUTGOING TELEGRAM

PAGE 01 OF 02 STATE 142413   3434 054475 AID3559

ORIGIN AID-03

OR	FICE	SAST-01					
[illegible]	AAAF-02	AFEA-03	AFCO-02	AFFW-04	AFCW-03	AFCA-03	AAAS-01
	ASPT-02	ASPM-02	AALA-01	LACE-03	LADA-03	AANE-01	FVA-01
	NEMA-03	PPCE-01	PPEM-01	PPPB-02	ONGT-02	STD-02	STAG-02
	STHE-01	STPO-03	STFA-01	FFP-03	NEE-03	NEME-03	SNC-03
	AAIO-01	CIA-05	STPA-01	RELO-01	TELE-01	STHP-01	NAST-01
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INFO	OCT-00	INR-10	EUR-00	AF-00	EB-08	EA-12	PRO-01
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AIDAC FROM THE ADMINISTRATOR TO MISSION DIRECTORS, AID REPS

E.O. 12356: N/A
TAGS:
SUBJECT: AGENCY RESEARCH AND RESEARCH PRIORITIES

REF: (A) STATE 244541, 8/3/82; (B) DRAFT AGENCY RESEARCH PRIORITIES STATEMENTS SENT TO MISSIONS IN JANUARY 1983

1. YOU ARE AWARE OF THE AGENCY EXERCISE TO IDENTIFY HIGH PRIORITY RESEARCH AREAS AND TO DEVELOP SPECIFIC PROGRAMS AND PROJECTS TO IMPLEMENT PRIORITY RESEARCH (SEE REFS A AND B). THE PURPOSE OF THIS CABLE IS TO CONVEY CLEARLY MY INTENTION TO INCREASE MARKEDLY AGENCY RESOURCES DEVOTED TO THE SUPPORT OF RESEARCH. I FIRMLY BELIEVE THAT WELL-DESIGNED RESEARCH EFFORTS HAVE BEEN AND WILL CONTINUE TO BE THE SOURCE OF ONE OF THE MOST POWERFUL AND LASTING CONTRIBUTIONS THAT CAN BE MADE TO ECONOMIC DEVELOPMENT AND TO THE PRODUCTIVITY AND WELL-BEING OF THE POOR IN LDCS. THE U.S. HAS A UNIQUE ADVANTAGE IN ITS GREAT SCIENTIFIC CAPACITY TO HELP LDCS FOCUS RESEARCH ON CRITICAL DEVELOPMENT PROBLEMS. A.I.D. REMAINS THE MOST IMPORTANT INSTRUMENT OF U.S. SUPPORT FOR DEVELOPMENT ORIENTED RESEARCH.

2. AID/W STAFF HAVE PREPARED INDICATIVE IMPLEMENTATION PLANS BASED ON THE STATEMENTS YOU RECEIVED IN JANUARY (REF B). THESE INDICATIVE PLANS WILL BE PROVIDED IN DRAFT TO ALL MISSIONS AND NEED TO BE DEVELOPED FURTHER ON THE BASIS OF MISSION COMMENTS AND DISCUSSIONS. DURING THE NEXT TWO MONTHS STAFF FROM S&T AND THE REGIONAL BUREAUS WILL VISIT SELECTED MISSIONS, [illegible] THREE TO FIVE IN EACH REGION, TO WORK WITH [illegible] DEVELOPING RESEARCH PRIORITY IMPLEMENTATION PLANS [illegible] CRITICAL PROBLEM AREAS: BIOMEDICAL RESEARCH ON CONTRACEPTIVES AND IMPROVED FAMILY PLANNING METHODS; [illegible] TROPICAL MEDICINE; FOOD AND AGRICULTURE RESEARCH; [illegible] AND RESEARCH ON FUELWOOD PRODUCTION AND CONVERSION TECHNOLOGIES. THE LENGTH OF EACH COUNTRY VISIT WILL VARY FROM A FEW DAYS TO ONE WEEK.

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3. MY INTENTION THROUGH THESE COMMUNICATIONS AND VISITS IS TO INCREASE THE TOTAL AMOUNT OF A.I.D. RESOURCES DEVOTED TO RESEARCH. SINCE OVERALL BUDGET RESOURCES ARE RELATIVELY FIXED, THIS WILL MEAN FUNDING FOR PRIORITY RESEARCH PROJECTS WILL HAVE TO COME FROM EXISTING TOTAL RESOURCES, INCLUDING MISSION, REGIONAL AND CENTRAL, WHETHER UNPROGRAMMED OR RE-PROGRAMMED FROM LOWER PRIORITY ACTIVITIES OF ALL TYPES INCLUDING NON-RESEARCH. I WANT THOSE MISSIONS VISITED TO WORK POSITIVELY WITH VISITING TEAMS TO ACCOMPLISH THIS GOAL.

4. TEAMS WILL WORK WITH MISSIONS TO IDENTIFY AND RANK PRIORITY RESEARCH TOPICS AND DETERMINE FUNDING REQUIREMENTS. CRITERIA FOR IDENTIFICATION OF PROJECTS WILL INCLUDE: POTENTIAL FOR YIELDING SIGNIFICANT RESULTS WITHIN A FIVE TO TEN YEAR TIME FRAME, KEEPING IN MIND A FOCUS ON THE NEEDS OF THE POOR; COUNTRY INTEREST AND INSTITUTIONAL CAPACITY TO UNDERTAKE AND APPLY THE RESEARCH; EXISTENCE OF SUITABLE COOPERATING U.S. OR INTERNATIONAL RESEARCH INSTITUTIONS; CONSISTENCY WITH CDSS'S, REGIONAL STRATEGIC PLANS AND AGENCY POLICIES; AND MISSION CAPACITY TO MANAGE (SEE PARA 11 BELOW).

5. THE PRIMARY FOCUS IS ON THE PLANNING AND IMPLEMENTATION OF RESEARCH ITSELF. ACTIVITIES NECESSARY TO UNDERTAKE RESEARCH, SUCH AS TRAINING OR OTHER ASPECTS OF INSTITUTIONAL DEVELOPMENT, MAY BE INCLUDED BUT THEY MUST BE PART OF AN OVERALL PROGRAM THAT IDENTIFIES AND SUPPORTS THE RESEARCH ITSELF. A NEW RESEARCH ACTIVITY COULD BE MADE AN ADDITIONAL COMPONENT OF AN ON-GOING INSTITUTIONAL DEVELOPMENT PROJECT.

6. PRIORITY RESEARCH ACTIVITIES ARE EXPECTED TO DRAW UPON THE SCIENCE AND TECHNOLOGY CAPABILITIES OF LDCS AND U.S. UNIVERSITIES TO THE GREATEST EXTENT FEASIBLE AS WELL AS TO CONSIDER ACTIVELY LDC AND U.S. PRIVATE ENTERPRISE FOR CARRYING OUT THE RESEARCH.

7. THE S&T BUREAU IS DEVELOPING IN COLLABORATION WITH THE REGIONAL BUREAUS COLLABORATIVE PROJECTS THAT WILL PROVIDE TECHNICAL BACKSTOPPING OF MISSION-SUPPORTED RESEARCH PROJECTS. THESE PROJECTS WILL ALSO FACILITATE LINKAGES OR NETWORKS OF INSTITUTIONS IN DIFFERENT COUNTRIES WORKING ON THE SAME PRIORITY TOPICS, E.G., FUELWOOD SPECIES TRIALS OR FUELWOOD BIOTECHNOLOGY. WHERE APPROPRIATE, INSTITUTIONS IN ADVANCED DEVELOPING COUNTRIES AND INTERNATIONAL INSTITUTIONS, SUCH AS THE INTERNATIONAL AGRICULTURAL RESEARCH CENTERS, WILL BE ENCOURAGED TO JOIN THESE QUOTE COMMON THEME NETWORKS UNQUOTE.

8. THE SPECIFIC RESEARCH PROJECTS TO BE IDENTIFIED WILL BE JUDGED BY THE SAME RIG AND PP STANDARDS AS OTHER PROJECTS THROUGH THE REGULAR PROJECT REVIEW AND APPROVAL PROCESS. THEY WILL NOT REPEAT NOT BE PUT ON A QUOTE SPECIAL TRACK UNQUOTE.

9. I LOOK FOR PROGRAMMING OF PRIORITY RESEARCH ACTIVITIES AS EARLY AS POSSIBLE, BEGINNING IN FY 1984 TO THE GREATEST EXTENT FEASIBLE, OR EARLIER WHEREVER POSSIBLE.

10. FIELD VISITS WILL BE SELECTIVE. THOSE UNDERTAKEN TO DEVELOP RESEARCH PRIORITIES FOR AGRICULTURE AND FUELWOOD WILL AVERAGE ABOUT THREE TO FIVE COUNTRIES EACH PER REGION. VISITS FOR BIOMEDICAL AND CONTRACEPTIVE RESEARCH WILL BE FEWER IN VIEW OF THE GREATER ROLE OF CENTRALLY-FUNDED PROJECTS. COUNTRIES FUNDED EXCLUSIVELY WITH ESF WILL ALSO BE CONSIDERED. A SEPARATE CABLE FOR EACH REGION WILL BE SENT TO ALL MISSIONS IN THE REGION

165

UNCLASSIFIED

Department of State

OUTGOING TELEGRAM

INDICATING WHICH MISSIONS ARE PROPOSED FOR VISITS.
RI[illegible] CONCURRENCE WILL BE SOUGHT IN ADVANCE OF EACH
TDY.

11. I REALIZE THAT I AM ASKING FOR SHIFTS IN CERTAIN BASES IN OUR ASSISTANCE PROGRAMS. I ALSO REALIZE THAT TECHNICAL STAFF CAPACITY MAY BE A CONSTRAINT IN SOME INSTANCES. AID/W STANDS READY TO AUGMENT MISSION STAFF RESOURCES THROUGH TECHNICAL BACKSTOPPING FROM CENTRALLY FUNDED PROJECTS AND ASSISTING MISSIONS TO OBTAIN EXPERTISE THROUGH OTHER CHANNELS, SUCH AS THE JOINT

CAREER CORPS AND TECHNICAL SERVICES TO MISSIONS FROM UNIVERSITIES.

12. I BELIEVE THE HARD WORK ENTAILED BY THIS EXERCISE WILL BE WELL WORTH THE EFFORT. I AM COMMITTED TO IT. SHULTZ

166

ANNEX C
Payne

REPORT ON THE IUFRO PLANNING WORKSHOP FOR ASIA HELD AT KANDY, SRI LANKA

16 - 28 JULY, 1984

By

Dr. Salleh Mohd. Nor,
Director,
Forest Research Institute
and
IUFRO Executive Board Member
for
Western Pacific

Report Presented to the IUFRO
Executive Board Meeting
at Helsinki, Finland
6 - 15 September, 1984

Contents

REPORT ON THE IUFRO PLANNING WORKSHOP FOR ASIA, HELD AT KANDY, SRI LANKA, 16 - 28 JULY, 1984

1. INTRODUCTION

The workshop was a culmination of an effort by the IUFRO Executive Board (EB) to stimulate and assist in the development of forestry research in developing countries, specifically Asia. The seed for this effort was planted at the IUFRO Congress in Kyoto, Japan in 1981 and the ultimate plan is to hold similar workshops in Africa and South America.

2. OBJECTIVE

The objective of the meeting as identified and defined by the workshop is as follows:

2.1 Within an initial period of 10 years develop and disseminate technology to increase productivity and usefulness of Multipurpose tree species (MPTS) in sustainable land use systems to enhance the income and supplement basic needs of rural people.

2.2 SUB-OBJECTIVES

1. Select, genetically improve and conserve MPTS.
2. Develop Nursery, establishment and tending techniques for MPTS.
3. Develop MPT Management Systems.
4. Develop Protection Systems for MPTS.
5. Develop techniques and

4. PARTICIPANTS

Those attending comprise the following:

a) 24 participants from 12 developing countries
With the exception of research institutions in Philippines and the Royal Thai Forestry Department, all major forestry research institutions in tropical Asia were represented.

b) 8 observers from 5 international aid agencies, including USAID, GTZ, IDRC, UNESCO and World Bank.

c) 11 other members including Rapporteurs (4), IUFRO (2) and the planning team (2), speakers and observers.

5. PROGRAM

The workshop consisted of the following program.

a) Official opening session by the Hon. Acting Minister of Lands and Land Development of Sri Lanka and a keynote address by Mr. S.S. Puri, FAO Assistant Director General and Regional Representative for Asia and the Pacific. I represented IUFRO at this session.

b) Four plenary sessions were held during which position papers were presented.

c) A planning session led by the planning team, with the Discussion leaders and Rapporteurs of the four sessions.

For each sub-objective (see para 2), a set of goals were identified and within each Goal, a set of activities proposed (see Appendix 1).

d) During the period of the planning session, the other participants and observers went on a 3 day field trip.

e) Working sessions, divided into geographical zones (Moist-wet, Semiarid-arid and Mountainous) which identified priorities within the workshop sub-objectives and developed networks within the region.

f) Each country was encouraged to express their needs and to reflect them in their proposals.

g) A final session during which the final plan for action was drafted and approved by the workshop in plenary.

h) A brief closing session including adoption of the plan for action.

170

6. OUTPUT

The original objective called for the drawing up of an ACTAR (Adapted Convergence Technique for Agricultural Research) plan similar to the CANUSA Spruce Budworm plan. It was soon found obvious that this could not be done to the same level of intensity for Multipurpose trees for Asia.

The final output thus consisted of the following:

a) A proposal of 10 species networks consisting of the following:

1. Acacia species - A.nilotica, A. auriculiformes, A. senegal, A. tortilis and A. mangium.
2. Bamboo
3. Albizzia and Leucaena
4. Eucalyptus species - E. camaldulensis, E. microtheca, E. deglupta and E. urophylla.
5. Dalbergia sissoo, Morus alba and Populus spp.
6. Azadirachta spp and Melia spp.
7. Rattan
8. Prosopis cineraria
9. Salix spp and Robinia pseudoacacia

and 10. Alnus nepalensis and Grewia oppositifolia

For each species network, a lead and co-leading country, lead and co-leading institution, participating countries and institutions, participating scientists, participating international agencies, possible aid agencies for country support and for networks, were identified.

(Please refer to Appendix 2 for full details. Appendix 2A gives the list of Institutions)

b) For each zone, the five considered top priority activities and related five priority species were identified as best as possible through a system of prioritization by individual countries. (Please refer to Appendix 3 and Appendix 4). This also reflects the possibilities for subject based and not necessarily species based networks.

207

171

These outputs, though not fully complete and to the level of detail that is expected in an ACTAR "blueprint for action", nevertheless provide the basic framework for further action.

7. General Comments

a) The Special Coordinator for Developing Countries (SCDC) Dr. Oscar Fugali, is congratulated on the tremendous effort in successfully bringing about such a diverse group together in one place for two weeks.

b) While the quality of some of the position papers were exemplary, the quality in general was below par. Many papers were not received before the stated due date and were instead brought on the day of the Workshop. One paper (and participant) never showed up. The system needs to be reviewed, especially with regard to payment for authors. While I agree on the merits and motivating influence of payment, there is a need to tighten control on quality and payment being made conditional to an accepted standard of quality.

c) Since the workshop was a planning workshop where one hopes to be followed up by implementation, there should be a higher representation of up-and-coming young researchers from the region and less of the retired or near-retiring group. Problems of identification of these young scientists and value of experience are nevertheless recognised.

d) While the accomodation facilities are excellent, the meeting facilities at Ladyhill Hotel were inadequate. This should be noted for future meetings.

e) Such a meeting must be orchestrated by a member of the IUFRO Executive Board from the region. Adequate planning involving the member and the SCDC must be made before the meeting to ensure smooth and successful program.

f) Due to assistance being obtained from a number of Aid agencies, which provide different rates of subsistence allowances, it is the duty of IUFRO to ensure that all participants are being paid at the same rate, irrespective of sponsor. It is gratifying to note that this was practised at Kandy.

8. WHAT NEXT?

This is the critical issue at hand. Where do we proceed from here?

I submit below my recommendations to the EB for consideration, with regard to the role of IUFRO in this exercise.

1. That the network based on species/species groups be given priority and implemented.

2. In view of the unlikelihood of starting all ten networks simultaneously, selection of networks to be pursued be based upon:

   a) number of possible participating countries

   b) existence of networking elements within the region

   c) potential of success based on social, political or economic situations of possible lead and/or participating countries and institutions.

The principle is to start a few small "core networks" and ensure that they succeed, and then to develop them through time, building upon the "core networks"

3. Wherever a subject based network exists, either within the IUFRO system or outside the IUFRO system, support be given to develop these networks, if considered useful and if lead institutions are found and considered capable of implementing them.

4. That the IUFRO Special Coordinator for Developing Countires (SCDC) be given the task of initiating and developing these networks for at least the next 12 months, and that adequate funding be obtained to enable him to do so.

5. That a IUFRO regional coordinator for Asia be recruited to understudy the SCDC and to pursue the task in 4 above, after the 12 month period.

6. That the proposed workshops for Africa and South America be postponed until the successful development of at least a few of the networks in Asia. This will be proof that this approach can work. Otherwise, IUFRO should reconsider and evaluate this approach, before proceeding with Africa and South America.

173

7. That lead countries be encouraged to pursue the formation of networks on their own initiative through any channel of financial support, that are open to them. IUFRO should lend support to these efforts.

8. That Donor agencies be encouraged to pursue developing the networks or components of networks according to and within their own program for aid to developing countries.

9. That IUFRO approach Donor agencies to commit funds to initiate and/or develop these networks within the Asian region.

10. That for each species network, an ACTAR planning framework be developed for each species by the designated lead institution and that IUFRO provides the financial support to get this done.

9. CONCLUSION

The Kandy exercise has been a worthwhile effort. Although the original aspirations were not fully achieved, the decisions obtained and the spirit of cooperation and goodwill which was so prominent during the whole period, will be invaluable when IUFRO does proceed to develop the networks. It is my opinion that the basic framework for cooperation and enhancement of forestry research in the tropical Asian region has been adequately defined and formulated to enable IUFRO or any Aid Agency or country to initiate the cooperation through networking. It is now up to IUFRO as the convenor of the proposal to pursue it to fruition.

10. ACKNOWLEDGEMENT

The support and cooperation of the Forestry Department Sri Lanka and the Government of Sri Lanka, the Aid Agencies, all participating institutions and countries, and the planning team are appreciated and acknowledged. A letter to such effect from the President of IUFRO would help in cementing the goodwill that developed during the meeting.

DR. SALLEH MOHD. NOR
Director,
Forest Research Institute,
Kepong, Selangor, Malaysia,
and IUFRO Executive Board Member
from the Western Pacific
28th. August, 1984.

Appendix 1

Objectives, Sub-objectives and Activities

OBJECTIVE(S):

Within the initial period of 10 years develop and disseminate technology to increase productivity and usefulness of Multi-purpose tree species (MPTS) in sustainable land use systems to enhance the income and supplement basic needs of rural people.

Sub-objective 1. Select, genetically improve and conserve MPTS

Goal 1.1 Choice of species

Activity 1.1.1 Exploration
Activity 1.1.2 Evaluation

Goal 1.2 Genetic Improvement

Activity 1.2.1 Tree Breeding
Activity 1.2.2 Development of Vegetative Propagation
Activity 1.2.3 Seed Collection, Storage and Testing

Goal 1.3 Conservation of Genetic Resources

Activity 1.3.1 Ex-situ Conservation
Activity 1.3.2 In-situ Conservation

Sub-objective 2. Develop nursery, establishment and testing techniques for MPTS

Goal 2.1 Nursery Production

Activity 2.1.1 Improvement of Nursery Stock Production

Goal 2.2 Site Selection

Activity 2.2.1 Utilization of Site Evaluation for MPTS

Goal 2.3 Site Preparation

Activity 2.3.1 Technology Development

Goal 2.4 MPTS Establishment and Early Tending

Activity 2.4.1 Technique Development

Sub-objective 3. Develop management systems for MPTS

Goal 3.1 Silvics and Biomass Yield

Activity 3.1.1 Spacing, Thinning and Rotation
Activity 3.1.2 Foliage Manipulation
Activity 3.1.3 Tree Species Mixtures
Activity 3.1.4 Water consumption

Goal 3.2 Agroforestry

Activity 3.2.1 Tree/Crop Interface
Activity 3.2.2 Silvo-pasture Development
Activity 3.2.3 Tree Ideotype Identification
Activity 3.2.4 Shelterbelts and Windbreaks
Activity 3.2.5 Landuse Problems Diagnosis
Activity 3.2.6 Irrigated Farming Systems
Activity 3.2.7 Mangrove Management

Goal 3.3 Natural Regeneration

Activity 3.3.1 Seeding, Root Suckaring and /or Coppicing

Goal 3.4 Harvesting and Transport

Activity 3.4.1 Tools and Ergonomics
Activity 3.4.2 Utilization

Goal 3.5 Marketing and Economics

Activity 3.5.1 Marketing Small Quantities of Produce
Activity 3.5.2 Tree Production Economics

Sub-objective 4. Develop protection systems for MPTS

Goal 4.2 Fire Protection

Activity 4.2.1 Rural Fire Prevention and Protection

Goal 4.3 Protection from Animals

Activity 4.3.1 Animal Damage

Sub-objective 5. Develop techniques and systems for maintaining and improving soil productivity

Goal 5.1 N-Fixing Organisms

Activity 5.1.1	Culture and Inoculation
Activity 5.1.2	Soil Productivity

Goal 5.2 Nutrient Cycling and Nutrient Flux

Activity 5.2.1	Nurtrient Cycling and Nutrient Flux

Sub-objective 6.	Strengthen institutional suport for technology transfer

Goal 6.1 Education, Training and Extension

Activity 6.1.1	Professional Education and Training
Activity 6.1.2	Technical Training
Activity 6.1.3	Extension

Goal 6.2 Information

Activity 6.2.1	Existing Information
Activity 6.2.2	Information Awareness
Activity 6.2.3	Data Base Development and Maintenance
Activity 6.2.4	IUFRO Involvement

Goal 6.3 Environmental Impact Analysis

Activity 6.3.1	EIA Techniques

Goal 6.4 Socio-Economic Studies

Activity 6.4.1	Farm Supply and Demand
Activity 6.4.2	Monitoring and Evaluation

Appendix 2

PROPOSED SPECIES NETWORKS

(1) Network species	(2) Leader	(3) Co-Leader(s)	(4) Participating Countries	(5) Lead Inst.	(6) Partici-cipating Inst.	(7) Partici-International Agencies	(8) Most Likely Source of External Aid Funding: For strengthening of National Research capabilities	(9) For supporting regions Network activities
1. Acacia sp.	1. India (a) A.nilotica (b) A.auriculiformis (c) A.senegal (d) A.tortilis	2. Malaysia A.mangium	Indonesia (c+b) Thailand (c+b) Philippines (c+b) Taiwan (b) & (c) Bangladesh (a+b+c) PNG (b+c) Nepal (b) Sri Lanka (b+c) Pakistan (a+c+d) China (b+c)	3 7	1,2,4,6 8,9,10 11,12,13 14,16,18, 19 29,21	UNDP ODA ICRAF CSIRO GTZ E-W Center FAO	GTZ IDRC USAID UNDP ODA(India) IBRD World Bank	USAID UNDP
2. Bamboo	1. Bangladesh	2. China (Utilisation) 3. Thailand (Harvesting and Seed)	All countries (except PNG)	1,2 21	All (except 5 & 13)	IDRC ODA FAO	IDRC ODA	IDRC USAID UNDP
3. (a) Albizia (b) Leucaena	1. Philippine	2. Taiwan (Leucaena)	Leucaena (All countries & U. of Hawaii) Albizia India Bangladesh Nepal Malaysia China Taiwan Pakistan PNG Sri Langka	14 (b) 15 (a) 19 (b)	Leucaena All except 8,9,10, 17 Albizia 1,2,3 7,8,10 11,12, 13,14, 16,18	ODA(CFI) GTZ ICRAF E-W Centre FAO	GTZ(M'sia) USAID World Bank	USAID UNDP

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
4. Eucalyptus spp.	1. India E.camaldulensis E.microtheca	2. Indonesia E.deglupta E.urophylla	All Countries	3 6	All	UNDP USAID ODA FAO	World Bank	UNDP
5. (a) Dalbergia sissoo (b) Morus alba (c) Populus spp.	Pakistan	-	Bangladesh(a) Nepal - India Indonesia (b) China (c) Sri Lanka (a)	12	1,2,3,6 18,22	GTZ FAO	GTZ(China) USAID World Bank	USAID UNDP
6. Azadirachta & Melia spp.	Thailand		India Bangladesh Nepal Pakistan Philippines Malaysia Taiwan Sri Lanka Indonesia	21	1,3,6,7 8,11,12, 14,15 18,19,20	IDRC FAO	IDRC World Bank	IDRC USAID UNDP
7. Rattan	1. Malaysia	2. Philippines	Indonesia Thailand Bangladesh India Taiwan PNG Sri Lanka China Pakistan	7 14	1,2,3,4 5,6,8,9 10,12,13, 15,17 18,19, 20,21	IDRC FAO	IDRC World Bank	IDRC USAID
8. Prosopis cineraria	India	-	Pakistan China	3	2,12,22	UNDP USAID ODA ICRAF FAO	IDRC World Bank	USAID
9. Salix spp. & Robinia pseudoacacia	India	-	Nepal China Pakistan	3	2,11, 12,22	GTZ FAO	GTZ(China) World Bank	USAID UNDP
10.(a) Alnus nepalensis (b) Grewia oppositifolia	Nepal	-	Pakistan China India Philippines(a)	11	2,3,12 14,16,22	GTZ FAO ICRAF	GTZ(Pakistan) World Bank	USAID UNDP

Appendix 2A

Participating Institutions

Code	Address
1.	Forest Research Institute, Chittagong, Bangladesh
2.	Tropical Forest Research Institute, Canton, Peoples Republic of China
3.	Forest Research Institute & Colleges, P.O. New Forest, Dehra Dun, India.
4.	Kerala Forest Research Institute, Peechi 680 653, Kerala, India
5.	Forest Products Research & Development Centre, P.O. Box 84, Bogor, Indonesia.
6.	Forest Research & Development Centre (FRDC), P.O. Box 66, Bogor, Indonesia.
7.	Forest Research Institute, Kepong, Selangor, Malaysia
8.	Forest Research Centre, P.O. Box 1407, Sandakan, Sabah, Malaysia
9.	Faculty of Forestry, Malaysia Agricultural University, Serdang, Selangor, Malaysia.
10.	Forest Research Branch, Forest Department, Kuching, Malaysia.
11.	Department of Forest, Bahar Mahal, Kathmandu, Nepal

12. Pakistan Forest Institute,
Peshawar, Pakistan

13. Forest Research Division,
Department of Primary Industry
(Forest Management Research Branch)
P.O. Box 5055,
Boroko,
Papua New Guinea

14. Forest Research Institute (FORI),
College, Laguna,
Philippines

15. College of Forestry,
University of the Philippines at Los Banos,
P.O. Box 434, College,
Laguna, Philippines

16. Bureau of Forest Development,
Diliman, Quezon City,
Philippines

17. Isabela State University
Philippines

18. Forest Department,
Research Branch,
P.O. Box 509,
Colombo 2,
Sri Lanka

19. Forest Research Institute
Taipei, Taiwan

20. Royal Forest Department,
Bangkok, Thailand

21. Faculty of Forestry,
Kasetsart University,
Bangkok, Thailand.

22. Chinese Academy of Forestry,
Beijing,
Peoples Republic of China

Appendix 3

Five most important species for top 5 priority activities

A. Moist/Wet Zone

	Activity	Species
1.	2.1.1 - Improvement of Nursery Stock Production	Acacia mangium Leucaena leucocephala Bamboos A. auriculiformis Eucalyptus spp.
2.	3.1.1 - Spacing, Thinning & Rotation	Eucalyptus spp. Leucaena leucocephala A. mangium A. auriculiformis Albizia spp.
3.	1.1.2 - Evaluation of species	Bamboos A. auriculiformis Eucalyptus spp. L. leucocephalia A. mangium
4.	1.2.3 - Seed collection, Storage & Testing	A. mangium A. auriculiformis Bamboos Eucalyptus spp. L. leucocephala
5.	1.2.1 - Tree Breeding	A. auriculiformis A. mangium Eucalyptus spp. L. leucocephalia Bamboos
6.	1.3.1 - Ex-situ Conservation	

B. Arid/Semi-arid Zone

	Activity	Species
1.	5.2.1 - Nutrient Cycling and Nutrient Flux	Acacia nilotica Populus spp. Eucalyptus camaldulensis Bamboos Prosopis cineraria
2.	1.2.1 - Tree Breeding	A. nilotica Populus spp. E. camaldulensis Bamboos P. cineraria
3.	3.2.1 - Tree/Crop Interface	A. nilotica Populus spp. E. camaldulensis] Bamboos P. cieraria
4.	3.1.3 - Tree Species Mixture	A. nilotica E. camaldulensis Bamboos E. microtheca
5.	3.2.4 - Shelterbelts & Windbreaks	A. nilotica E. camaldulensis Bamboos Morus alba Dalbergia sissoo
6.	3.2.6 - Irrigated Farming Systems	

C. Mountainous zone

	Activity	Species
1.	2.1.1 - Improvement of Nursery Production Stock	Alnus spp. Bamboos Pinus spp. Robinia pseudoacacia Populus spp. & Salix spp.
2.	2.4.1 - Establishment and Early Tending Techniques	Bamboos Pinus spp. Alnus pp. R. pseudoacacia Populus spp. & Salix spp.
3.	2.3.1 - Site Preparation Techniques	Populus spp. Pinus spp. Bamboos Alnus spp. Salix spp.
4.	1.2.3 - Seed Collection, Storage & Testing	Pinus spp. Bamboos Alnus spp. Celtus australis Grewia oppositifolia
5.	1.1.2 - Evaluation of species	Alnus spp. Salix spp. Populus spp. Pinus spp. R. pseudoacacia
6.	1.2.1 - Tree Breeding	

184

Appendix 4

Five Most Important Activities for Top 5 Priority Species

A. Moist/Wet Zone

	Species	Priority Activities*
1.	Eucalyptus camaldulensis	3.1.1, 3.1.2, 3.1.3 1.2.1 1.1.1, 1.1.2 1.2.2 4.1.1
2.	Bamboos	1.2.2 3.1.1, 3.1.2, 3.1.3 1.2.1 2.1.1 4.1.1
3.	Leucaena leucocephala	3.1.1, 3.1.2, 3.1.3 1.2.1 3.2.1 — 3.2.5 2.1.1 1.2.2
4.	Acacia mangium	3.1.1, 3.1.2, 31.13 1.2.1 2.1.1 1.2.2 5.1.1, 5.1.2
5.	Acacia auriculiformis	3.1.1, 3.1.2, 3.1.3 1.1.1, 1.1.2 1.2.1 2.1.1 5.1.1, 5.1.2

* Please refer to Appendix 1 for activity codes

C. Mountainous Zone

1. Pinus spp.	1.1.2 1.2.1 1.2.3 2.1.1 3.1.1
2. Bamboos	1.1.2 1.2.1 1.2.3 2.1.1 2.4.1
3. Alnus spp.	1.1.2 1.2.1 2.1.1 5.1.1, 5.1.2 2.4.1
4. Robinia pseudoacacia	1.1.2 1.2.1 1.2.3 2.4.1 3.1.2
5. Populus spp.	1.1.2 1.2.1 3.2.1 3.2.6 4.1.1
6. Salix spp.	1.1.2 1.2.2 2.4.1 3.1.2 3.1.1

ANNEX D

A/D/C

The Agricultural Development Council, Inc.

725 Park Avenue, New York, N.Y. 10021

Tel.: 212-517-9700 • Cable: AGRIDEVEL New York • Telex: 224863 ASIA UR

AN ASIAN REGIONAL PROGRAM IN

RENEWABLE RESOURCE MANAGEMENT

A/D/C Draft Concept

June 1984

JUL - 5 1984

Supporting, teaching and research related to the economic and human problems of agricultural development, primarily in Asia.

187

TABLE OF CONTENTS

PRECIS

The Agricultural Development Council proposes to establish a new regional program which concentrates on the social and economic aspects of renewable resource management in Asia. This ten year program will focus initially on collaborative systems for managing local common property resources. National land and settlement policies would be added subsequently. Research and long as well as short-term training constitute the principal program elements. A regional network involving workshops, seminars and publications is included.

The program would rely on national and regional panels of Asian scholars to establish specific research agendas; these panels would also make research and training award selections. Regional and country-level program activities would be coordinated and supported by an A/D/C Regional Associate and the Council's country-based field staff. Financing would be provided from both non-governmental and governmental sources.

Renewable Resource Management: The Issues

> "In the water there is fish, in the field there is rice." This is a familiar old Thai saying which indicates the abundance of Thai natural resources in the good old days. ... Is this saying still valid today? The answer would be at best a qualified yes... Thailand holds the title of "rice-bowl of Asia" but finds it increasingly difficult to live up to this name as the Thai population soars and the ratio of crop land to population dwindles. *

Even in a country as well endowed as Thailand, the resource base which sustains the population is undergoing important changes. In other Asian countries the issue is more pressing. Nepal's Himalayan foothill forests are disappearing, leading to erosion that has a direct impact on the carrying capacity of the land. Indonesia's massive resettlement scheme (transmigration) is populating vast tracts of heretofore unused land in Sumatra and Kalimantan with only the embryo of resource management systems in place. Upland regions of the Philippines are under increasing pressure from the poor who seek new ways to eke out a living. The Bangladeshis must find new ways to manage their water resources (sometimes in surplus and sometimes in shortage) if the remarkable potential for increased agricultural productivity of the Gangetic plain is to be realized. And India is tangling with the challenge of using large areas of "wasteland" for new production.

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* Nart Tuntawiroon, "National Development, Resource Depletion and Environmental Deterioration in Thailand," in Contemporty Southeast Asia, Vol. 1, No. 4 (March 1980).

These challenges are not new ones, nor are they ones which able scientists and policy makers have entirely neglected. But the need to meet these challenges and find solutions to resource management problems are more urgent than ever before. Economic and demographic pressures threaten to permanently destroy the natural resource base. In addition, the search for solutions raises difficult and complex questions which present governmental structures are poorly designed to address. Scientists find the analytical task extremely demanding because the issues cut across many disciplines -- more so than is the case with agricultural production. Interrelationships found in different ecosystems are far more puzzling than those in traditional problem-solving arenas and the linkages in resource-base deterioration are profound. * Because many of the issues involve marginal resource domains, the matter of equity in development is a particularly poignant concern: does more efficient resource management deny poorer segments of society access to the very resources upon which they depend for their livelihoods?

As with many other development concerns, approaches to renewable resource management have been developed almost entirely by biological and physical scientists. Knowledge has advanced little with respect to the social, political and economic determinants of resource utilization. The fundamental premise underlying the proposed program is that effective renewable resource management must encompass a set of social strategies. Resources must be managed by people and in the interests of people. The

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* These lingages are often circular. The degradation of the forests leads to the degradation of the soil and water resources; this in turn results in a decline of agricultural (and fishery) yields which exacerbates rural poverty and income inequality, the driving force of deforestation.

behavior of the resource users must be predicted and management systems must be devised to take this behavior into account. The knowledge base for this work is currently thin. New knowledge needs to be created; new public policy agendas need to be established; and innovations in management need to be developed.

Forest management and use is only one resource concern that requires attention. However, because of the extreme pressure on forests and forest land in Asia -- and the lack of significant progress in understanding the socio-economic dimensions of management of this resource -- a special effort must be made in this direction. Focusing on forestry problems may be the best place to begin to build the critical mass of scientific effort that is required if such resources are to be considered genuinely renewable. Subsequently, applications to other resource problems can be made.

Precise solutions to problems associated with human behavior are difficult to achieve, but the application of the social sciences is essential to progress. Most of this progress will come through the efforts of Asian social scientists working in their own countries. The potential for technology transfer or "social engineering" in the field of resource management is marginal. Concepts and curricula developed in the West are likely to be of only limited use. What is needed is a growing community of Asian professionals to build a knowledge base on their own. The role of donor agencies will be catalytic and supportive; it cannot be otherwise and be effective.

New A/D/C Program in Renewable Resource Management

The Romm Report. To develop the framework for a new regional program in this field, the Council acquired the assistance of Dr. Jeff Romm of the Department of Forestry and Conservation, College of Natural Resources, University of California at Berkeley. Romm served for 10 years on the professional staff of the Ford Foundation in South and Southeast Asia and is one of the most knowledgeable people on Asian resource issues.* His 1983 survey for A/D/C reached several conclusions.

His clearest finding was that resource-oriented social science research and education are superficial. "Neither," he noted, "displays an observable increase in quality and depth over the past decade." The reason for weaknesses in the application of the social sciences to resource issues is not due to funding shortages because increasing amounts of money are being thrown at the problems. Rather, he discovered, there is a critical gap in the funding now available: there is little or no support available which is personal and intellectually provocative; none that is protective of individual and institutional development; and none which is directed toward long-term possibilities rather than short-term needs. Intellectual capital is either standing still or is being eroded. In Romm's view, a great deal is being done to grapple with complex resource issues, but neither the knowledge base nor the conceptual base is being expanded.

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* Romm's "Higher Education and Natural Resource Management in Southeast Asia," which was published in 1978 by the OLC of the American Council on Education, is still the authoritative work in this area.

His report indicates that donors are providing significant training monies, but the inefficiencies attending graduate study in the resource fields are striking. The qualitative dimension to human resource development has disappeared, he argues, and only one in five of those trained eventually becomes an effective social scientist. While research monies are abundant in some countries, they are almost uniformly tied to a government's short-term needs. Traditional sources of untied support (the Ford and Rockefeller Foundations) are either dry or insufficient to maintain the self-determination of research programs.

Networks, Romm states, are urgently needed in the resource policy and management fields and among the multi-disciplinary organizations that house them. He cites two fairly narrow networks which seem to be working well -- agro-ecosystems in Southeast Asia and water management in India -- and identifies characteristics which appear to explain their success:

(1) They are composed of scientists and institutions who have engaged a problem to sufficient depth to be able to "bring something to the table."

(2) They have been organized by outside entrepreneurs, those who have invested time, effort and money.

(3) They have access to timely and consistent external intellectual stimulation and provocation -- including that by non-Asian experts.

(4) They have had the resources and organization to maintain a continuous flow of quality information among network participants.

Finally, he observed that publications and teaching materials are in short supply or do not exist. Courses must rely on foreign books, none of which touch the most challenging concerns in Asia.

In summary, Romm identifies a vacuum of substantial proportions. The resource-oriented social sciences, he says,

> . . . have yet to establish a conceptual and methodological foundation. Their practitioners are usually vulnerable. Their institutions are unusually exposed to the pressures of immediate need. Such pressures will increase in the future because the problems behind them have only recently been acknowledged and will grow with time. The current dissapation of knowledge will not moderate them and will only weaken the basis for future solutions.

III.

Substance of the Proposed A/D/C Program

A decision to work on resource-related issues in Asia on a regional basis presents an intellectual and operational challenge. Identifying an effective organizing framework for both is not easy. Programs to date have been developed around specific topics which have gained great currency. Fisheries, agro-forestry or social forestry, water management, soil conservation, etc., have all become organizing frameworks for projects. Normally these projects have been tucked away within one pocket of an operating ministry, a fact which leaves them relatively isolated from the intellectual resources which deal with systems. While such projects contribute to experiential knowledge, their organizational format does little to enhance the broader understanding of resource management issues.

A/D/C proposes to go a different route. The Council intends to take a generic concern for resource management in a way that cuts across the fields mentioned above. In what is expected to be a ten year undertaking, the Council will initially adopt sequentially, two organizing themes.

(1) Collaborative Systems for Managing Local "Common Property" Resources. Collaboration between villagers and governments in managing common property resources has become an accepted plank of rural development strategy. Governments provide specialized technical, financial and managerial services to village groups for projects that increase the sustainable productivity of non-private land and water resources. Villagers provide the labor and organization to maintain the projects and allocate among themselves the village benefits and obligations associated with them. Both parties suppress competitive aspects of their property claims to the resource in order to develop it for a common interest: they share project benefits and costs.*

Across Asia governments are attempting to develop organizations that can work effectively with village groups rather than impose professional norms of technical efficiency upon them. But in each country there is a lack of concepts, methods, and educational capacity to support changes in policy and administration which are needed to make these new commitments to collaborative resource management effective. In Romm's view, "Current models of collaborative resource management are gaining the attributes of dogma; they are beginning to suffer from the complacency and exaggeration that unanalyzed ideas tend to breed."

Such principles are being employed in programs for pump irrigation (Philippines and Bangladesh), communal gravity irrigation (Philippines, Indonesia, Nepal, India), large-scale irrigation throughout Asia, social/community forestry (India, Nepal, Philippines, Indonesia), watershed management (Nepal, India, Indonesia, Philippines), village range management (Nepal, Thailand, India), and coastal fishing (Philippines, Indonesia, Malaysia). They are most developed in Philippine irrigation management and in Indian social forestry. Their impact on policy has been greatest in Nepal, where panchayat forestry has become the dominant pillar of public land policy.

The chief advantage for A/D/C in utilizing "collaborative resource management" as an organizing principle lies in the opportunity to address several resource domains in search of common elements. Many common property management problems found in agro-forestry, fisheries, water management, the management of grazing lands, and soil conservation are similar in nature. Because of the structure of governmental administration and because of the structure of higher education (and the way it is organized by disciplines), no efforts have been made to draw these common threads together. A/D/C proposes to do just that.

(2) National Land and Settlement Policy. This topic has risen dramatically among governmental priorities in Asia for several reasons: (a) population pressure on the resource base has increased at rates heretofore unknown; (b) governmental recognition of the finite quality of the resource base has grown; and (c) governmental infrastructure (the civil service) has matured to afford countries some limited capability for land-use planning. Undoubtedly additional reasons for increased interest in land-use policy are the political conflicts which human competition for scarce resources are creating. The art of governance is much involved with conflict resolution and conflicts over access to resources will increase.

In brief, Asian governments are now deciding where significant portions of their populations will live and what access to natural resources they shall have. In the Philippines this is reflected in the establishment of a Ministry of Human Settlements. In Indonesia, the new Five-Year Development Plan includes the clearance and settlement of forty million hectares of Outer Island rain forest. Thailand, for the first time, is assessing forest and land resource potentials.

And in India and Nepal there is growing interest in broad assessments of population and resource distributions and how public policies can influence choices which govern patterns of settlement and resource use.

Looking to the long term, perhaps the most important issue of all is how access to resources can be structured so that the 250 million Asians living in perpetual poverty will have some chance to improve their livelihoods. "Access" goes beyond the narrower definition of "common property" resources and challenges to orthodoxy will inevitably be required if non-violent solutions to the more equitable distribution of income and opportunity are to be found.

There is not much understanding of forces at work in both evolutionary and planned land use. Missing, too, are rural social scientists who can provide guidance to national economic planners on these issues -- guidance which is actively being sought in many countries. The absence of such knowledge and people is attributable in part to the fact that resource agendas have been defined by technical people; but it is also due to a failing among social scientists to develop the interest and the conceptual/methodological means to analyze village behavior in resource management. It is natural, therefore, that a second and subsequent focus of this program will be to apply the techniques and lessons of common property management to government land-use planning, particularly in resettlement schemes.

Illustrative Research Topics. The research award decisions would be made by a panel of senior Asians and the choice of actual topics would be left to their discretion. A number of possible research topics have already been tentatively identified and they provide useful illustrations for the kinds of issues on which the program might focus. For example:

(1) The economic importance of alternative forest use and priorities for future research.

(2) Procedures for measuring and evaluating the "downstream" effects of deforestation (such as erosion, flooding, or loss of water retention) on agricultural productivity.

(3) A comparative study of common property resource management: can elements of the successful community organization structure to manage Nepal's forests be transferred to Thailand?

(4) Economically viable alternatives to firewood as a source of fuel for cooking.

(5) Requirements for marketing and infrastructure development of tree crops.

(6) Trees as both a capital investment and source of annual income for resource-poor farmers.

(7) Strategies to assure interim income generation when cropped land is converted to orchards or forests.

While these are just a few of many topics that have been suggested, they indicate:

(1) the mix of issues to be covered, both theoretical and practical;

(2) the integrated nature of the approach which will demonstrate the links between agricultural production and common property resource management; and

(3) the essential breadth of the program designed to cover a wide range of issues which have crucial bearing on rural development.

IV.

Organization of New Program

A/D/C proposes to build a network of scientists in Asia to address renewable resource management problems. The objectives of the network are to:

(1) increase the attention given to resource management problems by both scientists and policymakers;

(2) draw more scholars into resource management research;

(3) enhance the ability and effectiveness of organized research activities; and

(4) increase the collection of and improve the dissemenation of information on natural resources by facilitating contact and communication among scientists grappling with similar problems.

The elements of the program will be put in place both at the national and regional level. The national level is critical because only there can essential empirical research be carried out to advance the state of knowledge. The regional level is essential if all the advantages of professional networking are to be realized. Work at the national level is expected to begin in the Philippines, Indonesia, Thailand and Nepal. It will grow sequentially in the first three years to include India and Bangladesh. Other countries (e.g., Pakistan, Sri Lanka, China, Burma) may be added as well. The presence of established scholars already working on elements of the substantive agenda just described will be the initial determining criterion.

A creative program development process is envisioned. A/D/C will involve Asian professionals as partners in establishing the actual work plan and course of action for the program. The process of program development is designed to be genuinely responsive to Asian perceptions of need and opportunity; the option to innovate will be preserved. A Regional A/D/C Associate (program coordinator) located in Thailand would, in concert with Asian scholars and policy makers, establish research and conceptual agendas. The coordinator would bear responsibility for the following tasks:

(a) identifying individuals and groups who are studying or want to study collaborative systems of resource management and issues of resource and settlement policies.

(b) Identifying and selecting young scientists for short and long-term training opportunities.

(c) Encouraging collaboration among scientists and policy makers in the region by sustaining a continuous flow of information to them.

(d) Organizing conferences to advance concepts and methods through comparative analyses of national efforts.

(e) Establishing a publications program to include research and teaching materials.

(f) Organizing and coordinating workshops on research methodology.

(g) Establishing an inventory of formal training resources within the Asian region.

(h) Organizing both national and regional selection panels composed of Asian scholars and policy makers for the purpose of deciding on research training award recipients.

(i) Providing technical advice to ongoing research activities.

(j) Generating new funding for program activities.

This agenda is substantial but the infrastructure to support it is largely in place. A/D/C maintains a fully staffed regional office in Bangkok. This office and its director have extensive experience in regional networking activities and in arranging for panels of Asian scholars to make fellowship award decisions. The Council also has country-based Associates and Specialists who can be relied upon to play supporting professional roles. The nature of these professional roles is important to the proposed program. Country-based A/D/C field staff reinforce professional advancement in the social sciences through teaching, by undertaking collaborative research, and by providing teaching and research materials to Asian educators, researchers and policy makers.

Dr. Gerald Nelson, Council staff member in the Philippines recently presented a paper on "Approaches to Reducing Renewable Resource Depletion and Environmental Degradation: Social Forestry or Macro-Economic Policies." Dr. Theodore Panayotou, Council Associate for Thailand, completed two papers last month: "Land Use and Resource Management: A Socioeconomic Perspective," and "Renewable Resource Management for Agricultural and Rural Development in Southeast Asia: Research and Policy Issues." Dr. Frederick Roche, Specialist at Brawijaya University in Indonesia, currently conducts a workshop in research methodology at that university. Dr. Jefferson Fox, Specialist at Gadjah Mada University, is currently assisting university faculty on a set of watershed management studies focussing on Javanese river basins. Dr. Bruce Glassburner, a macro-economist, is based at Bogor Agricultural University under USAID/Indonesia funding. Dr. Gerard Gill, Council Associate in Bangladesh, prepared a paper last month on "The Demand for Tubewell Equipment in Relation to Ground Water Availability." And in Nepal, both Dr. John Cool and Dr. Michael Wallace are working on renewable resource agendas. Wallace wrote his dissertation for Harvard on "Solving Common Property Resource Problems: Deforestation in Nepal."

A question might arise as to whether the proposed network is redundant in light of the fairly recent emergence of more narrowly focused networks centering on agro-forestry and water management (India), agro-ecosystems and fisheries (Southeast Asia), and other undertakings which come under the UNDP umbrella. In fact, the proposed new network intends to rely on those already established and will benefit substantially from them. The rest of Asia has much to learn from developments in India but few vehicles for such learning. Further, one network of scholars in a field such as agro-forestry will benefit from interchanges with those engaged in research on other common property issues such as water and fisheries.

V.

Program Elements

A/D/C envisions a program of at least ten years duration. While the Council expects to carry the initial catalytic and program management roles, the work foreseen will be carried out most effectively over the long term if the program genuinely becomes an Asian undertaking. A/D/C's role, as presently envisioned, is that of making sure that (a) a substantive agenda is established and (b) a mechanism for the management of the network is created.

Research, training, and networking are the three key elements of this program. The discrete components of the program are as follows:

(1) A/D/C Regional Associate. A professional and experienced social scientist would be based in Asia and responsible for developing the program. He/she would be the program entrepreneur.

(2) A/D/C Country Associates. Mainly economists, the Council's field staff in Asia would play supporting, technical assistance roles.

(3) Research Awards to Asian Scholars. These awards, mostly at the level of $5,000 to $10,000, would serve three purposes. They would draw young, prospective scholars into the field of resource management; they would seek to create a new generation of human capital in a field where it is lacking; and in some cases the research product could be fed directly into the policy planning process.

(4) Training. Two types of training are envisioned. The first would be graduate degree training for a select few candidates carefully identified ans screened through A/D/C's traditional process. A handful of Ph,D. awards would be included. The second is short-term training in Asian institutions (third country). A/D/C is currently working with the Ford Foundation to assess all resource-related training programs in Southeast Asia as a first step.

(5) Workshops and Seminars. These are the most critical elements of the networking activity which is envisioned. They would take place both at country and at regional levels and would involve educators, researchers, and policy makers. A/D/C has a 25-year history of such work in Asia.

(6) Publications. These will be of two types. Research reports will be published by A/D/C and circulated to the emerging network in much the same fashion that A/D/C has traditionally handled this function. Equally important will be the production of teaching materials developed in Asia by Asians. The work will fill a critical gap that currently exists.

(7) Consultants. External stimulation is essential for regionally-based networks. The Council envisions a modest consulting component with one or two individuals per year visiting the region.

(8) Program Management. The Council's experience with Asian networks and the presence of its Regional Office in Bangkok provide essential assets for the program envisioned.

VI.

Funding

Depending on the number of advanced degree fellowships to be included in the program, an annual budget of between $400,000 and $600,000 is planned. A combination of central and field funding from non-governmental and governmental sources will be sought. One major foundation has already indicated strong interest in helping to initiate the program.

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SUBJECT: ASIA REGION: FORESTRY RESEARCH AND DEVELOPMENT PID REVIEW; PROJECT 498-0276

1. ON 9/24/84 C.W.GREENLEAF, AA/ASIA, CHAIRED APAC AND APPROVED THE PID FOR THE ASIA REGIONAL FORESTRY RESEARCH AND DEVELOPMENT PROJECT. JOHN ERIKSSON, DAA/ST, WAS PRESENT.

2. THE PROPOSED PROJECT IS A PIONEERING EFFORT SUPPORTING THE AGENCY'S INITIATIVE IN FUELWOOD AND FORESTRY RESEARCH. THE PROJECT WILL BE DEVELOPED AS A DOLS 2.5 MILLION, FIVE YEAR, LIFE-OF-PROJECT ACTIVITY USING 103 GRANT FUNDS. THE ASIA BUREAU PROJECT WILL COMPLEMENT A PROPOSED, TEN-YEAR, S AND T BUREAU PROJECT AND SEVERAL EXISTING AND PROPOSED, BI-LATERAL, ASIA MISSION PROJECTS.

3. THE ASIA BUREAU PROJECT WILL SUPPORT DEVELOPMENT OF AN ASIA REGIONAL NETWORK OF SCIENTISTS AND EXISTING

INSTITUTIONS TO IMPROVE RESEARCH ON SPECIFIC, FAST-GROWING, MULTIPURPOSE TREES. TECHNICAL ASSISTANCE, TRAINING, RESEARCH AND EVALUATION WILL BE PART OF THE AID ASSISTANCE PROPOSED.

4. SPECIFIC ACTIVITIES IN THE ASIA BUREAU PROJECT WILL BE SUPPORTED DIRECTLY BY THE S AND T BUREAU'S OVERALL PROJECT TO IMPROVE RESEARCH IN FUELWOOD AND TREE SPECIES WORLD WIDE. NO DISTINCTION WILL BE MADE BETWEEN WHICH ASIAN NETWORKS OR INSTITUTIONS THE TWO PROJECTS SUPPORT. UNDER THE GLOBAL APPROACH OF THE S AND T PROJECT, THE ASIA BUREAU PROJECT WILL LEAD THE ASIA REGION NETWORKING EFFORTS AND ASSIST WITH BUY-IN'S FOR ASIA MISSIONS. PROJECT MANAGEMENT RESPONSIBILITIES WILL BE WITH BOTH ASIA BUREAU AND S AND T BUREAU. ELIMINATING DUPLICATION OF EFFORTS IS BEING WORKED OUT.

5. FY 1985-89 BUDGET ESTIMATES FOR BOTH PROJECTS:

-COMPONENT/ACTIVITY	ASIA BUREAU	S AND T BUREAU	ASIA MISSIONS	TOTALS
--NETWORK DEVELOPMENT	1,400	3,391	1,000	5,791
--RESEARCH PLANNING ---AND MANAGEMENT	725	1,935	410	3,070
--SPECIAL RESEARCH ---SUPPORT	200	1,904	-	2,104
--GLOBAL RESEARCH	-	975	-	975
--CONTINGENCY AND EVAL.	175	1,635	-	1,810
------TOTALS US DOLS,	2,500	9,840	1,410	13,750

NOTE: S AND T BUREAU BUDGET FIGURES ARE FOR FIVE YEARS OF THEIR TEN YEAR PROJECT AND ARE FOR USE IN THE ASIA REGION. ASIA MISSIONS FIGURES ARE ESTIMATED BUY-IN AMOUNTS BY THE MISSIONS AND WILL CHANGE UNDOUBTEDLY DURING THE EVOLUTION OF THE PROJECT.

6. ISSUES DISCUSSED DURING APAC CENTERED AROUND (A) BUREAU AND MISSIONS LIMITED STAFF AND FUNDING RESOURCES, (B) ASIA BUREAU RESPONSE TO AN AGRICULTURAL DEVELOPMENT COUNCIL PROPOSAL, (C) PROCUREMENT AND OBLIGATION MECHANISMS, (D) BI-LATERAL FORESTRY ACTIVITIES VERSUS REGIONAL FORESTRY RESEARCH AND DEVELOPMENT CONCEPT AND (E) EVALUATION.

6A. BUREAU AND MISSION LIMITED RESOURCES: PROJECT ADMINISTRATION AND MONITORING WILL PLACE HEAVY DEMANDS ON LIMITED ASIA BUREAU STAFF AND GRANT RESOURCES.

MONITORING CONTRACTOR WORK, COORDINATING MISSIONS NEEDS AND BOTH BUREAUS EFFORTS, AND OVERALL PROJECT DIRECTION WILL BE PART OF THIS WORK LOAD.

HOWEVER, DUE TO THE HIGH PRIORITY AID IS GIVING PROBLEM FOCUSED RESEARCH PROJECTS AND RELATED INSTITUTIONAL STRENGTHENING IN SUCH AREAS AS FUELWOOD AND FORESTRY, MOST COMMITTEE MEMBERS FELT THAT THIS PROJECT WOULD MAKE GOOD USE OF THE BUREAU'S LIMITED STAFFING AND GRANT FUNDS. CONSEQUENTLY, IT WAS RECOMMENDED THAT THE PROJECT PAPER CONTAIN A THOROUGH ASSESSMENT OF THE STAFF REQUIRED AND THEIR RESPECTIVE MANAGEMENT RESPONSIBILITIES (I.E. ASIA/S AND T BUREAUS' AND MISSIONS' INVOLVEMENT).

6B. ASIA BUREAU RESPONSIVENESS TO ADC: THE ASIA BUREAU RECENTLY RECEIVED A PROJECT PROPOSAL FROM THE AGRICULTURAL DEVELOPMENT COUNCIL (ADC) WHICH COULD POSSIBLY FIT INTO THE ASIA BUREAU PROJECT. THE PROPOSAL FOCUSES ON SOCIAL DIMENSIONS OF FORESTRY AND ENVIRONMENTAL RESEARCH. IN ANY EVENT, THE PROJECT PAPER SHOULD INTEGRATE SOCIAL CONCERNS AND ANALYSIS INTO THE SUBSTANCE OF RESEARCH DESIGN. ROLE OF WOMEN SHOULD ALSO RECEIVE SERIOUS CONSIDERATION.

BECAUSE TIME WAS TOO SHORT TO REVIEW THE PROPOSAL AND DETERMINE A POSSIBLE ADC ROLE IN THE PROJECT, THE PROJECT PAPER DEVELOPMENT WILL EXAMINE THE POSSIBILITY OF AN ADC ROLE. DURING PROJECT DESIGN, ASIA MISSIONS WILL BE ASKED TO COMMENT ON THE PROPOSAL AND THEIR PAST EXPERIENCE WITH ADC.

6C. PROCUREMENT AND OBLIGATION MECHANISMS. QUESTIONS REMAIN ABOUT HOW THE PROJECT MONEY WILL BE OBLIGATED AND THE MECHANISMS FOR "BUY-IN'S" BY ASIA MISSIONS ON CENTRAL COOPERATIVE AGREEMENT(S) OR CONTRACT(S) FUNDED BY THIS OR THE S AND T PROJECT. ASIA AND S AND T BUREAU BELIEVE THAT SINGLE LEAD CONTRACTOR, WHICH BOTH BUREAUS FUND, WILL BE LIKELY MOST EFFECTIVE ROUTE.

PROJECT PAPER DEVELOPMENT WILL WORK OUT THE PROCUREMENT AND OBLIGATION MECHANISMS WHICH ARE TO BE USED FOR .

BUY-INS, RESEARCH ACTIVITIES, TRAINING, AND CONTRACTOR SUPPORT TO MISSIONS. WE FORESEE THIS AS A DIFFICULT AREA AND AA/ASIA HAS ASKED THAT PP CONTAIN A DETAILED WORK PLAN ON HOW TO IMPLEMENT THE FIRST YEAR OF THE PROJECT.

GRAY AMENDMENT CONCERNS WILL ALSO BE ADDRESSED IN THE PROJECT PAPER, ESPECIALLY BECAUSE THE PROJECT USES SCARCE ASIA BUREAU GRANT FUNDS.

6D. BI-LATERAL FORESTRY ACTIVITIES VERSUS REGIONAL FORESTRY RESEARCH AND DEVELOPMENT CONCEPT: THE SEVEN MISSION CABLE RESPONSES ATTACHED TO THE REVISED PID INDICATED INTEREST IN THE PROJECT AND CONSIDERABLE CURRENT OR PLANNED MISSION FUNDING OF FORESTRY RESEARCH. SOME HOST COUNTRIES MAY HAVE PROBLEMS WITH EXPATRIATE TECHNICAL SERVICES FOR THIS PURPOSE OR WITH U.S. SPONSORSHIP OF AN ASIA REGIONAL NETWORK.

A MAJOR PART OF PROJECT DEVELOPMENT WILL BE THE IDENTIFICATION OF ASIAN RESOURCES, ESPECIALLY EXISTING NETWORKS, WHICH COULD BE BROUGHT INTO COOPERATION WITH THE PROJECT. THE RECENT IUFRO MEETING IN JULY 1984 ADVANCED CONSIDERABLY OUR UNDERSTANDING OF EXISTING EFFORTS IN EUCALYPTUS, BAMBOO, AND NITROGEN FIXING TREES. SOME COMMITTEE MEMBERS FELT THAT, UNLESS THERE ARE SUBSTANTIAL INPUTS FROM ASIAN COUNTRIES, THEY WILL NOT USE PROJECT RESULTS TO MEET THEIR NEEDS. ALSO, THERE WAS CONCERN THAT ECONOMIES OF SCALE, DISBURSING MECHANISMS OR RESPONSIBILITIES WERE NOT FULLY DEVELOPED FOR INTERFACING AN ASIA BUREAU REGIONAL PROJECT BETWEEN MISSION, BI-LATERAL AND THE S AND T GENERAL SUPPORT PROJECTS.

NONETHELESS, AA/ASIA FELT THAT THE DEVELOPMENT OF THE PROJECT PAPER SHOULD GO FORWARD ALONG WITH THE DEVELOPMENT OF THE S AND T PROJECT PAPER. ASIA PAPER WILL BECOME ASIA COMPONENT OF S AND T PROJECT PAPER. DAA/ST ENDORSED THIS CONCEPT.

FOR THE ASIA BUREAU, ASIA/TR/EFE WILL COORDINATE AND WRITE THE PROJECT PAPER. THIS WILL BEGIN WITH ANALYZING THE RESULTS OF THE RECENT IUFRO MEETING. MATERIAL TO BE POUCHED TO ASIA MISSIONS BY ASIA/TR/EFE;. WE THEN WISH TO IDENTIFY THE EXISTING AND PROPOSED HOST COUNTRY AND DONOR ASSISTED FORESTRY RESEARCH ACTIVITIES AND THEIR IMPLICATIONS FOR THE ROLE THAT AID SHOULD AND CAN PLAY. ASIA/TR NOW HAS IQC CONTRACTOR, INTERNATIONAL SCIENCE AND TECHNOLOGY INSTITUTE, INC., GRAHAM BRISTER AND ALLEN LUNDGREN, CONDUCTING A STUDY ON FORESTRY RESEARCH IN ASIA.

6E. EVALUATION: EVALUATION WAS NOT COVERED IN THE PID BUT WILL BE AN IMPORTANT PART OF THE PROJECT PAPER. AN

EVALUATION PLAN WILL BE DEVELOPED TO INCLUDE BASELINE INFORMATION, BENCHMARKS OF ACCOMPLISHMENTS, AND CRITERIA TO PERMIT DECISIONS ON NEXT STEPS AT CONCLUSION OF FIVE-YEAR PROJECT.

7. DRAFT PROJECT PAPERS ARE SCHEDULED FOR NOVEMBER 1984. WHEN READY, COPIES OF BOTH THE ASIA BUREAU AND THE S AND T PROJECT PAPERS WILL BE SENT TO THE ASIA MISSIONS FOR THEIR COMMENTS TO BE CONSIDERED FOR THE FINAL DOCUMENTS. AID/W WOULD LIKE SECOND QUARTER FY 85 OBLIGATION.

8. THE REVISED PID IS BEING POUCHED TO ASIA MISSIONS TO ASSIST WITH THE DEVELOPMENT OF THE PROJECT. SEPTELS WILL FOLLOW GIVING ADDITIONAL INFORMATION AND TIMING OF

THE DESIGN TEAM. DAM

ANNEX F

Mission Responses

Mission	Network Support	Buy-ins	Interest in TA	Other Emphases
India	yes	$0-$2.0 mil.	yes	Training
Burma	yes	possible	possible	Support for stationing staff at Kasetsart U.
Pakistan	yes	$100-150,000	yes	Evaluation of on-going social forestry projects
Philippines	Questions Initial Focus	no	no	Training and Research Grants
Nepal	yes	$10-100,000	yes	Strong ADC Support; links with British research assistance
Indonesia	Support for ADC	$0-100,000	Limited	Involve Agricultural research institutions
Bangladesh	yes	$300,000	yes	Strong BDG interest in networking
Thailand	Supports working with Kasetsart	possible under EDP#	yes for policy dialogue	Want PSC to be helpful in natural resource policy dialogue
Sri Lanka	(no response)			

ANNEX F

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Department of State

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E.O. 12356: N/A
TAGS:
SUBJECT: FORESTRY/FUELWOOD RESEARCH AND DEVELOPMENT INITIATIVE--DRAFT ASIA-ANE ST PROJECT PAPERS

1. COPIES OF DRAFT PROJECT PAPERS FOR COMPLEMENTARY ASIA AND ST BUREAU EFFORT IN FORESTRY/FUELWOOD RESEARCH AND DEVELOPMENT ARE BEING POUCHED TO MISSION DIRECTORS FOR FORMAL MISSION REVIEW AND COMMENT.

2. WE WOULD APPRECIATE MISSION REVIEW AND CABLE COMMENTS/CONCURRENCE NO LATER THAN DECEMBER 15. REQUEST INTERIM CABLE INDICATING MISSION OFFICER RESPONSIBLE FOR REVIEW. IF NECESSARY [illegible] AND [illegible] CAN TELEPHONE MISSION OFFICER IN EARLY DECEMBER TO ANSWER ANY QUESTIONS ON DRAFT PRIOR TO MISSION FINALIZING CABLE.

3. IN YOUR COMMENTS WE WOULD ESPECIALLY ASK YOU TO INCLUDE THE FOLLOWING.

-- (A) ANY UPDATE OF PREVIOUS MISSION CABLE ON CURRENT OR PLANNED PROJECT ACTIVITIES THAT COULD SUPPORT JOINT PROJECT OBJECTIVES,

-- (B) REVISED MISSION POSITIONS ON ANTICIPATED BUY-INS, PARTICULARLY IN FY 85 BY COMPONENT AND ACTIVITY. A HIGH AND LOW OVERALL PROJECTION ON BUY-INS OVER 5-YEAR PERIOD IS REQUESTED. THIS ESTIMATE IS CRITICAL TO DEVELOPMENT OF LEVEL OF EFFORT CONTRACT THAT WILL HAVE A SUFFICIENT CEILING TO ACCOMMODATE FUTURE MISSION DEMANDS. THE CURRENT ESTIMATED LEVEL IS ONLY DOLS 1.4 MILLION OVER 5 YEARS OR DOLS 280,000 PER YEAR.

-- (C) MISSION COMMENTS ON CONTRACTING APPROACH INVOLVING PSC, COMPETITIVE ASIA FORESTRY RESEARCH CONTRACTOR, COOPERATIVE AGREEMENTS WITH THE AGRICULTURE DEVELOPMENT COUNCIL AND THE NITROGEN FIXING TREE ASSOCIATION. YOUR COMMENTS WOULD BE ESPECIALLY USEFUL.

-- (D) ANY SPECIFIC COMMENTS ON THE RELATIONSHIP

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BETWEEN TA UNDER THIS PROJECT AND TA IN MISSION PROJECTS, INCLUDING COMMENTS ON LEVEL OF TA PRINCIPAL FORESTRY RESEARCH POLICY, PLANNING AND MANAGEMENT COMPONENT

-- (E) RESULT OF MISSION DISCUSSIONS WITH HOST GOVERNMENT/LEAD RESEARCH INSTITUTIONS ON COUNTRY INTEREST IN PARTICIPATING IN NETWORKING ACTIVITIES CLEARANCE MECHANISMS FOR HOST COUNTRY INSTITUTIONAL/SCIENTIST PARTICIPATION IN NETWORK [illegible] RESEARCH PROGRAMS AND OTHER ACTIVITIES (I.E. [illegible] REGIONAL TRAINING, RESEARCH PLANNING, AND INFORMATION EXCHANGE).

-- (F) SPECIFIC COMMENTS ON HOST COUNTRY CLEARANCE PROCEDURES AND DESIRED MISSION ROLE IN TRAVEL CLEARANCE OF AID FIELD COORDINATOR AND TWO NETWORK TECHNICAL ADVISORS.

-- (G) COMMENTS AND APPROPRIATE ELABORATION ON ESTIMATED MAGNITUDE OF CURRENT MISSION OBLIGATIONS FORESTRY RESEARCH AND ON SECTIONS OF ASIA PP THAT DESCRIBE MISSION PROJECTS.

-- (H) SUGGESTIONS ON KEY INSTITUTIONS THAT ARE CANDIDATES FOR INCLUSION IN LAND AND FOREST RESOURCE MANAGEMENT NETWORK ORGANIZATIONAL MEETING.

-- (I) SUGGESTIONS ON WHICH OF 10 PROPOSED, IUFRO SPECIES NETWORKS (SEE PAGES 12, 18A, B, C, D, FOR DEFINITION OF EACH PROPOSED NETWORK AND PARTICIPATING INSTITUTIONS) MAY BE MOST AMENABLE TO MISSION SUPPORT

GIVEN PROPOSED PARTICIPATING INSTITUTIONS AND RESOURCES/PRIORITIES OF CURRENT OR PLANNED MISSION PROJECTS

-- (J) VIEWS ON ADEQUACY OF SOCIAL SCIENCE CONTENT [illegible] DRAFT PP.

4. FOR BANGKOK: REQUEST MISSION TO RECONFIRM ACCEPTABILITY OF STATIONING COORDINATOR AND ADVISORS IN THAILAND AND TO OBTAIN APPROVAL FROM RTG/KASETSART U. KASETSART OFFICIALS HAVE SEEMED READY TO PROVIDE FACILITIES FOR THREE INDIVIDUALS; BUT WOULD APPRECIATE YOUR RECONFIRMING THIS AND ADVISING ON MECHANISM FOR DEFINING THIS RELATIONSHIP (E.G. MOU, GRANT AGREEMENT). DAM

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AID/ST/FNR:J SULLIVAN (DRAFT) AID/ST/RD:E CHETWYN (DRAFT)
AID/ST/FNR:I MORISON (DRAFT) AID/ASIA/BI:R BECKMAN (DRAFT)
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E.O. 12356: N/A
TAGS:
SUBJECT: ASIA/ST FORESTRY RESEARCH AND DEVELOPMENT

REF: (A) 84 STATE 348207 (B) JAKARTA 21291 (C) BANGKOK 1419 (D) 84 ISLAMABAD 23509 (E) DHAKA 0081 (F) MANILA 00940 (G) MANILA 31232 (H) 84 NEW DELHI 13687 (I) NEW DELHI 01982 (J) 84 RANGOON 6361 (K) KATHMANDU 0373

1. NOW THAT WE HAVE RECEIVED COMMENTS FROM MOST ASIA MISSIONS, WE THOUGHT IT WOULD BE USEFUL TO SUMMARIZE FIELD VIEWS AND PROVIDE AID/W'S RESPONSE ON KEY ISSUES.

2. NEED TO STRENGTHEN NATIONAL CAPABILITIES FOR EFFECTIVE NETWORKING:
THIS POINT IS STRESSED BY A NUMBER OF MISSIONS WITH RESPECT TO BOTH POLICY ORIENTATION (E.G. BANGKOK, KATHMANDU AND BANGLADESH) AND INSTITUTIONAL CAPACITIES (E.G. MANILA). THE ASIA PP HIGHLIGHTS THIS LESSON DRAWING ON THE AGRICULTURAL RESEARCH NETWORK

EXPERIENCE. THE JOINT ASIA/ST EFFORT PROPOSES OVER 2 MILLION DOLLARS IN TA AND TRAINING SUPPORT TO ASIA MISSIONS AND COUNTRIES AS A COMPLEMENT TO MISSION PROJECTS AND SPECIFIC NETWORK SUPPORT ACTIVITIES. PER INDIA SUGGESTED EMPHASIS ON TRAINING, COMPONENT ONE HAS FLEXIBILITY TO INCREASE TRAINING ACTIVITY. ANNUAL WORKPLAN PROCESS WILL PROVIDE MISSIONS WITH OPPORTUNITY TO REQUEST SPECIFIC TRAINING PROGRAMS. THE PROJECT ALSO PROVIDES A MECHANISM FOR RAPID FIELDING OF EXPERTISE TO SUPPORT POLICY, PROGRAM PLANNING AND SPECIFIC PROJECT AND INSTITUTIONAL DESIGN AND MANAGEMENT ACTIVITIES. THE NETWORKING ACTIVITIES THEMSELVES COULD ALSO HAVE A STRONG IMPACT ON NATIONAL RESEARCH PLANNING AND IMPLEMENTATION THROUGH PEER REVIEW AND DIRECT INTERACTION WITH EXPERIENCED RESEARCHERS IN THE US AND ELSEWHERE. IN-COUNTRY MEETINGS OF THE NETWORK COULD FACILITATE EXPANDED COMMUNICATION AMONG ORGANIZATIONS WITHIN COUNTRIES. THE ADC NETWORK PROGRAM IS BASED ON A NEED FOR HUMAN RESOURCE DEVELOPMENT IN LAND AND FOREST MANAGEMENT. THE PROPOSED ADC PROGRAM, AS WELL AS THE ACTIVITIES UNDER COMPONENT 1, WILL ALSO RESPOND TO USAID/PAKISTAN'S COMMENT ON THE NEED FOR BETTER EVALUATION OF ON-GOING SOCIAL FORESTRY PROJECTS BY SUPPORTING CASE STUDIES AND COMPARATIVE ANALYSES AND

BUILDING SYSTEMATIZED DATA BASES TO GUIDE RESEARCH POLICY AND PLANNING.

3. LINKS WITH AGRICULTURAL, HORTICULTURAL, ENERGY AND RURAL DEVELOPMENT INSTITUTIONS

THE ASIA PP DISCUSSES ON PAGE 8 THE KEY ISSUE OF COORDINATION AND INTEGRATION BETWEEN FORESTRY AND AGRICULTURAL RESEARCH. PROJECT RESOURCES CAN BE CATALYTIC TO DEFINING AND FORGING THIS RELATIONSHIP. AID/W IS SENSITIVE TO THE NEED TO UTILIZE EXISTING AGRICULTURAL EXTENSION CAPABILITIES WHERE POSSIBLE. IT IS ALSO CLEAR THAT FORESTRY RESEARCH CAPABILITIES NEED TO BE ENHANCED AND REDIRECTED TO BE MORE RELEVANT TO RURAL DEVELOPMENT PROBLEMS. THE NETWORKS PROPOSED BY THE IUFRO MEETING DO NOT INCLUDE AGRICULTURAL RESEARCH ORGANIZATIONS. THIS FACT IS ONE REASON WHY WE HAVE INCLUDED A MAJOR FEASIBILITY REVIEW AS A FIRST STEP IN DEVELOPING THE SPECIES RESEARCH NETWORKS AND REQUESTED MISSION SUGGESTIONS ON INSTITUTIONS TO BE INVOLVED IN ORGANIZATIONAL MEETINGS. THE EXPERIENCE OF ASIA MISSIONS IN SUPPORTING AGRICULTURAL RESEARCH AND EXTENSION WILL BE VALUABLE IN DEFINING HOW A BETTER TWO-WAY INTERACTION CAN BE ESTABLISHED. THE ADC IS INTIMATELY INVOLVED WITH ASIAN

AGRICULTURAL INSTITUTIONS AND ADC'S MERGER WITH WINROCK AND IADS WILL FURTHER STRENGTHEN THEIR CAPABILITIES TO ADDRESS THE ROLE OF TREES IN FARMING SYSTEMS AND IN SOIL AND WATER MANAGEMENT. PER ISLAMABAD QUIRY, THIS NEW ORGANIZATION IS EXPECTED TO BE ELIGIBLE AND INTERESTED IN BIDDING ON CENTRAL SUPPORT CONTRACT. FOR INDONESIA, THE ADC PROGRAM WILL UNDOUBTEDLY WORK WITH KEPAS AND THE AGROECOSYSTEMS WORKING GROUP. KATHMANDU NOTES THE CONTRIBUTION ADC STAFF HAVE MADE IN RAISING POLICY AND COMMON PROPERTY RESOURCE CONCERNS RELATED TO FORESTRY. IT SHOULD BE NOTED, PARTICULARLY IN RESPONSE TO USAID/MANILA, THAT THE ADC PROPOSAL INCLUDED IN THE DRAFT ASIA PP WAS AN UNSOLICITED PROPOSAL. BASED ON FEEDBACK SUCH AS MANILA'S COMMENT ON THE RELEVANCE OF THE COMMON PROPERTY FRAMEWORK, WE WILL ASK THEM TO SUBMIT A FORMAL PROPOSAL THAT MORE DIRECTLY RESPONDS TO AID'S OBJECTIVES.

4. CONCERN ABOUT FUELWOOD EMPHASIS

THIS ISSUE WAS GIVEN CONSIDERABLE ATTENTION AT THE APRIL 1984 MEETING IN BANGKOK AND IT WAS AGREED THAT EMPHASIS OF ASIA ACTIVITIES WOULD BE ON TREES FOR MULTIPLE PURPOSES. AID/W AGREES WITH USAID/BANGKOK THAT PROJECT HAS BROADER IMPORTANCE THAN JUST FUELWOOD. FOR INSTANCE, IT IS ONE VEHICLE THAT CAN BE USED TO DEAL WITH ISSUES OF WATERSHED MANAGEMENT, AS DISCUSSED AT RECENT EAST-WEST CENTER MEETING ATTENDED BY DELGADO, BISSON, GILLESPIE, TAYLOR, AND KNOWLAND.

5. PROJECT FIELD MANAGEMENT APPROACH

MISSION RESPONSES SUPPORTED A FIELD COORDINATION FUNCTION IN THAILAND BUT THE POSSIBLE FEASIBILITY AND DESIRABILITY WERE QUESTIONED BY USAID/BANGKOK AND USAID/MANILA RESPECTIVELY. USAID/MANILA SUGGESTED THAT WE START WITH ONE OR TWO LONG-TERM COORDINATORS INSTEAD OF THE PROPOSED THREE PERSON TEAM. AID/W THINKING BEHIND THE THREE PERSON TEAM WAS AS FOLLOWS: (1) ASIA BUREAU DOES NOT HAVE A REGIONAL OFFICE NOR A DIRECT HIRE REGIONAL FORESTER; (2) AS THE PP INDICATES THERE ARE A LARGE NUMBER OF MISSION PROJECTS THAT HAVE RELEVANCE TO AND COULD BENEFIT FROM THE PROJECT'S ACTIVITIES; (3) AID/W WISHES TO ENSURE CLOSE CONSULTATION WITH ASIA

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210

MISSIONS AND OTHER DONORS IN THIS PROJECT; (4) THE TECHNICAL AND ORGANIZATION TIME AND SKILL INVOLVED IN DEVELOPING THE SPECIFIC ADC AND

SPECIES NETWORKS CALL FOR TWO DISTINCT INDIVIDUALS, ONE WITH SOCIAL SCIENCE OR ECONOMIC BACKGROUND AND THE OTHER WITH A TECHNICAL FORESTRY RESEARCH BACKGROUND. FOR MANILA, THE SPECIES RESEARCH ADVISOR IS A PART OF THE THREE-PERSON TEAM AND WILL BE RESPONSIBLE FOR HELPING ORGANIZE AND PROVIDE TECHNICAL SUPPORT TO THE TREE SPECIES NETWORKS. THE PROPOSED PSC INDIVIDUAL WILL BE THE OVERALL FIELD MANAGER WHO IS RESPONSIVE (A LA WILL KNOWLAND OR DAVE KORTENI TO MISSION INTERESTS AND WILL REVIEW PLANS AND PROGRESS OF THE ADC AND ASIA SUPPORT CONTRACTOR. USAID/BANGKOK IS CHECKING ON THE STATIONING OF A THREE-PERSON TEAM AT KASETSART. ADC HAS AN EXISTING REGIONAL OFFICE IN BANGKOK THAT COULD HOUSE THE ADC FIELD ADVISOR AS AN ALTERNATIVE. ADC HAS HAD A LONG-TERM STAFF IN KASETSART'S AGRICULTURAL ECONOMICS FACULTY FOR SEVERAL YEARS. THIS PERSON IS APPARENTLY LEAVING AND COULD BE REPLACED. AID/W WOULD APPRECIATE ANY FURTHER COMMENTS BY USAID/MANILA IN LIGHT OF ABOVE RATIONALE.

6. APPROPRIATENESS OF IUFRO PROPOSED SPECIES NETWORKS

MISSION RESPONSES INDICATE THAT SPECIES IDENTIFIED BY IUFRO MEETING ARE APPROPRIATE FOR NETWORK EMPHASIS. DHAKA INDICATED SUPPORT FOR EXISTING IDRC-SUPPORTED BAMBOO NETWORK; PAKISTAN CITED DALBERGIA SISSOO, PROSOPIC SPP., ROBINIA PSEUDOACACIA, ALNUS NEPALENSIS, LEUCAENA AND ACACIA SPP. AS AMENABLE TO SUPPORT; PRIORITY SPECIES IN PHILIPPINES WERE IDENTIFIED AS ALBIZIA, LEUCAENA, RATTAN, BAMBOO, ACACIA, CASUARINA AND ALNUS; NEW DELHI MENTIONS EUCALYTUS, ACACIA, ALBIZIA, PROSOPIS AND DALBERGIA SISSOO AS MOST AMENABLE TO SUPPORT. JAKARTA NOTED THAT GLYRICIDIA AND SESBANIA ARE COMMONLY USED SPECIES THAT WERE NOT INCLUDED IN IUFRO'S TOP TEN, THESE WILL BE INCLUDED AS PART OF THE FEASIBILITY STUDY.

7. CAPABILITY OF NFTA TO CONDUCT SPECIES STUDY

MISSION RESPONSES WERE CONFLICTING ON THIS POINT. MOST MISSIONS, ESPECIALLY PHILIPPINES, BANGLADESH AND INDIA, SUPPORTED USING EXISTING NETWORKS AND NFTA ROLE IN STUDY. PAKISTAN FELT NFTA DID NOT HAVE CAPABILITY AND THAT FOREST SERVICE GROUP OR COMPETITIVE CONTRACT SHOULD BE USED FOR THE FEASIBILITY STUDY. FACTORS INVOLVED IN

LOOKING TO NFTA FOR THIS PURPOSE WERE: (1) EXTENSIVE CONTACTS OF BREWBAKER AND COLLEAGUES WITH RESEACHERS THROUGHOUT THE REGION AND EXPERIENCE IN ORGANIZING SPECIES ORIENTED MEETINGS IN ASIA; (2) EXISTING AID MECHANISM TO SUPPORT NIFAL/NFTA; (3) LACK OF ANOTHER GROUP THAT HAS SAME RANGE GENETIC RESEARCH EXPERIENCE ON FAST-GROWING TREES. WE SUGGEST FLEXIBLE APPROACH THAT MAY INVOLVE AUGMENTING NFTA CAPABILITIES BE TAKEN. KEY FACTOR IS HOW QUICKLY CAN WE GET MAIN CONTRACTOR ON BOARD. AS NEW DELHI NOTES, IT MAY BE DESIRABLE TO INCLUDE THIS STUDY AS INITIAL TASK OF MAIN SUPPORT CONTRACTOR.

8. TISSUE CULTURE RESEARCH

ISLAMABAD QUESTIONED INCLUSION OF TISSUE CULTURE RESEARCH. GLOBAL RESEARCH COMPONENT OF PROJECT WILL ASSESS POTENTIAL OF TISSUE CULTURE AND OTHER TECHNOLOGIES FOR ADVANCING DEVELOPMENT OF IMPROVED TREE MATERIAL. TISSUE CULTURE WILL ONLY BE INCLUDED IN NETWORK PROGRAMS WHERE ASSESSMENT PROCESS INDICATES ITS

TECHNICAL AND ECONOMIC FEASIBILITY.

9. ANTICIPATED MISSION BUY-INS

ISLAMABAD AND DHAKA INDICATED GREATEST POTENTIAL FOR BUY-IN BUT INDICATED OVERALL LEVEL FOR ALL ASIA MISSIONS OF ABOUT 500 THOUSAND DOLS. IS BELOW 1.4 MILLION DOLS ESTIMATED IN PP. SINCE THERE IS NO MISSION COMMITMENT INVOLVED IN KEEPING THE 1.4 MILLION FIGURE AND IN ORDER TO MEET UNANTICIPATED FUTURE MISSION REQUESTS WITHOUT RECOMPETING CONTRACT, WE WILL KEEP ESTIMATED BUY-INS AT 1.4 MILLION DOLS.

10. USE OF NO-COST TA BY MISSIONS

INDIA, BANGLADESH, NEPAL AND POSSIBLY PHILIPPINES INDICATED INTEREST IN NO-COST TA UNDER PROJECT THAT PER REF I QUOTE COULD FACILITATE NETWORK PARTICIPATION AND FORESTRY RESEARCH MORE GENERALLY IN THOSE COUNTRIES WHERE THERE IS GROWING RESISTANCE TO USING BILATERAL FUNDS TO FINANCE EXPATRIATE TECHNICAL ADVISOR UNQUOTE. MISSIONS GENERALLY VIEWED PROJECT TA AS APPROPRIATE AND COMPATIBLE WITH MISSION PROJECTS AND SHOWED WILLINGNESS TO TRY TO PROMOTE AS MUCH LINKAGE AS STAFF TIME AND HOST COUNTRIES POSITIONS ALLOWED.

11. SCHEDULE.

WE WELCOME JAKARTA INTEREST IN DETAILS OF PROJECT AND SUGGESTION TO DISCUSS AT AB/RD MEETING IN APRIL. OUR READING OF CABLES IS THAT PROJECT AS REVISED AND CLARIFIED IN THIS CABLE PROVIDES ACCEPTABLE AND FLEXIBLE FRAMEWORK FOR PROCEEDING TO ASIA APAC AND ADMINISTRATOR. WE MUST MOVE NOW TO ACHIEVE PLANNED FY 85 OBLIGATION. THERE IS SERIOUS COST TO FURTHER DELAY. WE SUGGEST THAT AB/RD MEETING BE USED TO DISCUSS ELEMENTS OF DETAILED WORK PLAN FOR FIRST YEAR IF APPROVALS OF AA/ASIA AND ADMINISTRATOR ARE OBTAINED. WE WILL FURTHER CONSIDER THIS PROPOSED TIMING FOR WORK PLAN REVIEW BASED ON RESULTS OF ICHORD/MORISON DISCUSSIONS IN BANGKOK IN FEBRUARY CONCERNING FIELD TEAM APPROACH. WE WILL CIRCULATE THE APPROVED PP AS SOON AS IT IS READY. MEANWHILE, PLEASE ADVISE IF FURTHER CLARIFICATION ON THESE OR OTHER POINTS IS NEEDED.

12. WE FEEL THAT CONSIDERABLE PROGRESS HAS BEEN MADE SINCE OUR BANGKOK MEETING AND THAT A GOOD BASIS EXISTS TO LAUNCH THIS INITIATIVE. APPRECIATE THE CONTRIBUTIONS MISSIONS HAVE MADE TO THIS EFFORT AND LOOK FORWARD TO WORKING WITH INTERESTED MISSIONS AS THIS INITIATIVE PROGRESSES. SHULTZ

211

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PAGE 01 OF 02 NEW DE 01982 00 OF 02 2416212 7686 054161 AID7567
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E.O. 12356: N/A
SUBJECT: FORESTRY/FUELWOOD RESEARCH AND DEVELOPMENT INITIATIVE - DRAFT ASIA AND S&T PROJECT PAPERS

REF: (A) 84 STATE 346027 (B) 84 NEW DELHI 13697

1. FOLLOWING LAST MONTH'S ELECTION, PRIME MINISTER RAJIV GANDHI HAS REORGANIZED HIS GOVERNMENT, SEPARATING FORESTRY FROM THE MINISTRY OF AGRICULTURE AND PLACING IT IN A NEWLY CREATED MINISTRY OF ENVIRONMENT AND FORESTS. THE IMPACT OF THIS ACTION ON USAID FORESTRY PROJECTS IS UNKNOWN AT THIS TIME BUT IT IS VIEWED BY THE MISSION AS A POTENTIALLY POSITIVE ACTION. SINCE THE ORGANIZATION, STRUCTURE AND POLICIES OF THE NEW MINISTRY HAVE NOT BEEN ARTICULATED, IT IS DIFFICULT TO ASSESS HOW IT MIGHT INFLUENCE THE IMPLEMENTATION OF THE SUBJECT INITIATIVES.

2. THE NEW GOVERNMENT IS VERBALLY PLACING GREATER EMPHASIS ON TECHNOLOGY AND ITS ROLE IN THE DEVELOPMENT OF INDIA AND HER PROGRAMS. THE MISSION BELIEVES THE WAY INDIA MANAGES THE USE OF FOREIGN DONOR TECHNICAL ASSISTANCE MAY CHANGE SUBSTANTIALLY. HOW ANY SUCH CHANGE WILL AFFECT THE IMPLEMENTATION OF THE SUBJECT INITIATIVES IS UNCLEAR.

3. WITH THIS RECORDED THE MISSION'S RESPONSES TO [redacted] QUESTIONS POSED IN REFTEL A FOLLOW:

- A. PARA 3A: IN ADDITION TO THE MISSION PROJECTS CITED IN REFTEL B, A PID REGARDING AID PARTICIPATION IN A JOINT IBRD/AID ASSISTED NATIONAL SOCIAL FORESTRY PROJECT (386-0495) IS CURRENTLY BEING PREPARED WITH INITIAL PROJECT OBLIGATION PROPOSED FOR FY 85. THIS PROJECT WILL CONTAIN A MODEST RESEARCH COMPONENT WHICH MAY ENCOMPASS MULTIPURPOSE TREE SPECIES.

- B. PARA 3B: THE SITUATION PRESENTED IN REFTEL (B) PARA 4D RELATIVE TO THIS POINT HAS NOT CHANGED. IT IS POSSIBLE THE FACTORS MENTIONED IN PARA 2 ABOVE WILL ALTER THIS POSITION. LOW AND HIGH ESTIMATES OF POTENTIAL USAID/INDIA BUY-INS THEREFORE RANGE FROM ZERO TO SAY, U.S. DOLLARS 2,000,000 DEPENDING ON WHETHER OR NOT THERE ARE ANY CHANGES IN GOI POLICY REGARDING THE USE OF BILATERAL FUNDS FOR FINANCING EXPATRIATE TECHNICAL ASSISTANCE.

- C. PARA 3C: THE JUSTIFICATION BEHIND FOUR SEPARATE CONTRACTS IS NOT CLEAR. ONE CONTRACT WOULD BE EASIER TO MANAGE. IT WOULD PLACE FEWER ADMINISTRATIVE DEMANDS ON AID/W STAFF, COULD INSURE BETTER COORDINATION OF NETWORK ACTIVITIES AND WOULD NOT APPEAR TO SIGNIFICANTLY ALTER THE PROJECT IMPLEMENTATION SCHEDULE. SINCE THE CRITERIA

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FOR SELECTION OF A SPECIES NETWORK ARE MORE POLITICAL, ADMINISTRATIVE AND MANAGERIAL THAN BIOLOGICAL (CGIAR KEY INGREDIENTS) AND THE SPECIES NETWORKS WILL BE PHASED IN OVER THE LIFE OF THE PROJECT, THE NEED FOR A SEPARATE 2-YEAR COOPERATIVE AGREEMENT WITH NFTA MAY BE LESS DESIRABLE THAN TREATING THAT COMPONENT AS A SPECIFIC TASK OF THE ASIA FORESTRY RESEARCH SUPPORT CONTRACT.

- D. PARA 3D: AS MENTIONED IN REFTEL (B) PARA 4D, TO THE DEGREE THE SUBJECT INITIATIVE PROVIDES CRITICALLY NEEDED TECHNICAL ASSISTANCE ON AN IN-KIND BASIS FOR THE FORESTRY SECTOR, IT COULD SIGNIFICANTLY COMPLEMENT THE MISSIONS PROJECTS AND, OVERTIME, SERVE AS A POINT OF ENTRY FOR NETWORK ACTIVITIES. THE MISSION WOULD PREFER TO SEE MORE EMPHASIS AND RESOURCES PLACED IN THE TRAINING COMPONENT RELATIVE TO THE TECHNICAL ASSISTANCE COMPONENT. WE PERCEIVE A GREATER OPPORTUNITY FOR INDIAN PERSONNEL TO PARTICIPATE IN REGIONAL TRAINING PROGRAMS AND, THEREFORE, WOULD LIKE TO SEE THIS COMPONENT EMPHASIZED.

- E. PARA 3E: THE SITUATION PRESENTED IN REFTEL (B) PARA 4F RELATIVE TO THIS POINT HAS NOT CHANGED. WE DO NOT BELIEVE THE FACTORS MENTIONED IN PARA 2 ABOVE WILL ALTER THIS POSITION IN ANY SIGNIFICANT WAY.
- F. PARA 3F: GOI PROCEDURES REQUIRE THAT THE MISSION OBTAIN CLEARANCE FOR ALL USAID FUNDED CONTRACTORS AND THAT ALL FOREIGN FUNDS ENTERING INDIA THROUGH GOVERNMENTS, INDUSTRIES, FOUNDATIONS OR INDIVIDUALS, WHETHER BILATERAL, ADDITIONAL OR IN-KIND, BE REGISTERED WITH AND PROCESSED THROUGH THE GOI'S DEPARTMENT OF ECONOMIC AFFAIRS. IT IS HIGHLY UNLIKELY THE GOI WILL MAKE ANY EXCEPTION FOR THIS PROJECT'S CONTRACTORS OVER THE FORESEEABLE FUTURE. THE MISSION WILL BE RESPONSIBLE FOR OBTAINING NECESSARY GOI CLEARANCES FOR PROJECT PERSONNEL AND ASSISTING WITH IN-COUNTRY TRAVEL NEEDS, APPOINTMENTS AND ACCOMODATIONS. ALL PROJECT COMMUNICATIONS SHOULD, AT LEAST INITIALLY, PASS THROUGH THE MISSION. TO THE EXTENT THIS CONSTITUTES A SIGNIFICANT DRAW ON OUR LIMITED PERSONNEL RESOURCES, THE BENEFITS OF THE CONTRACTORS VISITS AND COMMUNICATIONS WILL NEED TO BE CAREFULLY WEIGHED AGAINST THEIR COSTS.

- G. PARA 3G: TABLE V-L7 SHOULD BE UPDATED AS FOLLOWS:

386-0475	M.P.S.F.	300	200
386-0476	M.S.F	1,000	0
386-0474	ALT. ENERGY RES.	1,695	630
386-0485	FRET	5,000 E	5,000 E
386-0495	NSF	.200 E	.300 E

E- ESTIMATE

THE FIRST THREE PROJECTS ARE APPROXIMATELY AT THE MID TERM POINT. R&D FUNDS ARE PROGRAMMED AND OBLIGATED FOR PROJECT TASKS. OPPORTUNITIES TO REPROGRAM THESE FUNDS ARE LIMITED. FRET AND NATIONAL SOCIAL FORESTRY PROJECTS ARE CURRENTLY UNDER DESIGN. THE OPPORTUNITY TO BUILD IN THE SUBJECT INITIATIVE EXISTS BUT IS CONSTRAINED BY THE GOI AS MENTIONED ABOVE AND IN REFTEL (B). THE MISSION IS SUPPORTIVE OF THE SUBJECT INITIATIVE AND WILL STRIVE TO INCLUDE IT AS A COMPONENT OF THESE PROJECTS.

- H. PARA 3H: REFTEL (B) PARA 4E IS STILL APPROPRIATE. LIKELY INSTITUTIONS THAT THE GOI MIGHT IDENTIFY INCLUDE FOREST RESEARCH INSTITUTE AND COLLEGE, DEHRA DUN, U.P.; NATIONAL BOTANICAL RESEARCH INSTITUTE, LUCKNOW, U.P.; CENTRAL ARID ZONE RESEARCH INSTITUTE, JODHPUR, RAJASTHAN; AND INDIAN GRASSLAND AND FODDER RESEARCH INSTITUTE, JHANSI, U.P.
- I. PARA 3I: MULTIPURPOSE SPECIES NETWORKS ON

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212

PAGE 02 OF 02 NEW DE 01982 08 OF 02 2416212 7696 054161 A107587
EUCALYPTUS, ACACIA, ALBIZIA, PROSOPIS AND DALBERGIA SISSOO ARE MOST AMENABLE TO SUPPORT BY THE MISSION. ALTHOUGH EUCALYPTUS HAS FEWER MULTIPURPOSES, ITS UNIVERSAL USE THROUGHOUT THE REGION AND THE WEALTH OF EXISTING STUDY AND INFORMATION WOULD PROVIDE A FOUNDATION THAT COULD ALLOW NETWORK PAYOFFS TO BE QUICKLY DEMONSTRATED AND SMOOTH THE ROAD FOR FURTHER NETWORK EXPANSION.

- J. PARA 33: SOCIAL SCIENCE CONTENT AND LEVEL IS ACCEPTABLE.

4. MISSION APPRECIATES CONSIDERATION GIVEN TO INDIA'S PARTICULAR PROBLEMS AND REFLECTED IN THE "SPECIAL CASE" STATEMENT IN PAGE 23 OF THE ASIA PP. HOWEVER, PROCEDURES GOVERNING THE USE OF THE MISSION'S LONG SOUGHT "IN-KIND MECHANISM" FOR FACILITATING U.S. TECHNICAL ASSISTANCE TO INDIA ARE STILL BEING DEVELOPED AND IT IS NOT POSSIBLE TO PROVIDE SUBSTANTIVE COMMENTS AT THIS TIME.

5. WE MUST NOTE THAT THE ROLE ENVISIONED FOR EACH MISSION'S PROJECT LIAISON OFFICER (PAGE 21, ASIA PP) CONSTITUTES A FAIRLY HEALTHY DRAW ON LIMITED MISSION RESOURCES.

6. PROPOSED PROJECT EVALUATION PROCEDURES STRESS THE NUMBERS OF NEW NETWORKS ESTABLISHED AND THE NUMBER OF NEWLY ESTABLISHED NETWORK ACTIVITIES. EMPHASIS SHOULD BE PLACED ON THE EFFECTIVENESS OF THE NETWORK(S) AND THE NETWORK(S) SHOULD BE ENCOURAGED TO CAPITALIZE ON THE EXISTING FIELD RESEARCH ESTABLISHED UNDER GOVERNMENT AND DONOR PROJECTS DURING THE PAST DECADE OR MORE THAT HAS YET TO BE ANALYZED, INTERPRETED AND INCORPORATED INTO OPERATIONAL PROGRAMS. STREEB

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E.O. 12356: N/A
SUBJECT: FORESTRY/FUELWOOD RESEARCH AND DEVELOPMENT INITIATIVE--
DRAFT ASIA AND ST PROJECT PAPERS

REF: STATE 346027

1. REGRET LATE RESPONSE BUT SUBJECT PAPERS ONLY RECEIVED IN JANUARY.

2. CURRENT ESTIMATED MISSION BUY-IN FROM 388-0052 ON-FARM FORESTRY RESEARCH PROJECT IS $300,000 FROM PROJECT FUNDS. NO BUY-IN FROM 388-0051 AGRICULTURAL RESEARCH II IS ANTICIPATED.

3. THE THREE PROPOSED CONTRACTING APPROACHES, NAMELY, (1) PSC FOR ASIA FIELD COORDINATOR, (2) CONTRACT FOR OVERALL TECHNICAL SUPPORT TO MISSIONS AND REGIONAL RESEARCH NETWORKING, AND (3) COOPERATIVE AGREEMENTS WITH ADC AND NFTA APPEAR APPROPRIATE IN VIEW OF THE ACTIVITIES ENVISIONED.

4. SUBJECT PROJECTS' TA TOTALS 466 PERSON MONTHS OR NEARLY 39 PERSON YEARS WITH THE FOLLOWING BREAKDOWN:

RESEARCH SERVICES CONTRACTOR	304 PERSON MONTHS
ADC	38
NFTA	12
PSC	60

APPROXIMATELY TWENTY FOUR PERCENT OF ABOVE IS TARGETED FOR RESEARCH POLICY, PLANNING, AND MANAGEMENT. THIS LEVEL OF EFFORT APPEARS APPROPRIATE GIVEN CURRENT LOW LEVEL OF FORESTRY RESEARCH POLICY FORMULATION CAPABILITY IN MOST ASIAN NATIONS.

5. MISSION'S ON FARM-FORESTRY RESEARCH PROJECT WILL PROVIDE APPROXIMATELY 400 PERSON MONTHS OF TA WITH FOLLOWING BREAKDOWN:

AGROFORESTERS (AF)	120 PERSON MONTHS
FARMING SYSTEMS RESEARCH/EXTENSION	60
AF EDUCATIONIST	60
AF TRAINER	60
SHORT-TERM TA (AUDIO - VISUAL, COMPUTER RESEARCH)	100

6. TA RELATIONSHIPS REFLECTED IN PARAS 4 AND 5 ABOVE INDICATE COMPLEMENTARILY ESPECIALLY IN VIEW OF SUBJECT PROJECTS' PROVISION OF NETWORKING SUPPORT.

7. MISSION DISCUSSIONS WITH BDG HAVE INDICATED A HIGH LEVEL OF INTEREST IN PARTICIPATION IN NETWORKING

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ACTIVITIES BUT AN ANTICIPATION OF [illegible] PROBLEMS IN BDG CLEARANCE PROCEDURES IN [illegible] OF RECENTLY IMPOSED STRINGENT REQUIREMENTS AND DISINCENTIVES RELATED TO SHORT-TERM TRIPS ABROAD. IN THE CASE OF BANGLADESH, A SOLUTION MAY LIE IN HOLDING REGIONAL NETWORK MEETINGS IN BANGLADESH.

8. BDG CLEARANCE PROCEDURE; FOR SPECIALISTS CAN TAKE AS LONG AS ONE TO THREE MONTHS, THEREFORE, SUGGEST THAT AID/W ADVISE USAID/BANGLADESH OF AID FIELD COORDINATOR AND NETWORK TECHNICAL ADVISORS' VISITS AND MISSION CLEARANCE WILL SUFFICE.

9. BANGLADESH'S DESIGNATION AS LEADER OF THE BAMBOO NETWORK SPECIES IS APPROPRIATE AND HAS BEEN AGREED UPON BY BDG; IT IS AMENABLE TO MISSION SUPPORT.
IN ADDITION, ALL NETWORK ACTIVITIES LEND THEMSELVES TO MISSION SUPPORT.

10. MISSION'S FORESTRY RESEARCH PLANNED ACTIVITIES ARE ACCURATELY DESCRIBED IN SUBJECT PAPERS.

11. THE MINISTRY OF AGRICULTURE, THE BANGLADESH AGRICULTURAL RESEARCH COUNCIL, THE BANGLADESH AGRICULTURAL UNIVERSITY, AND THE BANGLADESH FORESTRY RESEARCH INSTITUTE ARE KEY ENTITIES THAT SHOULD BE INCLUDED IN THE LAND AND FOREST RESOUCE MANAGEMENT NETWORK ORGANIZATIONAL MEETINGS.

12. THE SOCIAL SCIENCE CONTENT OF SUBJECT PROJECTS APPEARS LOW GIVEN THE RELATIVE IMPORTANCE OF SOCIALLY RESPONSIVE PROJECT ELEMENTS TO ENSURE SUCCESSFUL IMPLEMENTATION.

13. DESPITE LATENESS OF THIS RESPONSE HOPE ABOVE PROVES USEFUL IN AID/W FINALIZATION OF SUBJECT PROJECTS.
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Department of State

INCOMING TELEGRAM

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INFO AMEMBASSY JAKARTA
AMEMBASSY MANILA
AMEMBASSY RANGOON

UNCLAS BANGKOK 01419

AIDAC

E.O. 12356: N/A
SUBJECT: RESPONSE TO DRAFT FORESTRY PP

REF: 84 STATE 346827

MISSION APOLOGIZES FOR DELAYED RESPONSE. THE FOLLOWING COMMENTS ARE KEYED TO ALPHABETIZED REQUESTS IN STATE 346827.

(A) NO CHANGE

(B) MISSION CANNOT YET TAKE A POSITION ON BUY-IN: MECHANISM FOR BUY-IN EXIST IN EPD II PROJECT. SHOULD OPPORTUNITY TO INFLUENCE RTG POLICY ARISE, BUY-IN WOULD BE POSSIBLE. SUGGEST PROJECT RETAIN SUFFICIENT FLEXIBILITY TO ALLOW BUY-IN AFTER IMPLEMENTATION BEGINS.

(C) MISSION HAS NO STRONG FEELINGS ABOUT APPROACHES SUGGESTED IN DRAFT PP.

(D) USAID/THAILAND HAS SMALL FORESTRY/FUELWOOD COMPONENTS IN TWO OR THREE ON-GOING PROJECTS BUT NO TA IN PROJECTS THAT WOULD WORK CLOSELY WITH TA PROPOSED IN SUBJECT PROJECT. PLEASE SEE GENERAL COMMENTS BELOW ON TA PROPOSED IN PROJECT PAPER.

(E) DR. SUREE BHUMIBHAMON, KASETSART UNIVERSITY INDICATES LACK OF FUNDS, STAFF, AND FACILITIES FOR INVOLVEMENT. INTEREST EXISTS IN FORESTRY INFORMATION. FUELWOOD HAS LITTLE PRIORITY. IT WOULD HAVE BEEN USEFUL TO MISSION TO HAVE RECEIVED A TRIP REPORT ON DISCUSSIONS HELD WITH RTG OFFICIALS REGARDING SUBJECT PROJECTS. WE ARE NOT SURE WHO THE TEAM SPOKE WITH OTHER THAN DR. SUREE.

(F) MISSION HAS MINIMAL TIME AND PERSONNEL RESOURCES TO ASSIST IN OBTAINING HOST COUNTRY CLEARANCES AND CAN PLAY VIRTUALLY NO SUPPORT ROLE FOR PERSONNEL STATIONED FOR LONG TERM. FIELD COORDINATOR AND TECHNICAL ADVISORS MUST WORK OUT CLEARANCE PROBLEMS WITH DTEC AND POSSIBLY OTHER RTG AGENCIES. THIS ASSUMES KASETSART UNIVERSITY WILL BE THE COUNTRY HOST WHICH STILL NEEDS TO BE DETERMINED. USAID MUST BE NOTIFIED OF ALL OFFICIAL TRAVELLERS COMING TO THAILAND AND THEIR PURPOSE.

(G) USAID/THAILAND HAS NO PROJECT WITH A FORESTRY RESEARCH COMPONENT.

(H) KASETSART UNIVERSITY AND ROYAL FORESTRY DEPARTMENT.

(I) SEE GENERAL BELOW. MISSION HAS NO STAFF MEMBER WITH FORESTRY BACKGROUND OR EXPERIENCE.

(J) SOCIAL SCIENCE CONTENT APPEARS AT [illegible] ADEQUATE. [illegible] SHOULD BE NOTED THAT IMPLEMENTATION [illegible] CARRIED OUT IN THE POLITICAL ENVIRONMENT WHICH FREQUENTLY DOES NOT MESH WITH SOCIAL IDEALS.

GENERAL COMMENTS ON DRAFT PP

1. MISSION HAS INQUIRED ABOUT CONTINUING ACCEPTABILITY OF STATIONING PERSONNEL AT KASETSART. DR. SUREE STATES THAT WHILE KASETSART ATTITUDE REMAINS POSITIVE, OFFICIAL APPROVAL MUST AWAIT FACULTY COUNCIL APPROVAL. THE MATTER WILL BE DISCUSSED AT THE JANUARY MEETING OF THE FACULTY COUNCIL. MISSION CONCERNED WITH NUMBER OF PERSONNEL PROPOSED TO BE STATIONED IN THAILAND. WE WERE LED TO BELIEVE ONE PERSON WOULD BE STATIONED IN THAILAND TO COORDINATE ACTIVITIES. FINAL APPROVAL REGARDING NUMBER OF PERSONNEL WILL REQUIRE EMBASSY APPROVAL.

2. USAID/THAILAND POSITION AND THAT OF RELEVANT RTG AGENCIES AND EDUCATIONAL INSTITUTIONS IS ESSENTIALLY UNCHANGED FROM THAT STATED IN JUNE, 1984. THAILAND'S POSITION IS SOMEWHAT DIFFERENT THAN THAT OF SEVERAL OTHERS IN THE BUREAU. THE HEAVY EMPHASIS ON FUELWOOD IS AN EXAMPLE. A MAJOR FUELWOOD EFFORT IN THAILAND AT THIS TIME IS NOT CONSIDERED PRIORITY.

3. MISSION BELIEVES GOVERNMENT AGENCIES SHOULD SUBSIDIZE TREE PLANTING STOCK IF IT IS IN DEMAND BY INDIVIDUAL FARMERS OR OTHERS, AND OFFER TECHNICAL ASSISTANCE (ADVICE) ON TREE PLANTING. HOWEVER THE PRIMARY FOCUS FOR THAILAND SHOULD BE ON FOREST POLICY AND TIMBER MANAGEMENT INCLUDING SILVICULTURAL RESEARCH AND SILVICS.

4. THAILAND HAS NO REAL FORESTRY AND LAND USE POLICY AND NO TRADITION FOR FOREST MANAGEMENT. SUCH MANAGEMENT SHOULD BE IN PLACE BEFORE PLANTING CAN BE SUCCESSFUL. BASIC AND APPLIED RESEARCH WOULD BE USEFUL. CURRENTLY ROYAL FORESTRY DEPARTMENT ROLE IS TO PROTECT, NOT MANAGE. POLICY IS FOR PRIVATE SECTOR TO REFOREST BUT NO INCENTIVES TO DO SO ARE OFFERED.

5. IT IS NOT CONSIDERED USEFUL TO SPEND HEAVILY ON FORESTRY PROJECTS IN THAILAND UNTIL:

- A. THE RTG SETTLES ON A VIABLE POLICY;

- B. THE RFD REORGANIZES SO THAT THE FORESTS CAN BE MANAGED; AND,

- C. THE RFD PLACES PROFESSIONAL FORESTERS OUT IN THE PROVINCES WITH SUFFICIENT AUTHORITY AND IN SUFFICIENT NUMBERS SO THAT THE FORESTS CAN BE MANAGED.

6. EMPHASIS ON INCREASING THE GROWTH OF WOOD GENERALLY WILL, IN EFFECT, PROVIDE MORE FUELWOOD BUT ALSO WILL PROVIDE HIGHEST QUALITY WOOD WHICH WILL PROVIDE EMPLOYMENT AND INCOME TO POOR PEOPLE. THIS IS CONSIDERED MORE IMPORTANT THAN JUST A FUELWOOD PROGRAM. DEAN

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CLASS: UNCLASSIFIED
CHRGE: AID 02/08/85
APPRV: A/D:LTVENTIMAN
DRFTD: PRO:EJPLOCH:VS
CLEAR: 1. AGR:JFOTI
2. RFA:WSNOWLAND
3. PRO:TEJOHNSON
4. JHEAVE
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E.O. 12356: N/A
SUBJECT: NATURAL RESOURCES MANAGEMENT/ENVIRONMENT - THAILAND

SUMMARY: THE USAID/THAILAND FY 1987 CDSS IDENTIFIES NATURAL RESOURCE MANAGEMENT AND THE ENVIRONMENT AS AREAS NEEDING GREATER PRIORITY ATTENTION BY THE RTG. THE CDSS ALSO STATES WHILE THERE IS LITTLE INDICATION AT PRESENT THAT CONCERTED ACTION WILL BE TAKEN IN THE NEAR TERM, THE MISSION WILL NONETHELESS OPEN A POLICY DIALOGUE WITH THE RTG ON THIS SUBJECT. MISSION PLANNING, AND AN OUTLINE OF CURRENT NATURAL RESOURCES/ENVIRONMENTAL INITIATIVES, ARE REPORTED BELOW. PART 1 DESCRIBES WHERE WE ARE. PART 2 DISCUSSES WHAT IS CURRENTLY PLANNED, AND PART 3 EXPLAINS HOW WE EXPECT TO FOCUS OUR EFFORTS. END SUMMARY.

PART 1. USAID AND CENTRALLY FUNDED SUPPORT OF NATURAL RESOURCES/ENVIRONMENTAL INITIATIVES, 1983-84:

A. PROJECT: PEST MANAGEMENT AND RELATED ENVIRONMENTAL PROTECTION (NO. 0930)

- FUNDING: DOLS 10,000

- DATE: OCTOBER 1-15, 1983

- DESCRIPTION: CONSULTANT WAS PROVIDED UNDER CENTRAL FUNDING TO PREPARE AN ENVIRONMENTAL ASSESSMENT AND PESTICIDE USE PLAN FOR THE MISSION'S NORTHEAST RAINFED AGRICULTURAL DEVELOPMENT PROJECT.

- COUNTERPART AGENCY: NORTHEAST OFFICE OF AGRICULTURE AND COOPERATIVES

B. PROJECT: DRYLAND MANAGEMENT (NO. 4125)

- FUNDING: DOLS 13,500

- DATE: NOVEMBER 1984

- DESCRIPTION: THE DRYLAND MANAGEMENT PROJECT JOINTLY FINANCED WITH THE RTG A SEMINAR ON SOIL EROSION. THE SERVICES OF TWO USDA SPECIALISTS WERE PROVIDED.

- COUNTERPART AGENCIES: KASETSART UNIVERSITY, NORTHEAST REGIONAL OFFICE OF AGRICULTURE AND COOPERATIVES.

C. PROJECT: EMERGING PROBLEMS OF DEVELOPMENT I (493-0309)

- DATES: 1983-84

- NATURE OF ASSISTANCE, AND FUNDING:

(1)	PREPARATION OF AIR QUALITY MANAGEMENT PLAN	DOLS 29,000
(2)	TOXICOLOGY ADVISORS (9 P/M)	55,000
(3)	WATER QUALITY MANAGEMENT ADVISOR (4 P/M)	18,000
(4)	PREPARATION OF EASTERN SEABOARD ZONE ENVIRONMENTAL PLAN (26 P/M) COMPONENTS: - ENVIRONMENTAL IMPACT STATEMENT - AIR QUALITY MANAGEMENT - WATER QUALITY MANAGEMENT - SOLID WASTE MANAGEMENT - COASTAL ZONE RESOURCES MANAGEMENT	127,500
(5)	TRAINING	39,000
(A)	CONTROL OF TOXIC SUBSTANCES (11 P/M)	24,000
(B)	COASTAL ZONE ENVIRONMENTAL MANAGEMENT (6 P/M)	15,000
	TOTAL	DOLS 278,530

- COUNTERPART AGENCIES: NATIONAL ECONOMIC AND SOCIAL DEVELOPMENT BOARD, DEPARTMENT OF TECHNICAL AND ECONOMIC COOPERATION, AND NATIONAL ENVIRONMENT BOARD

PART 2. FUTURE PLANNED ASSISTANCE:

216

PROJECT: CRYLAND MANAGEMENT PROJECT (NO. 4125)

FUNDING: DOLS 26,500

DATE: FEBRUARY 1985

DESCRIPTION: THE PROJECT WILL FINANCE A WORKSHOP ON SOIL, WATER, AND CROP MANAGEMENT SYSTEMS FOR RAINFED AGRICULTURE SYSTEMS IN NORTHEAST THAILAND.

COUNTERPART AGENCY: NORTHEAST REGIONAL OFFICE OF AGRICULTURE AND COOPERATIVES

B. PROJECT: HEALTH CONSEQUENCES OF RURAL INDUSTRIALIZATION AND URBAN DEVELOPMENT

FUNDING: DOLS 50,000

DATE: MARCH 1985

DESCRIPTION: RESEARCH TO INVESTIGATE HEALTH EFFECTS OF INCREASING MODERNIZATION OF THAILAND'S ECONOMY. SPECIAL FOCUS OF THE STUDY WILL BE ON OCCUPATIONAL AND ENVIRONMENTAL HEALTH. RESULTS OF ANALYSIS COULD HAVE IMPORTANT POLICY IMPLICATIONS CONCERNING THE RISKS (AND POTENTIAL COSTS IN HEALTH CARE, OCCUPATIONAL SAFETY AND ENVIRONMENTAL PRESERVATION) OF ACCELERATED RURAL INDUSTRIALIZATION AND URBAN DEVELOPMENT.

RTG COUNTERPART AGENCY: MINISTRY OF PUBLIC HEALTH

C. PROJECT: EMERGING PROBLEMS OF DEVELOPMENT II (493-0341)

FUNDING: USAID AND THE RTG HAVE INITIALLY EARMARKED TWO MILLION DOLLARS UNDER THE (NOV FY 85) EPD II PROJECT FOR NATURAL RESOURCES MANAGEMENT AND ENVIRONMENTAL INITIATIVES. THIS COMPONENT OF THE PROJECT WILL ASSIST THE RTG WITH:

(1) PROBLEM ASSESSMENT: IDENTIFYING AND ASSESSING KEY NATURAL RESOURCE MANAGEMENT PROBLEM AREAS AND DEVELOPING STRATEGIES FOR ADDRESSING THEM. SOLUTIONS MAY ULTIMATELY REQUIRE INSTITUTIONAL OR MANPOWER DEVELOPMENT COMPONENTS, TECHNICAL ASSISTANCE AND TRANSFER OF TECHNOLOGY, FORMULATION OF NEW POLICIES, AND RESEARCH. BECAUSE THESE PROBLEMS TYPICALLY ARE COMPLEX AND LONG-TERM IN NATURE, DEVELOPMENT OF STRATEGIC FRAMEWORK FOR UNDERSTANDING AND ADDRESSING THEM WILL BE AN IMPORTANT GOAL OF THE EPD II PROJECT.

(2) MANAGEMENT INNOVATIONS: IMPLEMENTATION OF RELEVANT STUDIES, TECHNICAL ASSISTANCE, TRAINING, AND PILOT PROGRAMS IN NATURAL RESOURCES MANAGEMENT WILL FOLLOW THE PROBLEM

ASSESSMENT PHASE. WHILE SOME ACTIVITIES WILL BE ABLE TO SOLVE A PARTICULAR PROBLEM OR ISSUE, THEY ARE EXPECTED PRIMARILY TO ESTABLISH A BASIS FOR MAJOR PROGRAMS.

DURING THE FIRST YEAR OF THE EPD II PROJECT, USAID WILL DRAW UPON THE SERVICES OF THE AID REGIONAL ENVIRONMENTAL ADVISOR AND COLLABORATE WITH THE RTG IN DEVELOPING A SERIES OF SPECIFIC PROPOSALS FOR FUNDING. THE MODEST RESOURCES OF THE PROJECT WILL, WHENEVER POSSIBLE, BE USED ALSO TO LEVERAGE SUPPORT FROM OTHER DONOR ASSISTANCE PROGRAMS.

THE FOLLOWING TOPIC AREAS WILL BE ELIGIBLE FOR CONSIDERATION:

- SOIL AND WATER CONSERVATION
- WATERSHED MANAGEMENT
- COASTAL RESOURCES MANAGEMENT
- WATER RESOURCE PLANNING
- URBAN ENERGY AND RESOURCE MANAGEMENT
- INDUSTRIAL POLLUTION AND TOXIC WASTES MANAGEMENT
- ENVIRONMENTAL ASSESSMENT AND PLANNING
- ENVIRONMENTAL POLICY
- RESEARCH MANAGEMENT

SEVERAL SPECIFIC ACTIVITIES ARE PROPOSED FOR IMMEDIATE FUNDING UNDER THE PROJECT:

(A) ENVIRONMENTAL PROFILE:

IN COORDINATION WITH THE ASIA REGIONAL ENVIRONMENTAL ADVISOR (REA), JAKARTA, A NATIONWIDE NATURAL RESOURCES PROFILE FOR THAILAND WILL BE CONSTRUCTED SIMILAR TO, BUT NOT CONSTRAINED BY, THE PHASE II ENVIRONMENTAL PROFILES CARRIED OUT UNDER AID SPONSORSHIP IN SEVERAL OTHER COUNTRIES. INCLUDED WILL BE STUDY OF NATIONAL RESOURCE TRENDS BEYOND THE YEAR 2000. THE PROFILE WILL BE DONE BY THAI ANALYSTS (EITHER UNDER THE AUSPICES OF THE THAI DEVELOPMENT RESEARCH INSTITUTE OR AN INFORMED GROUP OF TOP REPRESENTATIVES FROM SEVERAL UNIVERSITIES OR AGENCIES) WITH ON-GOING INVOLVEMENT OF THE REA.

(B) TRAINING OF TRAINERS FOR COASTAL RESOURCES MANAGEMENT.

A FOLLOW-ON SESSION FOR THAI PARTICIPANTS IN THE TRAINING OF TRAINERS FOR COASTAL RESOURCES MANAGEMENT WORKSHOP TO BE HELD AT MAHIDOL UNIVERSITY UNDER AID/W SPONSORSHIP IN MARCH, 1985, TO DEVELOP APPROPRIATE TRAINING AND DISSEMINATION MATERIALS OVER THE NEXT 18 MONTHS.

(C) IN-SERVICE TRAINING PROGRAM IN COASTAL DEVELOPMENT PLANNING AND MANAGEMENT FOR STAFF OF THE THAILAND INSTITUTE FOR SCIENTIFIC AND TECHNOLOGICAL RESEARCH (TISTR).

TISTR IS SEEKING FOREIGN DONOR ASSISTANCE IN UPGRADING THE SKILLS OF ITS STAFF IN THE DEVELOPMENT OF COASTAL RESOURCES. TISTR IS RESPONSIBLE FOR THE PREPARATION OF REGIONAL AND PROVINCIAL DEVELOPMENT PLANS FOR THE COASTAL AREAS OF THAILAND. THESE PLANS ARE PREPARED FOR THE MINISTRY OF AGRICULTURE AND COOPERATIVES. TISTR ACTS AS THE SCIENTIFIC AND TECHNICAL ADVISORY GROUP FOR THE MINISTRY'S OFFICE OF COASTAL LAND DEVELOPMENT.

ART 3. MISSION STRATEGY AND WORK PLAN:

. WE PLAN TO DRAW HEAVILY ON THE EPE II PROJECT TO UPPORT POLICY RESEARCH AND ACTION PROGRAMS. MISSION LL INITIATE BILATERAL STUDIES/ACTIVITIES AND, ON A ELECTIVE BASIS, PROVIDE "BUY INS" FOR CENTRALLY FUNDED ROJECT SUPPORT.

. MISSION'S NATURAL RESOURCES/ENVIRONMENTAL DIALOGUE ITH RTG WILL START ESSENTIALLY FROM GROUND ZERO. A SAID NATURAL RESOURCES/ENVIRONMENTAL WORKING GROUP WILL E FORMED IN FEBRUARY. IT WILL BE CHAIRED BY THE DEPUTY

DIRECTOR AND CONSIST OF THE PROGRAM OFFICER, MISSION ENVIRONMENTAL ADVISOR, AGRICULTURAL DEVELOPMENT OFFICER, AND EPD II PROJECT OFFICER. CHIEF TECHNICAL CONSULTANT TO THE GROUP WILL BE THE ASIA BUREAU'S REGIONAL ENVIRONMENTAL ADVISOR. BY JANUARY 1986 WE HOPE TO HAVE EXPANDED THE GROUP TO INCLUDE REPRESENTATIVES OF THE NATIONAL ECONOMIC AND SOCIAL DEVELOPMENT BOARD, NATIONAL ENVIRONMENT BOARD, THAILAND DEVELOPMENT RESEARCH INSTITUTE, NATIONAL INSTITUTE OF DEVELOPMENT ADMINISTRATION, AND THE PRIVATE SECTOR.

C. THE REGIONAL ENVIRONMENTAL ADVISOR IS SCHEDULED TO BEGIN A ONE MONTH TDY IN THAILAND DURING LATE FEBRUARY. HIS SCOPE OF WORK WILL INCLUDE THE FOLLOWING:

(1) IDENTIFICATION AND ASSESSMENT OF KEY THAI PUBLIC AND PRIVATE INSTITUTIONS;

(2) DESK REVIEW OF EXISTING NATURAL RESOURCE/ ENVIRONMENTAL SURVEYS;

(3) TERMS OF REFERENCE FOR USAID-SUPPORTED NATURAL RESOURCES MANAGEMENT PROFILE;

(4) REVIEW AND ANALYSIS OF OTHER DONOR PROGRAMS;

218

(5) REVIEW OF AID/W CENTRALLY FUNDED ONGOING/PLANNED PROGRAMS AND THEIR RELEVANCE TO THAILAND;

(6) IDENTIFICATION AND RANK ORDERING OF NATURAL RESOURCE/ENVIRONMENTAL ISSUES/PROBLEMS/OPPORTUNITIES;

(7) DETAILED PLAN OF ACTION FOR: (A) GENERATING PUBLIC AWARENESS OF LONG TERM IMPLICATIONS OF ENVIRONMENTAL DEGRADATION; (B) CREATING INSTITUTIONAL BASIS FOR ACTION PROGRAMS (TO INCLUDE PRIVATE SECTOR); (C) POLICY RESEARCH AGENDA; (D) INITIATION OF SMALL PROJECT ACTIVITIES; AND (E) FRAMEWORK FOR MAJOR USAID LOAN INITIATIVE DURING FY 1989.

E. MISSION WELCOMES ACTIVE PARTICIPATION AND SUPPORT OF ASIA/TR/ARD AND TR/EFE IN THIS DIALOGUE, AS WELL AS DESIGNATED INDIVIDUALS FROM S&T AND PRE BUREAUS.

F. FEBRUARY TDY WILL ALLOW ONLY FIRST CUT AT ABOVE TASKS. SUSTAINED INVOLVEMENT OF REGIONAL ENVIRONMENTAL ADVISOR AND FULL COMPLETION OF ABOVE SCOPE OF WORK WILL BE ESSENTIAL INPUTS DURING INITIAL PHASE OF DEVELOPING THE MISSION'S POLICY DIALOGUE IN THIS AREA.

G. USAID/THAILAND IS MAKING SERIOUS COMMITMENT OF LIMITED GRANT FUNDS AND STAFF ATTENTION TO THIS INITIATIVE AND CONSIDERS IT APPROPRIATE TO REQUEST MINIMUM OF 50 PERCENT OF REA'S TIME OVER NEXT TWO YEARS IN SUPPORT OF OUR EFFORT. DURING REA'S FEBRUARY TDY, MISSION HOPES TO DEVELOP SCHEDULE FOR SUCH PARTICIPATION. WE WOULD PREFER TO HAVE HIS HOME BASE TRANSFERRED FROM JAKARTA TO BANGKOK FOR THIS PURPOSE.

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AMEMBASSY BANGKOK

UNCLAS RANGOON 6361

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E. O. 12356: N/A
TAGS:
SUBJECT: FORESTRY/FUELWOOD RESEARCH AND DEVELOPMENT INITIATIVE

REF: STATE 346027

1. AID/BURMA LOOKS FORWARD TO DRAFT PROJECT PAPERS. WHILE WE MAY NOT HAVE THE STAFF TIME TO COMPLETE DETAILED REVIEW AND ANSWER ALL QUESTIONS RAISED DEPTEL, WE SUPPORT THE FORESTRY/FUELWOOD INITIATIVE, ESPECIALLY THE POSSIBLE STATIONING OF STAFF AT KASETSART UNIVERSITY IN THAILAND.

2. WE HOPE DRAFT PP'S WILL BE IN LINE WITH REVIEW OF FUELWOOD NEEDS IN BURMA DONE RECENTLY AS PART OF THE BURMA AGRICULTURE SECTOR REVIEW.

3. WHILE WE CAN MAKE NO COMMITMENTS, THERE IS ROOM FOR DISCUSSING A POSSIBLE "BUY-IN" UNDER OUR PROPOSED AGRICULTURE RESEARCH AND DEVELOPMENT PROJECT.

4. AID/BURMA OFFICERS WHO WILL REVIEW DRAFT PP'S ARE ENERGY OFFICER RICHARD B. NELSON AND AGRICULTURE DEVELOPMENT OFFICER CHARLES A. SIMKINS.
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UNCLAS ISLAMABAD 25509

AIDAC

E.O. 12356 N/A
SUBJECT: FORESTRY/FUELWOOD RESEARCH AND DEVELOPMENT INITIATIVE - DRAFT ASIA AND S&T PROJECT PAPERS

REF: STATE 340827 - (B) ISLAMABAD 12816

1. MISSIONS RESPONSES TO THE QUESTIONS POSED IN REFTEL (A) ARE KEYED TO REF (A) PARAS AS FOLLOWS:

A. PARA 3 A: MISSION POSITION ON THIS PROJECT HAS NOT MATERIALLY CHANGED SEE REF (B).

B. PARA 3 B: A SUGGESTED MISSION BUY-IN COULD BE FOR RESEARCH ON MULTIPURPOSE SPECIES SUCH AS DALBERGIA SISSOO AT THE PAKISTAN RESEARCH INSTITUTE. FY85 BUY-IN LEVEL IS ANTICIPATED TO BE NO MORE THAN U.S. DOLLARS 10,000. OVERALL BUY-IN FOR THE FIVE YEAR PERIOD IS ESTIMATED TO BE BETWEEN U.S. DOLLARS 100,000 AND 150,000. THESE FUNDS, PENDING OFFICIAL GOP CONCURRENCE, WOULD BE USED TO SUPPORT SPECIES/PROVENANCE TRIALS AND RELATED NETWORK FUNCTIONS.

C. PARA 3 C: MISSION STRONGLY BELIEVES NITROGEN FIXING TREE ASSOCIATION (NFTA) DOES NOT HAVE PREDOMINANT CAPABILITY OR EXPERIENCE TO UNDERTAKE THE REQUIRED STUDY DESCRIBED ON PAGE 31 AND PAGE 31 OF 498-0276 PP. THE GOALS OF THE PROJECT WOULD BE BETTER SERVED IF THE SUBJECT STUDY IS UNDERTAKEN BY A PROVEN, RESEARCH ORIENTED ORGANIZATION OR INSTITUTION. HIGHLY RECOMMEND THAT THIS ELEMENT OF THE PROJECT BE COMPETITIVELY BID AND OPEN TO ALL U.S. AND ASIA BASED INSTITUTIONS. A SECOND ALTERNATIVE WOULD BE TO UTILIZE THE U.S. FOREST SERVICE EXPERIMENT STATIONS TO PROVIDE RESOURCES FOR THIS STUDY. MISSION FURTHER UNDERSTANDS THAT ADC HAS NOW BEEN INCORPORATED WITH WINROCK AND IADS. HOW WILL THIS AFFECT THIS PROJECT? WILL THIS INSTITUTION BE ELIGIBLE TO BID ON THE LONG-TERM AS RC?

D. (A) PARA 3 D AND 3 E: REFTEL (B) PARA 6. EXCEPT FOR BUY-IN DISCUSSED IN PARA (B) ABOVE, COMMENTS STILL HOLD.

E. (A) PARA 3 F:

PAGE 02 ISLAMA 25509 00 OF 02 200544Z 0796

ALL COMMUNICATIONS BY SUBJECT PROJECT PERSONNEL TO GOP SHOULD BE PASSED THRU MISSION.

MISSION WILL OBTAIN NECESSARY IN-COUNTRY CLEARANCES FOR PROJECT PERSONNEL, ASSIST WITH IN-COUNTRY TRAVEL NEEDS, APPOINTMENTS AND ACCOMODATION. EVERY EFFORT WILL BE MADE TO PROVIDE REASONABLE GROUND TRANSPORTATION DEPENDING ON COMMITMENTS AND VEHICLE AVAILABILITY.

F. 3 G: REFTEL (B) COMMENTS UNCHANGED.

G. PARA 3 H: PAKISTAN FOREST INSTITUTE AT PESHAWAR IS KEY GOP INSTITUTION THAT SHOULD BE INVITED TO THE NETWORK ORGANIZATIONAL MEETING.

H. PARA 3 I: NETWORK ON SELECTED MULTIPURPOSE TREE SPECIES IS MOST AMENABLE TO SUPPORT BY MISSION. SPECIFIC SPECIES: DALBERGIA SISSOO, PROSOPIS SPP, ROBINIA PSEUDOACACIA, ALNUS NEPALENSIS, LEUCAENA, AND ACACIA SPP.

I. PARA 3 J: SOCIAL SCIENCE CONTENT AND LEVEL ACCEPTABLE.

2. A. REVIEW OF DRAFT PPS CONTINUES. OTHER COMMENTS WILL BE TRANSMITTED IN SEPTEL. PRELIMINARY EVALUATION INDICATES NEED FOR MORE COLLECTION AND EVALUATION OF DATA CONCERNING ON-GOING SOCIAL FORESTRY PROJECTS IN ASIA REGION. PAGES 10 THROUGH 14 OF 498-0276 PP DESCRIBE 13 USAID FUNDED PROJECTS AND SEVERAL OTHER DONOR PROJECTS RELATED TO FUELWOOD PRODUCTION. THESE PROJECTS HAVE PRODUCED AND DEVELOPED MANY PROVEN METHODS OF SOCIAL FORESTRY FOR PRODUCTION OF FUELWOOD AND MINOR FOREST PRODUCTS ON FARMS AND PUBLIC LANDS. MISSION AGREES TO THE NEED FOR EXPANSION OF RESEARCH IN FUELWOOD PRODUCTION, HOWEVER, STRONGLY RECOMMENDS INTENSIVE EVALUATION OF ON-GOING PROJECTS IN ORDER TO DEVELOP A FIRM BASE OF KNOWLEDGE ABOUT KNOWN AND PROVEN TECHNIQUES AND FUELWOOD SPECIES BEFORE NEW RESEARCH IS FUNDED THROUGH THIS PROJECT.

B. PP RECOMMENDS RESEARCH IN TISSUE CULTURE. IN THE JOURNAL OF FORESTRY, APRIL 1984 PAGES 213 - 218, THERE IS STRONG EVIDENCE THAT THIS RESEARCH IS ONLY IN EARLY STAGES IN THE U.S. AND WILL PRODUCE HIGHER COST SEEDLINGS WHEN COMPARED WITH OTHER SYSTEMS OF PLANT REPRODUCTION. CAN THIS PROJECT AFFORD TO TAKE THIS ON? IS IT APPROPRIATE RESEARCH WHEN ONE WEIGHS THIRD WORLD FINANCIAL CAPABILITIES TO RESEARCH EFFORTS? ARE THERE EXAMPLES IN THIRD WORLD ENVIRONMENTS THAT WOULD SUGGEST THIS IS A VIABLE APPROACH WHEN OTHER FORMS OF VEGETATIVE REPRODUCTION ARE AVAILABLE, E.G. ROOTED CUTTINGS? THIS MISSION STRONGLY SUGGEST THE TISSUE CULTURE COMPONENT BE THOROUGHLY ASSESSED BEFORE A LARGE INVESTMENT OF FUNDS ARE MADE. HINTON

221

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PAGE 01 ISLAMA 03253 180528Z 2809 071191 AID8813
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E.O. 12356: N/A
SUBJECT: ASIA/ST FORESTRY RESEARCH AND DEVELOPMENT

REF: (A) 84 STATE 346027, (B) 84 ISLAMABAD 25509,
(C) STATE 041075

1. GOP COMMENTS ON PROPOSED PP'S INDICATE GENERAL SUPPORT OF CONCEPT BUT THAT THERE IS ALREADY CONSIDERABLE KNOWLEDGE ABOUT SPECIES APPROPRIATE FOR MULTI-PURPOSE AND FUELWOOD USE. MUCH OF THIS KNOWLEDGE NEEDS TO BE CATALOGED AND PUT TO FIELD USE. THE GOP OFFICIALS FEEL THAT APPLIED RESEARCH THROUGH WORKING DEMONSTRATIONS SHOULD BE A HIGH PRIORITY FOR THIS PROJECT. RATTRAY

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Department of State

OUTGOING TELEGRAM

PAGE 01 STATE 061742 3598 079664 AID8535
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APPROVED BY: AID/ASIA/TR:B SIDMAN
AID/ASIA/TR:C ANTHOLT (DRAFT) AID/ASIA/EA:B ODELL (DRAFT
AID/S/T/FNR:I MORISON (PHONE) AID/ST/EY: J SULLIVAN (SUBS)

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AMEMBASSY DHAKA PRIORITY
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AMEMBASSY COLOMBO PRIORITY
AMEMBASSY JAKARTA PRIORITY
AMEMBASSY BANGKOK PRIORITY
AMEMBASSY SUVA PRIORITY

UNCLAS STATE 061742

E.O. 12356: N/A

TAGS:

SUBJECT: ASIA/ST FORESTRY RESEARCH AND DEVELOPMENT

REF: (A) STATE 41075 (B) MANILA 05128

1. WE APPRECIATE POSITION MISSION IS TAKING ON IMPORTANCE OF DEVELOPING NATIONAL RESEARCH CAPABILITIES. BOTH COMPONENTS I AND II OF PROPOSED PROJECTS ARE SUPPORTIVE OF EXPANDING NATIONAL RESEARCH PROGRAMS AND EXPERTISE AND IMPROVING QUALITY OF RESEARCH. NEVERTHELESS, THESE AID/W PROJECTS SHOULD BE VIEWED AS CATALYTIC TO EFFORTS BY AID MISSIONS, HOST GOVERNMENTS, AND OTHER DONORS TO SUPPORT LARGER INSTITUTIONAL DEVELOPMENT PROGRAMS IN SPECIFIC COUNTRIES.

2. THE PROJECTS' THESIS IS THAT REGIONAL NETWORKING APPROACH SHOULD GO HAND-IN-HAND WITH LOCAL INSTITUTION BUILDING. NETWORK PARTICIPATION CAN BE HELPFUL IN BUILDING HUMAN RESOURCE CAPABILITIES BY PROVIDING FOCUSED RESEARCH EXPERIENCE WITH APPROPRIATE EXTERNAL TECHNICAL ASSISTANCE, TRAINING, AND RESEARCH SUPPORT AND WITH THE STIMULUS OF PEER REVIEW AND INTERACTION. WE

HAVE SEEN SIGNIFICANT DUPLICATION OF EFFORTS (E.G. SPECIES TRIALS ON LEUCAENA) IN THE REGION AND NO REAL MECHANISMS FOR COOPERATION.

3. THE IUFRO MEETING AND OTHER EVIDENCE POINTS TO A CORE OF SCIENTISTS IN THE REGION INTERESTED IN CLOSER COMMUNICATION IN MULTIPURPOSE TREE ASSESSMENT, IMPROVEMENT AND MANAGEMENT.

4. RECENT ICHORD/MORISON DISCUSSIONS IN THAILAND RESULTED IN POSITIVE RESPONSE BY OUTSTANDING FORESTRY FACULTY AT KASETSART UNIVERSITY TO PLAYING ACTIVE ROLE IN DEVELOPING REGIONAL NETWORK PROGRAM AND SERVING AS INFORMATION AND TRAINING CENTER, AS WELL AS BASE OF

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OPERATIONS FOR LONG-TERM ADVISORS.

5. AID/W INTENDS TO MOVE CAREFULLY IN LAUNCHING NETWORK ACTIVITY, ASSESSING NATIONAL CAPABILITIES TO PARTICIPATE AND FOCUSING ON DEVELOPING ONE OR TWO EFFECTIVE NETWORKS. THIS WILL NECESSARILY LEAD TO A CONCENTRATION ON A FEW INTERESTED COUNTRIES.

6. YOUR MISSION AS WELL AS USAID/NEW DELHI HAS STRESSED THE NEED FOR TRAINING AS A CENTRAL ELEMENT OF EXPANDING NATIONAL RESEARCH CAPABILITIES. TRAINING NOW IS ACCORDINGLY, AN EVEN MORE SUBSTANTIAL ACTIVITY UNDER THE PROPOSED CONTRACTS WITH ADC AND THE ASIA FORESTRY RESEARCH SUPPORT CONTRACTOR, ASIA AND ST MANAGERS HAVE REVIEWED BUDGET AND HAVE MOVED DOLS 1 MILLION FROM NETWORK COMPONENT TO COMPONENT I TRAINING ELEMENT.

7. WE REGRET THAT IT WILL NOT BE POSSIBLE TO DELAY APAC CONSIDERATION OF THE PP UNTIL MAY, I.E., AFTER FURTHER CONSIDERATION BY ARDO CONFEREES IN MANILA. THE VIEWS OF THE MISSIONS HAVE BEEN CRITICAL INPUTS IN PP PREPARATION, AND WILL BE CONSIDERED CAREFULLY BY THE APAC. DAM

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223

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INCOMING TELEGRAM

PAGE 01 OF 02 MANILA 00940 00 OF 02 101047Z 7403 043325 AIDS105
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ACTION OFFICE ASTR-02
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AIDAC

E.O. 12356: N/A
SUBJECT: COMMENTS ON THE ASIA REGIONAL FORESTRY RESEARCH AND DEVELOPMENT PROJECT (498-0276)

REF.: (A) STATE 346027 (84), (B) MANILA 31232 (84)

1. WE REGRET THE LATE RESPONSE, BUT NEEDED ADDITIONAL TIME TO CONSULT WITH PHILIPPINE FORESTRY GROUP AT LOS BANOS.

2. AS REQUESTED IN REFTEL A FOLLOWING ARE USAID COMMENTS KEYED TO THE QUESTIONS GIVEN IN REFTEL A, PARA 3.

- A. NO CHANGE IN PLANNED USAID ACTIVITIES THAT COULD SUPPORT PROJECT OBJECTIVES. PLEASE NOTE THAT DRAFT PROJECT PAPER DOES NOT ADDRESS ISSUES RAISED IN PREVIOUS MISSION RESPONSE OF NOVEMBER 6, 1984 (REFTEL B).

- B. THE MISSION'S RAINFED RESOURCES DEVELOPMENT (RRD) PROJECT CAN PROVIDE MOST TECHNICAL ASSISTANCE AND TRAINING NEEDS FOR OUR BILATERAL FORESTRY RESEARCH ACTIVITIES. USAID PORTFOLIO OF BILATERAL PROJECTS DOES NOT PROVIDE FOR BUY-INS AND THE GOP IS RELUCTANT TO PAY FOR RELATIVELY EXPENSIVE EXPATRIATE TECHNICAL ASSISTANCE WITH LOAN FUNDS. THEREFORE NO COMMITMENTS CAN BE MADE. MODEST LEVEL OF GRANT FUNDS IN THE ASIA AND ST PROJECTS COULD BE VERY SUPPORTIVE OF ASIA MISSIONS WHEN QUICK, FLEXIBLE RESPONSE IS NEEDED FOR SHORT-TERM TA, TRAINING AND SEMINAR/WORKSHOP ACTIVITIES. USUALLY THESE SITUATIONS ARE DIFFICULT TO RESPOND TO WITH BILATERAL FUNDS.

- C. PROJECT SHOULD CONSIDER FIELDING ONLY ONE OR AT MOST TWO FIELD PERSONNEL CONTRACTORS INITIALLY RATHER THAN A TEAM OF THREE. WE SUGGEST EITHER PSC OR COMPETITIVE INSTITUTIONAL CONTRACT ARRANGEMENTS AS BEST WAY TO GET EXCELLENCE. DISADVANTAGE OF PSC IS LACK OF INSTITUTIONAL BASE.

QA WHAT IS THE ROLE OF THE PROPOSE
LPR
YESEARCH
SPECIALIST? WILL THIS SPECIALIST BE IN ADDITION TO THE PROPOSED TEAM?

- D. THE RRD PROJECT PROVIDES TECHNICAL ASSISTANCE (TA) IN AGROFORESTRY, RESEARCH, FOREST POLICY AND MANAGEMENT, TRAINING AND INSTITUTIONAL DEI
OPMENT. WE
FORESEE NO PROBLEMS IN ESTABLISHING APPROPRIATE COMPLEMENTATION WITH THE ASIA AND ST PROJECTS.

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- E. FOREST RESEARCH INSTITUTE AND UNIVERSITY OF THE PHILIPPINES AT LOS BANOS HAVE COMMENTED FAVORABLY ON THE PROPOSED PROJECT. SUGGESTIONS INCLUDE CONDUCTING A
C
PTRY-SPECIFIC REVIEW OF RESEARCH, KNOWLEDGE AND CAPABILITY; INCREASING THE PARTICIPATION OF LOCAL SPECIALISTS; AND DEVELOPING INCREASED INSTITUTIONAL CAPACITY THROUGH GRADUATE STUDIES AND IN-COUNTRY TRAINING.

- F. USAID SHOULD CLEAR ALL TRAVEL REQUESTS OF CONTRACTORS IN ORDER TO ENSURE COORDINATION WITH MISSION ACTIVITIES AND THAT HOST COUNTRY COUNTERPARTS AGREE ON SCOPE OF VISIT AND TIMING.

- G. THE RRD PROJECT PRESENTLY INCLUDES AGROFORESTRY PILOTS, SPECIES TRIALS AND AGROFORESTRY RESEARCH. THE ANNUAL PLANNING PROCESS OF RRD REVIEW ONGOING ACTIVITIES AND PROPOSES NEW ACTIVITIES AS NEEDED. IT IS THROUGH THE RRD ANNUAL PLANNING PROCESS THAT ACTIVITIES CAN BE ADJUSTED OR PROPOSED NEW WHEN APPROPRIATE TO COMPLEMENT THE PROPOSED ASIA/ST PROJECT. NOTE: A COUNTRY MUST POSSESS A DEGREE OF EIN
IENCE AND A RANGE OF ONGOING
ACTIVITIES BEFORE THEY CAN CONTRIBUTE TO A REGIONAL NETWORK AS STATED IN REFTEL B).

- H. KEY INSTITUTIONS FOR LAND AND FOREST RESOURCE MANAGEMENT MEETING SHOULD INCLUDE MINISTRY OF NATURAL RESOURCES, FOREST RESEARCH INSTITUTE, COLLEGE OF FORESTRY AT UPLB, PROGRAM ON ENVIRONMENTAL SICENCE AND MANAGEMENT, ASIAN INSTITUTE OF MANAGEMENT, PHILIPPINE NATIONAL OIL COMPANY-WATERSHED DIVISION AND DEVELOPMENT ACADEMY OF THE PHILIPPINES.

- I. THE PHILIPPINES POSSESSES A DIVERSE MIXTURE OF ECOSYSTEMS RANGING FROM RAINFORESTS, MOIST LOWLANDS, PINE FORESTS TO SEMI-ARID AREAS. ACCORDINGLY, A LARGE NUMBER OF TREE SPECIES COULD BE TESTED HERE. PRIORITY SPECIES AND SUPPORT INSTITUTIONS WOULD INCLUDE THE FOLLOWING:

- ALBIZIA	-	14
- LEUCAENA	-	14, 15
- RATTAN	-	14, PAPER INDUSTRIES
- -	-	CORPORATION OF PHILIPPINES
- BAMBOO	-	14, 15, TWIN RIVER
- -	-	RESEARCH CENTER DAVAO DEL
- -	-	NORTE
- ACACIA	-	14, MANILA SEEDLING BANK
- -	-	FOUNDATION
- CASUARINA	-	14, MARIANO MARCOS STATE
- -	-	UNIVERSITY, BATAC ILOCOS
- -	-	NORTE
- ALNUS	-	14

EMPHASIS SHOULD BE PLACED ON WORKING WITH EXISTING AGRICULTURAL INSTITUTIONS.

- J. SOCIAL SCIENCE CONTENT IS ADEQUATE MISSION CONCURS WITH THE PROPOSED SELECTION OF THE NITROGEN FIXING TREE ASSOCIATION FOR COORDINATING TREE SPECIES TRIALS AND THE AGRICULTURAL DEVELOPMENT COUNCIL FOR CONDUCTING THE SOCIO-ECONOMIC STUDIES. EMPHASIS SHOULD BE ON DEVELOPING NATIONAL PROGRAMS BEFORE CONCENTRATING ON A LARGE NETWORK. THE CONCEPT OF DEVELOPING A MODEL FOR MANAGING "COMMON PROPERTY"; HOWEVER, MAY HAVE LITTLE APPLICATION FOR UPLAND FORESTRY WORK IN THE PHILIPPINES. DELINEATING INDIVIDUAL HOLDINGS HAS BEEN A CRITICAL COMPONENT OF SUCCESSFUL SOCIAL FORESTRY PROJECTS IN THE PHILIPPINES. FOR INSTANCE, THE BUREAU

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224

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PAGE 02 OF 02 MANILA 00940 00 OF 07 1810472 7403 043325 A105105
OF FOREST DEVELOPMENT ISSUES INDIVIDUAL STEWARDSHIP
CONTRACTS FOR UP TO SEVEN HECTARES AND A TOTAL OF 50
YEARS. EVEN MINORITY GROUPS ARE KNOWN TO DIVIDE
COMMUNAL LAND AMONG THE TRIBE AND OCCUPANTS OF PUBLIC
FORESTS OFTEN INFORMALLY DELINEATE LAND AMONG THEMSELVES.
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225

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Department of State

INCOMING TELEGRAM

PAGE 01 MANILA 05128 200752Z 5058 092307 AID9519 MANILA 05128 200752Z

ACTION AID 00

ACTION OFFICE ASTR-02
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AMEMBASSY JAKARTA
AMEMBASSY NEW DELHI
AMEMBASSY RANGOON
AMEMBASSY SUVA

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E.O. 12356: N/A
SUBJECT: ASIA/ST FORESTRY RESEARCH AND DEVELOPMENT

REF.: STATE 41075

1. WE UNDERSTAND THE OBLIGATION PRESSURES THAT ARE FACING THE PROJECT PROPONENTS, BUT IT DOES NOT APPEAR THAT THERE IS YET ACCEPTANCE BY ALL OF THE ASIA MISSIONS AS TO THE STRONG CONCENTRATION ON THE NETWORKING ASPECT OF THE PROJECT GIVEN THE NEED TO FIRST EXPAND NATIONAL FORESTRY RESEARCH CAPACITIES. THEREFORE WE URGE GREATER EMPHASIS ON STRENGTHENING NATIONAL RESEARCH CAPABILITIES IN THE FIRST FIVE YEARS. DEVELOPING NATIONAL CAPABILITY INITIALLY WILL ENABLE THE PHILIPPINES TO MORE SUBSTANTIVELY CONTRIBUTE AND PARTICIPATE IN A REGIONAL NETWORK. FURTHERMORE, FOCUSING ON SELECTED COUNTRIES AS OPPOSED TO A BROAD GEOGRAPHICAL PERSPECTIVE, SHOULD IMPROVE PROJECT MANAGEMENT.

2. REFTEL A STATES THAT THE PROJECT WILL ALLOCATE 2 MILLION DOLLARS FOR TA AND TRAINING ACTIVITIES (15 OF TOTAL DOLS 13.75 MILLION). PHILIPPINE RESEARCH INSTITUTIONS HAVE STRESSED TO US, AS A RESULT OF THEIR REVIEW OF THE DRAFT PP, THE NEED FOR SHORT-TERM TRAINING ABROAD LINKED WITH ON-THE-JOB TRAINING AT RESEARCH STATIONS OUTSIDE THE PHILIPPINES, FOR SPECIALIZED RESEARCH GRANTS WITH TA FOR DESIGN AND MONITORING, AND FOR IN-COUNTRY TRAINING.

3. MISSION UNDERSTANDS THE PROJECT DESIGNEES RATIONALE FOR THE PROPOSED THREE-PERSON FIELD TEAM AS STATED IN REFTEL A. HOWEVER, WE CONTINUE TO SUGGEST REDUCING THE NUMBER OF CONTRACTORS AND "NETWORKING" ACTIVITIES DURING THE FIRST FIVE YEARS IN ORDER TO STRENGTHEN NATIONAL CAPABILITIES. REDUCED USE OF RESOURCES THAT WOULD RESULT WOULD BE PROVIDED FOR EXPANDED ACTIVITIES DESCRIBED IN PARAGRAPH TWO ABOVE.

4. WE SUGGEST AUTHORIZATION OF THE PROJECT AFTER THE APRIL AG/RD MEETING. THIS WILL ALLOW APAC AND S&T REVIEWS TO IDENTIFY ISSUES WHICH CAN THEN BE DISCUSSED AT THE AG/RD MEETING BEFORE AUTHORIZATION OF THE PROJECT IS SOUGHT.
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226

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INCOMING TELEGRAM

PAGE 01 OF 02 KATHMA 00373 00 OF 02 280615Z 0602 049551 AID3818
ACTION AID-00

ACTION OFFICE ASTR-02
INFO AAAS-01 ASPM-02 ASDP-02 KENA-03 PPEC-01 PPPB-02 GC-01
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AMEMBASSY CAIRO
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AMEMBASSY DHAKA
AMEMBASSY ISLAMABAD
AMEMBASSY JAKARTA
AMEMBASSY MANILA
AMEMBASSY NEW DELHI
AMEMBASSY RABAT

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E.O. 12356: N/A
SUBJECT: FORESTRY/FUELWOOD RESEARCH AND DEVELOPMENT DRAFT PROJECT PAPERS (498-0276) AND (936-5547)

REF: (A) 84 STATE 346827; (B) 84 KATHMANDU 7365;
(C) ISLAMABAD 23509

1. MISSION'S RESPONSES TO QUESTIONS POSED IN REFTEL (A) ARE KEYED TO REFTEL (A) AS FOLLOWS:

A. MISSION PROJECT ACTIVITIES IN FORESTRY RESEARCH HAVE GENERALLY DECLINED FROM LEVELS STATED IN PP.

I. REF TABLE V-17 IN PP (498-0276): DUE TO RESTRUCTURING OF PROJECT ACTIVITIES IN RCUP (367-0132) ANTICIPATED FORESTRY RESEARCH FUNDING FOR REMAINDER OF PROJECT IS ESTIMATED AS LESS THAN $50,000. ARP (367-0149) HAS ALSO CUT BACK SUBSTANTIALLY ON LEVEL OF FUNDING FOR FORESTRY RESEARCH AS A RESULT OF EXTENSIVE NEGOTIATIONS WITH GON. NEW LEVEL IS EXPECTED TO BE LESS THAN $100,000 OVER LOP.

II. GON (HOST COUNTRY) CONTRIBUTION AT THIS POINT IS STILL UNKNOWN. MISSION SUSPECTS GON CONTRIBUTION TO PROJECT WOULD BE MINIMAL. THE GON DEPARTMENT OF FORESTS (PROPOSED COOPERATING AGENCY) HAS TWO FORESTRY RESEARCH PROJECTS PLANNED FOR THE NEXT FIVE YEARS, ONE FUNDED BY BRITISH ODA AND THE OTHER FUNDED BY ADB. FUNDING LEVELS FOR BOTH PROJECTS ARE UNKNOWN, BUT WILL REPRESENT A SUBSTANTIAL INCREASE IN BOTH THE FUNDING AND EFFORT BEING DEVOTED TO FORESTRY RESEARCH.

III. MISSION HAS CONCURRED ON AID/W OFFICE OF SCIENCE ADVISOR GRANT FUNDING ALNUS NEPALENSIS PROVENANCE AND PROPAGATION RESEARCH. LEVEL OF FUNDING IS APPROXIMATELY $170,000. A SECOND SCIENCE ADVISOR GRANT BEING FUNDED IN NEPAL IS TITLED QUOTE IMPROVED MANAGEMENT OF IMPORTANT FODDER TREES IN THE TERAI AND OUTER HIMALAYAS UNQUOTE BUT NO RESEARCH HAS TAKEN PLACE YET.

B. DUE TO TIGHTLY PROGRAMMED PORTFOLIO, MISSION ANTICIPATES A ZERO LEVEL OF BUY-IN FOR FY 85. OVER LOP, MISSION ANTICIPATES A LOAPLEVEL OF BUY-IN AT $10,000 AND A HIGH LEVEL AT $100,000.

C. MISSION STRONGLY SUPPORTIVE OF ADC CONFINANCING COMPONENT. MISSION FEELS A FREE-STANDING POLICY RESOURCE ECONOMICS COMPONENT MOST APPROPRIATE. ADC STAFF CURRENTLY IN NEPAL HAVE BEEN ON THE FOREFRONT OF RAISING POLICY AND COMMON PROPERTY RESOURCE CONCERNS RELATED TO FORESTRY. ADC IN NEPAL FOCUSES ON ISSUES SURROUNDING THE NATURE AND SUPPORT OF POLICY ORIENTED RESEARCH IN GENERAL, AND RESEARCH NETWORKS IN PARTICULAR. DISCUSSIONS WITH ADC IN NEPAL ARE POSITIVE CONCERNING THEIR COOPERATION. REGARDING CONTRACT PORTION, MISSION WONDERS WHAT MECHANISM WILL BE USED TO ENABLE ASIA MISSIONS TO CONTRACT RESEARCH SERVICES FOR PROJECT ACTIVITIES WITHIN SCOPE OF CURRENT ACQUISITION REGULATIONS. WHAT CONSTRAINTS WOULD BE PLACED ON THE CONTRACTOR'S SERVICES? WOULD THE CONTRACTOR REPLACE OR COMPLEMENT ALREADY EXISTING IQC'S IN THIS AREA?
D. MISSION CONSIDERS LEVEL OF TA PROPOSED FOR FORESTRY RESEARCH POLICY, PLANNING AND ARAGEMENT COMPONENT APPROPRIATE (2.16 MILLION DOLLARS).

E. GON GENERALLY IS BEGINNING TO HOLD BACK ON CLEARING PARTICIPATING SCIENTISTS FOR TRAVEL TO REGIONAL RESEARCH PROGRAMS OR MEETINGS. MISSION WOULD LIKE TO KNOW HOW USAID AND CONTRACTOR'S RESPONSIBILITIES ARE SHARED ON THE ISSUE OF OBTAINING SUCH CLEARANCES.

F. CURRENT BI-LATERAL AGREEMENT WITH GON REQUIRES ALL AID FUNDED TRAVELERS OTHER THAN USDH COMING TO NEPAL ON OFFICIAL BUSINESS BE CLEARED BY THE GON FINANCE MINISTRY WHICH REFERS QUESTION ALSO TO SUBSTANTIVE MINISTRY) PRIOR TO ARRIVAL. THIS PROCESS WILL BE REQUIRED FOR THE REGIONAL PROJECT. MISSION AND GON CLEARANCE WILL BE NECESSARY BEFORE FIELD TEAM VISITS NEPAL TO CONDUCT PROJECT RELATED ACTIVITIES.

G. REF PP (498-0276) PAGE 11, NEPAL: RESTRUCTURE OF THE FORESTRY COMPONENT OF RCUP (367-0132) NOW INCLUDES ONLY TREE NURSERY DEVELOPMENT AND MAINTENANCE, FOREST GUARD AND NURSERY TECHNICIAN TRAINING, A SMALL NUMBER OF UNIVERSITY LEVEL PARTICIPANTS, AND VILLAGE FORESTRY PLANTATIONS AND EROSION CONTROL PLANTINGS. ARP (367-0149) REMAINS UNCHANGED IN SUBSTANCE BUT FUNDING FOR FORESTRY RESEARCH HAS DECLINED FROM LEVELS PROPOSED IN PID.

REF PP PAGE 41 NEPAL: RCUP (367-0132) IS PROVIDING SUPPORT TO INSTITUTE OF RENEWABLE NATURAL RESOURCES (IRNR) BUT HAS LIMITED INPUT IN RESEARCH MANAGEMENT. A RESEARCH COMMITTEE HAS BEEN FORMED AT IRNR AND WOULD SERVE AS AN APPROPRIATE CONTACT POINT FOR THE PROJECT.

H. KEY INSTITUTIONS THAT ARE CANDIDATES FOR INCLUSION IN LAND AND FOREST RESOURCE MANAGEMENT NETWORK ARE:

-GON MINISTRY OF FORESTS, INCLUSIVE OF DEPARTMENTS OF FORESTS, SOIL CONSERVATION AND WATERSHED MANAGEMENT, NATIONAL REMOTE SENSING CENTER OF NEPAL, AND DEPARTMENT OFPARKS AND WILDLIFE CONSERVATION;

-INTERNATIONAL CENTRE FOR INTEGRATED MOUNTAIN DEVELOPMENT;

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227

-DEPARTMENT OF LIVESTOCK DEVELOPMENT AND ANIMAL HEALTH;

-AGRICULTURAL PROJECTS SERVICES CENTER;

-GON NATIONAL PLANNING COMMISSION.

-INSTITUTE OF RENEWABLE NATURAL RESOURCES

-AGRICULTURAL DEVELOPMENT COUNCIL/NEPAL

-NATIONAL COUNCIL FOR THE CONSERVATION OF NATIONAL RESOURCES.

1. MISSION CONCURS WITH INITIAL SELECTION OF SPECIES SELECTED FOR NETWORKING, AND ALSO AGREES WITH PP THAT A KEY PROJECT ACTIVITY WOULD BE TO INVESTIGATE OTHER SPECIES FOR WIDE-SPREAD APPLICATION BASED ON SOCIO-ECONOMIC CRITERIA. GON DEPARTMENT OF FORESTS IS LEAD INSITUTION ON AID/W SCEINCE ADVISOR GRANT FOR ALNUS NEPALENSIS.

J. SOCIAL SCIENCE CONTENT ADEQUATE.

2. MISSION SUPPORTS PROJECTS. REGRET THAT DUE TO TIGHT PROGRAMMING AND GON PRIORITIES, A HIGHER LEVEL OF BUY-IN IS NOT POSSIBLE. ARP (367-0149) ANTICIPATES UTILIZING RESEARCH POLICY, PLANNING, AND MANAGEMENT COMPONENT. RCUP (367-0132) ALSO ANTICIPATES TAKING ABVANTAGE OF RESEARCH POLICT, PLANNING, AND MANAGEMENT COMPONENT FOR ASSISTING IRNR WITH RESEARCH PLANNING AND CURRICULUM DEVELOPMENT.

3. MISSION ANTICIPATES THAT PROJECTS WILL BE USEFUL TO GON DEPARTMENT OF FORESTS IN COOPERATION AND ASSISTANCE TO THE TWO NEW FORESTRY RESEARCH PROJECTS MENTIONED ABOVE IN 1.A.II.

4. AFTER PROJECT BEGINS, THE MISSION SUGGESTS THAT THE PROJECT COORDINATOR MEET WITH GON MOF OFFICIALS AND ODA TEAM TO INVESTIGATE INFORMATION EXCHANGE AND RESEARCH ASSISTANCE.
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AMEMBASSY RANGOON

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E. O. 12356: N/A

SUBJ: RESPONSE TO DRAFT FORESTRY PPS

REF: STATE 346087

1. RESPONSE TO QUESTIONS POSED IN REFTEL ARE AS FOLLOWS:
A) NO CHANGE ON PLANNED ACTIVITIES THAT COULD SUPPORT JOINT PROJECT OBJECTIVES.
B) ESTIMATED BUY-INS OVER FIVE YEAR PERIOD - HIGH: US DOLLS 100,000; LOW: US DOLLS -0-
ESTIMATED FY 85: US DOLLS -0-
C) PROPOSED CONTRACTING APPROACH SEEMS APPROPRIATE TO PROJECT DESIGN
D) NO COMMENTS AT THIS TIME
E) DUE TO NEAR-TERM ARRIVAL OF RELEVANT NEW MISSION STAFF, AND CURRENT INTERNAL DISCUSSIONS OF FUTURE SUPPORT TO TREE AND FORESTRY RESEARCH, MISSION IS POSTPONING DETAILED DISCUSSIONS WITH GOI LEAD RESEARCH INSTITUTIONS UNTIL FINAL DESIGN OF SUBJECT PROJECT IS COMPLETED AND MISSION ASSIGNS A LIAISON OFFICER FOR THE SUBJECT PROJECTS. WE ANTICIPATE NO UNUSUAL PROBLEMS IN GOI CLEARANCES FOR PARTICIPANTS.
F) MISSION COULD RETAIN RESPONSIBILITY FOR CLEARANCE OF TRAVEL OF AID FIELD COORDINATOR AND NETWORK ADVISORS
G) PAGE 12 OF ASIA PP STATES THAT EAST KALIMANTAN RESEARCH COMPONENT HAS "NEVER BEEN IMPLEMENTED." IN FACT, SEVERAL CONSULTANCIES UNDER THAT COMPONENT OF THE APPLIED AGRICULTURE RESEARCH PROJECT HAVE BEEN COMPLETED, AND DESIGN OF THE RESEARCH CENTER IS COMPLETE. ADDITIONAL TA AND CONSTRUCTION IS PENDING DECISION ON EXTENSION OF OVERALL PROJECT
H) CANDIDATE INSTITUTIONS FOR LAND AND FOREST NETWORK INCLUDE:

(1) AGENCY FOR AGRICULTURAL RESEARCH AND DEVELOPMENNT (AARD)

(2) INDONESIAN RESEARCH GROUP ON AGROECOSYSTEMS (KEPAS)

(3) FORESTRY MINISTRY
- DIRECTOR GENERAL FOR LAND REHABILITATION AND SOIL CONSERVATION

(4) MINISTRY FOR POPULATION AND ENVIRONMENT

(5) ENVIRONMENTAL STUDIES CENTERS FROM:
- HASANUDDIN UNIVERSITY, UJUNG PANDANG
- INSTITUTE TECHNOLOGY BANDUNG
- BOGOR AGRICULTURE INSTITUTE AND THE INSTITUTE OF ECOLOGY, PAJAJARAN UNIVERSITY, BANDUNG

(6) THE FOREST RESEARCH INSTITUTE, BOGOR

(7) THE CENTER FOR STRATEGIC AND INTERNATIONAL STUDIES, JAKARTA

(8) THE FORD FOUNDATION, JAKARTA

I) CONFUSED AS TO REFTEL'S PAGE CITATION. PRESUME YOU REFER TO APPENDIX 2 OF ASIA PP. A MINORITY OF THE DESIGNATED GENERA ARE OF RELEVANCE TO INDONESIA. ALSO, WE HAVE DOUBTS ABOUT PRIORITY OF EUCALYPTS HERE. WHAT HAPPENED TO GLYRICIDIA AND SESBANIA?
J) SOCIAL SCIENCE CONTENT OF PROJECT IS GREATLY STRENGTHENED BY A/O/C COMPONENT.

(9) ADDITIONAL COMMENTS: THE DRAFT PP SHOWS CONSIDERABLE IMPROVEMENT FROM PREVIOUS PROPOSAL. AGAIN, A/O/C COMPONENT IS SIGNIFICANT CONTRIBUTION. WE HAVE A MAJOR CONCERN, HOWEVER, ABOUT VALUE OF INTERNATIONAL NETWORKS THAT ARE NOT BUILT ON A STRONG INTRA-NATIONAL BASE - WHICH DOESN'T YET SEEM TO BE CONSIDERED. THERE IS NOT EVEN ANY ATTEMPT TO INTEGRATE [illegible] OWN BIOENERGY USER'S NETWORK. WHY NOT? OUR OTHER CENTRAL CONCERN IS THAT THE PROJECT DESIGN SHOWS LITTLE PROMISE OF INTEGRATING HORTICULTURAL AND AGRICULTURAL INSTITUTIONS. NONE ARE MENTIONED IN APPENDIX 2. STRONG ARGUMENT COULD BE MADE FOR BETTER LIKELIHOOD OF ACHIEVING SPECIFIED GOALS -- FUELWOOD AND TREE PRODUCTION; IMPROVED LAND, WATER AND HUMAN RESOURCE MANAGEMENT; INCREASED EMPLOYMENT AND INCOME -- THROUGH AGRICULTURAL AND RURAL DEVELOPMENT INSTITUTIONS INSTEAD. BOTH CONVENTIONAL SILVACULTURE AND AGRICULTURE NEED TO BE INVOLVED. DOES THE PROPOSED DESIGN FACILITATE THIS INCREASINGLY DIFFICULT MERGER OR

WILL IT SERVE TO PERPETUATE THE DIVORCE BETWEEN THE TWO?

2. KNOWLAND CAN ELABORATE ON ABOVE POINTS DURING HIS AID/W TDY DECEMBER 17-18.

HOLDRIDGE

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TO: STATE, FOR JOHN ERICSSON, S&T AND
BARRY SIDMAN, ASIA/TR, FROM RICHARD COBB

E.O. 12356: N/A

SUBJECT: DRAFT PROJECT PAPER FOR FUELWOOD FORESTRY
RESEARCH AND DEVELOPMENT

REFS: (A) STATE 146827 (1984)
(B) JAKARTA 21291 (1984)
(C) COLOMBO 232 (1985)
(D) BANGKOK 1413 (1985)
(E) ISLAMABAD 023380 (1984)

1. REF A DID NOT DESCRIBE FINAL DESIGN PROCESS AND SCHEDULE FOR SUBJECT PROJECT, AND WE HAVE NOT YET RECEIVED RESPONSE TO ISSUES RAISED IN REF B (DATED DECEMBER 7). WE SHARE THE SERIOUS CONCERNS RAISED BY SEVERAL OTHER MISSIONS (REFS C, D, E) IN RESPONSE TO REQUEST FOR COMMENTS ON THE DRAFTS PP. WE ASSUME THAT COMMENTS FROM MISSIONS WILL RECEIVE FULL CONSIDERATION AND WRITTEN RESPONSE. WE REQUEST ALSO THAT THE MISSIONS WILL HAVE AN OPPORTUNITY TO REVIEW THE FINAL PP PRIOR TO AID/W APPROVAL.

2. IN VIEW OF THE SIGNIFICANCE OF A MAJOR INITIATIVE IN FORESTRY RESEARCH FOR THE AGRICULTURE AND RURAL DEVELOPMENT PROGRAMS OF MOST ASIA MISSIONS, WE SUGGEST THAT FINAL APPROVAL OF THE F/FRED PROJECT BE POSTPONED UNTIL AFTER THE REGIONAL ARDO MEETING SCHEDULED FOR APRIL IN MANILA. THE ARDO MEETING IS AN EXCELLENT AND TIMELY OPPORTUNITY TO DISCUSS THE RANGE OF ISSUES ASSOCIATED WITH TREE AND FORESTRY RESEARCH AND TO INSURE MISSION INVOLVEMENT AND SUPPORT IN FINAL DESIGN OF THE PROJECT.
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ADM AID

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E.O. 12356: N/A
TAGS: AFIN
SUBJECT: HHG AND HHE SHIPMENT - NORTH, WALTER E., SSN: 046-38-4032, USAID

REF: STATE 018322

USAID/INDONESIA AUTHORIZED AIR FREIGHT HHE CONSUMABLES TO ETHIOPIA AS STATED IN REFTEL. PLEASE ADVISE SHIPPING INSTRUCTIONS FOR AIR SHIPMENT TO ETHIOPIA. HOLDRIDGE

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UNCLAS JAKARTA 03112

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E. O. 12356: N/A

SUBJECT: ASIA/ST FORESTRY RESEARCH AND DEVELOPMENT

REF: STATE 041075

1. WE APPRECIATE AID/W'S CONSIDERED RESPONSE TO OUR AND OTHER ASIA MISSIONS QUESTIONS REGARDING FUELWOOD RESEARCH PROJECT AS OUTLINED IN THE DRAFT PPS. WE REMAIN CONCERNED THAT THE PROJECT'S FOCUS IS SPECIES TRIALS NETWORKS FOR THEIR OWN SAKE BUT WE ARE ENCOURAGED AT THE PROSPECT OF INCREASED A/D/C CAPABILITY TO WORK WITH NATIONAL INSTITUTIONS ON LAND RESOURCES MANAGEMENT ISSUES.

2. WE ARE DISAPPOINTED THAT FIELD MISSIONS ARE NOT EXPECTED TO REVIEW THE FINAL PP PRIOR TO ITS APPROVAL.
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APPROVED BY AID/ASIA/TR:RICHORD
AID/SAA/ST:HBRADY (DRAFT)
AID/ST/EY:JVANDERRYN (DRAFT)
AID/ST/HN:RZAGORIN (DRAFT)
AID/ST/FNR:WFELDMAN (INFO)
AID/ST/RD:JO'DONNELL (INFO)
AID/ST/FNR:CGALLEGOS (INFO)
AID/ST/FNR:MMCFADDEN
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AIDAC AID FOR MANILA PASS TO USAID/M.de FELVILLE

E.O. 12356:N/A

SUBJECT: RESEARCH PLANNING CONFERENCE

1. A FORM DAY CONFERENCE WAS HELD IN BANGKOK APRIL 16-19, 1984, TO DISCUSS THE DEVELOPMENT OF AN ASIAN FORESTRY/FUELWOOD RESEARCH NETWORK. ATTENDING THE MEETING WERE REPRESENTATIVES OF THE EIGHT ADDRESSEE MISSIONS, SELECTED ASIAN AND OTHER INTERNATIONAL EXPERTS, AND REPRESENTATIVES OF THE ASIA AND ST BUREAUS.

2. THE CONFERENCE WAS OPENED BY A VIDEO TAPE MESSAGE FROM ADMINISTRATOR MCPHERSON AND ASSISTANT ADMINISTRATOR FOR ASIA CHARLES GREENLEAF. THE ADMINISTRATOR STRESSED THE IMPORTANCE OF FORESTRY/FUELWOOD RESEARCH AS ONE OF THE AGENCY'S FOUR RESEARCH PRIORITIES AND EXPLAINED THAT ASIA WAS TO BE THE INITIAL FOCUS IN THIS EFFORT. MR. GREENLEAF NOTED THE ASIA BUREAU'S STRONG COMMITMENT TO HELPING ASIAN COUNTRIES FIND SOLUTIONS TO THE PROBLEM OF DEFORESTATION AND NATURAL RESOURCE MANAGEMENT. HE STRESSED THE NEED FOR RESEARCH ON MULTIPURPOSE TREES TO MEET FUEL, FODDER, FOOD AND OTHER NEEDS.

3. SENIOR ASSISTANT ADMINISTRATOR FOR SCIENCE AND TECHNOLOGY, DR. HYLE BRADY, WAS PRESENT FOR THE FIRST AND LAST DAYS OF THE CONFERENCE. IN HIS OPENING REMARKS, HE UNDERSCORED THE SIGNIFICANCE OF THE FUELWOOD PROBLEM AND EXPLAINED THE CONTRIBUTION THAT AN INTERCOUNTRY ASIAN RESEARCH NETWORK FOCUSED ON ISSUES OF PRODUCTION, UTILIZATION AND SOCIO-ECONOMIC IMPACT COULD MAKE IN HELPING TO RESOLVE THIS AND RELATED PROBLEMS. HE EXPLAINED THAT SUCH A NETWORK SHOULD BE BASED ON THE NEEDS OF THE COUNTRIES INVOLVED AND WOULD INVOLVE SUPPORT FROM A NUMBER OF DONORS.

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4. A SERIES OF PRESENTATIONS BY EXPERTS FROM PAKISTAN, THAILAND, INDIA, NEPAL, THE IBRD, PHILIPPINES, THE FORD FOUNDATION, ASIA DEVELOPMENT BANK AND FAO FOLLOWED. THESE FOCUSED ON PRIORITY RESEARCH NEEDS IN FORESTRY/FUELWOOD IN THE REGION AND STRESSED THE INTERACTION OF BIO-PHYSICAL WITH SOCIO-ECONOMIC AND INSTITUTIONAL FACTORS IN FORESTRY/FUELWOOD PRODUCTION.

5. THE SECOND DAY OF THE CONFERENCE WAS DEDICATED LARGELY TO SMALL GROUP DISCUSSIONS WHICH CONCENTRATED ON PRODUCTION, UTILIZATION AND SOCIO-ECONOMIC PROBLEMS AND RESEARCH NEEDS THAT COULD BE ADDRESSED MOST EFFECTIVELY THROUGH A RESEARCH NETWORK. EACH OF THREE GROUPS WAS GIVEN ONE OF THE ABOVE-MENTIONED AREAS OF CONCENTRATION BUT WAS ASKED TO CONSIDER ALSO THE OTHER TWO AREAS. THE GROUP DELIBERATIONS RESULTED IN THE FORMULATION OF THREE PRINCIPAL AREAS FOR NETWORK DEVELOPMENT KEYED TO IMPROVING PRODUCTION AND UTILIZATION OF MULTIPURPOSE TREES. THESE WERE: (1) SPECIES ASSESSMENT (WHAT ARE THE DESIRED SPECIES CHARACTERISTICS FOR SPECIFIC SITUATIONS AND CLIENT ANALYSIS; (2) SPECIES IMPROVEMENT; AND (3) SPECIES MANAGEMENT AND CULTURAL PRACTICES. WITHIN THESE THREE MAIN AREAS GROUPS CONSIDERED AND REPORTED ON PRIORITY RESEARCH TOPICS, HOW THE RESEARCH COULD BE DONE IN ASIA INSTITUTIONS CARRYING ON SPECIAL RESEARCH, THE POTENTIAL INSTITUTIONS FOR NETWORK RESEARCH AND COLLABORATION, AND THE APPROPRIATE ROLE FOR AID IN NETWORK ESTABLISHMENT AND DEVELOPMENT.

6. THE FINAL TWO DAYS OF THE CONFERENCE INVOLVED INTENSIVE DISCUSSION AMONG AID REPRESENTATIVES (ADDRESSEE MISSIONS, ASIA BUREAU AND ST BUREAU). THERE WAS GENERAL MISSION INTEREST IN AND SUPPORT FOR DEVELOPING THE ASIA FUELWOOD/FORESTRY RESEARCH NETWORK; PARTICIPATION WOULD VARY DEPENDING ON SUCH FACTORS AS:
—(A) SOME COUNTRIES CAN TAP INTO HIGH-QUALITY RESEARCH INSTITUTIONS WHILE OTHER COUNTRIES HAVE VERY LIMITED LOCAL INSTITUTIONAL CAPACITIES.
—(B) SOME MISSIONS HAVE CONSIDERABLE PROGRAM ACTIVITY IN FORESTRY WHILE OTHERS HAVE RELATIVELY LITTLE FORESTRY AND RELATED ACTIVITY.
—(C) AID IS A MAJOR DONOR IN SOME COUNTRIES WHILE IN OTHERS IT IS LESS SIGNIFICANT.
—(D) IN TERMS OF LINKING WITH RELEVANT MISSION PROJECTS, SOME MISSIONS MAY BE ABLE TO PARTICIPATE MORE ACTIVELY IN THE NETWORK THAN OTHERS.
—(E) SOME COUNTRIES ARE RELUCTANT TO PARTICIPATE IN BILATERALLY-SPONSORED RESEARCH NETWORKS.

7. THESE ABOVE FINDINGS OF THE CONFERENCE ARE REPORTED IN DETAIL IN A DRAFT SUMMARY REPORT PREPARED BY THE USDA GRADUATE SCHOOL, WHICH HANDLED THE LOGISTICS OF THE CONFERENCE. THE FINAL SUMMARY REPORT WILL BE PROCESSED TO ASIA MISSIONS DURING THE WEEK OF MAY 14, WHEN IT IS SCHEDULED TO BE COMPLETED. MEANWHILE, THE FOREGOING IS INCLUDED AS AN EXECUTIVE SUMMARY TO PROVIDE AN OVERVIEW OF THE CONFERENCE FOR THOSE WHO DID NOT ATTEND.

8. ON THE FINAL AFTERNOON OF THE CONFERENCE, THE FOLLOWING AGREEMENT ON A GENERAL PROJECT APPROACH WAS REACHED AND PROJECT DESIGN ISSUES/SUGGESTIONS WERE IDENTIFIED.

—(A) AGREEMENT ON GENERAL PROJECT APPROACH
O THE PROJECT SHOULD FOCUS ON APPLIED RESEARCH ON MULTIPURPOSE SPECIES FOR MEETING FUEL, FOOD, FODDER AND OTHER NEEDS.
O THE PROJECT'S BASIC OBJECTIVE SHOULD BE TO SUPPORT A

232

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NETWORK AND/OR SUBNETWORKS ON MULTIPURPOSE SPECIES.
0 IT SHOULD BUILD ON EXISTING NETWORKS TO THE EXTENT POSSIBLE.
0 PRIORITY AREAS FOR NETWORKING WERE: (A) SPECIES ASSESSMENT (INCLUDING SOCIO-ECONOMIC CONSIDERATIONS); (B) SPECIES IMPROVEMENT; AND (C) SPECIES MANAGEMENT. THE RESEARCH APPROACH MAY BE BASED ON EITHER INDIVIDUAL SPECIES OR ACTIVITIES THAT CUT ACROSS SPECIES (E.G., BIOTECHNOLOGY, LAND TENURE ISSUES).
0 COUNTRIES WILL PARTICIPATE IN THE NETWORK IN VARIOUS WAYS.
0 MISSIONS WILL SUPPORT RESEARCH ON NETWORK TOPICS IF THEY CAN AND A NUMBER OF EXISTING PROJECTS WERE IDENTIFIED THAT MAY SUPPORT RESEARCH WITHIN THE THREE TOPIC AREAS. RESEARCH AND INSTITUTES SUPPORTED BY OTHER DONORS MAY BE INCORPORATED INTO THIS NETWORK.
WITHIN THE NETWORK FRAMEWORK:
THE PROJECT WILL SUPPORT SUCH ACTIVITIES AS: (A)

WORKSHOPS TO PLAN AND REVIEW RESEARCH; (B) FIELD SITE VISITS AND PRE-REVIEW MEETINGS AND EVALUATIONS; (C) SHORT-TERM, SPECIALIZED TECHNICAL RESEARCH SUPPORT; (D) PROFESSIONAL DEVELOPMENT IN RESEARCH METHODOLOGY AND MANAGEMENT; (E) PUBLICATION AND INFORMATION MANAGEMENT AND EXCHANGE; AND (F) SPECIALIZED RESEARCH INPUTS (E.G. SEEDS EXCHANGE).

—(2) PROJECT DESIGN ISSUES/SUGGESTIONS

0 SEEK A DESIGN THAT MINIMIZES BILATERAL CONSTRAINTS DISCUSSED AT THE MEETING SUCH AS TRAVEL, VISAS, CLEARANCES, ETC.
0 EXPLORE MULTILATERAL ALTERNATIVES THAT WOULD ALLEVIATE SPECIFIC CONSTRAINTS INHERENT IN BILATERAL APPROACHES.
0 CONSIDER CAREFULLY THE GROWING RESISTANCE IN SOME ASIAN COUNTRIES TOWARD USING EXPATRIATE TECHNICAL ADVISORS.
0 PROVISIONS FOR IN-KIND TECHNICAL ASSISTANCE INCLUDING BUY-INS FOR SHORT TERM ACTIVITIES FROM THE PROJECT IN ONE OR TWO INTERESTED COUNTRIES WOULD MAKE THEIR PARTICIPATION POSSIBLE.
0 PROJECT DESIGN SHOULD TAKE COGNIZANCE OF SHORTAGE OF OPERATIONAL FUNDS FOR RESEARCH IN MOST PROSPECTIVE PARTICIPANT COUNTRIES.
0 OPPORTUNITIES TO PROVIDE SMALL RESEARCH GRANTS THROUGH THE PROJECT SHOULD BE EXPLORED—PAYING SPECIAL ATTENTION HOWEVER, TO THE NEED TO KEEP THE ADMINISTRATIVE LOAD OFF OF MISSIONS. BUREAU FOR ASIA AND ST BUREAUS FEEL THAT NO GRANTS SHOULD BE MADE WITHOUT FULL COGNIZANCE AND CONCURRENCE OF MISSIONS, AND, REALISTICALLY, A GRANT THAT ENCOUNTERS PROBLEMS MAY INVOLVE MISSION ADMINISTRATIVE WORKLOAD).
0 EXAMINE CAREFULLY THE NEED FOR AND COST EFFECTIVENESS OF A RESIDENT FIELD FACILITATOR UNIT UNDER MISSION MANAGEMENT.

—(3) TECHNICAL ASPECTS OF PP DESIGN

0 SOCIO-ECONOMIC RESEARCH WILL BE PRODUCTION AND UTILIZATION DRIVEN. MUCH OF THIS RESEARCH WILL BE COUNTRY SPECIFIC. SPECIAL ATTENTION SHOULD BE GIVEN TO MECHANISMS FOR LINKING SOCIO-ECONOMIC RESEARCH WITH PRODUCTION AND UTILIZATION NETWORK RESEARCH.
0 STRIKE A CAREFUL BALANCE IN SPECIES TRIALS BETWEEN A NETWORK THAT IS TOO NARROW AND ONE THAT IS TOO BROAD.

—(4) NEXT STEPS

0 THE DRAFT PP WILL BE PREPARED AND SENT TO MISSIONS ALLOWING SUFFICIENT TIME FOR REVIEW. FIELD CONSULTATION TO FINALIZE DESIGN WILL BE UNDERTAKEN IF NEEDED.
0 THE IUFRO CONGRESS IN SRI LANKA IN JULY WILL FOCUS ON RESEARCH GAPS AND PRIORITIES AND THE RESULTS WILL BE REVIEWED AND TAKEN INTO ACCOUNT.
0 THE ANTICIPATED OBLIGATION IS PLANNED FOR EARLY FY 85.

9. DR. BRADY CONCLUDED THE WORKSHOP BY THANKING THE PARTICIPANTS FOR THEIR ATTENDANCE, THEIR ACTIVE PARTICIPATION AND THEIR CONSTRUCTIVE SUGGESTIONS. HE SAID THAT HE LOOKS FORWARD TO THE DEVELOPMENT OF A PRODUCTIVE COLLABORATIVE RESEARCH PROJECT FOR FORESTRY/FUELWOOD RESEARCH IN ASIA. THIS WILL BE A FIRST OF A KIND EFFORT FOR AID.
SHULTZ.

233

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AID/ASIA/TR:RSIMPSON (SUBS)
AID/ASIA/PD:JNUSSBAUM (DRAFT)
AID/ASIA/DP:ASILVER (DRAFT)
AID/AA/ASIA:CWGREENLEAF, JR.

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AIDAC

E.O. 12356: N/A
TAGS: N/A
SUBJECT: ASIA FUELWOOD FORESTRY PLANNING CONFERENCE

FOR MISSION DIRECTORS FROM AA/ASIA CHARLES W. GREENLEAF

1. I AM PLEASED THE ASIA FUELWOOD FORESTRY PLANNING CONFERENCE WAS SUCCESSFUL. I AM ALSO PLEASED THAT SPECIFIC RESEARCH AREAS WERE IDENTIFIED FOR THIS FIRST [illegible] AGENCY COMMON THEME RESEARCH EFFORT.

2. NOW THAT YOUR MISSION REPRESENTATIVES HAVE HAD A CHANCE TO DISCUSS THE CONFERENCE RESULTS WITH YOU AND [illegible] TO FINALIZING THE PP, I WOULD APPRECIATE A FORMAL STATEMENT OF YOUR VIEWS ON THE EXTENT OF POTENTIAL MISSION PARTICIPATION IN THE PROPOSED RESEARCH NETWORK.

3. IN YOUR COMMENTS, RESPONSES TO THE FOLLOWING QUESTIONS WOULD BE MOST HELPFUL.

A. SHOULD AID SUPPORT A RESEARCH NETWORK IN MULTI-PURPOSE TREES INVOLVING SELECTED ASIAN INSTITUTIONS?

B. DO YOU HAVE EXISTING AND PLANNED PROJECTS THAT

[illegible] RESEARCH ON MULTI-PURPOSE TREES AT INSTITUTIONS [illegible] MAY BE INCLUDED IN THE NETWORK?

C. ARE YOU WILLING TO CONSIDER FUTURE BILATERAL PROJECTS [illegible] SUPPORT THE NETWORK'S RESEARCH OBJECTIVES?

D. DO YOU ANTICIPATE BUYING IN TO THE AID/W CONTRACT [illegible] COOPERATIVE AGREEMENT TO PROMOTE HOST COUNTRY RESEARCH [illegible]ING, IMPLEMENTATION AND RESEARCH NETWORK PARTICIPA-

E. ARE YOU WILLING TO FACILITATE PARTICIPATION OF KEY [illegible] INSTITUTIONS WITHIN YOUR COUNTRY IN THE NETWORK

PAGE 02   STATE 154129   1347 082371 AID8391

PROGRAM?

F. WHAT IS THE LIKELY INTEREST OF YOUR HOST GOVERNMENT IN AN AID AND POTENTIALLY MULTI-DONOR FUNDED RESEARCH NETWORK ON MULTI-PURPOSE TREES?

4. YOUR CABLED RESPONSE BY JUNE 15 WOULD BE APPRECIATED.

5. I BELIEVE THAT THIS COMMON THEME APPROACH IS A PIONEERING EFFORT THAT IS EXTREMELY IMPORTANT TO THE BUREAU AND AGENCY. WE AND S-T WILL NOT BE ABLE TO MOVE FORWARD IF THERE ISN'T SUFFICIENT INTEREST. SHULTZ

MAY 2 [illegible] 1984

234

ACTION OFFICE SAST-01
INFO AAAS-01 ASDP-02 GC-01 GCAS-01 GCFL-01 FM-02 ASPO-03
ASTR-02 STSY-01 STFN-01 STEH-01 CS-01 AGR-01 RELG-01
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R 080258Z JUN 84
FM AMEMBASSY DHAKA
TO SECSTATE WASHDC 5563

UNCLAS DHAKA 3988

AIDAC

E.O. 12356: N/A
SUBJECT: ASIA FUELWOOD FORESTRY PLANNING CONFERENCE

REF: STATE 154123

1. USAID/DHAKA SUPPORTS RESEARCH NETWORK NOTED PARA 1.A. AS TO POINT IN PARA 1B, WE EXPECT TO SUPPORT AN ACTIVITY BEGINNING IN FY 85 EITHER SEPARATELY OR AS PART OF OUR AGRICULTURAL RESEARCH PROJECT, WHICH WILL INVOLVE CERTAIN ELEMENTS OF RESEARCH OF MULTI-PURPOSE TREES. THIS WOULD BE DONE THROUGH SOME INSTITUTION, POSSIBLY THE FORESTRY RESEARCH INSTITUTE (FRI). GIVEN THE LEVEL AT WHICH MOST FORESTRY RESEARCH IS CONDUCTED IN BANGLADESH, PARTICULARLY THAT RELATED TO MULTI-PURPOSE TREES, WE WOULD EXPECT A BANGLADESH BASED ACTIVITY TO BE MORE ON THE INFORMATION RECEIVING END IN ANY NETWORK.

2. OUR ANSWER TO 1.C. IS SIMILAR TO OUR ANSWER TO 1.B. IN THIS SENSE. IF OUR PLANS JELL, WE WILL HAVE A BILATERAL PROJECT ADDRESSING ONFARM FORESTRY CONCERNS. WE FULLY EXPECT THIS TO INCLUDE A FAIR ELEMENT OF APPLIED RESEARCH ON MULTI-PURPOSE FARM HOMESTEAD TREES. WE ASSUME THAT WILL BE SUPPORTIVE OF THE RESEARCH NETWORK OBJECTIVES AND THAT TWO-WAY LINKAGES WILL BE BENEFICIAL.

3. WE WOULD EXPECT TO BUY INTO THE AID/W EXECUTED CONTRACT/ COOPERATIVE AGREEMENT FOR SELECTED PURPOSES TO PROMOTE OR IMPROVE BANGLADESHI FORESTRY RESEARCH PLANNING AND IMPLEMENTATION AND/OR ITS SUPPORT OF THE NETWORK. WE EXPECT THAT OUR PROPOSED FORESTRY EFFORT WILL UNCOVER AREAS FOR TECHNICAL ASSISTANCE WHICH CAN BE FAIRLY EASILY MET FROM RESOURCES OF A COMPREHENSIVE PRIME CONTRACT. AT THE MOMENT, WE CANNOT ESTIMATE THE LEVEL OF OUR INVOLVEMENT BUT IT IS LIKELY TO BE RELATIVELY MODEST AT THE START.

4. AS TO 1.E., WE CAN FORESEE SOME INVOLVEMENT OF FRI OR OTHER INSTITUTION IN THE NETWORK WHICH WE CAN FACILITATE THROUGH OUR PROPOSED PROJECT. THERE ARE, HOWEVER, VERY TIGHT RESTRICTIONS ON THE TRAVEL OF GOVERNMENT EMPLOYEES WHICH COULD SEVERELY INHIBIT BANGLADESH PARTICIPATION IN SOME ASPECTS OF THE NETWORK.

5. IN REPLY TO 1.F., THERE IS NO DOUBT A STRONG INTEREST IN RESEARCH ON AND PROGRAMS TO EXPAND THE USE OF MULTI-PURPOSE TREES AMONG MANY OFFICIALS IN THE GOVERNMENT ESPECIALLY THE MINISTRY OF AGRICULTURE. THERE IS STILL A DEBATE AS TO WHICH BRANCH OF MINISTRY OF AGRICULTURE SHOULD TAKE THE LEAD IN THIS AREA. IT COULD BE FORESTRY WHICH HAS CONCENTRATED IN THE PAST ON INDUSTRIAL TREE CROPS BUT WHICH HAS CERTAIN ELEMENTS SUPPORTING MORE WORK RELATED TO FARMER NEEDS OR IT COULD BE AGRICULTURE

ENCOMPASS ONFARM FORESTRY, PROBABLY UNDER THE FARMING SYSTEMS RESEARCH BANNER. WHILE THE SIGNALS ARE NOT YET CERTAIN WE WOULD EXPECT THAT THE INCREASED AWARENESS OF ONFARM FORESTRY NEEDS WILL SPUR INTEREST IN THE 1.F. IDEA.
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Department of State

INCOMING TELEGRAM

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ACTION OFFICE DAST-01
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RELO-01 MAST-01 /023 A5 SN8

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FM AMEMBASSY KATHMANDU
TO SECSTATE WASHDC 7167

UNCLAS KATHMANDU 3365

AIDAC

E.O. 12356: N/A
SUBJECT: ASIA FUELWOOD FORESTRY PLANNING CONFERENCE

REF: STATE 154129

1. SUMMARY. MISSION SUPPORTS PROPOSED RESEARCH NETWORK IN MULTIPURPOSE TREES. IN NEPAL'S FORESTRY RESEARCH SECTOR AID IS, AND WILL LIKELY REMAIN, A MINOR DONOR. IN OUR PROGRAMS WE ARE PRIMARILY ENGAGED IN FIELD APPLICATIONS; RESEARCH IS BEING HANDLED BY SIGNIFICANT WORK UNDERWAY OR BEING PLANNED BY OTHER DONORS. APPROVAL IS IMMINENT OF THE FINAL DESIGN OF A MAJOR RESEARCH EFFORT IN THE SECTOR BY BRITISH ODA. UNDP/FAO AND AUSTRALIA ARE OTHER PRINCIPAL DONORS. AID/NEPAL'S BILATERAL ASSISATNCE IN FORESTRY/FUELWOOD RESEARCH WILL BE RESTRICTED TO SUPPORT OF FACULTY RESEARCH AT THE INSTITUTE FOR RENEWABLE NATURAL RESOURCES (IRNR), THE INSTITUTE OF AGRICULTURE AND ANIMAL SCIENCE (IAAS) AND ON-FARM TRIALS OF MULTIPURPOSE TREES UNDER THE AGRICULTURE RESEARCH AND PRODUCTION PROJECT (ARP). IT IS FURTHER NOT LIKELY THAT IN THE FORESEEABLE FUTURE THERE WILL EMERGE AN INSTITUTION CAPABLE OF SUPPORTING REGIONAL RESEARCH PROGRAMS. NEPAL CAN LIKELY PARTICIPATE IN EXCHANGES OF RESEARCH INFORMATION AND IN REGIONAL SEMINARS, WORKSHOPS ETC. END SUMMARY.

2. REMAINDER OF THIS CABLE IS KEYED TO SPECIFIC QUESTIONS RAISED PARA 3 REFTEL.

A. YES, BUT TAKING INTO ACCOUNT THE LIMITATIONS ON THE USE OF BILATERAL FUNDS TO AUGMENT CENTRALLY FUNDED TECHNICAL ASSISTANCE, INTERNATIONAL TRAVEL, ETC.

B. NO. PRESENTLY AID SUPPORTS FACULTY RESEARCH IN MULTIPURPOSE TREES AT IRNR AND IAAS. UNDER THE ARP PROJECT ON-FARM TRIALS OF MULTIPURPOSE TREES AS PART OF A FARMING SYSTEMS APPROACH ARE CONTEMPLATED. THE TWO INSTITUTES ARE PRIMARILY B.SC. LEVEL TEACHING INSTITUTIONS AND CAN SUPPORT ONLY LIMITED RESEARCH PROGRAMS. OVER THE LIFE OF THE PROPOSED PROJECT THEIR PARTICIPATION WILL LIKELY BE LIMITED TO SHARING OF RESEARCH RESULTS AND OCCASIONAL ATTENDANCE AT REGIONAL WORKSHOPS.

. YES, FOR EXAMPLE, FOLLOW-ON RCU ACTIVITIES.

. YES, BUT BUYINGS WILL PROBABLY BE LIMITED TO PROJECT EVALUATION AND DESIGN WORK.

. YES, AID/NEPAL WILL ENCOURAGE THE GON TO SEND PARTICIPANTS TO REGIONAL RESEARCH WORKSHOPS, SEMINARS, TRAINING PROGRAMS, ETC., AS APPROPRIATE.

GON WILL LIKELY BE QUITE INTERESTED IN PARTICIPATING. A MULTIDONOR PROGRAM IS MORE ATTRACTIVE AN LIKELY TO ELICIT A HIGHER DEGREE OF PARTICIPATION.

236

UNCLASSIFIED

Department of State

INCOMING TELEGRAM

PAGE 01 ISLAMA 12818 08 OF 02 1184338Z 6433 812463 A102258
ACTION AID-08

ACTION OFFICE SAST-01
INFO SAAT-01 ASPM-02 ASOP-02 ASPO-03 ASTR-07 STPM-01 STEM-01
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FM AMEMBASSY ISLAMABAD
TO SECSTATE WASHDC 6667

UNCLAS ISLAMABAD 12818

AIDAC

E.O. 12356 N/A
SUBJECT: ASIA FUELWOOD FORESTRY PLANNING CONFERENCE

REF: A) STATE 154129 B) STATE 144546 C) ISLAMABAD 3734

1. MISSION RESPONSES TO THE QUESTIONS POSED IN REFTEL (A) ARE GIVEN BELOW

2. REF. PARA. 3-A, USAID/ISLAMABAD AND THE GOVERNMENT OF PAKISTAN (GOP) WILL CONSIDER ACCEPTING RESEARCH NETWORK SUPPORT FOR NATIONAL RESEARCH PRIORITIES IN PAKISTAN, BUT THE MISSION BELIEVES NETWORK FUNCTIONS WHICH ARE REGIONAL SHOULD BE FUNDED BY ASIA BUREAU AND/OR S&T BUREAU. USAID AND GOP ARE WILLING TO PARTICIPATE IN AID/W FUNDED NETWORKING ACTIVITIES (I.E., MEETINGS, STUDY TOURS, ETC.) AND TO MAKE IN-KIND CONTRIBUTIONS IN THE FORM OF PERSONNEL TIME ETC., AS LONG AS THESE DEMANDS DO NOT INTERFERE WITH LOCAL RESEARCH AND OTHER PRIORITY WORK IN FORESTRY IN PAKISTAN.

3. GENERAL BACKGROUND COMMENT CONCERNING PAKISTAN SITUATION: SPECIAL FEDERAL VS PROVINCIAL RELATIONSHIPS IN PAKISTAN MAKE DEVELOPMENT PROCESSES COMPLICATED AND MEANINGFUL COLLABORATION OFTEN DIFFICULT AMONG PAKISTANI INSTITUTIONS. REGIONAL NETWORKING WITH OTHER ASIAN COUNTRIES CARRIES THESE KINDS OF COLLABORATION PROBLEMS ONE STEP FURTHER. USAID HAS NOT BEEN DIRECTLY INVOLVED IN FORESTRY IN PAKISTAN FOR MORE THAN 13 YEARS. MISSION'S NEW FORESTRY PLANNING AND DEVELOPMENT PROJECT (FY83-FY91) STILL IS ONLY AT AN EARLY IMPLEMENTATION STAGE. LONG-TERM TECHNICAL ADVISORS ARE NOT SCHEDULED TO ARRIVE IN COUNTRY UNTIL EARLY IN CALENDER YEAR 1985, AND MOST PROJECT ACTIVITIES, INCLUDING FARM FORESTRY RESEARCH, WILL NOT BE WELL UNDERWAY UNTIL FY 87. ANOTHER IMPORTANT CONSIDERATION CONCERNING PAKISTAN IS ALTHOUGH GOP HAS CONSIDERABLE EXPERIENCE WITH AGRICULTURAL RESEARCH AND WITH TRADITIONAL FORESTRY RESEARCH, THEY ARE ONLY BEGINNING TO CONDUCT ANY INTERACTIVE RESEARCH BETWEEN FORESTRY AND AGRICULTURE ENTITIES. ANY SUBSTANTIAL RESEARCH EFFORTS IN FARM FORESTRY, ON-FARM TREE CROP MANAGEMENT, AND RELATED SUPPLY-DEMAND-MARKETING-SOCIO-ECONOMIC ASPECTS IS ALSO IN BEGINNING STAGES. NO SIGNIFICANT AMOUNT OF RESOURCES (GIVEN LIMITED FINANCIAL AND HUMAN RESOURCES) COULD BE DEVOTED TO REGIONALLY ORIENTED ACTIVITIES IN FARM FORESTRY RESEARCH FOR SEVERAL YEARS WITHOUT DETRACTING FROM DOMESTIC EFFORTS WHICH ARE ONLY NOW GETTING UNDERWAY.

4. REF. PARA. 3-B, PAKISTAN'S USAID SUPPORTED EIGHT YEAR FORESTRY PLANNING AND DEVELOPMENT PROJECT ALLOCATES OVER U.S. DOLLARS 3 MILLION FOR FARM FORESTRY RESEARCH (1.7 MILLION USAID - 1.3 MILLION GOP) AT THE PAKISTAN FORESTRY INSTITUTE (PFI) AT PESHAWAR AND THE FIELD STATIONS IN THE FOUR PROVINCES. COOPERATION IS EXPECTED FROM OTHER RURAL DEVELOPMENT AND AGRICULTURAL INSTITUTIONS AND UNIVERSITIES. AT THIS TIME WE ARE NOT FAR ENOUGH ALONG TO DETERMINE WHICH ASPECTS OF OUR PROJECT MIGHT BE APPROPRIATE IN THE NETWORK. USAID AND GOP ARE WILLING TO PARTICIPATE IN NETWORK ACTIVITIES IN THOSE SUBJECT AREAS WHICH COINCIDE WITH USAID PROJECT AND/OR GOP LINES OF INVESTIGATION. OF COURSE THIS PARTICIPATION WILL HAVE TO BE CAREFULLY MEASURED TO AVOID DIVERTING LIMITED AVAILABLE FINANCIAL AND HUMAN RESOURCES AWAY FROM THE PRIMARY NATIONAL RESEARCH PROGRAM FOCUS AND OBJECTIVES. AID/W SHOULD BE AWARE THAT AVERAGE ANNUAL EXPENDITURES FOR RESEARCH IN THE PROJECT ARE LESS THAN 10 PERCENT (DOLLARS 450,000/YR FOR RESEARCH) OF TOTAL ANNUAL PROJECT COSTS (DOLLARS 1.5 MILLION EACH YEAR OVER EIGHT YEARS FOR 44 MILLION TOTAL DOLLARS). THIS INCLUDES ALL OTHER INSTITUTION BUILDING, TRAINING, EQUIPMENT, CONSTRUCTION, TECHNICAL ASSISTANCE, GOP STAFF AND OPERATIONAL FIELD EXPENDITURES BY BOTH USAID AND GOP.

5. REF PARA 3-C, ANY THOUGHTS ON THE NEXT FORESTRY RELATED PROJECT ARE MUCH TOO PREMATURE, PARTICULARLY WHEN THE CURRENT EIGHT YEAR PROJECT IS STILL IN A START-UP PHASE.

6. REF PARA 3-D, AT THIS TIME, MISSION/GOP ARE NOT ANTICIPATING BUYING IN DIRECTLY TO THE AID/W CONTRACT OR COOPERATIVE AGREEMENT. THE PRIMARY TECHNICAL ASSISTANCE CONTRACTOR UNDER THE MISSION'S FP08 PROJECT WILL PROVIDE BOTH SHORT-TERM TECHNICAL ASSISTANCE IN RESEARCH AND ONE LONG-TERM RESEARCH PROGRAM ADVISOR AT PFI FOR FOUR-YEARS. MISSION MAY BE WILLING TO CONSIDER TASKING PROJECT CONSULTANTS TO CONTRIBUTE SOME OF THEIR TIME TO NETWORK ACTIVITIES. THE TRAINING PROVISIONS IN THE PROJECT INCLUDE SOME FUNDS BOTH FOR PAKISTANI PARTICIPATION IN IN-COUNTRY SEMINARS, AND FIELD TOURS AND OBSERVATION STUDY TOURS IN THE ASIA REGION. THE MISSION WOULD ALSO CONSIDER EXPANDING SOME OF THE PAKISTAN PROJECT ACTIVITIES TO SUPPORT REGIONAL NETWORK FUNCTIONS, AND INFORMALLY LINK THEM INTO AID/W NETWORK ACTIVITIES.

7. REF PARA 3-E, USAID/ISLAMABAD WILLING TO FACILITATE THE PARTICIPATION OF PAKISTANI INSTITUTIONS ASSOCIATED UNDER PAKISTAN AGRICULTURAL RESEARCH COUNCIL (PARC), SUCH AS THE PAKISTAN FOREST INSTITUTE (PFI) INTO THE NETWORK.

8. REF PARA 3-F, GOP, OFFICE OF INSPECTOR GENERAL OF FORESTS (O/IGF) AND DIRECTOR GENERAL OF THE PAKISTAN FOREST INSTITUTE (PFI) SEE VALUE FOR THEMSELVES IN PARTICIPATING IN AN AID AND POTENTIALLY MULTI-DONOR FUNDED RESEARCH NETWORK ON MULTI-PURPOSE TREES WHICH MIGHT STRENGTHEN PRIORITY AREAS OF RESEARCH IN PAKISTAN. O/IGF AND PFI MIGHT OFFER PAKISTAN AS A SITE FOR CONDUCTING NETWORK ACTIVITIES (WORKSHOPS, ETC.) OR FOR BASING LONG-TERM NETWORK STAFF. THE FACILITIES OF THE NATIONAL AGRICULTURAL RESEARCH CENTER (NARC) IN ISLAMABAD COULD POTENTIALLY BE USED FOR SOME REGIONAL NETWORK FUNCTIONS AS WELL AS THE PAKISTAN INSTITUTE ITSELF. PFI'S FACILITIES (CLASS ROOMS, MEETING ROOMS, ETC.) ARE QUITE LIMITED. HINTON

231

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Department of State

INCOMING TELEGRAM

PAGE 01 MANILA 15631 130915Z 6786 014079 AID5995
ACTION AID-00

ACTION OFFICE SAST-01
INFO ASPT-02 ASPM-02 ASTR-02 STFN-01 AGRI-01 RELO-01 MAST-01
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AMEMBASSY COLOMBO
AMEMBASSY DHAKA
AMEMBASSY ISLAMABAD
AMEMBASSY JAKARTA
AMEMBASSY KATHMANDU
AMEMBASSY NEW DELHI

UNCLAS MANILA 15631

AIDAC

E.O. 12356: N/A
SUBJECT: ASIA FORESTRY/FUELWOOD PLANNING CONFERENCE

REF.: (A) STATE 154123, (B) BANGKOK 23987

1. OUR PARTICIPATION IN THE PROPOSED RESEARCH NETWORK WILL PROBABLY BE SUBSTANTIAL BUT INDIRECT. WE PRESENTLY SEE OUR ROLE AS FACILITATING THE PARTICIPATION OF APPROPRIATE PHILIPPINE INSTITUTIONS AND INDIVIDUALS AND ARRANGING APPROPRIATE COMPLEMENTATION WITH THE FORESTRY RESEARCH EFFORTS THAT WE ARE SUPPORTING WITHIN CERTAIN OF OUR BILATERAL PROJECTS. WE STRONGLY SUPPORT THE POSITION EXPRESSED BY BANGKOK IN REFTEL B THAT THE PROPOSED RESEARCH NETWORK PRIMARILY INVOLVE ASIAN INSTITUTIONS AND THAT MAXIMUM USE BE MADE OF EXISTING RESEARCH NETWORKS ON THE FORESTRY AREA.

2. OUR COMMENTS ON THE QUESTIONS RAISED IN PARAGRAPH THREE OF REFTEL A FOLLOW.

(A) SHOULD AID SUPPORT A NETWORK?

YES, IN PARTICULAR, THE THREE AREAS IDENTIFIED AT THE BANGKOK CONFERENCE.

(B) EXISTING AND PLANNED PROJECTS AT INSTITUTIONS THAT MAY BE INCLUDED IN NETWORK?

THE ACTIVITIES WITHIN THE RURAL ENERGY DEVELOPMENT PROJECT AND THE AGROFORESTRY AND FORESTRY RESEARCH ACTIVITIES WITHIN THE RAINFED RESOURCES DEVELOPMENT PROJECT WOULD PRIMARILY COMPLEMENT THE NETWORK.

(C) ARE WE WILLING TO CONSIDER FUTURE BILATERAL PROJECTS WHICH SUPPORT THE NETWORK?

NO, THE MISSION'S CURRENT FORESTRY PORTFOLIO OF BILATERAL PROJECT IS MORE THAN SUFFICIENT FOR THE GOP'S ABSORPTIVE CAPACITY. HOWEVER, IN THE MEDIUM-TERM FUTURE (3-5 YEARS), THE MISSION WOULD CONSIDER ADDITIONAL BILATERAL PROJECTS WHICH MIGHT SUPPORT THE NETWORK.

(D) DO YOU ANTICIPATE BUYING INTO THE AID/W CONTRACT?

AID/W PROJECTS ARE NOT ACCEPTABLE TO THE GOP, AND TECHNICAL SUPPORT CAN BE PROVIDED THROUGH THE RAINFED...

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(E) ARE YOU WILLING TO FACILITATE THE PARTICIPATION OF KEY RESEARCH INSTITUTIONS IN THE NETWORK?

YES, FOR INSTANCE, THE R&D PROGRAMS ALREADY FOCUSED ON INSTITUTIONAL DEVELOPMENT.

(F) WHAT IS THE GOP'S INTEREST IN SUCH A NETWORK?

THEY ARE INTERESTED; HOWEVER, THE PRESENT BUDGET CRISIS SERIOUSLY LIMITS THEIR POTENTIAL INVOLVEMENT.
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238

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Department of State

INCOMING TELEGRAM

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ACTION OFFICE SAST-01
INFO ASPT-02 ASPN-02 STFM-01 ES-01 AGRI-01 RELO-01 MAST-01
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TO SECSTATE WASHDC 3883
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AMEMBASSY DHAKA
AMEMBASSY ISLAMABAD
AMEMBASSY JAKARTA
AMEMBASSY KATHMANDU
AMEMBASSY MANILA
AMEMBASSY NEW DELHI

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UNCLAS BANGKOK 28987

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E. O. 12356: N/A
SUBJECT: ASIA FUELWOOD FORESTRY PLANNING CONFERENCE

REF: STATE 154129

1. USAID/THAILAND PLANS ONLY LIMITED PARTICIPATION IN PROPOSED RESEARCH NETWORK FOR FUELWOOD FORESTRY. ANSWERS THAT FOLLOW ARE KEYED TO PARAGRAPH 3, REFTEL.

- A. BASED ON GENERAL SUPPORT FOR RESEARCH EXPRESSED AT CONFERENCE, MISSION FEELS AID SHOULD SUPPORT A RESEARCH NETWORK INVOLVING ASIAN INSTITUTIONS. WE WOULD, HOWEVER, RECOMMEND THAT MAXIMUM USE BE MADE OF EXISTING NETWORKS.

- B. NO, PROJECT SUPPORT LIMITED TO SIMPLE, ADAPTIVE RESEARCH TRIALS BEING CONDUCTED BY RTG IMPLEMENTING AGENCIES.

- C. OUR CURRENT AND PLANNED PORTFOLIO DOES NOT INCLUDE RESEARCH SUPPORT ON MULTI-PURPOSE TREES THAT CAN BE USED IN THE NETWORK. HOWEVER, UNDER CERTAIN CONDITIONS SUPPORT TO NETWORK RESEARCH OBJECTIVES MIGHT BE CONSIDERED, E. G. RTG REQUEST UNDER EPD II PROJECT OR PROPOSED FY 85 S&T PROJECT.

- D. NO, NOT AT THE PRESENT TIME.
- E. YES, HOWEVER, AID SUPPORT PROBABLY WOULD BE LIMITED TO HIGH PRIORITY RESEARCH IDENTIFIED UNDER EPD II PROJECT. ALSO, IF RTG WILLING TO USE LOAN FUNDS FOR SUCH ACTIVITIES, THERE MAY BE OTHER OPPORTUNITIES FOR AID TO FACILITATE THAI PARTICIPATION.

- F. LEVEL OF RTG INTEREST IN MULTI-DONOR FUNDED RESEARCH NETWORK NOT CLEAR. ACTUAL COST TO RTG WOULD BE MAJOR FACTOR. OUR GUESS IS, FOR PROFESSIONAL REASONS, KASETSART UNIVERSITY FORESTRY STAFF WOULD BE VERY RECEPTIVE. USAID INTEREST WOULD BE CONTINGENT UPON INTEREST OF RTG AS NOTED IN C. AND E. ABOVE. DEAN

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Department of State

INCOMING TELEGRAM

PAGE 01 COLOMB 04258 1811212
ACTION AID-00 6299 016300 AID2185

ACTION OFFICE SAST-01
INFO ASPT-02 ASPN-02 GC-01 GCAS-01 GCFL-01 ASPO-03 ASTR-02
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AMEMBASSY DHAKA
AMEMBASSY ISLAMABAD
AMEMBASSY JAKARTA 1130
AMEMBASSY KATHMANDU
AMEMBASSY MANILA
AMEMBASSY NEW DELHI

UNCLAS COLOMBO 4258

AIDAC

E.O. 12356: N/A
SUBJ: ASIA FUELWOOD FORESTRY PLANNING CONFERENCE

REF: (A) BANGKOK 28987; (B) STATE 154129

1. USAID/SRI LANKA PLANS ONLY LIMITED PARTICIPATION IN PROPOSED RESEARCH NETWORK FOR FUELWOOD AND MULTI-PURPOSE TREE FORESTRY FOR THE NEAR TERM DUE TO AID FUNDING AND GSL FOREST DEPARTMENT PERSONNEL CONSTRAINTS WHICH ARE EXPECTED TO LAST UNTIL 1987. ANSWERS TO PARA 3 OF REFTEL (B) AS FOLLOWS:

- A. AS GENERALLY AGREED AT THE SUBJECT CONFERENCE, MISSION FEELS IT WOULD BE DESIRABLE FOR AID TO SUPPORT A RESEARCH NETWORK INVOLVING ASIAN INSTITUTIONS. MUCH INDEPENDENT RESEARCH IS UNDERWAY AND A NETWORK APPROACH WOULD ASSIST WITH SHARING KNOWLEDGE AND RESEARCH RESULTS. MISSION AGREES WITH REF. (A) , RECOMMENDING THE MAXIMUM USE BE MADE OF EXISTING NETWORKS.

- B. ONE PROJECT SUPPORTS FOREST DEPARTMENT RESEARCH ON MULTI-PURPOSE TREES ON A LIMITED SCALE. ALSO A PVO IS SUPPORTING SMALL SCALE MULTI-PURPOSE TREE PLANTINGS. THESE INSTITUTIONS WOULD APPRECIATE BEING TIED-IN TO THE NETWORK, MAINLY IN A RECEIVING OR INFORMATION SHARING CAPACITY. THERE IS NOT ENOUGH INSITUTIONAL STRENGTH BY EITHER INSTITUTION TO TAKE A LEADING ROLE AT THIS TIME.

- C. MISSION WOULD CONSIDER BILATERAL PROJECTS THAT WOULD SUPPORT THE NETWORK'S RESEARCH OBJECTIVES PROVIDED THE OBJECTIVES WERE CONSISTENT WITH HOSET-COUNTRY NEEDS AND PRIORITIES AND ARE WITHIN THE MISSION'S OVERALL DEVELOPMENT STRATEGY AND RESOURCE LIMITS.

- D. NO. THERE ARE NO FUNDS AVAILABLE FOR A BUY-IN IN THE NEAR FUTURE

- E. YES, IF THE GSL SUPPORTS THE PROGRAM AND THE MISSION DETERMINES THE INSTITUTION HAS THE CAPACITY TO PARTICIPATE MEANINGFULLY.

- F. MISSION FEELS, AT THE TECHNICAL LEVEL, A MODERATE INTEREST IN THE NEAR TERM, POSSIBLY INCREASING IN THE LONGER TERM (5-10 YEARS). THIS PHASE-IN IS A RESULT OF MANPOWER SHORTAGES AND PROGRAMMATIC COMMITMENTS BY THE GSL. MINISTERIAL VERBAL SUPPORT EXISTS; HOWEVER, ACTUAL COMMITMENT IS HARD TO DETERMINE.
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240

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Department of State

INCOMING TELEGRAM

ACTION AID-00

ACTION OFFICE SAST-01
INFO AAAS-01 ASPT-02 ASPN-02 GC-01 GCAS-01 GCFL-01 ASPO-03
ASTR-02 STFN-01 STEN-01 ES-01 AGRI-01 RELO-01 MAST-01
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AMEMBASSY JAKARTA
AMEMBASSY ISLAMABAD
AMEMBASSY MANILA
AMEMBASSY COLOMBO
AMEMBASSY BANGKOK

UNCLAS NEW DELHI 13887

AIDAC

E.O. 12356: N/A
SUBJECT: ASIA FORESTRY/FUELWOOD PLANNING CONFERENCE

REF: (A) STATE 154123, (B) NEW DELHI 1883

1. THE GOI IS PLACING INCREASINGLY HIGH PRIORITY ON RESEARCH PROGRAMS AIMED AT MULTIPURPOSE SPECIES. USAID/INDIA BELIEVES THESE PROGRAMS COULD BENEFIT THROUGH IMPROVED COLLABORATION WITH RELATED RESEARCH ACTIVITIES IN THE REGION AND THAT OTHER COUNTRIES MAY BE ABLE TO BENEFIT BY DRAWING ON THE INDIAN EXPERIENCE AS WELL. HOWEVER, OUR ABILITY TO ENGAGE INDIAN PARTICIPATION IN THE PROPOSED NETWORK IS DIFFICULT TO ASSESS UNTIL MORE IS KNOWN REGARDING THE NETWORK'S STRUCTURE AND OPERATING ARRANGEMENTS. AS DISCUSSED IN BANGKOK, THE PARTICIPATION OF ANY INDIAN RESEARCH INSTITUTION OR INDIVIDUAL SCIENTIST WILL BE STRICTLY CONDITIONED BY THE NATURE OF THE AGENCY'S BILATERAL AGREEMENT AND WORKING RELATIONSHIPS WITH THE GOI. TO THE EXTENT THE NETWORK AND ANY AID/W SUPPORT PROJECT IS DESIGNED WITH THIS BILATERAL CONTEXT IN MIND, OUR ABILITY TO ELICIT GOI INTEREST AND INVOLVEMENT WILL BE STRENGTHENED.

2. IN THIS REGARD, SEVERAL RECOMMENDATIONS WERE PLACED ON THE TABLE IN BANGKOK FOR CONSIDERATION BY THE AID/W DESIGN TEAM. THE FIRST OF THESE WAS TO MAKE MAXIMUM USE OF EXISTING NETWORKS NOW OPERATING UNDER THE AUSPICES OF INTERNATIONAL ORGANIZATIONS SUCH AS FAO, ICRAF, IUFRO, NFTA AND THE LIKE. BY SUPPORTING AND BUILDING ON THE INFORMATION EXCHANGE AND RESEARCH ACTIVITIES THESE GROUPS ALREADY HAVE UNDERWAY, OFFICIAL APPROVAL AND CLEARANCE REQUIREMENTS COULD BE MINIMIZED. A SECOND RECOMMENDATION WAS TO INCLUDE IN AN AID/W SUPPORT PROJECT SOME MECHANISM FOR PROVIDING, ON REQUEST BY MISSIONS AND COOPERATING COUNTRIES, NO-COST TECHNICAL ASSISTANCE. THIS COULD FACILITATE NETWORK PARTICIPATION AND FORESTRY RESEARCH MORE GENERALLY IN THOSE COUNTRIES WHERE THERE IS GROWING RESISTANCE TO USING BILATERAL FUNDS TO FINANCE EXPATRIATE TECHNICAL ADVISORS.

3. RELATED TO THESE BILATERAL CONSIDERATIONS IS A SET OF MISSION MANAGEMENT CONCERNS. THESE TOO WERE DISCUSSED IN BANGKOK. THESE CONCERNS REVOLVE AROUND THE HIDDEN COSTS OF NETWORK PARTICIPATION, PRIMARILY THE PERSONNEL INTENSIVE BUSINESS OF SECURING INITIAL GOVERNMENT INTEREST AND APPROVAL, COORDINATING THE VISITS OF NETWORK

CONSULTANTS AND SECURING THEIR GOI CLEARANCES, COORDINATING GOI NOMINATION AND CLEARANCE OF INDIAN PARTICIPANTS FOR NETWORK TRAINING PROGRAMS AND WORKSHOPS, ASSISTING WITH THE START-UP OF NETWORK ACTIVITIES IN-COUNTRY AND MONITORING THEM THEREAFTER. COMPETING DEMANDS FOR STAFF TIME WITHIN THE MISSION COULD SERIOUSLY CONSTRAIN OUR ABILITY TO EFFECTIVELY PERFORM THESE NETWORK ACTIVITIES. THEREFORE A THIRD GENERAL RECOMMENDATION WAS THAT THE DESIGN OF THE NETWORK AND ANY AID/W SUPPORT PROJECT PAY SPECIAL HEED TO LIMITING THE ADMINISTRATIVE LOAD EXPECTED OF THE MISSIONS.

4. OUR RESPONSES TO THE SPECIFIC QUESTIONS RAISED IN REF A PARA 3 ARE GIVEN BELOW.

- (A) SHOULD AID SUPPORT A NETWORK?

- YES. HOWEVER, RATHER THAN START ONE OF OUR OWN, IT MAY BE MUCH MORE PRACTICAL AND COST EFFECTIVE TO SUPPORT THE EXPANDED ACTIVITIES OF AN ON-GOING NETWORK (E.G. NFTA). THIS ALTERNATIVE SHOULD BE GIVEN PRIORITY AND THOROUGHLY EXPLORED BEFORE FINALIZING AID/W SUPPORT PROJECT DESIGN.

- (B) EXISTING AND PLANNED PROJECTS AT INSTITUTIONS THAT MAY BE INCLUDED IN THE NETWORK?

- MADHYA PRADESH SOCIAL FORESTRY (386-0475), MAHARASHTRA SOCIAL FORESTRY (386-0478), AND ALTERNATIVE ENERGY RESOURCES DEVELOPMENT (386-0474) ARE EXISTING INSTITUTION BASED PROJECTS THAT HAVE RESEARCH COMPONENTS WHICH ADDRESS MULTIPURPOSE TREE SPECIES. AGRICULTURE RESEARCH (386-0470) AND FORESTRY RESEARCH, TRAINING AND EXTENSION (386-0482) HAVE PROPOSED COMPONENTS CONTAINING MULTIPURPOSE TREE SPECIES RESEARCH. INSTITUTIONS ASSOCIATED WITH EACH OF THESE PROJECT COULD POTENTIALLY PARTICIPATE IN A RESEARCH NETWORK. FOR THAT TO HAPPEN, A NETWORK SCHEME ACCEPTABLE TO THE GOI WILL BE NECESSARY.

- (C) WILLINGNESS TO CONSIDER FUTURE BILATERAL PROJECTS WHICH SUPPORT THE RESEARCH OBJECTIVES OF THE NETWORK?

- ONCE A RESEARCH NETWORK IS IN PLACE, THE MISSION WILL PURSUE WITH OUR INDIAN COUNTERPARTS APPROPRIATE MODIFICATIONS IN THE EXISTING BILATERAL PROJECTS CITED ABOVE. ADDITIONALLY, WORK ON THE DESIGN OF THE FORESTRY RESEARCH, EDUCATION AND TRAINING PROJECT (386-0482) IS NOW UNDERWAY. AT THE REQUEST OF THE GOI, THIS PROJECT WILL INITIALLY FOCUS ON BUILDING THE CAPABILITY OF SELECTED INDIAN STATE AGRICULTURAL UNIVERSITIES TO ASSIST STATE FOREST DEPARTMENTS IN MEETING SOCIAL FORESTRY RESEARCH AND MANPOWER DEVELOPMENT REQUIREMENTS. OVER THE ENSUING YEARS, WE HOPE FRET WILL BE ABLE TO SUPPORT ADDITIONAL PRIORITY PROGRAMS. AS SUCH IT MAY SERVE AS THE TOOL IN OUR PORTFOLIO MOST RESPONSIVE TO THE NETWORK'S RESEARCH OBJECTIVES.

- (D) DO YOU ANTICIPATE BUYING INTO AID/W CONTRACT?

- THE GOI IS HESITANT TO PERMIT THE USE OF BILATERAL LOAN OR GRANT FUNDS FOR FINANCING EXPATRIATE TECHNICAL ASSISTANCE. THEREFORE, ALTHOUGH IT WOULD BE COMFORTING TO KNOW THERE IS A CONVENIENT BUY-IN MECHANISM IN PLACE, WE DO NOT ANTICIPATE ANY BUY-INS AT THIS TIME OTHER THAN THOSE WHICH MIGHT BE APPROPRIATE FOR PD&S FUNDING.

- AS STATED ABOVE, IF THE PROPOSED AID/W SUPPORT PROJECT ITSELF COULD PROVIDE CRITICALLY NEEDED TECHNICAL ASSISTANCE ON AN IN-KIND BASIS FOR THE FORESTRY SECTOR, IT MAY PROVE USEFUL. IT MAY SERVE AS A POINT OF ENTRY FOR NET-

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Department of State

INCOMING
TELEGRAM

COUNTRIES WITH SIMILAR SENSITIVITIES REGARDING TECHNICAL ASSISTANCE FINANCING.

- (E) ARE YOU WILLING TO FACILITATE THE PARTICIPATION OF KEY RESEARCH INSTITUTIONS IN THE NETWORK?

- YES, SUBJECT TO COMPATIBILITY OF THE NETWORK WITH GOI RESEARCH PRIORITIES, BILATERAL OPERATING ARRANGEMENTS, AND MISSION STAFF AVAILABILITY. IT BEARS REPEATING THAT AT LEAST HERE IN INDIA THE GOVERNMENT IS GOING TO HAVE THE ABSOLUTE SAY IN IDENTIFYING THE QUOTE SELECTED INSTITUTIONS UNQUOTE AND STRUCTURING THE NATURE AND DEGREE OF THEIR NETWORK PARTICIPATION. THE DESIGN OF THE NETWORK AND AID/W SUPPORT PROJECT MUST RECOGNIZE THIS GOI PREROGATIVE AND INCORPORATE THE NECESSARY FLEXIBILITY.

- (F) LIKELY GOI INTEREST IN SUCH A NETWORK?

- OFFICIAL GOI INTEREST IS NOT CLEAR, PARTLY BECAUSE WE HAVE NOT BEEN ABLE TO GIVE THEM A CLEAR PICTURE OF WHAT THE PROPOSED NETWORK WOULD DO, HOW IT WOULD OPERATE, HOW INDIA IS LIKELY TO BENEFIT, AND WHAT WOULD BE EXPECTED FROM THE GOI AND INDIAN RESEARCH INSTITUTIONS. TO THE EXTENT WE HAVE DISCUSSED THE PROPOSED NETWORK WITH THEM, THE OFFICIAL RESPONSE HAS BEEN QUITE COOL. THE GOI CURRENTLY SEEMS MORE CONCERNED WITH EFFORTS TO NETWORK ITS DOMESTIC FORESTRY RESEARCH INSTITUTIONS MORE EFFECTIVELY THAN IT IS WITH OPPORTUNITIES FOR INTERNATIONAL COLLABORATION. FOR PROFESSIONAL REASONS, INDIVIDUAL SCIENTISTS ARE USUALLY VERY RECEPTIVE TO THE IDEA OF ANY FOREIGN DONOR SUPPORT FOR THEIR WORK. BUT IT MUST BE REMEMBERED THAT THE GOI HAS THE FIRST AND LAST SAY.

- IT BEARS REPEATING HERE A POINT MADE IN ONE OF OUR EARLIER CABLES ON THIS SUBJECT (REF. B). THE GOI GENERALLY INSISTS ON COMPLETE INDEPENDENCE IN MANAGING ITS TECHNICAL AND SCIENTIFIC EXCHANGE PROGRAMS. THE USE OF US GOVERNMENT (USG) FINANCIAL ASSISTANCE IN FACILITATING THE EXCHANGE OF INDIAN RESEARCH RESULTS WITH SAY PAKIST THAILAND OR INDONESIA WILL BE IN FOR VERY CLOSE SCRUTINY BY THE GOI AND IS LIKELY TO BE FOUND UNACCEPTABLE. WE BELIEVE IT WILL BE DIFFICULT TO SELL THE PROPOSED NETWORK IN A FORM WHICH CAN BE CONSTRUED AS MULTINATIONAL EFFORT FUNDED AND MANAGED BY THE USG.

5. TO ACQUAINT HIM MORE FULLY WITH CONDITIONS HERE IN INDIA, AID/W MAY WISH TO CONSIDER HAVING PROPOSED F/FRO PROJECT MANAGER, MAX MCFADDEN, STOP BY NEW DELHI FOR TWO OR THREE DAYS NEXT MONTH ON HIS WAY TO OR FROM THE IUFRO CONFERENCE IN KANDI. MISSION COULD ARRANGE FOR MCFADDEN TO MEET WITH GOI OFFICIALS TO DISCUSS THE PROPOSED NETWORK IN MORE DETAIL. WE ASSUME THE COST OF ANY SUCH VISIT WOULD BE BORNE BY AID/W. CREEKMORE

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242

5C(2) PROJECT CHECKLIST

Listed below are statutory criteria applicable to projects. This section is divided into two parts. Part A. includes criteria applicable to all projects. Part B. applies to projects funded from specific sources only: B.1. applies to all projects funded with Development Assistance funds, B.2. applies to projects funded with Development Assistance loans, and B.3. applies to projects funded from ESF.

CROSS REFERENCES: IS COUNTRY CHECKLIST UP TO DATE? HAS STANDARD ITEM CHECKLIST BEEN REVIEWED FOR THIS PROJECT?

A. GENERAL CRITERIA FOR PROJECT

1. FY 1982 Appropriation Act Sec. 523; FAA Sec. 634A; Sec. 653(a).

(a) Describe how authorizing and appropriations committees of Senate and House have been or will be notified concerning the project; (b) is assistance within (Operational Year Budget) country or international organization allocation reported to Congress (or not more than $1 million over that amount)?

(a) FY 84 Congressional Presentation

(b) yes

2. FAA Sec. 611(a)(1). Prior to obligation in excess of $100,00, will there be

b. ISDCA of 1981, Sec. 725(b). If ESF is to be furnished to Argentina, has the President certified that (1) the Govt. of Argentina has made significant progress in human rights; and (2) that the provision of such assistance is in the national interests of the U.S.?

c. ISDCA of 1981, Sec. 726(b). If ESF assistance is to be furnished to Chile, has the President certified that (1) the Govt. of Chile has made significant progress in human rights; (2) it is in the national interest of the U.S.; and (3) the Govt. of Chile is not aiding international terrorism and has taken steps to bring to justice those indicted in connection with the murder of Orlando Letelier?

	(a) engineering, financial or other plans necessary to carry out the assistance and (b) a reasonably firm estimate of the cost to the U.S. of the assistance?	Yes. See Project Paper details.
3.	FAA Sec. 611(a)(2). If further legislative action is required within recipient country, what is basis for reasonable expectation that such action will be completed in time to permit orderly accomplishment of purpose of the assistance?	Such action not required.
4.	FAA Sec. 611(b); FY 1982 Appropriation Act Sec. 501. If for water or water-related land resource construction, has project met the standards and criteria as set forth in the Principles and Standards for Planning Water and Related Land Resources, dated October 25, 1973? (See AID Handbook 3 for new guidelines.)	N/A
5.	FAA Sec. 611(e). If project is capital assistance (e.g., construction), and all U.S. assistance for it will exceed $1 million, has Mission Director certified and Regional Assistant Administrator taken into consideration the country's capability effectively to maintain and utilize the project?	N/A

6. FAA Sec. 209. Is project susceptible to execution as part of regional or multilateral project? If so, why is project not so executed? Information and conclusion whether assistance will encourage regional development programs.

Yes. This is a regional project.

7. FAA Sec. 601(a). Information and conclusions whether project will encourage efforts of the country to: (a) increase the flow of international trade; (b) foster private initiative and competition; and (c) encourage development and use of cooperatives, and credit unions, and savings and loan associations; (d) discourage monopolistic practices; (e) improve technical efficiency of industry, agriculture and commerce; and (f) strengthen free labor unions.

The project will improve the technical efficiency of agricultur through support and development of Asian scientists and institutions focused on forest resource manage- ment and improvement of multipurpo tree species.

8. FAA Sec. 601(b). Information and conclusions on how project will encourage U.S. private trade and investment abroad and encourage private U.S. participation in foreign assistance programs (including use of private trade channels and the services of U.S. private enterprise).

This project will involve private universities and contractors participating and furnishing technical assistance.

9.	FAA Sec. 612(b), 636(h); FY 1982 Appropriation Act Sec. 507. Describe steps taken to assure that, to the maximum extent possible, the country is contributing local currencies to meet the cost of contractual and other services, and foreign currencies owned by the U.S. are utilized in lieu of dollars.	Host country governments wil be making appropriate local currency contributions; the only excess country involved is India and U.S. owned rupe are not being used.
10.	FAA Sec. 612(d). Does the U.S. own excess foreign currency of the country and, if so, what arrangements have been made for its release?	No.
11.	FAA Sec. 601(e). Will the project utilize competitive selection procedures for the awarding of contracts, except where applicable procurement rules allow otherwise?	Yes.
12.	FY 1985 Continuing Resolution Sec. [illegible]. If assistance is for the production of any commodity for export, is the commodity likely to be in surplus on world markets at the time the resulting productive capacity becomes operative, and is such assistance likely to cause substantial injury to U.S. producers of the same, similar or competing commodity?	It is not for production of exports.
13.	FAA 118(c) and (d). Does the project comply with the environmental procedures set forth in AID Regulation 16? Does	Yes. No environmental assessment is required according to AID's revised environmental procedures.

the project or program take into consideration the problem of the destruction of tropical forests?

14. FAA 121(d). If a Sahel project, has a determination been made that the host government has an adequate system for accounting for and controlling receipt and expenditure of project funds (dollars or local currency generated therefrom)? N/A

B. FUNDING CRITERIA FOR PROJECT

1. Development Assistance Project Criteria

a. FAA Sec. 102(b), 111, 113, 281(a). Extent to which activity will (a) effectively involve the poor in development, by extending access to economy at local level, increasing labor-intensive production and the use of appropriate technology, spreading investment out from cities to small towns and rural areas, and insuring wide participation of the poor in the benefits of development on a sustained basis, using the appropriate U.S. institutions; (b) help develop cooperatives, especially by technical assistance, to assist rural and urban poor to help themselves toward better life, and

otherwise encourage democratic private and local governmental institutions; (c) support the self-help efforts of developing countries; (d) promote the participation of women in the national economies of developing countries and the improvement of women's status; and (e) utilize and encourage regional cooperation by developing countries?

b. FAA Sec. 103, 103A, 104, 105, 106. Does the project fit the criteria for the type of funds (functional account) being used?

Yes. Sec. 103. The project will increase fuelwood supply and income of rural poor by enhancing Asian researc and research capabilities in multi-purpose tree species.

c. FAA Sec. 107. Is emphasis on use of appropriate technology (relatively smaller, cost-saving, labor-using technologies that are generally most appropriate for the small farms, small businesses, and small incomes of the poor)?

Yes.

d. FAA Sec. 110(a). Will the recipient country provide at least 25% of the costs of the program, project, or activitiy with respect to which the assistance is to be furnished (or is the latter cost-sharing requirement being waived for a "relatively least developed" country)?

Yes.

e. FAA Sec. 110(b). Will grant capital assistance be disbursed for project over more than 3 years? If so, has justification satisfactory to Congress been made, and efforts for other financing, or is the recipient country "relatively least developed"? (H.O. 1232.1 defined a capital project as "the construction, expansion, equipping or alteration of a physical facility or facilities financed by AID dollar assistance of not less than $100,000, including related advisory, managerial and training services, and not undertaken as part of a project of a predominantly technical assistance character.

N/A

f. FAA Sec. 122(b). Does the activity give reasonable promise of contributing to the development of economic resources, or to the increase of productive capacities and self-sustaining economic growth?

Yes.

g. FAA Sec. 281(b). Describe extent to which program recognizes the particular needs, desires, and capacities of the people of the country; utilizes the country's intellectual resources to encourage

This project is designed to increase Asian government commitment to researc on multi-purpose trees, strengthen capacity to address social and economi issues on rural tree crop production a management.

institutional development; and supports civil education and training in skills required for effective participation in governmental processes esential to self-government.

2. Development Assistance Project Criteria (Loans Only)

a. FAA Sec. 122(b). Information and conclusion on capacity of the country to repay the loan, at a reasonable rate of interest. — N/A

b. FAA Sec. 620(d). If assistance is for any productive enterprise which will compete with U.S. enterprises, is there an agreement by the recipient country to prevent exports to the U.S. of more than 20% of the enterprise's annual production during the life of the loan? — N/A

c. ISDCA of 1981, Sec. 724 (c) and (d). If for Nicaragua, does the loan agreement require that the funds be used to the maximum extent possible for the private sector? Does the project provide for monitoring under FAA Sec. 624(g)? — N/A

3. Economic Support Fund Project Criteria

a. FAA Sec. 531(a). Will this assistance promote economic or political — N/A

stability? To the extent possible, does it reflect the policy directions of FAA Section 102?

b. FAA Sec. 531(c). Will assistance under this chapter be used for military, or paramilitary activities? N/A

c. FAA Sec. 534. Will ESF funds be used to finance the construction of the operation or maintenance of, or the supplying of fuel for, a nuclear facility? If so, has the President certified that such use of funds is indispensable to nonproliferation objectives? N/A

d. FAA Sec. 609. If commodities are to be granted so that sale proceeds will accrue to the recipient country, have Special Account (counterpart) arrangements been made? N/A

5C(3) - STANDARD ITEM CHECKLIST

Listed below are the statutory items which normally will be covered routinely in those provisions of an assistance agreement dealing with its implementation, or covered in the agreement by imposing limits on certain uses of funds.

These items are arranged under the general headings of (A) Procurement, (B) Construction, and (C) Other Restrictions.

A. Procurement

1. FAA Sec. 602. Are there arrangements to permit U.S. small business to participate equitably in the furnishing of commodities and services financed? — Yes.

2. FAA Sec. 604(a). Will all procurement be from the U.S. except as otherwise determined by the President or under delegation from him? — Yes.

3. FAA Sec. 604(d). If the cooperating country discriminates against marine insurance companies authorized to do business in the U.S., will commodities be insured in the United States against marine risk with such a company? — No such discrimination.

4. FAA Sec. 604(e); ISDCA of 1980 Sec. 705(a). If offshore procurement of agricultural commodity or product is to be — No such financing involved.

financed, is there provision against such procurement when the domestic price of such commodity is less than parity? (Exception where commodity financed could not reasonably be procured in U.S.)

5. FAA Sec. 604(e). Will construction or engineering services be procured from firms of countries otherwise - eligible under Code 941, but which have attained a competitive capability in international markets in one or these areas? N/A

6. FAA Sec. 603. Is the shipping excluded from compliance with requirement in section 901(b) of the Merchant Marine Act of 1936, as amended, that at least 50 per centum of the gross tonnage of commodities (computed separately for dry bulk carriers, dry cargo liners, and tankers) financed shall be transported on privately owned U.S. flag commercial vessels to the extent that such vessels are available at fair and reasonable rates? N/A

7. FAA Sec. 621. If technical assistance is financed, will such assistance be furnished by private enterprise on a contract basis to the fullest extent practicable? If the facilities of other Technical assistance will be furnished by private enterprise.

Federal agencies will be utilized, are they particularly suitable, not competitive with private enterprise, and made available without undue interference with domestic programs?

8. International Air Transport. Fair Competitive Practices Act, 1974. If air transportation of persons or property is financed on grant basis, will U.S. carriers be used to the extent such service is available? — Yes.

9. FY 1982 Appropriation Act Sec. 504. If the U.S. Government is a party to a contract for procurement, does the contract contain a provision authorizing termination of such contract for the convenience of the United States? — Yes.

B. Construction

1. FAA Sec. 601(d). If capital (e.g., construction) project, will U.S. engineering and professional services to be used? — N/A

2. FAA Sec. 611(c). If contracts for construction are to be financed, will they be let on a competitive basis to maximum extent practicable? — N/A

3. FAA Sec. 620(k). If for construction of productive enterprise, will aggregate value of assistance to be furnished by the U.S. not exceed $100 million (except for productive enterprises in Egypt that were described in the CP)? N/A

C. Other Restrictions

1. FAA Sec. 122(b). If development loan, is interest rate at least 2% per annum during grace period and at least 3% per annum thereafter? N/A

2. FAA Sec. 301(d). If fund is established solely by U.S. contributions and administed by an international organization, does Comptroller General have audit rights? N/A

3. FAA Sec. 620(h). Do arrangements exist to insure that United States foreign aid is not used in a manner which, contrary to the best interests of the United States, promotes or assists the foreign aid projects or activities of the Communist-bloc countries? Yes.

4. Will arrangements preclude use of financing:

a. FAA Sec. 104(f); FY 1982 Appropriation Act Sec. 525: (1) To pay for performance of abortions as a method of family N/A

planning or to motivate or coerce persons to practice abortions; (2) to pay for performance of involuntary sterilization as method of family planning, or to coerce or provide financial incentive to any person to undergo sterilization; (3) to pay for any biomedical research which relates, in whole or part, to methods or the performance of abortions or involuntary sterilizations as a means of family planning; (4) to lobby for abortion?

b. FAA Sec. 620(g). To compensate owners for expropriated nationalized property? — Yes.

c. FAA Sec. 660. To provide training or advice or provide any financial support for police, prisons, or other law enforcement forces, except for narcotics programs? — Yes.

d. FAA Sec. 662. For CIA activities? — Yes.

e. FAA Sec. 636(i). For purchase, sale, long-term lease, exchange or guaranty of the sale of motor vehicles manufactured outside U.S., unless a waiver is obtained? — Yes.

f. FY 1982 Appropriation Act, Sec. 503. To pay pensions, annuities, retirement pay, or — Yes.

adjusted service compensation for military personnel?	
g. FY 1982 Appropriation Act, Sec. 505. To pay U.N. assessments, arrearages or dues?	Yes.
h. FY 1982 Appropriation Act, Sec. 506. To carry out provisions of FAA section 209(d) (Transfer of FAA funds to multilateral organizations for lending)?	Yes.
i. FY 1982 Appropriation Act, Sec. 510. To finance the export of nuclear equipment, fuel, or technology or to train foreign nationals in nuclear fields?	Yes.
j. FY 1982 Appropriation Act, Sec. 511. Will assistance be provided for the purpose of aiding the efforts of the government of such country to repress the legitimate rights of the population of such country contrary to the Universal Declaration of Human Rights?	No.
k. FY 1982 Appropriation Act, Sec. 515. To be used for publicity or propaganda purposes within U.S. not authorized by Congress?	Yes.

AID 1820-25 (1-72)

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Life of Project: From FY 85 to FY 89
Total U.S. Funding 2.5 mm
Date Prepared: 3/4/85

Project Title & Number: Asia/Forestry Research and Development (498-0276)

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Program or Sector Goal: The broader objective to which this project contributes: The project goal is to meet basic needs of Asian countries for fuelwood and other tree products; for improved land, water and human resource management; and for increased employment and income.	**Measures of Goal Achievement:** —Increased goods and services from the forest —Improved forest and natural resource management —Direct benefits to locals —Improved levels of living	—Status of world forests (FAO, UNEP) —Forest products utilization patterns in LDCs (FAO country reports) —Forestry research institutions upgraded and research being conducted —On-site inspections by project staff —Project principles in use a decade or more after project initiation —AID project evaluations —Reports from LDC governments, missions and contractors	**Assumptions for achieving goal targets:** —Existence of research facilities within LDCs/regions that can be linked into networks —Trained Research Personnel —Agreement on common themes for research —AID and LDC practitioners desire more research —LDC recipient institutions are able to absorbe new approaches
PROJECT PURPOSE: The purpose is to enhance Asian research and research capabilities in multipurpose tree species through (1) improved policy formulation, planning and management of forestry and agro-forestry research and (2) support and development of networks of scientists and institutions on land and forest resource management and assessment improvement and management of multipurpose tree species.	**Conditions that will indicate purpose has been achieved: End of project status.** —Increase use of multipurpose fuelwood trees —Successful forest regeneration methods and programs —Increased development-related forestry/fuelwood research projects —Standardized research guidelines used in forestry programs —Increased capability of LDC institutions in regional research	—AID PIR reports —Annual project assessment, monitoring and evaluation reports of project director —Adaptation and application of research tools and methodologies —Project records —Contractors' workplan and vouchers —Mission consulting requests —Seminars, workshops, etc.	**Assumptions for achieving purpose:** —U.S. Congress maintains present position re tropical forests —Collaborative and complementary funding with Bureaus and Missions —Willingness of LDC governments in region to conduct forestry R&D —Relevant social science knowledge& expertise exists or can be developed
Outputs: —Research policy guidelines, DDMS (methods and tools) —Critical socioeconomic variables affecting forestry/fuelwood determined and theories revised —Three regional forestry/fuelwood networks established —Multipurpose species selection, improvement and management —National forestry research programs enhanced	**Magnitude of Outputs:** —Research methods and tools developed for use in regional networks and 125 LDCs —Netowrks estab.: 3 —Personnel trained: 100 —Species selected and improved: 10 —National forestry research plans: 5	—Printed studies —AID PIR and PFAR —Quarterly progress reports of project director	**Assumptions for achieving outputs:** —Linkages formed between LDC forestry institutions and U.S. —Sufficient high quality individuals willing to train and work in forestry —LDC emphasis on forestry —Tropical and subtropical forests are substantially depleted or eradicated
Inputs: —AID Funding: ST/FENR LOP 30; ST/RD 3; Bureaus/USAIDs 7; Total 40 —AID/W personnel for project management —Complementary funding of field research costs by USAIDs, IDCs, other donors —Funding of complementary regional bureau forestry/fuelwood research projects	**Implementation Target (Type and Quantity)** —Research Planning and Management 1.Country Plans 18 2.Institutional plans 24 3.Regional planning, training 39 4.Info. Mgmt. Sys. 30 —Network Development 1.Meetings/site visits 85 2.Publications 84 3.Training 63 4.Special Research Support 85 5.Network Coordination 150 —Global Research 44	—Project Records	**Assumptions for providing inputs:** —LDCs will provide facilities and personnel —Constracting institution, firm or consortium available —USAIDs/IDC/other donor funding is forthcoming —High quality consulting talent can be found —Network mechanisms approved

152

AGREEMENT BETWEEN KASETSART UNIVERSITY AND UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT FOR COLLABORATIVE RESEARCH ON MULTIPLE PURPOSE TREES*

BACKGROUND

A large potential exist for trees to meet growing Asian needs for fuel, fodder, food, income as well as to sustain land productivity To realize this potential will require improved management of land and forest resources and enhanced research on the genetic improvement and management of multipurpose trees.

GENERAL OBJECTIVES

Kasetsart University and USAID will collaborate over a five-year period to:

(1) Enhance research capabilities in Thailand and other Asian countries in multipurpose trees;

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*Draft prepared on February 14, 1985 between AID project managers Robert Ichord and Ian Morison and Dr. Suree Bhumibhamon of KUFF as reviewed with Dean Somsak Sukwong and Vice Rector Krisna Chutima.

(2) Develop effective networks among Asian scientists and institutions for the conduct of research on the biological and socio-economic aspects of multipurpose trees

SPECIFIC OBJECTIVES

In pursuing the above general objective, the following specific objectives are established:

(1) The development of an information base on multipurpose trees and research activities in the region;

(2) The enhanced dissemination of existing research information to organizations and scientists involved in programs of planning, implementation and research;

(3) The establishment of an Asian research network on Azadirachta and Melia species;

(4) The facilitation of Thailand's participation in other species networks of interest to Thailand (e.g. Acacia, Eucalyptus, Leucaena, Bamboo);

(5) The collaborative technical support of research by these other species networks;

(6) The building of research programs and capabilities through workshops, seminars, training programs on individual network topics and research issues that cut across networks;

(7) The fostering of enhanced research coordination and cooperation among Asian countries, donor agencies, and other international organizations.

PROJECT INPUTS AND CONTRIBUTIONS

Inputs to the collaborative program will be provided in the areas of manpower, documentation, research funds, and logistical support. Kasetsart University and USAID agree on the following contributions in these areas:

Manpower

USAID will provide three long-term research specialists

(1) A research program coordinator

who will work with KU staff, scientists and organizations in other Asian countries, USAID mission officers, IUFRO, other donors and international organizations in planning the overall collaborative program and in generating support for the program.

(2) A species research expert

who will help develop the technical research programs of specific species networks in collaboration with KU staff and scientists in other organizations in Asia and the donor countries.

(3) A social scientist or economist

who will replace the current expert in agricultural economics from ADC and serve to develop an Asian network for land and forest resource management.

USAID will also provide as agreed short-term specialists for workshops, training courses, and research design, implementation and monitoring.

KU will provide senior and junior faculty collaborators to work with the long-and short-term specialists provided by USAID for specific projects/network activities as formulated in annual network work plans and as special requirements arise. These individuals will provide liaison with other Thai organizations for carrying out research on Azadirachta and Melia and other multipurpose species.

DOCUMENTATION

USAID will provide publications and other technical materials for KU's information based on multipurpose trees. To promote systematic and efficient storage and retrieval of technical information, USAID will also provide and appropriate small computer to Kasetsart's Faculty of Forestry (KUFF). Funds will be provided for publication of research reports and workshop or symposium proceedings and their distribution to network participants and selected other organizations.

KU will provide access to its resource collection in multipurpose trees in the Faculty of Forestry library.

RESEARCH FUNDS

AID will provide grant funding for research activities agreed to under a specific network program in which Thailand is participating. These monies will be used for local salaries, laboratory costs, selected equipment, seeds, related training and other agreed items, e.g. costs for species trials.

KU will help cover costs involved in establishment and management of species field trials and will seek contribution from other Thai organizations in the research program.

LOGISTICAL SUPPORT

USAID will cover all salary, living and per diem, moving, transportation, communication and secretarial and office equipment support costs associated with the long-and short-term specialists.

KU will contribute suitable office space for the three long-term experts. In addition, the university will assist in obtaining visas and exemptions for importation of goods and personal effects of the long-term experts. Assistance will be rendered in obtaining clearances for Thai travel to participate in network workshops and training.

PROGRAM REVIEW AND MONITORING

KU and USAID will conduct annual reviews of the progress under the collaboration and prepare a joint report summarizing important activities, issues, and expected plans for the coming year.

SPECIFIC IMPLEMENTATION ARRANGEMENTS

This agreement provides the general framework for cooperation between Kasetsart University and U.S. Agency for International Development for this program. Specific implementation arrangements will be developed for separate activities and amended as appropriate to this agreement.