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**FORESTRY PLANNING AND
DEVELOPMENT PROJECT**

MID-TERM EVALUATION

391-0481



Submitted by:
Tropical Research & Development, Inc.

August, 1991

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The Evaluation Team wishes to extend special recognition to members of the Federal, Provincial, District and Range Forest Offices for their cooperation and frank answers to our many questions. We are grateful to the many organizations and agencies who made their time and resources available.

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While this evaluation attempted to be as unobtrusive as possible, its management, administration and logistics were disruptive to the project routine; particularly following the three month evacuation of the Technical Assistance Team caused by the Gulf war. The evaluation Team thanks everyone for their patience and assistance.

Our thanks go to Mrs. Seema Kamgar for serving as our secretary and to Ms. Jamila Aslam and Ms. Nizo Shahban of Solitaire Service Business center for providing us additional secretarial services.

Mervin Stevens, Team Leader

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LIST OF ABBREVIATIONS AND ACRONYMS

ACE	Agricultural Commodities and Equipment
ADB	Asian Development Bank
ADP	Agricultural Development Bank
AID	Agency for International Development
AIGF	Additional Inspector General of Forests
APAC	Asia Project Action Committee
ARD	Agricultural Rural Development
CCF	Chief Conservator of Forests
CF	Conservator of Forests
COP	Chief of Party
COSS	Country Development Strategy Statement
CN	Congressional Notification
DFO	Divisional Forest Officer
DG	Director General
DIGF	Deputy Inspector General of Forests
ESF	Economic Support Fund
EAD	Economic Affairs Division
FAO	Food and Agriculture Organization of UN
FAR	Fixed Amount Reimbursement
FD	Finance Division
FM	Financial Management Office
FP&D	Forestry Planning and Development Project
F/F RED	Forestry/Fuelwood Research and Development Project
FSN	Forestry Service National
FX	Foreign Exchange
FY	Fiscal Year
GOP	Government of Pakistan
HRT	Human Resource Training
IADS	International Agricultural Development Service
IBRD	International Bank of Reconstruction and Development
ICRAF	International Council for Research in Agroforestry
IG	Inspector General
IGF	Inspector General of Forests
IQC	Indefinite Quantity Contract
JCC	Joint Career Corps
LOP	Life of Project
MACS	Management Accounting System
NGO	Non-government Organization

NWPF	North West Frontier Province
O/IGF	Office of Inspector General of Forests
O/PCCF	Office of Provincial Chief Conservator of Forests
P & D DIV	Planning & Development Division
PACD	Project Assistance Completion Date
PARC	Pakistan Agricultural Research Council
PC-1	Planning Commission Document 1
PC-1 A	Planning Commission Document 1 Amendment
PD	Project Director
PDM	Provincial Forestry Department
PFI	Pakistan Forest Institute
PFRI	Punjab Forest Research Institute
PIL	Project Implementation Letter
PIR	Project Implementation Review
PLA	Personal Ledger Account
PP	Project Paper
PPA	Project Paper Amendment
PROAG	Project Grant Agreement
PROMIS	Project Management Information System
PVO	Private Voluntary Organization
RFO	Range Forest Officer
RFP	Request For Proposal
SOW	Scope of Work
SCA	Socio Cultural Analysis
TAT	Technical Assistance Team
UNDP	United Nations Development Program
USAID	U.S. Agency for International Development
USDA	U.S. Department for Agriculture
WFP	World Food Program
WID	Women in Development
WIF	Women in Forestry

PROJECT IDENTIFICATION DATA

1. Country: Pakistan
2. Project Title: Forestry Planning and Development
3. Project Number: 391-0481
4. Project Dated:
 - a) First Project Agreement: 28 August, 1983
 - b) Project Amendment: 26 June, 1989
 - c) Final obligation date: FY 91-planned
 - d) PACD: 30 August, 1993
5. Project Funding: (obligations to date)
 - a) A.I.D. bilateral funding (grant) US \$ 35 million
 - b) Other major donors
 - c) Host country counterpart funds US \$ 14.3 million

TOTAL US \$ 49.3 million
6. Mode of Implementation: A.I.D. direct contracts:
 1. Winrock International (TAT)
 2. Techno - Consult
 3. Ahmad Ali Construction Co. (PFI Hostel Contractor)
 4. Pioneer Consultants, Lahore (A&E Design and Supervision of Women's Hostel)
 5. Ahmadullah arid Sons, Peshawar, (Construction of Women's Hostel PFI)

7. Project Designers: Government of Pakistan, USAID/Pakistan, AID/W/ANE/TR, EID/W-ST/FNR, PSCS
8. Responsible Mission Officials:
 - a) Mission Directors: Donor Lion, Eugene Staples, James A. Norris
 - b) Project Officers: A.C. Hankins, A. Merkel, K. Hameedullah
9. Previous Evaluations: September 1987

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EXECUTIVE SUMMARY

Tropical Research and Development, Inc. (TR&D) was asked by USAID/Pakistan to field an evaluation team for the Forestry Planning and Development Project under its IQC for Environment and Natural Resource Management Services. The team, which started work in May, 1991, included: Mr. Merv Stevens, Team Leader and Forester, Dr. Al Hammett, Forest Products Specialist, Dr. Dan Minnick, Training Specialist, Dr. Barry Mitchie, Natural Resources Specialist, and Dr. K.G. Yasin, Forester.

This is the second Mid-Term Evaluation of the Forestry Planning and Development Project (391-0481) funded by the United States Agency for International Development Economic Support Fund Grant totalling \$ 35,000,000. The Government of Pakistan's contribution is \$ 14,300,000, making the total budget \$ 49,300,000.

The initial project obligation was signed August 11, 1983. The Project Assistance Completion Date is August 30, 1993. The Project Paper was amended June 26, 1989 to add and reschedule activities. The following components were added: ¹ institutional and human resource development; ² farm and energy forestry research; ³ farm and energy forestry field operational activities; and ⁴ grants to NGOs and PVOs to develop indigenous ability to enhance the public awareness of conservation and natural resource management.

The Government of Pakistan has prepared two Planning Commission Document - 1's (PC-1) which state GOP's commitment to the Project. The PC-1 amendment of June 1990 has now been cleared by the Central Development Working Party, but not by the Executive Committee of National Economic Council. This last step is should to be completed by July 1, 1991.

On May 28, 1991 a Fifth Amendatory Agreement to the Project Grant Agreement was issued reflecting a total USAID Grant of \$ 27,500,000; a reduction of \$ 7.5 million. What effect the amendment will have on project operations is not known at this time. However, as of this evaluation these are approximately \$8.5 million of expended USAID funds and the GOP has accumulated sufficient "Savings" to allow continuation of project activities for several years. Subsequently, one major recommendation is support for USAID to extend the project (Phase III) for 2 to 3 years based upon a recasting of both USAID and GOP budgets. The continued project scope should be limited to: ¹ NGO/PVO activities, ² Data Base Cell establishment ³ In-Service training, and ⁴ marketing and production of farm forestry products.

Evaluation Findings

The Evaluation finds that within the USAID Mission portfolio and GOP's Forestry Departments, the Forestry Planning and Development Project is given high priority.

The Evaluation finds that:

- Over 60,000 tree plantations have been established by farmers and landowners.
- "Of all the Projects launched by the Government, the social forestry project is the best" (Mr. Ailah Nawaz, farmer, D.I. Khan District).
- Farmers now know the importance of trees.
- Quality infrastructure is in place (buildings, transport, etc.)
- Successful training programs have established human resources with the potential to operate a first class farm forestry program.
- Over 2,400 farmer operated tree nurseries have been established.
- Fuel wood supplies increased.
- Studies of forest products industries has indicated the potential for developing the market for using the wood being produced on the 60,000 plus plantations.
- There is a change in forestry staff attitude from policing to social forestry.

This Evaluation concludes, similar to the 1987 Mid-term Evaluation, that there are differences between the amended Project Paper and PC-1 in terms of implementation approach and field targets. However, the differences are minimal, and represent what both parties visualize as relevant to project success. There needs to be closer coordination between the preparation of Project Papers and PC-1's.

This Evaluation finds that most recommendations from the 1987 Evaluation have been acted upon. Remaining unfinished issues are the final signing of the amended PC-1, posting of the Additional Inspector General of Forests, the hiring of a woman social scientist at PFI, improving field staff allowances, eliminating payment delays to private

sector nursery operators, and the preparation of a USAID comprehensive report on the status of the project.

The present status of the project is good. Excellent progress has been made during the last four years as compared to the initial four years, due to the high degree of cooperation that exists between USAID, GOP (Provinces) and TAT. While finding a good esprit de corps, issues that must be addressed for the project to be given a sustainable foundation are to operationally implement the NGO/PVO activity, activate the Data Base Cell, and implement a comprehensive in-service career training program. Activities in Skardy have not been implemented, therefore, a decision should be made whether or not to start at this late date in the area.

Farm and Energy forest research has not been farmer oriented nor has research concentrated on production alternatives that can be suggested to the farmer or land owner. Upwards of 80-90 percent of tree plants produced by the private nurseries are Eucalyptus. Some of the 60,000 plantations established by the Project are now becoming available for marketing. However, little harvesting and marketing technology is available to the plantation owners.

While the official Project Assistance Completion Date is August 30, 1993, the real end of project activities will occur December 1992/January 1993 when the TAT prepares to leave. Project administration (of on-going activities) and termination operations will last from February 1993 to August 1993. Therefore, the project has approximately 18 months to reinforce past activities to sustainable farm forestry operations within Pakistan.

Recommendations

Recommendations are made related to the project purposes given in the amended Project Paper and PC-1.

- I. Strengthen institutional capacity
 - a) Adjust the TAT work load to expeditiously implement research, in-country training for NGOs, and extension/marketing activities.
 - b) The Data Base Cell to be attached to the O/IGF should be activated immediately.
 - c) Establish a Forest Service program to transfer Farm Forest Technology

supported by the involvement of PVO/NGO's.

d) Implement the NGO/PVO activity as required in the Project Paper and PC-1.

e) Involve provincial administration in the Project decision making process so that Project goals can be accomplished.

f) Enact the Project Coordination Committee meetings as described in the PC-1 and PP on a regular and scheduled basis.

g) GOP direct Provincial Forestry Department to assign suitable staff on full time basis for sustaining social forestry project activities.

h) Give assistance to technical forestry schools in all Provinces.

i) Collaborate with the Forestry Sector Master Plan Project and other donors in the formulation of farm forestry policy at both the Federal and provincial levels.

II. Demonstrate tree crop feasibility on privately owned land and range land.

a) Accelerate the effort, based on the projects nursery strategy that assists owners/tree farmers to establish, harvest and market nursery and timber products.

b) Focus in-country training on farmer and in-service staff as part of a comprehensive training program.

c) Training materials and course ware should be developed to support and document completed training sessions and the comprehensive program.

d) Encourage increased farm forestry, participation, industry-government-farmer linkages and organizational collaboration, i.e. with PVO/NGO's, agricultural universities, and other donor organizations.

e) Produce environmental guidelines describing alternative production systems and species within the Project area from on-farm applied research particularly on Barani lands, that can be used by farmers.

f) Over the LOP adaptive research should concentrate research on species trials, establishment of seed orchards and the tree/crop livestock interaction.

g) Encourage research in the establishment and improvement of small wood-based industries through appropriate technology.

III. Future Direction

a) Immediately develop a Comprehensive Project Plan of Action for LOP outlining activities and responsible for person(s) including preparation for a follow-on Project.

b) Support a follow-on USAID funded Project after August 1993 oriented to true Barani areas and help establish the harvesting and marketing mechanisms of present Project plantations.

1.0 INTRODUCTION AND PROJECT DESCRIPTION

Tropical Research and Development, Inc. (TR&D) was asked by USAID/Pakistan to field an evaluation team for the Forestry Planning and Development Project under its IQC for Environment and Natural Resource Management Services. The team, which started work in May, 1991, included: Mr. Merv Stevens, Team Leader and Forester, Dr. Al Hammett, Forest Products Specialist, Dr. Dan Minnick, Training Specialist, Dr. Barry Mitchie, Natural Resources Specialist, and Dr. K.G. Yasin, Forester.

While forest resources are important in Pakistan, actual measurements of forest area is only an estimate. Prevailing literature indicates that Pakistan has somewhere between 4 to 5.4 percent, or 3.52 to 7.47 million hectares of forest area. Preliminary information from the FAO world wide forest assessment, now in process and scheduled for completion in 1992, indicates that the annual deforestation rate in Pakistan has remained constant at 1.8-2.2 percent since 1980 the report. This is the highest deforestation rate in Asia.

Considerable effort has been put into the establishment of forest plantations throughout the country, but up-to-date information on their total area has not been accumulated. The Government of Pakistan's (GOP) goal, as outlined in its National Agriculture Policy (in Draft, January 1991), is to increase the state forests to 10 percent of the total land area over the next 10 years involving an acceleration of tree planting similar to that of the USAID funded Forestry Planning and Development Project.

1.1 Activity Being Evaluated

The Forestry Planning and Development Project was initially authorized by the USAID Administrator on August 11, 1983 with a eight year life span and a funding level of US \$ 25,000,000. The project was amended on June 26, 1989, and an additional US \$ 10,000,000 were made available. The project is now scheduled to terminate on August 27, 1993, reflecting a 10 year project life. Chapter 3 of this report describes the Project Papers and associated Government of Pakistan Planning Commission Documents (PC-1).

The project goals and purposes are:

Primary Goal: Help Pakistan increase its wood fuel energy and timber supplies to achieve self-sufficiency.

Primary Purpose: Strengthen the capacity of institutions at the federal, provincial and local levels to design, implement and evaluate policies and programs for increasing the production of fuelwood and timber in Pakistan.

Secondary Goal: Reverse the process of deforestation in Pakistan and expand the extremely limited forest resources base.

Secondary Purpose: Demonstrate the economic, technical and social feasibility of producing tree crops on privately owned farm and range land. Chapter 3.0, of this report describes the project papers and the Government of Pakistan Planning Commission (PC-1).

1.2 Purpose of Evaluation

The objective of this evaluation is to provide USAID Islamabad and the GOP with an external evaluation of the FP&D project as a means of: ¹ assessing progress toward attaining the project purpose and ² providing guidance for increasing project effectiveness in meeting stated goals within the project life. The evaluation is to also assess how well the contractors have performed in guiding project implementation.

The initial evaluation, was conducted in 1987, and is reviewed in chapter 2.0. The scope of work for the present evaluation is provided in Annex I. This evaluation, scheduled for September 1990, was held between May 15, 1991 and September 15, 1991. No World Bank representation was on the evaluation mission as recommended in the PP amendment.

Specific items identified for consideration in this evaluation include:

- a. Adoption of farm forestry practices and the success of the private nursery strategy;
- b. Spread of farm forestry practices outside project supported areas;
- c. Effectiveness of technical assistance in providing leadership and guidance to project staff;
- d. Progress and effectiveness of training, outreach capacity, technology transfer and acceptance of farm foresters as change agents;
- e. Progress of the forest departments in policy development and implementation of policy through planning and monitoring of their activities;
- f. Budget allocation to the project in the annual development plan and amount on non-project resources devoted to farm forestry.

Several assessments were to be made, including the suitability of the strategy developed and employed to implement field activities within the confines of project goals and purposes, and the sustainability of the tree planting activities adopted by the farmers. The development of linkages with wood users and producers for a sound private sector development strategy were to be evaluated.

1.3 Evaluation method

Tropical Research & Development, Inc. fielded a 5 person team in June/July 1991 (see Annex 2 for schedule) for this evaluation. The team Leader/Forester was Mr. Mervin Stevens, Dr. Barry Michie served as Natural Resource Management/Extension specialist, the Agroforestry specialist was Dr. Tom Hammet, and Dan Minnich served as the Agriculture specialist. The evaluation team has focused on three areas to form the basis for their assessment:

1. A review of recommendations made in the September 1987 mid-term evaluation;
2. A review of present activities according to the Project Paper of August 1983, the PC-1 of March 1984 and their subsequent amendments.
3. An analysis of future direction required to support sustainability of project activities described in the original Project Paper and Amendment of June, 1989.

This review and resultant recommendations concentrates on those activities that can be effectively and efficiently managed between now and August, 1993 (Project Assistance Completion Date). To this end the evaluation team contacted, interviewed and visited the following people and sites:

1. USAID staff in Islamabad,
2. Forestry Planning and Development Project staff,
3. Federal and Provincial Project and Forestry Department staffs,
4. Islamabad based donors supporting forestry and environmental programs (i.e. FAO, World Bank, etc.),
5. Forestry Support Program, and International Forestry, USDA Forest Service, Washington, D.C,
6. Project farm forestry areas in all concerned Provinces,
7. The Malakand Social Forestry Project supported by the Netherlands Government,
8. Forestry and related institutions including educational and research organizations,
9. Interviews with farmers, land owners, and land users,

10. Other USAID project personnel,
11. Forestry Master Plan Project for Pakistan.

2.0 REVIEW OF SEPTEMBER 1987 MID-TERM EVALUATION

The 1987 Evaluation was the first evaluation and was conducted four years after the project was authorized. The evaluation team concluded "that **The Forestry Planning and Development Project and its original design concept** (enhancing the capability of the GOP forestry institutions to carry out farm forestry extension and demonstration) **continues to be extremely relevant to development needs and opportunities in Pakistan.**"

While endorsing Project relevancy the 1987 Evaluation Team identified that "**The roles, responsibilities and implementation procedures** and arrangements within the project are **still poorly understood** by project staff, including the GOP and the Technical Assistance Team (TAT)." In providing guidance to resolving the range of issues identified, recommendations were made along the lines of major project components.

The 1987 Evaluation Team's general recommendations and actions taken since that evaluation follow:

2.1 Institutional and Manpower Development

2.1.1 **Implement a comprehensive planning exercise under the leadership of the IGF.**

Four types of meetings are scheduled: ¹ yearly work plan meetings outlining strategies and implementation activities to be achieved, ² quarterly meetings with Project Directors, ³ monthly meetings with the TAT and USAID staff, and ⁴ ad-hoc meetings on specific issues or on general subjects as needed.

2.1.2 **Revise the PC-1.**

The PC-1 was revised in, June 1990, but has not been officially finalized. The document has been cleared by the Central Development Working Party, but now requires signing by the executive committee of National Economic Council.

2.1.3 **Constitute a small, select working group to prepare a working paper for field guidance on immediate issues of coping with PC-1 targets, field staff capability and budget short falls.**

This was accomplished.

2.1.4 Every effort should be made to quickly identify promising candidates for long-term training.

Fifteen candidates were identified. Of these, seven have returned to Pakistan with advanced degrees, and eight are still out-of-country. There are eight nominees with completed PIO/P's and two that are in process for GRE's. The lengthy GOP and USAID clearance procedures continues to hinder the expeditious sending of nominees for out-of-country training.

2.1.5 Complete a full draft of the comprehensive training plan.

This was completed by the previous TAT Training Specialist. A new one is being developed for the balance of the project.

2.1.6 Reprogram unused FP&D earmarked funds to increase participant fellowship.

Fellowship funding has not been a problem, therefore fund reprogramming has not been necessary.

2.1.7 An additional Inspector-General of Forests should be designated and posted by the GOP.

This has not been done. Because of lengthy GOP procedures, it could take three years to have the position approved and filled.

2.1.8 A senior Pakistani forester should be hired by TAT.

This was accomplished by hiring Mr. M.I. Sheikh.

2.1.9 Put together a contract with a local Pakistani Accounting firm.

This recommendation has not been acted upon. The GOP does not feel this assistance is necessary pointing out that procedures have been smoothed out.

2.1.10 Implement a publication of project newsletters.

The newsletter is published three times a year in Urdu and English.

2.2 Farm and Energy Forestry Research.

2.2.1 Strengthen the contribution of the project to PFI.

Approximately \$ US 400,000 of equipment has been received and turned over to PFI.

2.2.2 Resolve staffing shortfalls for the FP&D program at PFI.

Returning M.Sc graduates have partially helped to relieve the problem (see 2.1.4. above). However, this issue remains and is a direct cause of the persistent staffing problems identified by all forestry donor supported projects.

2.2.3 Investigation of the current split between research infrastructure development and program development by the project leadership.

Although some changes have been made, present project management does not feel this is a problem, and considers the issue an internal problem.

2.2.4 Prepare a farm forestry research master plan.

This has been completed.

2.2.5 The SCA group (Socio-Cultural Analysis) should prepare a synthesis report.

Thirteen reports on socio-cultural dimensions have been written, serving as base-line data, and offering guidelines for village/farm level operations and providing orientation to local communities. The Project has used these reports for the purpose of block and linear plantations, focusing on commercial farm forestry.

2.2.6 Continue analysis base line data by the SCA group.

The action taken was to apply the existing information to the existing out-reach program supported by the project

2.2.7 Hire a female social scientist.

A draft proposal was prepared by a TAT woman consultant and submitted to

PFI. However, PFI has not acted upon the proposal to hire a female social scientist.

2.3 Field Operational Activities.

2.3.1 Fill the vacant position of farm forestry.

The position was filled upon restructuring for phase II (PP amendment).

2.3.2 Resolve the concerns of field staff regarding allowances and conditions of work.

This issue has not been fully resolved. Vehicles and motorcycles are provided to the staff and most office buildings have been completed. There has been closer coordination of the GOP/USAID budget in order to work out the sharing of who will construct offices and housing.

2.3.3 An expeditious solution should be found to the issue of payments owed to the private sector nurseries.

Progress has been made while payment delays still continue. This is a monitoring and evaluation issue.

2.3.4 Start a training program for foresters and farmers as soon as possible.

This recommendation was taken seriously and in-country training has accelerated.

2.3.5 Every effort should be made to resolve the GOP funding problems.

While there have been many meetings on this subject, there has been little improvement. An advance loan arrangement to provincial departments from O/IGF repaid upon receipt of allocation through regular channels has eased the situation.

2.3.6 USAID should prepare a comprehensive report on the status of the FPO project.

While such a report has been discussed none has been forthcoming.

2.3.7 The USAID Project Officer should devote his time to major issues.

This issue has been resolved with staffing of K. Hameedullah.

3.0 PRESENT STATUS OF THE PROJECT

3.1 Project Papers - Overview

The Project Papers and Government of Pakistan PC-1 documents define the objectives and form the basis for project planning and implementation. These documents are supplemented by USAID Project Information Letters (PILS) which document the changes or transmitting funds found necessary to foster project success. The Project Paper Amendment, PC-1 Amendment (PC-1A) and subsequent PILS are an accepted on-going monitoring and evaluation process.

This evaluation concludes, similar to the 1987 mid-term evaluation, that within the amended Project Paper and PC-1 there are differences between the PP and the PC-1, both in terms of implementation and definition of field targets. The described outputs represent what both parties visualize as relevant to project success. For the GOP, the PC-1 is viewed as their commitment and blue print to project implementation. For USAID the Project Paper is interpreted as guidance rather than strict direction.

Table 1 summarizes some of the differing operational outputs given in the various Project Papers and PC-1's. The PC-1's generally show higher anticipated targets for field activities

Table 1. Showing operational outputs given in various project paper and pc-1 documents.

	Output	Measurement	Project Paper	PC-1 1984	Project Paper, 1989	PC-1A 1990
1	Farm plantation	Acres	23,715	30,524	43,250	105,500
2	Improvement of Sindh plantations	Acres	2,768	1,818	1,150	1,818
3	Nurseries	Number	--	928	197	1,783
4	Soil conservation	Acres	8,000	6,550	7,000	7,600
5	New plantation	Acres	--	4,500	3,850	5,400
6	Watershed Tarbella	Acres	--	--	5,000	5,000
7	Farmer involvement	Persons	18,240	23,100	23,000	69,000
8	Overseas training	Persons	128	128	160	160
9	In-country training	Persons	30,382	30,382	24,780	24,148

such as plantations and nurseries. Apparently the GOP hopes to accomplish more than what was discussed when the PPA was prepared.

As far as the evaluation team was able to determine, the disparity between conceived targets has not hindered in-field accomplishments. However, the contrast between documents does raise the question of the extensive and intensive administrative effort that went into preparation of the documents as communication vehicles and their effectiveness in project monitoring.

3.1.1 The Project Paper, August 1983

The project was authorized August, 11, 1983 but not initiated until August 1985. The two year delay was partly due to the lengthy PC-1 preparation process. These issues are discussed in the 1987 Evaluation Report.

3.1.2 Amendment, June 1989.

On December 8, 1988 the USAID Mission Director extended the project from September 30, 1991 to August 27, 1993 by an action memorandum. PIL NO.26 was prepared to extend the PACD to August 30, 1993. Project Authorization Amendment No. 1 was signed by the Mission Director on June 26, 1989 allocating an additional \$ 10,000,000 in ESF grant funds, bringing the total U.S. planned obligation to \$ 35,000,000. The GOP contribution remained at \$ 14.3 million bringing the project total to \$ 49.3 million over 10 years.

The Amendment was based upon the first four years of operations, and the recommendations of project personnel, GOP representatives, the Inspector General auditors and the 1987 Evaluation. The Amendment retains the philosophy, goals, and purposes outlined in the original PP, but adds and schedules new activities. These four components were added:

1. Institutional and human resources development to continue the enhancement of GOP's capability to identify, implement and evaluate the most promising forestry development alternatives;
2. A research program to continue providing an improved scientific basis for the technical and socio-economic design of farm and energy forestry activities;
3. Expanded operational activities to provide practical demonstration of feasible farm and energy forestry development opportunities. Figure 1 shows the expanded area now included within the project. This

- component will also provide an avenue for direct farmer involvement and stimulate the enthusiasm of forestry personnel; and
4. Develop an indigenous PVO/NGO capability. There was no increase in technical assistance. The revised project budget significantly increased the funds to be spent on farm forestry, training, commodities and construction, Table 2 summarizes the budget.

While the PACD date is August 30, 1993 there are other considerations influencing programming decisions. The GOP fiscal year is July 1 to June 30, therefore, allocated funds must be spent by June 30. Subsequently the GOP will probably be reluctant to appropriate funds for the short period between July and August 1993. A more critical consideration is that the TAT will be leaving in February 1993. Therefore, for the TAT project activities to be accomplished, they must be completed by the end of December 1992; leaving two months for wrap-up. Hence, only 1-1/2 years is available to complete project activities, rather than the two years commonly used in discussion.

3.1.3 PC-1 1984

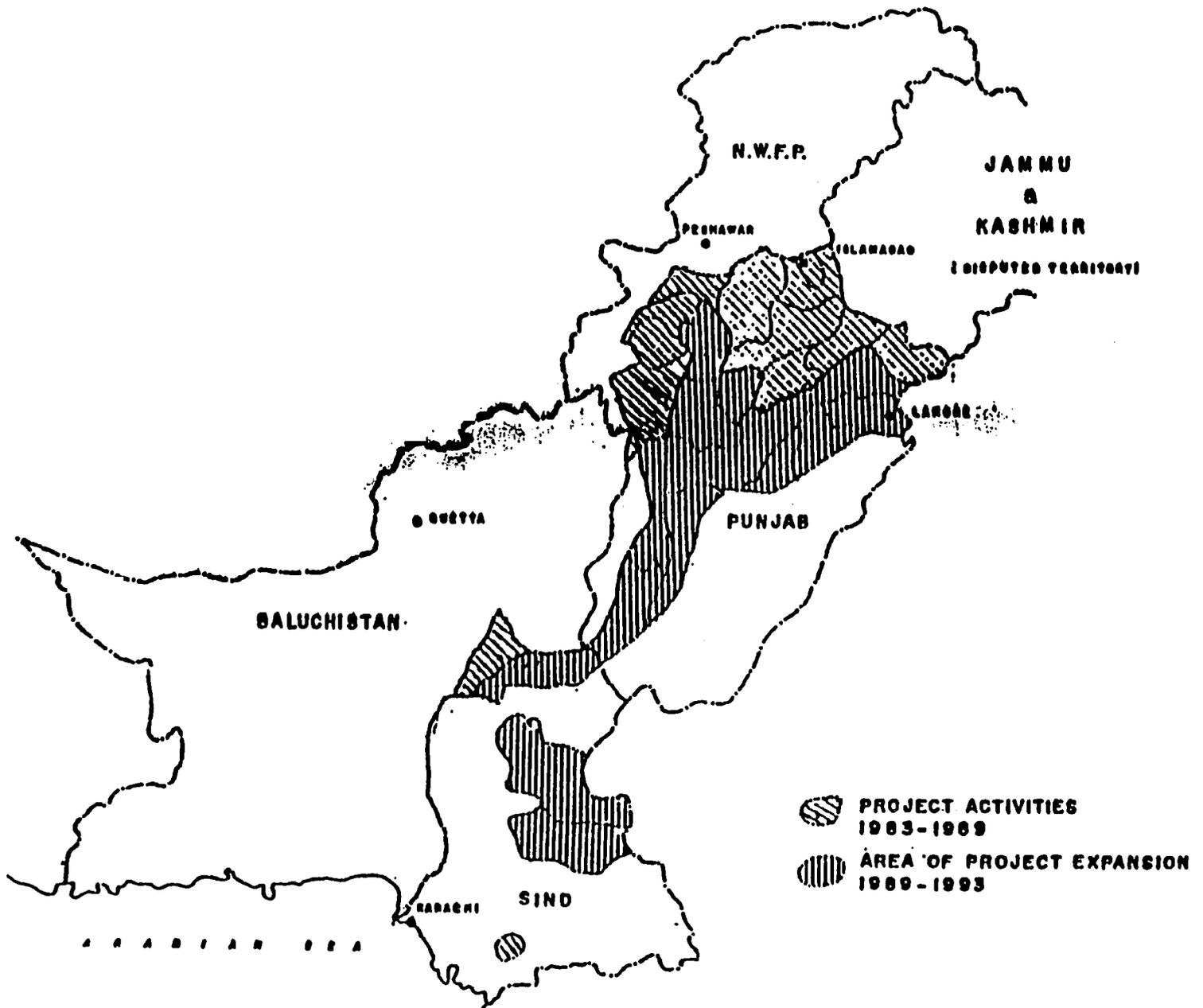
GOP's initial PC-1 parallels the initial Project Paper. However, there are differences as described in the 1987 Evaluation and indicated in Table 1. The most glaring problem was the failure of not staffing identified positions (See item 2.1.7, Chapter 2.0).

3.1.4 PC-1 Amendment

This amended PC-1 also parallels the amended Project Paper. However, similar differences remain as with the initial Project Paper and PC-1. Aside from the operational output differences indicated in Table 1, the staffing issue remains. The 1987 Evaluation recommended that an Additional Inspector-General of Forestry be assigned to give overall GOP direction to the Project. This position was identified in the initial PC-1. However, the position has not been filled, nor is it likely to be.

More serious is that the PC-1 has not been finalized. It has been cleared by the Central Development Working Party, but now requires signing by the Executive Committee of National Economic Council. The Evaluation Team was informed that the PC-1 would be signed shortly; possibly by July 1, 1991. However, the Team also sensed ambiguity in as to whether the signing would be used to either legitimize or deny the ability to act on project direction in both the PPA and PC-1 A.

Figure 1. INITIAL PROJECT AREA AND SITES ADDED IN PROJECT PAPER AMENDMENT OF 1989



**Table 2. FORESTRY PLANNING AND DEVELOPMENT PROJECT (391-0481)
BUDGET SUMMARY (in 000's US dollars or Pakistan Rupees)**

Category	Original PP	Amendment	GOP	Total	Project Agreement May 28, 1991	
					US \$	R
A. Technical Assistance	9,243.0	--	--	9,243.0	7,500.0	--
B. Training	3,288.0	3,312.0	588.0	7,188.0	4,250.0	7,000.0
C. Commodities	1,621.0	1,329.0	178.0	3,128.0	3,400.0	1,400.0
D. Field Operations	164.0	476.0	1,358.0	1,998.0		
1. Research						
2. Field Activities						
a. Farm Forestry						
1. Tree Plantation	2,378.0	1,772.0	9,970.0	13,620.0		
2. Nurseries	99.0	38.0	132.0	269.0		
3. Soil Conservation	2,567.0	198.0	1,000.0	3,765.0	11,900.0	115,400.0
4. Watershed (WFP)	--	500.0	--	500.0		
1,000.0	1,000.0	--	500.0	1,500.0		
4. Watershed (WFP)	1,982.0	1,031.0	543.0	3,556.0		
--	--	700.0	--	700.0		
b. Irrigation Upgrade						
c. Building Construction						
d. NGO/PVO Operations						
E. Evaluation	374.0	276.0	--	650.0	450.0	--
Sub-total	23,216.0	9,632.0	13,269.0	46,117.0	27,500.0	123,800.0
F. Contingency	1,784.0	368.0	1,031.0	3,183.0	--	7,000.0
Total	25,000.0	10,000.0	14,300.0	49,400.0	27,500.0	130,800.0

3.2. Project Funding

The PPA authorizes a total A.I.D. Life of Project grant obligation of US \$ 35,000,000. The GOP contribution of US \$ 14,300,000 was not changed. Therefore, the total funds anticipated for this 10 year project are US \$ 49,300,000. In addition, US \$ 5 million in grant funds was made available for commodity support from the USAID-funded Agricultural Commodities and Equipment Project (391-0468). A summary of the budget is shown in Table 2. Table 3 is a summary of Project Amendment costs by project element, expense category and source of funding. The funds shown for the various activities are slightly different from Table 2 because inflation was not considered in Table 2.

The LOP Grant was changed to US \$ 27,500,000, on May 28, 1991 through the Fifth Amendatory Agreement (No 91-13) influenced by the Pressler Amendment. This new funding level follows the similar procedure of previous Amendatory Agreements whereby funding levels are periodically adjusted to meet project requirements. While this new figure is given, there is no indication that the appropriated US \$ 35,000,000 has been retracted. Table 4 summarizes the project costs spread according to the agreement. Footnote 3 of the Agreement shows that US \$ 3 million is now available under the Agricultural Commodities Equipment Program rather than US \$ 5 million identified in the PPA. This new figure of US \$ 27.5 million has not been allocated by project element similar to Table 3. Within the USAID mission, the forestry thrust has been recognized as a success story. Therefore, it has not received the reduction as with other projects, associated with the Pressler Amendment.

3.2.1 Budget Tables

There are many budget spread sheets passing between the project offices. It is difficult to track budgets due to the use of detailed tables and summary tables used to construct other tables. Tables 2, 3, and 4 display broad sources of funding by expense category and project element as presented in the PP's, PC-1's and Amendatory Agreement.

Table 5 summarizes expenditure by Pakistan fiscal years in both dollars and rupees. Using the exchange rates shown in the table a little over US \$ 22,000,000 will have been expended through FY 1990-91. This is approximately 45% of LO? funds (US \$49.3 million) allocated in the PP's and the PC-1's. Therefore, about one-half of the appropriated funds remain to be spent.

As an example of expenditures made by month throughout the year, Table 6 displays expenditure by project elements. Monthly expenditure are cyclic with the low month coinciding with the winter field season. Complimentary to Table 6 is Table 7 showing a similar project element expenditure statement by project fiscal years. Table 8 shows the projected contract TAT expenditures for the remainder of the project indicating a very small surplus.

Table 9 is a statement of funds by years (through 1990) and by Province and PFI. As shown, the Punjab has captured the greatest share of funds with Balochistan and PFI receiving the least.

Table 3. SUMMARY OF PROJECT AMENDMENT COSTS BY PROJECT ELEMENT, EXPENSE CATEGORY, AND SOURCE OF FUNDING ^a

(in 000's US dollars)

Expense Category	USAID GRANT		GOP ^b	Total Funds
	Total	Percent		
A. Technical Assistance				
Expatriate Long-term	7,215.0		0.0	7,215.0
Expatriate Short-term	1,488.0		0.0	1,488.0
Local	540.0		0.0	540.0
Sub-total	9,243.0	26.4	0.0	9,243.0
B. Training				
Overseas Long-term	3,120.0		358.0	3,478.0
Overseas Short-term	1,387.0		0.0	1,387.0
In-country	1,914.5		230.0	2,144.5
Sub-total	6,421.5	18.3	588.0	7,009.5
C. Commodities	2,877.0	8.2	178.0	3,055.9
D. Field Operations				
1. Research	584.8	1.7	1,358.0	1,942.8
2. Field Activities		22.2		
a. Farm Forestry				
1. Tree Plantation	4,444.3		8,970.0	13,414.3
2. Nurseries	132.5		132.0	264.5
3. Soil Conservation	2,742.0		1,000.0	3,742.0
4. Watershed (NFP)	442.0		0.0	442.0
b. Irrigation Upgrade	1,000.0	2.9	500.0	1,500.0
c. Building Construction	2,893.3	8.3	543.0	3,436.3
d. NGO/PVO	618.8	1.8	0.0	618.8
Sub-total	12,857.7	36.9	12,503.0	25,360.7
E. Evaluation	618.0	1.8	0.0	618.0
Sub-total	32,018.1	91.6	13,269.0	45,287.1
F. Inflation^c	829.9	2.4	^d	829.9
G. Contingency^e	2,152.0	6.1	1,031.0	3,183.0
Total	35,000.0	100.0	14,300.0	49,300.0

Notes:

- ^a Project Costs are defined as anticipated earmarkings or commitments of funding through, for example, PIOs, contracts, purchase orders, or PILs.
- ^b Expressed as dollar equivalents at the exchange rate of US\$1.00=R.19.00.
- ^c Inflation is assumed 5% of FX costs and 10% of local costs.
- ^d Cost estimates for the original PP include inflation.
- ^e As the project is well underway, cost factors are fairly firm. Therefore contingency is calculated as approximately 6%.

Table 4. SUMMARY OF PROJECT COSTS BY EXPENSE CATEGORY AND SOURCE OF FUNDING ACCORDING TO FIFTH AMENDATORY AGREEMENT

(In 000's)

Expense Category	Cumulative FY 1983 through FY 1991 to date		June 1989 Life of Project Funding Amendment	
	A.I.D. Grant (In \$)	GOP (In R)	A.I.D. Grant (In \$)	GOP (In R)
Technical Assistance	7,500	--	9,243	--
Training	4,250	7,000	7,312	7,544
Commodities	3,400	1,400	3,712	2,284
Other Costs	11,900	115,400	13,715	160,413
Evaluation	450	--	650	--
Sub-Total	27,500	123,800	34,632	170,241
Contingency	--	7,000	360	13,228
Grand Total	27,500	130,800¹	35,000	183,469²

¹ Approximately \$5,687,000 at R 23:\$1 exchange rate

² Approximately \$7,987,000 at R 23:\$1 exchange rate

Table 5. EXPENDITURE BY FISCAL YEARS FOR USAID AND GOP FUNDS IN US DOLLARS AND PAKISTAN RUPEES

	1985-86	1986-87	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	Total
a-Reimbursable									
Total (\$)	75,565.00	185,638.00	472,755.00	622,938.00	1,241,175.00	1,781,886.00			4,379,957.00
Total (R)	1,274,788.18	3,239,396.27	8,306,318.72	12,527,284.54	26,958,334.83	39,363,173.58			9,166,929.12
b-TAT Direct									
Total (\$)	1,283,596.00	1,840,911.00	3,133,382.00	2,721,699.00	3,032,530.00	3,159,183.00			15,171,301.00
Total (R)	21,654,264.52	32,123,896.95	55,053,521.74	54,733,366.89	65,866,551.60	69,982,896.40			299,414,498.10
Total (a+b)									
Total (\$)	1,359,161.00	2,026,549.00	3,606,137.00	3,344,637.00	4,273,705.00	4,941,069.00	0.00	0.00	19,551,258.00
Total (R)	22,929,052.70	35,363,293.22	63,359,840.43	67,260,651.43	92,824,886.43	109,346,069.98	0.00	0.00	391,083,794.22
c-GOP									
Total (R)	397,210.22	4,670,773.74	8,752,802.95	9,744,178.51	13,122,166.78	13,067,294.95			49754427.15
Total (a+b+c)									
Total (R)	23,326,262.92	40,034,000.96	72,112,643.41	77,004,829.94	105,947,053.21	122,413,364.93			440838221.37
Average \$ Rate	R 16.87	R 17.45	R 17.57	R 20.11	R 21.72	R 22.18			

Table 6. EXPENDITURE STATEMENT OF FORESTRY PLANNING AND DEVELOPMENT PROJECT IN RUPEES

Expenditure 90-91	July	August	Sept	October	November	Dec	January	February	March	Total
1. Commodities	8105.00	8085.00	10400.00	23770.0	9177.08	1622.00	64440.00	43802.76	18121.00	187522.76
2. Temporary Office Rent	18550.00	95500.00	18050.00	20090.00	44945.00	21950.00	30150.00	16750.00	45200.00	319445.00
a. Furniture/ Office Equipment										
b. Field/Research Equipment										
c. Training Supplies										
3. Sindh Plantation Activities	184265.00	127512.00	238173.08	35549.00	52500.00	27894.00	10000.00	387417.00	707186.00	1810895.00
a. New Plantation										
b. Canal Construction Phase (1)										0.00
c. Canal Construction Phase (2)	434621.00	217193.00	593830.10	156417.00	303990.20	194159.00	00.0	282832.00	164263.00	2347321.36
4. Training	69509.52	48205.50	93471.08	323422.25	10395.20	108255.50	19730.00	403363.25	220496.37	12968440.59
5. Research	73096.96	21669.32	171817.82	116133.60	222128.30	148539.31	92348.73	103555.50	316731.67	1266021.29
6. Field Operational Activities										
a. Nursery	1338938.50	639942.12	3174374.40	1403712.50	2620809.75	3464991.50	602330.49	3865682.16	3869405.01	21380186.43
b. Land Developmnt	79921.00	112863.00	105870.00	3990.00	00.0	39327.19	16670.03	97802.83	148492.01	604937.05
c. Soil Conservation	00.0	1850.00	24050.00	00.0	00.0	00.0	00.0	00.0	138750.00	164650.00
d. Other Activities	00.0	2358.00	14749.00	3914.20	00.0	39472.24	59224.98	201653.08	228050.82	549692.32
e. Construction	1523275.90	749368.41	1887741.64	336365.00	1390276.33	854527.00	672332.00	698585.42	1323181.07	9435652.77
Reimbursable Total	3730282.98	424546.35	6382535.02	2422023.63	4654229.78	4901007.74	1567726.23	6101445.00	7179876.95	39363173.58

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Table 6. EXPENDITURE STATEMENT OF FORESTRY PLANNING AND DEVELOPMENT PROJECT IN RUPEES (continued)

a. Pay/Allowances	492873.23	418085.38	664831.60	467524.30	513122.76	602677.45	755047.00	674693.49	695042.17	5285497.54
b. Travelling Allowance	70349.00	163400.24	119917.60	95230.10	102081.36	107887.38	130616.76	110674.68	116606.19	1016763.31
c. POL/Maintenance of Vehicles	154782.22 42873.60	151175.50	161303.41	138046.14	109585.35	70452.07	157075.93	10924.08	9025.70	962370.40
d. Miscellaneous Charges	928394.63	73227.28	63479.99	43454.45	93059.88	103895.87	92715.74	106238.62	70857.75	689803.14
e. Buildings		244110.17	423494.60	215750.00	188862.00	258856.00	420233.00	316272.00	500319.00	3496291.40
f. Maintenance of Buldozers/ Tractors/ POL etc.	114905.04 00.0	144775.20 00.0	73963.84 00.0	47557.10 00.0	86923.87 00.0	52517.18 00.0	145208.20 00.0	39096.35 00.0	112897.38 796725.00	819844.16 796725.00
g. New Plantation (Sindh)										
GOP Total	1804177.72	192573.77	1506991.08	1087562.17	1093635.22	1196285.95	1701696.63	1257899.22	2301473.19	13067294.95
Grand Total	5534460.60	622120.12	7809526.10	3429505.80	5747865.00	6097293.69	3268922.83	7359344.22	9481350.14	52430468.53

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Table 7. EXPENDITURE STATEMENT FOR PROJECT ELEMENTS BY PAKISTAN FISCAL YEARS AND IN THOUSANDS OF RUPEES

Nation-wide	1985-86	1986-87	1987-88	1988-89	1989-90	1990-91	-92	-93	Total
1. Commodites	310592.00	366589.39	331516.61	288782.84	160702.50	187522.76			1645706.10
2. Temporary Office Rent	6900.00	114663.00	311956.00	366876.20	408432.00	319445.00			1528272.20
a. Furniture/Office Equipment									
b. Field/Research Equipment									
c. Training Supplies									
3. Sindh Plantation Activities		89413.00	1570080.04	693784.32	363791.26	1810896.00			4527964.62
a. New Plantation					3076249.86				3076249.86
b. Canal Construction Phase (1)					1457601.84	2347321.36			3804923.20
c. Canal Construction Phase (2)									
4. Training	5614.10	51890.00	242673.06	1466212.06	1559591.31	1296848.59			4622829.12
5. Research		513032.00	554416.64	602763.91	743186.80	1266021.29			3679420.64
6. Production and Distribution of News Letter, Research Reports and other Information and Publications		40118.00							40118.00
7. Field Operational Activities	942226.08	2051134.75	3998027.27	7914016.37	10606854.27	21380186.43			49892625.17
a. Nursery	9456.00	4284.00	81013.16	90154.00	212051.65	604937.06			1001895.87
b. Land Development					4184936.67	164650.00			4349586.67
c. Soil Conservation		8272.13	563455.94	451106.10	246481.50	549692.32			1819007.99
d. Other Activities			653000.00	653588.74	3938455.17	9435652.77			14680696.68
e. Construction									
Reimbursable Total	1274788.18	3239396.27	8306318.72	12527284.54	26958334.83	39363173.58	0.00	0.00	91669296.12

Table 7. EXPENDITURE STATEMENT FOR PROJECT ELEMENTS BY PAKISTAN FISCAL YEARS AND IN THOUSANDS OF RUPEES (continued)

a. Establishment	182234.36	2922680.22	5120478.15	5693103.82	6406627.04	5285497.54			25610621.13
b. Travelling Allowance	61828.36	639720.18	1195945.59	1212978.70	1511722.37	1016763.31			5638958.51
c. POL/Maintenance of Vehicles	82511.70	676420.02	1055843.02	1533570.56	1982278.31	962370.40			6292994.01
d. Miscellaneous charges									
e. Buildings	70635.80	167907.32	682378.19	683269.90	747601.88	689803.14			3041596.23
f. Maintenance of Buldozers/Tractors/ POL etc.		264046.00	698158.00	611876.12	1668663.28	3496291.40			6739034.80
g. New Plantation (Sindh)				9379.41	805273.90	819844.16			1634497.47
						796725.00			796725.00
GOP Total	397210.22	4670773.74	8752802.95	9744178.51	13122166.78	13067294.95	0.00	0.00	49754427.15
Grand Total	1671998.40	7910170.01	17059121.67	22271463.05	40080501.61	52430468.53	0.00	0.00	141423723.00

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Table 8. Proposed Technical Assistance Team Life-of-Project Expenditures According to Winrock Contract in Dollars

Budget Line Item	Expended to May 91	Remainder 1991	1992	1993	Projected Expend	Budget Amount	% Diff
Staff Salaries	511,865	240,901	346,292	40,029	1,139,087	1,158,431	-1.7%
Fringe Benefits	119,339	85,459	122,543	14,050	341,392	305,479	11.8%
Overhead	301,178	133,062	189,880	22,224	646,343	682,021	-5.2%
Travel/Transportation	226,381	118,000	184,000	177,500	705,881	800,673	-11.8%
Allowances	134,587	59,600	71,840	5,453	271,480	300,363	-9.6%
Other Direct Costs	186,165	72,000	120,000	18,000	396,165	404,791	-2.1%
Local Training	43,767	32,000	60,000	10,000	145,767	50,000	191.5%
Commodities	262,081	113,000	40,000	0	415,081	400,000	3.8%
Subcontract	0	25,000	125,000	0	150,000	75,000	100.0%
Total	1,785,364	879,022	1,259,555	287,257	4,211,198	4,176,758	0.8%

Table 9. STATEMENT SHOWING ANNUAL RELEASE, EXPENDITURE, AND THE BALANCE CARRIED FORWARD ACCORDING TO PROVINCES AND PFI

Province	Year	Release	Total Amount Available during the Year	Expenditure	Balance/Carry-Forward Amount
		Total = GOP + Reimbursable	Total = GOP + Reimbursable	Total = GOP + Reimbursable	Total = GOP + Reimbursable
Punjab	1985-86	2.500 = 0.750 + 1.750	2.500 = 0.750 + 1.750	1.672 = 0.392 + 1.275	0.828 = 0.353 + 0.475
	1986-87	2.904 = 1.784 + 1.120	3.732 = 2.137 + 1.595	2.617 = 2.077 + 0.540	1.115 = 0.060 + 1.055
	1987-88	10.575 = 4.922 + 5.653	11.690 = 4.982 + 6.708	5.101 = 3.453 + 1.648	6.589 = 1.529 + 5.060
	1988-89	14.292 = 3.537 + 10.755	20.881 = 5.066 + 15.815	9.545 = 4.105 + 5.440	11.336 = 0.961 + 10.375
	1989-90	18.684 = 5.924 + 12.760	30.030 = 6.885 + 23.135	15.029 = 4.782 + 10.247	14.991 = 2.103 + 12.888
Sindh	1985-86	1.700 = 0.510 + 1.190	1.700 = 0.510 + 1.190	0.071 = 0.067 + 0.004	1.629 = 0.443 + 1.186
	1986-87	0.200 = 0.088 + 0.112	1.829 = 0.531 + 1.298	1.143 = 0.861 + 0.282	0.686 = 0.330 + 1.016
	1987-88	4.429 = 2.152 + 2.277	5.115 = 1.822 + 3.293	3.656 = 1.537 + 2.119	1.459 = 0.285 + 1.174
	1988-89	4.762 = 1.014 + 3.748	6.221 = 1.299 + 4.922	5.420 = 0.797 + 4.623	0.801 = 0.502 + 0.299
	1989-90	7.860 = 1.806 + 6.054	8.661 = 2.308 + 6.353	7.364 = 2.367 + 4.997	1.297 = -0.059 + 1.356
N.W.F.P	1985-86	1.600 = 0.480 + 1.120	1.600 = 0.480 + 1.120	0.247 = 0.247 + 0.000	1.353 = 0.233 + 1.120
	1986-87	1.000 = 0.720 + 0.280	2.353 = 0.953 + 1.400	1.448 = 0.801 + 0.647	0.905 = 0.152 + 0.753
	1987-88	5.350 = 2.563 + 2.787	6.255 = 2.715 + 3.540	2.817 = 1.292 + 1.525	3.438 = 1.423 + 2.015
	1988-89	6.059 = 1.154 + 4.905	9.497 = 2.577 + 6.920	5.113 = 1.372 + 3.741	4.384 = 1.205 + 3.179
	1989-90	7.102 = 0.801 + 6.301	11.486 = 20.006 + -9.480	5.885 = 1.590 + 4.295	5.601 = 0.406 + 5.195
Balochistan	1985-86	0.700 = 0.210 + 0.490	0.700 = 0.210 + 0.490	0.000 = 0.000 + 0.000	0.700 = 0.210 + 0.490
	1986-87	0.454 = 0.319 + 0.135	1.154 = 0.529 + 0.625	0.710 = 0.208 + 0.502	0.444 = 0.331 + 0.123
	1987-88	4.000 = 1.919 + 2.081	4.444 = 2.310 + 2.134	1.399 = 0.625 + 0.774	3.105 = 1.615 + 1.490
	1988-89	0.931 = 0.931 + 0.000	4.036 = 2.546 + 1.490	1.643 = 1.013 + 0.630	2.393 = 1.533 + 0.860
	1989-90	5.123 = 1.059 + 4.064	7.516 = 2.592 + 4.924	4.281 = 2.865 + 1.416	3.235 = -0.273 + 3.508
P.F.I.	1985-86	0.600 = 0.180 + 0.420	0.600 = 0.180 + 0.420	0.259 = 0.054 + 0.205	0.341 = 0.126 + 0.215
	1986-87	0.705 = 0.310 + 0.395	1.046 = 0.436 + 0.610	1.046 = 0.521 + 0.525	0.000 = -0.085 + 0.085
	1987-88	3.320 = 1.918 + 1.402	3.320 = 1.833 + 1.487	3.326 = 1.918 + 1.402	0.000 = -0.000 + 0.000
	1988-89	2.553 = 1.357 + 1.196	2.555 = 1.440 + 1.115	3.612 = 1.687 + 1.925	0.000 = -0.644 + 0.644
	1989-90	4.730 = 1.130 + 3.600	4.730 = 1.130 + 3.600	2.983 = 1.172 + 1.811	1.647 = -0.042 + 1.719
Release for the Year	1985-86		<u>7.100 = 2.090 + 5.010</u>		
	1986-87	1st	3.606 = 1.355 + 2.250 on 26.12.1986		
		2nd	0.904 = 0.904 + 0.000 on 21.05.1987		
		3rd	0.754 = 0.754 + 0.000 on 21.06.1987		
			<u>5.263 = 3.013 + 2.250</u>		
	1987-88	1st	7.526 = 3.593 + 3.933 on 30.08.1987		
		2nd	20.148 = 9.881 + 10.267 on 09.03.1988		
		3rd	4.467 = 0.000 + 4.467 on 07.06.1988		
	PLA		<u>32.141 = 13.474 + 18.667</u>		
	1988-89	1st	0.603 = 0.603 + 0.000 on 12.10.1988		
2nd		1.950 = 0.754 + 1.196 on 08.12.1988			
3rd		6.758 = 0.000 + 6.758 on 10.01.1989			
4th		23.687 = 4.279 + 19.408 on 23.01.1989			
5th		2.357 = 2.357 + 0.000 on 25.06.1989			
		<u>35.355 = 7.993 + 27.362</u>			
1989-90	1st	10.678 = 2.340 + 8.338 on 29.08.1989			
	2nd	13.012 = 2.590 + 10.422 on 29.11.1989			
	3rd	15.723 = 3.216 + 12.507 on 03.02.1990			
	4th	4.086 = 2.754 + 1.512 on 26.05.1990			
		<u>43.499 = 10.720 + 32.779</u>			
PLA		14.000 = 0.000 + 14.000 on 03.12.1989			

The Table is significant because it shows the amount of funds that each unit was not

able to spend (Balance/carry forward column). This accumulated balance is apparently the "savings" that O/IGF has indicated as available to continue on with for several years after August 1993. In summary, the flow of the rate of USAID reimbursable expenditures, complimentary timing, amount and expenditures of the GOP contribution, has been adequate without hampering the project.

USAID and O/IGF have made arrangements whereby USAID will replenish a Personal Ledger Account (PLA) retained by the O/IGF. The account is reimbursed based on actual expenditures reported quarterly to USAID. This PLA account allows the project, through the O/IGF, to provide timely monies for field operations not handled by direct contract. Unfortunately, not all field staff have been aware of the procedures to gain access to the PLA.

3.2.2 World Food Program Activity

As an example of tracking a completed activity the Evaluation Team examined the WFP Tarbela Dam assistance. According to the PPA US \$ 442,000 (Table 3) was to be made available to accomplish 5,000 acres of reforestation in support of the World Food Programs on-going activity in the uplands. PIL's 19 and 19-A allocated the funds through the O/IGF. PIL 19-B closes the account.

According to PIL No. 19 R. 35,000,000 (approximately US \$ 2,050,000) was earmarked for the WFP activity. An additional R. 4.2 million was provided in the form of transport. According to the Forest Department Watershed Project Office in Abbottabad, R. 18.79 million was expended to accomplish 5,300 acres of reforestation and 56 acres of nursery. PIL No. 19-B recalls the un-expended balance of R. 9,820,000 and transfers it to other project activities. This leaves about R. 90,000 at the Watershed Project Office in Abbottabad (18.80 less 18.79) that should either be recalled or let the field office utilize it for other purposes. A similar tracking/accounting should be made of the Sindh irrigated plantation activity.

Interestingly, it cost about R. 3,545 per acre to reforest the 5,300 acres. At 435 seedlings per acre, which is normal for this area, it cost R. 8.19 per seedling for planting. At a current maximum market price of R. 4/seedling, the project paid twice as much per seedling on the WFP activity, or more than double to the WFP assisted project in Dirand Swat Districts of the NWFP.

3.3 Project Staffing and Management

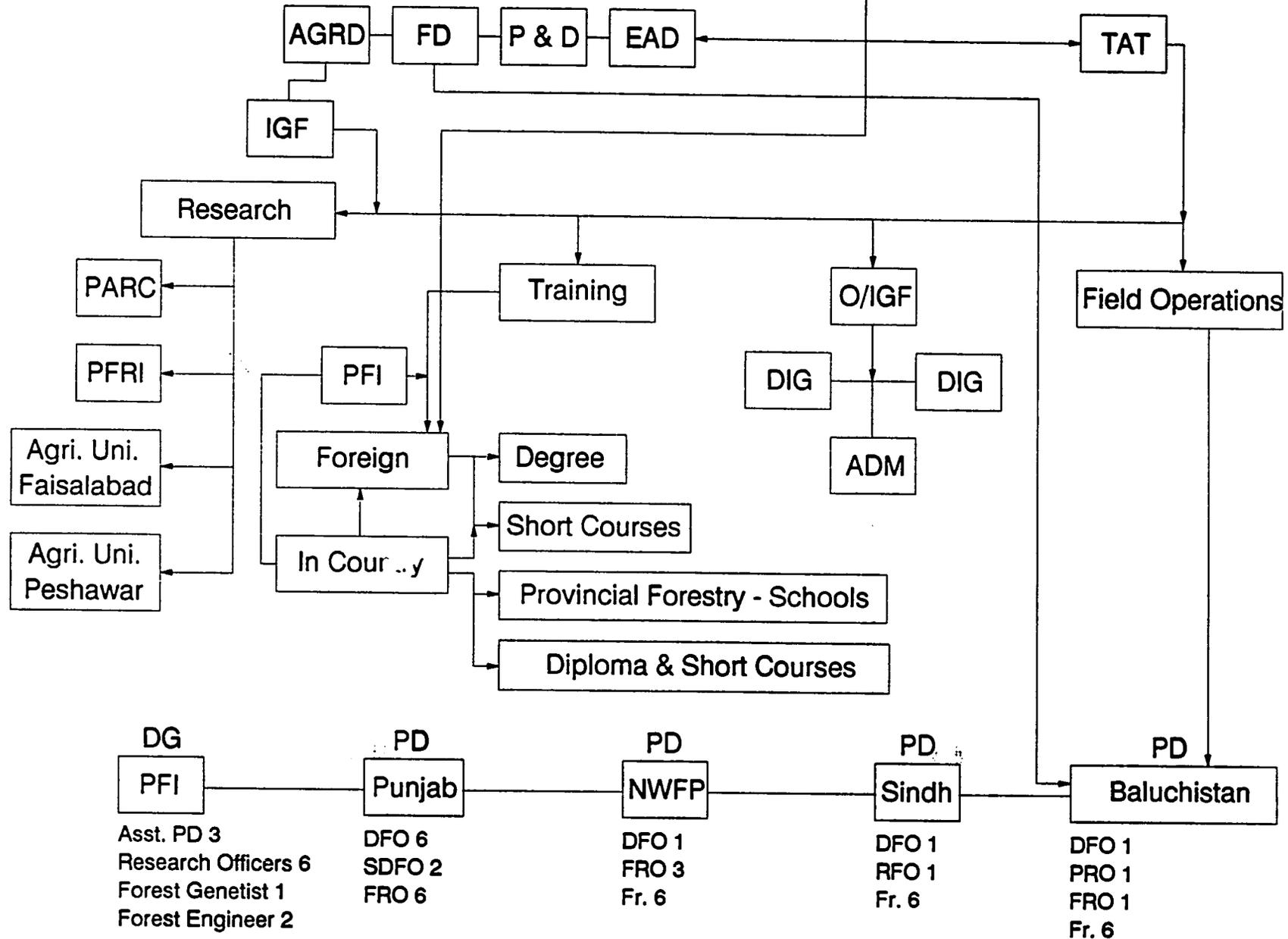
The Evaluation Team, after repeated queries, did not find a project organization chart,

hence one was prepared. Figure 2 describes the project organization and working environment. It shows the linkage between the GOP-USAID-TAT-Provinces. There has been excellent operational progress made since the 1987 evaluation. People associated with the project generally understand their roles and responsibilities. However, within the organization persistent staffing problems continue to surface; eg: GOP not sanctioning the Additional Inspector General of Forests position and assigning the Director for Research part-time rather than full-time.

Project management made a favorable conscious decision not to let the staffing issue jeopardize operations. Nevertheless, there is continual discussion on what effect the lack of staffing will have on accelerating the project, field operations into new areas (see Figure 1) and management\administration after 1993. This is an example of where non-finalization of the PC-1A is used to deny an action. The issue of staffing effect on future operations will be discussed in Chapter IV on Interpretations and Conclusions.

Figure 2: Existing Organizational Chart

PROJECT
GOP/USAID



There has been no progress in implementing the Data Base Cell, starting up the NGO-PVO activity, beginning farmer involved research or implementing activities in the Skardu Area. We also found that while there have been many training activities, training has been on an ad-hoc or scattered approach attempting to include something for everyone. There is need to concentrate on team building, leadership, and delegation of authority at the project management level and the addressing of social aspects at the farmer level.

There is a major problem with decision making and follow through of implementing the decisions made during committee meetings. About 50 percent of the action items identified at monthly IGF-TAT-USAID coordination meetings are apparently not acted upon. Some of the monthly meeting requests are outside the project's role and others "die on the vine," but many are related to giving the project direction. This problem is related to an ambitious scenario of activities, staffing gaps, and the fact that the project has expanded in some areas faster than originally planned and other areas have moved slower. Some provincial leadership also remarked during the evaluation that they have not been invited to the Annual Work Plan sessions or have not received information on what decisions were made (PIL NO. 23 describes reports and meetings that will be held). Most importantly, we sensed a lack of consensus building between the Provincial and Federal levels.

3.4 Activity Status

3.4.1 Institutional and Manpower development.

The project is to be congratulated on the placement of infrastructure and development of human resources. Hostels are in place or in progress to support training. The building of the women's hostel at PFI should do much to advance the women in Forestry component of the project. The buildings at Kharian should facilitate the transfer of Forest Technology in the District. Of tremendous potential is the seed storage cold room at PFI. It provides badly needed facility to conserve genetic resources and support a comprehensive breeding and genetic evaluation program. Equally impressive was the building program at PFRI and the refurbishing of the laboratories with instrumentation to institute a quality research program. All construction was of excellent quality.

Special mention should be made about the computer lab at PFI which is up-to-date state of technology. Coupled with excellent instruction, it will provide professionals the capability to begin using modern technology.

Even though there have been some problems with the deployment of tractors, their utility in land reclamation and preparation was most evident. Also of high profile was the successful deployment of transport at the farm interface. So many times, with the privileged afforded rank, this type of infrastructure gravitates toward the top. It was encouraging to observe extension personnel with the mobility to accomplish their work.

In the area of human resources four individuals have achieved expertise in management and training at the M.Sc. level and one is in training for a PHD. This group of individuals should do much to disseminate management skills if used in a training capacity. Others are trained or in training in social, and outreach, and forestry wildlife, silviculture and forest management. All of these trainees will have concluded their overseas training before the project ends.

Four more have completed tours and inputs from the US Forest Service. Nineteen have traveled to other parts of Asia and some to Africa. Over 80 individuals have completed short-term training or are in training in disciplines including extension, training, forestry and management skills.

In-country, 22 M.Sc. and 28 B.Sc. have passed through and are making an important impact in the forest service or industry as forest professionals. While there is so much to do in utilizing these individuals to echo their acquired expertise, much has been accomplished in the project's Training Program. To date, 74,003 farmers have received training.

Another important part of human resource development that warrants comment is that of attitude. A spirit de corps toward the new service/client mandate was evident especially at the field level! This is an important component of institutional and manpower development. It reflects a leadership that understands motivation and the ownership principle.

A manpower development training program for the remaining TAT time has been proposed. It shows approximately 60 person months of seminar/workshop activities scheduled indicating an average of about three person months of in-country training being conducted by consultants or staff. This is highly ambitious in light of other on-going activities. For example, two international seminars are proposed for September 1992-February 1993. It has also been suggested that a Research Management Workshop, proposed for September 1991-February 1992, be opened to the international community. Rather than embark upon such a training schedule that includes a series of events with something everyone, Chapter 4 will suggest

concentrating training that builds upon a training of trainers or change agent concepts. The team's recommendation is to reinforce already conducted training sessions and begin to utilize people that have been educated by the project.

3.4.2 Farm and Energy Forestry Research.

A comprehensive research plan in collaboration with the TAT, the Punjab Forest Institute, the Silvicultural Research Division, Hyderabad, as well as project staff of all the four Provinces, was prepared and approved in a Project Directors Meeting. The program includes research on economics of various species, design and yield of farm forestry systems, species trials and seed supplies and ecological and hydrological studies in the Project areas.

About twenty four studies in these subjects have been taken up at PFI and at field stations throughout the country. Progress reports have been prepared. During discussion with the PFI staff and visits to the field it was observed that:

Established research has not been communicated to the Project staff for adoption in farmer fields. Research topics, which have known solutions have been duplicated, (e.g. research on species trials, spacing trials, nursery shading, etc.) Identical experiments are being conducted at PFRI which could have been avoided. Research has not been farm-oriented and the farmers are unaware of research work conducted at field stations.

Marketing and out-reach research has not received due priority in the program. Plantations raised by farmers in 1987, will be ready for harvest in the next two years, but the farmer is still unaware of marketing his product.

Coordination between the researcher-farmer-project staff has not been established, with the result that research findings are retained within PFI. It has been stated that a main constraint in the conduct of research was non-availability of staff. It is also observed that the recruitment of technical staff, against the posts provided in the project, could not be made due to procedural delays in the Department. The Team, feels there is also lack of direction in adopting research which is contributive to low performance in field research operations.

It is suggested that a career corps of researchers, as provided in the PP research plan should be finalized as soon as possible. Research results should be transmitted to the field to guided farmers and contact between researchers,

project staff, and farmers, and increased to disseminate research findings.

3.4.3 Energy Forestry Field Operations

3.4.3.1 Farm and Rangeland Afforestation in the Barani areas of the Punjab and the NWFP.

Changa Manga

Forest Department irrigated plantations in Changa Manga were over watered and poor examples of forest management. Many of the stands needed thinning. The over watering had commonly caused root growth near the soil surface which led to excessive windthrow. Apparently, due to the excess irrigation no tap roots were formed hence the lack of proper support. Secondly, the level of research observed was not appropriate for application in the farmer's fields. More time should be spent to learn about the research clients, and hence, what research will be most useful.

Rangelands and fodder species:

In spite of the goals of the project to include forage plantations, very few forage species were observed in nurseries and new plantations. However, a few plantations located in river beds or farmer grazing areas were seen during the field visits. One in particular near Jhelum, had at least five different species; one of which was a fodder species. It was also encouraging to see this plantation had live fencing along the perimeter. This was the only plantation visited which had more than two species and included live fencing and fodder species. More emphasis should be placed on mixed tree species and including more fodder species. No such mixed plantations were seen in NWFP.

Land reclamation and soil conservation

Several sites were visited in Taxila, Punjab where land reclamation and soil conservation activities have taken place. These were done on banjar lands of relatively large farmers. The choice of species was good in most cases, and from a technical stand point well conceived and carried out. The only concern was the placement of eucalyptus on slopes that had been freshly disturbed.

Generally the conversion of banjar into cultivatable fields is expensive and highly subsidized (including the coordination of work with equipment from other provincial departments). In addition, the attention to grass forage as a conservation treatment

has lagged due to unavailability of seeds. Farmers are enthusiastic and providing protection to seedlings. The Team talked with project personnel in Kohat, NWFP, about their activities and equipment but no sites were visited. The tractors are working well for light leveling work.

Marketing

At present there is no formalized marketing system for private sector produced timber products. The GOP through government and parastatal operated wood yard systems does market state forest timber; such as was visited at Changa Manga and near Abbotabad. Few of the larger mills have established informal procurement systems with one or more agents in the field, buying wood from farmers and getting it cut and sent to the mills. These systems need to be studied and other ways to forge linkages between farmers and the mills need to be explored. Many opportunities for establishing and improving marketing systems and making market information readily available do exist.

There is a lack of information on the forestry product marketing at all levels, farmers, middlemen, and end users. The evaluation team examined the possibility of more data being collected, subsequent analysis and then dissemination by O/IGF staff. Simple methods of dissemination already exist as exemplified by the regular newspaper listing of agricultural commodity prices (see example of the regular agriculture market report column in Annex 13). No sophisticated system of data collection or dissemination system would be needed. For instance, disseminating information on auction sales at Changa Manga, FD&C wood depots, and other public sales would be a natural starting point. It has been recommended that this would be a first step in improving the marketing system for farm forestry products (McKetta 1990).

Wood products industries

Often much of the timber used by wood product industries is harvested in one province and transported to another for processing. Hence, it is difficult to quantify how much wood is needed by a province. For instance, much of the poplar wood used in the Sindh Province travels from suppliers in the NWFP. Much of the information needed for an effective market information system could be readily collected at roadside tax or police check posts and from timber harvest or transport permit applications.

Projections are only as good as the data used in making them. In other words,

provincial data is needed on what timber products are produced and go to other provinces for processing, in what province they are consumed, by which industry and by species. This information will form the base for any evaluation of the existing markets systems by the project. This need reinforces the urgency of enacting the Data Bank Cell in the O/IGF which is called for in the Project papers.

The Forestry Master Plan Project has developed a country wide project for wood use and a representative table is included (Annex 8 and 9) for illustration, based on preliminary information provided by that project. The following are comments on the major marketing requirements seen during the evaluation period.

Firewood

While many areas are not firewood deficient, there is a need to study firewood needs on a continual country wide basis. The use of natural gas has increased, but due to present capacity limitations more homes cannot be served. Real prices have continued to rise and are projected to continue to rise indicating a dire need for firewood (Grosenick 1991). The project's initial focus on firewood should not be ignored. Indicators of the demand exceeding the supply are confirmed by the continued use of animal manure for fuel. Without assured sources of kerosene and other alternative fuels, pressure on the forest resource will surely increase as the population increases (Amjad 1990).

Prosopis juliflora and other indigenous species should be fostered through nursery and plantation management schemes. Implementation of the recommendations contained in the large wealth of existing research information (see Sheikh's Acacia nilotica and Dalbergia sissoo studies of 1989). Most importantly, Eucalyptus has proven to be successfully established and grows quickly on most sites, and it should not be overlooked as a firewood and charcoal producing species.

Pulpwood

As yet no existing paper or paperboard mill has committed to using domestically grown pulpwood on a continual basis. However, many opportunities exist for increased utilization of domestically grown timber to satisfy the needs of the domestic paper industry. Without detailed analysis, it seems evident that pulpwood prices will have to rise above firewood prices before development of pulpwood marketing systems can take place.

Over 3 billion rupees is spent annually to import the necessary quantities of wood pulp

to supplement domestic fibre supplies. Mills visited during the evaluation period did not want to commit yet to using large quantities of wood raw material.

A mill to be built solely to produce pulp has merit. Studies have revealed that wood pulp can be produced domestically on a sufficiently large scale to support the needs for wood based pulp of many domestic mills (Wire 1990). The establishment of a specialized pulp mill supplying Pakistan paper mills would seem to be feasible. Paper mills could buy their wood pulp domestically, and save the country foreign exchange. Domestic wood suppliers should become important raw materials for the paper and paper board industry.

Sporting Goods

This industry is important to Pakistan as it provides a large source of much needed foreign exchange through its exports. For instance, the hockey stick industry in Sialkot could be the impetus for locally grown material; at present they are trucking the needed raw material from NWFP and are short on supplies. There is an immediate need for mulberry and bat willow timber as raw material making cricket bats and other sporting equipment. The Project could help fill this gap by promoting these alternative species to nursery operators.

In addition, other species should be tested for use by this industry. PFI and the industry should work closely together to organize and conduct a research program that encourages new species and technology developments. This along with the fostering of desired species in plantations will help to keep the industry competitive in world markets. Private industry plantations such as those found in the match industry, should also be encouraged by the Project.

Match Industry

Poplar is being transported from near Peshawar to Lahore, Karachi, and other match producing locations. The cost of such transportation, the amount of remaining resources, and the increased demand by competing industries for the species will force the poplar price up in some areas and should make it more economical for its plantation. Local areas such as Lahore should become self sufficient in poplar.

Hardboard

Only one industry visited by the evaluation team stated they would use eucalyptus regularly. The manager indicated that he would use large quantities of this species if

available. However, the manager also pointed out that he did not know there were vast plantations of eucalyptus available. The project should help foster industry tours of plantations to help build industry-farmer linkages.

Market needs assessment

Species selected for nurseries, plantation strategies, and timber production and marketing schemes should all meet the needs of the region, not just those within the project area. To assure long range markets for farm forest products, the species, quality, and volume needs of industries outside the project area should be assessed.

There are many areas underutilized processing capacity for which the project could in time remaining provide valuable assistance. Some larger industries could benefit greatly from the project's efforts. For instance, the hardboard manufacturing facility in Karachi was on the verge of running out of raw material due to supply problems and would like more eucalyptus as soon as possible. However, the mill owner did not know that there are plantations ready to be cut in the Punjab Province. An area where the project could have the most impact is developing the smaller, local and regional markets for farm forestry products such as fostering.

Perhaps the most notable area needing attention is the marketing of ever increasing volumes of eucalyptus timber becoming available from project sponsored plantations. The potential for an eucalyptus oversupply was especially evident in Punjab, as no industry there currently is or has agreed to use this species. This will cause problems between now and 1995 as supplies exceed effective demand. While the species has already encountered strong market resistance (Clark 1990), there is hope that in a year or two a pulp mill will be established at Lahore.

The easiest solution to potential oversupply would be to identify large volume customers such as the pulp, paper, hardboard, and chipboard industries. Currently mills are reluctant to commit to using local wood supplies and are not willing to pay prices that the farmers are seeking. It is the GOP and Project's responsibility to take immediate, corrective action or a situation not unlike the recent Eucalyptus backlash in India may occur (Saxena 1991). Opportunities for assistance include the employment of a eucalyptus utilization expert consultant (perhaps from Australia) to identify locally acceptable solutions that will continue to encourage farmer participation in the tree planting program. Such an expert has been recommended and terms of reference given in a recent consultant's report (Clark, 1990). In addition, the encouragement of local industries to utilize and market eucalyptus products must be continued and increased.

3.4.3.2 Farm Afforestation on Irrigated Lands in Nasirabad, Balochistan

The program designed for Balochistan appears to be meeting the objective of demonstrating the technical and economic feasibility of improving and expanding tree crop management. Similar to other provinces the FP&D Project is highly valued and request has been made to expand into new areas.

The project has largely concentrated on participation by absentee land owners. Due to absentee management, however, the tenant farmers have not shown high interest in tree maintenance.

The junior and lower level staff have not been educated in the management of arid zone species, therefore there is concentration on planting easily established Eucalyptus. There is no on-going research to help the staff or farmers identify alternative or multi-purpose species adaptable to the area. There is a research station scheduled for construction by the project at Quetta.

The size of nurseries within the project area are smaller than those developed in other provinces; the average size is 20,000 plants. There were problems with purchasing poly bags, but a supplier has now been found.

The most major issue identified by project management is the lack of education of lower echelon staff and the need for senior staff to receive training on management planning.

3.4.3.3 Improved and Expanded Management of Irrigated Forest Plantations in Sindh

In Sindh the project has concentrated on establishing 5,400 acres of new irrigated plantations on Government controlled forest land. The plantations are on the Penah and Hunderani Forests located near Daro, Thatta District. Also included is renovation/improvement of existing tree growth on 1818 acres. The purpose of this plantation is to produce fuel wood for the urban poor and the growing of mining props for the coal industry. PIL's 15, 27, 27-A, 41 and 46 commit project funds to undertake construction of water courses and structures. The Evaluation Team observed this project first hand. It employs between 200-300 people for site clearance and development. Direct sown **Acacia nilotica** have started germinating on the cleared areas. Sufficient funds have been made available to complete the work (FP&D letter No. F.4-7/90-91/FPD) As suggested by the high cost of the completed WFP activists, there should be a critical review/accounting of the irrigated plantation now being

constructed.

The establishment of nurseries and training of farmers has not begun. Although funds have been released from the GOP to begin these new activities they are not reaching the provincial level. The province forestry staff was not aware of the advance loan arrangement available to provincial Departments from the O/IGF which can be repaid upon receipt of activity allocation through regular channels. About 600-650 farmer plant nurseries are being planned; 100 farmers have been contacted in preparation of the activity.

4.0 INTERPRETATION AND CONCLUSIONS

This section is the evaluation team's analysis of what has happened since the 1987 mid-term evaluation; though pre-1987 management is considered. It is structured along the questions suggested in the evaluation plan described in the Amended Project. As pointed out in the evaluation plan this mid-term evaluation is scheduled at a time when there is opportunity to do some field methodology and strategy fine tuning. As also pointed out in the amended Project evaluation plan this evaluation comes at a time when many of the established plantations are reaching harvest age.

4.1 Adoption of Farm Forestry Practices and Private Nursery Strategy.

4.1.1 Equity Issues

The project has focused on physical targets such as number of trees, acres covered and numbers of farmers participating. A listing of project accomplishments is provided in Annex 5.

During the team's visits to field and farm sites, it was shown what the project staff considered important accomplishments. Invariably, large plantations (up to 250 acres) were shown on lands of large, influential landowners/farmers. The limit of 5,000 seedlings provided free by the Project to farmers has not limited the size of these plantations. This restriction has been easily circumvented by listing as many family members as necessary to receive the number of trees desired. A few instances were encountered where large landowner/farmers started nurseries, were paid for their nursery stock and then given those trees to establish their own plantations. Few visits were to small plantations, e.g. those plantations so often mentioned in conversation and in answer to questions about beneficiaries. Similarly, one farmer training session, of which a video tape was made by one of the participating farmers), indicates a preponderance of well-dressed, literate men in attendance.

When asked questions about the socio-economic background of farmers we visited, the answers quite often included the professional, civil service, business (sometimes diversified into several lines), and/or absentee landlords with extensive holdings (in one case about 5,000 acres). In short, the main beneficiaries of the project so far have been influential, well-off, and large landowners/farmers, with the caveat that small/marginal farmers have also participated. Some important questions that need to be addressed concerning the small farmers, particularly with regard to their commercial participation with low volume production.

Such dimensions of project operations have not been studied or evaluated to any great degree. Project records do keep track of individual farmers and how many trees of which species they receive. This could be taken as a proxy for size of operations and an analysis made of what percentage of farmers get what percentage of trees. A small effort was made by Null (1988) in his study of technical dimensions of nursery and plantation establishment which includes a few observations on the range of socio-economic backgrounds of nursery operators and farmers from a very small sample. Null's report includes proforma for collecting socio-economic information on participants.

4.1.1.1 Conclusion:

A sound argument can be made for working with large farmers. They are more willing to take risks. They often are community leaders who can help (or impede) project activities. They have a demonstration value, particularly for introduced species, such as Eucalyptus, with which people are unfamiliar.

At the same time the project should not lose sight of the equity issue which is explicit in the planning documents. It should not be a project for just the large landowners, for which there appeared to be pressure given based on statements about reasons to extend the project area in the amended PC-1 (see 4.1.4.1). It is hoped that with an increased attention to agroforestry/silvipastoral systems and the beginning of PVO/NGO activities, the equity issues will be actively addressed.

4.1.2 **Tree Culture**

This project has done an excellent job of establishing nurseries and on-farm plantations. However, information is needed by farmers on what to do after they planted trees.

The project has developed a series of project reports (ten completed through 1989) which focus on identifying farmers who would plant trees and what incentives may be needed for increased participation in the project. How have the trees fared after planting? What is the best species from the farmers' perspective? What problems have arisen after the plantation was established? These and other questions should be answered before the project finishes.

4.1.2.1 Conclusion

Project papers should be upgraded and new papers written that focus on project

follow-up (outreach) tree culture needs, and efforts to manage trees in existing plantations. The results will go a long way to helping the project staff adjust to farmers' needs, plan for the rest of the project, and help projects sustainability after funding is finished.

4.1.3 Tree Planting

Tree planting is not a major issue for attention, except as it pertains to improving upon what technology is already in place. Efforts to improve the dissemination of information pertaining to the importance of tree planting should be encouraged.

Many public relations type activities to encourage tree planting have been completed by the Phase II TAT team. The organization of a tree farm program that is sustainable should be encouraged. It will help sustain project tree planting activities well beyond the Life of the Project.

4.1.3.1 Conclusion

The tree farm program and extension program are closely linked. Much of the Extension Forester's time could be spent to continue to foster the tree farm programs' organization. However, since there are other activities he should focus on, a NGO should be located that could take on this responsibility.

4.1.4 Target Areas - Concept and Operation of "Barani"

There is a disparity between what barani means and its very loose interpretation for field operations.

First, there is an overwhelming tendency to treat any land, irrigated or solely rainfed, in the project area as barani with the justification that the total area is designated as "barani." This is qualified somewhat by another operational definition encountered that considers barani as applicable to any land not irrigated by canals, i.e. land irrigated from private sources is still "barani." Banjar Land is of course unirrigated in any event.

Given this loose operational definition, most FP&D project work, with the exception of soil conservation and land reclamation on banjar land, has been located on land where surface or ground water is available. Moisture deficient areas have been avoided. For instance, eucalyptus block plantations on waterlogged/saline lands is really a problem of too much water even though the land may be officially recorded as barani. Many block plantations are found on lands irrigated by private sources,

situations where water is available to establish a stand, but may or may not be sufficient to irrigate the entire operational holding for crop production. Similarly linear plantations most often occur along bunds and field channels where water is available from a private source. With the exception of plantings on broken and gullied areas where trees are part of the treatment for conservation/ reclamation, many banjar plantings are on uncultivable lands in stream bottoms or flood plains where the water table is high and/or initial establishment does not involve great transportation or water lift problems.

4.1.4.1 Conclusion

In effect, the problems of farm forestry on solely rainfed, surface and ground water deficient barani lands have not been squarely addressed. Admittedly these types of lands are problematic and defy easy answers. In contrast to existing project emphases and operations, addressing such problems means turning away from species that grow easily and quickly such as eucalyptus and poplar. It means diverting attention away from industrial/commercial tree production. It means the integration of trees into crop and livestock activities. And it also means attention paid to multi-purpose tree species.

Given the current direction and momentum of the FP&D project there is very little that can be done in the extremely limited life of the project remaining to substantially redirect operations toward original intents and objectives. Aside from this time constraint there are other considerations to be taken into account. The PC-1A (1990) explicitly extends the operational area into irrigated tracts "due to public demands through MPA's, MNA's, and Senators" (p.7). Furthermore the National Policy for Forests, Wildlife, Watershed and Rangelands, 1991 centers attention for farm forestry on irrigated and riverain environments, although the possibility for addressing barani issues exists between the lines in the sections on rangeland and watershed rehabilitation.

A beginning, however, can be made in the time remaining to lay the ground work for focusing on barani problems and resource poor farmers. This can be accomplished, in part, with the production of outreach material and training in conjunction with NGO's. A true focus on barani problems as the center piece, however, will have to wait for another project.

4.1.5 **Field Target Objectives - Physical Outputs**

The project is driven by physical output targets. In apparent descending order of

importance, project success is measured by: ¹ the number of trees in the ground (the faster biomass producers are the best) and acres covered, ² the number of seedlings produced and nurseries established, and ³ the number of farmers participating and plantations established.

This existing target structure encourages and allows for the counting of the same tree twice - once for nursery targets and again for plantation establishment. This builds in disincentives for transferring alternative plantation establishment technologies that, depending upon the species, could be less cumbersome and costly to farmers, eg. cuttings and direct seeding. No formulas or rules of thumb have been adopted for measuring other establishment techniques. Similarly, such targets exclude techniques such as establishing and encouraging the gratuitous spread of Prosopis juliflora on byways, roadsides and other vacant spaces near habitation areas for free casually harvested fuel wood by the poor and landless. In fact, project staff view P. juliflora from the perspective of farm landowners, who consider it an intrusive weed to be eradicated.

The emphasis on physical outputs (trees propagated, planted and marketable biomass), turns attention from the alternative uses of tree production systems in which outputs may be something else, eg. enhanced soil fertility and crop production or livestock products. In similar vein, things difficult to measure such as environmental enhancement and bio-diversity are not included.

With emphasis on producing the greatest number of countable trees with a commercial plantation model, outreach attention logically centers on larger holdings where volume production can be achieved. Although all size farmers can participate and there is indirect evidence that they do, eg. individuals taking from 10 to 5,000 seedlings (joint family farmers up to 65,000), the main beneficiaries have been the larger landholders who also control most of the land. Project personnel are of the opinion that since small farmers have planted trees and a few nurseries are operated by small and marginal landowners, the social distributional dimensions and equity issues are automatically taken care of. Similarly, with the focus on trees with little attention to the social matrix within which they are produced, the participation of women in farm forestry has not been given serious attention.

The stress on physical targets has taken attention away from the building of institutions. By comparison, the GOP/NWFP-Dutch social forestry project in the Malakand Agency stresses the creation of local community organizations to institutionalize farm forestry. The FP&D project has done very little in this vein at the community level. Admittedly target groups and areas between the two projects differ;

in the former it is local lineages controlling common grazing land and in the latter it is private individuals on their own lands. However, the project documents call for the establishment of farmer advisory groups at several levels. This goal has not been accomplished and in the few instances where actually established they have languished. Only in a few rare instances, are these groups functioning, eg. Taxila, Punjab, and then through the enthusiastic leadership of a large landlord close to Islamabad.

The creation of local institutions of this sort is problematic since the FP&D project is implemented by a governmental agency whose local personnel are subject to political pressure and manipulation. Local advisory groups are particularly subject to politicization due to their role in resource allocation, eg. selection of nursery operators. They also tend to be captured by the large influential farmers. NGO involvement in community organization could obviate this problem.

Focusing on trees as a commodity has turned attention away from social distributional dimensions that were originally to be addressed. Since the beginning of Phase II there has been no appreciable input into work plans or operational decision making by social scientists who could address these issues. We have not met a single economist, sociologist or anthropologist associated in any way with this project despite explicit positions for them in planning documents, including the PC-1A. Some excellent studies, however, have been done at PFI, perhaps indirectly supported by the project, for NWFP (Amjad, 1991) and Pakistan as a whole (Amjad & Khan, 1990).

There was considerable social science input into the project during Phase I (eg. Dove, 1988, 1988a-h; Dove, et.al., 1988, 1988a; Qureshi, 1989). Unfortunately, this input just ¹ focused on farmers attitudes and receptivity about establishing nurseries and planting trees, ² elicited lists of desired tree species and when farmers were willing to plant them, and ³ documented farmers perceived problems of fuel. Although survey data were collected by size of farm operations and irrigated vs. non-irrigated operations and provide a baseline of information, the reports generated are rather thin on content. Their only major contribution is that small and not just large farmers are interested in farm forestry. Evidently this influenced the decision to make nursery stock available in low numbers to include small farmers (Dove, 1991). While this may have been a major accomplishment at the time, these reports present no insights into researchable problem domains for technical scientists, descriptions of systems incorporating trees with their uses, recommendations for strategies of intervention in such systems, and basically are presentations of uninterpreted data. If the social science component is to be operationalized, as per the PC-1A, and have value in the remaining LOP, a farming systems research approach is strongly needed (eg. Gilbert,

Norman, Winch, 1980) with Rapid Rural Appraisal techniques. Rather than just the generation of isolated baseline data there must be an explicit link to adaptive technical research and integration with outreach. Similarly, explicit attention should be given to distribution of project benefits at the farm level that feeds into the monitoring and evaluation activities.

4.1.5.1 Conclusions

Given the emphasis on physical outputs centered on numbers of trees, many other planned project objectives have not been fully addressed. Project and TAT staffing positions reflect this. As a result, operational decisions and work plans have been centered on the technical aspects of establishing nurseries and monoculture plantations, with less attention given to alternative production systems, environmental and equity issues. This has been the direct consequence of planning design driven by narrowly defined and focused physical targets.

Again, given the momentum of the project and the time remaining there is little that can be done to substantially reorient the main thrust of field operations. This issue can begin to be addressed with PVO/NGO activities.

4.1.6 Alternate Production Systems

The focus on linear and block plantations of eucalyptus (80-90 percent of trees planted) is but one way of incorporating trees into farm production systems. The emphasis of planting Eucalyptus on bunds, boundaries, saline, waterlogged, and waste lands is in itself an excellent use of the species. This does contribute to the overall productivity and improvement (in this limited sense) of land resources and, potentially, farm income.

However, little attention has been given to the other ways of incorporating trees into farm production systems. There are two dimension to this: ¹ the relationships of trees to the other production activities on farm -- for either household use or commercial objectives (directly or indirectly), and ² mixes of tree species and multi-purpose trees.

Tree-crop interfaces have been explored in a very limited way. It is surprising that agroforestry -- the incorporation of trees and crops on the same land -- is explicitly avoided as a project activity in the PP of 1983, the reasons for which are assumed farmer resistance, lack of basic research and a concern for negative impact on crop production (pps. 122-123). This stance has been changed in the PC-1A of 1990, (pps. 28-31). Basic research on interfaces is underway through PFI's, field trials at the D.I.

Khan Field Station. However, whatever results have been generated through the project, or before project involvement, have not found their way into adaptive research on farmers fields nor has the impetus for designing research problems come from the farm level. Tree/crop mixtures have several advantages. First, tree/crop mixtures, depending on tree species and management, do not necessarily produce negative effects on crop production and in fact may enhance it. Two examples come to mind. First, widely spaced (3-10 meter) single rows of direct seeded L.Leucocephala on medium depth heavy soils that are radically pollarded to several centimeters from the ground during the rain growing season minimizes soil/nutrient competition with crops, and during the off-season provides fuel and fodder. This was a system devised by adaptive research on farmers fields in semi-arid black soil areas of the Deccan under the Bijapur Research Station Karnataka, India, an adaptation of the L.Leucceephala alley cropping system suggested by Lal at IITA, Ibadan, for the humid tropics.

The second is the traditional use of volunteer stands of Prosopis cineraria under rain-fed conditions (200-500 mms.) in deep sandy soils in the arid to semi-arid regions of Rajasthan. This species fits well into this system as it is frost resistant, its root structure does not compete with crops for soil moisture/nutrients, the canopy provides a micro-environment conducive for crop growth e.g.: enhanced soil nutrients through nitrogen fixation and leaf litter, lowered soil temperatures for mixed field crop germination, protection of crop seedlings from washout and silting over during cloudbursts, lowered air temperature protecting against heat/moisture stress, protection against wind desiccation. The canopy is managed through lopping to coincide with agro-climatic cycles whereby it is in place during the kharif season but is removed for the cooler rabi season should a farmer have irrigation or residual soil moisture for a rabi crop. This system enhances crop production provides renewable fuel wood from the loppings for domestic and local industrial purposes, e.g. brick firing, and a nutritious leaf fodder that is traded commercially in regional markets (Michie, 1986). Basic plantation establishment research on this species has already been done by M.I. Sheikh at the Rakh Daggarwal Kotli Research Station near Bhakkar, Punjab. Other preliminary research on this species suggests a similar relationships as described above (Sardar, ND).

There are several points to be made: First, adaptive research on farmers' fields is necessary and requires some creative thinking to come up with combinations, treatments, and alternative management systems that fit local conditions and requirements. This is, however, work fraught with ambiguity, measurement problems, and no one single or simple technological package as suggested by the work with Eucalyptus. Second, such work involves interaction and collaboration with farmers and is not as neat and elegant as on-station research. Third, management of the tree

component often requires treatments that run counter to a forester's orientation that typically desires the full phenotypic expression of the tree. Pollarding and lopping are not necessarily "damage" to the tree. Fourth, other methods of establishing tree stands should be investigated, i.e. direct seeding (depending on the species) that cut down on farmers' expenses and effort. This technique require a change in establishing and measuring project goals since the nursery stage would be bypassed and measurement numbers of trees against work targets is problematic. Fifth, slow growing trees, such as the P. cineraria, should not be overlooked as they have characteristics eminently compatible with crop and livestock components of total production systems. Sixth, perhaps enough basic research exists that can be applied to adaptive research. Most importantly, seventh, ask farmers questions and make observations while off-station in rural areas in order to establish familiarity with how trees are used in order to pick up ideas for applied research and outreach.

4.1.6.1 Conclusion

As a result of their training, professional foresters are most familiar and comfortable with single specie plantation technologies oriented to commercial sale. This is reflected in this Project. The appreciation and willingness to work with alternative production systems is rather limited. This, in part, is a product of disciplinary training that places conceptual and analytical boundaries that only encompass timber trees. Attention to agricultural and forage crops, tree fodder, livestock, and fruit crops is assigned to other disciplines with those specialties.

The problem is creating an interdisciplinary approach that addresses on-farm production systems, combining these components in various ways, thus creating associations and interdependencies between them. This situation is especially applicable to small/marginal farmers and barani conditions. So far the FP&D project has not addressed this issue which is central to the project goals expressed in all planning documents.

4.1.7. Outreach-Research Interface - Adaptive Research

According to the Project design, provincial field and TAT outreach activities center on working with ¹ farmers on technical problems of nursery and plantation management, and ² wood product manufacturers on their production and marketing problems. This involves substantial creative thinking in problem solving that draws upon technical, institutional/networking knowledge and skills of the outreach worker.

According to design, the research component of the project consists of tightly

controlled on-station experiments that ¹ often duplicate work done previously in Pakistan or other places, ² have research questions based upon problems originating from within the discipline, and ³ are not responsive to problems encountered in the field. For instance, at one Federal research station located in one of the provinces, the question was asked concerning how many farmers visit the station to observe and perhaps pick up ideas for their own activities. The answer was that perhaps one farmer a month visits the station. In another instance, wood product scientists at PPI had no knowledge of the technical problems facing wood product producers located in the same city.

The problem is that there is little interaction between research and outreach, whether in tree farm production systems or wood products manufacturing.

The project has established many plantations that have technical problems. It is also exploring tree/crop/livestock interfaces in agroforestry and silvi-pastoral systems. Similarly, the project is beginning to address problems of marketing and linkages with wood product manufacturers. It should be evident that adaptive research is the way to proceed. First, substantial scientific knowledge already exists about tree/crop/livestock interactions for many of the appropriate species. Similarly, basic technical knowledge already exists for many of the manufacturers operations. Adaption of existing knowledge is the key. Second, adaptive research will integrate research with on-going production and management systems that will test technologies appropriate for a number of local situations. Third, adaptive research conducted with the assistance of outreach allows outreach to perform a feedback function into research for solving practical problems encountered in the field. Fourth, adaptive research will enhance the ability of outreach to perform by adding to their knowledge base and providing extendable solutions to field problems they encounter.

4.1.7.1 Conclusion

Outreach staff have to adapt their technical knowledge to situations on the ground. In effect, this means conducting their own experiments in order to gain practical knowledge about how to extend the project technologies to their field conditions. The outreach staff should have assistance in expanding their technical knowledge from the existing findings of research and enhancing with adaptive research on the problems they encounter.

Adaptive research, however, calls for a major reorientation on the part of researchers who often see themselves solely as the producers of technologies that are handed over to outreach staff to implement in the field. Adaptive research also means leaving

the tightly controlled experimental environment of the research station.

4.1.8 Marketing:

One of the general goals is to create a source of cash income by fostering tree-mindedness among farmers. This goal may come to naught if there is little or no market for trees. The main emphasis of the FP&D project has been the establishment of tree stands. This orientation, while understandable in terms of having something demonstrable to show pays relatively little attention to what farmers will do with their trees when they reach maturity, i.e. marketing and linkages with end users. As the predominant tree has been eucalyptus, an introduced species with little or no market familiarity (see Clark, 1990), farmers could very well become disillusioned with eucalyptus specifically and trees generally if they have a bad experience. Many have familiarity with poplar D.Sissoo, A.nilotica, etc.

We found one industrialist, the Oosman Bros. hardboard plant in Karachi, actively purchasing eucalyptus (but decrying the lack of supply). During the course of this evaluation, the project received solid information of a plant, Farooqui Mills in Lahore, being set up with Swedish collaboration, that will produce high quality eucalyptus pulp as in import substitute. Aside from these two industries we have heard of no others, other than anecdotally or in terms of "intentions." Alternate industrial users have not been systematically identified, eg. for furniture or other woodworking. Neither has the acceptance and use of eucalyptus in local or regional markets been explored. The attainment of maturity of the first eucalyptus plantings is beginning to force the issue.

Small and medium sized product firms seek access to pertinent market information. Information is not readily available from which farmers can make informed marketing decisions. Market data collection, its analysis, and the dissemination to proper users is vital to improving the producer selection and utilization, and development appropriate to farm forest products.

In order for timber users, processors, handlers (middlemen), and farmers who raise tree crops to efficiently use markets, it is necessary to allow free flow of market information (prices, price trends, qualities and quantities needed, etc.) Present capacity allows for the collection and dissemination of such information as product characteristics, market needs, distribution networks, and competition. For instance, markets are already monitored in the agricultural sector. A piece from a newspaper reporting agricultural products is included in Annex B. In addition, the Agriculture Department studies firewood (Rock and Gee 1987). Knowledge of market information is needed by wood users and producers on a timely and continual basis.

4.1.8.1 Conclusion

The need for information about markets is paramount for the success of the commercial production aspects of the project. This element is a major void in the project design, perhaps because of project documents' focus on farmer producers as the primary end users of timber/fuel grown with marketing of surplus production left as an unexamined benefit (eg. Anonymous, 1989). What is missing is knowledge about wood markets - local, regional, and national, their structure, organization and operation with regard to the species being worked on in the project. This is highlighted in the McKetta report of 1990, recommendation 13 (pns. 18-20). An analogue for issues that require attention with eucalyptus in particular can be found in N.C. Saxena (1991).

The initial attempts undertaken in the past year by TAT personnel to address this issue, explore possibilities, and create linkages between producers and end users of commercial species such as poplar and eucalyptus is encouraging. However, the utilization and marketing of a large eucalyptus timber resource is the most important problem facing the Project. Efforts to make the project sustainable after funding expires must focus on this issue.

Increased availability of market information will help farmers make informed decisions about which tree species to plant, appropriate culture techniques, products produced, and harvesting needed.

The present marketing publications need to be more useful to all user groups. They should be massaged and presented in such a way that they are understandable and useful, especially to the farmer and extension agent.

Supply and demand, and marketing information has been collected by local consultants for major industry sectors. These reports are well presented in durable, neat bindings, and have been made available to industry and policy makers.

Development of useable marketing information at the farmer (producer) level is imperative for the success and sustainment of the project. Recommendations have been made to help make these reports and future reports more accessible to the project's target users. One page handouts could be developed to summarize topics, focusing on the major points applicable to the target users. For instance, simple marketing techniques useful to farmers when deciding which tree species to plant. For extension agents, more detailed information would be more useful.

4.1.9 Harvesting, Landing and Transport

Efficient harvesting, landing, storage and transportation is critical to maximization of returns to farmers from their plantations. In order to ensure that farmers maximize the utility and consequently the income from his/her plantations, care should be given to utilize most, if not all, of the tree as it is harvested. This will ensure the farmer will not waste any of the scarce resources, s/he has invested.

4.1.9.1 Conclusion

There needs to be increased awareness of the most efficient methods to get wood from the planting site to the ultimate user. Industries need to assess their needs for raw material (form, volumes, quality, etc.) and this information needs to be transferred to those growing timber. As of yet this linkage has not been formalized. Often middlemen harvest, collect, store, and sort timber products for appropriate users. Extension and training needs to focus on this group, so that farmers can benefit from increased returns and mills can gain increased quality and regular supplies.

4.1.10 Monitoring & Evaluation

The linkage between planning and project operations is monitoring and evaluation. Monitoring and evaluation assesses the degree to which project objectives are being met and should recognize and flag problems for corrective action if activities and operations are not achieving those goals.

Given the physical target objectives of the project, the monitoring and evaluation component of the project is primarily keeping track of the number of nurseries established, number and species of trees produced and planted, acres of plantations, and numbers of farmers participating. In addition, the unit is keeping track of project expenditures as to where and how monies are being spent. These are bookkeeping activities that are necessary and contribute greatly to the efficiency of project operations and provide a running baseline of information about physical achievements.

However, there are various project objectives not being monitored, evaluated or studied on a regular basis. These include assessing the social distributional effects of the project (related to objectives about resource poor farmers), environmental effects, and technical management problems. This is partially due to the fact that few staff members are interested or trained in these dimensions and the questions are rarely raised. These questions are addressed on occasion, e.g. the evaluation report by W.S. Null of April, 1988, that focuses primarily on nursery and plantation establishment

technical issues but also tangentially addresses the distributional effects related to socio-economic background of nursery operators and farms of different size. However, such studies are few and far between.

4.1.12.1 Conclusion

The FP&D project is interested primarily in physical output targets focused on numbers of trees. The social science component has not been in place since the beginning of Phase II and there is little indication that it will be revived. The project office and contractor Chief of Party are aware of the need to monitor and evaluate project activities. They have been working with the Missions office of Project Development and Monitoring to develop norms/indicators of success and failures, as suggested in Judy Schumacher's 27 May, 1991 memorandum on the subject. This evaluation team's report may give some insight to accomplishment indicators.

4.2 Effectiveness of Technical Assistance

In comparison to the 1987 Evaluation Report this evaluation has found that the present Winrock TAT has had a decided positive impact on improving the direction. There is good rapport between project units. The project has progressed through several evolutions where some activities have rapidly developed and others have not. Several of the TAT are attempting to carry out too many activities. As a result implementation of several activities natural to ensuring sustainability have been delayed or not stressed; e.g. NGO involvement, establishment of the Data Base Cell, in-country career training, farmer involved research and implementing activities in Skardu District. The strong task orientation already spoken to has contributed to this planning weakness. With the short time remaining for the TAT, in the present project, a more realistic look should be taken at what they can both accomplish and reinforce for program sustainability.

4.2.1 **Research**

The TAT has been quite effective in developing a research program in collaboration with PFI; but it appears that the desired collaboration cannot be maintained. PFI has not received due guidance from the TAT/Winrock team in the implementation of the research program. A reason for this shortfall may be attributed to the fact that the TAT/Winrock Research Specialist is based in Islamabad, whereas the research activities are conducted at PFI in Peshawar under the direction/guidance of the DG. Thus, there is limited contact between the DG/PFI and the TAT/Winrock research specialist.

The economic return to the farmers as a result of planting trees should be further examined. Presently, only three such economic research projects have been approved at PFI, but many other studies are needed.

Primary focus of the research program has been on the silviculture and nursery aspects. Increased effort to isolate the gains from raising trees should be explored. Three economic or supply demand studies have given good baseline information. Little has been done to describe markets for wood products, but a study plan to begin work in this area has been drafted. New areas of focus should include market information system, data collection at Government check posts and a detailed study of firewood markets such as was completed in Nepal (Shaikh et al. 1989) by the USAID funded Resource Conservation and Utilization Project.

4.2.1.1 Conclusion

The staff at PFI is equipped to write and the staff is interested in having appropriate economic and marketing studies for farm forestry products. Support for such studies in this area would help justify future plantations and encourage other farmers to join the Project. Increased collaboration with F/FRED, ICR, CISRO, and other organizations would help bolster the research programs resources.

It is advisable that the TAT research counterpart be positioned at PFI Peshawar. This will improve the effectiveness of the TAT. As an alternative, due to the short time remaining for the TAT, the TAT research counterpart should spend at least 50 percent of his time at PFI providing guidance on the priority areas identified by the Evaluation Team.

4.2.2 Information Synthesis

The project has produced, in a relatively short period of time, a large amount of information; especially in the case of marketing and supply/demand studies and are ready for distribution. More information is needed to help make the project sustainable. Many (at least 13) market/supply demand publications focusing on individual forest production sectors have been completed by outside consultants. These marketing information booklets provide a summary of available information by product area. Some concentrate on little appreciated products. No synthesis of this information exists except in a brief description by Clark (1990). It would be useful, especially at the DFO or lower level, for this information to be readily available so that farmers and extension personnel could be more informed about market possibilities.

In addition, an industry list that covers sector divisions would also be useful. Since farmers and concentration yards must seek markets for many products, many sectors (pulp and papers, timber, furniture, etc.) should all be included in one manual/directory. This would provide a single source for the GOP or NGO extension agents to inform their clients (farmers) about all potential markets.

Newsletters should be expanded to include information on mills and their requirements. This would provide users and growers a market linkage. While completed studies add greatly to the data/market information available, they are written primarily as a procurement tool for mills and industrial wood users. In order to encourage planting and management of new plantations, effort should be made to bridge this large important information gap; that of marketing information available to the farmer. The format of these reports is not standardized, and in some cases (Ansari 1990) information was just photocopied from current industry directories.

4.2.2.1 Conclusion

Many opportunities for synthesizing available information exist. Integration of existing information should make it more usable to farmers and extension personnel. For instance, this market sector information with minimal effort synthesized for use by farmers.

4.2.3 **Planning**

It has been difficult to reconcile project activities with guiding documents in effect within the PP of 1983 and the PC-1 of 1984. First, this difficulty results from the ambiguity injected into the situation by the PPA (1989) and the PC-1A (1990), neither of which come officially into effect until the final signing of the latter by GOP. Nonetheless, both are used to alternately legitimize or deny the ability to act on project modifications.

Second, there is disparity between emphasis in the planning documents and project activities. The planning documents emphasize ¹ fuel wood production, ² the explicit avoidance of eucalyptus and poplar, and ³ special attention to small resource-poor farmers. Project field operations however, focus on ¹ the commercial production of eucalyptus and secondarily poplar for industrial uses, ² the establishment of nurseries to support this effort, and ³ linear and block plantations primarily on large farms. There has been an obvious evolution of the project and in-project operational decisions that have moved emphasis in this direction, away from that outlined in the planning documents.

In discussions with TAT personnel it became apparent that this "about turn" occurred for several reasons. For instance, previous USAID Project Officers had reservations (with the exception of Acacia nilotica), about farmers receptivity to such indigenous species as Dalbergia Sissoo (shisham) and also put a ban on working with poplar. With the start up of field operations to establish nurseries, an easily propagated species with few disease or pest problems was needed for imparting nursery technology. For establishing farm plantations, resistance to frost and grazing damage were prime considerations along with the desire for a tree that would grow quickly and show quick results. It is apparent that with the beginning of Phase II, the new TAT received marching orders to produce tangible results (Daughtery, et al. 1988: pps. 5-6). All these factors converged for the selection of eucalyptus. Only in Phase II has attention turned toward poplar, and in a very minor way to other species such as those of forage or multipurpose uses.

4.2.3.1 Conclusions

The emphasis on eucalyptus has had both negative and positive effects. While it is an easy species to propagate and establish in fields it has taken attention away from other species. While it has definite commercial industrial value (yet to be fully explored and developed in Pakistan), it has taken consideration away from household production of wood products from locally familiar species for household or local use/consumption through "traditional" systems of distribution (eg. as discussed in Gibbons, 1983). In similar vein its incompatibility with cropping and forage production has taken attention away from linkages with other farm production activities such as livestock and field/row crops as might be found in agro/silvipastoral systems. Fortunately, emphasis on eucalyptus has forced the issue of addressing timber and other wood commodity marketing.

4.3. Environmental and Related Issues

4.3.1 **Biological Diversity**

There is a need to encourage genetic, species and other diversity within the farm plantations. It is important that farmers are provided a menu of trees species for planting. To date, the project's field operations have stressed eucalyptus. The second species has been Poplar with minor attention to others such as Acacia nilotica, Acacia modesta, Dalbergia sissoo, Salmalia malabarica, and Leucanae leucocephala in a few nurseries and plantations. The emphasis on eucalyptus, although improving edaphic conditions in saline/waterlogged locations, in block plantations does not promote biological diversity. There is very little that is compatible with eucalyptus

including grasses, crops, livestock, and wildlife. Alley cropping with eucalyptus, occasionally encountered, does promote biological diversity and enhances production values on waterlogged land; but in other situations it results in competition with crops.

The call for attention to agroforestry and silvi-pastoral systems in the farm forestry section of the 1991 National Policy document on forests and in the PC-1A will require more attention to a range of species. Attention might focus on a few exotics, eg. Casuarina equisetifolia, Robinia pseudoacacia, and Leucanae leucocephala. But, indigenous species should receive the most attention, e.g. Dalbergia sissoo, Albizia lebbek, Melia azedarach, and especially for dry areas Acacia nilotica, Acacia modesta, Prosopis cineraria, and Zizyphus mauritiana. For industrial uses more attention should be given to Morus alba, Salmalia malabarica, Salix, Populus, and less emphasis on eucalyptus.

One observation made in the field is that some nursery operators are already beginning to diversify their nursery stock into such species, with some into fruit trees, perhaps responding to demands for diversity and also anticipating the end of this project.

The point is that biological diversity is compatible with production systems. First, it promotes the interface with other production activities and integrates trees into an operation. Second, focus on indigenous, or long established exotics, obviates problems of farmer and user unfamiliarity. Third, promoting biological diversity has side benefits to environmental quality such as enhanced wildlife, the latter particularly the case with indigenous tree species that are components of natural habitats.

4.3.1.1 Conclusion

Attention is beginning to be placed on a wider range of species in farm forestry in local nurseries. This change will also occur as eucalyptus supply comes into equilibrium with market demand. Having demonstrated the feasibility of farm forestry with eucalyptus, interest is turning to diversification of species. Other benefits of biological diversity include better species-site matches, and especially for indigenous species, lowering the incidence of disease or insect pests. A lower reliance on eucalyptus will help improve farming environments (windbreaks, shade trees, etc.).

4.3.2 **Land Reclamation**

The Evaluation Team visited many sites that were reclaimed by the planting of trees. Similar sites should be located and their planting be a high priority during the balance

of the life of the project.

Waterlogging and salinity problems are often caused by over irrigating and trees offer an appropriate solution for reclamation. However, other sites may have been overlooked. Highly erodible soils and those in the true barani sites need also be considered for future planting.

4.3.2.1 Conclusion

The definition of degraded sites should be expanded to include not only saline or river bottom sites, but steep slopes, highly arid sites, water logged sites, and solid waste disposal areas.

4.3.3 Environmental Awareness

Environmental stewardship and sustainability are demanding increasing attention in a world of increasing populations and diminishing natural resources. Trees are one of those diminishing resources.

In advancing forest technology it is essential to include environmental components in the technology equation. Where once the forester was a steward of the national forests, the domain and opportunity to advance conservation principles has increased substantially. Some NGOs (World Wildlife Fund, IUCN, and Forest Friends World Conservation Union) are advancing these concepts on an elementary level.

However, now it is necessary to implement this environmental policy as part of the forest service strategy. In this regards the GOP is to be lauded for advancing a national policy for forests, wildlife, watershed and rangelands in 1991. This policy includes a pro environmental and conservation posture. It follows that environmental concepts and environmental nurturing components should be included as part of the forest training process at all levels, both professional and farmer. They should be made aware that farms and forests are part of a greater design that includes systems with inherent carrying capacities.

4.3.3.1 Conclusion

Collaborative projects should be entertained with NGOs and PVOs to promote environmental importance as a part of government policy.

At the research level a simple environmental impact statement should be developed

and included in all project proposals. Such a process will assist professionals about the long term consequences of their proposed technology.

4.4 Training Needs

The narrative that follows makes inferences to other sections of this report since human resource development is by design, holistic, and as such, is difficult to treat in isolation.

The training component has made progress in the training of project staff. However, a better selection process is needed. There has been some dissension about those trained outside the project, detracting from opportunities of those project related individuals.

There is a lack of training focusing on the sociological aspects of the Project. There is a need of trainers program to capture and transfer information to other individuals. A comprehensive in-service career training program that targets individuals as part or an institutional process is not in place. There is a lack of a program curriculum designed to include information as professional building blocks in a continuum at all professional levels, one that includes a good skills inventory for each position at the various institutional levels. This is the greatest contribution that the project can make in the time frame left in the LOP.

4.4.1 Training Targets

Table 3 of the June 1989 Progress Report (P 20) relates the expected training levels for FY 1983-1993. It can be compared to the March 1991, status report to arrive at present versus projected targets. They are as follows:

Overseas	Goals	89	90	91	To Train
Advanced Degree	26	4	1	2 (7 to place)	12
Non Degree	72	28	18	8	18

An issue of importance to all project training components is the judicious selection of candidates as part of a comprehensive plan of institution building. Candidate selection for training is an administrative tool used in an employer reward system. Most institutions have evolved policy identifying objective criteria for selection, based on employee performance or longevity. However, actual selection is most often friendship

oriented. It is evident that there is short fall in overseas and in-country degree and non-degree training. The result is an undermining of employee moral and motivation.

In addition, candidate selection is a tool for building institutional excellence. Subsequently, if training is to have maximum impact, it should be relevant to the candidates past training, present employment and future niche in the organization. Exceptions are employees picked specifically for career transition as part of organizational planning. Candidate selection not related to institutional planning erodes the goal of fashioning models of institutional excellence.

4.4.1.3 Conclusions

Since M.Sc. training generally requires a period of two years or longer, and the project has less than a two year longevity, it is evident that formal degree training is terminated. This will cause a shortfall of targets both overseas and in-country training. This shortfall is due to selection and processing constraints, and inefficient administrative policies and procedures of both USAID and the GOP. A task analysis of the procedural process reveals 15 steps are required for final approval between agencies. Methods must be found to expedite candidate selection and processing in a timely manner on the part of both USAID and the GOP for the remainder of the program. To derive the maximum impact from training, candidate selection should be based on employee performance and professional fit in relation to institution building and project implementation.

A comprehensive training plan should be designed and implemented. The present program is ad hoc, menu driven, and reactive rather than proactive. A new training of trainers program should be instituted to effect human resources building in the various disciplines. It should be composed of those sent for training. Discipline teams should be formed to avoid dilution of information and expertise (i.e. training of trainers cadre).

4.4.2 Training Populations and Curriculum

4.4.2.1 Administrators and Managers

It is often the case in professional bureaucracies that administrators are promoted to positions of responsibility without exposure to formal administrative training or skills. This formal exposure must have been a concern of the project designers, for a component for administrative training in policy formation, planning, decision making organizational and managerial skills is included in the project.

Three levels of managers should be identified: executive, middle, and field. A comprehensive continuing in-service training program should be designed for each level. The training should be hands on, team oriented and entail relevant problem solving applicable to Pakistan work situations. Training should be conducted by outside contractors who have experience in business administration and organizational relations and should target the same individuals on a continual basis.

Suggested topics include:

- Strategic project, and program planning;
- Contingency planning and downsizing;
- Organizational theory and structure;
- Team building, decision making and employer/employee relations;
- Motivational psychology/human dynamics;
- Controls/monitoring/evaluation;
- Rewards/communication/management information system (MIS), etc.

Upper level managers (i.e. CCF and CF) should attend executive training courses held out of country to provide a conducive training environment away from their work places (e.g. University of Michigan/U.S. Forest Service, Forest Administration, 2nd management, month long seminar, and University of Tennessee's courses for Forest Industry Management Development Program and Management for Natural Resource Development and Environmental Protection). Training with executives from other countries provides not only a challenge, but also a forum for constructive interchange of ideas. One training officer and one administrator should be designated as trainer team to transfer relevant information from these courses to others upon their return to Pakistan.

This training component has the potential to impact:

- Strengthening of a federal forest planning team;
- Establishment of provincial forest planning teams;
- Management of forestry plantations;
- Development of a comprehensive training and research strategy;
- Development of federal and provincial forest management plans.

Administrative training relates to most of the project outputs referred to on Pages 12 and 13 of the June 1989 Progress Report. In this context, an annual work plan is being implemented, a master plan is under development, a meeting on national forest policy was held in March 1989 and more recently a series of workshops were held

contractors in communications and human dynamics.

Although some of the training courses listed in the proposed project training activities relate to planning and management, a holistic continuum of courses that develops experts in these administrative skills is not evident, either in the past or in the future program.

4.4.2.2 Conclusion

A training component offering in-country and out-of-country opportunities is crucial to developing administrators adept in applying the basic concepts and skills of planning, organizing, staffing, leading, monitoring, and developing reward systems to attain goals in a timely manner with an expeditious use of resources.

4.4.2.3 Farm Foresters (Social Forestry, Extensionists)

The FP&D project has introduced new meaning for the forestry profession in Pakistan. Previously foresters duties were towards protecting forest lands. Now they must acquire an array of skills associated with technology transfer to include: extension, on farm adaptive research, communication, sales and promotion, training, economics and marketing. In addition, they must be able to manage all of these components in an interpersonal client environment.

A curriculum should be designed for farm foresters that provides skills and concepts in:

- Basic communication; use of electronic communication systems,
- Extension and diffusion methods, presentation and training methods,
- Field and plot techniques; simple research design,
- Economic and marketing principles,
- Media and course-ware design.

The training should be hands-on, entail relevant projects to their work environments, be a continuing in-service career development process, and target individuals as part of a comprehensive human resource development plan. The professionals trained as trainers by OICD and AED should form a team to transfer the relevant training technology.

Although some past training has related to the social training and managerial side of

the profession, there is to be little continuity or use of previous training as building blocks to current and future training in the socio/agro/managerial components.

However, there is an esprit-de-corps among the foresters involved in the project that embraces the new concept of client relationships. The project leaders at all levels have done an excellent job in introducing and fostering this new attitude.

4.4.2.4 Conclusions

Training in technology transfer skills at the DFO and FR levels is essential. It will entail developing an innovative curriculum and training program that focuses on extension/communication/training/social/economic/marketing and managerial expertise.

4.4.2.5 Researchers

The project provides for the training of researchers in competencies of developing research protocol, a protocol that now, not only includes forestry, but the integration of agriculture and forestry (agroforestry). In addition a new orientation that includes social components, has been introduced into the forestry research profession in a relatively short time. The team approach to research recently implemented at PFI is an excellent strategy to promote interdisciplinary communication and holistic problem solving.

The Data Base Cell is to be established. Individuals associated with this program should attend a trainers course. Subsequently, they should train farm foresters to monitor and gather data.

All personnel should be schooled in computer and software systems applicable to monitoring programs, as part of the data collection and monitoring service. A monitoring workshop for DFO's is suggested to discuss data collection and the development of a procedure with input from the ground up streamlining data collection and focusing on utility rather than quantity (June 19, 1989 Progress Report, page 14).

4.4.2.6 Conclusion

Again, to fashion forest research professionals with competencies and comprehension in these new domains requires training programs that incorporate multi-variable parameters with disciplines outside traditional forestry. Applied and adaptive research thrusts requires on-farm research and trials. Training in communication and interpersonal skills at the farm level are essential. The team approach to research

should be intensified.

4.4.2.7 Training Monitoring

The project documents state there will be training of monitors. Monitoring, by design is the feedback loop in the communication and information process. Precise and accurate monitoring is essential to sound research, extension and especially management decisions. Time is an important variable in the monitoring process and is related to the sequential accumulation and documentation of data in an accessible menu format. Although some individuals may be responsible for this feedback system, monitoring skills are essential at all levels of project implementation in an efficient network. Electronic documentation, storage and retrieval system have greatly facilitated monitoring activities and information assessibility.

An in-service carrier development program should also be developed for all researchers. The training curriculum should be field oriented and participatory, including concepts related to:

- Farming systems and a research protocol/development integrating agro-socio components in forestry;
- Overview of extension methods, communications, farmer interviewing and knowledge elicitation;
- On-farm research with farmer cooperators;
- Project development and management;
- Team building, leadership and power sharing.

Each DFO is compiling data on farmer cooperation and out reach sites. Some have compiled excellent maps and data fields. However, no monitoring training was noted in the future training plans.

4.4.2.8 Conclusion

Knowledge gathering from farmers and the observation of farmer practices is an activity that requires establishing a network and monitoring protocol, as well as training of outreach personnel in the monitoring process. This training is important to establishing and maintaining an accurate and reliable Data Cell.

4.4.2.9 Women in Farm Forestry

A strategy to encourage the participation of women in forestry has been suggested

calling for retaining PFI women graduates as part of the project. Making these individuals leaders, a WIF training wing could be formed capable of designing a womans' farmer program. In addition, the WIF cell should operate as a village change agent unit (the critical mass concept) focusing on recruiting, promotion, and training activities in a region where it can derive the greatest impact. Furthermore, project management, training, and extension need to be made available to women farm forest trainers. Liaison with the womens' component of the Malakand SFP and the farming systems program at NARC should also be established.

4.4.2.10 Conclusions

It is imperative to develop a comprehensive training program for female professionals to expedite the technology transfer process at the managerial/specialist and village levels. These female professionals should be organized into a cadre that focuses on training women.

4.4.2.11 Progressive and Subsistence Farmers

Two distinct farmer populations are evident in the traditional technology transfer process. First are progressive farmers having larger holdings and a higher economic base who, as a consequence, can "risk" the opportunity of implementing innovative technology. By contrast subsistence farmers have small land holdings, limited working capital and are inclined to take little risk. Subsequently technology transfer is usually different for the two populations.

4.4.2.12 Conclusion

Since large and small land holders have different outlooks, realities and economies of scale, different training and outreach programs must be tailored to meet their needs. Training targeted at both of these two populations is essential to long term technology transfer.

4.4.3 Courseware

The terminal reports of training courses serve to document the project training history. Of equal importance is the development of supporting instructional resources in the form of courseware materials. Courseware documentation involves paper and all manner of electronic media, in the form of newsletters, field guides, manuals, lesson plans, books, movies, audio, video programs and interactive computer software programs on CD ROM or floppy disk. It can be used in promotional campaigns,

workshops, conferences, short courses, and formal long term training. Course-ware can be designed to teach and transfer information to populations differing in education, gender and culture.

In this context Annex A page 8 of the June 89 PR refers to lesson plans and notes for formal courses at PFI. Page 13 and 14 mention nursery manuals, field guides and a monitoring manual.

A farm forestry newsletter has been initiated from the office of the IGF. Seven manuals have been written and several more are under design. Workshops, consultancies and research reports have been documented (FP&D documents list, March 11, 1991).

The CCF for the Punjab is in the process of setting up a media cell. We were impressed by the attempts of the staff at Faisalabad University to create course-ware materials with meager resources and facilities. Several media courses are scheduled to go on line in the future. The NARC headquarters in Islamabad, with the assistance of USAID, is constructing a state of the art media center.

4.4.3.1 Conclusion

The need to produce courseware is evident in many sectors. Courseware in support of training is indicative of quality training programs. The creation and design of courseware and the associated media is a technical specialty. Documentation of learning materials for both instructor and trainee assists in implementation of the multiplier effect in technology transfer. Increased emphasis should be placed on this component.

4.4.4 **Program for Technology Transfer**

4.4.4.1 Development of a forestry extension system

It is evident that the existing skeleton forestry extension units are inadequate to reach the tree farmer clients in a continuing education program essential to technology transfer.

Training is just one aspect of extension work. Other responsibilities will soon include monitoring for data acquisition, setting up observation trials, promotional campaigns, exploring markets, career training programs and administrative activities associated with these responsibilities. Inquiries about seconding persons from other government

service organizations to meet these future needs were met with rejection.

If the present organization is to develop a true social forestry/agroforestry extension system, it must be infused with : ¹ additional human resources, ² capital in the form of modern transfer and communication facilities, ³ a comprehensive in-service training program, ⁴ an emphatic leadership that can create; vision for the future, methods of delegation and facilitation, a mechanism of control adjustments that contain objective accountability, and an objective and comprehensive reward system.

There will be constraints in attaining this menu of needs, especially in the area of additional human resources. However, the project should move ahead in the time left to improve in each of the four areas.

4.4.4.2 Conclusion

There is an urgent need for a strategic plan for an extension system competent in new skills and focused to provide maximum impact to its clients. To be efficient it must be well organized, especially in the areas of mobility and communication. The transition most always demands new models of organizational structure.

4.4.4.3 Identifying Target Trainees

There are many types of farmers: full-time, part-time, progressive, subsistence, male, female, animal, agroforestry, plantation, rainfed crop, irrigated crop, and others.

These descriptions are important to know when relating the effectiveness of technology transfer to the "farmer." Another item for clarification is what component of technology is being effectively transferred. Subsequently any evaluation must relate "what is being effectively transferred and to whom."

If forestation is the goal of the technology transfer process, then this project is undoubtedly a success. Most evident is the transfer of: viable nursery practices to private enterprise, some nurseries employing women, planting of nursery stock by farmers unfamiliar with forestry practices, or the tree as a commodity for profit, and, extensive plantings in all types topographical and ecological settings

However, the project, though designed to focus on subsistence farmers with a large WIF component, has gravitated to serve the plantation and/or progressive farmer.

4.4.4.4 Conclusions

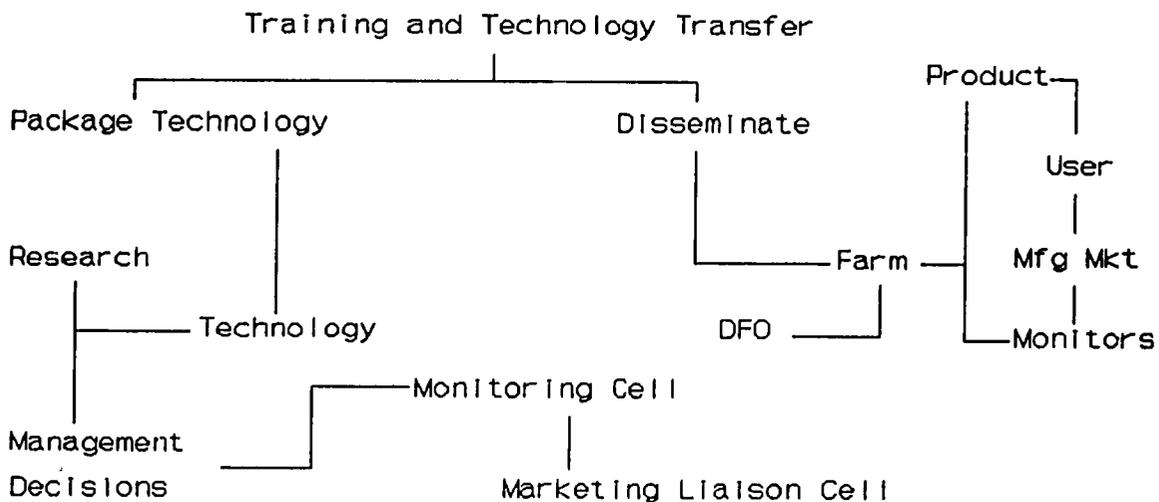
For the remaining LOP, new targets need to be defined in relation to client, type of impact desired, and the specific technology for transfer. Presently there are too many demands for the paucity of resources. When services are free, clients proliferate. A focus of services is essential for the project time left.

4.4.4.5 Change Agent Capacity

1. A Training Cell

The cells important to training support are vital to an efficient technology transfer program, are not fully in place. They include ¹ a training and information unit to coordinate training activities and provide core media and material support, and ² a monitoring cell to compile logistics on farm practices, market activities, nursery, plantings and genetic variability, and a specialist in marketing and manufacturing liaison to the forest farmer.

The training cell is vital to implementing training of trainer concepts and disseminating information in the learning and communication process. By contrast the monitoring system supplies feedback to the dissemination activities by monitoring the intensity and speed of technology adaptation. The manufacturer/market liaison completes the communication loop by monitoring user activity. These relationships are shown in the following diagram:



4.4.4.5.1 Conclusions

These cells should be established as-soon-as-possible. It will be difficult to implement and transfer technology, monitor extension and research programs, and provide clients adequate information without appropriate support systems.

Transportation and Communication Network

Proliferation of communication technology has provided accessibility to information of all types in shortened time frames. The project has provided an array of transportation and communication equipment to facilitate outreach and monitoring activities.

In this context the GOP has wisely invested in infrastructure that has contributed to a functional communications network. Everywhere, in both government and business, the telephone was evident as an available communication device to conduct business. Telecommunications peripherals such as fax were in place. Advertisements for fax and laptop computers were found in daily newspapers, indicating this technology is available in the country.

Data bases associated with project management and decision making were evident. Of special mention are those being compiled by DFO's to begin monitoring clients. In this regard, both numerical and graphic data were being collected.

There is a need for grass roots documentation and a history of farmer behavior as part of a monitoring feed back service. In the future, farmer activity and marketing information at the agent/client interface of the extension network in an expeditious time frame will be essential to client relationships. The infrastructure and communication components are in place for an advanced grass roots communication network. This communications network can be a model for the country.

4.4.5 Marketing Training

Many clients in the project area, as well as project staff, need a general introduction to marketing principles. More importantly, farmers need to learn how their tree products could move more efficiently through the marketing chain and maximize gains. This could be accomplished by providing marketing training to tree farmers after formulation of a marketing training needs assessment. A marketing awareness survey should be conducted to prioritize the training needs of each group targeted (i.e. farmer, extension workers, and industry groups) in the marketing chain described earlier (3.4.3.1.8)

After this information is collected (Annex 17), an analysis of why farmers, wholesalers, and retailers bought (and sold) their products can be made. Subsequently, a training plan can be developed to assist farmers to better market their tree products. Evolving from this needs assessment, a comprehensive training program could be developed designed for different client groups. The program should be offered on a continual basis. A needs assessment table is offered in Annex 17 as a guide to help identify groups targeted for training and formulating curriculums.

4.4.4.5.1 Conclusion

Marketing training, though not mentioned in the Project Papers, is required to complete the cycle from producer to manufacturer. An understanding of basic market mechanisms is essential to producer viability and sustainability of a forest products system.

4.4.6 **Assistance to Provincial Forestry Schools**

An opportunity exists to fashion a true training of trainers program for the farmer interface at the technical forestry schools. If a training component is part of the curriculum an opportunity exists to impart training trainers skills using farmers as a population to be trained.

However, many of the schools are devoid of the infrastructure that demonstrates an acceptable training environment. Because of the short time in the LOP, building construction is not feasible. However, classrooms/laboratories can be outfitted with communication hardware and other renovations to produce a far better training environment.

Transportation that will provide field exercise options in the instructional process is another assistance opportunity.

4.4.6.1 Conclusions

Successful training programs in provincial technical forestry schools offer excellent opportunities to advance the training of trainers programs. This would produce change agents close to the farm level. Forestry school graduates should be brought back into the classroom for retraining in social and agroforestry, administrative techniques and dissemination, and understanding market processes.

4.5 Policy

4.5.1 Planning

The primary purpose of the project is to strengthen the capacity of federal and provincial government institutions to formulate, implement and evaluate policies and programs for increasing the production of fuel wood and timber in Pakistan. The project has been active in an advisory role helping to foster policy planning.

In the spring of 1989, the O/IGF and USAID organized and conducted a seminar on forest policy (GOP 1989). Policy papers were presented as well as working group recommendations. The TAT continues to monitor the progress of GOP in development of a comprehensive forest policy.

In addition, the project has supported training in policy planning for short- and long-term programs. The extent of this involvement is mentioned in the training section of this report.

4.5.1.1 Conclusion

The basic role of the project is to advise and set forth recommendations regarding policy and planning. This role should be continued and emphasized. Policy planning is essential to successful implementation of project programs.

4.5.2 Legislation

In order for forest policy to become law it must be first ratified by the Parliament. The project continues to monitor policy change needs and make recommendations on policy related issues.

An example of how the project might impact policy changes, involves the marketing and transportation of farm timber products. Farmers have traditionally sold their tree farm timber to middlemen who in turn sell to the end user. Many in government feel the middleman makes undue profits. Timber producers would therefore, gain more return for their timber if the middleman is avoided and timber is sold directly to the end user. In order to help explain the role of middlemen to GOP and the farmers, a study similar to the one conducted in Nepal (see section 4.2.1) would reveal the reality of these claims.

4.5.2.1 Conclusion

The development of a comprehensive policy for peoples participating in forestry in Pakistan is important. Once one is established, those at every level will be working in concert toward common goals, and progress will be maximized. In addition, policies such as those regulating the movement of timber products might be replaced with more equitable laws based on the activities of the project.

4.5.3 Implementation

The implementation of forest policy has had a low priority in Pakistan. Social forestry policy implementation will become more important as the trees become older and more farmers enter the Farm Forestry Program.

The Forestry Master Plan Project will become a major policy document that will influence the utilization of the nation's forests through the early part of next century. The project TAT team has cooperated with the Master Plan Project. Other agencies including the ADB, FAO and the Dutch social forestry project at Malakand are also heavily involved in forest policy activities and should be contacted to integrate ideas.

The recent version of the GOP policy for forests, wildlife, watershed, and rangelands (GOP 1991) is not in complete agreement with the agricultural policy guidelines and findings of the Master Plan Project. There is still work to be done.

4.5.3.1 Conclusion

There is heavy involvement and influence by the Forestry Master Plan Project, and other agencies as well as various donor's projects in the formulation of forest policy. The Project's TAT team should assist in developing plans for follow-up workshops to the 1989 seminar to assist in the completion and acceptance of the GOP forest policies.

4.5.5 Budget

As indicated in Chapter III the budget appears adequate to carry through to August 1993 and to extend beyond the PACD in order to see activities that have been slow to implement put on solid footing; eg. NGO's, Data Base Cell, in-country training and wood product marketing and utilization.

Review of the completed WFP activity demonstrated the need for USAID and GOP to

be more involved in monitoring money disbursing. As the project begins to wind down, in anticipation of the PACD, project management should have a clearer understanding of where the money was spent.

Indications are GOP has accumulated "savings" sufficient to support the staff and nursery activities for several years after the PACD. GOP budgets have been reduced by 50 percent. How this will effect the use of the savings is not understood.

4.5.5.1 Conclusion

Funding appears to be adequate funds to support a 2-3 year extension to the project. This will allow the project to complete activities that are in the committed pipeline. A recasting of both USAID and GOP budgets is needed which can fold into an action plan describing project goals and activities through to August 1993 and beyond.

4.5.6 **GOP/Provincial Government Support**

One potential way to develop support for Farm Forestry within the provinces is with NGO assistance. Project planning documents call for collaboration of project activities, presumably outreach, with PVO/NGO's. Aside from some promising attempts with industrial manufacturing associations and a proposal from the TAT to the IGF (ref: Naughton letter of April, 24, 1991), there has been little movement in this area. To a great degree this is due to the TAT being unable to take on an additional burden, and the GOP not being very supportive beyond current efforts with manufacturers' associations.

The evaluation team learned that a joint GOP-USAID project, the Trust for Voluntary Organizations (TVO), has been established for promoting and supporting NGO's in Pakistan. The TVO will focus on rural development and women's equity activities. The TVO is going through its initial establishment phase, currently hiring a CEO, writing by-laws, setting up audit procedures and should be on stream in July-August, 1991. The Board of Directors includes leading NGO practitioners, government and industry representatives - both men and women. It will solicit and fund proposals from NGO's and also screen them for their genuine dedication, track record, and/or potential for carrying out projects within the TVO's mandate. The team also learned of various NGO's already involved in tree nursery and planting/afforestation projects. There are obvious complementarily of interests with the project here.

4.5.6.1 Conclusion

Implementation of the PVO/NGO component of the project appears eminently feasible and probable of success. PVO/NGO involvement would greatly assist the institutionalization, sustainability and extension of farm forestry. A problem, however, is that NGO field operations and use of resources are viewed as being outside the direct hands on control of the project and forest services. This is an issue that requires early attention and resolution.

4.5.7 Relation to Forestry Sector

4.5.7.1 Collaboration with other organizations

There are many opportunities for collaboration with others donor and government sponsored agencies. Close coordination with other projects, such as the Forestry Sector Master Plan Project, would allow for continuation of FP&D activities after the Project has been completed.

Communication on a regular basis about project goals results and needs with the Forestry Master Plan Project and other donor's such as FAO would help national and provincial policy. Such links of communication would help other project personal learn more about what constraints exist for the FP&D. Conversely the FP&D staff would be able to ensure that sections of their project would continue well after the project is completed.

There are many other opportunities for increased collaboration or and support for research, product development, timbers product utilization, and establishment as extension capabilities. First and foremost collaboration with other GOP agencies will increase capabilities to extend technologies to the farmers.

Important is increased collaboration with regional agencies such as the International Research and Development Council, the International Tropical Timber Organization (ITTO), Winrock's F/FRED project and other agencies of regional scope. Research on utilization, marketing, and product development should take the highest priority. The ongoing FAO and World Bank programs, the Dutch government sponsored a Malakand Social Forestry Project and the upcoming ADB funded social forestry project in the Sindh province all offer important opportunities for collaboration. In the past, F/FRED has been involved in forestry research in Pakistan. The FP&D stands to gain much in increased resources and research capabilities if it can establish and increase collaborative efforts with this and other such organizations.

4.5.7.1.1 Conclusion

Increased collaboration will help improve effectiveness of the project in reaching its goals. It also will increase the sustainability of the project as many of the potential collaborating agencies are permanent or have project lives that extend beyond this project.

4.5.7.2 Industry-government-farmer linkages

It is important for the sustainability of the project to ensure that strong linkages between the farmers and the timber users are forged. In order to assure that the project's programs have the most impact, strong private sector involvement should be encouraged.

Other sections have reviewed the involvement of NGOs and PVOs in the project program. While over 6,000 NGO'S are registered in the country, few are focused on environmental work in the project operating area. One, the World Wildlife Fund (WWF), was visited by the team during the evaluation period. The WWF has already established a well organized educational component that could support project outreach activities. The organization would enthusiastically work with the USAID funded project to foster better utilization of forest products especially if this involved small, local level industries.

Another possible avenue for developing this linkage is the fostering of a tree farm program such as the one operating in the USA. NGOs might also be interested in directing the establishment and operation of this and other farmer oriented organizations.

4.5.7.2.1 Conclusion

NGOs should help foster industry-farmer linkages. One possible linkage is the formation of industry or NGO sponsored tree farm association. In addition, attention should be paid to learning more about middlemen and their role in the marketing of timber products. NGOs could make this analysis quite easily.

4.5.7.3 Employment

Many trees have been planted through the project's guidance and support. At present there has been no assessment of the impact these plantations and their future products will have on employment opportunities at the local village level.

The establishment of farm plantations has led to increases in local employment. It is reasonable to assume that land clearing, planting, and tree plantation activities will provide additional employment and income. In addition, employment opportunities will increase at time of harvest, and as the timber products pass through the processing steps to the eventual consumer. However, the overall affect on the local employment picture is unclear. Does tree planting eliminate substantial agricultural related jobs, as less land is in crops? Or are more jobs generated due to increased processing that may be needed both at the local level and in urban areas? It is reasonable to assume that these plantations will provide additional employment at harvest and as the wood proceeds through the processing claim.

4.5.7.3.1 Conclusion

Assessing the impact of first generation of farm forestry trees on employment is important. This study would help assess planning and management schemes that could make future plantations more profitable. Some method of assessing the impact of employment gains (or loss) caused by planting of trees should be devised.

4.5.7.4 Reduction of Forest Products Imports

While imports of pulp and paper products continue to grow, replacement of them would seem to be an important project goal. In 1988-89, Pakistan imported 262,000 tons of paper and paper board, and 58,000 tons of wood pulp. The annual cost is more than R. 3 billion (Ansari 1990)

The goals of this project did not focus an import substitution, as the project was designed to provide increased firewood at the village level. However, many opportunities exist for the project to help alleviate the drain of foreign currency.

For example, at present nearly R. 3 Billion worth of long fiber wood pulp is imported annually to satisfy a short fall of domestic production. Existing plantations of eucalyptus and other species could easily fill part if not all of this short fall. The project is very active in attempting to get the paper industry to accept wood fiber in their raw material mix. Demand for paper will be increasing as the country strives to increase education levels and continues to modernize its manufacturing sectors.

Many other wood products are also imported at vast expense; a list of these products imported is included in Annex 7. Substitution for these and other products, by plantation grown species, offers much potential for foreign exchange savings.

4.5.7.4.1 Conclusion

Local farmers should be trained in the cultivation of pulpwood species and the returns to be expected from pulpwood production. Industry should be assisted to develop systems suitable for sustaining suitable wood raw material supplies. In addition, the improvement of the forest products marketing information system (see 4.1.9) should help alert policy makers to avenues of decreasing imports. For instance, in times of domestic shortage, manufacturers in other countries have often imported excessive wood supplies to maintain production levels. In other cases, supplies were exported when subsequently the country had to import supplies to meet deficits which occurred later.

5.0 RECOMMENDATIONS

The recommendations in this section are: ¹ tied to the issues discussed in Chapter IV, Interpretations and Conclusions and ² directly linked to the primary and secondary purposes of the project. The Evaluation Team concentrated on issues that need to be addressed over the next two years in order to put foundation to a sustainable farm forestry operation within Pakistan. Further, the Team kept in mind that the TAT has only one and one-half years of effective input time remaining.

5.1 Strengthen Institutional Capacity

5.1.1 The TAT should adjust its work load to expeditiously implement/accelerate research, NGO activities, in-country training and extension/marketing activities as follows:

1. The Forest Management Specialist should devote full time attention to research coordination assisted by the Chief of Party.
2. The Research and Training Advisor devote all his attention to overseeing and implementing the in-country training program with assistance from the Training and Communication Coordinator.
3. The Field Demonstration and Outreach Forester should continue as present, but should increase efforts on wood-using industries, marketing and tree farm production techniques.
4. The Training and Communications Coordinator accelerate the consolidation and dissemination of existing information and coordination of environmental education materials, and assist the Research and Training Advisor with the in-country training program.

Though the TAT is scheduled to leave in February 1993 their effective working time will be over December 1992; January and February 1993 will be taken up with the chores of shutting down and preparing to move. The TAT should concentrate on reinforcing and putting into place activities that will sustain the ten years of effort invested by the U.S. Government and GOP. As discussed with the USAID Project Officer and the TAT Chief of Party a workload adjustment is needed within the TAT. During our discussion they agreed upon adjustments as described above.

In order to make these adjustments effective, a "close out" schedule should be

prepared as soon as possible with agreement between USAID-GOP-TAT, incorporating the recommendations that follow.

5.1.2 The Data Base Cell to be attached to the O/IGF should be activated immediately.

There are two alternative posting locations, at PFI or at the O/IGF Islamabad. The data that needs to be collected, assimilated and communicated dictates that Islamabad is the better alternative. The Data Base Cell is the Monitoring and Evaluation Unit for the O/IGF as well as the generator and manipulator of data on all aspects of forestry throughout Pakistan. The central location for collecting data is Islamabad (PARC, NARC, Statistical Data Agencies, Parliament, etc. etc.). If located at PFI the Unit will become research oriented and out of the main stream of the public it is supposed to serve. This Data Base Cell is not a research unit producing a series of statistics, but one that collects, interprets and presents information useful to the whole forestry community.

There are about thirty PFI educated foresters without jobs. The three people who will make up the Cell should be recruited from this pool.

The work description for the Cell is described on page 37 of the amended PC-1. The first step for this group to function as a team will be to receive intensive training on computer programs most adaptable to data manipulation, including Harvard Graphics or similar programs. This would probably take about 3 months (instruction, working-on-own, follow-up instruction). At the end of 3 months a TAT consultant, with expertise in data management and display, should work with the cell on a split consultancy to prepare guidelines and procedures (2-3 months initial assistance followed by another 2 months about 6 months after the initial assistance).

One way to utilize the Data Base Cell is to establish a market information system for farm forestry products. The farmers (producers) need accurate and current market information in order to make decisions on what species to plant, when to harvest, and cultural practices that may affect the tree farmers' investment behavior. Information on product characteristics desired in the market place, market projections, distribution networks, competitors and promotional methods would help producers adjust their operations to current or future market conditions. When the tree farm is developed, such information should be also disseminated through meetings and publications.

5.1.3 In support of the above recommendations a program within the forest services be established having the ability to expedite the transfer of farm forest technology.

This recommendation should be strongly supported by the involvement of PVO/NGO's as called for in the PC-1.

Technology transfer and development of an extension system.

Establish the foundation for an extension system that has both dissemination and feed back components as well as linkages with institutions and sources of technology generation. To this end an extension organizational consultant should be employed to help develop a strategic plan. In developing this plan inputs should be obtained from both government and private sources to include; national institutions (IGF, PFI, PFRI, NARC), other projects in residence, provincial universities and forest agencies, private manufacturing companies, NGOs and PVOs, and progressive farmers.

From these inputs an extension program should be developed that defines long range goals in relation to a growth strategy. A campaign strategy should be defined as part of this program.

Target Definition

Client targets should be defined to derive the greatest impact from available resources. The type of farmers and manufacturers need to be identified as a recipient of the service to prevent dilution of services and loss of credibility.

Impact zones should be declared to receive a technology similar to that with the Malakand Project. Technology should be identified for transfer in relation to these specific clients and impact zones, that can be introduced within the LOP.

Increasing Change Agent Capacity

Additional human resources will have to be employed to provide support services in monitoring, training, ccourseware production, and industry liaison.

A comprehensive in-service training program should be instituted (see other recommendations). Training in managerial skills at all levels should be intensified. Initial training should focus on disseminating practical planning, organizing, delegating, facilitating, control and reward skills.

A task force should design an objective and comprehensive reward system for the service. Transportation facilities should be increased in target impact zones. A communications network should be built from the manufacturing farmer/agent interface up, to monitor client activity. In this regard the DFO should be supplied with and instructed in the use of a laptop computer with battery pack for field monitoring, printer, modem and fax capacity.

Media software can be supplied by the training and information unit of the O/IGF office. Each impact zone should eventually be outfitted with a media vehicle to conduct promotional campaigns and training courses. For further information contact Mr. Imran Agha, Sales Manager Agro Chemicals, I.C.I. Pakistan Ltd., 63 Mozang Road - Lahore, Tele : 869380-3

5.1.4 Implement the NGO/PVO activity as required in the Project Paper and PC-I.

The call for extension of the project area without increases in budget or project field staff should raise concern about the ability to cover the expanded targeted area and achieve goals of the PPA and PC-1A. PVOs and NGOs should be enlisted and encouraged to expand farm/social forestry activities within, and possibly even beyond, the project area. PVOs, such as industrial user associations should be encouraged and supported to establish outreach/extension wings. For instance, the match makers association is beginning to think along these lines. Similarly, NGOs are often involved in rural development activities at the local level and can be enlisted and trained in farm/social forestry technology including nursery establishment. The forest service and project staff can provide technical backstop for them.

Two Pakistani PVO/NGO outreach specialists, one man and one women, should be hired immediately and given full support by the project to begin contacting and coordinating Project activities with PVO/NGOs. This activity should be coordinated with the Trust for Voluntary Organizations (TVO), in Islamabad. This function could complement Project activities and contribute to the formal institutional sustainability of farm/social forestry especially considering the limited remaining life of the project. Participating PVO/NGO personnel should be trained in Rapid Rural Appraisal and Participatory Rural Appraisal processes to determine farmers' needs, market information, and appropriate technology transfer techniques.

This activity should be assisted initially by a short term (i.e. several months) PVO/NGO consultant with language skills and demonstrated experience in local level applied rural development and NGO activities in Pakistan/South Asia. This consultant should be

hired as soon as possible and return for short periods (e.g. every six months) to advise and assist the two Pakistani specialists.

5.1.5 More involvement of Provincial Administration in the project decision making process is imperative for project goals to be accomplished.

With extension of the project, its field activities such as plantation and nursery establishment, soil conservation works, land development, training, etc. will continue over the next two years. The PC-1A field activities will spread to an area of 117,000 hais. Accordingly more staff for the conduct of these activities will be required. But, in view of the fact that new posts are not available, particularly when the PC-1A stands sanctioned with a ban on creation of new posts, an internal arrangement, both at federal and provincial levels, will have to be made for the successful implementation of the project. Additional staff from the normal budget will need to be transferred to the project. The staff would perform duties at both the federal and provincial levels, but also continue to draw their salaries from the normal budget. The existing and proposed organization charts (figures 2 and 3) show the organization situation. The Evaluation Team offers the following recommendations for the posting of additional staff:

AIGF Position

The post of Additional Inspector General of Forests, though provided in the PC-1, has not been agreed to by the Finance Division of the Government of Pakistan. Although the AIGF has been positioned in FP&D, the position has not been entrusted with any specific duties for the project. Communications are submitted to the IGF by the DIGF, thus bypassing the AIGF. It is recommended that the present IGF delegate to the AIGF administrative and financial powers and the AIGF made responsible for looking after the project functioning from the Government of Pakistan side.

P.F.I.

Posts at PFI provided in the original PC-1, have not been filled according to requirements. The reason given by authorities for not staffing the posts are the delays in sanctioning positions by the GOP Finance Division and the hiring quota system.

As the institution falls under the federal government, vacancies are filled by giving representation to all provinces, irrespective of the fact whether personnel are available in that particular field or not. It is recommended that all the vacant posts should be filled immediately for efficient operation of the project.

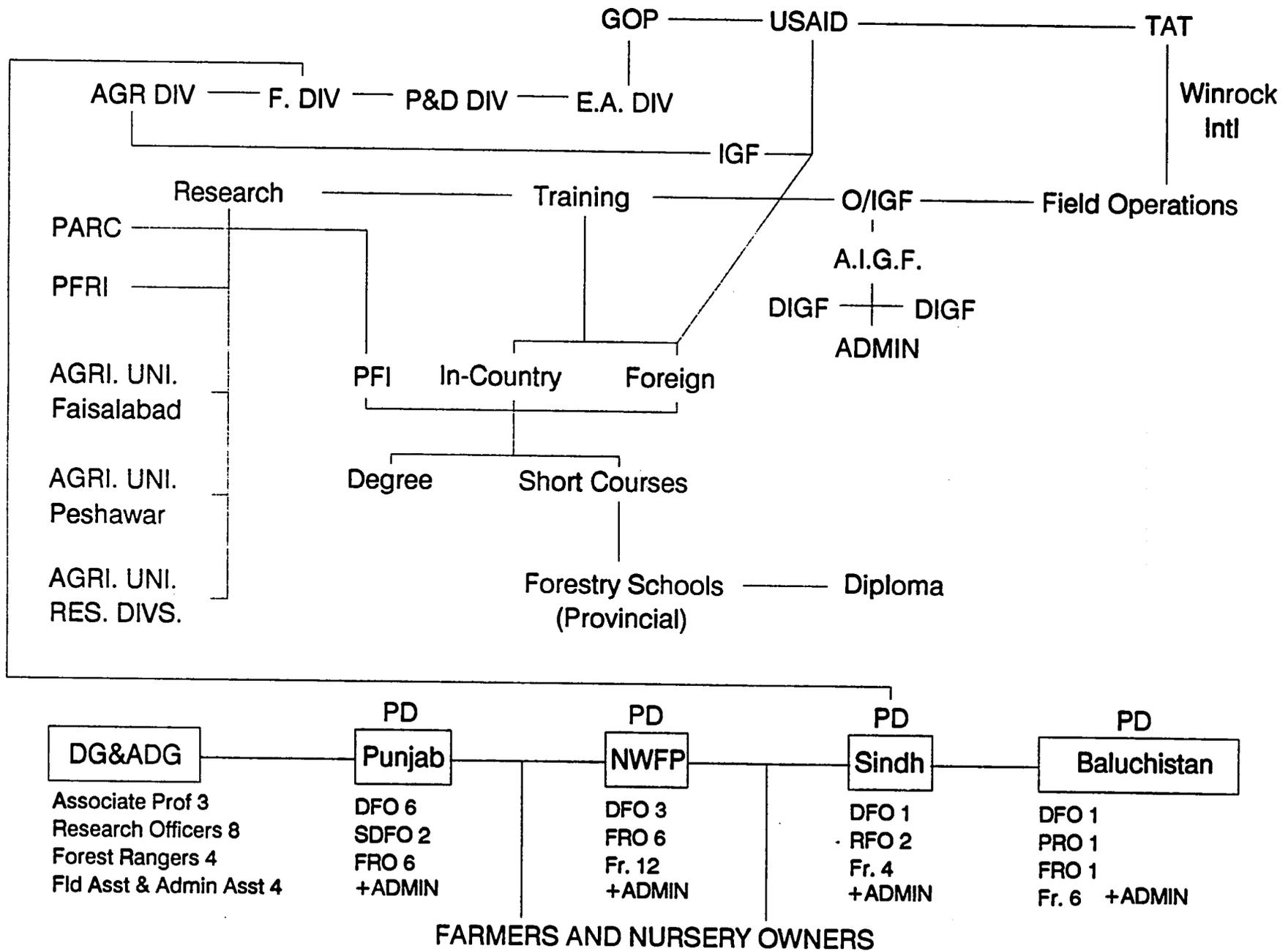
PUNJAB Province

The province does not require any substantial change. The present organization is sufficient to carry out field activities.

NWFP Province

In view of large scale field work, the province needs the following adjustments. First, an independent Project Director be made available for supervising the activities of the project.

Figure 3: Proposed Organization and Budget Flow Chart



— Tropical Research and Development

Secondly, only one DFO is looking after the entire work. It is recommended that at least two more DFOs be made available to the project (one for each District). Similarly three additional Forest Rangers and six Foresters should be provided to assist the three DFOs.

SINDH Province

Since plantation work is being done on state land (very little in private lands), additional staff including one Forest Ranger, two Foresters and four Forest Guards should be placed at the disposal of the Project Director (DFO) for the implementation of the project.

A Project Director (DFO) should be made responsible to the Conservator of Forests (Territorial).

BALUCHISTAN Province

One District Farm Forestry Officer, should be added to the present staff.

Frequent shifting of staff

The frequent shifting of staff must be avoided. The above recommendations do not involve any new financial implications. It should be possible for the GOP/Provincial Forest Departments to make available the necessary additional staff for a period of two years with minor adjustments.

5.1.6 The Project Coordinating Committees described in the PC-1 and PP should function on a regular and scheduled basis with minutes disseminated to all concerned staff.

On a regular basis these meetings should include participation by leaders from industry, the farming community, and other forestry related agencies. Consensus building and support for introducing techniques and building the organization that will ensure farm forestry is on firm footing, requiring the power of team spirit. People that are asked to be on the committee should expect to participate. Project management must examine its committee structure and make up to ensure meetings are held regularly on time and that members are notified.

It is also imperative that farmers and others related to the program be invited to participate in order to share their views and build a base of support to a more

synergistic approach to farm (social) forestry.

5.1.7 Government of Pakistan should direct Provincial Forestry Departments to assign suitable staff for sustaining social forestry project activities; e.g. the proposed NWFP Social Forestry Wing.

This recommendation is complimentary to the recommendations supporting greater involvement of Provincial administration. Forestry in Pakistan is phasing through a critical transition from several decades of afforestation and reforestation to bringing plantations that have been established under exploitation management. The people and forestry staff have been responsible for the change. It is time to reinforce this evolution with an organization within the provincial forestry departments that addresses the social responsibilities linking the private lands with state forests. The establishment of a "Social Forestry Wing" (extension unit) within each Province is at different stages.

The Government of Netherlands is now considering supporting the recommendation that a Social Forestry Wing be created within the Department of Forestry, NWFP. The Wing will formulate social forestry policy, produce procedural guidelines and implement, identify and formulate new projects, as well as supervise, monitor and coordinate the social forestry program. This objective is directly related to the FP&D Project goals.

5.1.8 Give assistance to Technical Forestry Schools In all Provinces.

Foresters and Forest Guards are the front line staff in direct contact with the people. These technicians do not receive adequate instruction. This assistance should concentrate on instructional and communications media.

A true training of trainers program should be implemented at the technical forestry school level. To this end, training technology should be packaged and infused as part of the curriculum. To expedite this training of trainers component, technical forestry schools should be furnished with the basic instructional and communications media used in disseminating information; i.e., light fixtures, chalk boards, a paper copy machine, a transparency copier, overhead projectors, T.V. monitors and cassette players, a media software library, and a generator (if needed).

Practicums in training should be conducted by implementing farmer training in association with these schools, either at the school or in nearby farmer fields.

The training technology should be packaged and disseminated by the information and

training unit of the O/IGF.

5.1.9 In follow-up to the USAID supported Policy Seminar of 1990, the project should collaborate with the Forestry Sector Master Plan Project and other donors to organize workshops leading up to the formulation of farm forestry policy at both the federal and provincial levels.

A major objective of the Forestry Sector Master Plan for Pakistan is to recommend a public forest policy direction for the country. No policy identifying with the participatory approach to management exists. No doubt the Forestry Master Plan Project, supported by the Asian Development Bank, FAO, and other donors, will give high priority to legislating Forest Policy that addresses all aspects of forestry.

The primary purpose of the FP&D Project is to effect a change in policy. The USAID has supported development a comprehensive forest policy concerned with the future management of forest resources being created through the FP&D Project. To protect this investment and join forces with ADB, FAO and others the Project should continue to assist in developing a legislated sound forest policy.

Government controls on the movement of timber products are a disincentive to the production and later the utilization of farm forestry products. The timber should be taxed only once, and not indiscriminately at each border of jurisdictions through which the timber must pass from the farm to the ultimate consumer. This system of taxation causes undue delays and expense especially to smaller contractors and growers. It is a disincentive policy to the growing or utilization of timber.

5.2 Demonstrate Tree Crop Feasibility on Privately owned Land and Rangeland.

5.2.1 Accelerate the effort, based on the projects nursery strategy, that assists owners/farmers to establish, harvest and market nursery and timber products made from present or alternative species.

The project has successfully demonstrated and established nursery and plantation technology in field operations which, with modifications for other species, essentially needs only further extension. Current efforts on developing and imparting harvest and market training of farmers should be intensified. Training activities should include: technical aspects of measuring/estimating the volume of timber in a plantation, the use of efficient felling equipment; storage/curing of felled trees. Farmers need marketing information, that includes locations and prices in wood commodity markets and end

user specifications, e.g. volume, diameter, board length, etc. To this end, efforts should be intensified to understand the structure and operations of wood commodity markets and establish linkages between commercial end users and producers.

The current emphasis on eucalyptus should shift towards alternative species with both commercial and producer-user values. For instance populus species, willow, mulberry, Salmalia malabarica, D. Sissoo, Melia azcdarach, A. nilotica, and Robinia pseudoacacia have definite commercial as well as other value. Additionally, the exotic Casuarina equisetifolia has commercial potential and should be explored. Attention should focus on indigenous multi-purpose trees with potential for dry areas such as Zyzyphus mauritania Salvadora oleoides, and Prosopis species, particularly P. juliflora and P. cinerarnia a basic poor man's fuel should not be overlooked for its potential to meet rural energy requirements. Zyzyphus, S. oleoides, and Prosopis species have definite fuel, fodder and/or timber value as well as P. cineraria, which combines well with crops and livestock combinations.

In order to extend desirable small nursery operations, demonstration nurseries should be established at the research field stations as called for in PP. This will facilitate communication among researchers and local farmers.

Focus on Higher Value Uses for Timber Products

The project should expand efforts to stimulate market development for higher valued tree farm products. These specialized products will increase the employment and income possibilities, which would be especially helpful for smaller farmers. The more markets identified by the project, for more species, the more likely previously skeptical farmers will join the project and agree to plant trees. Potential products from eucalyptus are utility poles and furniture parts and not solely wood pulp.

5.2.2 Focus in-country training on farmer and in-service staff as part of a comprehensive training program.

The TAT has prepared a training program incorporating about sixty person months of trainer time that includes nearly forty training events. This would be a tough administrative and logistical schedule based on the LOP.

Most important there should be a follow-up series to previous trainings, targeting the same individuals, as part of a comprehensive human resource development program. The in-country training focus should be supported by selected out-of-country short term training, particular for higher level staff. The training portfolio should not

concentrate on university/instructors/seminar leaders, but tap into the whole forestry community. Within the U.S.A., this might include the U.S. Forestry Service, USAID/USFS Forestry Support Program, Society of American Foresters, private consultants, industry officials and tree farmers.

Formal Training: Duration and Candidate Selection/Processing

Additional overseas degree training is impossible because of time constraints for the duration of the project. Short term training in the form of short courses, workshops, demonstrations and conferences are viable approaches. Resources need to be reallocated. Training programs should have appropriate minimum time durations to derive the greatest impact;

OVERSEAS	3 MONTHS
IN COUNTRY Professional: Course Technical: Workshops Training: Conferences	100 Contract hours 15 Contract hours 15 Contract hours
FARMER TRAINING	VARIABLE/CLIENT AVAILABILITY

Information and skills derived from the training should compensate for any inconveniences in time away from work. Motivational devices, such as an additional per diem, could be considered.

The project advisory staff should meet with the USAID Director of Human Resources to develop a constructive plan to resolve the constraints of candidate processing. Both parties should meet with GOP to solicit assistance in resolving the constraints under their jurisdiction.

A task force of GOP officials and project advisory staff involved in the selection process should be convened to fashion a selection protocol. Subsequent candidate selection should fit the protocol of mutual agreement of both parties.

Forests Products Marketing Training

Develop and conduct, on a continual basis, forest products marketing training for all levels of target users. There has been an effort to conduct farmer trainings in

marketing, but this has been limited by size and schedule constraints of the TAT staff.

5.2.3 Training materials and courseware should be developed to support and document completed training sessions and the comprehensive program

A small information/training course-ware cell should be established under the O/IGF. The objective of the unit in the initial stages would be to produce course-ware (e.g. newsletters, manuals, etc.), provide courseware, models and research in support of training, and provide consultancies to the provinces in courseware and media.

The cell should be staffed with two professionals familiar with editing, layout and desktop publishing software, the arts, graphics and course-ware development; and educational technology, extension and basic forestry concepts.

In creating this unit, contacts and consultations with the following should provide insights for developing this unit and the production of quality courseware: World Wildlife Fund (Lahore), Creative Unit (PVT) Ltd. (Lahore), National Education and Training Commission (Islamabad), Malakand Social Forestry Project of the Netherlands Government, MART Project at NARC, and TIPAN Project at the NWFP Agricultural College at Peshawar.

The Cell staff should be schooled in writing concise performance or behavioral objectives. This is a viable proforma to document training programs that has been used in both corporate and military training for over twenty five years. All training programs should be proceeded by a manual that contains precise performance objectives.

A field guide series that documents forestry practices in a modular sequential format coinciding with the trees' plantation management cycle should be produced as-soon-as-possible. these would include nursery management (in process) tree cars, regeneration techniques (coppice, etc.) marketing, and other techniques. The series should use a task analysis approach to performing forest activities (site selection, land preparation, selecting seedlings, planting etc.).

For example, the Nursery Techniques Training Manual of the Malakand Social Forestry Project is an excellent prototype. However, it is strongly suggested that the output should be modular and in a convenient pocket size that can be taken to the field. Wherever possible pictorial descriptors should be used as the land communication device.

The newsletter series should continue but could be popularized with basic forestry articles and human interest stories that appeal to a wider, more basic audience, even primary schools. Use more pictorial input that communicates with the subsistence farmer. Take advantage of it as a publicity, promotional and advertisement vehicle for the forestry service.

In addition to objective manuals all courses should generate study manuals with feed back questions and a vocabulary section to facilitate inputting of information. The slide and video library should be expanded to include a video production facility that can provide media for extension support.

5.2.4 Encourage increased farm forestry participation of industry-government-farmer linkages and organizational collaboration, i.e. with PVO/NGO's, agricultural universities, and other donor organizations

Linkages should be established between wood industry associations, rural development NGOs involved in farm/social forestry, concerned governmental departments, government supported farm forestry projects and institutions, donor organizations involved in farm/social forestry, and farmers. These linkages can be accomplished through a newsletter of sufficient quality and breadth, annual meetings, and workshops.

However, it would be best if this activity were initiated and coordinated by the proposed PVO/NGO Coordinators on the FP&D project staff with the advisement of the TAT Field Demonstration and Outreach Forester. Upon termination of the project the activity should be turned over to an identified group (NGO, donor organization, project or PVO) with a demonstrated capacity to continue.

Agricultural University Collaboration

Collaboration should be made between PFI and the appropriate provincial agricultural universities to address issues of tree/crop/livestock interactions. This has both adaptive research and training dimensions. Adaptive research on farmers' fields requires the expertise of agronomists, horticulturalists and animal scientists. Such scientists should be included in rapid rural appraisal teams to survey project operational areas for identifying agroforestry/silvi-pastoral problem domains as well as designing and assessing adaptive research projects. Such individuals should also be involved in training outreach workers in farm forestry wings of Forestry Departments and NGO's.

At Faisalabad University of Agriculture an in-service training program has been developed to train agricultural extension agents in forestry. The marketing of forest products should also be added to such a curriculum. A land owner should be able to ask his local agriculture extension agent where he can sell timber products growing his wood lot. The agriculture department should provide extension agents with the necessary forestry extension pamphlets and other forestry information resources.

Opportunities for increased collaboration with other agencies include :

- a. Locate an in-country agency (or agencies) which assists industries in improving marketing or other business practices. Such business extension systems exist in other countries to foster the development of small, locally managed enterprises. This information should be provided to the producers and smaller wood product industries. The organization need not be a governmental agency, but could be a NGO or PVO set-up to foster enterprise development. The Agricultural Development Bank or similar bank may already have a section responsible for fostering business development.

- b. Explore existing (tested) methods of utilization for eucalyptus to avoid glut of material on the market when all the plantations are ready for harvest. (See Clark's 1990 report for proposed Consultant's Terms of Reference). Project personnel could benefit from traveling to visit utilization facilities in other Asian countries (i.e Thailand, see below). There is no need for PFI or other agencies to examine (again) the products that can be made from eucalyptus. Drying schedules, strength test results, and other important utilization information is readily available from Australian and other regional sources. Australian researchers should first be contacted by PFI scientists before conducting similar trials here. The following are other potential agencies with which the project could collaborate:
 - i. USDA Forest Service, Forest Products Laboratory, Madison, Wisconsin. This well known laboratory has research scientists who have focused on species utilization problems. They have resources available for consultancies, publications and other help to the project;
 - ii. Forest Products Division, Royal Forestry Department,

Bangkok, Thailand. Research has occurred here in the utilization of eucalyptus and other species common in Pakistan visits here and to other locations within the Asia region, by project staff, many help speed up the process of developing markets, etc.

- iii. International Tropical Timber Organization (ITTO), Japan. This agency supports research on the increased utilization of forest species, especially when increased utilization will halt deforestation of tropical forest areas; and
- iv. Other potential collaborating agencies including the FAO Forest Industries Group in Rome, the Malaysian Timber Board, and TRADA, in the United Kingdom.

The project has already begun an ad hoc effort to promote solar drying. Eucalyptus plantations are ready for harvest, and farmers in rural areas need to utilize this timber. The project should contract Myanmar (Burma) forestry officials to learn more about appropriate solar lumber drying techniques.

- c. The project is supporting the formation of an association of wood using industries. It is important that a wood products industry association be formed to help alert users of forest products to the species available and help bridge the gap between producers and users of forest products (see also recommendation on linkages). This organization should have a vested interest in the availability of timber and therefore be interested in sponsoring a tree farm program based on the American model. Successful assistance to a NGO or PVO here could be an example for project support to other NGOs.

5.2.5 Produce environmental guidelines describing alternative production systems and species within the Project area from on-farm applied research, particularly on barani lands, that can be used by farmers.

These guidelines are to be formulated from on-farm applied research involving inputs by the farmers, particularly on barani lands. Alternative production systems

incorporates various multi-purpose tree species, spacing arrangements, silvicultural practices, agriculture and forage crops, and land use considerations which are best suited for the farmers or landowners needs. In many cases, merely reviewing existing models and document and disseminating the information will suffice; no new research needs to be done, and no new programs established.

Reduce emphasis on eucalyptus and increase emphasis on other (or multiple) species.

The planting of eucalyptus has been effective in raising the tree planting consciousness of the farmer. The cultivation of trees on private land should now emphasize other species. Strict reliance on one species will increase the risk to farmers, especially if markets of sufficient size do not result in the near future. Such a monoculture could seriously limit the farmers' possibilities for marketing their timber products.

Focus on other products that can be produced from planted forest species.

Increased appreciation for wildlife, inter-crop species, and additional agroforestry products from farm forestry plantations should be stressed. This will enable farmers to maximize harvest returns and allow for interim harvest and income.

Develop new plantations on degraded or saline soils.

This will maximize the benefit without affecting land which otherwise might be used for agricultural crops.

Outreach activities to promote different species requires knowledge of their specific site requirements, alternative management techniques, uses and other characteristics, as well as their associations with other on-farm production activities. An outreach guide (English and Urdu) for project field staff and farmers should be prepared that provides this information along with representative agroforestry and silvipastoral systems. Representative systems should be based on existing practices/systems that can be improved/extended to other acres. Special attention should be given to indigenous tree species and barani conditions. Preparation of such a guide can be done with existing scientific knowledge and particularly with rapid reconnaissance surveys (Rapid and Participatory Rural Appraisal) of usage and farmers' knowledge in the project area. This guide would be extremely useful for establishing/improving/increasing existing stands and practices. It would also help achieve the environmental goals of biodiversity (including wildlife, see Chaudhry,

1990), afforestation and land conservation/reclamation clearly stated in the amended PC-1 and the National Policy for Forest, Wildlife, Watershed and Rangelands, 1991.

5.2.6 Over the LOP adaptive research should concentrate on species trials, establishment of seed orchards, and tree/crop/livestock interaction.

Adaptive research should be carried out on farmers' fields and plantations to contribute to: ¹ scientific knowledge and outreach efforts toward fostering and improving such interactions, and ² the management of project established sole species tree plantation. While such research activities have measurement problems, e.g., experimental controls, these can be devised with the use of inductive multi-variate analysis techniques.

Tree/crop/livestock interactions should be: ¹ surveyed in the project operational areas, especially under barani conditions with rural appraisal techniques in order to establish problem domains, with ² a survey of existing literature and on-station research findings on the uses and associations of species, and ³ investigation of agroforestry/silvi-pastoral systems and research in similar environments.

Point 3 might be explored through contacts/study tours with the Central Arid Zone Research Institute for Dryland Agriculture (CRIDA in Hyderabad, Andhra Pradesh), and a study tour of the traditional P. cineraria dominated agroforestry system in the Shekawati region of Rajasthan, India which being operated by the National Agricultural Research Program by the Rajasthan Agricultural University, Bikaner, India. Such contacts should be made through the Indian Council of Agricultural Research (ICAR) and concerned Government of India ministries.

5.2.7 Encourage research in the establishment and improvement of small wood-based industries through appropriate technology.

Small efficient sawmills are available to utilize small diameter, plantation grown wood into lumber and other products. Small scale sawmills could be imported such as the Wood Miser (from the USA), the Forester series (from the UK), or other low impact technology that would be appropriate for the species and sizes of wood grown here in plantations.

Solar dryers should continue to be encouraged to increase the utilization levels of those species and to save energy costs. The Project has already begun this effort, but this and other appropriate technologies should be included in their educational efforts at all levels. Again regional sources of information are readily available.

Encourage on-farm research in multiple species plantation, especially multiple species within rows, that will be environmentally sound and will add to the interim income opportunities for farmers. This should be done in line with the Comprehensive Plan for Research of April 1988.

5.3 Future Directions

5.3.1 Immediately develop a comprehensive Project plan of action for LOP outlining activities and responsible person(s) including preparation for a follow-on Project.

There is approximately \$9 million remaining in the project obligation for carrying out project activities between now and August 1993. In light of the recommendations made in this chapter of the Evaluation Report, the requirement for normal operations to continue and the need to help GOP prepare for after August 1993 a recasting of the USAID and GOP budget is in order.

The project staff (TAT-GOP-USAID) will be busy for the remainder of the project finalizing and implementing activities. A plan of action that incorporates the evaluation recommendations as well as on-going activities should be formulated. This plan must identify the responsible person, or persons for each action. The plan should include an item to prepare for a follow-on project. PTL No. 54, Annex 16, has initiated action to phase-down and transfer procurement of tree seedlings to GOP.

5.3.2 USAID should support a follow-on project after August 1993 oriented to true barani areas and to help establish the harvesting and marketing mechanisms for plantations established by the project.

GOP has "saved" funds that could see this project carried on for several years. There are activities identified for completion that may not be fully in place or should be given a stronger foundation between now and August 1993, e.g., PVO/NGO activity, the Data Base Cell establishment, marketing profile and channels research, and implementation of activities in Skardu District as recommended in the PPA.

As has been remarked in the 1987 evaluation and PIL's, the project got off to a slow start. Most major influence has been made in the last four years of the project. To stop on August 1993 will seriously place the goal of sustainability in jeopardy. The intent here is not to suggest another eight year project, but to "match" GOP's project "savings" for two to three years after August 1993. This period should be devoted to

reinforcing what started prior to 1993 by ¹ establishing the Data Base and training cells as organizational units within the O/IGF, ² establishing the NGO/PVO role in farm forestry, ³ developing services to private landowners and ⁴ contributing to the implementation of the recommendations forthcoming from the Forestry Sector Master Plan in May/June 1992.

It should be anticipated that the GOP will continue the nursery/plantation activities (see Annex 16). Because of the strong future orientation to wood product utilization and marketing, supported by M60 and farmer oriented training a TAT team including the present field demonstration and Outreach Forester, and the training and communications coordinator would appear logical to retain. It is also suggested that Winrock carry through with the extension since administration/operational procedures are in place. Cooperation with other donors should also be considered, eg. FAO and the World Bank.

USAID/Islamabad should make a decision of how to implement activities in Skardu. The alternative is to include Skardu in the project extension rather than initiating activities within existing LOP.

6.0 LESSONS LEARNED

This is an ambitious project. Some activities considered important in the Project design were not implemented. These are considered high priority for sustaining the effort that has gone into the project to date, e.g., the Data Base Cell, NGO/PVO participation and farmer involved research. Other components were "forgotten" such as initiating activities in Skardu District. At an early stage the planting of trees skewed to emphasizing eucalyptus on lands where water is more readily available rather than on dry barani land with a mixture of species. In the early project years management had to contend with few staff or a highly mobile staff. The primary lesson surfacing is that the participation of people in a program that has filled an environmental void such as this one needs to be flexible and dynamic as well as constantly appraised of stated goals. It often becomes easy to take the easy route rather than the less attractive, but more sustainable solution.

6.1 Joint action plan

FP&D has given new direction and provided an opportunity to the wood producers, users, foresters, and researchers to "think" collectively and devise a plan of action for the production of quality products from forests. Their appropriate marketing will give maximum benefit to the wood producers. Previously these people had been working in isolation.

Despite planned intentions to direct the bulk of project benefits to the resource-poor farmers and regions, i.e. small marginal farmers in dry regions, field operations inevitably were channeled to the well off, powerful and better resource endowed areas. This is the result of three things. First, operational definitions of target groups and areas are easily manipulated when there is little monitoring and evaluation within a project of such dimensions. Second, when targets are defined solely in terms of physical outputs the social distributional dimensions are not visible. Third, the channelling of benefits to the already well off is a function of wider structural and organizational socio-political pressures within which the project must operate.

6.2 Eucalyptus monoculture

The emphasis of this project to date has been to encourage the planting of eucalyptus in most, if not all, of new project plantations. Less than 20% of the seedlings offered from project nurseries are of other species.

Eucalyptus is a fast growing species adaptable to many planting sites. Farmers are

attracted to a species that requires little care and accumulates biomass at a fast space. However, farmers, especially the smaller substance ones, cannot afford to plant only one species. In doing so, this puts pressure on them to find suitable markets for this one species, eliminating possible markets for which other species may be suitable. While Eucalyptus has served nobly as the example species for farmers, markets and the utilization of this species must now be sorted out or farmers may destroy their plantations due to lack of markets. Sudden market changes can lead to disaster, especially for small landowners who can not afford large economic loses. To avoid such catastrophes private tree farms should be planned with long range and short range markets in mind.

Large companies who buy pulpwood regularly deal on a large scale, buying huge amounts of raw material. To save money they switch to cheaper raw materials, drive down the price of raw material, or switch to another raw material. Pulp and paper companies continually travel widely searching for cheap sources of raw materials. Good marketing extension and planning should hedge against market change risks. Future projects should encourage crop diversification (planting different species), multiple age stands and multiple agroforestry systems to assure farmers the greatest protection possible from unexpected market changes.

6.3 Information synthesis

Many excellent publications have been completed by the project. These marketing information booklets provide an excellent summary of available information by product area. However, the needs of the key target users (the farmers) have been forgotten. While these publications add greatly to the data/market information available, they are written primarily as a procurement tools for larger mills and industrial wood users. To encourage more planting and the best management of new plantations, efforts should be made to bridge an important information gap; producing marketing information available for the farmer. To extend the usefulness of these publications for farmers and local extension practitioners, a summary publication could be written and translated into Urdu to give the greatest utility to farmers and local outreach workers.

6.4 NGO/PVO Involvement

There is an important goal listed in the PC-1 document that has been overlooked. The project documents allow for the involvement of NGO'S in the project, especially to extend the effectiveness of the outreach component. Such organizations, would enthusiastically support project outreach activities and meet goals that are mutually beneficial.

The project staff would have been well served early in the LOP to enlist the assistance of NGOs to help with outreach, nursery establishment, and training. Funds had been allocated for this purpose and should have been used to involve NGOs in the promotion of project goals.

6.5 Training

While implementing a project with a strong human resource development program such as this one, it is best to develop a comprehensive plan integrating out-of-country and in-country training and education. As the plan is implemented feed back becomes an essential part of a continuous technology transfer process whereby adjustments are made to provide for new directions. Many of the project trained people have not been utilized as trainers of trainers.

Training plays an important part in the development activities of a country. It provides, technical know how, skill, experience and planning techniques. The FP&D has a substantial training component. The project has provided both short and long term foreign and in-country training courses to the project staff, thus producing a career corp for the dissemination of social forestry practices in various parts of the country. The lesson learned is that a training program should be designed as part of a comprehensive organizational structure which is part of a strategic plan for the future.

Completed marketing supply and demand studies are impressive. However, these reports should have been written in the first year or so of the project, not well past the half way point. In order to encourage planting and management of new plantations on a sustainable basis, more effort should have been made to provide marketing training to tree farmers.

As mentioned in the body of this report, the formulation of a marketing training needs assessment should have taken a high priority. In other words, the project should have encouraged not just the farming of trees, but should have also explored markets for the timber simultaneously.

6.6 Policy development

The Forestry Planning and Development Project arranged an International Workshop in March 1989, focused on National Forest Policy in Pakistan. Many forestry-aid donors, senior forestry officials, and representatives of the wood products industry attended the workshop. The resultant recommendations and their implementation were

submitted to the GOP. After great deliberation the Government agreed to strengthen and expand Social Forestry in Pakistan (Item #V of National Forestry Policy Resolution of 1991). Thus, the FP&D has been contributive to obtaining strong commitment from GOP for the development of social forestry policy in Pakistan. This should have occurred earlier in the Project to enable legislation of policy before the project ends.

6.7 Middleman phobia

Farmers have traditionally sold their tree farm timber to middlemen who in turn sell to the end user. Yet, GOP and others feel that timber producers would gain more when selling timber if the timber was sold directly to the end user. The margin between the price paid to the timber owner and the price charged to the end user often seems too much.

However, middlemen provide valuable services that farmers can't afford or do not have time to provide for themselves. The GOP and project should have recognized and further studied the valuable role middlemen play. Only now is there preliminary discussion of how to train or involve middlemen during the LOP.

6.8 Field operations

6.8.1 Nurseries.

An adequate network of nurseries is essential for a successful plantation program. The FP&D is the pioneer project that involves local population/farmers in the establishment of Kissan Nurseries. These nurseries meet the ever increasing demand of plants by the farming communities. The Project established 2374 Kissan Nurseries by 1990, which produced 50 million seedlings. This indicates how farmers have willingly accepted the concept of Kissan Nursery. The demand for seedlings has increased enormously and it is hoped that the farmers will independently operate nurseries after the project is finished. Methods of evaluating how sustainable these nurseries are should have been developed. As of now, there is no way to estimate how many nurseries will continue after 1993.

6.8.2 Plantations

The project has provided guidance to the farmers for increasing their farm income through better utilization of unproductive, saline water logged and wastelands. The Team visited a number of sites where the farmers/owners have raised trees in blocks, lines, as shelterbelts in house yards, along water courses and hedge rows, thus

utilizing every bit of vacant land. Realizing that tree cropping requires less after-care and brings in more returns as compared to agricultural crops, some farmers have either completely switched over to tree cropping or set aside blocks for plantation or are practicing agroforestry.

6.9 Advisory committees

The success of the FP&D Project is greatly linked with the working of advisory committees at Tehsil, district, provincial and federal level. Unfortunately this project activity has not been actively implemented. And because of this, the project has missed an important evaluation and feed back linkage.

6.10 Spread effect

Within the agricultural dominant lowlands, where this project has concentrated, people outside the project are aware of the Forestry Planning and Development Project. How widespread this knowledge is, remains unknown, for there are no monitoring and evaluation mechanisms to judge what is happening outside the Project area. Knowledge of the private nursery component of social forestry is partly due to indirect communications among government officials functioning as ad hoc extension agents.

Reference has been made throughout this report to the potential for expanding the wood industry coupled with the maturing of the 60,000 eucalyptus plantations established by the project. The greatest demand for private nursery produced stock comes from the larger land owners seeking free seedlings. Unfortunately, except for a small population of manufacturers, the wood using community is not aware of the potential availability of wood from these lands. This is understandable. The industry has had to rely on wood from either the traditionally wooded uplands or imports. The project has done a good job of quantifying the industry status, but no one has asked the industry what it wants.

Survival of nearly 2,500 private nurseries will, in great measure, depend upon whether or not the industry begins to use the wood now growing. It should be anticipated that a great number of the nurseries will cease to exist in several years. Even now, some nursery owners are questioning the economics of staying in business. These are the nurseries that are only concerned with producing seedlings for project subsidized plantation establishments. Once the owner is forced to "go-it" alone, without project subsidy, they may find it uneconomical to continue without diversifying into other species and/or crops. There is no question, however, the project has been successful in establishing the niche of the private nursery.

A private nursery industry has been established. But how much will continue to spread without direct project intervention depends on how well the link between the tree growers and market outlets develop. This association has not yet been developed.

ANNEXES

ANNEX 1

EVALUATION SCOPE OF WORK

Title

Mid Term Evaluation, Forestry Planning and Development Project (FP&D) (391-0481)

Objective

The objective of this work order is to provide to the GOP and USAID/Islamabad, an external evaluation of the FP&D Project as a means of assessing progress toward attaining the Project purpose as well as providing guidance for increasing Project effectiveness in meeting stated goals within Project life.

Level of Effort

This Evaluation Team will be composed of a Team Leader/Forester (6 person-weeks), A Training Specialist (5 person-weeks) and a Forest Products Specialist(5 person-weeks).

Statement of Work

The general aim of this evaluation is to ascertain; project progress to determine what major constraints presently exist and to consider how they may be overcome to help achieve desired goals. The evaluation will also assess how well contractors have performed in guiding project implementation toward attaining the purpose.

The evaluation will assess the suitability of the strategy developed and employed to implement field activities, given the project goals of institutional strengthening and demonstration of the economic, technical and social feasibility of tree-crop production on private lands. The adoption of the tree planting activity by the farmers on a perpetual basis is to be assessed as well as the development of linkages with wood users and wood producers for a sound Private Sector development strategy.

Specifically the Team shall:

1. Assess the adoption of farm forestry practices and the success of private nursery strategy;

2. evaluate the spread of farm forestry practices outside project supported areas and in Project area, but without direct project support eg. client demand for and sales of tree seedlings directly to clients by private nurseries, without direct project intermediation;
3. examine the effectiveness of technical assistance in providing leadership guidance to the project staff;
4. assess the extent to which environmental and related issues have been addressed in project implementation;
5. assess the progress of in-country training and use of returned participants in meeting the needs of the project;
6. evaluate the progress of the Federal and Provincial forest departments in policy development and implementation of policy through planning and monitoring of their activities;
7. determine budget allocation to the project in the Annual Development Plan (ADP) and amount of non-project resources devoted to farm forestry; and
8. address any other matter discussed in meetings that USAID may suggest;
9. assess the effectiveness of Gov/Provincial Government support of project activities;
10. assess the extent which the project, in meeting project objectives is addressing the overall economic and environmental issues facing the forestry sector in Pakistan.

Each member of the team will assess and comment upon issues from his/her specialized points of view:

1. Effectiveness of the TAT in meeting their contract responsibilities.
2. Effectiveness of institutional relationships and interactions among USAID, GOP Federal and Provincial officers and the TAT.
3. The results of the activities towards achieving project purpose and objectives.

4. The Team will also review:
 - A. GOP budget and reimbursements
 - a. Timing, amount and expenditure of the GOP contribution.
 - b. Rate of USAID reimbursable expenditure.
 - c. Review of USAID reimbursement activities and identification of changes which could facilitate project implementation.
 - B. Project Staffing
 - a. Impact of vacant positions on project implementation activities.
 - b. Impact of project staff turn-over on project implementation activities.
 - C. Field Activities
 - a. Review the degree to which Forest Department farm forestry officers are performing as technology transfer agents, and identify factors which could enhance their performance in this capacity.
 - b. Review the complex procedures used by Forest Departments to pay private nursery operators for acceptable seedlings produced in terms of their:
 - impact on seedling cash sales
 - impact on the actual availability of seedlings to small farmers in areas remote from the DFO
 - c. Review seedling pricing policies in terms of:
 - farmer participation
 - impact on the establishment and sustainability of private nurseries.
 - d. Review laws and policies governing harvest and sale of wood from private farm lands in terms of their impact on tree farmer participation in farm forestry activities.
 - e. Identify farmer selection criteria and farmer reimbursement procedures which might increase farmer participation in land development and social conservation activities.

- f. Identify ways in which direct nursery sales to clients of seedlings could be encouraged, leading to this activity's sustainability as a private sector effort, with the evaluation extrication of the Government.
- g. Review the importance of farm forestry advisory committees in terms of:
 - whether or not they are needed
 - how they should be formed
 - what their role should be
 - level of forest-related agribusiness involvement

- 5. Conclusions regarding the directions in which project is moving and recommendations, if any, for meeting the prescribed objectives.

Team Composition

Team Leader/Forester

The team leader/forester shall have full responsibility for coordinating team and for drafting and presenting the final evaluation report based on individual member reports. He will have primary responsibility for evaluating operational strategy, managerial support within the project and effectiveness of GOP agencies in implementing the project and for assessing and evaluating the general effectiveness of the (TA) component of the project including staffing, transfer of funds and appropriate budget allocation, and steps towards producing a policy document and progress toward development of a "National Forest Master Plan."

Qualifications: Advanced training in forestry, broad experience with forestry projects, preferably in South Asia, evaluation experience with farmer/private sector fuelwood production in developing countries, preferably in arid/semi-arid climates, will be desirable. Experience in environmental projects/initiatives preferable.

Natural Resource Management/Extension specialist

The National resource Management/Extension Specialist will review the effectiveness of the Project to identify farmer/public/private sector participation strategies as they relate to the farm operators. He/she will evaluate the

effectiveness of the use of resource options and technology transfer as they affect resource production from farm plantings. He/she will include evaluation of successful motivation techniques and the assessment of potential biological problems and how the role of the farm forester can be further expanded. He/she will also address the question of Project's relation to broader environmental issue.

Qualifications: Advance multidisciplinary training in Natural Resources with strength in natural resources planning, management and environmental studies.

Academic training and field experience in forestry production and Afro-forestry, including new species introduction as applied to the private sector supported with experience in extension methods in the third world.

Training Specialist

The training specialist will evaluate progress of the in-country and out-of-country training programs, and will assist their effectiveness in meeting project goals. The impact of the training for meeting project goals will be assessed. Also the effectiveness of transfer of technology to the farmer will be evaluated and measures to be taken suggested. He will also evaluate the farm forest officers' effectiveness as a technology transfer agent and the extent to which the Forestry Department has accepted this new role of foresters.

Qualifications: Qualified to evaluate training and its impact. Knowledge in the methodology of training farmers in the technology of forestry and natural resource management. Experienced in communicating with rural people, particularly in the Asian context.

Forest Products Specialist

The Forest Products Specialist will review the status of linkages between producers and end users of farm produced lumber and forest products. Adequacy of the present marketing system will be assessed. The Specialist will project marketing requirements for each Province over the next ten years using at least three alternate projections (three rates of growth of or expansion of farm forestry). He would be required to address the following questions: Are present geographic

areas supported by the Project appropriate to supply regional demand? Are there areas with processing facilities (under utilized capacity) which could accelerate production with increased or new efforts by the Project? Are there voids in areas with both production and market potential which the project should consider or support?

Qualifications: A forest products/forest marketing specialist with substantial private sector experience. Should have experience in a wide range of marketing activities, regarding both inputs - producers/industry linkages, and production utilization and distribution as well. International experience in developing nations forest products sub-sector is highly desirable.

Senior Pakistani Forester

The local forester will advise and assist expatriate team members in arranging contacts, logistical arrangements and in assessing the appropriateness of field operational strategy.

Qualifications: A retired or private sector senior forester with at least 20 years experience in Pakistan forestry activities. Good knowledge of current forestry operations and personnel.

Reports

Three reports are required. the first is an evaluation plan to be presented to the Mission by the end of the Team's first three working days in the country. The second is the main report which will have three parts (descriptive information, interpretation and conclusions, and recommendations). Individual reports may be drafted by Team members to reflect their special assignments. These would appear as appendices to the main report which will be compiled by the Team Leader. The third report in Draft Evaluation Summary (PES) format following the latest AID guidelines, will be submitted with the near-final report.

A draft of the main report will be delivered to the Mission for review within four weeks after the team's arrival. It will contain an executive summary of not more than three single-spaced pages, the body of the report including "lessons learned" and at least four annexes including the evaluation scope of work; a list of individuals and sources consulted, a logical framework incorporating team recommendations, and an evaluation summary in the format provided by AID/W.

A near-final draft is due before the team leader leaves Islamabad. a complete and final edited document is to be forwarded to the Mission no more than four weeks after the evaluation team leaves Pakistan.

Relationships and Responsibilities

The contractor will establish liaison with the USAID Project Officer through the Team Leader. the latter will supervise the work of the three other Team members.

Contracts with Government of pakistan Offices and staff will be made in accordance with local practice.

ANNEX 2

ITINERARY AND SOURCES CONSULTED

- May 24 (Friday) Stevens, Michie and Minnick Leave USA
May 25 (Saturday) Enroute
May 26 (Sunday) Arrive Islamabad
- Meet Mr. Hameedullah, USAID
 - Stay at Holiday Inn
 - Mission Holiday
- May 27 (Monday) Meet at USAID and review schedule
- FP&D Project
- Discussion with Dr. Charles Hatch, Chief of Party,
 - Discussion with Dr. John Swanson, Chief Agriculture Production and Institution Division, USAID
 - Discussion with Mike Hanson and Shauket Javed, USAID office of Project Development and Monitoring and Judy Shumacher, Consultant for Purpose Level Monitoring
 - Discussion with Arnold Radi, Deputy Chief, office of Agriculture and Rural Development.
- May 28 (Tuesday)
- Hammett and Yasin arrive
 - Mrs. Seema Kamgar, Secretary appointed
 - Stevens meet with Dr. M. Rafique, Member PARC and M. Ashraf, PARC
 - Michie and Minnick attend Facilitator Training Session
 - Stevens visit World Food Program Office
 - Team meet with Mr. Ismet Hakim, FAO Representative
 - Team meet with Forestry Sector Master Plan staff
 - Team meet with Hameedullah and FP&D project staff
- May 29 (Wednesday)
- Stevens accompanies USAID Director on field trip to Attock Farm Forestry Areas
 - Team members (except Stevens) meet with:
 - i. Abdul Qayoom Sheikh of World Bank
 - ii. Dr. M. Hanif, Dr. M. Rafique, Mirza M. Ashraf of PARC separately
 - Forestry Sector Master Plan

- May 30 (Thursday)**
- Review reports
 - Stevens prepares Table of Contents for report and scheduling of field visits
 - Team (except Stevens) tour Attock Farmer Forestry Areas with FP&D staff (Gary Naughton) and Project Director Punjab (Rashid Ahmed Rhandhawa).

Visited:

- Ali Kissan Nursery
 - Fazal Karim Gondal Farm
 - Manmughar Nursery
 - Eucalyptus Plantations
 - Popular Nursery
- May 31 (Friday)**
- June 1 (Saturday)**
- HOLIDAY**
- Team 1 (Stevens, Michie, Yasin and Sheikh) fly (PK 682) to Peshawar, meet with Provincial Forestry staff
 - Chief Conservator of Forests (Mr. Yar Mohammed Khan)
 - Briefing by the CCF
 - Conservator of Forests/Project Director FP&D NWFP (Rashid Arshad)
 - Divisional Forest Officer FP&D (Ihsan Wazir)
 - Briefing by PD & DFO, FP&D project NWFP
 - Meet with Dr. K. M. Siddiqui, DG-FPI
 - Stay overnight USAID Staff House
 - Team 2 (Minnick, Hammett, Hameedullah, Naughton and Blake) drive to Jhelum and Gujrat and visit Farm Forestry Areas on way and stay overnight in Gujrat
 - Visited Pakistan Chipboard Factory Jhelum
 - Met with Mirza Tariq N. Ahmed owner of the factory
 - Visited Plantations and Nurseries Agro Forestry, Line planting on way to Gujrat
 - Visited Project constructed building

(Range office, residence and tractor garages) at Kharian on way to Gujrat

- June 2 (Sunday)
- Team 1. Drive to Kohat and visited Farm Forestry Areas in Kohat and Kirk Districts of NWFP
 - Briefing by Forest Ranger Kohat
 - Visited plantations
 - Visited USAID buildings at Kohat and Kirk districts
 - Observed farmers nurseries on way to D.I. Khan
 - Met with DFO Kohat on way to D.I.Khan
 - Team 2. Visited Decent Furniture Factory Gujrat, drive to Sialkot
 - Visited plantations, nurseries, agro forestry plantations
 - Visited Ali Trading Company, manufacturers of sports goods
 - Met with Ali Shabbir of Ali Trading Company
 - Visited plantations and nurseries raised by Orient Match Factory near Lahore
 - Visited agro forestry plantation on way to Lahore (Blake joins Team)
 - Stay in Lahore
- June 3 (Monday)
- Team 1. Briefing by Forest Ranger D.I.Khan
 - Continued discussions with the Project Staff
 - Observed Farm Forestry Plantations, Nurseries, Fish Pond Plantations and Agro Forestry
 - Stay at D.I. Khan
 - Team 2. Met with CCF (Anwar Masroor) in Lahore
 - Briefing by CCF
 - Visited Director of Orient Match Factory
 - Drive to Changa Manga Plantations
 - Observed various plantation sites and PFI research plots.
 - Stay at Lahore

- June 4 (Tuesday) - Team 1. Met with Dr. Shams ur Rehman, Director Research PFI
- Briefing by the Director
 - Observed research areas at D.I. Khan Research Station
- Team 2. Visited World Wildlife Fund office. Met with Dawood N. Ghaznavi
- Briefing by Mr. Ghaznavi
 - Drive to Faisalabad
- June 5 (Wednesday) - Team 1. Drive from D. I. Khan to Islamabad on way
- Met with DFO Mianwali
 - Observed dry afforestation technique and trickle irrigation at Rakh Daggar Kotli experimental station
 - Stay in Holiday Inn
- Team 2. Visited Punjab Forestry Research Institute. Met with the Director PFRI (Mr. Hafeez)
- Visited Agricultural University Faisalabad. Met with the Director and faculty Forestry Department, and toured library.
 - Fly back to Islamabad
 - Stay at Holiday Inn
- June 6 (Thursday) - Meet with IGF (Mr. Abeer Ullah Jan)
- Meet with Dr. Mohammed Rafique Member PARC
 - Meet with Director Extension PARC (Dr. Agha Hyder Sajjad, Member Social Sciences)
 - Team meeting, reviewing first trip and follow up discussions with Federal and Project staff
- June 7 (Friday) HOLIDAY
- June 8 (Saturday) - Team, except Minnick, fly (PK 301) to Karachi with Gary Naughton and Charles Hatch. Met with Dr. Wani and Provincial Farm Forestry staff
- Met with Secretary Forest and Wildlife (Mr. Sirhindhi)
 - Briefing by Secretary Forest
 - Stay at Holiday Inn
- June 9 (Sunday) - Stevens, Yasin and Dr. Wani visited Dadu irrigated plantation area in Tando Mohammed Khan

- accompanied by M/s. Sheikh and Awan (Provincial Forestry staff)
- Hammett, Hatch and Michie along with provincial forestry staff (CF Mr. Ansari) visited Sindh Match Company, Master Paper Company Factory and Oosman Hardboard Factory.
 - Working dinner with Secretary Forests Sindh Government
- June 10 (Monday) - Visited Timber Market Karachi
- Fly back to Islamabad (PK 308), stay at Holiday Inn
- June 11 (Tuesday) - Team meeting and writing of report
- June 12 (Wednesday) - Met with Swanson, Radi and FP&D on initial findings at USAID office.
- June 13 (Thursday) - Met with Hameedullh and Hatch on initial findings. Team meeting and writing
- June 14 (Friday) HOLIDAY
- June 15 (Saturday) - Team 1. Hammett, Minnick, Yasin and Blake.
- Drive to Abbottabad
 - Visited W.F.P Nursery
 - Visited F.D.C Timber Department Goharabad.
 - Visited Sarhad Forestry School Abbottabad
 - Meet with Conservator Forests, Watershed Management Circle, at Abbottabad. Discussed USAID assistance to W.F.P Project in 1988
 - Returned to Islamabad
- Team 2. Stevens and Hatch
- Fly to Quetta (PK 385) via Lahore (PK 321) stay in Quetta
 - Arrived Lahore. Visited Packages Limited and talked with Mr. M. Moghis Asghar and M. Jawad Aslam G.M. Packages Limited
 - Talked with Saleem A. Farooqui of Farooqui Paper Mills
 - Left Lahore for Quetta
 - Arrived Quetta. Stay at USAID Guest

- June 16 (Sunday) - House
- Team 1. (Hammett, Minnick, Yasin and Blake)
 - Fly to Peshawar (PK 682)
 - Visited PFI. Met Dr. K.M. Saddiqui Director General PFI
 - Briefing by the DG
 - Visited Pak German Institute Peshawar
 - Visited Adamji Paper Mills Nowshera
 - Visited Research sites
 - Visited USAID Buildings - Hostels, Seed Center and equipment
 - Team 2. (Stevens and Hatch)
 - Talked with Syed Manzoor Hussain Shah, Secretary Forests
 - Discussed Project with Manzoor Ahmed Conservator Forest
 - Discussed project with M. Kaleem RFO. Stay at USAID Guest House.
 - Team 3. Michie, Wani, Gary and Tahir drive to Malakand.
 - Visit field operations in Social Forestry Project.
- June 17 (Monday) - Team 1. (Hammett, Minnick, Yasin and Blake)
- Meeting with DG to discuss research/outreach at PFI. (Hameedullah joins).
 - Visit Daud Armoury (Furniture Section)
 - Hammett discussed Research Project proposal with Forest Economist (Mr. Amjad) and other faculty.
 - Minnick meets with Mr. Safdar Ali - Incharge, Education Section and Communication at PFI.
 - Visit Forest Museum at PFI.
 - Visit Poplar Timber Market at Afghan Refugee camps.
 - Stay Pearl Continental Hotel
- Team 2. (Stevens and Hatch)
- Met Mr. Ghiasuddin - Chief Conservator of Forests and discussed

project with him.

Returned to Islamabad (PK 324) 11.30.

Team 3. (Michie, Gary, Wani, Tahir) attended workshop on social forestry and returned to Islamabad in the afternoon.

- June 18 (Tuesday) - Team 1. (Hammett, Minnick, Yasin and Blake)
- Visit private Poplar Plantation Charsada and agroforestry sites in area.
 - Research Site (Eucalyptus/Acacia Plantation) at Risalpur
 - Team fly back to Islamabad (PK 683)
- June 19 (Wednesday) - Team meet IGF
- Review and writing of report
 - Meet with Project Director FP&D (Punjab) at his office.
- June 20 (Thursday) - Review and writing
- June 21 (Friday) HOLIDAY (Stevens, Michie and Hammett trip to Taxila area to meet tree farmer).
- June 22 (Saturday) - Report preparation
- June 23 (Sunday) - Report Preparation
- June 24 (Monday) - Report Preparation
- June 25 (Tuesday) - Presentation of draft report to USAID and FP&D staff.
- June 26 (Wednesday) - Report preparation
- June 27 (Thursday) - Report Preparation
- June 28 (Friday) - HOLIDAY. Minick and Hammett leave. Stevens and Yasin stay
- June 29 (Saturday) - Stevens, Yasin and Hameedullah meeting with IGF at 9 o'clock.
- Michie leaves.
- June 30 (Sunday) - Report finalization.
- July 1 (Monday) - Report finalization.
- July 2 (Tuesday) - Stevens leaves.

NOTE: Approximately 150 people at Federal, Provincial, District, Range, village and other donor levels were met and interviewed.

ANNEX 3

LOGICAL FRAMEWORK

Incorporating 1991 Mid-Term Evaluation Recommendations

Project Title & Number: Forestry Planning and Development(391-0481)-Project Paper Amendment

Name of Summary	Objective Verifiable Indicators	Means of Verification	Important Assumptions
<p>PROGRAM OR SELECTOR GOAL: THE BROADER OBJECTIVE TO WHICH THIS PROJECT CONTRIBUTES:</p> <p>To increase Pakistan's fuelwood and timber self sufficiency.</p> <p>To reverse the process of deforestation</p>	<p>MEASURES OF GOAL ACHIEVEMENT</p> <p>Approximately 60,000 farm families achieve fuelwood self-sufficiency for domestic needs.</p> <p>The equivalent of 70,000 acres of farm woodlots established on the lands of poor farmers and on Sind Irrigated Plantations</p>	<p>Project Evaluations</p> <p>*Data collected by F.D. Monitoring and Evaluation Units</p> <p>*Forest and Fuelwood Development Plan and Related Studies</p> <p>*Field Inspections</p> <p>*Records kept by Ministry of Food, Agriculture & Cooperatives</p> <p>*Progress Reports</p>	<p>ASSUMPTION FOR ACHIEVING GOAL TARGETS:</p> <p>*Farm Forestry will gain support of farmers</p> <p>*GOP will continue to support farm and energy forestry activities</p> <p>*GOP will develop appropriate policies that enhance support to private forestry activities</p>
<p>PROJECT PURPOSE:</p> <p>- To enhance the capabilities of GOP institutions and PVOs in designing and implementing plans and programs for increasing the production of fuelwood and timber in Pakistan.</p> <p>-To demonstrate the economic, technical and social feasibility of producing tree crops on privately-owned farm and range lands.</p> <p>-To establish a service that can meet client needs in perpetuity.</p>	<p>CONDITIONS THAT WILL INDICATE PURPOSE HAS BEEN ACHIEVED:</p> <p>End of Project Status:</p> <p>-Forest Planning activities are fully staffed at both Federal and Provincial levels and progress is being made in relating forest development to overall development needs of Pakistan.</p> <p>-Private nurseries established, operated profitably, and supply seedlings in quantity with acceptable quality and on time.</p> <p>-Approximately 60,000 farm families establish the equivalent of about 70,000 acres of farm woodlot.</p> <p>-5-10 indigenous PVOs managing natural resource progress throughout the country.</p>	<p>-Project Evaluations</p> <p>-Data collected by F.D. Monitoring and evaluation units</p> <p>-Forest and Fuelwood Development Plan and Related Studies</p> <p>-Field Inspections</p> <p>-Records kept by Ministry of Food, Agriculture, and Cooperative</p> <p>-Progress Reports</p> <p>-PVO's established in Provinces</p>	<p>ASSUMPTIONS FOR ACHIEVING PURPOSE:</p> <p>-Land in private sector is available for afforestation</p> <p>-GOP policies will continue to support farm & energy forestry</p> <p>-GOP will utilize forest plan & related studies</p> <p>-Motivated & qualified indigenous personnel can be recruited & trained in sufficient numbers</p> <p>-Farmers believe fuelwood, fodder, timber will accrue to them</p> <p>-Sufficient annual budget allocation by GOP Finance Ministry</p> <p>-Sufficient staffing in Provincial Forest Department Project Offices</p> <p>-PVO's are involved in program</p>

LOGICAL FRAMEWORK

Project Title & Number: Forestry Planning and Development(391-0481)-Project Paper Amendment

Name of Summary	Objective Verifiable Indicators	Means of Verification	Important Assumptions
<p>PROJECT PURPOSE:</p> <p>*To transfer forest technology to the private sector to increase the forests firewood and products of Pakistan</p>	<p>CONDITIONS THAT WILL INDICATE PURPOSE HAS BEEN ACHIEVED</p> <ul style="list-style-type: none"> -Number of farmers adopting on farm-tree crop management is increasing -Farm & Energy Forestry unit is fully staffed and operational at all levels -Data Base Cell staffed and operational -Demand for seedlings for private lands is rising 	<p>With the seedlings price subsidized, demand remains high</p>	<p>ASSUMPTIONS FOR ACHIEVING PURPOSE:</p> <ul style="list-style-type: none"> Farmers accept farm forestry -an addition to the farmers income -Govt. will not tax farm forestry activities -Increased fuel wood availability leads to reduction in use of alternate fuels -Annual report on state of forests produced
<p>OUTPUTS:</p> <p><u>Component 1:Institutional Capability and Manpower Development</u></p> <ul style="list-style-type: none"> -A permanent GOP Forest Planning Group within the Ministry of Food, Agriculture and Cooperatives, Office of Inspector General of Forests(O/IGF) -A permanent Forest Planning Group established in each of the four provinces -A series of studies completed on the role of timber and fuelwood in Pakistan's development -A permanent monitoring and Evaluation group in the O/IGF and in each of 3 provinces -Establishment of a professional curriculum in farm and energy forestry studies -Establishment of a career corps in forest research <p>Construction:</p> <ul style="list-style-type: none"> PFI Hostels -Conservators Office -DFO Offices -Nursery Huts -Training Facilities -Rescarch Center Upgrade 	<p>MAGNITUDE OF OUTPUTS:</p> <ul style="list-style-type: none"> -An operational planning group exists in O/IGF -Operational Data Base Cell in O/IGF -Four operational planning groups exist comprised of 2-4 persons each -Five or more studies completed on the role of wood in Pakistan's development -Five operational M&T groups exist comprised of 1-3 persons each -Farm and energy forest units established in O/IGF and in Punjab, NWFP and Balochistan -Social Forestry Curricula established at the Bsc and Msc level at PFI and training 10-14 students/year -1 for men, 1 for women Upgrading of main building -1 in Punjab -26 (for details see Annex D, Table 3) -20 -137 -1 in each Province -1 in each province 	<ul style="list-style-type: none"> *Project Evaluation *Data Collected by F.D. Monitoring and Evaluation Units *Forest and Fuelwood Development Plan and Related *Field Operations *Records kept by Min of Food, Agriculture and Cooperatives *Progress Reports *Data Base Cell is producing/publishing data on marketing of wood and other forest-related information 	<p>ASSUMPTIONS FOR ACHIEVING OUTPUTS</p> <ul style="list-style-type: none"> -Qualified participants are selected for training -Technical consultants are effective in working with their counterparts -Training programs effectively transfer skills and technology -Adequate personnel and budget support is provided by GOP -Farm families are willing to use their labour to plant seedlings on their lands and pay for seedlings -Severe climate conditions draught etc. do not occur -Data Base Cell is located and trained and producing

LOGICAL FRAMEWORK

Project Title & Number: Forestry Planning and Development(391-0481)-Project Paper Amendment

Name of Summary	Objective Verifiable Indicators	Means of Verification	Important Assumptions
<p>OUTPUTS: (Continued)</p> <p>Component 2: Research Program in support of Farm and Energy Forestry</p> <ul style="list-style-type: none"> -A completed assessment of alternative farm and energy forestry systems -A completed assessment of fuelwood demand, supply, and marketing systems <p>Component 3: Farm Forestry Field Operations</p> <ul style="list-style-type: none"> -Establishment of farm woodlots -Improvement of Sind Forest Plantations -Conversion of Sind Forest Plantations Extension of Sind Forest Plantations -Production of fuelwood -Production of timber -Production of fodder -Irrigation Improvements -Soil Conservation Activities <p>Component 4: PVO Grants</p> <ul style="list-style-type: none"> -Indigenous PVOs strengthened and managing farm forestry, natural resource programs 	<p>MAGNITUDE OF OUTPUTS (Continued)</p> <ul style="list-style-type: none"> -Five full time researchers trained and working full time at PFI and various provincial locations -A series of field research experiments and analysis that identify most promising strategies for on-farm tree crop management to contribute to the farm enterprises. -A series of studies for rural, village, and urban settings regions of Pakistan <p>The equivalent of 70,000 acres in all provinces</p> <p>About 5000 acres</p> <p>About 1000 acres</p> <p>About 2000 acres</p> <p>About 126 million cubic feet</p> <p>About 9.2 million cubic feet</p> <p>About 5.0 million tons</p> <p>3 miles of Forest Minor</p> <p>5000 acres of land-leveling distribution canals, etc.</p> <p>2500 acres in Punjab and NWFP; 1200 acres in Sind; 800 acres in Balochistan</p> <p>10-20 PVOs supported and managing Project-funded grants</p>	<ul style="list-style-type: none"> -Multi-purpose trees are planted -farmers integrate agricultural crops -assistance is given to provinces on wood utilization -utilization studies on use of various wood -Industry wood needs inventoried No. of Reports finished -At least 25% of nurseries continue in private hands -Sind irrigated plantations are 80% established -Farmers are selling wood on the market -Import dependence is reduced -Survey of plantations at age 3-4 -Survey under existing tree stands -Land owners outside project area request assistance -Less than 2 tons/acre of erosion/year -10-20 established PVO's -Contract to train farmers 	<p>ASSUMPTIONS FOR ACHIEVING OUTPUTS</p> <ul style="list-style-type: none"> -Research involves farmers -PFI increases research on marketing and utilization -Farmers find it profitable to be in nursery business -Woodfuel prices in Sind decrease -Farmers/land owners increase land devoted to trees -More in-country timber is available <p>PVO's/NGO's are given chance to function</p>

LOGICAL FRAMEWORK

Project Title & Number: Forestry Planning and Development(391-0481)-Project Paper Amendment

Name of Summary	Objective Verifiable Indicators	Means of Verification	Important Assumptions
<p>INPUTS</p> <p>Financial</p> <p>Technical Assistance</p> <p style="padding-left: 40px;">Long-Term</p> <p style="padding-left: 40px;">Short-Term</p> <p>Professional Training</p> <p style="padding-left: 40px;">Long-Term</p> <p style="padding-left: 40px;">Short-Term</p> <p style="padding-left: 40px;">Farmer Training</p> <p>*To develop Pakistan's Human Resources in Socio/Agro Forestry</p>	<p>IMPLEMENTATION TARGET (TYPE AND QUANTITY)</p> <p>\$35 million (AID Contribution) \$14.3 million (GOP Contribution)</p> <p>251 person months</p> <p>199 person months (Includes 12 for evaluation)</p> <p>2,520 person months</p> <p>1,265 person months</p> <p>400 person months</p> <p>* #Administrators trained and skills applied</p> <p>* #Farm Foresters trained and skills applied</p> <p>* #Researchers trained and skills implemented</p> <p>* #Monitors trained and skills applied</p> <p>* #WIF trained and skills applied</p> <p>* #Farmers trained and skills practiced</p>	<p>-GOP budgets adequate recurrent costs</p> <p>USAID Contractor and GOP Progress and Evaluation Reports and other documents</p> <p>-All people trained</p> <p>-Trained people are transferring knowledge</p> <p>*Tally, Planning & ORG/MGMT Documents</p> <p>*Tally, Technology transferred, client feedback, monitoring reliability</p> <p>*Tally, Tech. generated & accepted</p> <p>*Tally, monitoring systems in place, operations reliable</p> <p>*Tally, Women in Employment, tech. transfer to female population</p> <p>*Tally, Tech. transferred & accepted</p>	<p>ASSUMPTIONS FOR PROVIDING INPUTS:</p> <p>-GOP Budget available</p> <p>-Highly motivated persons with technical skills can be recruited when needed</p> <p>-Most qualified candidates can be placed in appropriate training programs</p> <p>-GOP/USAID Bureaucracy allows for candidates to get out on time</p> <p>-GOP provides clearances for TAT Consultant on a timely manner</p> <p>*TECH.F.Y.</p> <p>*Research applicable, monitors furnish feedback</p> <p>*Training cell in place Resources allocated</p> <p>*True emphasis and employment on WIF</p> <p>*Tech, generated and relevant</p>

LOGICAL FRAMEWORK

Project Title & Number: Forestry Planning and Development(391-0481)-Project Paper Amendment

Name of Summary	Objective Verifiable Indicators	Means of Verification	Important Assumptions
<p>*To transfer forest technology to the private sector to increase the forests firewood and products of Pakistan</p>	<p>*Comprehensive ORG. Plan in place & functioning</p> <p>*Farm Foresters in socio. management, monitoring and Agro as well as forest technology skills</p> <p>*Researchers producing relevant farm/Mfg Tech. adept at on-farm research and interpersonal skills</p> <p>*Data Base Est., relevant proforma & information</p> <p>*WIF in forest service Farm Foresters practicing technology</p> <p>*Farmer clients identified, categorized & technology Implemented</p>	<p>*Strategic plan developed</p> <p>*Farmer ability to perform skills ADM Records-Feedback</p> <p>*Farmer acceptance of Tech.- monitoring</p> <p>*Relevancy and reliability checks in Data Base</p> <p>*Monitoring</p> <p>*Monitoring</p>	<p>Comprehensive in-service career training available and adequate for each training level</p>

LOGICAL FRAMEWORK

Project Title & Number: Forestry Planning and Development(391-0481)-Project Paper Amendment

Name of Summary	Objective Verifiable Indicators	Means of Verification	Important Assumptions
<p>*Organization & planning in place for control adjustment and urgent decision</p> <p>*A cadre of Farm Foresters trained in socio-forestry skills</p> <p>*A team of researchers who can integrate research in a systems context and place relevant socio-forestry technology on line</p> <p>*Accurate and reliable feedback for adjusting present and making future Mgmt decisions</p> <p>*Female Forestry Cell--Female change agent at village level</p> <p>*Farmer adoption of technology increased economics of farmers & family</p>	<p>*Goals, contingency planning, goal redefinition available in short turn around time</p> <p>*Experience in tech, dissemination, feedback, HRD and administrative skills, functional Ext. system</p> <p>*Expediency in Technology generation & adaptation to socio/ecological requirements</p> <p>*MGMT info systems to produce info for MGMT decision in shortend turn around times</p> <p>*Technology transfer to women segment of population</p> <p>*Women Forest activities, women professionals in place/social challenge</p> <p>*Reforestation of Pakistan country side</p> <p>*Increased opportunities and products</p>	<p>*Performance in case studies and diagnostic exercises</p> <p>*Tech transferred</p> <p>*Client interviews</p> <p>*Practicums</p> <p>*Tech. adoption monitoring via interview observation</p> <p>*Auditing checks for accuracy & reliability of Data proximity to real time Data</p> <p>*Tally: Women Farmer interviews & observations</p> <p>*Infrared survey bench marks, monitoring of lifestyle & affluence</p>	<p>*Leaders screened, adequate training in planning, organization and control</p> <p>*Adequate leadership training: Team, Agro/socio</p> <p>*Network/communications reliable proforma adequate training</p> <p>*Resources and information to form women professional cadre in forestry dedicated women adequate training Women Cell facilitation</p> <p>*Research-Tech and general dissemination of feedback system on place, markets available</p>

LOGICAL FRAMEWORK

Project Title & Number: Forestry Planning and Development(391-0481)-Project Paper Amendment

Name of Summary	Objective Verifiable Indicators	Means of Verification	Important Assumptions
<p style="text-align: center;"><u>SECTOR GOAL</u></p> <p>Produce quality software/coursework that documents information enhances technology transfer through the training and diffusion network</p>	<p style="text-align: center;"><u>MEASURES OF ACHIEVEMENT</u></p> <p>*Course-ware produced for training levels/clients-Menu of course-ware</p> <p>*Quality of course-ware for target levels-does it communicate and transfer information</p>	<p>*Quantitative counts of categories and numbers within a category</p> <p>*Pretesting of materials</p>	<p style="text-align: center;"><u>FOR ACHIEVING GOAL</u></p> <p>*Media Cell Est. with adequate facilities; special staff adequately trained</p>
<p>Project Purpose</p> <p>*Document information to develop human resources through</p> <p>*Training -ultimate to generate & transfer technology</p> <p>*To communicate</p>	<p>Indicators & Achievers</p> <p>*Accelerated changes in behavior- New skills competency</p> <p>*Accelerated transfer & technology to tied course-ware materials</p> <p>*Communication facilitated</p>	<p>Verification</p> <p>*Behavior modification monitored/observed or tied to documented performance objectives</p> <p>*Document training/pretesting</p> <p>*Pretesting</p>	<p>Assumptions</p> <p>*Monitoring unit in place & has pretesting expertise</p> <p>*Media unit functioning with competent leadership</p>
<p>Outputs</p> <p>User friendly communicative course-ware</p>	<p>Magnitudes</p> <p>Variable</p>	<p>Verifications</p> <p>Tally & pretesting</p>	<p>Assumptions</p> <p>Resources as above</p>

ANNEX 4

A.I.D. EVALUATION SUMMARY - PART I

1. BEFORE FILING OUT THIS FORM, READ THE ATTACHED INSTRUCTIONS.
2. USE LETTER QUALITY TYPE, NOT "DOT MATRIX" TYPE.

IDENTIFICATION DATA

A. Reporting A.I.D. Unit: Mission or AID/W Office <u>USAID/Pakistan</u> (ES# _____)		B. Was Evaluation Scheduled in Current FY Annual Evaluation Plan? Yes <input type="checkbox"/> Stopped <input type="checkbox"/> Ad Hoc <input type="checkbox"/> Evaluation Plan Submission Date: FY <u>87</u> , Q <u>91</u>		C. Evaluation Timing Interim <input type="checkbox"/> Final <input type="checkbox"/> Ex Post <input type="checkbox"/> Other <input type="checkbox"/>	
D. Activity or Activities Evaluated (List the following information for project(s) or program(s) evaluated; if not applicable, list title and date of the evaluation report.)					

Project No.	Project /Program Title	First PROAG or Equivalent (FY)	Most Recent PACD (Mo/Yr)	Planned LOP Cost (000)	Amount Obligated to Date (000)
391-0481	Pakistan-Forestry Planning and Development	8/28/83	8/30/90	Phase I \$25,000 Phase II 10,000	27,500

ACTIONS

E. Action Decisions Approved By Mission or AID/W Office Director	Name of Officer Responsible for Action	Date Action to be Completed
<p align="center">Action(s) Required</p> <ol style="list-style-type: none"> 1. Continue contract with Winrock until August 30, 1993 2. Prepare second Amended Project Paper in concert with GOP PC-1 for continuation until August 1995/6 within first PP Amended Appropriate funds and GOP Savings. 3. Allocate funds to activate PVO/NGO activity. 4. Allocate funds to activate Data Base Cell 5. Adjust funding activities to consider in-country training and GOP field staff attending Project Directors meetings. 6. Allocate funds to implement wood marketing and utilization information systems. 		

(Attach extra sheet if necessary)

APPROVALS

F. Date Of Mission Or AID/W Office Review Of Evaluation:			
(Month)		(Day)	
July		1991	
G. Approvals of Evaluation Summary And Action Decisions:			
	Project/Program Officer	Representative of Borrower/Grantee	Evaluation Officer
Name (Typed)			Mission or AID/W Office Director
Signature			
Date			

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H. Evaluation Abstract (Do not exceed the space provided)

Background: The mid-term evaluation was completed in July 1991 eight years into the project. The primary goal is to help Pakistan increase its energy supplies to achieve energy self-sufficiency. The secondary goal is to reverse the process of deforestation in Pakistan and to expand the extremely limited forest resource base. The primary purpose is to strengthen the capacity of institutions at the Federal, Provincial, and local levels. The secondary purpose is to demonstrate the economic, technical, and social feasibility of producing tree crops on privately owned farm and rangeland.

Findings: The Evaluation concluded that the farm-forest program has been successful and people are planting trees, often on land converted from agriculture. Implementation of the field nursery and plantation activity is successful as is the out-of-country training. The Data Base Cell, NGO, and Skardu district activities have not been implemented. The in-country training program has been partially installed. There is no farmer oriented research. The strong emphasis to Eucalyptus trees diverges from PP strategy as does the orientation to large land holders.

Conclusions: The project is successfully contributing to reversing the process of deforestation with establishment of over 60,000 plantations, 2,400 plus farmer nurseries and training/education of more than 70,000 people. Research has yet to develop an out-reach program. Without the installation of of the Data Base Cell, NGO component, a sharply focused in-country training program, increased input and wood marketing and utilization, and permanent staffing, it is doubtful that the effort to-date is sustainable.

Lessons Learned: Establishing a sustainable information infrastructure required to meet project objectives takes years. This complex process has only had a real production life of four years out of eight. It must be extended in order to put into place sustaining activities.

COSTS

Evaluation Costs					
1. Evaluation Team		Contract Number OR	Contract Cost OR	Source of Funds	
Name	Affiliation	TDY Person Days	TDY Cost (U.S. \$)		
Mr. Mervin Stevens	Tropical Research	40		Project 391-0481	
Dr. A.L. Hammett	& Development, INC	32			
Dr. Barry H. Mitchie	Gainesville, FL	32			
Dr. Dan R. Minnick		32			
Mr. Khawaja G. Yasin		30			
2. Mission/Office Professional Staff		3. Borrower/Grantee Professional			
Person-Days (Estimate) <u>10</u>		Staff Person-Days (Estimate) <u>10</u>			

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A.I.D. EVALUATION SUMMARY - PART II

S U M M A R Y

J. Summary of Evaluation Findings, Conclusions and Recommendations (Try not to exceed the three (3) pages provided)

Address the following items:

- | | |
|--|-----------------------------|
| • Purpose of evaluation and methodology used | • Principal recommendations |
| • Purpose of activity(ies) evaluated | • Lessons learned |
| • Findings and conclusions (relate to questions) | |

Mission or Office:	Date This Summary Prepared:	Title And Date Of Full Evaluation Report: (391-0481
USAID/Pakistan	June 29, 1991	Mid-Term Evaluation, Forestry Planning & Development Project (FP&D)

1. Purpose of Activity Evaluated

The primary goal is to help Pakistan increase its energy supplies to achieve energy self-sufficiency. The secondary goal is to reverse the process of deforestation in Pakistan and to expand the extremely limited forest resource base. The primary purpose is to strengthen the capacity of institutions at the Federal, Provincial, and local levels to design implement, and evaluate policies and programs increasing the production of fuel wood and timber in Pakistan. The secondary purpose is to demonstrate the economic, technical, and social feasibility of producing tree crops on privately owned farm and rangeland. The PP amendment added: new areas in the provinces, irrigated areas, increased WID activity, NGO/PVO operations, Data Base Cell, Soil Conservation, additional training, additional GOP support, additional commodities, and additional TAT.

2. Purpose of Evaluation

This was the second mid-term evaluation, the first was September 1987. There were five people on the team. The purpose is to provide GOP and USAID/Islamabad an external evaluation of the Project as a means of assessing progress toward attaining project purposes as well as providing guidance for increased project effectiveness in meeting stated goals within project life.

The Team reviewed the 1987 mid-term evaluation, reviewed on-going program/activities, reviewed documents, visited every province, examined a cross section of activities, interviewed about 150 people from the farmer-on-up and looked to the future. The findings were discussed with USAID, GOP, and the TAT team.

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3. Findings and Conclusions

The evaluation finds ¹ farm forestry practices are being adopted and the concept of private nurseries has been accepted, ² farm forestry practices are spreading to areas outside the project domain and seedlings are being sought after, ³ the TAT has given foundation to a management infrastructure, but has failed to put in place the Data Base Cell, NGO/PVO operation, farmer oriented research, research demonstration nurseries, etc. ⁴ In general, environmental issues have been addressed, but the project diverged from the PP by emphasizing eucalyptus trees and not concentrating on rangeland, ⁵ The in-country training program is weak and too scattered with events academically oriented, rather than focusing on a holistic approach. Basically out of country returnees are not utilized in training, ⁶ a forest policy development is in progress, supported in part by the 1989 policy seminar. No policy has been implemented. The Forestry Sector Master Plan supported by ADB and FAO has been given lead to policy formation, ⁷ the budget allocated to the project is adequate, but the amount denoted to farm forestry outside of the project is unknown. However, ADB will be starting a \$40,000,000 project with a major forestry component shortly; building upon this project, ⁸ at the request of USAID/Islamabad the team looked to the future and recommends a follow-on activity using unspent funds, ⁹ the effectiveness of GOP/Provincial government support is constrained due to staffing and budget restrictions, ¹⁰ overall the project is addressing the economic and environmental issues, even though activities which can jeopardize sustainability have not been taken up, and ¹¹ activities within the Shardu Province have not been activated.

4. Principal Recommendations

Attached is the listing of the Team's recommendations tied to the two purposes of the project. Particularly significant are the recommendations addressing the need of TAT to adjust its workload to be more effective, activate the Data Base Cell, establish the NGO program and establish a technology transfer program. Supporting this direction is the need to have a focused in-country training program that reinforces post training. Most important is the recommendations to ¹ prepare an action plan outlining what is to be done between now and August 1993 and ² preparing the proposed follow-on project.

5. Lessons Learned

A 10 year program must be flexible. This project diverged from its original charge and emphasized eucalyptus which proved to have positive results in getting farmers involved. However, the project now faces the issue of what to do about marketing and harvesting a mono-culture. This issue and the supporting activities such as NGO's, Data Base Cell, training in-country and research-technology transfer and how they are instituted will, no doubt, determine whether-or-not the project approach is successful. The long term effort to develop an infrastructure to support people's participation in forestry development will disappear to a major extent if the key recommendations are not attended to.

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RECOMMENDATIONS

Recommendations are made related to the project purposes given in the amended Project paper and PC-1.

I. Strengthened Institutional Capacity

- A. Adjust the TAT workload to expeditiously implement research, NGO, in-country training and extension/marketing activities.
- B. Activate the Database Cell to be attached to the O/IGF as soon as possible.
- C. Establish a Forest Service program to transfer Farm Forest Technology supported by the involvement of PVO/NGO's.
- D. Implement the PVO/NGO activity as required in the Project Paper and PC-1 as soon as possible.
- E. Involve provincial administration in the project decision making process so that project goals can be accomplished.
- F. Encat Project Coordination Committee meetings as described in the PC-1 and PP on a regular and scheduled basis.
- G. GOP direct provincial forestry department to assign suitable staff on full-time basis for sustaining social forestry project activities.
- H. Give assistance to Technical Forestry schools in all provinces, concentrating on instructional and communications media.
- I. Collaborate with the Forestry sector Matster Plan Project and other donors in the formulation of farm forestry policy at both the federal and provincial levels.

II. Demonstrate Tree Crop Feasibility on Privately Owned Land and Range Land.

- A. Accelerate the effort, based on the project's nursery strategy, that plans and assists plantation owners/tree farmers to establish, harvest, and market nursery and timber products.

- B. Focus in-country training on farmer and in-service staff at all levels and as a part of a comprehensive training program.
- C. Develop courseware to support and document completed training sessions and the comprehensive program in recommendation II-B.
- D. Encourage increased knowledge of industry-government-farmer linkages and organizational collaboration, i.e., with PVO/NGO's, agricultural universities, and other donor organizations.
- E. Produce environmental guidelines describing alternative production systems and species within the project area from on-farm applied research particularly on Barani lands.
- F. Concentrate research on specimen trials, establishment of seed orchards and the tree/crop livestock interaction.
- G. Encourage research in the establishment of improved existing small wood-based industries.

III. Future Direction

- A. Immediately develop a Comprehensive Project Plan of Action outlining activities and responsible person(s) through August 1993, including preparation for follow-on project.
- B. Support a follow-on USAID funded project after August 1993 oriented to true Barani areas and help establish the harvesting and marketing mechanisms of present project plantations.

ANNEX 5

Life of Project Targets and Accomplishments by Fiscal Year

Name of Activity	(1985-91) PC-1(T)	(1985-86) PC-1(T)	Achieved	(1986-87) PC-1(T)	Achieved	(1987-88) PC-1(T)	Achieved	(1988-89) PC-1(T)	Achieved	(1989-90) PC-1(T)	Achieved	(1985-90) PC-1(T)	Achieved	% age
Planting - No. Farms - No. Plants	76718 76718000	4276 4276000	N/A 132000	6585 6585000	N/A 1430000	10087 10087000	7332 4313595	14065 14065000	12536 7658702	19185 19185000	20118 17542423	54198 54198000	39986 31076720	74 57
Nursery - No. Units - No. Plants	1520 114000000	80 6000000	N/A 1357000	130 9750000	N/A 4963468	200 15000000	162 9423014	280 21000000	302 10179347	380 28500000	890 31938207	1070 80250000	1354 57861036	127 72
Land Development - No. Acres	69500	2500	0	5500	32	9000	2650	13000	4788	18000	3285	48000	10755	22
Soil Conservation - No. Acres	6550	110	0	330	50	690	35	890	35	2010	180	4030	300	7
Research - Res. Projects - Rest. Studies							4 25				44 7		48 32	
Afforestation (SINDH) - Topographic map (acre) - Command map (acre) - Jungle clearance a. Phase.1(Pil-27) - Const:Penah Minor b. Phase.1(Pil-41) - Const:Penah Minor - New Plantation (acre) - Renovation/improvements	10000 5400 3600000 3960 3000 5400 1818	840		840		10000 840	10000 5400	840	3600000 1980	1020	1980	10000 4380 3600000 3960 3000 5400 1818	10000 5400 3600000 3960 0 0 0	100 123 100 100 0 0 0
Training: Staff I. (OVERSEAS) - Short-Term - Long-Term - Tour II. (LOCALS) - M.Sc. - B.Sc. - Others - Tours	66 22 30 36 42 92 144	3 3		11 7	11 4	2 5	7 2 14	30 3	29 1 8	8 2	10 3	66 22 30	57 6 26	86 27 87
Training: Farmer - Tree Plantation - Nursery Technique - Soil Conservation - Land Development - Motivators - Tour	30000						4792		16426		10619 289 92 25 23 268	30000	32608 31837 289 92 25 45 320	109
Training: Buildings I. Office (Reimbursable) - Conservator - O.F.O. - R.F.O. - Nursery Hut - Hostel (Men) - Hostel (Women) - Lecture Rooms - Research Station II. Residence (G.O.P) - Conservator/D.F. - R.F.O./S.D.F.O. - Research Officer - Others	1 6 17 17 1 1 5 4 8 22 4 56										2 5	1 6 17 1 1 5 4 8 22 4 56	0 0 2 5 0 0 0 0 0 0 1 0	0 0 12 29 0 0 0 0 0 0 25 0

ANNEX 6

Achievements Through March 1991 for Fiscal Year 1990-1991

Capital Cost With FEC	Source And Amount For Aid	Date of Commencing	Name of Activity	Targets (1990-91)	Achievement in 1st Quarter	Achievement in 2nd Quarter	Achievement in 3rd Quarter	Achievement in 4th Quarter	Cumulative Achieve. 1990-91	Cumulat. Achieve. as % of Target	Life of Project Achieve	
1	2	3	4	5	6	7	8	9	10	11	12	
73.661 Million and 59.567 Million FEC	USAID	1985-86	1. Planting									
			I. No. Farms	22720	14387	4571	15291	34249	150.7%	74235		
			II. No. Plants	22720000	10661902	2098996	6277324	19038222	83.8%	50114942		
			2. Nursery									
			I. No. Units	700	174	173	673	1020	145.7%	2374		
			II. No. Plants	30750000	8907000	5545000	12411900	26863900	87.4%	84724936		
			3. Land Development									
			I. No. Acres	21500	1425	1578	1430	4433	20.6%	15188		
			4. Soil Conservation									
			I. No. Acres	1533	512	258	532	1302	84.9%	1602		
			5. New Plantation(Sindh)									
			I. Afforestation(Acre)	993	213	72	1149	1149	115.7%	1149		
			II. Rehabilitation(Acre)	409			325	610	149.1%	610		
			6. Research									
			I. Res. Projects			5		5	20.8%	53		
II. Res. Stuoies	24				0	0.0%	32					
III. Res. Stations	7				0	0.0%	4					
4												
7. Training												
A. Staff												
I. (Overseas)												
Sh. Term	20	8	9	1	17	85.0%	74					
Lg. Term	5				1	20.0%	7					
Tour	No Target		1				27					
II. (Local)												
M.Sc.	20		19		19	95.0%	22					
B.Sc.	20		20		20	100.0%	28					
Others	50	9	63	43	115	230.0%	390					
Tours	No Target	14			14		77					
B. Farmer												
Tree Plantation	50000	24291	4304	12360	40555	81.9%	72792					
Nursery	700	210	5		215	30.7%	504					
Soil Conservation	2150	6	5		11	0.5%	103					
Land Development	150	40	15		55	36.7%	80					
Motivators	85		6	8	14	16.5%	59					
Other	No Target		336		465		465					
Tour	No Target	15	31	103	149		469					
B. Buildings												
Office	15				0	0.0%	2					
Nursery Huts	9				3	33.3%	8					
Hostel	1		1		1	100.0%	1					
Residences	9				1	11.1%	2					

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ANNEX 7

Import of Wood Products During 1989-1990

Name of Item	Unit	Quantity	Value (000 Rs)
Cork Natural	Kg	99085	1819
Cork Natural Raw	Kg	42442	1742
Cork Waste	Kg	4030	20
Wood (non-coniferous)	Kg	1092	788
Pit Props	CM	1130	1132
Props, Pilings, Posts	CM	5096	4326
Sawn logs, Veneer logs (coniferous)	CM	180	180
Deodar logs (coniferous)	CM	217	217
Fir logs (coniferous)	CM	5209	313
Wood (coniferous)	CM	23174	17850
Sawn log veneer logs (non-coniferous)	CM	37500	32290
Teak wood roughly square	CM	49634	55221
Gurjam logs (non-coniferous)	CM	1707	1848
Chem. wood pulp. semi-bleached (coniferous)	Kg	39682178	285378
Chem. wood Pulp Bleach. (non-coniferous)	Kg	5382136	1914462
Chem. wood pulp. sulphite bleached	Kg	18622408	108354
Other Wood Black. (non-coniferous)	CM	1536	583
Waste paper un-bleached	Kg	849362	6204
Waste paper bleached	Kg	539018	4562
Newspaper old	Kg	1883726	12252
Journals & printed matter	Kg	2069134	6884
Railway sleepers of wood	CM	1004	1005
Wood coniferous, Sp. sawn chipped	CM	656	834
Wood sawn non-coniferous	CM	73886	72267
Local other than Teak Sawn non-coniferous	CM	131762	147490
Waste scrap other paper board	Kg	19034879	96165
Mechanical Wood pulp	Kg	758668	5811
Chem wood pulp dissolved grade	Kg	2479216	18384
Chem wood pulp un-bleached	Kg	8952293	52042
Semi-chem wood pulp	Kg	896658	3006
Pulp of other cellulose matter	Kg	1592825	11941
Total			2865370

Source: Ministry of Commerce, Govt. of Pakistan

ANNEX 8

Projected demand for wood products, 1990 through 2000.
(High and low estimates for each year)

Product	1990		1995		2000	
	low	high	low	high	low	high
Fuelwood Domestic firewood	24320	24320	28270	29350	33370	35980
Tobacco Curing	82	112	82	112	82	112
Brick Kilns	515	2000	651	2500	823	3200
Total	24917	26432	29003	31962	34275	39292
Industrial Wood Construction	882	882	1027	1031	1187	1208
Mining Timber	152	283	170	358	190	452
Sporting Goods	42	42	61	61	90	90
Railway ties	8	8	7	7	6	6
Matches	46	162	61	225	73	310
Plywood	24	24	24	27	24	29
Particle board	85	85	126	126	187	187
Fiberboard	22	22	22	22	22	22
Vehicles	170	170	209	215	247	264
Crates and boxes	640	640	780	780	950	950
Village Carpentry	282	282	313	316	340	352
Furniture	215	322	271	405	340	509
Total	2568	2922	3071	3573	3656	4379
Grand Total	27485	29354	32074	35535	37931	43671

Based on Forestry Master Plan Project preliminary data (Grosenick 1991)

ANNEX 9

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Projected demand for species, 1990 through 2000.
 (High and low estimates in thousand cubic meters, and
 percentage differences between high estimates)

Species	1990			1995				2000			
	low	median	high	low	median	high	% Change	low	median	high	% Change
Softwood	882	882	882	1027	1029	1031	17%	1187	1198	1208	17%
Deodar	103	103	109	122	126	129	18%	145	149	153	19%
Fir	38	38	38	47	48	49	29%	57	59	61	24%
Chir	15	15	15	19	20	20	33%	23	24	24	20%
Shisham	772	791	810	890	947	1003	24%	1088	1163	1237	23%
Babul	181	248	315	200	236	392	24%	222	356	489	25%
Poplar	99	159	219	137	222	306	40%	183	305	427	40%
Mulberry	16	18	20	21	24	27	35%	29	33	36	33%
Eucalyptus	45	45	45	55	55	55	22%	67	67	67	22%
Willow	5	5	5	7	7	7	40%	10	10	10	43%
Teak	3	3	3	3	3	3	0%	3	3	3	0%
Mango	51	51	51	76	76	76	49%	112	112	112	47%
Others	408	409	410	467	472	476	16%	530	541	551	16%
Total	2618	2770	2922	3071	3323	3574	22%	3656	4017	4378	22%

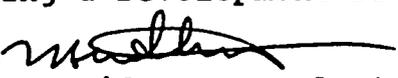
Based on Forestry Master Plan Project preliminary data (Grosenick 1991)

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ANNEX 10

June 17, 1991

To: K. Hameedullah, Project Officer
Forestry Planning & Development Project

From: Mervin Stevens 
Team Leader, FP/D Mid-Term Evaluation

Subject: Tree Improvement Technology

At the meetings of June 12 and 13 discussing the Teams findings to date we covered a range of issues associated with research and approaches that can be used to put research on firmer ground for the remaining project life.

The Evaluation Team will be making recommendations on Forestry research. However, at our June 13 meeting with you and Dr. Hatch it was brought to our attention that Dr. Douglas Richards, Mississippi State University, will be arriving June 25, to prepare a scope of work for developing tree improvement, seed technology and nursery technology workshops. It is recommended that Dr. Richards also explore/propose a collaborative plan to produce a woody plant manual involving a returned project funded scientist (graduate student) and U.S. based scientists. The U.S. counterparts should include a Forest Soil Scientist and Physiologist. Also located at Mississippi State are a U.S Forest Service Forest Sciences Laboratory and a major forest tree Nursery. Therefore, it would seem possible to identify a well qualified team of scientists at Mississippi to put together a woody plant manual oriented to Pakistan.

There may be other manuals just as important , but the woody plant manual was identified as priority at our meeting. These other manuals should be identified as soon as possible, as well as the teams to put them together. Mississippi should not be given exclusive rights.

Such a approach will: (1) follow-up on the degree training investment made in forest scientists education and (2) establish/reinforce a network so important to project sustainability.

cc: C. Hatch, FP&D
P. Wild, TR&D

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ANNEX 11



FORESTRY PLANNING & DEVELOPMENT PROJECT

Government of Pakistan-USAID

TRIP REPORT

Contract No. 391-0481-00-C-5021-00

1. Prepared by: Mahmood Iqbal Sheikh *Mahmood Iqbal Sheikh*
2. Places Visited: Peshawar, Kohat, Bannu, D.I. Khan & Dagar Kotli (Thal desert)
3. Date of Trip: June 1-5, 1991
4. Description of Trip Activities:

a. Purpose of Trip: To accompany Forestry Planning & Development Project Evaluation Team to NWFP Project areas.

b. Individuals contacted:

Accompanied: Merve Stevens, B. Michie, Khawaja Yasin of the Project Evaluation Mission.

Met the following:

Mr. Yar Muhammad Khan CCF, NWFP
Dr. K. M. Siddiqui, DG, PFI
Mr. Rashid Arshad, PD/CF NWFP, South Circle
Dr. Shamsur Rehman, Forest Geneticist
Mr. Habib, ARO.
Mr. Ihsanullah Wazir, DFO, Project
Mr. Mushtaq, DFO, D. I. Khan
Mr. Abdul Quddus, DFO, Bannu
Mr. Amjad Ali, RO, Project, Kohat,
Mr. Khurshid Ali, RO, Project, D.I. Khan,
Mr. Gul Mir Khan, RO, Project, extended area
Mr. Jamil Shah, R.O., Karak
other junior field staff and farmers.

c. Purpose Achieved: Yes

d. Observations & recommendations:

On 2nd. & 3rd. of June a large number of nurseries and plantations raised by small and big farmers in the four project districts were seen by the team.

 Winrock International

Technical Assistance Team

55, Margalla Road, F-7/2, Islamabad, Pakistan. Tel : 813262 -- 813272 Tlx : 54252 WIF. D PK Fax : 824519

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Nurseries: In the nurseries, species such as Eucalyptus camaldulensis, Acacia modesta, A.nilotica, Dodonea viscosa, Dalbergia sissoo, Ipil Ipil, Albizzia lebbek, Cassia fistula etc. are being raised. E. camaldulensis is the major species, the nurseries having almost 70 - 80% plants. This tree is being preferred as the people are impressed with its rate of growth even on marginal sites and non palatability to the livestock. The other two choice species are A.modesta & A.nilotica. Nursery size ranges from 40000 to 75000 plants. There are almost full with tube plant of one - 5 months. Some of the stock is ready for planting out and in fact should be planted as soon as the monsoons start. Following suggestions are made to further improve the nursery management.

- . Provide shade by sowing Jantar & Ipil Ipil all around the newly established nurseries to protect the tender plants from scorching summer heat. Persuade the farmers to use Kana chiks (Saccharum curtains).
- . Remove/reduce shade from heavily shaded nurseries. Excellent eucalypt stock in such nurseries is becoming whippy, the internodes have become unusually elongated in search of light and leaves are yellow and papery. Such plants when planted out shall not be able to stand the planting shock and heat.
- . Cull all bifurcated or double stemmed seedlings as these are not going to make a good tree. (Resultant plants from such seedlings in the field were pointed out to the staff. These had been left far behind in growth as compared to the other plants of the same age.
- . Adopt the system of gradation of the nursery stock, segregating weak collared, broken plants from the rest.
- . Do a few days hardening through full exposure to the sun before taking the plants for planting out.

Field plantations: Row and compact plantations with/without agri. crops have been raised on agricultural as well as marginal lands. Planting of eucalypts around large fish ponds appears to be very popular. E.camaldulensis is the most preferred species. Some farmers have already been able to sell 5 year old trees for Rs.80-100 per trees, the end use being mine props, scaffolding, shuttering and roofing. Some cattle sheds have also been constructed with eucalypt wood.

Rate of growth appears to be quite good at most of the sites. Block plantation of 15 acres at Teri raised in 1987 is an example of the adaptability of E.camaldulensis in almost stony and sandy old river bed under very trying conditions. This plantation has some excellent trees which could be marked as future seed source. At some other sites such as spur No 10 in D.I. Khan the farmer has planted some undersized eucalypt stock on a very marginal land by hand watering and is expecting the plants to survive and grow. He should dig pasels 20 apart and do planting with flow irrigation which he has in the form of a tube well. He should also be stopped from raising poplars and Willows on hand watering. If he is interested in poplars he should await the research results at Rata kulachi where attempt is being made to identify suitable clones for this zone. Some farmers are planning to plant more than 100,000 plants at one site. They should be persuaded to hire retired Forest guards & foresters for protection & maintenance of these plantation.

Block plantation of Babul called Hurries are being successfully raised in Sindh for the last more than 135 years. The practice consists of sowing/broad casting Babul seed on marginal lands & harvesting the crop after 5 years for mine props. Hurries should be introduced in NWFP as early as possible.

Some staff indicated non-availability of eucalypt seed from PFI in time. They were thus collecting the seed locally for distribution. It is not a bad idea but for that purpose Seed Production Areas have to be identified on farmer's land/state plantations where plus or elite trees should be marked. These trees should be straight with normal branching pattern and good healthy crown. Other undesirable individuals around these trees such as forked, large crowned, suppressed, diseased etc. should be removed to provide the left overs more growing space. These trees should be given a white/yellow ring and kept as future seed sources. Project Director is requested to attend to it at top priority level. Details have been given in technical note No.5 on nurseries, already circulated.

Mr. Rashid Arshad and his dedicated staff are doing a very good job and have played their natural role of a forester to improve the tree cover in the province under very demanding situations.

PFI Research Station Ratta Kulachi: An area of 10 acres was acquired in 1986 to set up the research station. Studies on water harvesting, water requirement and season of planting and selection of species suitable for arid zone are being conducted in collaboration with Arid Zone Res.

Institute of PARC. One study on arid zone species network trials is being done with F/FRED while several other studies are being conducted exclusively for the Forestry Planning & Development Project since 1987. These include spacing trials of Acacia nilotica, genetical variation in A. nilotica; spacing trial of Ipil Ipil; inter cropping of six tree species with agronomic crops; mgt. of multipurpose tree species; establishment of seed stands/introduction trials; introduction of forage species; clonal trial of 7P. deltoids clones & causes of transplant mortality and methods of their control. An arboretum of 45 species, 5 tree plot has also been established. Some very indicative results such as that January-April is the best season of planting with two watering of 5 litres each in a month; 7% slope for water harvesting and 2xlm spacing for the optimum growth of Acacia nilotica are available.

Dr. Shams informed the Evaluation Team that most of the studies were being written up and shall be presented when the Team visits PFI in the middle of this month. On query from the team as to what would be his three best priorities if he continued to have staff constraint as he was having now, Dr. Shams replied that he would like to concentrate on species trials, establishment of seed orchards and tree crop interface.

The team desired that:

- Research Plan should be developed.
- Career ladder for research scientists should be identified.
- Whatever data are available should be passed on to the farmers and field foresters.
- Visits of farmers and field foresters to the research station should be arranged.
- Future studies should concentrate on management, harvesting, marketing and end use.

Since PFI is conducting studies on establishment of tree species in the Thal desert for the last 10 years it was decided to visit Rakh Dagar Kotli as well. Species such as Acacia tortilis, A. modesta, A. nilotica, A. victoriae, A. aneura, Prosopis cineraria etc. have been established using water harvesting and water conservation techniques.

Improvised trickle system of irrigation for sand dune afforestation was appreciated by the visitors. The method consists of filling a drum with hand water pump at the top of a sand dune and releasing water gradually through plastic pipes perforated at 10' interval where a sapling is planted. A.tortilis was showing excellent growth under this method. PD/CF Southern Zone and DFO, D.I.Khan decided to try this inexpensive method in their arid zones.

PFI have done a very good job in initiating some very useful studies which when applied in the field should be very helpful to the farmers as well as practicing foresters. With the setting up of the seed storage facilities at Peshawar, the long outstanding problem regarding supply of quality seed at the national and international is soon going to be solved.

Problems and Constraints: The Team asked several individuals to identify the problems and constraints which were a hindrance in smooth operation of the project. Most of them came out with the following.

- Non availability of requisite staff.
- Inconsistent release of funds.
- Lack of incentives for the project staff.
- Non-recognition of the work.

It was considered that the following issues needed attention during the next 2 years before the termination of the project.

- . Training of staff in extension, communication and publicity in the country as well as outside.
- . Nomination of the only those personnel for higher short/ long time training who are associated with the project.
- . Transfer of research results to the end user.
- . Transfer of technology on scientific lines.
- . Increase in interprovincial visits.
- . More frequent meetings of the Project Directors in different provinces to exchange experiences, problems constraints etc.
- . Refreshers courses at PFI & PFRI.

- . Training programs for the farmers and exchange visits.
 - . Meetings/seminars to streamline pricing and marketing systems.
- Demonstration of plantation mt. techniques.

Distribution:

IGF Abeedullah Jan
CCF NWFP, Mr. Yar Mohammed Khan
DIGF Nasrullah Khan Aziz
DIGF Dr. B. A. Wani
DG PFI, Dr. K.M. Siddiqui
DFO Project, Ihsanullah Wazir
PD/CF NWFP, South Circle, Rashid Arshad,
PD Punjab, R.M. Randhawa
Director PFRI, Sahibzada M. Hafeez.
USAID Project Officer Kh. Hameedullah
TAT

MIS/maa

ANNEX 12

(sent to private industry Contacts)
about 60 people

WOOD NEWS



JUNE 1991

EUCALYPTUS PULPING TRIALS:

By now, most of you have heard or read about the eucalyptus pulping trials run at Adamjee Paper and Board Mills, Nowshera, in January. Unfortunately, complications arising from the Persian Gulf War caused cancellation of the seminar we had planned to hold at PFI on 19 January.

Depending upon the interest of those of you in the paper industry, we can still hold a seminar on this study later this year (mid-August). Please advise me of your interest in this.

The event at Nowshera was significant for the following reasons:

1. Eucalyptus trees planted by farmers under the FPD Project were sold, cut, transported, and manufactured into a valuable market product.
2. Private enterprise, the combination of farmer/producer and industrial user, was the dominant force in this undertaking. The government (forest department) served only a technical supporting role in helping bring buyer and seller together and in transporting farmers to the field day.
3. Farmers are just as hungry for knowledge about how their tree crops will be used as the industries are hungry for wood. The farmer, the industrialist and the forester each knows his own business well -- and each has a need to understand the other better.

This test run opened up new opportunities, but also raised important new questions which must be addressed. We are working to find the answers and help smooth out the process.

ENGLISH BAT WILLOW cuttings were brought to Pakistan in the late 1970s by M.I. Sheikh when he was with Pakistan Forest Institute. The first out-plantings were put at PFI and used for expansion of the materials. Later, there was a substantial out-planting of this tree at Changa Manga forest. In the fall of 1990 we went to the plantations and made some evaluations of the growth and form of these trees, and decided to expand the species further by issuing cuttings to farm nurseries in the Sialkot area.

Best results are obtained by taking branch-wood cuttings in November, after the leaves have fallen, and putting them immediately into nurseries or field planting sites. The advantage of going to nurseries is that a lot more trees can be started from a limited number of cuttings, because they don't have to be as large as field planting stock. After one year in the nursery, the new plants are easily 5 or 6 feet tall, have developed good root systems, and can be field planted with great success. Farmers want to grow this tree, but also want to know how it is used by the industry and what the size, grade, and price standards are.

"DELTOIDES" OR SUFEDA POPLAR has been introduced from the southern United States several years ago, and is finally proving to be one of the best possible species for the match industry, plywood core, particle board, and fruit boxes. Because of high alpha-cellulose content (55%), this species is also very good for production of short fibre pulp. There are many other poplar species and hybrids found throughout Pakistan, and unfortunately, the deltoides has had to share space with them over the years. In some very hot areas and on poor soils, the deltoides does not do very well. So, there is still a need for other types of poplar. But, if you are in a region North of 28 degrees latitude and deep loamy soils with available water, the deltoides can be a first class tree. In good conditions it should produce top grade logs of 10 to 12 inches diameter in 8 to 10 years.

We have begun to expand the deltoides poplar into farm nurseries and have found that farmers and industries both like this tree.

"Acts of creation are ordinarily reserved for gods and poets, but humbler folk may circumvent this restriction if they know how.

To plant a (tree) for example, one needs be neither god nor poet; one needs only own a shovel. By virtue of this curious loophole in the rules, any clodhopper may say:

Let there be a tree --
and there will be one.

If his back be strong and his shovel sharp there may eventually be 10,000. And in the seventh year he may lean upon his shovel, and look upon his trees, and find them good."

-Aldo Leopold

TREE PLANTING CAMPAIGN 1991:

Even though the national press continues to poke fun at the grandiose fanfare generated by the semi-annual launching of tree-planting campaigns, the fact is that this approach has stirred public interest in a big way. Farmers in the 10 districts of the FPD Project planted a total of 6.2 million new seedlings this spring, all produced from farmer operated and owned nurseries. This brings the project total to over 84 million since 1985.

Over the past 5 years we have seen the planting activities of farmers doubled and re-doubled many times. They are betting on the future value of trees not yet planted and grown, because they know that wood is a scarce and valuable commodity.

Current thinking among many of you has started to shift toward more active involvement with local farmers to help assure your own wood supplies in the future. Those of you who have tried working with the farmers have already discovered how much more direct and straight-forward your success will be, as compared to trying to work out special supply needs through government sources.

One of the big problems faced by our project team is how to shift the tree planting emphasis from eucalyptus to other species. Many of you, of course, need eucalyptus wood. Others have particular needs for many other species, almost all of which can be grown by farmers. Farmers are currently excited by eucalyptus for two reasons: (1) it grows fast, and (2) it needs no particular protection from grazing animals.

However, eucalyptus is still a comparable unknown from the economic side of the picture. Farmers will begin to show more interest in growing the species that you want to buy when they begin to understand the differences in market value between eucalyptus and other trees.

MARKET DEVELOPMENT:

As long as farmers continue to want to plant more eucalyptus, our job at FPD Project is going to be very much oriented to finding and testing market and utilization standards for eucalyptus. Some of the things we have found (in addition to the paper pulp potential) are:

1. Hardboard -- currently active market in Karachi
2. Particle board -- test level interest by at least 2 mills
3. Industrial fuel -- brick kilns in Attock and Chakwal are already buying some at rates higher than pulp market
4. Construction -- local on-farm use for roof poles and rafters; the market is limited at present, but prices for straight poles of 7" diameter and 20 feet length run in the range of Rs 200-250 each
5. Railroad sleepers -- limited use at present because of technical difficulties in preservative treatment
6. Pit props -- market not yet tested in Pakistan, but active in Africa and the Middle East.

If your operations call for large quantities of certain species of wood, consider developing your own nurseries to supply plants free or at low cost to farmers close by your mills. We have the technical personnel available to help you get started in this project. Or, you could make arrangements with one of the existing kisan nurseries in your Tehsil or District to grow plants of your specification. The current practice of giving free trees to farmers is a good incentive to them, but the forest departments are going to be obliged to reduce this subsidy eventually, and part of the future supply could be produced through industrial sponsorship instead of government sponsorship.

THE PAKISTAN TIMES

ISLAMABAD, February 6, 1991.



SOLAR DRYING OF LUMBER in specially designed kilns is a low-cost and practical way to decrease the amount of seasoning defects in high value wood used in the furniture industry. Personal experience in the U.S. over many years has shown that the technique is simple and effective, and the final product, when made of properly seasoned wood, is very high in customer acceptance. We have acquired the plans for construction of these kilns, and have already shared them with some of you on a trial basis. Our current intent is to build one or two as 'demonstrators'. If you are interested in this operation please contact us.



OK SHAJARKAR:

We have given our project some public identity through use of the "Lok Shajarkar" logo which is now being used by project foresters and participating farmers. YOU are also invited to use this logo wherever you feel it is appropriate to show your involvement and interest in the development of the private forestry sector in Pakistan.

We have developed a lot of motivational materials using this logo (signs, bumper stickers, pocket calendars, label stickers). It represents our commitment to the strength of the private sector to get things done, and is especially designed to give farmers a sense of identity with the effort.

If you have ideas or suggestions for new uses of this logo we would be pleased to hear from you. This is a type of advertising which we hope will continue to pay off in the future. When our USAID contract with the project ends in 1993, we want to see this type of activity continue in some way. Government will probably not be able to do it, but the wood industries can do it if it serves their purposes.

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WHY DO FARMERS PLANT TREES ?

It is not uncommon for those of us who are not in the farming business to stand back and scratch our heads sometimes when we observe what farmers do and try to understand why they do it. Even those of us who grew up on farms tend to lose track of what it is to be a farmer,, and how the farmer decides which crop to raise and which job to do next.

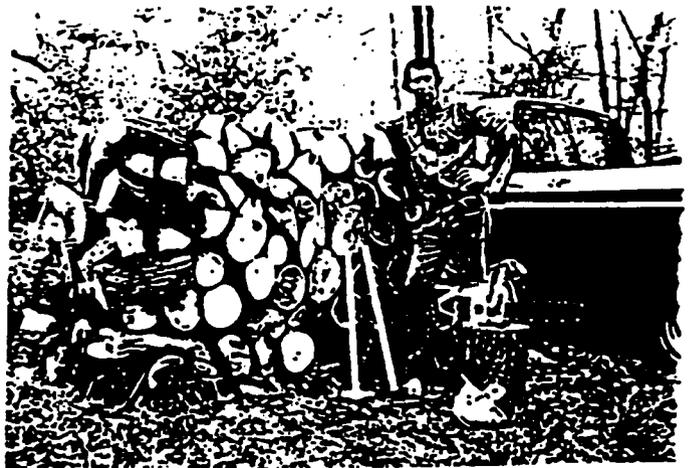
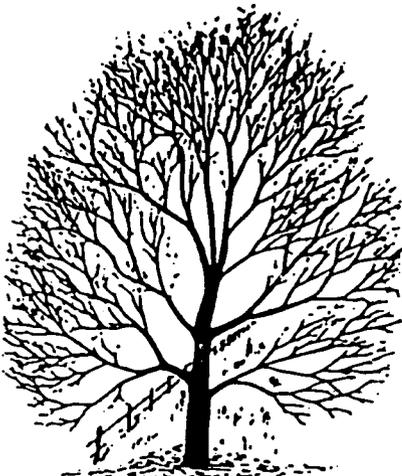
So, it is really no big surprise when I here some forest officer or some businessman (while sitting behind a desk in town) say, "Farmers will not plant trees!" Some of these world-wise sages will even go so far as to say that the reasons for this are that "they won't plant what they can't eat" or "trees to long to grow -- a farmer can't wait til next year".

In reality, it seems that the forester and the businessman are really much harder to convince of the idea to plant trees. Foresters, of course, plant trees on forest lands, but how many of them plant trees on their own lands? And how many businessmen, even those who make their living from using wood and trees, have really spent any energy on their own behalf planting trees for the future of themselves and their families?

Farmers plant trees for every human reason that we can imagine. They are not merely driven by the day to day struggle for survival, but -- just like the rest of us -- they have long-term concerns for their families. Trees mean shade in the heat of the day, fuel for the family hearth, fodder for the animals during hard times, fruit for the table, the basic materials for construction of shelter, and a form of savings.

As trees grow, their value increases rapidly. A farmer with a grove of trees has a type of bank account in which the growth is the profit on his investment, and he is his own banker. While some may take up tree "farming" just as they raise any other crop, most approach the idea as one of tree "banking".

Another thing which non-farmers don't seem to understand is the willingness of so many farmers to plant long-term trees such as shisham and phulai. It also comes as a big surprise to most people to learn that it is not the young farmers who plant these long-term trees. Most often these slower growing trees are planted by the grandfathers. Why? They certainly don't expect to live to harvest them. But, just as the young man is impatient for things to happen and to obtain fast results from everything he does, the old man has come to learn patience and faith in the future. Knowing his days are short, he is most likely to do things for the younger people in his family. The trees he plants are a legacy to his grandchildren and a symbol of his love and trust in them.



MIDDLEMEN NEEDED (trees for sale!):

One of the biggest frustrations we have at the moment is in helping farmers make the market linkage so that wood can be sold, cut, and transported to your factories. There are hundreds of wood contractors and middlemen working in the business, but we have not yet found the right way of helping farmers to link up with them. Some farmers have been taught to cut and transport their own trees, but this is not going to happen in the majority of cases.

Even though you may have entered into a contract to have a certain quantity and kind of wood brought to you, your contractor may still have trouble finding the farmers who are ready to sell NOW. If you will provide us with the name and address of your contractors, and the kind of wood you are buying, we will put out that same information in our FARM FORESTRY NEWS so that our farmers and forest officers have the information and will know who to contact.

As this is written, we know of farmers who are looking for buyers for shisham, willow, mulberry, kiker, poplar, and eucalyptus. If they can make a successful sale of their wood, these farmers will tell others, and more trees will get planted.

YOUR COMMENTS PLEASE: We are going to try this newsletter for a while to see if it is of any value or interest to you. This means that we would like to have you ideas and comments about what we say and what we are trying to do.

Please address your comments to: Gary Naughton, FFDP/WINROCK #58 Khayaban-e-Iqbal, F-7/2, Islamabad.

"Coming together is a beginning
Keeping together is progress
Working together is success."

ANNEX 13

City market reports and rates

By Our Commerce Reporter

KARACHI, June 8: Commodity market opened the week on a dull note on Saturday as leading dealers kept to the sidelines following reports of comfortable ready position.

Stray business was, however, reported mostly at the weekend levels as dealers and brokerage houses were not in a hurry to build up long positions on any of the counters. But rather were instances of selling at the prevailing prices on some sectors.

Barring gains ranging from Rs 25.00 to 30.00 in Kabli Chana, pulses showed little change in the absence of strong demand from any quarter and were quoted unchanged at the last close as did cereals and major export commodities under the lead of wheat and rice.

Oilseeds sector lacked normal trading interest both from crushers and mills and as a result prices of major seeds including rapeseed, cottonseed, groundnut, castorseed and til were held unchanged and so did cakes barring cottonseed cakes, which rose by one rupee

Oilseeds

RAPESEED (Per 40 kgs): Nawabshah 280.00 to 285.00; Punjab 280.00 to 290.00; Dedulana 260.00 to 262.00; Mirpuriana 280.00 to 285.00; Rapeseed Cakes 90.00 to 92.00; Rapeseed Oil 729.00 to 734.00; Vanaspathi Ghee (16 kg) 304.00; Til (Sindh) 640.00 to 695.00; Groundnut (Sindh) 200.00 to 225.00; Groundnut (Punjab) 340.00 to 350.00.

CASTORSEED (Per 40 kgs): Lasbela 194.00; Punjab NA; (Sindh) 190.00.

SUGAR (Per 100 kg): Sugar; 969.00 to 990.00; Gur (new) 400.00 to 700.00; Khandsari 550.00 to 650.00.

COTTONSEED: (Per 40 kgs): Sewgin 119.00 to 145.00 Cottonseed Oilcakes 49 kgs without bag 145.50 to 146.50; with bag (50 kg) 149.00 to 150.00.

OILSEEDS CLOSING: July 145.00 December, 130.70.

Tea

The following are Karachi wholesale tea market rates in rupees per lb.

CEYLON: BOPF (1013) 32.00; BOPF medium (276) 21.50; BOPF (624) 20.00; POF STD (15) 25.00; BOP (001) 24.00; STD (33) Jhno special 29.00.

BANGLADESH: (BOP) (CTC) (STD) 22.00; POF (S15) 25.50 STD (15) 25.50; Gulab 26.25; POF Khushbo 26.50.

KENYA: DI Medium 30.00 to 32.00, AB 34.00 to 36.00, MP AB Grade 36.00 to 38.00, BPI (Medium) 32.00 to 34.00, PFI (Medium) 32.00 to 34.00, PFI (AB) 36.00 to 38.00, PFI Siret 33.00 to 34.00.

CHINA: BOP Green (8117) 21.00, (9575) 17.50; (3008) 17.25.

INDONESIA: Medium D (1800) 22.00, (BP) 17.00, (BP2) 23.00 F 23.00.

Cereals

CEREALS (Per 40 kgs): Makai 190.00 to 200.00; Jowar 230.00 to 250.00.

BARLEY (Per 100 kgs): (all types) Sindh 24.00 to 288.00; Mardan 260.00 to 288.00; Wheat Mexipak 335.00; Atta (85 kgs) 325.00 to

330.00; Green peas 1000 to 1200; Mattar 375.00 to 400.00; Guwar 320.00 to 325.00; Bajra 670.00 to 675.00.

RICE (Per 100 kgs): IRRI-6 (SPL) Sindh 410.00 to 440.00; (FAQ) Polished 330.00 to 350.00; IRRI-9 Punjab 600.00 to 640; Basmati (Old) 1100.00 to 1650.00; (New) 825.00 to 925.00 Karnal 1200.00 to 1550.00 (New) NA; Sindh Basmati 475 to 550.00

BROKEN RICE (Per 100 kgs): IRRI-White 300 to 310.00; Basmati (new) 475.00 to 650.00.

Milk powder

The following are full cream milk powder prices in rupees.

Dane Instant 176.00; Coast Instant 136.00; Farm Instant (1800 grams) 95.00; Lita Instant 105.00; Safety Instant 182.00, Millic (2 1/2 Kilo) 226.50, Millic (1800 grams) 166.50, Greenland Instant (1800 grams) 175.00; Regular (2000 grams) 97.00, Red Cow 190.00; Frisienne Instant 171.00; Alban Instant 148.00; Avanti 142.00; Farm Instant 140.00, Klim Instant 135.00 (1800); 171.00; Lita Instant 122.00, Nide (1800 grams) 249.00 (2500 grams) 249.00 (1600 grams) packet 142.50 (400 grms) packet 37.00, Milk Star 115.00, Milk Land (1800 grams) 112.00, (250 grams) 241.00; Mix Me (1700 grams) 85.00; Omela Instant (400 grams) 50.00 (1800 grams) 145.00.

Pulses

PULSES (Per 100 kgs): Moong (Sindh) 900.00; Imported 650.00 to 800.00; Punjab 875.00; Masoor Dal (Sindh) No. 1 2000.00 to 2200.00; No. II 1500.00 to 1700.00; China NA; Imported NA; Turv Punjab 1100.00; Sindh 1100.00; Urad Sindh 828.00; Burma 900.00 Urad; Thailand 838.00 to 913.00; Gram Gerdia 440.00; Gram Yellow Sindh (per 100 kg) 440.00 to 450.00; Punjab 490.00 to 500.00; Gram Dal (Sanyasi) 800.00 to 825.00 Gram Dal Sindh

570.00 to 575.00; Punjab 580.00 to 590.00, Chickpeas (Kabli Chana) No. 26-28, 925.00, No. 29-30, 1300.00.

WASHED: Moong 440.00 to 450.00; Masoor 800.00; Arhar 660.00; Gram (100 kg) 575.00 to 600.00; Mash 470.00 to 480.00.

Poultry rates

Eggs: Rs. 318.00 to 322.00 per crate of 30 dozens, Broiler (Live) Rs. 28.00 per kilo, Cull Bird (Live) Rs. 22.00 per kilo.

The following are the maximum retail rates for Sunday's:

Eggs: Rs. 12.00 per dozen, Broiler (Live) Rs. 30.00 per kilo, Cull Bird Rs. 24.00.

Spices

SPICES WHOLE: (Per 40 kgs): Chillies dry New 840.00 to 860.00 (old) 450.00 to 600.00; Cumminseed (Zeera White) 1900.00; Cumminseed (Zeera Black) 2400.00 to 5000.00; Ajwan 600.00; Turmeric (Gantha) 900.00 950.00; (Lambi) 850.00 to 900.00; Corianderseed; No. I 620.00; No. II 520.00 to 550.00; Fenugreek (Methi) 600.00 to 800.00; Tamarind 520.00; Garlic 300.00 to 550.00.

Dry fruits

DRY FRUITS: (Per 40 kgs): Almond (Katha) 850.00; Almond (Girdi) 825.00; Almond (Kagzi No. 1) 1800.00; Almond (No. 2) 1200.00 Walnut in shell (No. 1) 650.00; Walnut (No. 2), 500.00; Walnut (Kernel) 1900.00; Raisin Sindukhani (No. 1) 2800.00; (No. 2) 1500.00; Raisin-II 1100.00; Apricot (No. 1), 1200.00; Apricot (No. 2), 800.00, Chilgoash (Roasted) 2000.00, Pistachio, Peshawari 6500.00; Kandhari 5500.00; Coconut (Edible) 1050.00 to 1125.00; Coconut FMS 1000.00; Dry Dates (Chhoorra) 400.00 to 600.00.

DAWN SUNDAY JUNE 9, 1991

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ANNEX 14

'One family out of every 4 homeless in Pakistan'

ISLAMABAD (APP) — One family out of every four is homeless in Pakistan. It's a shattering thought for millions who dream of a cosy, small, little piece of a heaven of their own on this earth.

"It's a fact, one family out of every four is shelterless", said Sardar Yaqub Khan Nasir, minister for environment and urban affairs.

Still all hope is not gone. The first small steps are now being taken to tackle the problem.

"In order to alleviate the problem of the homeless, and to integrate different policies, a national housing policy has been evolved", Nasir says. The policy will be announced soon. It comes after a lapse of 13 years.

According to the policy the government will play the role of a facilitator and will provide low-cost construction techniques, land, legal and institutional framework and easy access to money.

The latest official estimates show that the country is short of about 2.5 million houses. The actual fresh housing demand is estimated to be 500,000 a year whereas on average only 90,000 houses are constructed annually. In order to overcome the multiplying shortage and to clear the backlog, present construction capacity needs to be accelerated to 700,000 a year up from 90,000 a year.

Nasir said "people are unable to afford shelter in Pakistan, because an average earner requires at least 30 years of his income to build a house, whereas desired cost should not be more than three years of income."

A nation-wide shelter programme called "shelter study project", is nearing completion. It is a step towards achieving the objectives of the national housing policy.

Brian Ellis, project co-ordinator, shelter study project, says, "the main objective of the study is to raise living standard of the low-income groups, by improving availability of developed land and housing they can afford."

The project, Ellis said will also provide better land tenure security for access to finance for housing. The study is spread over all the four provinces, the northern areas and the State of Azad Jammu and Kashmir.

The programme is being run through six offices, each headed by its own team leader. The project is financed by Swiss Development Co-operation and the government of Japan, the World Bank is administering its consulting assignment.

The National Housing Authority (NHA), which co-ordinates the preparation and implementation of shelterless programmes for the low income group will imple-

ment the project. The group constitutes about 70 per cent of the total population. Prime Minister Nawaz Sharif, who is the chairman of the board of governors of NHA, has ordered that top priority should be given to provide houses to low-income groups.

The development of Islamabad — the capital city — has not either progressed as planned, for example, only 15 sectors were developed by 1986 against the planned 26. "It is imperative that three or four new sectors are developed every year", the seventh five year plan suggests, "if the nation is to meet the growing demand".

F.I. Malik, chairman of Capital Development Authority (CDA), says the authority is trying to meet the growing housing shortage in the capital. He said "CDA has planned to develop 22,000 plots during the next two years. It has decided to open two new sectors every six months, with 2,000 to 2,500 plots in each sector. Land for the two new sectors in G-12 and F-12 has been acquired, applications will be invited soon".

Houses for government employees are few and far between, only some government employees are provided houses owned by the government. Those without government accommodation feel discriminated and frustrated, especially because the housing allowance is very meagre as compared to the prevailing rents.

Estate office sources said the demand for government-owned and rental houses stood at 65,865 last year, whereas the total availability was only 31,815. This means a shortfall of 34,050 houses, or more than the availability itself. Islamabad also faces severe housing shortage for government employees. The availability in terms of percentage was only 38.73 per cent last year.

If steps are not taken, these figures are expected to shoot up because the demand for houses is far greater than the supply. The shortage is felt more acutely by the higher ranging officials as most of the houses are constructed in categories four and five — or houses are built over 18000 square feet and 1250 square feet respectively.

The seventh five-year plan (1988-93) identifies many reasons for the acute shortage of housing units. New construction is not starting in accordance with the rate of urban population growth and worsening the backlog.

According to the annual economic survey the urban population growth is 4.4 per cent a year compared to 2.6 per cent in rural population to national population growth is 3.1 per cent a year.

The crush on housing is visible in

the form of more than 2,000 slums or *Katchi abadis* which are unplanned developments in the four provinces. About 25 per cent of the total population lives in these slums. In fact nearly one-third of the nation's biggest city of Karachi, now lives in *Katchi abadis*. The situation in Lahore is quite similar. The current five-year plan lays special emphasis for providing shelter to the slum dweller.

The seventh plan also says, the scarcity in the urban areas has primarily resulted from low returns on investment in housing and very high profits on sale of open plots. Another major reason it mentions, is lack of basic infrastructure and the absence of employment opportunities in the rural areas.

The gap between the supply and demand has been continuously widening with each passing day. The housing census results indicate that rate of occupancy per housing unit had increased to seven persons in 1980 against six persons in 1972, the average number of persons per room increased to 3.0 in the same period. This overcrowding is a clear reflection of housing shortages in the country.

In 1978, the country had a backlog of 1.2 million houses, says the sixth five-year plan (1983-88) which rose to 1.4 million units in 1983 and to 3.5 million houses as of now.

Although, the physical achievements made during the sixth plan period have improved some infrastructure services provided in urban and rural areas but they were not enough. As against the target development of 550,000 residential plots for low-income families in urban areas, only 430,000 plots were developed. Similarly, 400,000 houses were constructed against a target of 670,000 units in the urban areas.

The seventh five-year plan (1988-93) identifies many reasons for the acute shortage of housing units. New construction is not starting in accordance with the rate of urban population growth and worsening the backlog. According to the annual economic survey the urban population growth is 4.4 per cent a year compared to 2.6 per cent in rural population to national population growth is 3.1 per cent a year.

Under the same programme, 100,000 houses will be constructed on seven-marla plots for *Mustahaqeen* from zakat funds, while loans will be given to others for constructing houses.

Based on a size of 8.5 persons a house, 650,000 houses will be required if demands construction of 130,000 houses a year over the next five years period presuming the village folk stay back home.

TWIN CITY
POST
APRIL 27, 1991

ANNEX 15

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Telegram : ECONOMIC
Telex : ECDIV No. 05-634

JOINT SECRETARY,
PHONE: 826684.

No. 1(1)NGO/90-III.
Government of Pakistan
MINISTRY OF FINANCE AND
ECONOMIC AFFAIRS
(ECONOMIC AFFAIRS DIVISION)

Islamabad, the 6th May, 1991. 19

Subject:- SPECIAL DEVELOPMENT FUND AID PROGRAMME
NO.391-0500 PROJECT IMPLEMENTATION LETTER NO.11.

Dear Mr. Norris,

Kindly refer to this Division's letter of even number dated the 30th March, 1991 on the subject cited above.

I am to inform you that with the approval of the competent authority, the Board of Directors of the Trust for Voluntary Organization (TVO) has been re-constituted. A copy of the notification regarding appointment of member of the Board of TVO issued by the Economic Affairs Division is enclosed. Now the conditions set forth in your letter dated March 14, 1991 have been met. USAID are requested to kindly notify their approval.

With regards,

Yours sincerely,


(Sikandar Hayat Jamali)

6/5

Mr. James A. Norris,
Director USAID,
USAID Office,
ISLAMABAD.

ANNEX 16

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Recent decisions made in Washington, D.C. regarding the Pressler Amendment will significantly affect the USAID Program in Pakistan. As a direct result of those decisions, all projects will be facing readjustments to budgets and an increase of focus is required of those projects which will continue. Extensions of the project assistance completion date (PACD) will not be considered. The best way for the Forestry Planning and Development Project to improve its focus and to carry out an orderly phase out, ensuring the sustainability of project objectives, is by altering its reimbursement procedures for the procurement of tree seedlings.

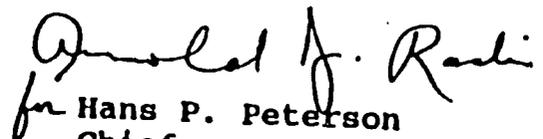
During Fiscal Year 1992, the Project will reduce seedling procurement subsidies for tree seedling procurement by 50 percent in existing project areas. This phase-down will serve as an incentive to private sector nurseries and district forests to encourage direct farmer/nurseryman contacts and sales, strengthening the procedure which has already begun in many areas.

During Fiscal Year 1993, the Project will reduce seedling procurement subsidies to 25 percent of present levels. This phase-down over a two-year period will reduce the adjustment shock to nurseries and farmers alike, which would have resulted at the end of the project, had full subsidies been carried through until the very end. This phase-down will also permit better planning and priority setting among activities slated for the remaining years of the project, and will give increased importance to budget planning for support by the Government of Pakistan during the next few years and throughout the 1990s.

USAID is grateful for the support from IGF and its staff, and we look forward to continual cooperation as the project enters its final phases.

Best personal regards.

Sincerely,



for Hans P. Peterson
Chief
Office of Agriculture
and Rural Development

cc: Mr. Abeedullah Jan
Inspector General of Forests



JOHN WILSON
Good letter, Thanks
PBT
UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT
MISSION TO PAKISTAN

Cable : USAIDPAK
Telex : 54270 PK
Telephones : 824071-79

18 South Avenue, Hanna 5,
Post Office Box 1028
Islamabad, Pakistan

May 27, 1991

Mr. Sikandar Hayat Jamali
Joint Secretary
Ministry of Finance and Economic Affairs
Government of Pakistan
Pakistan Secretariat, Block C, Room 510
Islamabad

Subject: Forestry Planning and Development Project
AID Project No. 397-0481
Project Implementation Letter (PIL) No.54

Dear Mr. Jamali:

The purpose of this PIL is to restructure the reimbursement procedures under which the Forestry Planning and Development Project will operate during its final two years.

The Forestry Planning and Development Project has experienced a number of successful components since the project was initiated in 1984. The establishment of private sector tree seedling nurseries and the partial direct sales of their seedlings to farmers is praiseworthy, and will ensure the sustainability of project activities once the project is complete in 1993. The Inspector General's Office and the Provincial and District Forestry organizations have worked hard, and the success they have achieved as evidenced by the significant increase of tree plantings is becoming widely known, domestically as well as internationally.

USAID has always had a strong interest in private sector development through the establishment of micro agri-business ventures, such as the nurseries the project has established. Sustainability of activities well into the future, and well beyond the life of existing projects, is another development principle of USAID. To carry both of those concepts forward in a workable yet sustainable way during the remaining two years of the Forestry Planning and Development Project, some adjustments will be required.

ANNEX 17

Marketing Training Needs Assessment Priorities		
Numbers Requiring Target Groups	Training	Major Subjects
University Level Training		
Federal forestry dept.		
Provincial forestry dept.		
Private sector (from large scale industry)		
Technical Training		
Technical field staff		
Regional/District level buyers		
Wood Buyers at plant level (industry)		
Small scale industry		
Large plantation owners		
Farmer Field Training		
Local concentration yards (sales depot, storage yards, etc.)		
Transporter of logs, etc.		
Small scale plantation owners		
Small scale enterprises (Shops)		
Local wood buyers		

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