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**REPORT**

**On**

**FOREST ECOLOGY TEACHING CONSULTANCY**

**At**

**PAKISTAN FOREST INSTITUTE**

**PESHAWAR**

**Submitted to:**

**Forestry Planning and Development Project  
Winrock International  
Islamabad, Pakistan**

**by**

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## EXECUTIVE SUMMARY

Courses in Forest Ecology and Soil-Plant Water Relations were taught at Pakistan Forest Institute, Peshawar, the national forestry school and research center. Instruction was supported by the publication of a revised syllabus, lecture notes, student study guides, and a field exercise for Forest Ecology, and a textbook for Soil-Plant Water Relations.

Workshops and instruction were provided on the use of plant moisture stress and atomic absorption apparatus.

Recommendations were prepared on the improvement of instructional quality and on curriculum improvement at PFI.

It was recommended that PFI prepare a plan for counterpart participation in all future expatriate teaching assignments in order to facilitate a transfer of information and techniques to future classes. PFI was also encouraged to develop a mission statement that would define how quality will be maintained with expanding enrollments, and to continue the on-going process of curriculum revision, perhaps by seeking external assistance.

## PROJECT DESCRIPTION

This project provided short-term instructional support and institutional development for the Pakistan Forest Institute (PFI), the national forestry school and research center.

Instructional support was provided by teaching courses in Soil-Plant Water Relationships and Forest Ecology to Masters degree classes. For Forest Ecology, textbooks were procured, a modern syllabus written, and a booklet containing model lecture notes, student study guides, and a field exercise was published for current and future student use. A textbook was written for the Soil-Plant Water Relationships course. Reference books on ecology, plant physiology, forestry, and plant water relationships were also procured for the PFI library.

Recommendations were solicited from students, faculty, and alumni to identify ways to improve the quality of education at PFI, and to identify research needs. Curriculum changes were reviewed, workshops held, and recommendations made.

Assistance was provided faculty learning to operate the plant moisture stress and atomic absorption apparatus.

This report was prepared for USAID - Pakistan and Winrock International.

## INTRODUCTION

Pakistan Forest Institute is situated on the extensive Peshawar University campus. The main building includes classrooms, instructional laboratories, research offices and laboratories, and a museum. Adjacent facilities include an arboretum, forest nursery, experimental plantations of such species as *Eucalyptus* and *Populus*, and faculty housing.

PFI has a three-fold mission: to conduct forestry research, to provide forestry education, and to disseminate forestry related information. Forestry research has been the recipient of substantial Forestry Planning and Development (FPD) funds. My impression is that forestry education has received much less.

Two levels of instruction, both two year programs, are offered at PFI: the Bachelors and the Masters of Science in Forestry. These programs overlap in course content. Students enter the M.Sc. program with B.Sc. degrees in a variety of non-forestry, or even non-biology undergraduate programs. Some are also admitted following the B.Sc.- Forestry program, and portions of these students studies are redundant.

M.Sc. students are supported in three ways: a few are self-supported; several are deputized from government positions to pursue the M.Sc. program as in-service training; and some are funded by FPD funds. Enrollment has swelled from less than twenty to nearly forty students per class during the availability of FPD funds. It is expected that eighty students will be

admitted to next year's B.Sc. class. This expansion has strained faculty and facilities.

Compared to the students I have instructed at three equivalent campuses in Nepal, as well as those I have observed on the main Peshawar University campus, PFI students are courteous, attentive, and disciplined. For example, students demonstrations have closed classes on the rest of the campus, but not at PFI. PFI classroom attendance is higher than on the main campus. PFI students are uniformed, live in organized hostels, and are required to participate in physical fitness and sports programs. Their ages vary from early twenties to around forty.

The M.Sc. program is demanding. The two year course includes geology and soil science, forest biology, mathematics, statistics, and biometrics; economics, silviculture, forest ecology, protection, zoology and entomology, photogrammetry, taxonomy, forest wildlife, range and watershed management, engineering and surveying, soil-plant water relations, and forest exploitation.

Peshawar is located in the well-named Northwest Frontier Province. It is an ancient city of over a million Pakistanis, and until very recently, about twice that many Afghan refugees. It is one of Pakistan's most conservative areas. All women are expected to conform to Islamic dress codes, with the possibility of being spat on, pinched, or otherwise harassed for wearing western clothes. It is considered unsafe for a woman to leave the compound of her home unescorted. Food shopping is very

limited compared to other cities, especially for fresh produce in summer. The climate is several degrees hotter and more humid than Islamabad. Security is a constant problem, with shootings caused by religious or political violence common (i.e. monthly or more). Transportation is a problem because until August no taxi service was available, leaving only dangerous motorized rickshaws or public buses as alternatives to the limited USAID motor pool.

One advantage that Peshawar has partially compensates for its other handicaps, and that is its expatriate community. I sense a "siege mentality" in this community which encourages group cooperation and concern, and good fellowship. These qualities are expressed socially through the American Club, which accepts all expatriate nationalities, and without which Peshawar would be an extremely difficult post. Regardless of the American Club, Peshawar is the most confining, restrictive, and threatening place that I have lived in Southeast Asia.

## **OBJECTIVES**

Objectives can be stated by paraphrasing the Scope of Work:

### **A. Before arriving in Pakistan:**

- 1. To review the Forest Ecology and Plant-Water Relations syllabi to determine course content**
- 2. To purchase modern text and references books for the PFI library.**

### **B. In Pakistan:**

- 1. To prepare lesson plans for the Forest Ecology and Soil-Plant Water Relations courses.**
- 2. To teach these courses.**
- 3. To present special lectures and seminars to the B.Sc. students, staff and faculty.**
- 4. To assist PFI scientists prepare laboratory manuals on the use of the atomic absorption unit, plant moisture stress instrument, and related equipment.**
- 5. To collaborate on research projects with PFI scientists.**
- 6. To demonstrate and provide instruction on the use and maintenance of new laboratory equipment.**

## **ACHIEVEMENT OF OBJECTIVES**

The two pre-departure objectives were achieved by purchase of selected references for the PFI library. Forty copies of the best and most current forest ecology textbook were purchased.

I prepared extensive lecture notes and student study objectives for Forest Ecology (see Appendix). These were published for distribution to future students. Even though no field exercises were scheduled, I prepared an exercise that was squeezed it into PFI field classes at Ghora Galli and Shinkari.

At first I prepared lecture notes for the Soil-Plant Water Relations class, but later these were expanded into a textbook because none was available for this class. This 161 page text has been adopted for the PFI class, and by the USAID-funded TIPAN project at the nearby Agricultural University both as a student text and as a model for future faculty generated texts (see Appendix).

I was not invited to present special lectures to the B.Sc. class, nor seminars to the staff and faculty.

I prepared a modern syllabus in Forest Ecology which has been circulated among PFI faculty and administrators, and is being considered for adoption (see Appendix).

Student evaluations of the Forest Ecology class were solicited by a form similar to the one used at the University of Montana. The results were very favorable, and comparable to those I have received at Montana. Student recommendations for

course improvement (e.g. more field exercises) correspond to some of my own.

Although anonymous student opinion may sometimes offend the instructor's ego, the potential benefits of evaluations for the improvement of the quality of education was recognized by PFI's Director of Education. He plans to adopt a student evaluation scheme for other courses based upon my model. The tabulation of the evaluation for my course is in the Appendix.

Recommendations were sought from students, alumni, and faculty on ways to improve the quality of education at PFI. The results were incorporated into a discussion paper (see Appendix).

PFI has proposed a revised M.Sc. curriculum which I reviewed, prepared recommendations, and made comparisons with the curriculum being proposed at Nepal's Institute of Forestry (Appendix).

The Plant Moisture Stress apparatus was made operational and I used it for student demonstrations. Two faculty were trained in its use. The instructions provided with it are clear and detailed. The theory underlying the instrument and examples of its use for forestry research are contained in my Soil-Plant Water Relations textbook. A key component of the atomic absorption apparatus, the ignition system, arrived late in my term. The instrument was set up, initial adjustments made, and standardization runs made. The instructions provided with it are complete, thorough, and clear. Flow diagrams are included that illustrate the sequence of operation. I had obtained reference

works on analytical methods for soils and plant materials which were placed in the PFI library.

No other equipment was identified as requiring instruction on use or maintenance.

An effort was made to assist a faculty member to prepare a research proposal related to the threatened juniper forests near Quetta, but the concept did not receive strong endorsement from the administration and was dropped. Although I was approached by a few other faculty early in my stay, none followed through on suggestions of research design or activity.

Given adjustments to take advantage of local situations, all conditions of the Scope of Work were satisfied.

## PROBLEMS AND SOLUTIONS

I encountered problems in three areas: professional activities at PFI, living conditions in Peshawar, and the business office of Winrock in Arkansas.

### A. Professional Activities at PFI

Foreign faculty assigned to PFI should have some experience with Asian university procedures, or be given an orientation. The style of instruction and student expectations are different than those in western universities, and in order to avoid confusion, especially with the students, careful and authoritative explanations may be necessary. This is especially the case for examinations. In contrast to examinations in western universities, the examinations in Pakistan, India, and Nepal at least, are conducted by external examiners. These examiners are nearly always selected from off-campus, and generally are either not known to the instructor, or have no contact with the instructor concerning course content. The examiner uses the course syllabus at hand to write exam questions, which are then reviewed by supervising university's examination committee. In the case of PFI, Peshawar University conducts the examination process. It is important that major changes in courses be coordinated so that students are not examined on a syllabus not being taught!

I was concerned that there would be little "technology transfer", or that my teaching activities at PFI would only affect one group of students. In the Forest Ecology class I

attempted to insure carry-over by writing, publishing, and distributing model lecture notes and student study suggestions. Since the course was given to the M.Sc. Junior class, I hoped that word of mouth concerning course content and appropriateness, and the availability of lecture notes to next year's class would encourage change. Lecture notes, student study guides, and the text were also supplied to the external examiner, whose questions this year reflected the change in course content, and that will certainly help insure permanent change. But the revised syllabus I prepared still languishes, and the old one still a component of the so-called revised curriculum still under consideration. Thus the question remains whether in spite of new textbooks, lecture notes, student study guides, and a record of exam questions, any change will occur next year. I have certainly tried to stack the deck in support of a modern Forest Ecology course as a permanent development.

The situation with the Plant-Soil Water Relations course differs in that the topical content of the syllabus was fairly good, and I used it as chapter headings in writing the text. The text is also written in sufficient detail that I expect it can be used with a minimum of assistance from an instructor. But if the new curriculum is adopted, this course will be deleted. It is alleged that the course content will be incorporated into other courses (e.g. forest botany, hydrology, etc.), but examination of the proposed new syllabi for these courses does not support that assertion. So, the primary benefit of the text may not go the

PFI, but to the Agricultural University and others, including the Institute of Forestry (forestry school) in Nepal, which is also ordering copies.

The quality of education at PFI is being eroded by several factors, not the least of which is over-crowding, too heavy of a faculty teaching load, and inadequate financial support for instructional materials and library resources. I have no solution for this problem other than to attempt to develop an awareness of it (see Appendix).

#### B. Living in Peshawar

An assignment of a few weeks is best handed by housing in a staff house or hotel, and food obtained in restaurants (but there are only a couple of "safe" restaurants in Peshawar). But as the months wear on hotel life becomes very wearying. We were very fortunate to obtain a USAID house which was still under lease, but unoccupied because the lease was about to expire. This became a cherished refuge in which we could clean and purify our own food (food purchased on the market must be washed in detergent and soaked in a clorox solution), boil our water, and retreat from external threats (24-hour security guards are provided by USAID at all residences because of security). Living in a house for this long of a tour was very appreciated.

Transportation was always a problem. Although USAID motor pool is available, it does not function after 10 p.m., is frequently not available at all, and if there is a hint of a

security threat you may be abandoned wherever you are. I fended for myself on several occasions at PFI because situations arose during the work day in which USAID believed their vehicles may be at risk if in the university area.

In summary, this is not a post to which those not familiar with foreign situations should be sent for terms of many months. I have lived off and on in southeast Asia for ten years, and it took all of my experience and resourcefulness to create a reasonably comfortable and refreshing home environment in Peshawar.

#### C. Winrock International's Business Offices - Arkansas

Winrock enjoys and deserves an excellent reputation for its accomplishments and the efficiency of its field staff in several parts of the world. By contrast with the high standards of its field activities, my experience with the "home office" has been marked by inexperience and the absence of business procedures and schedules so ordinary in other organizations as to be unquestioned. I encourage Winrock's officers to improve the quality of performance of its business office in three areas:

##### I. Preparation of Letters of Appointment.

The letter of appointment I received omitted several important terms and conditions for compensation that were tacked on as afterthoughts as situations arose during the term. The new conditions were always to my disadvantage and caused considerable hardship. At least the following points should be covered in future letters: 1. The number of hours worked per week appear to

be the exclusive basis for compensation. The activities report form should be revised as a time card, and the consultant informed of this condition. 2. When I reported to Winrock/Islamabad the Pakistan holiday schedule was reviewed with me by office personal, and I took portions of some holidays. In June the Chief of Party became concerned that I may not be allowed holidays, and ask Arkansas for instructions. Holidays were retroactively denied. This policy should have been made clear in the letter of appointment, including the provision to be able to work holidays if desired. 3. I had used Fridays for official travel, but was informed in July that work on Fridays would not be compensated as either overtime or in lieu of work on other days. This too, should have been included in the letter of appointment.

Much confusion and hard feelings can be avoided by Winrock by preparing a model letter of appointment that is complete and thorough, especially for all those terms and conditions that affect compensation.

## II. Reimbursement for Authorized Expenses

I experienced delays of many months in obtaining reimbursements, and at one point with over \$2,500 outstanding, I told the Chief of Party that regardless of inconvenience I could no longer afford to carry Winrock for any by the most urgent expenses.

Some of the delay appeared to be due to inexperience in deciding whether some items, approved in Islamabad, were legitimate expenses. These included whether I should be reimbursed for per diem when on authorized travel from my post in Peshawar, and whether gas and electric bills for the residence provided by USAID were reimbursable. Compounding this uncertainty was Winrock's refusal to return an accounting of which items had been reimbursed and which had been rejected to the contractor without repeated demands.

I encourage Winrock's officers to provide training opportunities in USAID approved reimbursement procedures to its business office personnel, to reimburse expenses reasonably promptly (e.g. within thirty days after submission), and to provide a statement to the contractor indicating which items were reimbursed.

### III. Payment of Wages

Payment of wages has nearly always been delayed for several months. One time it was declared that the delay was caused by over-worked accountants. That is no excuse.

I encourage Winrock's officers to adopt the policy of paying wages, salary or honoraria within thirty days after submission of the payment record, and providing the employee or contractor with an earnings statement so the amount and accuracy of payment can be confirmed. This policy would avoid considerable hardship, and in the end be far more efficient for the business office.

## RECOMMENDATIONS

1. PFI has a dedicated faculty and those students who have been admitted by examination and deputized from provincial departments are quite good. But it is in danger of an erosion in the quality of education because of an explosive expansion of enrollment with no additional faculty, facilities, or instructional support. Recommendations concerning this are expressed in more detail in a position paper in the Appendix. Officers concerned with education in the forestry sector should assist PFI to establish policies and priorities in this matter.
2. PFI has initiated a needed curriculum revision, but much remains to develop a modern curriculum in forestry. The current proposal misses the mark by a wide margin in my opinion, and indicates that PFI would benefit by external assistance in curriculum development. The plan used by Nepal's Institute of Forestry might be used as a model, and it has been provided to the Director of Education (see Appendix).
3. PFI should be required to submit a plan demonstrating the means by which a "technology transfer" is to be accomplished by any future expatriate teaching assignments. It is important that a PFI faculty member be identified as a counterpart, and that substantive interaction occur between the advisor and the counterpart in order to insure that the benefits go beyond just one class.
4. A great deal has been spend on research instruments which lay about unused. Sometimes this is due to lack of interest, and

sometimes by lack of support supplies. No future investment should be made in research instrumentation that is not clearly linked to an approved research program being conducted by an investigator with a record of accomplishment. Plenty of equipment is available to conduct a variety of projects if supported with expendable supplies.

5. Winrock is encouraged to improve the efficiency and operation of its business offices.