

PAKISTAN FOREST INSTITUTE PESHAWAR

The scientists and faculty members of the Pakistan Forest Institute (PFI) have been endeavoring to provide support of effective research and education for sustainable and scientific management of forests, rangelands, wildlife, watersheds, environment protection and biodiversity conservation in the country. A brief of the research and training activities carried out during the year 2005-06 is as follows:

On-going Development Projects

The institute remained involved in the implementation of four research projects during the year under report. These projects are:

Sr. #	Title of the Project	Duration (Years)	Total cost (Rs. In Mil.)	Sponsor
1	Forestry Sector Research and Development Project	(2003-2010)	193.500	PSDP
2	Strengthening Forest Products Research at Pakistan Forest Institute, Peshawar	(2005-2010)	39.250	PSDP
3	Determination of Growth, Wood Properties and Water Table Control following Afforestation under Saline & Waterlogged Conditions in Pakistan	(2005-2007)	2.998	PARC
4	Introduction of Medicinal Herbs and Spices as Crops	(2001-2006)	4.000	MINFAL

Achievements on the Projects During 2005-2006

i) Forestry Sector Research and Development Project

The following activities were carried out under this project during the year 2005-06:

- Collected 476 kg seed and distributed 144 kg seed of different tree species to provincial forest departments, tree growing agencies and farmers.
- Established 7 nurseries of various trees species at different places including PFI.
- Selected 97 plus trees and 47 die-back resistant trees of shisham.
- The seed collected from the plus tree and die-back resistant trees was used in the establishment of shisham model nursery in Changa Manga irrigated plantation.

- Established Neem provenance/seed sources trials at, D.I. Khan (NWFP) Chichawatni, Changa Manga (Punjab), Thatta (sindh) and Pasni (Balochistan)
- Establishment of two comparative trials of *Dalbergia sissoo* and *D.latifolia*, one each at PFI, Peshawar and Changa Manga.
- Establishment of shisham progeny trial on 7 acres area at Changa Manga
- Carried out grafting/budding of 1500 plants of Walnut, Almond and Chalghoza pine.
- Maintained all field experiments laid out in 2004-05 and recorded survival and growth data of trees.
- Carried out surveys for recording observations on Falcons and cranes in NWFP, Punjab and on Ramsar sites
- Prepared and printed 200 copies of wildlife act and rules for Pakistan
- Digitized 6 wildlife distribution and status maps
- Conducted surveys for shisham die-back disease in NWFP.
- Studied disease and damage to *Artemisia* and *Haloxylon* in Balochistan.
- Established one termite control trial at Bhurban and recorded observations on twig borers on 3 sites in Muree.
- Conducted surveys of poplar borers at 4 sites and collected 739 insects for identification.
- Conducted 10 short training courses on Nursery Management, GIS/RS, Wildlife, Seed technology and delivered a seminar on Wildlife for participants of various departments
- Construction work of seed lab. at Bhurban and D.I. Khan remained in progress.
- Installed a sprinkler irrigation system and a erected nursery shed at PFI.

ii) Strengthening of Forest Products Research at PFI, Peshawar

Established a data cell and started work on establishment of Energy Cell for introduction of environment friendly stoves and initiated studies on determination of physical, chemical and anatomical properties of tree species, solar kiln technology, economical and safe tree harvesting methods, determination of wood and pulping characteristics of non-commercial tree species.

**iii) Determination of Growth, Wood Properties and Water Table Control, following
Afforestation on Saline and Waterlogged Conditions in Pakistan under
ALP-PARC programme**

Established two field trials for evaluation of various salt tolerant tree species on saline farmlands and collected data for soil and water to determine the effects of tree species on soil salinity and ground water table.

iv) **Introduction of Medicinal Herbs and Spices as Crops**

Conducted agronomic trials to prepare a technology package on production of medicinal plants including *Nigella sativa*, *Plantago ovata*, *Lallementia royleana*, *Curam copticum*, *Fagopyrum esculentum*, *Glycyrrhiza glabra*, *Linum usitatissimum*, *Gingiber officinale* and *Curcuma domestica*. Worked on seed multiplication of improved plant species and disseminated information on production technology to the farmers.

New Projects

The following projects were approved during the last PSDP.

- Establishment of Chach Recreational Park for Improvement of Local Environment at Mansar Camp, District Attock
- Establishment of Recreational Park for Improvement of Local Environment at Ghourghushti, District Attock
- Establishment of a Modal Park for Improvement of Urban Environment and Recreational facilities in Attock City.

These parks would be developed through landscaping, plantations of ornamental true species and provision of healthy recreational and learning facilities. This will not only ameliorate the local environment, but also create the awareness among people and motivate them to improve the environment.

Staffing Position

Total strength of Pakistan Forest Institute during the year under report was 506 (104 Officers and 402 non-gazetted staff members).

Important Activities of PFI During 2005-2006

Pakistan Forest Institute conducted its regular research, training and technical support activities during the year. However, the main focus remained on conducting field-oriented research and training of manpower in various disciplines of forestry. The main research activities included, Improvement of tree species, clonal selection, comparison of species under saline/ waterlogged and other site conditions, preparation of yield, biomass and volume tables, watershed management, range improvement, socio-economic studies in watershed, wood properties for their strength and utilization for various products, wood seasoning and preservation, cultivation of medicinal plants and their marketing, integrated pest management, chemical composition of wood species, shisham die-back, survey of wildlife and sericulture.

Progress in Research Sector during 2005-2006

More than 60 research studies were conducted in various fields of forestry by various divisions of the institute during the year 2005-2006 as briefly discussed below:

i) Forestry Research Division

25 studies in the fields of Silviculture, Forest Genetics, Forest Mensuration, Watershed Management, Range Management, Forest Economics, GIS and RS were conducted. Specifically these studies were on the improvement of tree species (Neem, Walnut, Almond, Chalghoza, Paulownia, Poplar, Shisham), Water Use Efficiency, selection of species for saline/waterlogged areas, preparation of yield and biomass tables for forest trees, watershed management, range improvement through comparison of fodder species, socio-economic studies in watershed areas, compilation of forestry statistics of Pakistan.

ii) Forest Product Research Division

Various studies were carried out on pulping characteristics of tree species, anatomical properties of non-commercial tree species, physico-mechanical properties of indigenous tree species, wood seasoning and preservation techniques, determining the suitability of local woods for particle-board manufacturing and their peeling properties.

iii) Biological Sciences Research Division

A number of studies were conducted on cultivation and introduction of medicinal plants, investigation of shisham die-back, integrated pest management in forest and forest plantations, salinity of soil and soil water in relation to change of water table through afforestation, chemical composition of locally grown wood species as raw material for pulp and paper, nutritive value of tree leaves, vegetative propagation of mahogany, survey of falcons, cranes and waterfowls.

iv) Sericulture Research Division

Studies were carried out on silkworm rearing, breeding, purification, silk seed production, diseases of silkworm, cultivation and yield of mulberry varieties their insect pests and diseases.

Education and Training

The Forest Education Division continued its activities on training of M.Sc. and B.Sc. forestry students through regular classes at PFI and conducting their field study tours and examinations. During the year, 47 M.Sc. and 50 B.Sc. students were enrolled

for the session 2005-2007. In addition 3 short courses for Barani Area Development Project were also conducted

Extension and Publicity

Research outcomes were published in the form of scientific papers, popular publication, brochures and disseminated technical information to foresters, farmers, individuals, NGOs, and industrialists. Moreover, a number of visits of University, College and School students to PFI were conducted.
