

**IALC SUSTAINABLE DEVELOPMENT OF DRYLANDS IN ASIA AND THE
MIDDLE EAST PROJECT AFGHANISTAN-PAKISTAN COMPONENT**

**CAPABILITY STATEMENT
OF
NWFP AGRICULTURAL UNIVERSITY
PESHAWAR**

BY

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THE NWFP AGRICULTURAL UNIVERSITY SYSTEM

The North West Frontier Province of Pakistan Agricultural University (NWFAU) is the only University in Pakistan which is based on the concept of US Land Grant System in that it has integrated the agricultural education, research and outreach activities in North West Frontier Province of Pakistan. This concept was designed and implemented by the collaborative efforts of the University of Illinois at Urbana Champaign and Southern Illinois University at Carbondale under a Title-XII Grant funded by the United States Agency for International Development. The NWFAU was modernized through the creation of a network of education, research and extension that serves the people. The Transformation and Integration of Provincial Agricultural Network (TIPAN) project was born. Under the TIPAN Project the University was modernized as a dynamic institution that now serves the people through high quality education, research and transfer of new technology to the farmers.

Under the TIPAN Project, the physical infrastructure, human resource development and institutional development were carried out by top class American Universities, American Construction and A&E firms. Today the NWFAU is a modern University in Asia equipped with: (1) world class trained faculty (131 teaching and research staff members received their Ph.D and Masters degrees from various US and European Universities); (2) high quality education through improved teaching methods using pedagogical tools and improved curricula to meet the developmental and professional needs; (3) expanded modern facilities with construction of more than 500,000 sq.ft. of buildings and infrastructures (4) more than \$ 5 million worth of laboratory equipment installed at the University and the research stations; (5) problem-oriented research that strengthens the agriculture and rural area and serves the people. The modern facilities, trained faculty and researchers and resources are the hallmarks of a modernized NWFAU which, have expanded as well as improved the products and services of the University system. The University's teaching program has been expanded to include a Ph.D program in agricultural, animal and rural social sciences and masters in business and enterprise development and computer science. With the expansion of output and services offered by the University's system, the quality of education has been improved at the same time. The education offered by the University system is now valued not only by the students, parents and entrepreneurs of Pakistan but by other countries of the region. The student population has increased by 197% from 800 in 1994 to 2383 including 354 female students in 2002. Currently 18 students from Afghanistan are studying in different disciplines of agricultural and animal sciences at the Bachelor and Master levels. The Afghan students have been sponsored by the federal Ministry of Education, Government of Pakistan. Middle East Countries including Saudi Arabia, Kuwait, Iraq and other have now approached the NWFAU for placement of their students at the NWFAU in agricultural, animal and rural social sciences and business and enterprise development.

RESOURCES OF THE NWFPAU SYSTEM

The NWFP Agricultural University is spread over an area of 397 acres. Academic buildings cover an area of 70 acres. 327 acres are under the University's farm and are used for research purposes by the faculty and students. In addition to the 397 acres, an area of about 2029 acres are owned by the agricultural research institutes, stations and sub-stations of the Agricultural Research System which are an integral part of the Agricultural University System. This area is being used for horticultural and cereal crops research purposes by the agricultural researchers. Thus the total area available for horticultural and cereal crops research to the faculty, researchers and students is 2426 acres. The total budget of the NWFPAU system is Rs.235 million including NWFPAU Rs.96 million and Agricultural Research System Rs. 139 million with a trained professional staff of 501 including 180 faculty members at the NWFPAU and 321 research scientists at the Agricultural Research Institutes and stations. Seventy-five percent of the total faculty of 180 had received Ph.D and Masters training in American and European Universities. Total support staff of the entire NWFPAU system is 1784 including 580 at the NWFPAU and 1204 at the Research Institutes and stations. Academic buildings cover an area of 663,272 sq.ft including 422,680 sq.ft new facilities built under the TIPAN and 240,592 sq.ft old facilities. The NWFPAU has eleven student hostels housing 1600 students. The NWFPAU system's teaching and research activities are supported by a big Library consisting of 67697 sq.ft area including both old and new facilities. The Library has 120,000 technical and professional books and has subscribed to 25 foreign journals and 56 local journals and periodicals. The Library is equipped with a Computer laboratory, which is used by students and faculty members for research purposes. The service is used for referencing and electronic data retrieval for research purposes. In addition the NWFPAU is equipped with nine computer labs for use by the students. Each Agricultural Research Institute and Research Station is also equipped with a computer lab. In addition, the NWFPAU's teaching and research activities are supported by a well established Communication Department within the Outreach Directorate to hold seminars, conferences and field days.

TEACHING PROGRAM

The NWFPAU has a mission of providing high quality, innovative and relevant degree programs in different disciplines, which meet the needs of the real world and prepare students for a challenging and rewarding career. It provides excellent facilities including a well-equipped library as well as computer laboratories. It has a modern infrastructure including indoor and outdoor sports. There are five faculties:

(1) **Faculty of Crop Production Sciences**

The Faculty of Crop Production Sciences is headed by the Dean Professor Dr. Fazli Hayat Taj. He is responsible for quality assurance and coordination of teaching and research activities of the following six departments of the Faculty:

1. Agronomy
2. Horticulture
3. Plant Breeding and Genetics
4. Soil and Environmental Sciences
5. Agricultural Mechanization
6. Water Management.

Department of Agronomy

The Department of Agronomy is headed by Chairman Professor Dr. Khan Zada. The Department aims at providing quality academic training in crop production, crop physiology, seed technology and arid zone agronomy. The Department offers courses leading to B.Sc., M.Sc. and Ph.D in agronomy. Sixty-five percent of the faculty members are Ph.D trained in U.S and European Universities. The department conducts problem-oriented research and has established linkages with national and international research organizations, both within the country and abroad, like ICARDA in Syria, ICRISAT in India, CIMMYT in Mexico, University of Bonn in Germany, PARC and NARC in Islamabad, Agricultural University Faisalabad in Punjab and Agricultural University Tandojam, Sind.

Department of Horticulture

The Department of Horticulture is headed by Chairman Professor Dr. Faridullah Khan Wazir. The Department provides quality education in its three main disciplines, i.e. Pomology, Olericulture Landscape and Ornamental Horticulture leading to Bachelor, Master and Ph.D degrees in horticulture. Ninety one percent of faculty members were trained in US and European Universities for Ph.D and Master level degrees. Seventy-three percent of the faculty members are Ph.D. The department provides training in production practices, insects, pests and disease control, and counseling regarding day to day problems in various disciplines of horticulture. Currently the department is conducting research on guava propagation, Litchi production, introduction of dwarfism in Peach and Apricot and tea cultivation. The Department has a 38 acres Horticulture Farm for its research purposes. An ornamental plant nursery is used for students practical.

Department of Soil and Environmental Sciences

The Department of Soil and Environmental Sciences is headed by Chairman Professor Dr. Amanullah Bhatti who received his Ph.D from the Washington State University under the TIPAN Project. The department provides quality education in soil and environmental sciences leading to B.Sc (Honors), M.Sc and Ph.D. Ninety one percent of faculty members have received their Ph.D degrees from American and European Universities.

Apart from teaching, the department is implementing a viable program of research on the management of soil resources with the objectives to familiarize and inculcate the students in the theoretical and practical significance of soil problems and enable them to conduct research in different fields to increase per acre yield of agricultural crops through improved agronomic and biological methods.

Department of Plant Breeding and Genetics

The Department of Plant Breeding and Genetics is headed by Chairman Professor Dr. Muhammad Siraj Swati. Almost 100% of the faculty members were trained in U.S. Universities. The Department offers quality education at the graduate and undergraduate levels in Crop Improvement, Cytology, Cytogenetics, Biometry, Molecular Genetics and Tissue Culture. The Department has well equipped laboratories to run any level research project, objective based breeding programs in wheat, maize, pulses, sugarcane, tobacco and oilseed crops. The department is patent to some crop cultivars in wheat, maize and sugarcane crops. It has also been maintaining quality seed production program. The department has been disseminating 50 MT quality seed to the farmers each year and has started its own objective-based hybridization programs in different crops. Development of cultivars for drought, saline and cold tolerance is the top priority of the department.

Department of Water Management

The Department of Water Management is headed by Chairman, Professor Dr. Muhammad Jamal Khan. Dr. Khan received his Ph.d in Soil Salinity from University of Arizona, under the TIPAN Project. More than 50% of the faculty were trained in U.S. Universities. The Department of Water Management is dealing with a wide range of water management issue i.e. irrigation requirement, water distribution, interaction of irrigation and drainage, conveyance losses and water harvesting. To broaden the scope of the department new courses have been added in the field of water resources and environmental management. The Department aims to develop highly skilled human resources and to conduct research in the field of Water Resources and Environmental Management with emphasis on management of surface and groundwater resources. Currently the department is providing short-term training to Afghan nationals in the area of water-management.

Department of Agricultural Mechanization

The Department of Agricultural Mechanization is headed by Mr. Masood ur Rahman who has received his Master in Agricultural Mechanization from Southern Illinois University at Carbondale under the TIPAN Project. The Mission of the Department is to improve quality of farm life by mechanizing agriculture and to develop human and economic resources through teaching undergraduate and graduate students the fundamental and problem solving skills related to agriculture engineering and technology. The department aims at building an understanding and ability in the safe application and uses of farm mechanization, in order to achieve an environmentally sound, sustainable agriculture and to engage graduate students and faculty in creative and scientific research that adds to the body of knowledge, techniques and processes for scientific community, extension workers, students and agricultural producers.

(2) **Faculty of Crop Protection Sciences**

The Faculty of Crop Protection Sciences is headed by Dean Professor Dr. Sher Hassan who is responsible for quality assurance and coordination of academic activities of the four Departments of the Faculty. The Faculty includes the following four departments:

1. Plant Protection
2. Plant Pathology
3. Entomology
4. Weed Science

Department of Plant Protection

The Department of Plant Protection is headed by Chairman Professor Dr. Said Khan Khalil.. The Department is actively involved in teaching, applied research, and outreach activities of the NWFPAU system. The Department of Plant Protection offers courses at the graduate and undergraduate levels and awards B.Sc., M.Sc. and Ph.D degrees. Besides teaching and research, the department organizes lectures, seminars, workshops and conferences on national issues related to plant protection. The Department of Plant Protection is well equipped with two major labs and two mini labs. Most textbooks are available at the main library. The most researched areas are grain storage management, fruit flies, cereal aphids and biological control. One priority being considered in the future plans is the establishment of Insect Pathology and Bio-Control Labs. Other areas of interest are Eco-toxicology, insect bio-diversity, IPM Institute, Nature Conservation and Host Plant Resistance.

Department of Plant Pathology

The Department of Plant Pathology is headed by Chairman Dr. Saifullah. Important areas of research for academic degrees leading to M.Sc and Ph.D are Mycology, Plant Virology, Phytonematology, Physobacteriology, Biological control and Mushroom Biotechnology. Plant diseases pose a serious threat to the agricultural productivity and quality of our cereals, tobacco, fruits and vegetable crops. To tackle the problem, the Department of Plant Pathology has launched a three-pronged, activity- high quality education, problem-solving research, and effective communication of results found for creating awareness among the farming community.

Department of Entomology

The Department of Entomology is headed by Chairman Professor Dr. Muhammad Naeem. Dr. Naeem received his Ph.D in Entomology from the University of Illinois at Urbana Champaign, under the TIPAN Project. Eighty percent of the faculty members of the Department of Entomology were trained in different universities in the USA. The Department offers courses in areas of Economic Entomology, Insect Morphology, Insect Physiology, Insect Systems and Insect Behavior. The Department has three well equipped laboratories. The facilities available to students in these laboratories include good quality microscopes, access to different groups of insects for morphological and taxonomic studies and

equipment used in the areas of Insect Physiology, Biological and Microbial control of insects. The University maintains a large experimental farm on the campus, which provides students and faculty with land and labor facilities for their research. The Department of Entomology has established strong linkages with the agricultural research system, Nuclear Institute of Food and Agriculture (NIFA), Peshawar and National Agricultural Research Center (NARC), Islamabad. Various research projects of the Department such as projects of Biology and control of Tobacco cutworms, grain storage management in NWFP, insect pests of sugar beet, integrated control of insect pests of borers of sugarcane and stone fruits in NWFP were funded by different donor agencies.

Department of Weed Science

The Department of Weed Science is headed by Chairman Professor Dr. Khan Bahadar Marwat. Dr. Marwat received his Ph.D. in Agronomy (Weed Science) from University of Illinois at Urbana Champaign, under the TIPAN Project. In the light of recommendations of the TIPAN and ARP-II team and Weed Science Society of Pakistan, the NWFP Agricultural University emerged as a pioneer to initiate a separate full-fledged department of Weed Science among the galaxy of its departments in the year 2000. The Department of Weed Science is the headquarters of the Weed Science Society of Pakistan (WSSP) and the Pakistan Ethnobotanical Society (PES). The Pakistan Journal of Weed Science Research, an official publication of Weed Science Society of Pakistan is being published from this Department. The Chairman, of the Weed Science Department is also the President of the Pakistan Weed Science Society of Pakistan and Pakistan Ethnobotanical Society. It is also a credit that the World Wide Fund (WWF) has declared their resource center to be established here in this Department. The Department of Weed Science provides quality education and research facilities to the graduate and undergraduate students. Currently the Department is working on four research projects which were funded by the PARC and WWF in Pakistan.

(3) Faculty of Nutrition Sciences

The Faculty of Nutrition Sciences is headed by the dean Professor Dr. Iqtidar Ahmad Khalil who is responsible for quality assurance of quality education and research of the three departments of the Faculty which are:

1. Agricultural Chemistry
2. Food Sciences and Technology
3. Human Nutrition

Department of Agricultural chemistry

The Department of Agricultural Chemistry is headed by Chairman Professor Dr. Hamidullah Shah. The major courses taught in the department include: Biochemistry, Food Chemistry, Pesticide Chemistry, Phytochemistry, Bio-analytical and Bio-physical chemistry, Biochemical techniques, Enzymology, Endocrinology, Biotechnology, Agricultural Microbiology and environmental chemistry. Sixty percent of staff had received Ph.D degrees from foreign universities. The department has qualified faculty and excellent teaching and research programs to produce quality graduates who possess the potential of significant contribution towards national prosperity. Most of the research work has been published in

national and international journals. Specialized laboratory instruments and sophisticated equipment are available for graduate students' research.

Department of Food Sciences and Technology

The Department of Food Science and Technology is headed by Chairman Mr. Bakhtiar Hussain. In addition to providing quality education the Department is engaged in research on post harvest handling and processing of fruits and vegetables. The department has two major research laboratories, which has facilities for routine chemical and microbiological analysis of fresh and processed fruits and vegetables. Activities of the Department include advisory services to the food producers, food processors, extension workers, scientists and colleagues in other disciplines as well as people interested in food preservation.

Department of Human Nutrition

The Department of Human Nutrition is headed by Chairman Professor Dr. Parvez Iqbal Paracha. Dr. Paracha received his Ph.D in Human Nutrition from the University of Connecticut under the TIPAN Project. The Department's mission is to impart quality education to the students and to undertake research in promoting the health and nutrition of the people. It is also aimed to tackle the nutritional problems of the country with broad-based research and intervention programs. The scope of the department includes promoting food security by increasing mass awareness through nutrition education and preventing malnutrition by undertaking applied research activities. The Department has well-equipped laboratory facilities capable of undertaking biochemical analysis of food, blood and urine samples for macro and micronutrients estimation. The central library of the University has a very good stock of nutrition books, journals and periodicals. Research is directed through assessment, intervention and prevention of micronutrient malnutrition.

(4) Faculty of Rural Social Sciences

The Faculty of Rural Social Sciences is headed by Dean Professor Dr. Zahid Hussain. The Faculty comprises two major degree awarding departments and an institute namely Agricultural Economics, Agriculture Extension Education and Communication and the Institute of Development Studies. The Faculty also has three supporting departments which cater the needs of all the teaching departments of the University in the field of basic sciences. The supporting departments are (1) Department of Statistics, Mathematics and Computer Science; (2) Department of Islamic Studies/Pak Studies; and (3) Department of English. Dean Prof. Dr. Zahid is responsible for quality assurance and coordination of teaching and research activities of the following three departments of the Faculty:

- 1) Agricultural Economics and Rural Sociology
- 2) Extension Education and Communication
- 3) Institute of Development Studies

Department of Agricultural Economics

The Department of Agricultural Economics is headed by Chairman Dr. Munir Khan, a TIPAN participant. Fifty-five percent of Faculty members received their Ph.D and Master levels degrees from US and European Universities. The Department offers Master and Ph.D degrees in Agricultural Economics with specialization in Agricultural Marketing, International Trade, Agricultural Policy and other related areas. The Department of Agricultural Economics provides quality education by preparing students to analyze economic problems systematically and objectively and to come up with practical solutions. It seeks to equip students for a wide range of roles in the private sector as well as in the public sector. The Department of Agricultural Economics offers an introductory course in agricultural economics and development issues, rural sociology and farming systems management that are taken by all students in the University. Elective courses in accounting and entrepreneurship are also offered. Most of the students complete M.Sc (Honors) degree in agricultural economics. The first year of post graduate work is devoted to advanced courses. These courses include: agricultural production economics, advance micro and macroeconomics, research methodology, advance marketing analysis, agriculture price policy analysis and resource economics. In the second year the students prepare a thesis based on their problem-oriented research.

Department of Extension Education and Communication

The Department of Extension Education and Communication is headed by Chairman Dr. Muhammad Akram. The department aims at establishing effective linkages with provincial directorate of extension education through outreach directorate of the NWFP Agricultural University for quick and more effective problem solving of the agriculturists. At this department students of M.Sc (Hons) choose topics of original research regarding farmers problems.

Institute of Development Studies

The Institute of Development Studies (IDS) is headed by Director/Chairman Professor Dr. Mir Kalan Shah. IDS is a unique inter-disciplinary unit of the Faculty of Rural Social Sciences that undertakes teaching, short-term training and research. Seventy percent of faculty had received Ph.D and Master degrees from different Universities of US and European Countries. In teaching the Institute offers the courses of B.Sc (Honors), Rural Development, M.Sc. (Honors) Rural Development and Ph.D Rural Development, M.A. Economics, Ph.D Economics, M.A. Rural Sociology and Ph.D Rural Sociology. As far as research is concerned, the IDS conducts studies and provides training leading to sustainable improvement of resources use, productivity and socio-economic well-being. The research work is related not only to NWFP itself but also to the tribal areas, neighboring economies and national programs and policies. The Institute has its own journal i.e. Journal of Development Studies and a library with a collection of 23,000 books and a well maintained computer lab.

(5) Faculty of Animal Husbandry and Veterinary Sciences

The Faculty of Animal Husbandry and Veterinary Sciences is headed by Dean Professor Dr. Taj Muhammad Khan who received his Ph.D.in Animal Science (Sheep and Goats) from the University of Wyoming under the TIPAN Project. Dr. Khan is responsible for quality assurance of teaching and research activities of the following three departments of the Faculty:

1. Animal Nutrition
2. Poultry Sciences
3. Livestock Management and Animal Breeding

Department of Animal Nutrition

The Department of Animal Nutrition is headed by Chairman Professor Dr. Ghulam Habib. Eighty percent of the faculty members have received their Ph.D degrees from American and European Universities. The department is running degree programs of B.Sc. (Honors), M.Sc. (Honors) and Ph.D. in Animal Husbandry with thesis research in Animal Nutrition. The Department has two separate well equipped laboratories for undergraduate and postgraduate studies. These laboratories together with a new livestock complex on the campus offer facilities for students practical and research that integrate the whole range of disciplinary fields from basic to applied animal nutrition. The courses offered by the Department prepare students to effectively assume leadership in the livestock sector with a strong background of Animal Nutrition This will allow them to serve animal husbandry needs of the farmers and industries, to conduct basic and adaptive research for improving livestock nutrition and to increase farm income in low (small holder) and high input (commercial) systems to develop linkages with national and international organization in education research and development programs for sustainable development of livestock sector.

Department of Poultry Sciences

The Department of Poultry Sciences is headed by Chairman Professor Dr. F.R. Durrani. Sixty percent of the faculty members have received their Ph.D in Poultry Sciences. The Department is actively involved in teaching graduate and undergraduate students, conducting research trials and assisting the farming community in applying appropriate management tools and problem solutions regarding poultry production. Poultry production is one of the significant livestock production activities providing better opportunities for income generation and self-employment. Keeping in view the future prospects and challenges in this sector, the department has extended its research activities to farm location problems and field oriented activities. At present the department has three experimental units and two laboratories with modern equipment. The Department has modern incubators for hatching eggs on a commercial and experimental basis. The Department has established linkages with other research organizations such as Poultry Research Institute, Rawalpindi and offers special training for poultry farmers and organizations.

Department of Livestock Management and Animal Breeding

The Department of Livestock Management and Animal Breeding is headed by Chairman Dr. Nazir Ahmad. All of the faculty members (100%) are Ph.D's in Animal Sciences from different U.S. Universities. The activities of the Department include teaching undergraduate and postgraduate students, conducting problem-oriented research in various aspects of Livestock management, breeding and dairy technology. The department has established linkages with provincial livestock development organizations for transfer of technology to local farmers. The department is offering fifty-two courses and has one operational Animal Husbandry laboratory. A full-fledged dairy laboratory with the facilities for the quality assessment and processing of milk has also been established. A project of Rs.1.94 million has been awarded to the department under the ALP-PARC program. The department has also established a

dairy farm at the University campus for teaching and research purposes. Twenty acres of forage land is also available with the Dairy Farm for fodder production and research. The farm has greatly strengthened the livestock production, research and teaching potentials of the faculty. Arrangements are in progress to introduce machine-milking at the farm and also to establish a dairy processing unit with the facilities to produce pasteurized milk, cheese, butter and yogurt.

(6) **Institute of Business and Management Sciences/Computer Sciences**

The Institute of Business and Management Sciences/ Computer Sciences (IBMS/CS) has since completed five successful years of its establishment and is now one of the leading institutes of the country, providing quality education for private sector development focusing on enterprise development, management, computer sciences, information technology and educational research. The institute is equipped with trained faculty representing variety of disciplines and specialization, five computer laboratories with the latest version of Pentium IV computers, one electronic laboratory and a Virtual Research House. The faculty members are using pedagogical tools such as overhead, slide and multimedia projectors as teaching methods in addition to seminars, case studies and educational tours of private sector enterprises. The quality of education is so valued by the private sector entrepreneurs that almost all of the students who have graduated from the University have been accepted for employment by the private sector enterprises. Currently the institute is providing quality education at the bachelor and master levels in the areas of Bachelor in Business Administration (BBA), Master in Business Administration (MBA), Bachelor in Computer Science (BCS), Bachelor in Information Technology (BIT), Bachelor in Commerce (B.Com), Master in Computer Science (MCS), Master in Information Technology (MIT) and Master in Commerce (M.Com). In the near future the University plans to expand the business and computer science program to Ph.D level. Business education focuses on private enterprise development and management.

(7) **Institute of Biotechnology and Genetics Engineering**

Recognizing the future innovative role of biotechnology in industrial development the NWFP Agriculture University accepted the future challenges and decided to integrate Biotechnology into its education and research system through establishment of the Institute of Biotechnology and Genetic Engineering NWFP Agricultural University Peshawar. The Institute is a teaching and research institution engaged in training and research in the field of biotechnology and genetic engineering, by focusing both education and research on solving the agricultural problems of NWFP in particular and Pakistan in general. The Institute is well equipped with modern laboratories essential for conducting of basic and applied biotechnology research of international standard. Currently thirteen students are working for their M.Phil programs in Biotechnology and Genetic Engineering at the Institute of Biotechnology and Genetic Engineering, NWFP AU. The Institute also offers Ph.D degrees in biotechnology and genetic engineering. The institute is headed by Dr. Zahoor Ahmed Swati, Director, IBGE. Dr. Zahoor has received his Ph.D from South Dakota State University, USA under the TIPAN Project. Currently the institute is running the following projects:

- In Vitro Development of stress Tolerant Plants in wheat

- Genetic improvement of Brassica Oilseed (Aphid Resistance) by integrated use of conventional & molecular biological approaches (ALP Project).
- Genetic Improvement of Brassica Oilseed Yield through integrative use of conventional and molecular biological approaches.

AGRICULTURAL RESEARCH SYSTEM OF NWFPAU

The Agricultural Research System of the NWFPAU comprises five agricultural research institutes and seven research stations/substations which are located in different ecological zones of the North-West-Frontier Province (NWFP). These research institutes and stations are conducting research on different crops in different ecological regions. The main thrust of agricultural research conducted by the research system on 2029 acres of land is shown below.

S.No	Agricultural Research Institute /Research Station/ Sub-Research Station	Acres	Main Crops
1.	Agricultural Research Institute, Tarnab	200	Mixed
2.	Cereal Crops Research Institute, Pirsabak, Nowshera	437	Wheat, Maize and others
3.	Sugar Crops Research Institute, Mardan	96	Sugarcane, Sugarbeet
4.	Agricultural Research Institute (North), Mingora, Swat.	25	Fruits, Vegetables, Rice, Potato, Oilseeds
5.	Agricultural Research Sub-Station, Mansehra	25	Maize, Wheat, Oilseeds
6.	Agricultural Research Sub-Station, Abbottabad	68	Potato
7.	Potato Sub-Station, Batakundi	50	Potato
8.	Agricultural Sub Station, Kaghan	46	Wheat
9.	Agricultural Research Institute, (South) D.I. Khan	1025	Mixed
10.	Agricultural Research Sub-Station, Serai Naurang	25	Mixed, including sugarcane
11.	Agricultural Research Substation, Karak	29	Gram
12.	Agricultural Research Substation, Chitral	3	Mixed

CURRENT LONG-TERM DEGREE PROGRAMS OF NWFPAU

The long-term degree programs of NWFPAU for the calendar year 2002 in different disciplines are as follows:

S.No	Discipline	Ph.D		M.Phil		Master		Bachelor		Total
		Male	Female	Male	Female	Male	Female	Male	Female	
1.	Agriculture/ animal Husbandry	61	3	-	-	330	58	553	161	1166
2.	Biotechnology and Genetic Engineering	-	-	11	2	-	-	-	-	13
3.	Economics	-	-	-	-	9	9	-	-	18
4.	Rural Sociology	-	-	-	-	13	2	-	-	15
5.	MBA, MCS, MIT, M.Ed	-	-	-	-	445	48	607	71	1171
	Total									2383
	AFGHAN STUDENTS SPONSORED BY MINISTRY OF EDUCATION GOP	-	-	-	-	6	-	12	-	18

LONG-TERM AND SHORT-TERM TRAINING PROGRAMS AT NWFPAU SYSTEM

LONG-TERM TRAINING

The NWFP Agricultural University offers long-term training programs leading to degrees of B.Sc. (Honors), M.Sc (Honors) and Ph.D in all disciplines of agricultural, animal and rural social sciences and BBA, BCS, BIT, B.Com, B.Ed, MCS, MBA, M.Ed in business and computer sciences. These academic programs are discussed below.

BACHELORS PROGRAMS

The B.Sc. (Honors) is a four years program after twelve years of schooling. Two types of students group having F.Sc. (Pre-engineering) and F.Sc (Pre-medical) compete for entry to the B.Sc (Honors) program. Both groups of the entrants have different capabilities. For example, the students of F.Sc (Pre-engineering) lack background in biology, while students of F.Sc (Pre-medical) lack background in mathematics. This gap in capabilities of the students have been filled through improvement in curriculum. Under the new improved curriculum the students with background of F.Sc (Pre-engineering) are required to take preliminary biology courses and the students of F.Sc(Pre-medical) background are required to take elementary mathematics courses in the first year of their enrolment to the B.Sc (Honors) program. The B.Sc (Honors) program starts in Spring Semester starting in January each year. In the business school, the degrees offered at the bachelor levels are Bachelor in Business Administration (BBA),

Bachelor in Computer Science (BCS), Bachelor in Information Technology (BIT), Bachelor in Commerce (B.Com), and Bachelor in Education (B.Ed). For the BBA and B.Com the admission requirements are FA or FScs, for BCS, BIT the admission requirements are F.Sc in pre-medical or pre-engineering or Intermediate in General Science, Computer Science or Commerce.

MASTERS PROGRAMS

After completion of B.Sc(Honors) the students enter the M.Sc. (Honors) programs in agriculture, animal and rural social sciences disciplines of the University.. Students from other Universities having B.Sc(Honors) in respective discipline are eligible for admission. For MBA, MCS and MIT the admission requirements are BA/B.Sc Masters programs are for two years of duration. Students can enter either in the Spring or Fall semester. In addition, the Business School of the NWFP AU offers Bachelor in Education and Master in Education programs.

PH.D PROGRAMS

Ph.D programs are offered in almost all disciplines of the NWFP AU including Agronomy, Horticulture, Soil and Environmental Sciences, Plant breeding and Genetics, Water Management, Entomology, Plant Pathology, Plant Protection, Weed Science, Agricultural Chemistry, Human Nutrition, Food Science and Technology, Agricultural Economics, Extension Education and Communications, Economics, Rural Development, Rural Sociology, Animal Husbandry, Animal Nutrition, Poultry Sciences, Livestock Management and Animal Breeding and Biotechnology and Genetic Engineering. Ph.D programs are of four years duration and students can enroll either in Spring or Fall Semester.

The long term training programs leading to Bachelor, Master and Ph.D degrees offered by the NWFP AU are shown in Annex-I.

SHORT-TERM TRAINING PROGRAM

The NWFP AU has been providing short-term training in agriculture, animal, rural social sciences and business disciplines to the private and public sector organizations of Pakistan. As far as the short term training programs for participants from Afghanistan are concerned, the NWFP AU is currently providing short-term training to Afghan students in the water management area. Agriculture is the largest sector of Afghan's economy of 22 million people. Before war, the Afghans were producing about 80% of their food requirements and the remainder was imported from Pakistan. Afghan's agriculture was dominated by horticultural crops which accounted for about 40-50% of Afghanistan's total export. Therefore, the training in horticultural crops is the key area on the priority list. Another problem of Afghanistan as reported by various donor agencies is water management; as water is a very crucial input for agricultural production. More importantly, in order to make Afghan people stand on their own feet by developing their own businesses, enterprise development and management skills training program for young and moderately educated Afghan people becomes essential. Currently the training need assessment of the agricultural sector of Afghanistan is not available. Therefore, based on the above assessment we have developed the following, short-term training programs for Afghanistan's participants, as a starting point, for the year 2003:

Business Related

- Enterprise Development and Management Skills Program for young and moderately educated people;

Horticultural Crops

- Orchard Management;
- Plant Protection Measures
- Preservation of Fruits and Vegetables (Drying of Apricot)
- Post-harvest management and marketing skills

Water Resources and Irrigation and Water Management

- Training of Trainers Course on Sustainable Use of Water Resources;
- On-the-job Training course on Irrigation Infrastructure Development and Water Management Practices for Agricultural Engineers and Agronomists

The detailed programs for the above mentioned short-term training have been developed and presented in Annex-II. However, future short-term training programs will be developed only after need assessment of short-term training is done in consultation with the USAID/Kabul and Agriculture Ministry of Afghanistan.

