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**END OF TOUR REPORT - JACK J. BOND
RESEARCH PROGRAM SPECIALIST
15 FEBRUARY 1988 - 15 FEBRUARY 1990**

**Submitted to the
Northwest Frontier Province
Agricultural University
Peshawar, NWFP, Pakistan**

and

**the U.S. Agency for International Development
Mission to Pakistan**

**A Report of Contract 391-0488-C-00-5001-00
The Transformation and Integration of the Provincial
Agricultural Network (TIPAN) Project**

by

**Office of International Agriculture
University of Illinois at Urbana-Champaign
Southern Illinois University at Carbondale**

I. Introduction

Dr. Raymond G. Cragle served as the first Research Program Specialist in the TIPAN project from July 1985 to March 1987 at which time he became Team Leader. This Research Program Specialist continued the activities begun by Dr. Cragle and served from 15 February 1988 to 15 February 1990. This report outlines the major approaches, accomplishments, and recommendations of the current incumbent.

II. Scope of Work for the Research Program Specialist

Duties: To serve, as counterpart to the NWFP-AU Director of Research, as chief research administration specialist on a major institution development technical assistance project. The Agricultural Research Program Specialist shall assist the AU Director of Research to strengthen the agricultural research program of NWFP under the leadership of the Agricultural University. Specifically this specialist shall:

- A. With the Director of Research, give leadership to the transfer of the provincial crop and livestock research program including staff, budget, and physical facilities, combining it with the research of the university into a mission and project-oriented program to meet provincial agricultural needs.
- B. Provide support for organizing the research director's office for projectizing research.
- C. Participate in planning and implementing an in-service evaluation and training program for personnel, and in selection of research personnel and participants for degree and non-degree training.
- D. Assist in developing and implementing a system for evaluating research performance.
- E. Participate in the on-going monitoring and evaluation of the Master Work Plan.
- F. Make recommendations on the selection of equipment and supplies needed to support the research program on-campus and at outlying stations.
- G. Assist the Research Director in developing linkages with the Pakistan Agricultural Research Council (PARC), the National Agricultural Research Center (NARC), other provincial research organizations, national agricultural universities, and the international agricultural research centers.

III. Major Activities

A. Research Projectization

One of the first activities begun near the beginning of this tour was an analysis of the existing research program--both by off-campus and on-campus researchers. It was discovered that on-campus researchers had no regularly budgeted funds for research. Hence the amount of research conducted by on-campus researchers was limited to a few projects supported by outside funding, e.g., the Pakistan Agricultural Research Council (PARC), PL-480 etc. Most of the research conducted by on-campus researchers is in connection with the conduct of graduate thesis research. Also, it was discovered that a previous effort in 1987 to develop research projects by on-campus researchers was aborted due to the fact that the Vice-Chancellor failed to follow through and provide the promised funding. As a consequence, on-campus researchers were very skeptical of spending any effort to develop research projects that were not likely to be funded.

At the beginning of this tour, researchers in the field research system had for many years held two planning sessions per year--one for Rabi (Winter) crops and one for Kharif (Summer) crops. Instead of planning, these sessions were primarily occasions where senior scientists discussed their already

developed plans for the forthcoming cropping season. At these sessions, very few decisions were made which altered the plans. Nevertheless, the materials presented at the 1987 Rabi review and the 1988 Kharif review provided valuable background information for the analysis of the existing research program.

At this point in time (1987-1988), the field research program consisted of 572 experiments covering the following subjects:

Subject Area	Percent of Total Experiments
Cereal Crops	15
Oilseeds and Pulse	15
Horticultural Fruits/Vegetables	15
Sugar Crops	9
Potato	8
Livestock, Fodder and Forage	5
Food Technology	3
Entomology	8
Plant Pathology	5
Plant Physiology	4
Soil Chemistry	7
Agricultural Biochemistry	5
Seed Technology	1

The above compilation does not reveal the personnel or the resources committed to each area of research. Also, since the amount of research involved in each project is not equal, it does not quantify the relative research effort to each subject area. However, the above compilation does provide an overall view of the relative emphasis on different areas of research within the field research system.

An analysis of individual experiments also revealed that of the total of 572 experiments, some frequently types of trials were:

Type of Field Trial	Percent of Total Experiments
Variety	22.2
Fertilizer	11.0
Herbicide	4.0
Date of planting	2.4
Plant population	1.6

Thus one-third of the total research program consisted of variety trials (22%) and fertilizer trials (11%). Also, there was a large number of trials involving simple single factor studies with herbicides, date of planting and plant population variables.

Along with the aforementioned material presented at the two most recent Rabi and Kharif planning sessions, a detailed study was made of the most recent annual research reports. This study revealed that most experiments had yield determinations only with no auxiliary data such as soil nutrient status, soil moisture determinations, plant growth measurements, or incidence of pests and diseases. Consequently, the experiments determined only "what" happened in terms of yields with no idea of "why". Most experiments involved the study of only one factor at a time with no concept of how various inputs interact as they do in the real world. There was a distinct tendency for field trials to involve variables not normally expected to significantly influence yields. This is indicative of inadequate reviews of literature and deficiencies in the original hypotheses. In many instances plots were too small and the area harvested for yield determinations was entirely inadequate. In the annual reports, there was almost no record of previous crop history where residual effects from previous treatments might affect yields as much or more than the variables studied during the current year.

The overall analysis of the existing research program suggested that some drastic changes needed to be made in the research program. The approach taken was that of "projectization" of the overall research program of NWFP-AU.

The projectization effort began in earnest in May and June 1988. During this period, 11 information meetings were held for all of the AU faculty. Four meetings were held on-campus and seven off-campus to cover all of the more than 400 potential researchers of AU. During the meetings several issues were discussed. The need was stressed to fully take into account past research and to summarize already accumulated data and to develop meaningful conclusions and recommendations before moving on to other research. The need for a long-term master research plan for AU was discussed. Since nothing was on paper as to procedures for projectizing the research program, a draft copy of the proposed administrative memorandum for preparing, reviewing, processing, financing and approving research project outlines was distributed and discussed.

During each information meeting, a considerable amount of time was spent discussing concepts for strengthening the research program. For example, there was a discussion of the concept of placing the responsibility for planning, conducting and reporting of research at the lowest administrative level possible consistent with the training, knowledge, experience, and aptitudes of individual researchers. The concept of a research project outline being a contract between researchers(s) and administration was discussed. The researcher agrees to conduct and report the research while administration agrees to provide the necessary resources. The need for making greater use of peer reviews was discussed. The potential role of multidisciplinary research teams was emphasized.

The series of information/discussion meetings was finalized on 15 August 1988 with an all-day session of about 50 on- and off-campus senior staff where definitive plans for projectization were discussed.

After comments were obtained on several drafts of the procedures for projectization, Administrative Memorandum No. 1 was issued on 21 September 1988 (Appendix A). For the first time in the history of NWFP-AU, procedures were outlined on paper for the preparation, submission and processing of research project outlines. Eight hundred copies were reproduced in order to be certain that every professional researcher in AU had access to a copy. The issuance of this administrative memorandum inaugurated a program whereby it was planned that all research within the university would be covered by formally approved research projects by the beginning of fiscal year 1989-90--1 July 1989. The due date for all proposed research projects was set for 1 March 1989 in order to provide adequate time for review and processing.

A critical element in the projectization process is the incorporation of the concept of technical peer review. Accordingly, the Technical Review Committee (TRC)(Appendix A) began to assume an active role in latter 1988. Three organizational meetings were held in October and November and trips of the entire TRC to all field locations were made in December 1988 and January 1989. During these visits the TRC discussed with the respective staffs the program of projectization and offered assistance in any way possible in the development of research project outlines.

Some 45 days after the 1 March 1989 deadline, only 60 proposed research projects had been received from locations representing about one-third of the total field research system. Finally by 15 June, some 160 research projects had been received from all of AU with some response from all field locations except Jabba and including a response from five of the 16 on-campus departments with research responsibilities.

Due to the fact that most of the proposed research projects were received almost four months after the due date (and immediately prior to the beginning of the new fiscal year beginning 1 July), the TRC was placed in the extremely difficult position of trying to expedite the peer review process. In addition, neither the Research Directorate nor the NWFP-AU administration responded adequately to continued pleas for clerical and technical help in processing the proposed projects. As a result the overall peer

review process and subsequent communications back to the Principal Investigators was some four months behind schedule--the same as the four month delay in initially receiving the projects.

B. Development of a Master Research Plan

The original scope of work for the Research Program Specialist position indicated the duty of: "Participate in the on-going monitoring and evaluation of the Master Work Plan." Upon beginning the assignment it was soon discovered that there was no Master Work Plan and certainly no-ongoing monitoring and evaluation thereof. Aside from the firm conviction by the Director of Research that AU badly needed a Master Research Plan, there were two external factors which contributed to the urgency of developing such a plan. First, the World Bank proposed the development of Agriculture Research Program II (ARP-II) as a follow up to the original ARP-I which provided much of the funding for the development of the federal National Agricultural Research Center (NARC) as the flagship research organization of the Pakistan Agricultural Research Council (PARC). ARP-II was intended primarily to strengthen the provincial research organization. In order for NWFP-AU to share in the utilization of ARP-II funds, the development of a Provincial Research Master Plan (PRMP) was a requirement. The ARP-II proposal was in the formative stages in latter 1988 and provided an impetus for AU to develop a Master Research Plan. Later, however, the Government of Pakistan (GOP) declined to participate in ARP-II. Second, for several years NARC has been involved in the development of a Master Research Plan. This activity was consummated in latter 1989 with the publication of the final plan.¹ Hence if NARC felt the need for a plan, provincial research organizations should also.

In order to develop a Master Research Plan for AU, the concept was proposed that first AU needed to determine what it had already accomplished by research. An analysis of annual research reports and published research revealed that there were very few summaries, conclusions or recommendations emanating from past research. Thus it was proposed that the initial stage in the development of a Master Research Plan should be the preparation of state-of-the-art review papers covering the most recent decade of research progress of AU. In addition, it was proposed that after preparation these papers should be presented at a Research Review and Planning Conference where simultaneously different committees would initiate the process of developing a long-term research plan.

For this activity, a Program Committee was appointed and began functioning in December 1988 (Appendix B). After several meetings the committee reached a consensus on the titles and authors of 23 review papers involving a total of 84 authors. After developing written guidelines for preparation of review papers and collecting a large volume of examples, the Program Committee over a period of several weeks in March-April 1989, traveled to each field location and visited personally with each proposed author and provided numerous handouts. Similarly the committee followed up and conferred with proposed on-campus authors. In order to provide adequate time, first drafts were requested by 1 July 1989.

By the end of the third quarter of 1989 (some three months after the due date), three rough drafts out of a total of 23 proposed review papers (Appendix B) had been received. None of these rough drafts were close to being acceptable as state-of-the-art review papers. Consequently the 10-month long effort to develop research reviews preparatory to the development of a Master Research Plan was, for all practical purposes, a failure.

C. Annual Reporting of Research Results

Every year each field location is expected to prepare an annual research report covering research accomplishments. The reporting period is for the 12-month fiscal year (1 July - 30 June) with the reports due some three months after the end of the fiscal year, i.e., 1 October.

¹National Agricultural Research Centre: Master Plan. 1988-2000. Volume 1. Research Master Plan. Pakistan Agricultural Research Council, 1989, 211p.

An examination of previously prepared annual research reports revealed a wide range of format between locations. In addition, the most outstanding feature of many annual reports was that each report was more a compilation of data than a report of research progress. Very little effort was expended in summarizing, drawing conclusions, and developing recommendations from research data. Almost no effort was expended in connecting the current year's results with those of previous years. In too many instances, "practical" significance was equated with "statistical" significance with no effort to separate and discuss the two.

In the past, on-campus researchers were not expected to prepare annual research reports directly to the university. Those who received outside funding reported to their respective funding agency.

The AU badly needed a system of reporting whereby annual research reports could be used as a basis for preparing an overall summary of research accomplishments for each fiscal year. Such a summary report would be very useful in informing the general public of the university's overall program and accomplishments. Other research entities in Pakistan do an effective job of preparing such summary reports. For example, the author has reviewed excellent reports from PARC and the University of Agriculture, Faisalabad.

In order to formalize a system of annually reporting research progress within the NWFP-AU, Administrative Memorandum No. 2 on the subject of annual research reports (ARRs) was issued on 1 November 1988. Several drafts of the memorandum had previously been reviewed by researchers of AU. This administrative memorandum provided for the annual in-service reporting of research results by all researchers posted both off- and on-campus irrespective of the source of funding including regular operating and annual development program (ADP) funds of the field system as well as the various sources of funding for on-campus researchers. The memorandum standardized the reporting format for all ARR's and includes a detailed proforma for eleven sections. The memo also incorporates a tie-in between research project outlines (RPOs) and ARR's, i.e., detailed information from RPOs on previous work, justification, procedures, institutional units, etc., are reproduced only for the initial year of a research project. In subsequent years, only the initial entry in the ARR will be cited. This procedure will greatly simplify ARR preparation and minimize the bulk of each report while at the same time placing maximum emphasis on research results, summaries, and conclusions.

The ARR is an in-service document of the NWFP-AU intended to provide information on the progress of the research program of all researchers within the university. In order to accomplish this objective, the Vice Chancellor issued a policy memorandum on 14 December 1988 (Appendix C). This memorandum emphasized that the university had much work to do in terms of improving the quality of ARR's while at the same time a very real need exists to communicate research results throughout the university. Accordingly the policy memorandum indicated that copies of ARR's should not be distributed outside the university without prior approval of the Vice Chancellor's office. The memo also indicated that a total of 60 copies of the ARR's should be made for in-service distribution to all field locations, faculty deans, department chairmen, technical review committee members, outreach staff, and associated administrative offices.

Administrative Memorandum No.2 established 1 October each year as the due date for ARR's. As of February 1990, some four months after the due date, no annual research reports have been received. Accordingly the Vice Chancellor has recently sent a notice to all staff requesting the submission of reports at the earliest possible date.

D. The Development of a Long-term Staffing and Advanced Academic Training Plan for NWFP-AU

The overall effort to develop a long-term staffing and advanced academic training plan began in latter 1988 and was finished in December 1989 (Appendix D). Two key elements in the plan were the development of a master list of disciplines applicable to the needs of AU and the classification of all professionals in the university by discipline according to the master list. These two activities were in draft form by December 1988.

Subsequent activities leading up to the final plan along with tables are given in Appendix D. For the first time, NWFP-AU has on paper a plan which serves as a guide for staffing during the coming decade as well as a specific plan for advanced academic training, particularly for the training opportunities provided by the TIPAN project.

E. Administration of the NWFP-AU Research Program

An important precondition of the TIPAN project was that the provincial field research system be merged with the NWFP Agricultural University. Even though several administrative actions have taken place which on the surface would lead one to believe that there has been a merger, almost every time an attempt is made to bring about change in the research system, somewhere in the fine print there is something that prevents the change. A good example is the recent effort in projectization whereby at the suggestion of the Director of Research (TIPAN), the TRC promised that research funds to support approved research projects would be provided directly to the Principal Investigators (PIs). Researchers in the field research system were told during personal contacts as well as during general briefings that this would definitely be the method of operation. However, when the Director of Research made the request that funds be provided to PIs, it was discovered that the university did not have the authority to do so. Instead the funds had to be provided to Station Directors (as in the past) who in turn allocated the funds to researchers. The aforementioned is just one small (but significant) example of how the university continues to operate under the rules of the provincial Ministry of Food, Agriculture, Livestock and Cooperatives.

The central issue of the merger of the provincial field research system with NWFP-AU is that of a single unified personnel system under the full control of AU. With a single uniform personnel system, an autonomous AU would have an opportunity to develop one university personnel system and incorporate certain elements of merit performance in order to encourage increased professional productivity. Instead, the personnel system of the field research system of AU remains with the provincial ministry. The seniority system is so deeply ingrained as to effectively stifle any individual initiative.

Presently the on-campus administration of the field research system consisting of almost 300 professionals is performed solely by the Director of Research (TIPAN). The original intent of TIPAN was that on-campus research would also be under the overall administration of the Director of Research (TIPAN). However, to date this has not occurred to any significant degree. In addition, the original plan of action called for the appointment of an Associate Director of Research. Only recently was this position filled with a part time individual. The designation of a Technical Review Committee (TRC) in connection with the research projectization effort has provided some relief in terms of technical research leadership. However, the activities are limited in scope and the TRC members still have full-time positions of their own outside of the TRC. Thus there is a real need for the Director of Research (TIPAN) to have formal access to a group of technically competent researchers to provide leadership and guidance to the overall research program of NWFP-AU (off-campus as well as on-campus).

The establishment of Chief Scientists positions to assist the Director of Research (TIPAN) in administering the research program of AU has been proposed (Appendix E). Initial reaction to this proposal has been positive by the small group of researchers to whom the proposal was addressed. Hopefully, the recommendations might serve as the background for further discussions and eventually a decision to formally augment the research leadership of AU.

Closely associated with this proposal to establish Chief Scientist positions is the existing administrative structure of the field research system into sections, largely along commodity lines. It is proposed that these sections be abolished and the research system be reorganized along disciplinary lines as outlined in Appendix E. If the field research system is eventually merged with the university and one uniform personnel system developed, the present concern over seniority within the sections would automatically disappear and the gateway would be opened for personnel actions based on merit performance.

IV. Conclusions and Recommendations

On a scale from 1 to 10, this Research Specialist would rate the success with the major activities of this two-year assignment as follows:

Activity	Rating
Research Projectization	8
Develop Master Research Plan	1
Annual Reporting of Research Results	1
Development of a Staffing/Training Plan	9
Administration of Agricultural Research	3

The research projectization effort might be classified as: "so close but yet so far." For the second time within a period of two years, funds were promised by AU administration to support on-campus research. For the second time also within the two-year period, when the time came to allocate funds for approved research projects, no funds were provided. Even the fact that the second commitment by the then Vice Chancellor was in writing and thus on record, apparently carried no weight. There is a core group of well trained and highly motivated on-campus researchers who want to do research. In the current exercise, two of the 16 potential research departments did an outstanding job of preparing research projects. However, the research potential of on-campus researchers will never be fully utilized until such time as they have at least a small amount of regular funds to support research. The university badly needs to establish a line item in the annual UGC budget to support on-campus researchers. The amount does not necessarily have to be large and could be primarily operating funds for approved research projects. Supporting funds for the larger expenditures for research equipment could be made available from the TIPAN project or other sources.

For the current fiscal year, in order to support the university's projectization effort, USAID is considering a university request to provide funds to support the operational expenses of the 53 currently approved on-and off-campus research projects. It is presumed that these funds will be made available. For the second and third year of these three-year projects, the university has indicated that university financial resources will be provided to support these projects.

For the current 1989-90 fiscal year, operating funds to support the entire operating expenses of the field research system were decreased by 66 percent--from a total of 8.29 million Rs last fiscal year to 2.78 million Rs this fiscal year. This drastic decrease was caused by both a 10 percent cut in overall total salary and operating funds as well as a 4.5 million Rs increase in pay and allowances due to the addition of more than 40 new professionals to the field research staff. Instead of an increase in professional staff, the field research system badly needs to decrease its numbers in order to provide adequate operating funds. Until such time as the university assumes the management of the field research system and operates it as a research agency instead of an employment agency, the field research system will likely continue to be plagued by inadequate operating funds. Conservatively, the field research system could reduce its numbers by 50 percent (from the current employment roll of near 300 BS-17 and above) and by keeping the top 50 percent of the productive researchers and investing the salary savings in those researchers who are productive, double its research output.

The research projectization effort, more than any other activity with which this Research Specialist was involved, approaches institutionalization. A key element for the future is whether or not adequate funding for research is provided. Another key element is whether or not the TRC receives the necessary administrative support to carry out its activities. During the just completed projectization cycle, the AU failed to provide the needed clerical and technical help to process the proposed research projects. Due to the heavy burden of administering a field research program containing almost 500 researchers (on- and off-campus combined), the Research Directorate badly needs a full-time Associate Director (not a part-time Associate Director as was recently announced). In addition, the Research Directorate needs the guidance of a group of technically competent Chief Scientists, as previously proposed, to augment the functions of the TRC. Since AU staff are returning to the university in increasing numbers from

advanced academic training through TIPAN and other sources, the university has a valuable pool of talent from which to select some outstanding research leaders to serve as Chief Scientists. Unless AU abandons its antiquated system of seniority and starts placing individuals in research leadership positions based on ability, the research program of AU will continue the current low level of productivity.

The NWFP-AU badly needs to develop a Master Research Plan to guide its future research program. As previously indicated, the approach followed by this Research Specialist was a failure. However, the overall activity accomplished two things: (1) The need for a Master Research Plan was highlighted. Almost every researcher in AU is aware of the need, and (2) The effort pinpointed one of the major problems of AU, i.e., the failure of the professional staff to commit themselves and spend the necessary time and effort to record their research results on paper. In the effort to develop a series of 23 state-of-the-art research review papers covering the past accomplishments of AU, no acceptable papers were received despite the fact that 17 of the 23 proposed papers had at least one Ph.D. author possessing the known ability to write the paper. This disappointing response in the preparation of research review papers is closely associated with the degree of success of the Outreach Directorate on AU. Unless the researchers record on paper their research results, conclusions, and recommendations, the Outreach Directorate is seriously hampered in transferring that information on to extension workers and individual farmers. There is very little reason to believe that researchers will assume an active role in documenting their research findings until AU moves toward a personnel system based on research performance rather than almost solely seniority.

A parallel effort of this Research Specialist was to formalize a system for the annual reporting of research results, i.e., the preparation of Annual Research Reports. Even though the procedures were announced by AU some nine months ahead of the due date, four months after the due date no reports had been received.

One of the more successful efforts of this tour of duty was in the development of a long-term staffing and advanced academic training plan. In its final form the plan outlined specific training slots for each individual to receive advanced academic training up to the conclusion of the TIPAN project in 1994. This activity spanned more than one year, involved more than 20 drafts, and input was solicited from virtually every person in AU with any administrative authority. While the development of this plan is commendable, the ultimate test will come after these individuals are trained and they return to AU. With the current administrative structure of the field research system, researchers are assigned to groups of sections with the seniority system tied to these groups which are presently primarily commodity (crop) oriented. Hence, irrespective of training, an individual from the field research system will be returned after training to the same section as before training. Unless some flexibility is built into the present organizational structure, an individual returning with advanced training may have very little opportunity to pursue a research program within his trained discipline. There is a real need to reorganize the field research system along disciplinary lines rather than by commodities.

Potential problems also exist when an individual returns from advanced academic training to the on-campus faculty. If the individual is trained in a discipline somewhat different from that already represented in the 19 departments and if he is fortunate enough to have obtained a Ph.D. degree, he often feels that he is entitled to begin his own department representing his particular area of training. Such an approach would exacerbate the already unfortunate situation of too many departments.

One of the current pressing needs of AU is to follow through on the planning effort and to prepare a definitive plan for short-term technical training, particularly that training supported by the TIPAN project. The plan should include in-country as well as outside training. The present practice of "shooting from the hip" has resulted from the absence of a long-term plan based on need rather than seniority and position.

With time increasing numbers of professionals are returning to AU with newly acquired advanced academic degrees. These individuals along with many others already at AU form a valuable pool of talent which should be called upon to provide research leadership to both the off-campus and on-campus researchers of NWFP-AU. Almost all of these individuals are mid-career and have many years of

research experience. Based entirely upon research leadership potential and not seniority, it is proposed that a group of eight Chief Scientists be designated along disciplinary lines to provide research leadership to support the Research Directorate. Details of this proposal can be found in the aforementioned under II-E Administration of the NWFP-AU Research Program and in Appendix E.

ACKNOWLEDGEMENT

This Research Program Specialist is particularly indebted to Mr. Mohammad Siddiq, Director of Research, for his continued encouragement, foresight, and courage to try to bring about constructive change to the NWFP-AU Research System. Mr. Siddiq is one of the most knowledgeable and progressive administrators with which this Research Specialist has had an opportunity to be associated over the past 30 years.

A special note of appreciation is also extended to Dr. Mohammad Saeed, Chairman of the Technical Review Committee, for his dedicated and untiring efforts to develop a system of peer reviewed research projects. Without Dr. Saeed's contribution, NWFP-AU would not now be at the threshold of institutionalizing the process of projectization of agricultural research.

APPENDICES

Appendix A -- Implementation of a System of Research Project Outlines

Appendix B -- Research Review and Planning

Appendix C -- Implementation of a System of Annual Research Reports

Appendix D -- Development of a Long-Term Staffing and Advanced Academic Training Plan

Appendix E -- Proposal for the Establishment of Chief Scientist Positions to Provide Research Leadership

Attachment No. 4

Composition and Operation of Research Project Technical Review Committee

The Research Project Technical Review Committee shall be appointed by the Director of Research and shall contain 14 members. Representation by different disciplines of the combined on- and off-campus staff shall approximate relative faculty size as follows:

Faculty	Percent of total staff*	Representation on Committee
1. Plant Sciences	63	6
2. Plant Protection Sciences	13	2
3. Rural and Social Sciences**	3	1
4. Animal Husbandry & Vet. Sciences	6	2
5. Food and Nutritional Sciences	<u>15</u>	<u>3</u>
	100	14

Each member of the Technical Review Committee shall serve for a term of 3 years. No member of the committee shall be reappointed for a second term without first having been off the committee for a 3-year period. After the initial 3-year period whereby changes will occur in the percentage of scientists in different disciplines as well as numerous returnees with advanced academic training, the Director of Research may elect to re-adjust the representation on the committee and to establish a staggered term system for the annual replacement of a portion of the members. The term of committee members shall begin on July 1. Individuals selected for service on the review committee shall be primarily researchers as contrasted to administration.

Each year, the Technical Review Committee shall appoint from its membership a Chairman to serve a 1-year term beginning July 1. The Chairman shall be responsible for calling meetings, arranging for minutes, assembling individual reviews and coordinating communications with the Principal Investigator until such time as an agreement is reached on the details of each research project outline. The Chairman shall represent the committee in recommending approval/disapproval of each research project outline to the Director of Research. The Director of Research shall arrange for secretarial services for the committee and the appointed secretary shall serve under the supervision of the Chairman.

The Technical Review Committee shall utilize fully the technical expertise available within the Agricultural University to evaluate each research project outline. The committee is encouraged to solicit inputs from any source with the University system or outside the University in evaluating individual research project outlines.

*Based on the 1986 total of 386 staff members both on- and off-campus.

**Excludes Institute of Development Studies who will utilize their own procedures for research project review.

Attachment No. 5

Research Project Technical Review Committee--1 July 1985 - 30 June 1991

Faculty	Individual	Location
1. Plant Sciences (6)	Dr. Faridullah Wazir	PS
	Dr. Mohammad Saleem	PIR
	Dr. Imran Mohammad	MAR
	Mr. Habib ur Rehman	MIN
	Dr. Paigham Shah	PS
	Dr. Khan B. Marwat	PS
2. Plant Protection Sciences (2)	Dr. Mohammad Shahid	PPS
	Dr. Sher Hassan	PPS
3. Rural and Social Sciences (1)	Dr. Asmatullah Khan	RSS
4. Animal Husb. & Vet. Sciences(2)	Dr. Iqbal Shah	AVS
	Dr. Mushtaq Mian	AVS
5. Food Sciences and Nutrition (3)	Dr. Mohammad Saeed	FSN
	Dr. Tajamul Hussain	FSN
	Dr. Saifullah Khattak	TAR

Attachment No. 6

I. Proforma for assessment of Manpower Needs:

	No. already on Payroll			No. additional needed			Total No. needed			Total man-months		
	Year-1	Year-2	Year-3	Year-1	Year-2	Year-3	Year-1	Year-2	Year-3	Year-1	Year-2	Year-3
011-Officers												
-Principal Investigators												
-Senior Research Officers												
-Asst. Research Officers												
-Other												
012-Support Staff												
-Lab. Assistants												
-Field Workers												
-Office Assistants												
-Driver												
-Watchman												
-Other												
Totals												

II Proforma for preparation of Project Budgets:

A. Salaries	(000 Rupees)			
	<u>Year-1</u>	<u>Year-2</u>	<u>Year-3</u>	<u>Total</u>
011-Pay of Officers				
-Principal Investigator				
-Senior Research Officers				
-Asst. Research Officers				
Total pay of Officers (011)				
012-Pay of Establishment				
-Lab. Assistants				
-Field Workers				
-Secretaries				
-Office Assistants				
-Driver				
-Watchman				
-Other				
Total pay of Establishment(012)				
Total all salaries (011+012)				
<hr/>				
B. Allowances	<u>Year-1</u>	<u>Year-2</u>	<u>Year-3</u>	<u>Total</u>
020-Regular Allowances				
022-House Rent Allowance				
027-Washing Allowance				
028-Dress Allowance				
-Research Allowance				
-Other				
Total Regular Allowances(020)				
030-Other Allowances				
034-Medical Charges				
037-Labor Wages				
038-Leave Salary				
-Other				
Total Other Allowances(030)				
Total all Allowances(020+030)				
<hr/>				
C. Purchases	<u>Year-1</u>	<u>Year-2</u>	<u>Year-3</u>	<u>Total</u>
100-Purchase of Durable Goods				
110-Transport*				
120-Machinery and Equipment*				
130-Furniture and Fixtures*				
-Other				
Total purchases(100)				

D. Repairs	(000 Rupees)			
	<u>Year-1</u>	<u>Year-2</u>	<u>Year-3</u>	<u>Total</u>
400-Repair and Maintenance of Durable Goods				
410-Repair of Transport				
420-Repair of Machinery				
430-Repair of Furniture/Fixtures				
-Other				
Total repair/maintenance(400)				
<hr/>				
E. Operational Expenses	<u>Year-1</u>	<u>Year-2</u>	<u>Year-3</u>	<u>Total</u>
500-Commodities and Services				
510-Transportation				
511-Travel Allowance				
512-Freight				
513-P.O.L.				
-Other				
Total transportation(510)				
520-Communications				
521-Postage and Telegraph				
522-Telephone				
Total Communications(520)				
530-Utilities				
531-Gas Charges				
533-Electricity Charges				
534-Hot/Cold Weather Charges				
539-Other				
Total Utilities(530)				
540-Office Stationery				
550-Printing				
560-Newspapers, Periodicals, Books				
580-Rent				
590-Other				
598-Cost of other stores				
-fertilizer				
-seed				
-pesticides				
-bags				
-chemicals				
-other				
Total Operational Expenses(500)				

F. Capital Investments	(000 Rupees)			
	<u>Year-1</u>	<u>Year-2</u>	<u>Year-3</u>	<u>Total</u>
41-Capital Costs				
81-Capital Buildings				
Total Capital Costs				
<hr/>				
Total Project Costs (A thru F)				
<hr/>				

*Itemize each equipment costing more than 5,000 Rs.

Attachment No. 2

Numbering system for off-campus Research Project Outlines:

Location	Code
Cereal Crops Research Institute, Pirsabak	PIR
Sugar Crops Research Institute, Mardan	MAR
Agricultural Research Institute, Tarnab	TAR
D.I.Khan Research Institute, D.I.Khan	DIK
Mingora Research Station, Mingora	MIN
Mansehra (Dhooial) Research Station, Mansehra	MAN
Abbottabad Research Station, Abbottabad	ABB
Serai Naurang Research Station, Serai Naurang	SER
Karak Research Station, Karak	KAR
Surezai Research Station, Surezai	SUR
Jabba Research Station, Jabba	JAB
Malakander Research Station, AU	MAL

Numbering system for on-campus Research Project Outlines:

Faculty	Code
Plant Sciences	PS
Plant Protection Sciences	PPS
Rural and Social Sciences	RSS
Animal Husbandry and Veterinary Sciences	AVS
Food Sciences and Nutrition	FSN

Examples of Research Project Outline Numbers based on the above:

- TAR-88-3 The third project initiated in 1988 at the Agricultural Research Institute, Tarnab.
- MAN-89-1 The first project initiated at Mansehra Research Station in 1989.
- PS-88-4 The fourth project initiated in 1988 in the Faculty of Plant Sciences.

The decision as to whether a research project outline receives a field or on-campus number depends on the principal assignment of the Principal Investigator. Location Directors shall assign numbers at field locations and shall keep a record of consecutive numbers each year for research project outlines emanating from field locations. Similarly, Faculty Deans shall assign consecutive numbers each year for outlines emanating with their respective faculties.

Attachment No. 3

Proforma for Preparation of a NWFP Agricultural University Research Project Outline

1. Project Number - To be assigned by the Location Director/Faculty Dean. Please note research project numbering system outlined in attachment no. 2.
2. Title - A clear, concise statement of the subject of the research. The title used by itself should give a good indication of what the project is about. The title should not exceed 80 letters and spaces so that it can be added to the national records system.
3. Previous Work - A brief review of the current state of knowledge on the problem, and how it falls short of meeting current and future needs for knowledge. Literature citations should be listed at the end of the project outline. The conclusion of this section should lead the reader directly into the next two subsections of justification for further work and the statement of objectives for the proposed work.
4. Justification - A concise statement of the importance of the problem to the agriculture and rural life of the province, region or nation, reasons for doing the work at this or other locations at this particular time, and potential benefits to agriculture, the public at-large, and the scientific community. This statement should involve a careful review of current projects on the subject within the province and country.
5. Objectives - A clear, complete and logically arranged statement of the specific objectives of the project, each identified by number. This section should be limited to the objectives and not be a restatement of justification nor an explanation of procedure.
6. Procedure - A statement of the essential working plans and methods to be used in attaining each of the stated objectives. The procedures should correspond to the objectives and follow the same order. To attain these objectives, the research program should be outlined, giving details of the experiments, histories of plots if appropriate, layout plans, treatments, replications, statistical design, and the nature and types of data to be recorded from time to time. The location(s) of the work, and the facilities and equipment available and needed should be indicated. Be sure to indicate total area of land to be seeded, fertilized or otherwise treated as justification for the budgeted supplies requested. The statement on procedure should indicate that the research has been carefully planned and provides for changes when they are necessary to improve the research.

7. Duration - An estimate of the time required to complete the research and publish the results. Whenever any material change in the objectives of a project is advisable, a new or revised project outline should be prepared and submitted through channels. A major change in procedure may also necessitate a revision of the project outline. Projects involving field research normally run for at least three (3) years. Laboratory type projects may be as short as one year.
8. Personnel - A list of the Principal Investigator and other technical personnel involved. The Principal Investigator should be clearly indicated. The position title and location of technical personnel should be clearly indicated along with the anticipated man-months per year of each individual's time.
9. Institutional Units Involved - A list of each subject matter unit and/or field locations in the research system or other institutions contributing essential services or facilities. The responsibility of each should be clearly outlined. If there is an advisory, coordinating or directing committee for the project, they should be shown and their functions clearly explained.
10. Cooperation - A statement as to cooperation with PARC, NARC, and/or other research institutions, or agencies cooperating formally or informally on the project.
11. Financial Support and Manpower Needs - A listing, on a separate page, of the annual allocations by source as to manpower needs and salaries, wages, allowances, equipment, supplies, travel, publications, and any other operating expense. (See attachment no. 6).
12. Plans for Publication - Provide specific information relating to plans for publication of research results as to technical journal, technical bulletin, outreach publication and/or extension publication.
13. Administrative approvals - Include the following with each research project outline:
- Submitted by: _____ (Principal Investigator)
 Recommended: _____ (Section Head/Department Chairman)
 Recommended: _____ (Location Director/ Faculty Dean)
 Recommended: _____ (Chairman, Technical Review Committee)
 Concurred In: _____ (Fiscal Officer)
 Approved: _____ (Director of Research)
14. Literature Cited - List references cited under "Previous Work" as the last section of the research project outline.

NORTH WEST FRONTIER PROVINCE
AGRICULTURAL UNIVERSITY
Peshawar

September 21, 1988

SUBJECT: Implementation of a System of Research Project Outlines
for the NWFP-Agricultural University

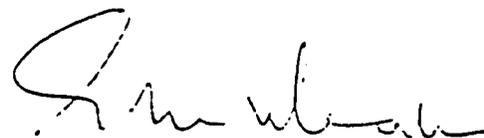
TO: Researchers of the NWFP-Agricultural University

We have discussed with you on several occasions our plans to initiate a system of research project outlines for all research conducted by the staff of the NWFP-Agricultural University. Over the past several months, your suggestions have been solicited for the implementation of this program. Accordingly, the attached administrative memorandum is being issued by the Research Directorate for your guidance in the preparation of research project outlines.

As you will notice in the memorandum, we plan to have all of the research conducted by our staff incorporated into the system by 1 July 1989 with a deadline for initial submission by 1 March 1989. We encourage you, however, to begin immediately with the development of your research projects and to submit them at the earliest possible date. Once you become involved in this process, we would be glad to work with you should any questions, problems or issues arise.

We have incorporated into the memorandum a proforma for manpower and budget needs. Even though numerous categories of positions and budget items are provided, you will be needing only a selected number of these to fit your project outlines. Since future budget allocations will be based on approved research project outlines, we encourage you to be thorough in your preparation of this section. Also, we will shortly be issuing guidelines for the preparation of station and faculty operations budgets to complement the budgets for research projects.

We wish you every success in this important endeavor and stand ready to assist in any way possible.


G. M. Khattak
Vice-Chancellor

Attachment

NORTH WEST FRONTIER PROVINCE
AGRICULTURAL UNIVERSITY
RESEARCH DIRECTORATE
Peshawar

21 September 1962

ADMINISTRATIVE MEMORANDUM NO. 1

SUBJECT: Research Project Outlines

The research project outline is the basic document for conducting research in the NWFP-AU research system. When properly prepared, reviewed, and approved, the research project outline represents a contract between the researcher and administration. The researcher agrees to carry out the research and report the results as outlined. The administrator agrees to provide the necessary financial and physical resources for the conduct of the research.

This memorandum outlines procedures for the preparation, submission, approval and implementation of a system of research project outlines for the agricultural research activities of the NWFP-Agricultural University. Details are provided for the research project outline format, numbering system, peer review and administrative approval. Also, the concept of research programs, sections, projects and experiments is discussed and examples given. A schedule for implementation is included.

I. Concepts of research program, project and experiment.

The purpose of this memorandum is to outline the procedures for utilizing research project outlines. First, however, there should be a clear understanding of the meaning of the terms: program, project and experiment. Some examples are given in attachment no. 1. Note the hierarchical relationships between program, section, research project and experiment. First is the research program. Within each program, one or more research sections or groups may be conducting research on a subunit of the program. Each section has one or more research project outlines to cover the activities within a section. Finally, each section may have one or more experiments to carry out the activities enumerated in the research project outline. Please note that research project outlines should not be prepared for each experiment.

Researchers should utilize their own judgement as to what research is included in each research project outline. Where relevant, researchers are encouraged to provide details of individual experiments as a part of research project outlines. Also, researchers should not aggregate the varied activities of any individual section into only one overall research project when several research outlines would provide a more definitive statement of the planned research.

Attachment no. 1 provides simple straightforward examples of programs, sections, research projects and experiments where commodities or crops or subject areas such as soil chemistry or food technology might be involved. Individual research locations have within their mandate or mission the responsibility to conduct research and find answers to problems unique to their own geographic area or agro-ecological zones. Accordingly individual locations are encouraged to prepare and submit research project outlines covering these research needs.

II. Concepts of researcher participation in research projects.

Each research project outline should clearly indicate the Principal Investigator. Normally the Principal Investigator is the senior researcher in terms of experience and training, and possesses the demonstrated ability to lead a project. The Principal Investigator is responsible for working with usually several co-workers, coordinating their activities, and seeing that the research is carried out properly and in a timely manner. At the same time, the co-workers on an individual project may desire to initiate contributing projects to a research project outline and thus serve as the Lead Scientist for that particular component. Such arrangements are to be encouraged in order to provide each individual researcher with the environment to work at his maximum potential and to excel in his own endeavors.

Except in unique circumstances, each research project will be carried out by a team of researchers with each contributing in his own way whether it be by the development of research concepts and approaches, actually physically carrying out the research, or by analyzing and interpreting the results. Only those individuals who make a significant and measurable contribution to a research project should be included on research project outline.

Research teams constitute a valuable mechanism to carry out research. Also, the voluntary formation of research teams comprised of individuals from varied backgrounds and disciplines and who desire to work together is a valuable approach for conducting research. It is well known that when multidisciplinary research teams can be formed to tackle a problem that the potential exists for accomplishing more than when individual researchers work alone or in small isolated groups.

III. Procedures for preparation, submission, review and approval of research project outlines.

A. Each research project outline shall be assigned a unique number. Details of the proposed numbering system are outlined in attachment no. 2. Each unique number shall consist of: location code--year of initiation--number. Examples are given in attachment

no. 2. Location Directors are responsible for assigning numbers and keeping records on project numbers for field locations and Faculty Deans are similarly responsible for on-campus research. Each year, newly initiated projects will be assigned consecutive numbers beginning with the number one (1). The location code shall be ascertained on the basis of the location of the Principal Investigator.

B. The format for preparing a research project outline is provided in attachment no. 3. The project outline shall be submitted through channels with sufficient copies for signature and distributed as follows:

- Researcher(s)-1 copy for each researcher
- Director of Research-1
- Location file-1
- Section file-1
- Fiscal officer-1

Thus each project outline should be submitted in at least 5 copies (more depending on the number of researchers involved).

C. Each research project outline shall undergo the following approval process:

- Step 1: The Section Head/Department Chairman shall review the project for conformance with the research unit mission, policy, objectives and technical adequacy.
- Step 2: The Section Head/Department Chairman shall pass the research project outline on to the Location Director/Faculty Dean who will review the project in accordance with the responsibilities of his office.
- Step 3: The Location Director/Faculty Dean will pass the research project on to the Director of Research who will record its receipt and pass it to the Research Project Technical Review Committee. See attachment nos. 4 and 5.
- Step 4: The Technical Review Committee shall furnish its recommendations to the Director of Research through the Fiscal Officer who shall take into account the fiscal requirements of the project. See attachment no. 6 for proforma of manpower and fiscal data.
- Step 5: The Director of Research shall provide final approval or disapproval for the NWFP-Agricultural University.

General: At any or all points within the approval process, each signer may append to the research project outline written comments whether of a general nature or as justification for approval or disapproval. If disapproved at any point along the line, the research project shall be returned to the Principal Investigator along with written comments. If disapproved, the Principal Investigator retains the option of forwarding the research project to the next administrative level provided the signed disapproval comments are appended. At any administrative level below the Technical Review Committee, if no action is taken on a research project within a period of 15 days and is documented by a copy of the forwarding memo, the Principal Investigator has the option of submitting the research project to the next higher administrative level.

D. Timing:

- Unless otherwise indicated, each research project shall continue for three (3) years. Justification for longer or shorter periods of time will be considered.
- The system of approved research project outlines shall be initiated at the earliest possible date but not later than 1 July 1989. It is planned that all research within the NWFP Agricultural University system be conducted under the authority of approved outlines.
- Individual Principal Investigators are encouraged to submit research project outlines well in advance of anticipated initiation but not later than 90 days before anticipated date of initiation. For the initial submission in preparation for the 1 July 1989 deadline, projects must be submitted not later than 1 March 1989.
- Individuals involved in the approval process shall expedite their recommendations; but (except for the Technical Review Committee) in no instance shall hold the project for more than 15 days. In the event of an absence, the official "acting" in the position shall have the authority to sign. The Technical Review Committee shall meet at least monthly when project reviews are pending and shall return review comments at the earliest possible date but not later than 60 days from the date of receipt.

IV. Revision or termination of Research Projects.

A. If conditions warrant a significant change in an ongoing research project, the Principal Investigator shall submit the details of his recommendations for changes at least 90 days before the date of making the recommended changes.

B. Within 90 days after the termination of a research project, the Principal Investigator shall submit through channels a report providing the following information:

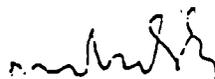
--Project identification information including title, project number, researchers involved, and date of initiation and termination.

--Abstract of significant findings.

--Recommendations for future work.

--List of publications emanating from the research.

The provisions of this administrative memorandum are effective immediately.



Mohammad Siddiq
Director of Research

Attachments

- No.1-Programs, Sections, Projects and Experiments
- No.2-Numbering system for Research Project Outlines
- No.3-Proforma for Research Project Outlines
- No.4-Composition of Research Project Technical Review Committee
- No.5-Membership of Research Project Technical Review Committee,
1988-91
- No.6-Proforma for assessment of Manpower Needs and preparation
of Project Budgets
- No. 7-Terms of Reference for Research Project Technical Review Committee

Attachment No. 1

The interrelationships of research program, section, project and experiment.

EXAMPLES:

Institution:	Cereal Crops Research Institute
Program:	I. Maize
Section:	A. Maize Breeding
Research Project:	1. Breeding improved varieties of maize for the agro-ecological conditions of NWFP.
Experiment:	a. Development of short duration hybrids and double top crosses for general cultivation.
Experiment:	b. Breeding an early maturing (80 day) variety adapted to cooler upland conditions.
Research Project:	2. Seed increase of improved maize germplasm to facilitate breeding and seed distribution.
Experiment:	a. Production of pre-basic seed of approved/released varieties.
Experiment:	b. Maintenance and seed increase of promising breeding material.
Section:	B. Maize Agronomy
Research Project:	1. The improvement of maize yields through agronomic practices.
Experiment:	a. Varietal trials of full season and short season maize.
Experiment:	b. Fertilizer and spacing trials on maize.
Experiment:	c. Time of planting trials for different varieties.
Program:	II. Wheat
Section:	A. Wheat Breeding
Research Project:	1. Breeding improved varieties of wheat for the agro-ecological conditions of NWFP.
Experiment:	a. Varietal improvement through hybridization.
Experiment:	b. Varietal development through introduction/selection.
Section:	B. Wheat Pathology
Research Project:	1. Studies of the role of germplasm and chemicals in minimizing losses from plant diseases.
Experiment:	a. Screening of wheat breeding material for leaf rust resistance.
Experiment:	b. Studies on chemical control of kernel bunt of wheat.

TERMS OF REFERENCE FOR RESEARCH PROJECT TECHNICAL REVIEW COMMITTEE (TRC)

The TRC shall serve as the principle advisory body to the Director of Research and shall be the sole committee within the University who has the primary responsibility for determining the quality of the research carried out by both off- and on-campus staff/faculty. The TRC is charged with the responsibility to develop a single unified system of research for both the off- and on-campus researchers and shall assure equal opportunities for research funding for all staff based on merit. Within this framework, the TRC will be responsible for the technical review of all research project outlines (RPOs). Technical review will involve the determination of research priorities, the improvement of research projects through a process of peer review, the allocation of available research funds, and the promotion of activities/approaches to attract outside research funds. In the technical review process, the TRC shall have the responsibility of submitting research proposals to the best authorities on the subject in the University and if needed competent scholars in other institutions. Specifically the TRC shall function within the following guidelines:

1. The TRC shall be responsible for establishing standards and maintaining the technical excellence of all research conducted by staff/faculty of the NWFP-AU.
2. All research conducted by the staff/faculty of NWFP-AU shall be covered by a formally approved research project outline in accordance with Administrative Memorandum No.1. In those instances where graduate student research is a part of the major professor's research program, it shall be covered by a research project outline. Such arrangements whereby graduate thesis research is a part of a larger research project is to be encouraged.
3. The final authority in the approval of RPOs shall be vested in the Director of Research (or the Associate Director on his behalf). However, the TRC is expected to involve itself in all aspects of framing the research program of the University and in involvement of all relevant expertise within and outside the University in the development of the research program. This involvement includes:
 - o--maintaining and enhancing the technical excellence of all research projects.
 - o--determining whether the RPOs encompass a logical sphere or area of research in relation to research programs, sections, and experiments. Individual trials or experiments shall normally be considered a sub-unit of a research project. Individual RPOs shall be developed primarily to solve problems and not just cover the research activities of a group of researchers.
 - o--insuring that multidisciplinary approaches are utilized where advantageous.
 - o--encouraging combined on- and off-campus teamwork and co-investigations as appropriate.
 - o--ascertaining that research projects are concerned with relevant and important agricultural problems which fully take into account the Provincial and National priorities and policies.
 - o--ascertaining that research projects are designed to answer the problems of farmers and that the envisioned research results can be utilized by farmers within the framework of their socio-economic conditions, land holdings and tenure, credit availability and other related factors.
 - o--determining whether researchable problems are identified in the research projects.
 - o--determining if the research approaches and data to be obtained are likely to yield meaningful results and conclusions.
 - o--evaluating whether the proposed research staffing and budgets are reasonable and consistent with the likely benefits of the research.

4. The TRC is expected to be objective in its review of RPOs. It is visualized that many RPOs may have to be returned to the originators several times for revision. Full utilization shall be made of reviewers outside the TRC.
5. The recommendations of the TRC shall be made on the basis of quality and relevance and shall be made to the Director of Research (or his representative) for implementation.
6. The TRC shall be involved with the total base or normal funds available for supporting both on- and off-campus research. The TRC shall utilize this information to develop recommendations for the overall research program of the University. Budget considerations of the TRC shall include prioritizing of research project proposals as well as adjusting budget figures within individual RPOs to conform with the budget constraints. Also, the TRC shall actively seek separate funding for the purchase of major research equipment items (e.g. TIPAN, MART etc.) deemed by the TRC to be an integral part of high priority research projects. The TRC shall also actively seek funding/grants for the overall support of research projects (e.g. organizations within Pakistan as well as international donor agencies).
7. The TRC shall not be directly involved in the allocation of ADP funds through development schemes. Such funds go directly to the individual development projects. However, the TRC will play an active role in the technical review of development schemes, i.e., the same as for any other project supported by base or normal funds. Also, the TRC will perform an active role in recommending whether or not ADP funds should be converted to base or normal funding.
8. Funding for all RPOs reviewed by the TRC during fiscal year 1988-89 shall commence with fiscal year 1989-90. For allocating funds, the TRC shall consider all RPOs simultaneously with final decisions based on a process of prioritization and scaling back of individual RPO budget requests to conform to the available funds.
9. In succeeding years, the TRC shall establish a due date for all new RPOs and similarly decide on funding of all RPOs simultaneously within the framework of available funds as outlined under no.8.
10. The TRC shall be concerned with the development of a research program for all researchers within the University who have a research responsibility irrespective of background, training and experience. Accordingly the TRC may be needed to work closely with certain researchers in the development of a quality program. This may require official travel to field locations, the conduct of training sessions, and the counseling of individuals.

Research Review and Planning Conference

Draft Program
6 March 1989

I. Commodity Research--Breeding/Selection/Testing/Evaluating
Germplasm: Management: Agronomy, Fertilizers, Crop Rotation; and
Protection: Entomology, Pathology, and Weed Science.

A. Cereals

1. Wheat and Barley Research

- a. Mr. Allauddin Khan, Director, CCRI
- b. Mr. Ali Haider, CCRI
- c. Dr. Zahoor Ahmad Swati, PB&G, Campus

2. Maize Research

- a. Dr. Mohammad Saleem, Maize Botanist, CCRI
- b. Dr. Fazli Karim, CCRI
- c. Mr. Mohammad Siraj, PB&G, Campus

3. Rice Research

- a. Dr. Paigham Shah, Agron., Campus
- b. Mr. Amir Zaman Khan, Agron., Campus
- c. Mr. Alim Said, ARS, Mingora
- d. Mr. Mohammad Dilrosh, ARS, Mingora (InTng)
- e. Mr. Rafiquilah Shah, ARI, D.I.Khan

4. Sorghum/Millet Research

- a. Mr. Mohammad Akram Khan, ARI, D.I.Khan
- b. Mr. Sherin Khan, Agron., Campus

B. Oilseeds/Pulses

1. Pulse Research

- a. Mr. Abdul Wadood, Karak
- b. Dr. Saeedul Hasan, PB&G, Campus

2. Oilseed Research

- a. Dr. Mir Hatam, Agron., Campus
- b. Mr. Mohammad Rahim, ARS, Mingora
- c. Mr. Farooq Ahmad, ARI, Tarnab

C. Horticultural Crops**1. Fruit Research**

- a. Dr. Saifullah Khattak, Fruit Max., Tarnab
- b. Dr. Faridullah Khan Wazir, Hort., Campus
- c. Mr. Iftikharul Haq, ARI, Tarnab
- d. Mr. Taslim Jan, ARI, Mingora

2. Vegetable Research

- a. Mr. Mohammad Atta Shuja, Director, Abbottabad
- b. Mr. Pordil Khan, Veg. Max., Tarnab
- c. Mr. Abdul Hanan, ARI, Tarnab
- d. Mr. Abdul Majeed, ARS, Mingora

D. Sugar Crops**1. Sugarcane Research**

- a. Dr. Imran Mohammad, SCRI
- b. Dr. Said Rehman, SCRI
- c. Mr. Habib Akbar, Agron., Campus
- d. Mr. Gul Rehman, SCRI

2. Sugarbeet Research

- a. Mr. Ghulam Sarwar Khan, Director, SCRI
- b. Dr. Mohammad Shahid, Entomology, Campus
- c. Mr. Mohammad Amin, SCRI
- d. Mr. Shah Nazar Khan, SCRI

E. Tobacco Research

- a. Dr. Bahadur Ali, Tobacco Res. Sta., Mardan
- b. Mr. Gul Waris, Tobacco Res. Sta., Mardan
- c. Mr. Sher Afzal, Tobacco Res. Sta., Mardan
- d. Dr. Fazal Hayat Taj, Agron., Campus

II. Livestock and Livestock Feed

A. Livestock/Poultry Production Research

- a. Dr. Ghulam Habib, Surezai
- b. Mr. Mira Khan, Surezai
- c. Dr. Syed Iqbal Shah, Liv. Mgmt., Campus
- d. Mr. Jamshid Khan Jadoon, ARS, Jabba
- e. Dr. Mushtaq Ahmad Mian, Poul. Sci., Campus

B. Livestock Disease Research

- a. Dr. Bashir Qureshi, Director, VRI
- b. Mr. Yousaf Marwat, VRI
- c. Mr. Mohammad Hafenz, VRI
- d. Mr. Mashooq Ali, VRI

C. Fodder and Forage Research

- a. Dr. Habib ur Rehman, PB&G, Campus
- b. Mr. Shad Khan, Agron., Campus
- c. Mr. Muslim Shah, ARI, Tarnab (InTng)

III. Discipline Research

A. Entomology Research

- a. Dr. Mohammad Shahid, Entomology, Campus
- b. Dr. Naseer Hussain, Plant Prot., Campus
- c. Dr. Karimullah, Entomology, Campus
- d. Mr. Imtiaz Ahmad, ARI, Tarnab
- e. Mr. Ahmad Jan, SCRI
- f. Dr. Nawab Khan, ARI, DIK

B. Plant Pathology Research

- a. Dr. Sher Hassan, Plant Path., Campus
- b. Dr. Shabeer Ahmad, Plant Path., Campus
- c. Mr. Mohibullah, ARI, Tarnab
- d. Mr. Fatehullah Khan, ARI, D.I.Khan
- e. Mr. Sabir Hussain Shah, ARI, Tarnab
- f. Mr. Attaudin Mian, CCRI

C. Weed Science Research

- a. Dr. Khan Bahadur Marwat, PB&G, Campus
- b. Dr. Mohammad Khan, CCRI
- c. Mr. Gayyum Nawaz, ARI, Tarnab
- d. Mr. Zainullah Khan, SCRI

D. Plant Physiology Research

- a. Dr. Khan Zada, Agron., Campus
- b. Mr. Abdur Rashid, ARI, Tarnab

E. Soil Fertility/Soil Chemistry Research

- a. Mr. Habib ur Rehman, Director, Mingora
- b. Prof. Jehangir Khan Khattak, Soils, Campus
- c. Dr. Ahmad Bakhsh, ARI, D.I.Khan
- d. Mr. Sadaqat Hussain, ARI, Tarnab

F. Agricultural Chemistry/Biochemistry/Human Nutrition Research

- a. Dr. Tajamul Hussain, AC&HN, Campus
- b. Dr. Jehangir Khan Khalil, AC&HN, Campus
- c. Dr. Sabir Hussain Shah, ARI, Tarnab

G. Seed Technology Research

- a. Dr. Fazal Hayat Taj, Agron., Campus
- b. Mr. Inayatullah, ARI, Tarnab
- c. Mr. Khaista Gul, CCRI

H. Food Technology Research

- a. Dr. Mohammad Saeed, FS&T, Campus
- b. Mr. Fazli Karim, ARI, Tarnab
- c. Mr. Malik Ghulam Jilani, ARI, D.I.Khan

I. Social Sciences Research

- a. Dr. Nurul Islam Mian, Dean, IDS, Campus
- b. _____
- c. _____

IV. Outreach/Extension -- adaptive research, on-farm research and technology transfer

Contact Rauf Khattak of Outreach

NWFP AGRICULTURAL UNIVERSITY
RESEARCH DIRECTORATE
PESHAWAR

Date: March 13, 1989

Subject: Activities of Program Committee for
Research Review and Planning Conference

To: Field Location Directors

As we have discussed on several occasions in our monthly meetings, we need to develop a long-term strategic research plan outlining objectives, goals, and research priorities for our total University research program for the next 5 to 10 years. In order to develop this "look to the future", we feel that we must first look at the past and determine where we are now in the development of agricultural technology. Thus we are proposing the development of state-of-the-art review papers for all of the major research activities of our University. After these review papers are prepared, we propose the scheduling of a research review and planning conference to hear the papers and begin the process of developing a long-term research plan.

In order to plan for the preparation of these review papers, we have appointed a program committee consisting of the following individuals:

Dr. Fazal Hayat Taj, Agronomy, Campus, Chairman
Dr. Sabir Hussain, Tarnab
Dr. Ahmad Bakhsh, D.I.Khan
Mr. Baz Mohammad Khan, Outreach
Dr. Ghulam Habib, Surezai
Dr. Said Rehman, SCRI
Dr. Mohammad Khan, CCRI
Dr. Khan Zada, Agronomy, Campus
Dr. Karimullah, Entomology, Campus

The program committee has developed the proposed titles and authors for the review papers and would now like to travel to the various research locations, make contact with proposed authors, and overall get the process of organizing the review papers started. The proposed schedule for the field visits is as follows:

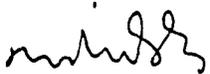
25-27 March to Karak and D.I.Khan
29-30 March to Mingora and SCRI
2-4 April to Abbottabad and Jabba
6 April to Tarnab, CCRI and Surezai
8 April contact with on-campus authors

On the occasions of these visits, the committee will meet with the proposed authors, participate in detailed discussions as to the form and content of the review papers, and provide hand-out materials to get the process started. Specifically, this committee would like to meet with the following individuals at each location:

- | | |
|--|--|
| <p>1. CCRI - 6 April
 Mr. Allaudin Khan
 Mr. Ali Haider
 Dr. Mohammad Saleem
 Dr. Fazli Karim
 Mr. Attaudin Mian
 Dr. Mohammad Khan
 Mr. Khaista Gul</p> | <p>2. Mingora - 29 March
 Mr. Alim Said
 Mr. Mohammad Rahim
 Mr. Taslim Jan
 Mr. Abdul Majeed
 Mr. Habib ur Rehman</p> |
| <p>3. D.I.Khan - 26 March
 Mr. Rafiqullah Shah
 Mr. Mohammad Akram Khan
 Dr. Nawab Khan
 Mr. Fatehullah Khan
 Dr. Ahmad Bakhsh
 Mr. Malik Ghulam Jilani</p> | <p>4. Karak - 25 March
 Mr. Abdul Wadood</p> |
| <p>5. Tarnab - 6 April
 Mr. Farooq Ahmad
 Dr. Saifullah Khattak
 Mr. Iftikharul Haq
 Mr. Pordil Khan
 Mr. Abdul Hanan
 Mr. Muslim Shah
 Mr. Intiaz Ahmad
 Mr. Mohibullah, Path
 Mr. Sabir Hussain Shah, Path
 Mr. Qayyum Nawaz
 Mr. Abdur Rashid
 Mr. Sadaqat Hussain
 Dr. Sabir Hussain Shah, Agr.Chem.
 Mr. Inayatullah, Seed Tech.
 Mr. Fazli Karim, Food Tech.</p> | <p>6. Abbottabad - 2 April
 Mr. M. Atta Shuja</p> <p>7. Mardan - 6 April
 Dr. Imran Mohammad
 Dr. Said Rahman
 Mr. Gul Rahman
 Mr. Ghulam Sarwar Khan
 Mr. Mohammad Amin
 Mr. Shah Nazar Khan
 Mr. Zainullah Khan
 Mr. Ahmad Jan</p> |
| <p>9. Jabba - 3 April
 Mr. Jamshid Jadoon</p> | <p>8. Surezai - 6 April
 Dr. Ghulam Habib
 Mr. Mira Khan</p> |

We would appreciate your informing the above individuals of these impending visits and working with the committee in getting this important activity underway.

If there are any changes in this schedule, we will be contacting you.


 Mohammad Siddiq
 Director of Research

c.c. V.C. G.M. Khattak
 Dr. Fazal Hayat Taj

NORTHWEST FRONTIER PROVINCE
AGRICULTURAL UNIVERSITY
Peshawar

21 March 1989

SUBJECT: Preparation of Research Review Papers

TO: Authors of Research Review Papers

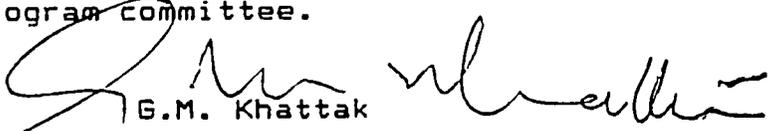
Research consists of many different activities, e.g., planning, implementing, data collection, data analysis and summarization, and finally the development of conclusions, summaries and recommendations. Even after all of the aforementioned steps are finalized for a given research project, we often need to take a look at all of the research in a given subject area and determine where we are with respect to the current status of technology development.

Our University has assumed the responsibility for developing a long-term strategic research plan which will outline the objectives, goals and research priorities for the next several years. However, before we develop the long-term plan, we feel that we must first determine where we are with respect to what we have already accomplished. Accordingly, we have appointed a committee to organize a series of state-of-the-art research review papers. After these papers are prepared, we plan to schedule a conference where the papers will be presented and the process of developing a long-term research plan will begin.

The committee has developed proposed titles and authors for the review papers and will be contacting you in the near future relative to your accepting this important assignment. The committee informs me that they would like to receive first drafts of these papers by 1 July 1989.

I know that you will expend the extra effort necessary to develop state-of-the-art review papers which will be a credit to our University. In order to partially compensate you for this effort, I am authorizing the payment of 1,000 rupees to each author of an acceptable paper, *as an honorarium.*

Should you have any further questions, I would suggest that you contact a member of the program committee.


G.M. Khattak
Vice-Chancellor

cc: Dr. Fazal Hayat Taj, Chairman, Program Committee
Mr. Mohammad Siddiq, Director of Research

NORTHWEST FRONTIER PROVINCE
AGRICULTURAL UNIVERSITY
Peshawar

November 1, 1988

SUBJECT: Implementation of a System of Annual Research Reports
for the NWFP-Agricultural University

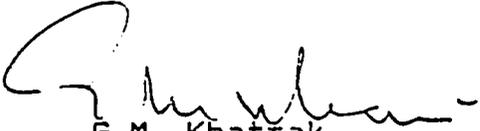
TO: Researchers of the NWFP-Agricultural University

As a follow through to the initiation of a system of research projects in our University, we would like to develop definitive procedures for the reporting of research results. Accordingly the attached administrative memorandum is being issued by the Research Directorate for your guidance in the preparation of Annual Research Reports. Since this is our first effort at formalizing the proforma for these reports, we expect to issue revisions after we obtain more experience. Your suggestions for improvement are solicited.

We are asking that reports from off-campus institutes/stations be bound into one document for each location. For on-campus research, we are requesting one bound report from each faculty. We realize that it will not be possible to fully implement these procedures until after we have finished the process of developing formal research projects. Thus, we will be expecting the first Annual Research Reports from both off- and on-campus research activities on October 1, 1989.

Recently we were fortunate in obtaining an offset press. The unit is located on-campus and is being operated by our Outreach Directorate. You may want to take advantage of these services when you face the task of preparing the large number of copies required for your report.

We look forward to the receipt of these reports which are so important in communicating our research results both within and outside of the University.


G.M. Khattak
Vice Chancellor

Attachment

NORTHWEST FRONTIER PROVINCE
 AGRICULTURAL UNIVERSITY
 RESEARCH DIRECTORATE
 Peshawar

ADMINISTRATIVE MEMORANDUM NO. 2

November 1, 1988

SUBJECT: Annual Research Reports

This Administrative Memorandum concerns the Annual Research Report (ARR) to be prepared by all faculty researchers of NWFP-AU. Unless graduate student research is covered by a research project outline and is a part of the major professor's research program, it should not be reported on in the ARR. Researchers should report their research in the ARR irrespective of the source of funding including permanent/SNE; annual development program; and PARC funded projects (Coordinated, PL-480 etc.).

The ARR is an in-service document of the NWFP-AU intended to provide timely information on the progress of our research program. Even though the ARR is not a publication per se, it should be prepared with sufficient effort and editorial input so that it is of high quality and a credit to the University. The ARR provides preliminary research results, discussion and conclusions for information and programmatic uses within the University as well as to our associates and cooperators who need to know the results of our work prior to formal publication. In addition, the ARR provides an overview of staff and their activities supportive of the research role.

The ARR should be prepared by all researchers within the NWFP-AU and consolidated into individual bound reports for the following entities:

- Off-campus Field Research Institutes/Stations - one report for each location.
- On-campus Faculties - one report for each faculty.

Location Directors are responsible for consolidating and editorial excellence of off-campus ARR's and Faculty Deans are similarly responsible for on-campus faculties.

Each ARR should cover research activities during the fiscal year, i.e., July 1 through June 30. Thus for field experiments, the ARR will generally cover results from kharif experiments harvested in the first half of the fiscal year and rabi experiments harvested during the second half. For laboratory type research where season is not involved, the ARR should cover accomplishments during the July 1 to June 30 reporting period.

Fifty (50) copies of the ARR covering the previous fiscal year's activities should be submitted to the Research Directorate not later than October 1 each year. The initial ARR under the provisions of this Administrative Memorandum covering activities of the off-campus field research locations shall be due November 1, 1988; whereas on October 1, 1989 and subsequent years, reports will be due from both field locations and campus faculties.

The ARR should consist of eleven sections as described in attachment no. 1. Additional sections may be added if desired.

The provisions of this administrative memorandum are effective immediately.



Mohammad Siddiq
Director of Research

Attachment-1

Attachment No. 1 -- Proforma for Annual Research Reports (ARR)

Section I - Acknowledgements

Section II - Table of Contents

Section III - Foreword

Section IV - Executive Summary

Section V - Introduction

Section VI - Professional Staff

Outline in a table by Research Sections/Departments the following:

1. Name, academic qualifications (or vacant)
2. Title designation of post
3. BPS scale
4. Number of posts sanctioned
5. Number of individuals in position
6. Number of positions vacant

Section VII - Summary of climatic data for the parent location of Institute/Station/Department*.

Prepare a summary table of climatic data to include:

1. Mean**monthly rainfall
2. Monthly rainfall for current reporting period.
3. Mean**maximum daily temperature by months.
4. Mean maximum daily temperature by months for current reporting period.
5. Mean** minimum daily temperature by months.
6. Mean minimum daily temperature by months for current reporting period.
7. Mean** monthly humidity (average of daily maximum and minimum).
8. Mean monthly humidity (average of daily maximum and minimum) for current reporting period.
9. Mean** total monthly pan evaporation.
10. Total monthly pan evaporation for current reporting period.
11. Other as available: solar radiation, percent possible sunshine etc.

* For on-campus research, climatic data for Malakander Farm shall be reported by the Faculty of Plant Science.

**Indicate number of years used to calculate means. Also units (mm,%etc).

Section VIII - Reports by Individual Research Project Outlines***

1. Project Number - Repeat same as from Research Project Outline.
2. Title - Repeat same as from Research Project Outline.
3. Previous Work

First year of project - for the first year that project is reported upon in the ARR, repeat the same material as given in the Research Project Outline.

Subsequent years of project - cite only original entry into ARR. For example: "See 1986-87 Annual Report"
4. Justification

First year of project - for the first year that project is reported upon in the ARR, repeat the same material as given in the Research Project Outline.

Subsequent years of project - cite only original entry into ARR. For example: "See 1986-87 Annual Report"
5. Objectives - Repeat same as from Research Project Outline.
6. Procedure

First year of project - for the first year that the Research Project is reported upon in the ARR, repeat the same material as given in the Research Project Outline.

Subsequent years of project - cite only original entry into ARR. For example: "See 1986-87 Annual Report"
7. Duration - Repeat same as from Research Project Outline
8. Personnel - Repeat same as from Research Project Outline.
9. Institutional Units Involved

First year of project - for the first year that the Research Project is reported upon in the ARR, repeat the same material as given in the Research Project Outline.

Subsequent years of project - cite only original entry into ARR. For example: "See 1986-87 Annual Report"

***For the November 1, 1988 report from the field, location should utilize the old system of project numbers.

10. Cooperation

First year of project - for the first year that the Research Project is reported upon in the ARR, repeat the same material as given in the Research Project Outline.

Subsequent years of project - cite only original entry into ARR. For example: "See 1986-87 Annual Report"

11. Financial Support

First year of project - for the first year that the Research Project is reported upon in the ARR, repeat the same material as given in the Research Project Outline.

Subsequent years of project - cite only original entry into ARR. For example: "See 1986-87 Annual Report"

12. Plans for Publication

First year of project - for the first year that the Research Project is reported upon in the ARR, repeat the same material as given in the Research Project Outline.

Subsequent years of project - cite only original entry into ARR. For example: "See 1986-87 Annual Report"

13. Experimental Data and Observations - a presentation of the current year's research results including statistically analyzed data along with observations such as to growing season conditions and the results of experimental treatments.

14. Summary and Conclusions - a presentation outlining the summary and conclusions emanating from the current year's results along with a discussion of the relevance of the current year's data as related to previous results (from the same project) or results from other unpublished or published sources. Discuss relevance of data as related to the solving of problems, applicability of results, and potential for technology transfer. Since this is the only section which will be read by many, it is extremely important that material be well thought out and well written. Editorial assistance should be sought if needed. Material from this section may be repeated word for word in other reports.

15. Literature Cited

First year of project - for the first year that Research Project is reported upon in the ARR, repeat the same material as given in the Research Project Outline.

Subsequent years of project - cite only original entry into ARR. For example: "See 1986-87 Annual Report"

Section IX. Location/Faculty Activities

- A. Field Days held.
- B. Training courses.
- C. Participation by staff in training courses, conferences, symposia, meetings.
- D. Seminars held.
- E. Seed production and distribution.
- F. Number of research project outlines prepared and submitted to NWFP-AU and other funding sources.
- G. Number of research project outlines approved for funding by NWFP-AU and other funding sources.

Section X. Publications

By individual research project outline numbers, indicate status of manuscripts by the following categories:

- A. Manuscript prepared (indicate intended mode of publication)
- B. Manuscript submitted for publication (indicate mode of publication)
- C. Manuscript accepted for publication (indicate by whom accepted)
- D. Manuscript published (indicate journal, volume, number, pages, date etc.)

Section XI. Constraints and Recommendations.

14 December 1988

SUBJECT: Preparation and Distribution of Copies of
Annual Research Reports

TO: Director of Research
Director of Outreach
Field Research Location Directors
Faculty Deans
Department Chairmen

Reference is made to Administrative Memorandum No. 2, dated 1 November 1988, whereby we requested 50 copies be made of your Annual Research Reports. Upon further consideration, we would like to request that you prepare 60 copies (with additional copies for field Section Heads at parent location) per the attached distribution list.

Your attention is also directed to my covering memorandum to Administrative Memorandum No. 2, dated 1 November 1988, whereby we offered the services of the recently acquired offset press to make the necessary number of copies of your Annual Research Reports. We reemphasize that you may want to take advantage of these services. Be sure to provide a top quality original for preparing the necessary plates and subsequent copies.

The Annual Research Report is an in-service document of the NWFP-AU intended to provide timely information on the progress of our research program. In order to carry out our research function, it is highly important that we communicate our program to each other through these reports. At the same time, we have much work to do in the context of improving the quality of our Annual Research Report before we consider distributing the reports to others outside the University. Accordingly, no copies (repeat no copies) will be distributed to any individual or organization outside the University without prior approval from my office. As we continue to work together to improve the quality of our reports, I am confident that we will in the near future be proud to distribute these reports to our outside associates and cooperators.

Your usual excellent cooperation in this matter will be greatly appreciated.

/s/

G.M. Khattak
Vice-Chancellor

Attachment

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DISTRIBUTION OF ANNUAL RESEARCH REPORTS

	Total
1. One copy to each of 12 Field Location Directors	12
2. One copy to each of 5 Faculty Deans	5
3. One copy to each of 16* Department Chairmen	16
4. One copy to each member of the Research Project Technical Review Committee	14
5. Director of Research(1 file;2 loan)	3
6. Associate Director of Research	1
7. Director of Outreach(1 Dir,4 Reg Dir,1 Info)	6
8. Vice-Chancellor	1
9. One copy for each Field Section Head (originating location only)	variable
10. TIPAN office (1file;1. Res. Specialist)	2
Total (minimum)	----- 60

*Omit copies to the Department of Math, Physics and Statistics,
Department of Islamic and Pakistan Studies, and Department
of English

TIPAN

a project of
NWFP Agricultural University
University of Illinois at Urbana-Champaign
Southern Illinois University of Carbondale

TIPAN FIELD OFFICE
NWFP Agricultural University
Peshawar, Pakistan
Project Office: 44490, 44500
Telex: 52399 USAID PK

To: Mr. Thomas McCowen,
University of Illinois.

From: Dr. Gilbert H. Kroening,
Teamleader, TIPAN.



Date: 17 March 1990

Subject: Final Report - Dr. Jack Bond.

Please find enclosed the following:

- (1) diskette containing two files both pertaining to Dr. Bond's report.

File Final Report, is the first 16 pages of the report only.
File TRC, is Attachment 7. (Technical Review Committee).

- (2) a copy of the completed report.

Note this is the only diskette we have relating to the report if you require any further assistance please contact Dr. Bond.

TIPAN

a project of
NWFP Agricultural University
University of Illinois at Urbana-Champaign
Southern Illinois University of Carbondale

TIPAN FIELD OFFICE
NWFP Agricultural University
Peshawar, Pakistan
Project Office: 44490, 44560
Telex: 52399 USAID PK

Mr. Abdur Rahman Khan,
Vice Chancellor,
NWFP Agricultural University,
Peshawar.

21 February 1990

Dear Dr. ~~Bhatti~~, *Rahman*

Under the TIPAN Project it is proposed to develop text books for the agricultural universities. It is suggested that a start will be made with books for the beginning students. Each book shall have a major author and several co-authors selected mostly from amongst the faculties of the agricultural universities, and a resource person from PARC or other agricultural research agencies.

The task shall be guided by a task force comprising 2 representatives from each agricultural university; one from Balochistan Agricultural College; one each from UGC, PARC, National Book Foundation, MART and TIPAN; Director of Publications PARC; and the co-ordinator text books project.

The task force shall meet once or twice a year to select priorities for text books topics, identify authors and co-authors and resource persons for various text books, and deliberate on any other matter in this connection.

I would be highly obliged if you could nominate two of your faculty with a good over-view of the disciplines taught at your university and of our community of teachers and research workers in agricultural sciences, to be members of the task force. The people selected should understand that they represent all disciplines at your university. This will not take a large amount of their time as we will meet only once a year.

Dr. G.M Khattak has been selected to be the National Coordinator for this project and will be working closely with the people you select.

I have attached a document describing the program. We would appreciate having your nominations by March 5th as we will be having the first meeting on March 26th 1990.

Yours sincerely,
Everett D. Edington
Everett D. Edington,
Teaching Specialist.

cc: Dr. Gilbert H. Kroening, Teamleader, TIPAN
Dr. Abdul Qayyum, Project Officer.

The Development of a Long-Term Staffing
and Advanced Academic Training
Plan for NWFP Agricultural University
December 1989

The overall effort to develop a long-term staffing plan and advanced academic training plan for NWFP-AU began in latter 1988. By December 1988, both a proposed master list of discipline titles as well as a tentative classification of all professionals within the university by discipline title was submitted to Department Chairmen and Field Station Directors.

By March 1989, a master list of all professionals of AU was developed (table 1). This master list provided the needed background information to begin the development of a staffing and training plan, i.e., names, grades, birth dates, location of assignment, advanced degrees, working titles, discipline titles, and status of recent advanced academic training. Many staff changes have occurred since March 1989 and the master list needs to be updated. However, all succeeding tables are based on the March 1989 master copy (table 1) and is thus presented here if anyone desires to verify the statistics in tables which follow.

During a 1 April 1989 meeting of Deans, Directors, Department Chairmen, and Field Location Directors, a thorough discussion was held relative to the needed input by all staff in the development of a staffing and training plan. During this meeting, committees were appointed to develop recommendations. Subsequently the Vice-Chancellor appointed a 4-man committee to evaluate the recommendations received and to develop a long-term staffing plan. This committee developed a staffing plan which outlined university needs in each discipline for (1) current need, (2) need by 1994, and (3) need by 1999 (tables 2 and 3). This proposed staffing plan was distributed to Deans, Directors, Department Chairmen and Field Location Directors on 14 June.

Utilizing the "current need" assessment from the long-term staffing plan (table 2) as a model for the idealized distribution of disciplines between discipline areas and taking into account those previously involved in training, calculations were made for the number of remaining training slots by discipline area for a total of 65 remaining slots (table 4). Finally, actual training slots by discipline area was decided in a meeting of Deans and Directors on 2 November 1989 (table 4). Remaining training slots by discipline area for on-campus and off-campus faculty as decided at the 2 November meeting are shown in table 5, whereas slots by individual disciplines are shown in table 6. Table 7 accounts for individuals listed as "pending" per Dr. John Santas' monthly report of 31 July 1989 and tentatively allocates 29 of the 65 available slots to individuals already meeting TOEFL requirements and ready for consideration for advanced academic training through TIPAN. Table 8 summarizes the utilization of the 65 remaining training slots including the names of pending incumbents as well as those slots yet to be filled.

Table 1 - Master List of Professional Staff (BPS-17 and above) of NWFP-AU

2

MASTER WORK COPY (Latest revision - 22 March 1989)

Name	BPS	YOB	C	Site	Deg	YrDeg	DegFrm	Working Title	Discipline Title	Inq	Status	Source	IOEFL	Comments
G.M. Khattak	22		C	Admin	PhD			Vice Chancellor	237-Administration (gen.)					
Farooq Shah	19	45	C	Admin	MS			Registrar	237-Administration (gen.)	NA	Comp	TIPAN	450	
Mushahidin Shah	19		C	Admin	MA			Director of Finance	237-Administration (gen.)					
Sardar Alam		43	C	Admin	BS			Director of Works	237-Administration (gen.)					
Mohammad Asrar	19	41	C	Admin	MS			Educ Admin	229-Educational Admin	A	InProg	TIPAN		UIUC
Arshad Salim Malik	18	52	C	Admin	MS			Educ Admin	229-Educational Admin	A	InProg	TIPAN		UIUC
Ijaz Ahmad			C	Admin				Admin Officer	237-Administration (gen.)					
Mohammad Iftikhar	18	42	C	Admin	MS			Deputy Controller	237-Administration (gen.)					
Farzand Ali Jan	17	59	C	Admin	MBA			Asst Dir, Finance	237-Administration (gen.)					
Ghulam Ahmad Baig	17	50	C	Admin	MS			Dir, Physical Educ	237-Administration (gen.)					
Liaqat Ali	17	56	C	Admin	MA			Deputy Dir, P&D	237-Administration (gen.)	NA	Comp	TIPAN		AIT/Bangkok
Mohammad Iqbal			C	Admin				Dir, Examinations	237-Administration (gen.)					
Mohammad Siddiq	20	32	C	Resear	MS	63	AUB	Director, Research	14-Agronomy (gen.)	NA	Comp	MART		1986
Abdul Rauf Khattak	20	33	C	Outrch	MS			Director, Outreach	7-Sugarcane Agronomy	NA	Comp	TIPAN		(1985)(1987)
Baz Mohammad Khan	19	41	C	Outrch	MS			Div Prog Leader Out	130-Extension Education	NA	Comp	TIPAN		09/88-10/88
Qazi Ajiqullah	19	40	C	Outrch	MS	68	AUB	Div Prog Leader Out	47-Soil Fertility	NA	Comp	TIPAN		09/88-10/88
Gulfam Khan Jehangire	19	43	C	Outrch	MS	71	AUB	Div Prog Leader Out	9-Oilseed Agronomy	NA	Comp	TIPAN		09/88-10/88
S.Amir ul Hassan Zaidi	18	46	C	Outrch	MS			Information Officer	47-Soil Fertility				547	
Raja Sajjad Ali	18		C	Outrch				Senior AV Producer	135-Audio visual Aids				490	
Mansoor Ahmad	17		C	Outrch	MS			Cameraman	166-Entomology (gen.)					
Mohammad Ayaz	17	57	C	Outrch	MS	88	U.Wis	Print Media	132-Print Media	A	Comp	TIPAN		
FACULTY OF ANIMAL HUSBANDRY														
Syed Basit Ali Shah	20	35	C	AnNut	MS	66	CSU	Dean/Chairman	105-Ruminant Nutrition	NA	Comp	TIPAN		84/88
Mohammad Amjad	18	54	C	AnNut	MS			Asst Professor	105-Ruminant Nutrition	A	InProg	TIPAN		Univ Minn
Irfanullah	17	62	C	AnNut	MS			Lecturer	105-Ruminant Nutrition				467	
Nazir Ahmad	17	62	C	AnNut	MS			Lecturer	105-Ruminant Nutrition	A	Pend	TIPAN	423	
Mushtaq Ahmad Mian	20	42	C	PouSci	PhD	87	NCSU	Chairman	106-Non-Ruminant Nutrition	A	Comp	TIPAN		
Altaf ur Rehman	17	61	C	PouSci	MS			Lecturer	112-Poultry Management				447	
Fazli Raziq Durrani	18	49	C	PouSci	MS			Asst Professor	113-Poultry Nutrition	A	Pend	TIPAN	563	
Syed Iqbal Shah	20	41	C	LivMan	PhD	74	WSU	Chairman	110-Large Animal Management	NA	Comp	TIPAN		4/85-9/85
Taj Mohammad Khan	19	44	C	LivMan	MS			Assoc Professor	111-Small Animal Management	A	InProg	TIPAN		Univ Wyoming
Nazir Ahmad	18	48	C	LivMan	MS			Asst Professor	110-Large Animal Management				520	
Sohail Akhtar	17	58	C	LivMan	MS			Lecturer	110-Large Animal Management	A	InProg	TIPAN		Colo State
Syed Mirajuddin	17	49	C	AB&G	MS			Lecturer	99-Animal Breeding/Genetics	A	InProg	TIPAN		UIUC
Sher Nadir	17	59	C	AB&G	MS			Lecturer	101-Reproductive Physiology	A	Pend	TIPAN	563	
Johar Ali	17	63	C	AB&G	MS			Lecturer	116-Animal Biotechnology				543	

Name	BPS	YOB	C	Site	Deg	YrDeg	DegFrm	Working Title	Discipline Title	Inq	Status	Source	TOEFL	Comments
FACULTY OF RURAL SOCIAL SCIENCES														
Jamil Siddiqui	20	31	C	AE&RS	PhD	65	U.Wis	Chairman	127-Agr. Economics (gen.)					
Munir Ahmad Khan	17	56	C	AE&RS	MS			Lecturer	121-Agr Mktng/Cooperatives A	InProg	TIPAN			Univ Conn
Anwar Fazli Christi	17	49	C	AE&RS	MS			Lecturer	121-Agr Mktng/Cooperatives A	InProg	TIPAN			UIUC
Mohammad Bashir	18	46	C	AE&RS	MS			Assistant Professor	122-Farm Management/Prod Econ A	InProg	TIPAN			UIUC
Mohammad Nawab Khan	19	38	C	AE&RS	MS			Assoc Professor	122-Farm Management/Prod Econ NA	Comp	TIPAN			1/84-1/85 UIUC
Musawar Shah	17	61	C	AE&RS	MA			Lecturer	126-Rural Sociology				520	
Iftikhar Ahmed	17	58	C	AE&RS	MS			Lecturer	136-Agr Extensions (gen.)				443	
Asmatullah Khan	18	51	C	AE&RS	PhD	88	UIUC	Asst Professor	130-Extension Education	A	Comp	TIPAN		
Mukhtar Ahmad	17	61	C	AE&RS	MS			Lecturer	123-Resource Economics	A	Pend	TIPAN	553	
Mohammad Idris	17	59	C	AE&RS	MA			Lecturer	126-Rural Sociology	A	InProg	TIPAN		UIUC
Nurul-Islam Mian	21	31	C	IDS	PhD	60	W.Ger.	Dean/Director	137-Agric Policy/Rural Dev					
Mohammad Ahmad Khan	20	36	C	IDS	MPh			Chief Res Officer	138-Production Economics					
Jan Baz Khan	19	40	C	IDS	MPh			Sr Res Specialist	139-Rural Sociology	A	InProg	TIPAN		Penn State
Fazli Rahim Khan	19	43	C	IDS	MA			Sr Res Specialist	140-Rural Economu					
Mir Kalam Shah	18	54	C	IDS	MA			Research Specialist	138-Production Economics	A	Pend	TIPAN	547	
Mohammad Aurangzeb	18	54	C	IDS	MA			Research Specialist	141-Quantitative Methods				520	
Anwar Hussain	18	60	C	IDS	MA			Research Specialist	142-Economic Theory	A	InProg	TIPAN		U.Minn
Ikramullah Arbab	17	46	C	IDS	MA			Jr Res Specialist	143-Agr/Rural Development				367	
Mohammad Akram	17	53	C	IDS	MA			Sr Res Specialist	143-Agr/Rural Development					
Humayun Khan	17	57	C	IDS	MA			Jr Res Specialist	143-Agr/Rural Development				460	
Farman Ali	17	54	C	IDS	MA			Jr Res Specialist	143-Agr/Rural Development	NA	Comp	TIPAN	517	AIT/Bangkok
Mrs. Shaheen Shaukat	17	56	C	IDS	MA			Jr Res Specialist	144-Social Science Res Method					
Mrs. Khalida Shahnaz	17	56	C	IDS	MA			Jr Res Specialist	145-Rural Dev Planning/Admin	A	InProg	TIPAN		UIUC
Miss Raheela Begum	17	58	C	IDS	MA			Jr Res Specialist	143-Agr/Rural Development	A	Pend	TIPAN	550	
Noor Shahidin	17	55	C	IDS	MA			Jr Res Specialist	143-Agr/Rural Development	A	Pend	TIPAN	550	
Noor Paio Khan	17	61	C	IDS	MA			Jr Res Specialist	146-Agr Credit/Finance	A	Pend	TIPAN	543	
Mushtaq Ahmad Jadoon	17	58	C	IDS	MA			Jr Res Specialist	147-Anthropology	A	Pend	TIPAN	520	
Ms Shahzan Akhtar Bhatti	17	61	C	IDS	MA			Jr Res Specialist	148-Development Theories				467	
Mohammad Iqbal	17	52	C	IDS	MS			Jr Res Specialist	138-Production Economics					
Himayatullah	17	64	C	IDS	MS			Jr Res Specialist	149-Agricultural Econ (gen.)	A	Pend	TIPAN	540	
Miss Roshan Ara Yusufzai	17	58	C	IDS	MA			Jr Res Specialist	150-Proj Planning/Monitor				587	
Abul Bayan	19	42	C	IslSt	MA			Chairman	228-Islamic Studies				480	
Aziz ur Rahim	17	52	C	IslSt	MA			Lecturer	228-Islamic Studies				443	
Mohammad Idris	17	59	C	IslSt	MA			Lecturer	228-Islamic Studies					
Fida Mohammad Yousafzai	19	42	C	English	MA	88	UIUC	Assoc Professor	225-Teaching English	A	Comp	TIPAN		
Dilshad	17	44	C	English	MA			Lecturer	225-Teaching English				577	
Mohammad Idris	17	49	C	English	MA			Lecturer	225-Teaching English					
Mohammad Ibrahim	17	57	C	English	MA			Lecturer	134-Agr Journalism	A	InProg	TIPAN		U.Wis
Mohammad Yousaf Khan	19	39	C	MSP&CS	MS	87	TexTech	Chairman	221-Agr Statistics	A	Comp	TIPAN		
Inamul Haq	18	29	C	MSP&CS				Asst Professor	222-Computer Science	NA	Comp	TIPAN		11/85-02/86
Mohammad Kamal	17	62	C	MSP&CS	MA			Lecturer	222-Computer Science				470	
Mohammad Sherin	19	36	C	MSP&CS	MS			Assoc Professor	223-Physics/Mathematics				457	
Nabi Ghulam Bangash	17	50	C	MSP&CS				Lecturer	221-Agr. Statistics	A	Pend	TIPAN	540	
Ruhullah Khan	19	35	C	MSP&CS	MS			Assoc Professor	223-Physics/Mathematics					
Zahid Hussain	17	34	C	MSP&CS	MS			Lecturer	221-Agr Statistics					
Zakiullah	17	62	C	MSP&CS	MS			Lecturer	222-Computer Science	A	Pend	TIPAN	557	
Shafqat Malik	17	63	C	MSP&CS	MS			Lecturer	222-Computer Science					

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FACULTY OF CROP PRODUCTION SCIENCES														
Tajamal Hussain	20	41	C	AC&HN	PhD	81	Punjab	Chairman	216-Human Nutrition (gen)	NA	Comp	TIPAN	1/85-9/85	
Rasool Bakhsh	20	37	C	AC&HN	PhD	83	Punjab	Professor	204-Biochemistry	NA	Comp	TIPAN	9/84-1/85	
Sher Akbar Khan	20	41	C	AC&HN	PhD	84	Wales	Professor	207-Pesticide Chemistry					
Jehangir Khan Khalil	20	41	C	AC&HN	PhD	82	Punjab	Professor	216-Human Nutrition (gen)	NA	Comp	TIPAN	7/88-8/88	
Iqtidar Ahmad Khalil	19	50	C	AC&HN	PhD	84	Wales	Assoc Professor	210-Analytical Chemistry	NA	InProg	TIPAN	SIUC	
Pervez Iqbal Paracha	18	53	C	AC&HN	MS			Assoc Professor	215-Nutritional Disorders	A	InProg	TIPAN	Univ Conn	
Hamidullah Shah	18	57	C	AC&HN	MS			Asst Professor	208-Farm Industrial Chemistry				500	
Saifullah Khan	17	52	C	AC&HN	MS			Lecturer	209-Instrumental Chemistry				443	
Saleem Khan	17	59	C	AC&HN	MS			Lecturer	211-Infant Nutrition	A	Pend	TIPAN	457	
Fazli Manan	17	60	C	AC&HN	MS			Lecturer	198-Food Science (gen.)	A	InProg	Other		GOP-now in UK
Mohammad Karim Khan	20	33	C	Agron	MS	68	N.Mex.	Dean	14-Agronomy (gen)	NA	Comp	TIPAN	83-85,7/88-8/88	
Mir Hatam	20	42	C	Agron	PhD	88	Tando.	Chairman	8-Soybean Agronomy	A	Comp	Other	NA-1984	
Fazal Hayat Taj	20	44	C	Agron	PhD	80	USSR	Professor	26-Seed Production/Tech	NA	Comp	TIPAN	8/87-8/88	
Khan Zada	20	44	C	Agron	PhD	87	Faisal	Professor	16-Crop Physiology (gen)	A	Comp	Other		
Paigham Shah	19	44	C	Agron	PhD	88	UIUC	Assoc Professor	16-Crop Physiology (gen)	A	Comp	TIPAN		
Sherin Khan	19	44	C	Agron	MS			Assoc Professor	28-Arid Zone Agronomy	NA	Comp	TIPAN	CSU/Utah 1986	
Mohammad Iqbal	18	39	C	Agron	MS			Asst Professor	13-Fibre Crops Agronomy					
Bashir Ahmad Mohmand	17	59	C	Agron	MS			Lecturer	27-Seed Physiology	A	InProg	TIPAN	Miss State	
Mohammad Tariq Jan	17	57	C	Agron	MS			Lecturer	11-Forage Agronomy	A	InProg	TIPAN	New Mex St	
Shad Khan	17	59	C	Agron	MS			Lecturer	11-Forage Agronomy	A	Pend	TIPAN	560	
Amir Zaman Khan	17	61	C	Agron	MS			Lecturer	3-Rice Agronomy				490	
Mohammad Akmal	17	62	C	Agron	MS			Lecturer	9-Oilseed Agronomy				427	
Habib Akbar	17	65	C	Agron	MS			Lecturer	7-Sugarcane Agronomy					
Aslam Khan Khattak	18	43	C	Agron	MS		AUB	Asst Professor	1-Wheat Agronomy	A	InProg	TIPAN	NDSU	
Mohammad Shafi	17	60	C	Agron	MS			Lecturer	231-Farm Manager				490	
Hafiz Inayatullah	20	35	C	Hort	MS	63	CSU	Chairman	81-Horticulture (gen)	NA	Comp	TIPAN	1983;1988	
Sharafat Khan	19	38	C	Hort	MS			Assoc Professor	76-Postharvest Physiology					
Wazir Sadiq Mohammad	19	41	C	Hort	MS			Assoc Professor	71-Tree Fruit Production	NA	Comp	TIPAN	9/85-10/85	
Faridullah Khan Wazir	19	46	C	Hort	PhD	86	OklSt	Assoc Professor	74-Pomology	A	Comp	Other		
Noor Badshah	18	44	C	Hort	MS			Assoc Professor	76-Postharvest Physiology	A	InProg	TIPAN	WSU	
Nawab Ali	18	51	C	Hort	MS			Assoc Professor	66-Vegetable Production	A	InProg	TIPAN	UIUC	
Ishtlaq Mohammad	18	54	C	Hort	MS			Assoc Professor	76-Postharvest Physiology	A	Pend	TIPAN	503	
Asghar Syed Hussain	18	47	C	Hort	MS			Asst Professor	83-Nursery Management					
Sher Mohammad	17	51	C	Hort	MS			Lecturer	74-Pomology	A	InProg	TIPAN	SIUC	
Abrar Hussain Shah	17	58	C	Hort	MS			Lecturer	67-Vegetable Seed Technology	A	Pend	TIPAN	540	
Noorul Amin	17	60	C	Hort	MS			Lecturer	80-Ornamental Horticulture				470	
Saeedul Hasan	20	42	C	PB&G	PhD	78	USSR	Chairman	41-Pulse Breeding	NA	Comp	TIPAN		
Mohammad Siraj	19	44	C	PB&G	MS			Assoc Professor	46-Plant Breeding (gen)					
Khan Bahadur Marwat	19	53	C	PB&G	PhD	88	UIUC	Assoc Professor	18-Weed Science (gen)	A	Comp	TIPAN		
Habib ur Rehman	19		C	PB&G	PhD	73	Alberta	Assoc Professor	42-Forage Breeding					
Mukhtar Ahmad	18	37	C	PB&G	MS			Asst Professor	219-Botany	NA	Comp	TIPAN	UIUC 86-87	
Raziuddin Razi	17	59	C	PB&G	MS			Lecturer	45-Plant Cytogenetics	A	Pend	TIPAN	540	
Farhatullah	17	60	C	PB&G	MS			Lecturer	44-Crop Biotechnology	A	Pend	TIPAN	543	
Khurshid Ahmed	17	61	C	PB&G	MS			Lecturer	46-Plant Breeding (gen)	A	InProg	TIPAN	U.Minn	
Hidayat ur Rehman	17	59	C	PB&G	MS			Lecturer	33-Wheat Breeding	A	InProg	TIPAN	SDSU	
Zahoor Ahmed Swati	17	54	C	PB&G	PhD	88	SDSU	Lecturer	33-Wheat Breeding	A	Comp	TIPAN		
Wajid Hussain	17		C	PB&G	MS			Lecturer	40-Oilseed Breeding					PARC proj
Fazle Hanan	17		C	PB&G	MS			Lecturer	41-Pulse Breeding					PARC proj

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Jehangir Khan Khattak	20	35	C	SoiSci	MS	69	U.Ariz	Chairman	48-Soil Chemistry	NA	Comp	TIPAN		UIUC-1985
Abdur Rashid	19	40	C	SoiSci	PhD	87	Faisal	Assoc Professor	50-Soil Sallnity/Sodicity	A	Comp	Other	480	
Sultan Ahmed Rizvi	19	41	C	SoiSci	MS			Assoc Professor	47-Soil Fertility	NA	Pend	TIPAN	497	
Sajida Parveen	18	56	C	SoiSci	MPH			Asst Professor	48-Soil Chemistry	A	Pend	TIPAN	563	Accp-UC Davis
Amanullah Bhatti	18	46	C	SoiSci	MS			Asst Professor	51-Soil Physics	A	InProg	TIPAN		WSU-Pullman
Riaz Ahmad Khattak	18	50	C	SoiSci	MS			Asst Professor	52-Soil/Plant Relationships	A	InProg	Other		U.K.
Zahir Shah	17	57	C	SoiSci	MS			Lecturer	54-Soil Microbiology	A	InProg	Other		U.K.
Mohd Sarirullah Sabir	18	50	C	SoiSci	MS			Asst Professor	47-Soil Fertility	A	InProg	Other		U.K.
Mohammad Afzal	17	56	C	SoiSci	MS			Lecturer	47-Soil Fertility	A	InProg	Other		U.K.
Mohammad Jamal Khattak	17	60	C	SoiSci	MS			Lecturer	56-Soil Genesis/Morphology	A	Pend	TIPAN	550	
Muzammil Shah	17	56	C	SoiSci	MS			Lecturer	61-Soil Tillage/Management				500	
Farmanullah Khan	17	59	C	SoiSci	MS			Lecturer	59-Soil Cons/Erosion Control	A	Pend	TIPAN	547	
Mohammad Tariq	19	37	C	AgMech	MS			Chairman	84-Agric Mechanization	NA	Comp	TIPAN		UIUC 84-85
Mohammad Arshad	18	40	C	AgMech	MS			Asst Professor	84-Agric Mechanization	A	Pend	TIPAN	523	
Mohammad Jamal	17	58	C	AgMech	BS			Lecturer	85-Soil & Water Engineering	A	InProg	Other		Purdue
Masood ur Rehman	17	55	C	AgMech	BS			Lecturer	84-Agric Mechanization	A	InProg	TIPAN		Mich.St.
Nisar Ahmad	17	57	C	AgMech	BS			Lecturer	84-Agric Mechanization	A	InProg	TIPAN		SIUC
Javed Akhtar Tariq	17	59	C	AgMech	BS			Lecturer	86-Irrigation Water Mngement				487	
Mansoor Khan	17	63	C	AgMech	MS			Agr. Mech. Officer	84-Agric Mechanization				453	
Mohammad Amin	17	60	C	AgMech	MS			Agr. Mech. Officer	84-Agric Mechanization				413	
Naseer Hussain	20	40	C	PIProt	PhD	72	U.Wyo.	Chairman	160-Insect Physiology					
Said Khan Khalil	19	50	C	PIProt	PhD	82	Prague	Assoc Professor	161-Insect Pathology	NA	Pend	TIPAN		
Farmanullah	17	59	C	PIProt	MS			Lecturer	154-Integrated Pest Mngement	A	Pend	TIPAN	557	
Inamullah	17	60	C	PIProt	MS			Lecturer	163-Economic Entomology				413	
Maqsood Iqbal	17	61	C	PIProt	MS			Lecturer	77-Postharvest Management				430	
Sher Hassan	20	43	C	PIPath	PhD	84	WSU	Chairman	175-Plant Virology	NA	Pend	TIPAN		
Ahmad Gul	19	40	C	PIPath	MS			Assoc Professor	178-Plant Nematology	NA	Pend	TIPAN		NCSU
Shabeer Ahmad	19	45	C	PIPath	PhD	86	K.St.	Assoc Professor	188-Host-Pathogen Genetics	A	Comp	Other		
Abdul Rafi	17	60	C	PIPath	MS			Lecturer	183-Plant Disease Control	A	Pend	TIPAN	547	
Saifullah	17	61	C	PIPath	MS			Lecturer	178-Plant Nematology				450	
Shaukat Hussain	17	64	C	PIPath	MS			Lecturer	176-Plant Mycology				553	
Mohammad Arif Chohan	17	64	C	PIPath	MS			Lecturer	175-Plant Virology				427	
Mohammad Shahid	20	40	C	Ent	PhD	84	Pesh	Chairman	164-Insect Toxicology	NA	Comp	TIPAN		UIUC-B6
Karimullah	20	40	C	Ent	PhD	77	Romania	Professor	156-Insect Morphology					
Bashir Mohammad Khan	19	41	C	Ent	MS			Assoc Professor	163-Economic Entomology				523	
Farooq Shah	18	45	C	Ent	MS			Asst Professor	170-Agricultural Zoology					
Mohammad Naeem	17	55	C	Ent	MS			Lecturer	157-Insect Ecology	A	InProg	TIPAN		UIUC
Mian Inayatullah	17	56	C	Ent	MS			Lecturer	155-Insect Taxonomy/Classif	A	InProg	TIPAN		U.Wyo.
Sajjad Ahmad	17		C	Ent	MS			Lecturer	166-Entomology (gen)					
Salim Jan	17	56	C	Ent	MS			Lecturer	161-Insect Pathology				397	

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Mohammad Saeed	20	39	C	FS&T	PhD	87	UIUC	Chairman	191-Oilseed Technology	A	Comp	TIPAN		
Jan Mohammad Miankhei	19	40	C	FS&T	MS	89	CalPoly	Assoc Professor	194-Food Chemistry	A	Comp	TIPAN		
Rafiullah Khan	18	41	C	FS&T	MS			Asst Professor	195-Food Processing/Engineer	A	InProg	TIPAN		UIUC
Bakhtiar Hussain	18	43	C	FS&T	MS			Asst Professor	198-Food Science (gen)	NA	Pend	TIPAN	547	
Mohammad Javaid Durrani	18	42	C	FS&T	MS			Asst Professor	193-Postharvest Technology				487	
Samiullah	18	32	C	FS&T	PhD	77	Punjab	Asst Professor	192-Food Microbiology					
Shamsul Muneer	17	56	C	FS&T	MS			Lecturer	198-Food Science (gen)	A	Pend	TIPAN	533	
Alam Zeb	17	58	C	FS&T	MS			Lecturer	198-Food Science (gen)					
Attaullah	18	56	C	LearnR	MLS	88	U.Hawaii	Librarian	234-Librarian	A	Comp	TIPAN		
Ali Khan	17	35	C	LearnR	MLS			Librarian	234-Librarian	U.				
Shakirullah Jan	17	51	C	LearnR	MLS			Librarian	234-Librarian					

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AGRICULTURAL RESEARCH INSTITUTE - TARNAB														
Syed Abdul Qadim	20	37	0	Tar	MS	64	AUB	Director General	14-Agronomy (gen.)	NA	Comp	TIPAN		2 mos-1987
HORTICULTURE SECTION - TARNAB														
Saifullah Khattak	19	35	0	Tar	PhD	72	USA	Proj Dir-Fruit Max.	190-Cereal Technology					
Iftikharul ul Haq	18	37	0	Tar	MS			SRO-Horticulture	81-Horticulture (gen.)					
Sabir Hussain Shah	18	36	0	Tar	MS			SRO-Pathology	179-Plant Pathology (gen.)					
Gul Nawaz	18	43	0	Tar	MS			SRO-Entomology	166-Entomology (gen.)	A	Pend	TIPAN	540	
Abdul Baqi	17	47	0	Tar	BS			ARO	81-Horticulture (gen.)					
Afsarullah Khan	17	62	0	Tar	MS			ARO	81-Horticulture (gen.)				430	
Habib ul Wahab	17	46	0	Tar	BS			ARO	81-Horticulture (gen.)				410	
Syed Qasim Shah	17	46	0	Tar	BS			ARO	81-Horticulture (gen.)				470	
Mohammad Anwar Khan	17	44	0	Tar	MS			ARO	81-Horticulture (gen.)	A	Pend	TIPAN	550	
Mohammad Rafiq	17	47	0	Tar	MS			ARO	81-Horticulture (gen.)					
Jansher Khan	17	50	0	Tar	BS			ARO	81-Horticulture (gen.)				370	
Suleman Ali	17	43	0	Tar	BS			ARO	81-Horticulture (gen.)					
Mir Saleem Khattak(Khan)	17	48	0	Tar	MS			ARO	81-Horticulture (gen.)					
Tahsinullah	17	52	0	Tar	MS			ARO	81-Horticulture (gen.)				480	
FOOD TECHNOLOGY SECTION - TARNAB														
Fazli Karim	18	42	0	Tar	MS	78	AUB	Food Technologist	189-Food Technology				497	
Ajab Khan Khattak	17	39	0	Tar	MS			Asst. Technologist	189-Food Technology	NA	Comp	TIPAN		01/87-12/87
Adam Khan	17	48	0	Tar	MS			ARO	189-Food Technology	A	InProg	TIPAN	563	Purdue
Mrs. Ejaz Begum	17	49	0	Tar	BS			ARO	189-Food Technology				380	
Fazli Rahim	17	41	0	Tar	MS			ARO	189-Food Technology					
Jan Mohammad	17	51	0	Tar	MS			ARO	189-Food Technology				457	
Manzoor Nazli	17	46	0	Tar	MS			ARO	189-Food Technology					
Mahboob ur Rehman	17	42	0	Tar	MS			ARO	189-Food Technology				453	
Mohammad Hussain Khan	17	51	0	Tar	MS			ARO	189-Food Technology	A	Pend	TIPAN	553	Mich.St.
Mian Javid ur Rehman	17	53	0	Tar	MS			ARO	189-Food Technology				390	
Abdur Rab	17	61	0	Tar	MS			ARO	76-Post Harvest Physiology	A	Pend	TIPAN	590	
BIOCHEMISTRY SECTION - TARNAB														
Abdul Hamid I	18	34	0	Tar	BS			Asst Biochemist	204-Biochemistry	NA	Comp	TIPAN		BNFRC/Bangkok
Abdul Hamid Raja	18		0	Tar				AsstSoilMicroblgist	54-Soil Microbiology					
Mir Abbas Khan (Khattak)	17	53	0	Tar	MS			ARO	48-Soil Chemistry				460	
Mrs. Qudsia Sultana	17	47	0	Tar	BS			ARO	189-Food Technology				397	
Saeed Ahmad	17	50	0	Tar	MS			ARO	47-Soil Fertility	A	InProg	TIPAN		UIUC
Mohammed Javed Khattak	17	61	0	Tar	MS			ARO	47-Soil Fertility				397	
Sabir Gul Khan	17	62	0	Tar	MS			ARO	47-Soil Fertility				487	
Sabir Hussain Shah	17	48	0	Tar	PhD	88	Glasgow	ARO	48-Soil Chemistry	A	Comp	Other		
Rashid Ahmad	17	53	0	Tar	MS			ARO	48-Soil Chemistry				497	
Umar Rahim	17	46	0	Tar	BS			ARO	204-Biochemistry				490	

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SOIL CHEMISTRY - TARNAB														
Sadaqat Hussain	18	37	0	Tar	MS			Agric. Chemist	48-Soil Chemistry					
Jamshaid Khan	17	39	0	Tar	BS			Asst. Agr. Chemist	48-Soil Chemistry				407	
Ali Gauhar Khan	17	39	0	Tar	BS			Asst. Agr. Chemist	48-Soil Chemistry					
Zuhar Dast Khan	17	46	0	Tar	MS	76	AUB	Asst. Agr. Chemist	49-Soil/Plant Analysis	A	InProg	TIPAN		N.Mex.State
Mohammad Jehangir	17	39	0	Tar	BS			Asst. Soil Fert. Offr	47-Soil Fertility				457	
Mohammed Zamir Hussain	17	51	0	Tar	MS			ARO	47-Soil Fertility	A	InProg	TIPAN		Idaho 1/89
Izharul Haq	17	48	0	Tar	MS			ARO	47-Soil Fertility	A	InProg	TIPAN		UC-Davis
Mrs. Sakina Khatoon	17	47	0	Tar	MS			ARO	48-Soil Chemistry				393	
HabiburRehman(Charsadda)	17	46	0	Tar	MS			ARO	48-Soil Chemistry				443	
Noor ur Rehman	17	44	0	Tar	MS			ARO	50-Soil Salinity/Sodicity	A	Pend	TIPAN	520	
Akbar Hussain Gurmani	17	47	0	Tar	MS			ARO	47-Soil Fertility				523	
Mohammad Nisar	17	46	0	Tar	MS			ARO	48-Soil Chemistry				493	
Mohd Ibrar (Mardan Lab)	17	51	0	Tar	MS			ARO	48-Soil Chemistry				460	
Rohullah (Mardan Lab)	17	51	0	Tar	MS			ARO	48-Soil Chemistry				397	
Rehmat Gul (Parachinar)	17	50	0	Tar	BS			ARO	48-Soil Chemistry					
Abdur Rehman	17	48	0	Tar	MS			ARO	47-Soil Fertility					
(TARNAB-MARDAN SCARP) SOIL CHEMISTRY														
Ghulam Ali Shah	18	43	0	SCP	MS			Agr. Chemist	48-Soil Chemistry					
Zahoorul Haq	17	53	0	SCP	MS			ARO	50-Soil Salinity/Sodicity				440	
Mohammad Subhan	17	57	0	SCP	MS			ARO	50-Soil Salinity/Sodicity				367	
Ajmal Khan	17	61	0	SCP	MS			ARO	50-Soil Salinity/Sodicity				477	
ENTOMOLOGY - TARNAB														
Imtiaz Ahmad	18	45	0	Tar	MS			Entomologist	166-Entomology (gen.)				517	
Mohammad Zaman	17	45	0	Tar	MS	80	AUB	Asst. Entomologist	166-Entomology (gen.)	NA	Comp	TIPAN		Univ. Ark.
Mohammad Qasid Syed	17	48	0	Tar	BS			ARO	166-Entomology (gen.)				410	
Aurangzeb Khan	17	44	0	Tar	BS			ARO	166-Entomology (gen.)				463	
Liaquatullah	17	51	0	Tar	MS			ARO	166-Entomology (gen.)	A	Pend	TIPAN	483	
PLANT PATHOLOGY - TARNAB														
Mohibullah	18	42	0	Tar	MS			Plant Pathologist	179-Plant Pathology (gen.)					
Mehmood Khan	17	52	0	Tar	MS			ARO	179-Plant Pathology (gen.)	A	InProg	TIPAN		UIUC
Hamidullah Jan	17	47	0	Tar	MS			ARO	179-Plant Pathology (gen.)	A	InProg	TIPAN		Idaho
Faizul Hassan	17	48	0	Tar	MS		USA	ARO	179-Plant Pathology (gen.)	A	Pend	TIPAN	573	NDSU
Mohammad Shah	17	47	0	Tar	BS			ARO	179-Plant Pathology (gen.)	A	Pend	TIPAN	553	
Noorul Haq	17	44	0	Tar	MS			ARO	14-Agronomy (gen.)					
PLANT PHYSIOLOGY - TARNAB														
Abdur Rashid	18	36	0	Tar	MS			Plant Physiologist	15-Plant Physiology					
Dayyum Nawaz	17	48	0	Tar	MS			ARO	18-Weed Science (gen.)	NA	Comp	Other		Weed Control
Mustajab Khan	16	49	0	Tar	MS			ARO	18-Weed Science (gen.)	A	InProg	TIPAN		SIUC

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<u>Name</u>	<u>BPS</u>	<u>YOB</u>	<u>C</u>	<u>Site</u>	<u>Deg</u>	<u>YrDeg</u>	<u>DegFrm</u>	<u>Working Title</u>	<u>Discipline Title</u>	<u>Inq</u>	<u>Status</u>	<u>Source</u>	<u>IOEFL</u>	<u>Comments</u>
ECONOMIC CELL - TARNAB														
Shahin Shah Saifi	17	44	0	Tar	MS	76	AUB	ARO	14-Agronomy (gen.)	A	Pend	TIPAN	360	
OILSEED CROPS (formerly Tobacco Botany) - TARNAB														
Muslim Shah	18	43	0	Tar	MS	73	USA	Tobacco Botanist	11-Forage Agronomy	A	Pend	TIPAN	547	
Mohammad Ayub Shah	17	43	0	Tar	BS			ARO	9-Oilseed Agronomy				423	
Karim Jan	17	54	0	Tar	BS			ARO	9-Oilseed Agronomy				367	
Javaldur Rehman	17	53	0	Tar	MS			ARO	9-Oilseed Agronomy					
Salahuddin	17	44	0	Tar	MS			ARO	9-Oilseed Agronomy					
Rafiullah	17	63	0	Tar	MS			ARO	9-Oilseed Agronomy				387	
Farooq Ahmad	17	43	0	Tar	MS			ARO	9-Oilseed Agronomy				520	
Naveed Akhtar	17	62	0	Tar	MS			ARO	9-Oilseed Agronomy				500	
Zar Quresh	18	44	0	Tar	MS			ARO	9-Oilseed Agronomy	A	InProg	TIPAN	430	NDSU
SEED TESTING AND CERTIFICATION - TARNAB														
Inayatullah Khan	17	39	0	Tar	MS	83	N.Zeal	ARO	14-Agronomy (gen.)				473	
Habibullah Khan	17	53	0	Tar	MS			ARO	14-Agronomy (gen.)				370	
FARM MANAGEMENT - TARNAB														
Noor Mohammad	17	49	0	Tar	MS			ARO	231-Farm Manager				527	
Mohammad Jamal I	17	37	0	Tar	MS			ARO	14-Agronomy (gen.)					
STATISTICS - TARNAB														
Fazli Subhan	18	36	0	Tar	MS			Statistician	221-Agr. Statistics					
VEGETABLES - TARNAB														
Purdil Khan	18	46	0	Tar	MS			Veg. Botanist	66-Vegetable Production				513	
Mohammad Wahid Ullah	17	39	0	Tar	BS			ARO	66-Vegetable Production					
OTHER - TARNAB														
Rahim Jan	17	42	0	Tar	BS			Economic Botanist	14-Agronomy (gen.)					
Sher Bahadur	17	42	0	Tar	MS			ARO	46-Plant Breeding (gen.)				433	
AGRICULTURAL RESEARCH STATION - SUREZAI														
Iqbal Ahmad Yusuf	19	42	0	Sur	MS			Director	108-Veterinary Medicine					
Meera Khan	17	39	0	Sur	MS	88	SIUC	ARO	101-Reproductive Physiology	A	Comp	TIPAN		
Ghulam Habib	17	50	0	Sur	PhD	88	Austr.	ARO	103-Animal Nutrition	A	Comp	Other		
Ghufraan Ullah	17	55	0	Sur	DVM			ARO	118-Dairy Science	A	Pend	TIPAN	497	
Mohammad Mohsin Siddiqui	17	55	0	Sur	DVM			ARO	103-Animal Nutrition	A	Pend	TIPAN	553	Tex T.
Attaullah Khan	17	59	0	Sur	MS			ARO	99-Animal Breeding/Genetics				513	
Tariq Jan	17	62	0	Sur	MS			ARO	11-Forage Agronomy				443	
Ahmad Said	17	62	0	Sur	MS			ARO	11-Forage Agronomy				407	
Fazal RahimKhan(Bangash)	17	50	0	Sur	MS			ARO	11-Forage Agronomy				390	

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SUGAR CROPS RESEARCH INSTITUTE - MARDAN														
Ghulam Sarwar Khan	19	43	0	Mar	MS	75	AUB	Director	16-Crop Physiology (gen.)	NA	Comp	TIPAN		1 mo.-1986
Imran Mohammad (PBG)	18	43	0	Mar	PhD	86	LaSt	Asst Professor	39-Sugarcane Breeding	A	Comp	Other		
Mohammad Amin Khan	18	45	0	Mar	MS	82	N.Zeal	SRO	6-Sugarbeet Agronomy	A	Pend	TIPAN	530	
Gulzar Ahmad	18	42	0	Mar	MS	64	USA	SRC	38-Sugarbeet Breeding	A	InProg	TIPAN		Univ.Idaho
Ahmad Jan	18	40	0	Mar	MS			SRO	166-Entomology				530	
Mohammad Pazir	17	41	0	Mar	MS			ARO	7-Sugarcane Agronomy				473	
Zainullah Khan	17	51	0	Mar	BS			ARO	7-Sugarcane Agronomy				447	
Gul Rehman	17	44	0	Mar	MS	78	AUB	ARO	39-Sugarcane Breeding	A	Pend	TIPAN	543	
Abdul Qayum	17	47	0	Mar	MS			ARO	39-Sugarcane Breeding				483	
Said Rehman	17	52	0	Mar	PhD	86	Faisal	ARO	39-Sugarcane Breeding	A	Comp	Other	457	
Farid Gul	17	46	0	Mar	MS			ARO	179-Plant Pathology (gen.)				420	
Mohammad Akram Khan	17	41	0	Mar	MS			ARO	6-Sugarbeet Agronomy				450	
Dawa Khan	17	52	0	Mar	MS			ARO	38-Sugarbeet Breeding	A	Pend	MART	510	
Inayatullah	17	37	0	Mar	BS			ARO	202-Sugar Technology				433	
Mehboob Ali	17	45	0	Mar	MS			ARO	202-Sugar Technology				390	
Shah Nazor Khan	17	50	0	Mar	MS			ARO	202-Sugar Technology				420	
CEREAL CROPS RESEARCH INSTITUTE - PIRSAK														
Allauddin Khan	19	33	0	Pir	BS			Director	33-Wheat Breeding	NA	Comp	TIPAN		2 mos-1987
Mohammad Saleem (PBG)	19	44	0	Pir	PhD	82	KSU	Assoc Professor	34-Maize Breeding				530	
Ali Haider	18	41	0	Pir	MS			SRO	33-Wheat Breeding					
Ali Anwar Abidi (PARC)	18	35	0	Pir	BS			SRO	33-Wheat Breeding					
Khaista Gul	17	44	0	Pir	MS			ARO	33-Wheat Breeding					
SyedWajid Hussain(Kohat)	17	45	0	Pir	MS			ARO	9-Oilseed Agronomy	A	InProg	TIPAN		NDSU
Abdul Azim	17	49	0	Pir	BS			ARO	34-Maize Breeding				503	
Kiramat Khan	17	50	0	Pir	MS			ARO	34-Maize Breeding	A	InProg	TIPAN		Univ.Nebr.
Mohammad Ismail Jan	17	50	0	Pir	BS			ARO	34-Maize Breeding				413	
Farhad Ahmad	17	63	0	Pir	MS			ARO	34-Maize Breeding				453	
Nazir Hussain	17	59	0	Pir	MS			ARO	34-Maize Breeding	NA	Comp	TIPAN	403	
Abdul Aziz	17	57	0	Pir	MS			ARO	34-Maize Breeding	NA	Comp	TIPAN	420	
Saifullah	17	55	0	Pir	MS			ARO	33-Wheat Breeding				357	
Mohammad Siddiq	17	62	0	Pir	MS			ARO	33-Wheat Breeding				403	
Fida Mohammad	17	63	0	Pir	MS			ARO	33-Wheat Breeding				477	
Abdus Samad	18	41	0	Pir	MS			SRO	2-Maize Agronomy				476	
Saleem Khan	17	43	0	Pir	MS	72	AUB	ARO	18-Weed Science (gen.)	A	InProg	TIPAN		Univ.Idaho
Fazli Karim	18	44	0	Pir	PhD	84	Auburn	SRO	2-Maize Agronomy				470	
Adam Khan	17	48	0	Pir	BS			ARO	2-Maize Agronomy				467	
Abdul Qadir	17	38	0	Pir	MS			ARO	1-Wheat Agronomy				383	
Fazli Subhan I	17	49	0	Pir	MS			ARO	1-Wheat Agronomy				463	
Fazli Subhan II	17	62	0	Pir	MS			ARO	1-Wheat Agronomy	A	Pend	MART	593	
Abdur Rauf	17	58	0	Pir	MS			ARO	1-Wheat Agronomy	A	InProg	TIPAN		Iowa State
Manzoor Akbar	17	58	0	Pir	MS			ARO	2-Maize Agronomy				437	
Imtiaz Ahmad	17	59	0	Pir	MS			ARO	2-Maize Agronomy				430	
Sadur Rehman	17	60	0	Pir	MS			ARO	1-Wheat Agronomy				450	
Bashir Ahmad	17	62	0	Pir	MS			ARO	1-Wheat Agronomy				373	
Nazir Ahmad	17	60	0	Pir	MS			ARO	166-Entomology (gen.)					
Mohammad Suleman	18	36	0	Pir	MS			SRO	179-Plant Pathology (gen.)					
Mian Attauddin Khan	17	51	0	Pir	MS			ARO	179-Plant Pathology (gen.)					
Irshad Ali	17	47	0	Pir	MS			ARO	221-Agr. Statistics	A	Pend	TIPAN	640	Mich.St.
Mohammad Idris	17	50	0	Pir	MS			ARO	18-Weed Science (gen.)	A	Comp	FAO	443	
Mohammad Khan	17	48	0	Pir	PhD	88	NDSU	ARO	46-Plant Breeding (gen.)				557	
Rafiullah	17	63	0	Pir	MS			ARO						

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AGRICULTURAL RESEARCH STATION - MINGORA														
Habib ur Rehman	19	42	0	Min	MS	66	AUB	Director	48-Soil Chemistry	NA	Comp	TIPAN		2 mos-1985
Mohammad Rahim	18	50	0	Min	MS			Economic Botanist	40-Oilseed Breeding	A	Pend	TIPAN	457	
Taslim Jan	18	46	0	Min	MS			Horticulturist	74-Pomology				430	
Sayed Fazal Ahad	18	46	0	Min	MS			Horticulturist	81-Horticulture (gen.)					w/Italian project
Abdul Hanan	18	46	0	Min	MS			Potato Botanist	68-Potato Production	A	Pend	TIPAN	577	
Mumtaz Khan	18	43	0	Min	MS	83	U.Ark.	SRO	176-Plant Mycology	A	Pend	TIPAN	533	
Dil Rosh Khan	18	42	0	Min	MS			Rice Botanist	35-Rice Breeding	A	InProg	TIPAN		Louis. State
Nowshad Khan	17	45	0	Min	MS			ARO	9-Oilseed Agronomy				417	
Mohammad Usman	17	49	0	Min	MS			ARO	10-Pulse Agronomy				383	
Amjad Khan	17	62	0	Min	MS			ARO	40-Oilseed Breeding				543	
Sajjad Khan	17	62	0	Min	MS			ARO	4i-Pulse-Breeding				470	
Ayub Khan	17	62	0	Min	MS			ARO	9-Oilseed Agronomy				410	
Mukamil Shah	17	47	0	Min	MS			ARO	71-Tree Fruit Production	NA	Comp	Other		Tree Fruit Mgmt
Jamshid Khan	17	49	0	Min	BS			ARO	71-Tree Fruit Production				440	
Abdul Majid	17	44	0	Min	MS			Asst. Botanist	66-Vegetable Production	NA	Comp	Other	460	
Sadat Khan	17	46	0	Min	MS			ARO	67-Vegetable Seed Production				413	
Azim Khan	17	61	0	Min	MS			ARO	65-Vegetable Breeding				453	
Misbahuddin	17	47	0	Min	MS			ARO	65-Vegetable Breeding	NA	Comp	Italy		1 year
Waheedullah	17	30	0	Min	BS			ARO	66-Vegetable Production					
Imran Ali	17	61	0	Min	MS			ARO	65-Vegetable Breeding					
Mazullah Khan	17	57	0	Min	MS			ARO	67-Vegetable Seed Production				433	
Mursalin Khan	17	43	0	Min	MS			Asst. Botanist	68-Potato Production				400	
Abdur Rehman Khan	17	51	0	Min	MS			ARO	76-Postharvest Physiology					
Abdul Ghani	17	46	0	Min	MS			ARO	48-Soil Chemistry				483	
Badshah Wahid	17	44	0	Min	MS	76	AUB	Asst. Food Tech.	76-Postharvest Physiology	A	Pend	TIPAN	583	
Oazi Sirajuddin	17	49	0	Min	BS			ARO	166-Entomology (gen.)					
Alim Said	17	50	0	Min	BS			ARO	3-Rice Agronomy					
Nasir Ud Din	17	49	0	Min	MS			ARO	33-Wheat Breeding	A	InProg	TIPAN		Okla.St.
AGRICULTURAL RESEARCH STATION - ABBOTTABAD														
Mohammad Atta Shuja	19	39	0	Abb	MS	68	AUB	Director	69-Seed Potato Production					
Abdul Malik Lughmani	18	43	0	Abb	MS			SRO	40-Oilseed Breeding	A	Pend	TIPAN	573	
Duri Iman	18	46	0	Abb	MS			SRO	63-Potato Production				423	
Shaukat Hussain	17	54	0	Abb	BS			ARO	69-Seed Potato Production				400	
Mohammad Suleman	17	58	0	Abb	MS			ARO	66-Vegetable Production				440	
Syed Karar Haider	17	63	0	Abb	MS			ARO	78-Tissue Culture					
Mohd Khaliq u Zaman	17	41	0	Abb	MS			ARO	65-Vegetable Breeding	A	InProg	TIPAN		Idaho
HARIPUR SUBSTATION														
Ghulam Rasool Malik	17	42	0	Har	BS			ARO	47-Soil Fertility				477	
Maqbool Elahi	17	45	0	Har	BS			ARO	189-Food Technology	A	Pend	TIPAN	527	
AGRICULTURAL RESEARCH STATION - MANSEHRA														
Sahibzada Dayyum Ahmad	17	54	0	Man	BS			ARO	2-Maize Agronomy	A	InProg	TIPAN		U.Nebr.
Mohammad Bashir	17	50	0	Man	MS			ARO	9-Oilseed Agronomy	A	Pend	TIPAN	553	
Rohan Shah	17	48	0	Man	MS			ARO	71-Tree Fruit Production	A	Pend	TIPAN	527	
Sultan Mohammad	17	48	0	Man	MS			ARO	47-Soil Fertility				450	
Ikhtiar Malook (ul Mulk)	17	48	0	Man	BS			ARO	48-Soil Chemistry				467	

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AGRICULTURAL RESEARCH STATION - JABBA														
Jamshid Khan Jadoon	18	39	0	Jab	MS			Director	99-Animal Breeding/Genetics	NA	Comp.	TIPAN		2 mos-1987
Ghulam Farid	17	37	0	Jab	BS			ARO	120-Wool Analyst					
Gul Shad Khan	17	57	0	Jab	DVM			ARO	108-Veterinary Medicine				443	
Waheedullah Awan	17	56	0	Jab	BS			ARO	111-Small Animal Management				527	
AGRICULTURAL RESEARCH INSTITUTE - D.I.KHAN														
Allah Bakhsh Khan	19	37	0	DIK	MS			Director	14-Agronomy (gen.)	NA	Comp	TIPAN		2 mos-1987
Abdul Wadud	17	42	0	DIK	BS			ARO	220-Chemistry				473	
Ahmad Bakhsh	17	56	0	DIK	PhD	88	Glasgow	ARO	48-Soil Chemistry	A	Comp	Other		
Sanaullah Khan	17	50	0	DIK	MS			ARO	48-Soil Chemistry				480	
Mohammad Bashir Ahmad	17	46	0	DIK	MS			ARO	14-Agronomy (gen.)				390	
Ghulam Jillani Malik	17	48	0	DIK	MS			ARO	189-Food Technology				447	
Mohammad Younis	17	49	0	DIK	MS			ARO	14-Agronomy (gen.)				497	
Bashir Hussain Shahani	17	47	0	DIK	MS			ARO	14-Agronomy (gen.)				453	
Nazir Hussain Shah	17	57	0	DIK	MS			ARO	14-Agronomy (gen.)	A	InProg	MART		Kansas St.
Saifur Rehman	17	48	0	DIK	MS			ARO	62-Soil Biochemistry	A	InProg	TIPAN		U.Wyo.
Masud Ahmad	17	48	0	DIK	MS			ARO	50-Soil Salinity/Sodicity	A	InProg	TIPAN		Utah St.
Abdul Halim Khan	17	39	0	DIK	MS			ARO	81-Horticulture (gen.)					
Mohammad Amin	17	47	0	DIK	MS			ARO	81-Horticulture (gen.)				400	
Zari Dad Khan	17	49	0	DIK	MS			ARO	81-Horticulture (gen.)				387	
Gul Hassan	17	50	0	DIK	MS			ARO	18-Weed Science (gen.)	A	InProg	TIPAN		Oregon St.
Fatahullah Khan	17	50	0	DIK	MS			ARO	179-Plant Pathology (gen.)	A	Pend	MA/TIP	597	
Gulzar Hussain Chughtai	17	47	0	DIK	MS			ARO	154-Integrated Pest Mngement	A	Pend	TIPAN	557	Mich.St.
Abdul Latif	17	52	0	DIK	MS			ARO	166-Entomology (gen.)	A	InProg	TIPAN		U.Kentucky
Ghulam Shabir Shah	17	50	0	DIK	MS			ARO	166-Entomology (gen.)	A	InProg	TIPAN		K.St.
Mehmood Jan	17	42	0	DIK	BS			ARO	11-Forage Agronomy					
Shaukat Ali	17	35	0	DIK	MA			ARO	221-Agr. Statistics					
Rafiqullah Shah	17	43	0	DIK	MS			ARO	37-Millet Breeding				487	
Akram Khan	18	34	0	DIK	MS			SRO	37-Millet Breeding				557	
Malik Fazli Elahi	17	39	0	DIK	BS			ARO	37-Millet Breeding					
Din Sarwar Wazir	17	46	0	DIK	MS			ARO	5-Millet Agronomy	A	Pend	MART		
Khizar Hayat	17	45	0	DIK	MS			ARO	36-Sorghum Breeding	A	InProg	TIPAN		U.Nebr.
Mohammad Hashim	17	47	0	DIK	MS			ARO	37-Millet Breeding					
Mohammad Sadiq	17	48	0	DIK	MS			ARO	37-Millet Breeding	A	Pend	TIPAN	570	K.St
Habibullah	17	45	0	DIK	MS			ARO	166-Entomology (gen.)				413	
Ghulam Rabbani	17	46	0	DIK	BS			ARO	166-Entomology (gen.)				453	
Abdul Majid	17	60	0	DIK	MS			ARO	37-Millet Breeding					
Azmatullah	17	48	0	DIK	BS			ARO	37-Millet Breeding				423	
Shah Hussain Shah	18	35	0	DIK	BS			SRO	14-Agronomy (gen.)					
Iqbal Ahmad	17	51	0	DIK	MS			ARO	14-Agronomy (gen.)					
Munawar Khan	17	50	0	DIK	BS			ARO	14-Agronomy (gen.)					
Kazim Shah	17	60	0	DIK	MS			ARO	14-Agronomy (gen.)					
Nawab Khan	18	40	0	DIK	PhD	83	Faisal	SRO	14-Agronomy (gen.)					
Ghulam Ali Malik	16	44	0	DIK	MS			AO	166-Entomology (gen.)					
Farooq Ahmad Lodhi	17	45	0	DIK	MS			ARO	16-Crop Physiology (gen.)	A	Pend	TIPAN	567	
									81-Horticulture (gen.)	NA	Comp	TIPAN	500	

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SERAI NAURANG														
Tarinullah	17	41	0	Ser	BS			Asst. Botanist	2-Maize Agronomy					
Abdul Maed	17	45	0	Ser	BS			ARO	47-Soil Fertility				413	
Abdul Sattar	16	60	0	Ser	BS			AO	47-Soil Fertility				473	
Ali Ayaz Khan	17	53	0	Ser	BS			ARO	65-Vegetable Breeding	A	Pend	TIPAN	550	Kentucky
Hamidullah Azim	17	47	0	Ser	MS			ARO	47-Soil Fertility				457	
Khan Badshah	17	42	0	Ser	BS			Asst Botanist	9-Oilseed Agronomy				487	
Khan Bahadar	17	50	0	Ser	BS			ARO	7-Sugarcane Agronomy				470	
Mir Nawaz Khan	17	44	0	Ser	MS			ARO	47-Soil Fertility					
Mohammad Jamal II	17	49	0	Ser	MS			ARO	1-Wheat Agronomy	NA	Comp	TIPAN		1 mo-1986
Nazir Ahmad Khan	17	45	0	Ser	MS	76	AUB	ARO	47-Soil Fertility	A	InProg	TIPAN		U.Florida
Sahib Noor Khan	17	52	0	Ser	MS			ARO	166-Entomology (gen.)				433	
SahibzadaObaidullah Khan	17	51	0	Ser	BS			ARO	47-Soil Fertility				480	
RESEARCH STATION - KARAK														
Abdul Wadud	18	44	0	Kar	MS			Director	10-Pulse Agronomy	NA	Comp	TIPAN		2 mos-1987
Bashir Ahmad	17	51	0	Kar	MS			ARO	10-Pulse Agronomy				473	
Nazir Khan	17	45	0	Kar	MS			ARO	189-Food Technology				397	
Khan Sherin	17	43	0	Kar	MS			ARO	74-Pomology					
Hamayun Khan	17	59	0	Kar	MS			ARO	221-Agr. Statistics					
Ghani ur Rehman	17	41	0	Kar	MS			ARO	47-Soil Fertility				347	
Mohammad Riaz Khalil	17	49	0	Kar	MS			ARO	179-Plant Pathology (gen.)	A	InProg	TIPAN		K.St.

Printed 432 of the 432 records

181 On-campus

251 Off-campus

Table 2 - Current staff, current need, need by 1994, and need by 1999 for different discipline areas and for on-campus and off-campus faculty.

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NWFP AGRICULTURAL UNIVERSITY

DISCIPLINE AREAS	ON-CAMPUS				OFF-CAMPUS			
	CURRENT STAFF	PROJECTED REDISTRIBUTION OF DISCIPLINES			CURRENT STAFF	PROJECTED REDISTRIBUTION OF DISCIPLINES		
		CURRENT NEED	NEED by 1994	NEED by 1999		CURRENT NEED	NEED by 1994	NEED by 1999
1. Agronomic Production	18	18	23	25	68	68	75	81
2. Agron. Plant Breeding	10	11	14	15	36	32	37	41
3. Soils	14	14	19	21	43	43	49	57
4. Horticulture	12	14	15	17	42	42	51	62
5. Agr. Engineering	8	9	12	13		5	7	8
6. Atmos. Science		1	1	1		4	4	4
7. Animal Science	14	27	33	38	10	24	34	42
8. AFARS	8	12	13	17		3	4	6
9. Ext. Educ/Comm.	6	7	9	13		3	4	6
10. IDS	21	24	27	30	-	-	-	-
11. Entomology	13	14	16	18	16	16	20	23
12. Plant Path/Nematology	7	8	12	14	12	15	20	24
13. Food Sci/Tech	8	8	10	12	18	18	24	26
14. Agr. Chem.	5	6	7	8	2	2	2	1
15. Human Nutrition	4	4	5	6	-	-	-	-
16. Seed Tech.	-	-	-	-	-	-	-	-
17. Other	32	33	38	40	6	12	16	20
<u>Grand totals</u>	<u>180</u>	<u>210</u>	<u>253</u>	<u>288</u>	<u>253</u>	<u>287</u>	<u>347</u>	<u>401</u>

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Table 3 - Current staff, current need, need by 1994, and need by 1999 for different disciplines and for on-campus and off-campus faculty.

NWFP AGRICULTURAL UNIVERSITY
MASTER LIST OF DISCIPLINE TITLES

	ON-CAMPUS				OFF-CAMPUS			
	CURRENT	PROJECTED REDISTRIBUTION OF DISCIPLINES			CURRENT	PROJECTED REDISTRIBUTION OF DISCIPLINES		
	STAFF	CURRENT NEED	NEED by 1994	NEED by 1999	STAFF	CURRENT NEED	NEED by 1994	NEED by 1999
			AGRONOMIC PRODUCTION					
1. Wheat Agronomy	1	1	1	1	8	5	5	5
2. Maize Agronomy			1	1	8	4	4	4
3. Rice Agronomy	1	1	1	1	1	1	2	3
4. Sorghum Agronomy								
5. Millet Agronomy					1	1	1	1
6. Suarbeet Agronomy		1	1	1	2	2	2	2
7. Sugarcane Agronomy	2	1	1	1	3	3	3	3
8. Soybean Agronomy	1	1	1	1		1	1	1
9. Oilseed Agronomy	2	2	2	2	13	12	12	12
10. Pulse Agronomy			1	1	3	3	4	5
11. Forage Agronomy	2	2	2	2	5	7	7	8
12. Cotton Agronomy								
13. Fibre Crops Agronomy	1	1	1	0				
14. Agronomy (gen.)	2	2	0	0	16	11	11	11
15. Plant Physiology					1	1	1	1
16. Crop Physiology (gen.)	2	2	2	2	2	2	3	4
17. Plant Stress Physiology				1		1	1	1
18. Weed Science (gen.)	1	1	1	1	5	5	6	6
19. Biological Control of Weeds			1	1				
20. Crop Ecology			1	1				
21. Crop Eco-physiology				1				
22. Plant Nutrition								
23. Physiological Ecology								
24. Range Management			1	1		2	3	3
25. Range Ecology								
26. Crop Seed Production/Technology	1	1	1	1		2	2	3
27. Crop Seed Physiology (dup.)	1	1	1	1				
28. Arid Zone Agronomy	1	1	1	1				
29. Multiple/Mixed Cropping						1	2	2
30. Cropping Systems/Patterns			1	1		2	3	4
31. Crop Quality/Utilization			1	1		1	1	1
32. Plant Biological N-fixation				1		1	1	1
Total	18	18	23	25	68	68	75	81

	ON-CAMPUS				OFF-CAMPUS			
	CURRENT STAFF	PROJECTED REDISTRIBUTION OF DISCIPLINES			CURRENT STAFF	PROJECTED REDISTRIBUTION OF DISCIPLINES		
		CURRENT NEED	NEED by 1994	NEED by 1999		CURRENT NEED	NEED by 1994	NEED by 1999
			AGRONOMIC PLANT BREEDING					
33. Wheat Breeding	2	2	2	2	8	8	8	8
34. Maize Breeding		1	1	1	7	7	8	8
35. Rice Breeding			1	1	1	1	2	3
36. Sorghum Breeding				1	1	1	1	1
37. Millet Breeding					7	3	3	3
38. Sugarbeet Breeding					2	1	1	1
39. Sugarcane Breeding		1	1	1	4	4	4	4
40. Oilseed Breeding	1	1	1	1	3	3	4	5
41. Pulse Breeding	2	1	1	1	1	2	2	3
42. Forage Breeding	1	1	1	1		1	2	2
43. Cotton Breeding								
44. Crop Biotechnology (breeding)	1	1	2	2		1	2	2
45. Plant Cytogenetics	1	1	2	2				
46. Plant Breeding (gen.)	2	2	2	2	2	0	0	0
Total	10	11	14	15	36	32	37	41
			SOILS					
47. Soil Fertility	5	3	3	3	17	10	10	10
48. Soil Chemistry	2	2	2	2	18	10	10	10
49. Soil/Plant Analysis		1	1	1	1	2	4	6
50. Soil Salinity/Sodicity	1	1	1	1	5	5	5	5
51. Soil Physics	1	1	1	2		2	2	3
52. Soil/Plant Relationships	1	1	1	1		1	2	3
53. Soil/Plant/Water Relationships		1	1	1		2	2	3
54. Soil Microbiology	1	1	1	1	1	2	3	4
55. Soil Classification								
56. Soil Genesis/Morphology	1	1	1	1				
57. Soil Survey			1	1				
58. Soil Mineralogy			1	1		1	1	1
59. Soil Conservation/Erosion Control	1	1	1	1		2	3	4
60. Soil Moisture Conserv./Water Harvesting			1	1		2	2	3
61. Soil Tillage/Management	1	1	1	1		2	3	3
62. Soil Biochemistry/Biotech./Microbiology				1	1	2	2	2
63. Hydrochemistry				1				
64. Fertilizer Technology and Usage			1	1				
Total	14	14	18	21	43	43	49	57

	ON-CAMPUS				OFF-CAMPUS			
	CURRENT STAFF	PROJECTED REDISTRIBUTION OF DISCIPLINES			CURRENT STAFF	PROJECTED REDISTRIBUTION OF DISCIPLINES		
		CURRENT NEED	NEED by 1994	NEED by 1999		CURRENT NEED	NEED by 1994	NEED by 1999
			HORTICULTURE					
55. Vegetable Breeding		1	2	2	5	5	6	7
56. Vegetable Production	1	1	1	1	5	6	7	8
57. Vegetable Seed Production/Technology	1	1	1	1	2	2	3	4
58. Potato Production					3	3	3	4
59. Seed Potato Production				1	2	2	2	3
70. Tree Fruit Breeding		1	1	1		1	2	2
71. Tree Fruit Production	1	1	1	1	3	3	4	5
72. Small Fruit Breeding								
73. Small Fruit Production						1	1	2
74. Pomology	2	2	2	2	2	2	2	3
75. Horticultural Physiology								
76. Postharvest Physiology	3	3	3	2	3	3	3	3
77. Postharvest Handling/Management	1	1	1	1		2	3	4
78. Tissue Culture/Biochem. Propag./Breeding		1	1	2	1	1	2	3
79. Horticultural Biotechnology (breeding)	1	1	1	1		1	2	2
80. Ornamental/Landscaping Horticulture	1	1	1	1		1	1	1
81. Horticulture (gen.)	1	0	0	0	16	4	4	4
82. Hydroponic/Glasshouse Culture Hort. Plants								
83. Nursery Management	1	1	1	2		5	6	6
Total	12	14	15	17	42	42	51	62
			AGRICULTURAL ENGINEERING					
84. Agricultural Mechanization	6	4	3	3				
85. Soil & Water Management/Engineering	1	2	2	2		2	2	2
86. Irrig. Water Management/Engineering	1	1	2	2		1	2	3
87. Drainage Engineering		1	1	1		1	2	2
88. Watershed Management/Engineering								
89. Processing/Storage of Agr. Products			1	1				
90. Structural/Environmental Engineering				1				
91. Food Processing Engineering								
92. Power and Machinery		1	1	1				
93. Waste Water Management			1	1				
Total	8	9	12	13		5	7	8
			ATMOSPHERIC SCIENCE					
94. Crop/Plant Modeling								
95. Crop Microclimatology						1	1	1
96. Agricultural Meteorology		1	1	1		1	1	1
97. Remote Sensing Technology						1	1	1
98. Soil/Plant/Atmosphere Relationship						1	1	1
Total		1	1	1		4	4	4

	ON-CAMPUS				OFF-CAMPUS			
	CURRENT STAFF	PROJECTED REDISTRIBUTION OF DISCIPLINES			CURRENT STAFF	PROJECTED REDISTRIBUTION OF DISCIPLINES		
		CURRENT NEED	NEED by 1994	NEED by 1999		CURRENT NEED	NEED by 1994	NEED by 1999
			ANIMAL SCIENCE					
99. Animal Breeding/Genetics	1	3	5	7	2	2	3	4
100. Meat Science/Technology (dup.)		1	1	1				
101. Reproductive Physiology	1	1	1	1	1	1	2	2
102. Growth/Developmental Physiology				1		1	1	1
103. Nutritional Toxicology		1	1	1	2	1	1	2
104. Nutritional Physiology		1	2	2		1	2	2
105. Ruminant Nutrition	4	3	3	3		2	2	3
106. Non-ruminant Nutrition	1	1	1	1		1	1	1
107. Ruminant Microbiology		1	1	1		1	2	2
108. Veterinary Medicine		1	2	2	2	2	2	2
109. Veterinary Physiology		1	1	1				
110. Large Animal Management	3	3	3	3		1	2	3
111. Small Animal Management	1	1	1	1	1	1	2	3
112. Poultry Management	1	1	1	1		1	1	2
113. Poultry Nutrition	1	1	1	1		1	1	2
114. Poultry Breeding/Genetics		1	2	2		2	2	3
115. Draft Animal Management		1	1	1		1	1	1
116. Animal Biotechnology	1	1	1	2		1	2	2
117. Beef Animal Production		1	1	2		1	2	2
118. Dairy Science		1	1	1	1	1	2	2
119. Feed Technology		1	2	2		1	2	2
120. Wool Analyst		1	1	1	1	1	1	1
Total	14	27	33	38	10	24	34	42
			AGRICULTURAL ECONOMICS/RURAL SOCIOLOGY					
121. Agricultural Marketing/Cooperative	2	2	2	2				
122. Farm Management/Production Economics	2	2	2	2				
123. Resource Economics	1	1	1	1				
124. Agr. Credit/Financial Management (dup.)								
125. Econometrics/Quantitative Methods		1	1	1				
126. Rural Sociology (dup.)	2	2	2	3		3*	4*	6*
127. Agricultural Economics (gen.) (dup.)	1	2	2	3				
128. Economic Eco-theory (Micro/Macro)		1	1	2				
129. Agricultural Business Management (dup.)		1	2	3				
Total	8	12	13	17		3	4	6
			EXTENSION EDUCATION/COMMUNICATIONS					
130. Extension Education	2	2	2	3		3*	4*	6*
131. Agricultural Communications		1	2	3				
132. Print Media	1	1	1	2				
133. Extension Administration								
134. Agricultural Journalism	1	1	1	2				
135. Audio Visual Aids	1	1	2	2				
136. Agr. Extension (gen.)	1	1	1	1				
Total	6	7	9	13		3	4	6

* Outreach personnel

	ON-CAMPUS				OFF-CAMPUS				
	CURRENT STAFF	PROJECTED REDISTRIBUTION OF DISCIPLINES			CURRENT STAFF	PROJECTED REDISTRIBUTION OF DISCIPLINES			
		CURRENT NEED	NEED by 1994	NEED by 1999		CURRENT NEED	NEED by 1994	NEED by 1999	
		INSTITUTE OF DEVELOPMENT STUDIES							
137. Agricultural Policy	1	1	1	2					
138. Production Economics (dup.)	3	3	6	7					
139. Rural Sociology (dup.)	1	2	2	2					
140. Rural Economy	1	1	1	1					
141. Quantitative Methods	1	1	2	2					
142. Economic Theory	1	1	1	1					
143. Agricultural and Rural Development	6	6	4	4					
144. Social Sciences Research Methods	1	1	1	1					
145. Rural Development Plan./Admin.	1	1	1	1					
146. Agricultural Credit/Finance (dup.)	1	1	1	1					
147. Anthropology	1	1	1	1					
148. Development Theories	1	1	1	1					
149. Agricultural Economics (gen.)(dup.)	1	1	2	3					
150. Project Planning and Monitoring	1	1	1	1					
151. Economic Analysis/Policy		0	0	0					
152. Agricultural Business Management (dup.)		1	1	1					
153. Management of Farming Systems		1	1	1					
Total	21	24	27	30					
		ENTOMOLOGY							
154. Integrated Pest Management	1	1	1	2	1	3	4	5	
155. Insect Taxonomy/Classification	1	1	1	1					
156. Insect Morphology	1	1	1	1					
157. Insect Ecology	1	1	1	1					
158. Insect Virology									
159. Biological Control of Insects		1	1	1		2	3	4	
160. Insect Physiology	1	1	1	2					
161. Insect Pathology	2	2	2	2					
162. Livestock Insects									
163. Economic Entomology	2	2	3	3		2	3	4	
164. Insect Toxicology	1	1	1	1					
165. Insects of Stored Agr. Products			1	1					
166. Entomology (gen.)	2	2	2	2		2	3	3	
167. Apiculture					15	6	5	4	
168. Sericulture						1	2	3	
169. Environmental Entomology									
170. Agricultural Zoology	1	1	1	1					
Total	13	14	16	18	16	16	20	23	

	ON-CAMPUS				OFF-CAMPUS			
	CURRENT STAFF	PROJECTED REDISTRIBUTION OF DISCIPLINES			CURRENT STAFF	PROJECTED REDISTRIBUTION OF DISCIPLINES		
		CURRENT NEED	NEED by 1994	NEED by 1999		CURRENT NEED	NEED by 1994	NEED by 1999
171. Phytobacteriology		1	PLANT PATHOLOGY/NEMATODOLOGY					
172. Bacterial/Mycoplasmal Pathogens			1	1		1	2	2
173. Soil-Borne Plant Pathogens						1	2	3
174. Pesticide Ecology								
175. Plant Virology	2	2	2	2		2	2	3
176. Plant Mycology	1	1	1	1	1	1	2	2
177. Biological Control of Plant Diseases				1				
178. Plant Nematology	2	2	2	2		2	2	3
179. Plant Pathology (gen.)					11	3	3	3
180. Seed Pathology			1	1		1	2	2
181. Plant Disease Epidemiology			1	1				
182. Physiological Plant Pathology								
183. Plant Disease Control	1	1	1	1		1	1	1
184. Mycotoxicology and Postharvest Losses			1	1		1	2	2
185. Horticultural Pathology			1	1		2	2	3
186. Fungal Molecular Biology								
187. Ecology of Plant Pathogens								
188. Host-Pathogen Genetics	1	1	1	1				
Total	7	8	12	14	12	15	20	24
FOOD SCIENCE AND TECHNOLOGY								
189. Food Technology					14	4	3	3
190. Cereal Technology			1	1	1	2	3	3
191. Oilseed Technology	1	1	1	1		2	3	3
192. Food Microbiology	1	1	1	1		2	3	4
193. Postharvest Technology	1	1	1	1		1	2	2
194. Food Chemistry/Biochemistry (dup.)	1	2	2	2		1	1	1
195. Food Processing/Engineering	1	1	1	1		1	1	2
196. Consumer/Food Economics						1	1	2
197. Dairy Foods/Processing			1	1		1	2	2
198. Food Science (gen.)	3	0	0	0				
199. Processing/Storage Agr. Products						1	2	2
200. Food Fermentation Technology		1	1	1				
201. Beverage Technology		1	1	1		1	2	2
202. Sugar Technology				1	3	2	2	2
203. Meat Science Technology (dup.)				1				
Total	8	8	10	12	18	18	24	28
AGRICULTURAL CHEMISTRY								
204. Biochemistry	1	1	2	2	2	2	2	1
205. Food Chemistry (dup.)								
206. Physical Chemistry		1	1	1				
207. Pesticide Chemistry	1	1	1	1				
208. Farm Industrial Chemistry	1	1	1	1				
209. Instrumental Chemistry	1	1	1	1				
210. Analytical Chemistry	1	1	1	2				
Total	5	5	7	8	2	2	2	1

	ON-CAMPUS				OFF-CAMPUS			
	CURRENT STAFF	PROJECTED REDISTRIBUTION OF DISCIPLINES			CURRENT STAFF	PROJECTED REDISTRIBUTION OF DISCIPLINES		
		CURRENT NEED	NEED by 1994	NEED by 1999		CURRENT NEED	NEED by 1994	NEED by 1999
211. Infant Nutrition	1	1	1	1				
212. Maternal Nutrition			1	1				
213. Dietitics		1	1	1				
214. Human Physiology				1				
215. Nutritional Disorders	1	1	1	1				
216. Human Nutrition (gen.)	2	1	1	1				
Total	4	4	5	6				
217. Seed Technology (gen.)								
218. Seed Physiology (dup.)								
219. Botany	1	1	1	0				
220. Chemistry								
221. Agr. Statistics	3	3	4	5	1	0	0	0
					4	4	5	6
222. Computer Science	4	4	5	6				
223. Physics/Mathematics	2	2	1	0		2	3	4
224. Mathematics								
225. Teaching English	3	3	4	5				
226. Genetic Engineering		1	2	3				
227. Forestry								
229. Islamic Studies	3	3	3	3				
229. Educational Administration	2	2	2	2				
230. Experiment Station Management		1	2	2				
231. Farm Manager	1	0	0	0	1	4	5	6
232. Project Management						0	0	0
233. Public Policy								
234. Library Science	3	3	4	4				
235. Quantitative Ecology						2	3	4
236. Parasitology (Birds/Vertebrates)								
237. Administration (gen.)	10	10	10	10				
Total	32	33	38	40				
Grand Total	180	210	253	288	6	12	16	20
					253	297	347	401

Table 4 Allocation of training slots based on perceived current need for all staff and taking into account previous involvement in advanced academic training. (2 Nov 1989).

Discipline Area	Current need (1)	Previously Involved (2)	Calculated Training Slots (3)	Actual Training Slots (4)
1. Agronomic Production	86	16	10	4
2. Agron. Plant Breeding	43	10	3	8
3. Soils	57	15	2	3
4. Horticulture	56	5	11	11
5. Agr. Engineering	14	3	2	2
6. Atmospheric Science	5	0	2	1
7. Animal Science	51	7	8	8
8. AE&RS	15	4	1	2
9. Ext. Educ/Comm.	10	3	1	1
10. IDS	24	3	4	5
11. Entomology	30	4	5	5
12. Plant Pathology	23	4	3	4
13. Food Sci/Tech.	26	4	4	3
14. Agr. Chemistry	8	0	2	2
15. Human Nutrition	4	1	1	1
16. Seed Technology	0	0	0	0
17. Other	45	5	6	5
	497	84	65	65

(1) Both on- and off-campus combined.

(2) Previously involved in advanced academic training as of March 15, 1989, i.e. total of completed and in-progress. Includes academic training completed in 1986 or later with either a Ph.D obtained inside or outside Pakistan or an M.S. outside Pakistan. 67 of the 84 total cases were TIPAN sponsored.

(3) 84 previously involved plus 65 remaining TIPAN slots = 149 total. 149 total divided by 497 current need = an average of 30% of professional staff to be trained. Minor arbitrary adjustments were made to accommodate high priority areas. Training slots determined by multiplying 30% times current need and subtracting previously involved.

(4) Per decision of Deans and Directors on 2 November 1989.

Table 5 Summary of those previously involved in training, potential trainees and allocation of training slots for on- and off-campus staff at NWFP-AU by discipline area. (2 Nov 1989)

NWFP AGRICULTURAL UNIVERSITY

DISCIPLINE AREAS	ON-CAMPUS				OFF-CAMPUS				TOTAL TRNG SLOTS
	CURRENT STAFF	PREVIOUSLY INVOLVED(1)	POTENTIAL TRAINEES (2)	ALLOCATED TRAINING SLOTS (3)	CURRENT STAFF	PREVIOUSLY INVOLVED(1)	POTENTIAL TRAINEES (2)	ALLOCATED TRAINING SLOTS (3)	
	1. Agronomic Production	18	7	4	2	68	9	35	
2. Agron. Plant Breeding	10	3	2	2	36	7	20	6	8
3. Soils	14	6	4	2	43	9	20	1	3
4. Horticulture	12	4	5	3	42	1	24	8	11
5. Agr. Engineering	8	3	4	2		0	0	0	2
6. Atmos. Science		0	0	1		0	0	0	1
7. Animal Science	14	5	7	4	10	2	5	4	8
8. AE&RS	8	4	2	2		0	0	0	2
9. Ext. Educ/Comm.	6	3	1	1		0	0	0	1
10. IDS	21	3	14	5	-	0	0	0	5
11. Entomology	13	2	4	3	16	2	6	2	5
12. Plant Path/Nematology	7	1	4	1	12	3	6	3	4
13. Food Sci/Tech	8	3	2	0	18	1	8	3	3
14. Agr. Chem.	5	0	3	2	2	0	0	0	2
15. Human Nutrition	4	1	1	1	-	0	0	0	1
16. Seed Tech.	-	0	0	0	-	0	0	0	0
17. Other	32	5	11	3	6	0	3	2	5
Grand totals	180	50	68	34	253	34	127	31	65
Percent of current staff		28	38	19		13	67	12	

- (1) Previously involved in academic training, as of March 15, 1989 including total of completed and in-progress (those pending are excluded).
- (2) Any individual born in 1947 or later who, as of 15 March 1989, has not previously been involved in academic training outside Pakistan (also includes those classified as pending per Santas report of 31 January 1989; of the 56 listed as pending, 18 were born before 1947).
- (3) Per decision of Deans and Directors on 2 November 1989.

Table 6 Summary of those previously involved in academic training, potential trainees and allocation of training slots by individual disciplines (2 Nov 1989).

NWFP AGRICULTURAL UNIVERSITY

	ON-CAMPUS				OFF-CAMPUS			
	CURRENT STAFF				CURRENT STAFF			
		PREV INV (1)	POTENT. TRNEES (2)	TRAINING SLOTS		PREV INV (1)	POTENT TRNEES (2)	TRAINING SLOTS
				AGRONOMIC PRODUCTION (4)				
1. Wheat Agronomy	1	1			8	1	5	
2. Maize Agronomy					8	1	4	
3. Rice Agronomy	1		1		1		1	
4. Sorghum Agronomy								
5. Millet Agronomy					1		1	
6. Sugarbeet Agronomy					2		1	
7. Sugarcane Agronomy	2		1		3		2	
8. Soybean Agronomy	1	1						1
9. Oilseed Agronomy	2		1		13	2	6	
10. Pulse Agronomy					3		2	
11. Forage Agronomy	2	1	1	1	5		4	
12. Cotton Agronomy								
13. Fibre Crops Agronomy	1			1				
14. Agronomy (gen.)	2				16	1	7	
15. Plant Physiology					1			
16. Crop Physiology (gen.)	2	2			2		1	1
17. Plant Stress Physiology								
18. Weed Science (gen.)	1	1			5	4	1	
19. Biological Control of Weeds								
20. Crop Ecology								
21. Crop Eco-physiology								
22. Plant Nutrition								
23. Physiological Ecology								
24. Range Management								
25. Range Ecology								
26. Crop Seed Production/Technology	1							
27. Crop Seed Physiology (dup.)	1	1						
28. Arid Zone Agronomy	1							
29. Multiple/Mixed Cropping								
30. Cropping Systems/Patterns								
31. Crop Quality/Utilization								
32. Plant Biological N-fixation								
Total	18	7	4	2	68	9	35	2

1) Previously involved in academic training, as of March 15, 1989, for training outside of Pakistan, i.e. total of completed AND in progress.
 2) Defined as any individual in a given discipline born in 1947 or later who has not previously been involved in graduate academic training outside Pakistan.

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	ON-CAMPUS				OFF-CAMPUS						
	CURRENT				CURRENT						
	STAFF	PREV INV (1)	POTENT. TRNEES (2)	TRAINING SLOTS	STAFF	PREV INV (1)	POTENT TRNEES (2)	TRAINING SLOTS			
33. Wheat Breeding	2	2		AGRONOMIC PLANT BREEDING (8)				8	1	3	
34. Maize Breeding					7	1	5				
35. Rice Breeding					1	1					
36. Sorghum Breeding					1	1					
37. Millet Breeding					7		4	1			
38. Sugarbeet Breeding					2	1	1				
39. Sugarcane Breeding					4	2	2				
40. Oilseed Breeding	1				3		3	2			
41. Pulse Breeding	2				1		1	1			
42. Forage Breeding	1							1			
43. Cotton Breeding											
44. Crop Biotechnology (breeding)	1		1	1				1			
45. Plant Cytogenetics	1		1	1							
46. Plant Breeding (gen.)	2				2		1				
Total	10	2	2	2	36	7	20	6			
				SOILS (3)							
47. Soil Fertility	5	2			17	4	8				
48. Soil Chemistry	2		1		18	2	8				
49. Soil/Plant Analysis					1	1					
50. Soil Salinity/Sodicity	1	1		1	5	1	4				
51. Soil Physics	1	1									
52. Soil/Plant Relationships	1	1						1			
53. Soil/Plant/Water Relationships											
54. Soil Microbiology	1	1			1						
55. Soil Classification											
56. Soil Genesis/Morphology	1		1								
57. Soil Survey											
58. Soil Mineralogy											
59. Soil Conservation/Erosion Control	1		1	1							
60. Soil Moisture Conserv./Water Harvesting											
61. Soil Tillage/Management	1		1								
62. Soil Biochemistry/Biotech./Microbiology					1	1					
63. Hydrochemistry											
64. Fertilizer Technology and Usage											
Total	14	6	4	2	43	9	20	1			

	ON-CAMPUS				OFF-CAMPUS			
	CURRENT STAFF				CURRENT STAFF			
		PREV INV (1)	POTENT. TRNEES (2)	TRAINING SLOTS		PREV INV (1)	POTENT TRNEES (2)	TRAINING SLOTS
				HORTICULTURE (11)				
65. Vegetable Breeding			1		5	1	4	1
66. Vegetable Production	1	1			5		1	
67. Vegetable Seed Production/Technology			1		2		1	
68. Potato Production					3		1	
69. Seed Potato Production					2		1	
70. Tree Fruit Breeding								
71. Tree Fruit Production	1							1
72. Small Fruit Breeding					3		3	1
73. Small Fruit Production								
74. Pomology	2	2						1
75. Horticultural Physiology					2			
76. Postharvest Physiology	3	1	1					
77. Postharvest Handling/Management	1		1		3		3	1
78. Tissue Culture/Biochem. Propag./Breeding				1				1
79. Horticultural Biotechnology (breeding)					1		1	1
80. Ornamental/Landscaping Horticulture	1		1					1
81. Horticulture (gen.)	1							
82. Hydroponic/Glasshouse Culture Hort. Plants					16		9	
83. Nursery Management	1		1					
Total	12	4	5	3	42	1	24	8
				AGRICULTURAL ENGINEERING(2)				
84. Agricultural Mechanization	6	2	3					
85. Soil & Water Management/Engineering	1	1						
86. Irrig. Water Management/Engineering	1		1	1				
87. Drainage Engineering				1				
88. Watershed Management/Engineering								
89. Processing/Storage of Agr. Products								
90. Structural/Environmental Engineering								
91. Food Processing Engineering								
92. Power and Machinery								
93. Waste Water Management								
Total	8	3	4	2	0	0	0	
				ATMOSPHERIC SCIENCE (1)				
94. Crop/Plant Modeling								
95. Crop Microclimatology								
96. Agricultural Meteorology				1				
97. Remote Sensing Technology								
98. Soil/Plant/Atmosphere Relationships								
Total	0	0	0	1	0	0	0	0

AB

	ON-CAMPUS				OFF-CAMPUS			
	CURRENT				CURRENT			
	STAFF	PREV INV (1)	POTENT. TRNEES (2)	TRAINING SLOTS	STAFF	PREV INV (1)	POTENT TRNEES (2)	TRAINING SLOTS
99. Animal Breeding/Genetics	1	1		ANIMAL SCIENCE (8)	2		1	1
100. Meat Science/Technology (dup.)								
101. Reproductive Physiology	1		1	1	1	1		
102. Growth/Developmental Physiology								
103. Animal Nutrition								
104. Nutritional Physiology					2	1	1	
105. Ruminant Nutrition	4	1	2	1				
106. Non-ruminant Nutrition	1	1						
107. Ruminant Microbiology								
108. Veterinary Medicine								
109. Veterinary Physiology					2		1	1
110. Large Animal Management	3	1	1					
111. Small Animal Management	1	1						
112. Poultry Management	1		1	1	1		1	1
113. Poultry Nutrition	1		1					
114. Poultry Breeding/Genetics				1				
115. Draft Animal Management								
116. Animal Biotechnology	1		1					
117. Beef Animal Production								
118. Dairy Science								
119. Feed Technology					1		1	1
120. Wool Analyst								
Total	14	5	7	4	10	2	5	4
				AGRICULTURAL ECONOMICS/RURAL SOCIOLOGY (2)				
121. Agricultural Marketing/Cooperative	2	2						
122. Farm Management/Production Economics	2	1						
123. Resource Economics	1		1	1				
124. Agr. Credit/Financial Management (dup.)								
125. Econometrics/Quantitative Methods								
126. Rural Sociology (dup.)	2	1	1	1				
127. Agricultural Economics (gen.) (dup.)	1							
128. Economic Eco-theory (Micro/Macro)								
129. Agricultural Business Management (dup.)								
Total	8	4	2	2	0	0	0	0
				EXTENSION EDUCATION/COMMUNICATIONS (1)				
130. Extension Education	2	1						
131. Agricultural Communications				1				
132. Print Media	1	1						
133. Extension Administration								
134. Agricultural Journalism	1	1						
135. Audio Visual Aids	1							
136. Agr. Extension (gen.)	1		1					
Total	6	3	1	1	0	0	0	0

	ON-CAMPUS				OFF-CAMPUS			
	CURRENT				CURRENT			
	STAFF	PREV INV (1)	POTENT. TRNEES (2)	TRAINING SLOTS	STAFF	PREV INV (1)	POTENT TRNEES (2)	TRAINING SLOTS
			INSTITUTE OF DEVELOPMENT STUDIES (5)					
137. Agricultural Policy	1							
138. Production Economics (dup.)	2		2					
139. Rural Sociology (dup.)	1	1		1				
140. Rural Economy	1							
141. Quantitative Methods	1		1	2				
142. Economic Theory	1	1						
143. Agricultural and Rural Development	6		5					
144. Social Sciences Research Methods	1		1					
145. Rural Development Plan./Admin.	1	1		1				
146. Agricultural Credit/Finance (dup.)	1		1					
147. Anthropology	1		1					
148. Development Theories	1		1					
149. Agricultural Economics (gen.)(dup.)	1		1					
150. Project Planning and Monitoring	1		1	1				
151. Economic Analysis/Policy								
152. Agricultural Business Management (dup.)								
153. Management of Farming Systems								
Total	21	3	14	5	0	0	0	
			ENTOMOLOGY (5)					
154. Integrated Pest Management	1		1	1	1		1	1
155. Insect Taxonomy/Classification	1	1						
156. Insect Morphology	1							
157. Insect Ecology	1	1						
158. Insect Virology								
159. Biological Control of Insects				1				
160. Insect Physiology	1							
161. Insect Pathology	2		2	1				
162. Livestock Insects								
163. Economic Entomology	2		1					
164. Insect Toxicology	1							
165. Insects of Stored Agr. Products								
166. Entomology (gen.)	2							1
167. Apiculture					15	2	5	
168. Sericulture								
169. Environmental Entomology								
170. Agricultural Zoology	1							
Total	13	2	4	3	16	2	6	2

	ON-CAMPUS				OFF-CAMPUS			
	CURRENT				CURRENT			
	STAFF	PREV INV (1)	POTENT TRNEES (2)	TRAINING SLOTS	STAFF	PREV INV (1)	POTENT TRNEES (2)	TRAINING SLOTS
171. Phytobacteriology				PLANT PATHOLOGY/NEMATOLOGY(4)				
172. Bacterial/Mycoplasmal Pathogens				1				2
173. Soil-Borne Plant Pathogens								1
174. Pesticide Ecology								
175. Plant Virology	2		1					
176. Plant Mycology	1		1		1		1	1
177. Biological Control of Plant Diseases								
178. Plant Nematology	2		1					
179. Plant Pathology (gen.)					11	3	5	
180. Seed Pathology								
181. Plant Disease Epidemiology								
182. Physiological Plant Pathology								
183. Plant Disease Control	1		1					
184. Mycotoxicology and Postharvest Losses								
185. Horticultural Pathology								1
186. Fungal Molecular Biology								
187. Ecology of Plant Pathogens								
188. Host-Pathogen Genetics	1	1						
Total	7	1	4	1	12	3	6	3
				FOOD SCIENCE AND TECHNOLOGY (3)				
189. Food Technology					14	1	7	
190. Cereal Technology					1			
191. Oilseed Technology	1	1						
192. Food Microbiology	1							1
193. Postharvest Technology	1							1
194. Food Chemistry/Biochemistry (dup.)	1	1						
195. Food Processing/Engineering	1	1						
196. Consumer/Food Economics								
197. Dairy Foods/Processing								
198. Food Science (gen.)	3		2					
199. Processing/Storage Agr. Products								1
200. Food Fermentation Technology								
201. Beverage Technology								
202. Sugar Technology					3		1	
203. Meat Science Technology (dup.)								
Total	6	3	2	0	18	1	8	3
				AGRICULTURAL CHEMISTRY (2)				
204. Biochemistry	1				2			
205. Food Chemistry (dup.)								
206. Physical Chemistry								
207. Pesticide Chemistry	1							
208. Farm Industrial Chemistry	1		1					
209. Instrumental Chemistry	1		1	1				
210. Analytical Chemistry	1		1	1				
Total	5	0	3	2	2	0	0	0

	ON-CAMPUS				OFF-CAMPUS			
	CURRENT				CURRENT			
	STAFF	PREV INV (1)	POTENT. TRNEES (2)	TRAINING SLOTS	STAFF	PREV INV (1)	POTENT TRNEES (2)	TRAINING SLOTS
211. Infant Nutrition	1		1	1				
212. Maternal Nutrition								
213. Dietitics								
214. Human Physiology								
215. Nutritional Disorders	1	1						
216. Human Nutrition (gen.)	2							
Total	4	1	1	1	0	0	0	0
SEED TECHNOLOGY (0)								
217. Seed Technology (gen.)								
218. Seed Physiology (dup.)								
Total	0	0	0		0	0	0	0
OTHER (5)								
219. Botany	1							
220. Chemistry					1			
221. Agr. Statistics	3	1	1	1	4		2	1
222. Computer Science	4		2	1				
223. Physics/Mathematics	2							
224. Mathematics								
225. Teaching English	3	1	1					
226. Genetic Engineering								
227. Forestry								
228. Islamic Studies	3		2					
229. Educational Administration	2	2						
230. Experiment Station Management				1				1
231. Farm Manager	1		1				1	
232. Project Management					1			
233. Public Policy								
234. Library Science	3	1	1					
235. Quantitative Ecology								
236. Parasitology (Birds/Vertebrates)								
237. Administration (gen.)	10		3					
Total	32	5	11	3	6	0	3	2
Grand Total	180				253			

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Table 7 Accounting for individuals listed as "pending" per Dr. Santas' report of 31 July, 1989

<u>Name</u>	<u>Discipline per Santas</u>	<u>Discipline per Bond</u>	<u>Discipline per slot allocation table</u>
<u>I. Tentatively allocated to priority training slots:</u>			
1. Mukhtar Ahmad(C)	Agr.Econ(Resource Ec)	123.Resource Economics	123.Resource Economics (Accp 01/90)
2. Johar Ali(C)	Animal Science	116.Animal Biotechnology	114.Poultry Breeding/Genetics
3. Mohd.Bashir(O)	Soybean Agronomy	9.Oilseed Agronomy	B.Soybean Agronomy
4. Ms.Shahnaz Akhtar Bhatti		148.Development Theories	141.Quantitative Methods
5. Farhatullah(C)	Crop biotechnology	44.Crop biotechnology	44.Crop biotechnology
6. Farmanullah((C)	Entomology(IPM)	154.IPM	154.IPM (Accp 01/90)
7. Mohd.Hussain(O)	Food Tech(Microbiology)	189.Food Technology	192.Food Microbiology
8. Irfanullah(C)	An.Sci(Rum.Nutrition)	105.Ruminant Nutrition	105.Ruminant Nutrition
9. Ms.Roshan Ara Yousafzai		150.Project Planning/Monitoring	150.Project Planning/Monitoring
10. Farmanullah Khan(C)	Soil Conservation	59.Soil Conserv/Erosion	59.Soil Conserv./Erosion
11. M.Jamal Khan(C)	Soil Salinity	56.Soil Genesis/Morphology	50.Soil Salinity
12. Noor Paio Khan(C)	Agr Econ(Production)	146.Agr.Credit/Finance	145.Rurul Devel.Planning/Admin/137 Agr.Policy
13. Abdur Rab(O)	Hort(Fruit Physiology)	76.Post Harvest Physiology	76.Post Harvest Physiology
14. Abdul Rafi(C)	Pl.Path(Phyto bact)	183.Plant Disease Control	171.Phytobacteriology (Accp 01/90)
15. Mohd.Rahim(O)	Soybean Breeding	40.Oilseed Breeding	40.Oilseed Breeding
16. Raziuddin(C)	Plant Cytogenetics	45.Plant Cytogenetics	45.Plant Cytogenetics
17. Abrar Hussain Shah(C)	Veg.Seed Tech	67.Veg.Seed Tech	65.Vegetable Breeding
18. Sher Nadir(C)	An.Sci(Reprod.Physiol)	101.Reprod.Physiology	101.Reprod.Physiology (Accp 01/90)
19. Zakiullah(C)	Computer Science	222.Computer Science	222.Computer Science (Accp 01/90)
20. Mohd.Aurangzeb(C)	Statistics	141.Quantitative Methods	141.Quantitative Methods
21. Ajmal Khan(O)	Soil Sci(Salinity)	50.Soil Salinity/Sodicity	52.Soil/Plant Relationships
22. Fatehullah Khan(O)	Plant Pathology	179.Plant Pathology(gen)	172.Bacterial/Mycoplasmal Pathogens
23. Shahidin Noor(C)	Rural Sociology	143.Agr/Rural Development	139.Rural Sociology (Accp 08/89)
24. Mohd.Sadiq(O)	Millet Breeding	37.Millet Breeding	37.Millet Breeding (Accp 08/89)
25. Rafiullah Sahibzada(O)	Rapeseed Breeding	46.Plant Breeding(gen.)	40.Oilseed Breeding (Accp 01/90)
26. Ghulam Ali Malik(O)	Agron(Plant Physiology)		16.Crop Physiology (gen). (Accp 01/90)
27. Mussawar Shah(C)	Rural Sociology	126.Rural Sociology	126.Rural Sociology
28. Irshad Ali(O)	Plant Path(Mycology)		176.Plant Mycology
29. Gulzar Chughtai(O)	Entomology(JPM)		154.Integrated Pest Management

II. In-progress already

<u>Name</u>	<u>Discipline per Santas</u>	<u>Discipline per Bond</u>	<u>Discipline per allocation table</u>
30. Adam Khan(O)	Food Technology	189.Food Technology	
31. Ali Ayaz Khan(O)	Vegetable Breeding	65.Vegetable Breeding	
32. Shad Khan(C)	Agronomy(Crop Physiology)	11.Forage Agronomy	
33. M.Mohsin Siddiqui(O)	An.Sci(Rumen Physiol)	103.Animal Nutrition	

III. Too Old et al. reasons

<u>Name</u>	<u>Discipline per Santas</u>	<u>Comments</u>
34. Mohd.Arshad(C)	Agr.Mech.	Too old (1940)
35. Abdul Hanan(O)	Vegetable Crops	Too old (1946); Delete per Director Siddiq 7 Nov 89.
36. Mir Kalam Shah(O)	Economics(Proj.mgmt)	Going to UK
37. Gul Nawaz Marwat(O)	Entomology(Ecology)	Too old (1943)
38. Noor Ur Rehman(O)	Soil Sci(Salinity)	Too old (1944)
39. Nabi Ghulam Bangash(C)	Applied Statistics	Slow Progress W/English
40. Himayatullah(C)	Agr Econ(Production)	Enrolled for PhD in Islamabad
41. S.Asghar Hussain(C)	Horticulture	Too old (1947)
42. Mohd.Ishtiaq(C)	Horticulture	Pursing Ph.D in Hungary
43. Saleem Khan(C)	Human Nutrition	Slow Progress W/English
44. Mohd.Shah(O)	Pl.Path(Bacterial)	Too old (1947)
45. Rohan Shah(O)	Hort(Tree Fruit)	Slow Progress W/English; almost too old.
46. Akhtar Tariq(C)	Agr.Mech(Irrigation)	Slow Progress W/English
47. Ghufuran Ullah(O)	An.Sci(Vet.Med.)	Slow Progress W/English
48. Awan Waheedullah(O)	An.Sci(Liv.Mgmt.)	On deputation
49. Mansoor Khan	Agr.Mech.	Slow Progress W/English
50. Abdul Qayum(O)	Sugarcane Breeding	Too old (1947)
51. Abdur Rahman(O)	Soil Science	Too old (1948)
52. Raheela Begum	Rural Sociology(IDS)	Slow Progress W/English
53. Mushtaq Jadoon	Anthropology(IDS)	Delete per Dr. Nurul Islam Mian

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Table 8 Allocation of training slots per meeting of Deans/
Directors on 2 November 1989.

Discipline No./Title	No.Slots	Pending incumbent
AGRONOMIC PRODUCTION (4)		
8. Soybean Agronomy	1	Mohd. Bashir(O)
11. Forage Agronomy	1	_____ (C)
13. Fibre Crops Agronomy	1	_____ (C)
16. Crop Physiology	1	Ghulam Ali Malik(O)
AGRONOMIC PLANT BREEDING (8)		
37. Millet Breeding	1	Mohd. Sadiq(O)
40. Oilseed Breeding	2	Mohd. Rahim(O); Rafiullah Sahibzada(O)
41. Pulse Breeding	1	_____ (O)
42. Forage Breeding	1	_____ (O)
44. Crop Biotechnology	2	Farhatullah(C); _____ (O)
45. Plant Cytogenetics	1	Raziuddin(C)
SOILS (3)		
50. Soil Salinity/Sodicity	1	M. Jamal Khan(C)
52. Soil/Plant Relationships	1	Ajmal Khan(O)
59. Soil Conservation/Erosion Control	1	Farmanullah Khan(C)
HORTICULTURE (11)		
65. Vegetable Breeding	2	Abrar Hussain Shah(C); _____ (O)
70. Tree Fruit Breeding	1	_____ (O)
71. Tree Fruit Production	1	_____ (O)
73. Small Fruit Production	1	_____ (O)
76. Postharvest Physiology	1	Abdur Rab(O)
77. Postharvest Handling/Mgmt.	1	_____ (O)
78. Tissue Culture/Biochem. Propag.	2	_____ (C); _____ (O)
79. Horticultural Biotechnology	1	_____ (O)
80. Ornamental/Landscape Hort.	1	_____ (C)
AGRICULTURAL ENGINEERING (2)		
86. Irrig.Water Mgmt/Engr.	1	_____ (C)
87. Drainage Engineering	1	_____ (C)

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ATMOSPHERIC SCIENCE (1)		
96. Agricultural Meteorologist	1	_____ (C)
ANIMAL SCIENCE (8)		
99. Animal Breeding/Genetics	1	_____ (O)
101. Reproductive Physiology	1	Sher Nadir(C)
105. Ruminant Nutrition	1	Irfanullah(C)
108. Veterinary Medicine	1	_____ (O)
111. Small Animal Management	1	_____ (O)
112. Poultry Management	1	_____ (C)
114. Poultry Breeding/Genetics	1	Johar Ali(C)
118. Dairy Science	1	_____ (O)

AGRICULTURAL ECONOMICS/RURAL SOCIOLOGY (2)		
123. Resource Economics	1	Mukhtar Ahmad(C)
126. Rural Sociology	1	Mussawar Shah(C)

<u>EXTENSION EDUCATION/COMMUNICATIONS (1)</u>		
131. Agricultural Communications		_____ (C)

INSTITUTE OF DEVELOPMENT STUDIES (5)		
139. Rural Sociology	1	Shahidin Noor(C)
141. Quantitative Methods	2	Mohd. Aurangzeb(C); Ms. Shahnaz Akhtar Bhatti (C)
145. Rural Devel.Planning/Admin	1	Noor Paio Khan(C)
150. Project Planning/Monitoring	1	Ms. Roshan Ara Yusafzai(C)

ENTOMOLOGY (5)		
154. Integrated Pest Management.	2	Farmanullah(C);Gulzar Chughtai(O)
159. Biological Control Insects	1	_____ (C)
161. Insect Pathology	1	_____ (C)
165. Insects Stored Agr.Products	1	_____ (O)

PLANT PATHOLOGY/NEMATODOLOGY (4)		
171. Phytobacteriology	1	Abdul Rafi(C)
172. Bacterial/Mycoplasmal Pathogens	1	Fatehullah Khan(O)
176. Plant Mycology	1	Irshad Ali(O)
185. Horticultural Pathology	1	_____ (O)

FOOD SCIENCE AND TECHNOLOGY (3)

192. Food Microbiology	1	Mohd. Hussain(O)
193. Postharvest Technology	1	_____ (O)
199. Processing/Storage Agr.Products	1	_____ (O)

AGRICULTURAL CHEMISTRY (2)

209. Instrumental Chemistry	1	_____ (C)
210. Analytical Chemistry	1	_____ (C)

HUMAN NUTRITION (1)

211. Infant Nutrition	1	_____ (C)
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SEED TECHNOLOGY (0)

OTHER (5)

221. Agr.Statistics	2	_____ (C); _____ (O)
222. Computer Science	1	Zakiullah(C)
230. Experiment Station Mgmt.*	2	_____ (C); _____ (O)

* For new M.S. Program at Univ. Arkansas.

TIPAN

a project of
NWFP Agricultural University
University of Illinois at Urbana-Champaign
Southern Illinois University of Carbondale

TIPAN FIELD OFFICE
NWFP Agricultural University
Peshawar, Pakistan
Project Office: 44480, 44560
Telex: 52399 USAID PK

APPENDIX E.

MEMORANDUM

10 December 1989

SUBJECT: Establishment of Chief Scientist Positions to Provide Research Leadership

TO: Mr. Mohammad Siddiq, Director of Research
Dr. Mohammad Saeed, Chairman, Tech. Review Committee
Dr. Mohammad Saleem, Pirsabak
Dr. Imran Mohammad, Mardan
Mr. Habib ur Rehman, Tarnab

Reference is made to our several previous discussions relative to the need for formalizing a system for research leadership in NWFP-AU. Our recent experience has shown that even though we have made significant progress in improving our research through the activities of the Technical Review Committee (TRC), the overall task is so great that the Research Directorate could very well use some additional help to complement, but in no way replace, the role of the TRC.

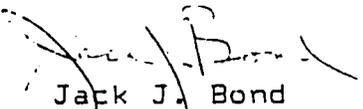
I think the last thing we want to do is to set up a series of research leadership positions which would remove productive practicing scientists from their research and place them in full-time leadership roles. Within 3 to 5 years of administration and lack of direct involvement in research, their own research capabilities would suffer. In addition, their current direct contribution to research would be curtailed. Thus we are suggesting only part-time individuals be involved in research leadership.

To me, we should consider the possibility of designating several "Chief Scientists" who would assist the Director and Associate Director of Research in carrying out the AU research program. These individuals would operate in a staff capacity only and thus not be a part of the line organization. They would have provincial-wide responsibility within their subject area. As far as terminology is concerned, you may prefer a title such as "Research Leader," "Research Coordinator" or some other title.

In order to stimulate discussion, I have prepared the attached material for your reaction. As you will notice, I have proposed eight Chief Scientists with individuals assigned to each in accordance with our recent exercise with the long-term staffing and training plan. As you will notice, this is a discipline oriented approach distinctly different from the current grouping by commodities/activities and the associated organization by Section at field locations and by Departments for on-campus faculty.

In addition to the table suggesting Chief Scientists, I have enumerated certain criteria and procedures for discussion purposes.

I would appreciate your verbal and/or written reaction/comments to these ideas. I think one of the things we should consider is a mini-retreat of selected individuals to discuss further these and related ideas and the overall future of AU research.


Jack J. Bond
Research Specialist

Attachment

cc: Dr. Gilbert Kroening, TIPAN Team Ldr.

Recommended criteria and procedures for the establishment of a system of Chief Scientists to provide research leadership for NWFP-AU

- o--Establish a group of Chief Scientists who will provide research leadership to promote the technical excellence of the overall research program of NWFP-AU
- o--Select Chief Scientists on the basis of demonstrated professional competence. Criteria for selection should include previous training, individual research accomplishments, publication record, and attitude toward working with and assisting other research scientists. Select individuals who are dedicated staff members who will place the concerns of AU ahead of their own possibilities for personal gain. Chief Scientists shall not be selected on the basis of seniority.
- o--Select individuals who are active researchers, are near mid-career, and who do not currently hold a predominantly administrative position. In this respect, the selected individuals should not hold an administrative position higher than Department Chairman for on-campus faculty or Section Head for off-campus faculty.
- o--Chief Scientists should provide provincial-wide leadership within their area of responsibility. This includes all individuals who have any research responsibility whether on-campus or off-campus. Every professional researcher within AU shall be assigned to a Chief Scientist.
- o--Chief Scientists shall operate entirely in a staff capacity with no line responsibility. Thus they will provide primarily technical advice and administrative advice as requested to the Research Directorate (the Director and Associate Director) without any direct line control over program and funds.
- o--Chief Scientists shall be active researchers with responsibility for as well as active involvement in the leadership of their own research program.

- o--Chief Scientists shall devote no more than 25 percent of their time to the Chief Scientist role. The remaining 75 percent shall include active research involvement with any combination of research/teaching/outreach totaling the remaining 75 percent.
- o--Designation of Chief Scientist shall not involve the transfer of any individual from their current location.
- o--The Research Directorate shall physically establish on the campus of NWFP-AU an office with physical facilities and adequate clerical staff to support the activities of Chief Scientists. This office shall be supervised by the Associate Director of Research and the office shall also support the activities of the Technical Review Committee.
- o--The Chief Scientists shall work closely with the NWFP-AU Technical Review Committee in improving the quality and quantity of AU research. As appropriate, individuals may serve both as Chief Scientist and as a member of the Technical Review Committee.
- o--In order to frequently travel to all field research locations where their people are stationed, Chief Scientists shall be provided with a special travel fund to provide for travel expenses. In addition, at least one vehicle and driver shall be made available on a full-time basis to support the activities of Chief Scientists.
- o--The Chief Scientists shall provide the principal technical interface between the research system and the proposed monitoring and evaluation cell of the Vice-Chancellor's office.

<u>Chief_Scientist</u>	<u>Discipline_Area</u> ⁽¹⁾	Number of Professional Staff		<u>Total</u> ⁽²⁾
		<u>On-campus</u>	<u>Off-campus</u>	
Chief Agronomist	Agronomic Production	17 ⁽³⁾	63 ⁽³⁾	80
Chief Plant Breeder	Agronomic Plant Breeding	10	36	46
Chief Soil Scientist	Soil Science	14	43	57
	Agr.Engr/Water Mgmt.	8	0	<u>8</u>
				65
Chief Horticulturist	Horticulture	12	42	54
Chief Plant Protectionist	Entomology	13	16	29
	Plant Pathology	7	12	19
	(Weed Science) ⁽⁴⁾	1	5	<u>6</u>
				54
Chief Nutritionist	Agr.Chemistry	5	2	7
	Human Nutrition	4	0	4
	Food Science & Tech.	8	18	<u>26</u>
				37
Chief Animal Scientist	Animal Science	14	10	24
Chief Social Scientist	Agr.Econ.&Rural Soc.	8	0	8
	Ext.Educ./Comm.	6	0	6
	IDS	21	0	<u>21</u>
				35
			Grand Total	395 ⁽⁵⁾

(1) Adapted from draft of long-term staffing and training plan of NWFP-AU, October 1989.

(2) As of 15 March 1989.

(3) Excludes Weed Scientists,

(4) Listed under Agronomic Production in discipline areas.

(5) Excludes 38 people in administration and other positions.

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TIPAN

a project of
NWFP Agricultural University
University of Illinois at Urbana-Champaign
Southern Illinois University of Carbondale

TIPAN FIELD OFFICE
NWFP Agricultural University
Peshawar, Pakistan
Project Office: 44490, 44560
Telex: 52399 USAID PK

MEMORANDUM

24 December 1989

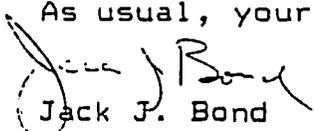
SUBJECT: Terms of Reference (TOR) for Proposed Chief
Scientist Positions

TO: Mr. Mohammad Siddiq, Director of Research
Dr. Mohammad Saeed, Chairman, Tech. Review Committee
Dr. Mohammad Saleem, Pirsabak
Dr. Imran Mohammad, Mardan
Mr. Habib ur Rehman, Tarnab

Reference is made to my memo to you of 10 December 1989, subject:
Establishment of Chief Scientist Positions to Provide Research
Leadership.

Dr. Carl Hausler suggested that in addition to the material
outlined in the above memo, that a more definitive TOR for the
positions would be helpful. Accordingly, I have drafted the
attached TOR to add to the material previously outlined. In
addition to more clearly outlining the duties of these positions,
the TOR should clear up any confusion between the roles of the
TRC and the Chief Scientists.

As usual, your comments and suggestions will be appreciated.


Jack J. Bond
Research Specialist

Attachment

cc: Dr. Gilbert Kroening

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Draft

Terms of Reference for Chief Scientists

- o--Serve as a focal point for all researchers within a given discipline area throughout the NWFP-AU system.
- o--Coordinate all research throughout the NWFP-AU system within the incumbent's discipline area.
- o--Encourage the development of research projects involving researchers from more than one discipline area.
- o--Provide information on promising research leads and potential areas for research cooperation between different individuals/locations.
- o--Assess needs for laboratory and field research equipment. Explore potential sources of funding for purchasing equipment. Encourage the sharing of major equipment items between locations/units.
- o--Make recommendations to the Director of Research on the acquisition of research equipment and physical facilities (land and buildings).
- o--Encourage the development of multidisciplinary research teams.
- o--Encourage the development of research projects which involve both off- and on-campus staff.
- o--Make recommendations to the Director of Research on hiring, firing, promoting, transfer, and evaluation of researchers within the incumbent's discipline area.
- o--Assure that researchers initiate research projects which take into account the Provincial and National priorities.
- o--Assist researchers in conceptualizing research hypotheses and in the development of research approaches.
- o--Assist researchers in the drafting of problem solving research projects which will ultimately contribute to the solving of farmer problems and in increasing agricultural productivity.
- o--Organize planning sessions and meetings of researchers to stimulate communications and sharing of research ideas.

- o--Organize in-service training sessions of researchers on a variety of subjects and participate in the training process.
- o--Recommend individuals and subjects for short-term training either inside or outside Pakistan and for long-term advanced academic training outside Pakistan.
- o--Assist the Director of Research in the development of PC-Is to support the research program of NWFP-AU.
- o--Coordinate the activities of the incumbent's discipline area with the activities of other disciplines areas.
- o--Assist the Research Projects Technical Review Committee in maintaining and improving the quality/quantity/relevance of the research program of NWFP-AU by providing guidance/advice to Principal Investigators and Co-workers on the preparation of research project outlines for AU research and proposals for outside funding.
- o--Make recommendations to the Director of Research for the providing of research funds and other resources to individual scientists.
- o--Assist individual scientists in the acquisition of scientific literature/reference materials.
- o--Encourage researchers to prepare technical papers, bulletins and outreach type publications documenting research accomplishments. Serve as the initial reviewer of manuscripts, provide feedback to authors, and make recommendations to the Director of Research relative to potential publication.