

PD.AAU-841
4/2/86

EVALUATION
OF .
PARTICIPANT TRAINING COMPONENT
PROJECT (391-0296)
STRENGTHENING AGRICULTURAL RESEARCH
IN
PAKISTAN

MARCH 1986

EVALUATOR: SUSAN GANT

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PART I

Executive Summary

A. Findings:

A total of 197 participants were sent abroad for advanced degrees and for short-term non-degree training (Appendix 1 and 2) under the Participant Training Component of USAID Project (391-0296) Strengthening Agricultural Research. Many returned participants have made outstanding contributions to agriculture in Pakistan. Only three percent of the trainees are known to have left government service. Only four women were selected for non-degree training, none for long-term degree programs. Eighty-five MSc and PhD participants were trained at local universities. The objectives of the Participant Training Component were met after appropriate modifications during the eleven year project.

B. Mission:

USAID/Pakistan: End of project evaluation report for Manpower Development/Participant Training Component of the Agriculture Research Project (391-0296). April 30, 1974 - June 30, 1985.

C. Project Purposes:

1. To increase agricultural production and improve farmer income.
2. To establish a functioning centrally coordinated program of agricultural research for major agricultural commodities.
3. To provide development and research training for appropriate personnel from Pakistan Agriculture Research Council (PARC), National Agriculture Research Council (NARC) and the provincial agricultural research and training institutions.

D. Purpose of evaluation:

1. To complete statistical data on participant training regarding numbers trained, level of training, place and subjects of training.
2. To determine difficulties experienced in selection and processing, pre-departure training, English language preparation and monitoring during training.
3. To ascertain how training received has been utilized.
4. To highlight lessons learned and make recommendations which will benefit the present PARC/USAID MART (Management of Agriculture Research and Technology) project "Training for Agricultural Network" which began in 1984.

E. Evaluation Methodology:

1. Review of project documents and related materials;
2. Questionnaire survey of returned participants and supervisors;
3. Interviews with:
 - (a) Selected participants and supervisors;
 - (b) PARC, NARC and GOP officials;
 - (c) USAID (ARD-HRT) officials involved with the project;
 - (d) CIMMYT in-country personnel.
4. Correspondence with the International Rice Research Institute (IRRI) in the Phillipines.

PART II

Overall Assessment

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This project provided long-term training at M.Sc and Ph.D levels in the United States and third countries as well as at in-country institutions. It also provided short-term non-degree training and study tours for PARC and NARC provincial administrators and scientists at the International Rice Research Institute (IRRI) in Manila, Philippines, and the International Center for Wheat and Maize Improvement (CIMMYT), Mexico and the United States. The program suffered major interruptions: the political violence of 1979 resulted in USAID staff reductions; record keeping was incomplete due to change of contractors for IRRI and CIMMYT in 1982 and poor record exchange between contractors and USAID and PARC; foreign exchange costs for training were substantially reduced during project redesign in 1977 with increased emphasis on in-country training.

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Nevertheless, this evaluation found that most of the original program and training objectives were met. This study also revealed that ninety-two more participants received short-term formal training and study tours than had been acknowledged.

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A total of 197 participants were sent abroad for advanced degrees and for short-term non-degree training (Appendix 1 and 2). At the time of this evaluation the vast majority have returned to Pakistan and are employed in their GOP sponsoring institutions and provinces.

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There has been some concern among observers that many participants leave the country or are employed outside the Pakistan government once

Four participants returned before completion of training for reasons of health. Performance of five participants was sub-standard for the training objectives for which they were selected. Based on recommendations of their U.S. advisors, training objectives of these five were changed to less demanding requirements. One candidate's training program was changed from a Ph.D to an M.Sc degree while another was changed from M.Sc to a non-degree program. In the cases of the other three candidates, the M.Sc programs were changed from the original science specialities to related but less demanding programs. Although five out of 197 participants cannot be considered an excessive rate of failure, there are indications that some participants who did achieve their training objectives were not adequately prepared for advanced degree work. Several had to spend time in remedial English training, one person spending nine months in ESL (English as a Second Language) training prior to beginning the regular study program.

A total of four women were selected for non-degree training under the (391-0296) program. None were selected for long-term degree programs.

Lessons Learned:

Successes:

1. The project trained 197 Agriculture Research Specialists. Many of the personnel required to staff the National Agriculture Research Center (NARC) which was created by the (391-0296) project are former participants trained under the same project.
2. Several returned participants have made outstanding contributions to the field of agriculture either in education, research or community extension service. This is in spite of constraints of working in substandard laboratories and lack or shortage of essential resources. For instance, one (391-0296) participant has developed a white cheese that is now ready for mass production which could expand

Pakistani's meager list of dairy products (Pakistan only recently marketed its first mass produced cheese, a Cheddar cheese). Another (391-0296) trained participant designed the country's first university M.Sc degree curriculum in fisheries at the University of Punjab in Lahore. Fish is one of Pakistan's major export food commodities.

Another trainee saved community apple trees in Swat from being destroyed by identifying a contagious disease and introducing control measures which maintained the orchards. This trainee has also introduced new varieties of apple trees in an entire division area in Swat. IRRI trainees in Dokri (Sind) report new rice crosses. Many of these trained agriculturalists work in labs which they are helping equip; others work in labs where there isn't even a refrigerator.

CIMMYT trained personnel in Pirsabak have selected and released three varieties of CIMMYT wheat which over an eight year period, combined with increased fertilizer use, have increased yields by 100% in the NWFP area since 1965. Since that time, Pirsabak's research system has strengthened to the point where the major portion of research is done in Pakistan with CIMMYT assistance rather than Mexico being the main contributor in the research process. The latest Pirsabak variety is Pak '81 released in 1981 which will soon be the most important wheat variety in Pakistan, given current trends. The average increase in yield, based on variety alone, from Pak '81 exceeds previously mentioned yields by 20%. It is being grown in NWFP and certain areas of the Punjab and its use is spreading rapidly. It is very resistant to rust.

Although their job is screening wheat varieties, since there is no seed corporation in NWFP, these participants have helped created a channel whereby the extra improved seed is passed on to the farmers after it is certified at government farms. In addition, these scientists have been able to help area farmers decrease disease through effective application of insecticides, increase yields

through efficient utilization and application of fertilizer herbicides and irrigation methods. They also encourage use of organic fertilizer. Reports of similar successes have been received from throughout the country which resulted from efforts of (391-0296) participants.

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An IRRI (UPBL University of Philippines) Ph.D participant is testing the third generation of improved basmati rice induced not by the typical method of cross breeding which would have lost the finer qualities of basmati rice, but rather through a manipulated cell technique learned at IRRI heretofore not used in Pakistan.

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As a result of advice from CIMMYT trained scientists, farmers in the Muzaffarabad area produced 5,000 maunds (1 maund = 82 pounds or 37 kilograms) of surplus maize to sell to RAFHAN industries.

4. Many ex-participants were able to develop improved varieties of wheat, maize, barley or rice. These were passed on to the farmers with instructions for multiplication for further distribution within their communities.

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5. Newer and more effective levels of technical expertise have been introduced into the field of agriculture by many returned participants who voluntarily trained colleagues and communicated their expertise through publications, seminars and other communicative techniques.

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6. Based upon questionnaire responses and interviews, supervisors and participants stated that the institutions selected for long-term training were excellent.

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7. CIMMYT and IRRI were rated highly as participant training institutions. However, there was an indication that recent CIMMYT training is not up to the standard of previous reports, possibly due to a change of training officers. Further investigation may be warranted.

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7. The GOP needs to examine its personnel policy system. If participants could look forward to better opportunities for career advancement, more fairly determined assignments and a reward system, there would be more incentive to stay with government employment and to put more effort into their work.
8. Closer coordination between PARC, USAID and contractors should be required. As a minimum, copies of all trainee nominations from PARC and CIMMYT must be forwarded to USAID. USAID was not informed of the nominations of more than ninety-two CIMMYT and IRRI contract funded participants under the (391-0296) project. PARC was unaware that some CIMMYT trainees were also funded by UNDP and World Bank.
9. Record keeping in all agencies needs to be improved. Updating of addresses, transfer information and career advancement should be maintained in participant or master files. Record keeping must be more accurate and organized so that people other than long time employees of concerned agencies may have convenient access to the information.
10. Increased efforts should be made to disseminate agriculture information throughout the country concerning the successes in research laboratory and field work. One of the most repeated comments concerning benefits of IRRI and CIMMYT projects was that of meeting scientists from other parts of the world and exchanging information. A centrally produced and distributed publication in Pakistan would acquaint the agriculturalists in-country with each other and their work and provide a vehicle for valuable information exchange even if only among returned participants.

Word of the "traveling and teaching seminar" from NARC instituted as part of (391-0296) in-country training had reached some participants and was spoken of with respect and approval.

11. Efforts should be made to ensure that the USAID receives proper recognition for its contribution to Pakistan's training program especially in the case of short-term and mid-term trainees sent out under contract. There have been cases where CIMMYT trainees were not aware that their CIMMYT training for instance, was USAID funded. This evaluator has also noted during travel interviews that equipment and books given by other donor agencies have the seal of donor placed in a prominent place. USAID should take the opportunity to spread goodwill from the U.S. in this manner whenever possible. Placement of USAID stamps or seals seems to be a haphazard activity.

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PART III

INTRODUCTION

The USAID agricultural project began officially in 1969, however, the relevant start of activity, however, was the (391-0296) project of 1974 which was a major project assistance agreement of loan and grant funds with the Pakistan Agricultural Research Council (PARC). The project developed through efforts of Pakistan-American joint agricultural research review teams in 1968 and 1973 which resulted in a series of project agreements with the Government of Pakistan (GOP) designed to strengthen Pakistan's agricultural research capability. The project terminated on June 30, 1985 after being redesigned in 1978 and amended in 1982.

Several problems arose during the early stages of implementation due to inadequate staffing and managerial services at PARC. A major recommendation of the 1976 review team was that a full-time training officer be appointed to the Agricultural Research Council (ARC, now PARC) due to the very slow progress of the training project component.

At the onset of the project, training for masters and doctoral degrees was being undertaken in the United States, in Lebanon at the American University of Beirut (AUB) and at the Agricultural University, Lyallpur (AUL) in Pakistan (Lyallpur is now named Faisalabad). However, in 1976 only one doctorate and one masters degree had been obtained out of the total of the planned 212 participant training allocations for practical, doctorate and masters programs. Both of these were obtained in the United States. In addition to staffing problems at ARC other reasons for delays in training were due to lack of clear guidelines and detailed procedures involved in processing nominations (Appendix 3).

The shape of the training program changed after a 1977 project review which placed increased emphasis on in-country training and reduced foreign exchange costs for out-of-country training. The 1974 project provided for seventy-two long-term training positions abroad which was scaled back to forty-six positions, all of which had been used by June 1982. Civil war in Lebanon in 1981 resulted in several participants being transferred to U.S. universities for completion of training and cancellation of subsequent training in Beirut. The loss of UAB as a training site was regrettable because the university had provided excellent on-the-spot training facilities; Lebanon's climate and soil were similar to that of Pakistan which was favorable for agriculture research exchange; Beirut offered a cultural backdrop familiar to participants and reduced participant training travel costs compared to training in the U.S.

The project reviews of 1976 and 1977 identified little success in the overall project, including participant training, but did identify major problems. A redesign in 1978 incorporated appropriate changes which allowed the project to survive the disruptions of 1979 and 1980 when USAID staff was drastically reduced. An in 1982 extended the project through June 30, 1985 and provided additional support for project completion.

The 1982 amendment to the project provided for a total of seventy long-term training fellowships leading to M.Sc and Ph.D degrees at local universities which were all utilized.

Most of the practical training short-term, study programs, study tours and non-degree training have been executed under contract with the international service institutes of IRRI and CIMMYT. IRRI has also trained M.Sc and Ph.D candidates (Appendix I). Forty-six of fifty-four

participant trainees from the institutes completed training in 1982. The 1982 amendment provided for forty-nine more participants to be trained in Mexico and the Philippines (Appendix 4). At project assistance completion date (PACD) of June 30, 1985 a total of 121 participants had attended courses at CIMMYT and IRRI and thirty-three had received training in other countries (Spain, Syria, Italy, India, England, Thailand, France and Kenya) contracted through CIMMYT.

PART IV

Results of responses to questionnaires:

FROM (391-0296) PARTICIPANTS

This portion of the report summarizes evaluation questionnaire data from foreign trained participants. It includes short-term trainees (less than three months), mid-term trainees (three months or more) and long-term trainees (academic degree training).

The questionnaire (Appendix 5) is comprised of seven components: personal information, participant selection, training purpose, pre-departure orientation, English language proficiency, support services and training impact.

Considering the fact that project (391-0296) had its inception over eleven years ago and that record keeping and updating of address has been neglected during that time, it was encouraging to note that there was a 51% response from long-term trainees. However, only 26% of mid-term trainees responded and only 6% of short-term trainees responded.

The evaluator believes poor response from short-term trainees was mainly due to the length of the questionnaire. The same questionnaire (Appendix 5) was used for all three training length groupings and a major part of it, eg. language training, support services, pre-departure orientation, sections of training impact and personal information, was not necessary to evaluate short-term training. Additionally, one questionnaire was returned with a note which indicated that the CIMMYT respondent did not believe his training was USAID funded. There has been no way to assess how many other contract sponsored candidates might not have responded for that reason.

There is reason to believe that a portion of mid-term trainees did not respond due to the same reasons mentioned for short-term trainees. However, in depth interviews with selected mid-term trainees and tabulations of returned mid-term participants' questionnaires indicate that their concerns and satisfactions with training correlates with that of long-term trainees. Therefore, the 26% response can be accepted with a high level of confidence as a valid sample of the whole mid-term group. Differences between long-term and mid-term responses will be discussed in the Section B. Because of the poor response from short-term trainees, information about that group will be extracted from a recent CIMMYT report concerning return participants. CIMMYT participants comprise 50% of the non-degree total.

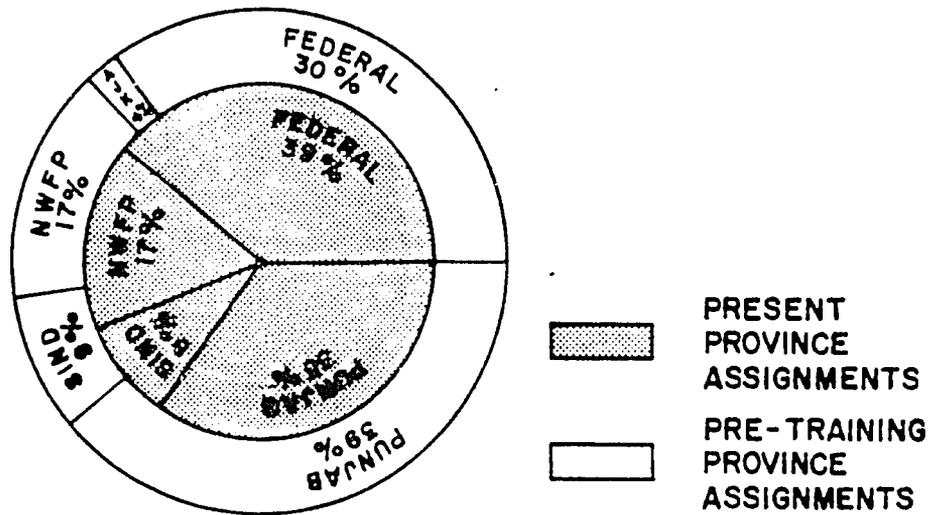
- A. The following section evaluates results of questionnaire responses from long term trainees only. The majority, 51%, of long-term foreign trained participants responded to the questionnaire.

1. Personal Information:

The average age of long-term participants at time of selection was thirty-two years.

The chart below indicates province assignment of participants before training compared to present province assignment:

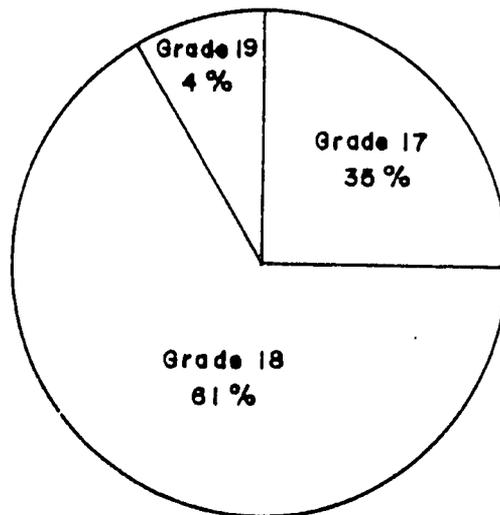
TABLE I:
(Long-Term Participants)



The chart below indicates the present grades of Government employed (391-0296) participants.

TABLE II:
(Long-Term Participants).

**PRESENT GRADES OF
GOVERNMENT EMPLOYED
0296 PARTICIPANTS**



The vast majority, 83%, of long-term participants retained their pre-departure job title upon return to country. A few, 17%, indicated a title change. At the time of their survey, 48% indicated that their job title had been changed since returning from (391-0296) training. The changed job titles indicate increased responsibility and in some cases, higher grades.

Of those participants who responded to the questionnaire, 31% indicated that training had changed their education level from M.Sc. to Ph.D, 4% changed from B.Sc to Ph.D and 65% started training with a M.Sc degree from Pakistan and received an M.Sc degree from the U.S. or IRRI.

Six percent of the respondents had been selected for other in-country training before participating in the (391-0296) training project and 13% had received some training abroad. These responses indicate short-term study seminars rather than academic training. The evaluator has met at least four participants who were trained at AUB under the earlier PARC/USAID agreements which led into the formation of (391-0296).

2. Participant Selection:

The time between the participant learning of his selection and his departure date ranged from one week to two years with one participant mentioning four years. The questionnaire might have split the question into two parts, one asking when the participant learned of his selection and then how much time did the participant have between notification of final selection when processing of nomination was completed and departure date. The majority, 57%, responded that they did not have enough time to prepare for departure with emphatic comments that there were too many formalities and GOP delays. Suggestions for improving selection included:

"Service grades should not be considered in candidate selections."

"Selection period is long and hopeless; ministries should not be involved in selection."

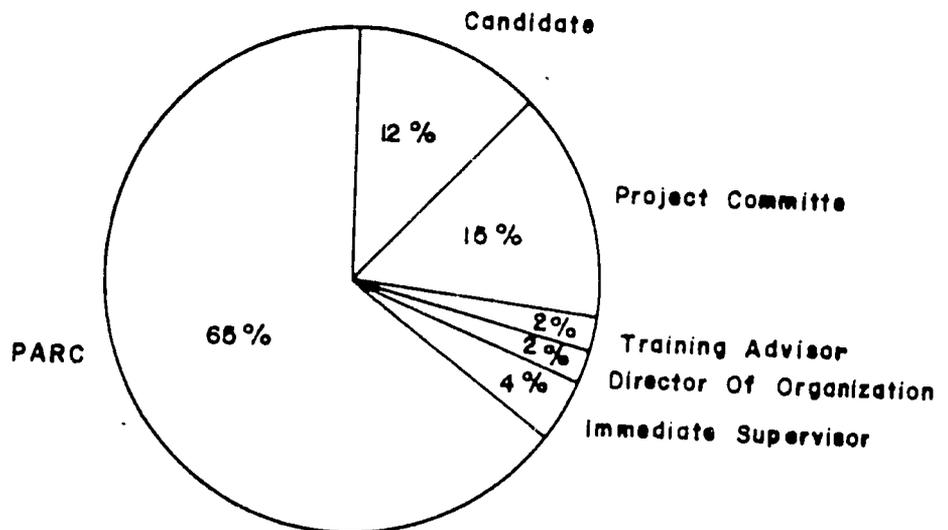
"More care taken to select the proper man and for selection of proper course for institution needs linked to proper candidate."

3. Training Purpose:

The majority, 65%, of (391-0296) candidates feel that PARC determined the purpose of their training. Fifteen percent felt that committee consisting of PARC, NARC, USAID, and director of the organization where they work, determined the purpose of training.

TABLE III:

(Long-Term Participants)



Thirteen percent of replies indicated that the explanation of purpose of training received before leaving Pakistan was "very inadequate"; 13% said it was "fairly adequate", 9% "neutral", and 26% said it was "very adequate".

Seventeen percent of candidates felt they had no part in determining the purpose of their training. Nine percent had a little part, 22% had a moderate part, 26% had substantial participation and 26% had an extensive part. The average candidate spent two and one-half years abroad in long-term training. The largest portion of these, 57%, were sent out in 1981.

Thirty-nine percent of the candidates did not return to Pakistan within the expected period of time. This was due to difficulty of course work, change of degree from M.Sc to Ph.D, time used in English language training or time lost in switching schools. The average extra time spent by these 39% was seven months each. Five candidates switched to Ph.D studies after their M.Sc. and account for the major portion of extra time spent completing studies. Fifty-two percent of the respondents changed their original plans concerning designated level of training or institution selected. Twenty-two percent of respondents converted to Ph.D degrees while in the U.S. One person transferred schools, one switched to non-degree from M.Sc, one changed to a more general degree, another had problems with the climate (cold weather) and another spent five extra months studying for TOEFL.

Comments concerning training purpose included:

"Participants should be involved in selection of the institution where they will be trained."

"Candidate should be consulted."

"Advisor, not AID or PARC, should determine coursework."

"Purpose of training should be established and explained to candidate before processing papers."

"Purpose of training should be established with head of research program."

4. Pre-departure Orientation:

Seventy-eight percent of respondees did not receive any formalized orientation program prior to leaving for training abroad. Any orientation or information was received at the time of receipt of airline ticket or when advised of acceptance at institute of study. The (391-0296) program was coordinated with PARC by the agriculture division of USAID. The USAID training office was involved in coordinating records and distributing airline tickets. Responsibility for orientation was not clearly defined although little by little the USAID training office rather unofficially assumed some basic orientation responsibilities. Comments from the participants were:

"No orientation of any sort received."

"Suggest regular orientation arranged by USAID on a priority basis. Students who attained degrees under this program should be invited to help organize such an orientation program."

"Mostly orientation was satisfactory."

"Written as well as oral briefing would be an ideal arrangement."

5. English Language Proficiency:

Only three-fourths of the respondees answered the question concerning English language tests. Seventy-four percent of candidates responding were required to take an English language assesment test prior to placement. Of those, seventy-four percent were required to take TOEFL before placement. Twenty-one percent took ALIGU, 5% took "other". None were required to take the GRE prior to placement, but 40% had to take it prior to graduation.

All respondees replied to the question concerning English training in conjuction with USAID and PARC. They indicated that 51% received English language training. Sixty-two percent received it at the American Lanugage Institute at George Washington University in Washington D.C. They rated the services highly and indicated that cultural information about the U.S. was included and was helpful.

Twenty-three percent were trained at the Institute of Modern Languages in Islamabad. These services were rated "not efficient" to "somewhat efficient". Fifteen percent were trained at their university of enrollment.

6. Support Services:

Seventy-five percent indicated support services were received upon arrival to host country. Those who did not receive orientation upon arrival said it was because they had reached their institution only in time to attend classes, not in time for orientation programs. Those who had sufficient time to attend orientation in the U.S. attended a three day seminar at the Washington International Center (WIC) in Washington, D.C.

WIC orientation to training activities were rated "very efficient" by all but one trainee whose comment was that support services were not effective and that the program officer in AID Washington was rarely accessible. Program related travel arrangements were rated "somewhat" to "very effective", receipt of allowances and payments was rated "somewhat" to "very effective". General assistance was also rated somewhat to "very effective".

Comments were:

- "This course is excellent and should be continued with aliens."
- "It was a useful service to introduce American culture which I found totally different than my own."
- "Very effective."
- "All services other than financial support were satisfactory."

The majority of respondents rated as very effective the following services received from WIC: (a) assistance in focusing training, (b) access to trainers/faculty, (c) access to administrative staff or advisor, (d) assistance in finding food and housing. Seven percent rated "d" as "not effective". Because of other comments on the

questionnaire, one might assume this has to do with the problems Muslims have in avoiding pork products and finding meats which are properly butchered.

The majority of trainees rated the effectiveness of their government maintaining contact with them as "somewhat efficient" to "not efficient." They rated "not efficient" the GOP keeping them informed about affairs relating training to their job.

7. Training Impact:

TABLE IV:

Trainees rated the effectiveness of training as follows:

	! NA	! Not Eff!	! Somewhat Eff!	! Very Eff!
	!(1)	!(2)	!(3)	!(4)!(5)
a. Increase your knowledge of professional matters in your field	!	!	!	! 4% ! 13% ! 83%!
b. Improve technical skills	!	!	!	! 9% ! 17% ! 74%!
c. Establish professional contacts	!	!	!	! 26% ! 26% ! 39%!
d. Better understanding of USA or other Int'l organizations similar to yours!	!	!	!	! 24% ! 48% ! 29%!
e. Better understanding of USA culture	!	! 22%	! 4%	! 13% ! 26% ! 35%!

TABLE V:

8. Professional appropriateness of training was rated as follows:

a. With respect to training level:

(Much too low)	(Somewhat low)	(On Target)	(Somewhat high)	(Much too high)
0%	4%	70%	13%	13%

b. With respect to training length:

(Much too <u>short</u>)	(Little <u>short</u>)	(On <u>Target</u>)	(Little <u>long</u>)	(Much too <u>long</u>)
0%	18%	64%	14%	5%

The extent to which trainees were able to use aspects of training in their job is as follows:

<u>Not at all</u>	<u>Limited amount</u>	<u>Moderately</u>	<u>Substantially</u>
15%	13%	39%	39%

Participants were asked to give specific examples of uses they had made of their training. Some negative and positive responses follow:

"The training helped in range research activities in Pakistan."

"On return I worked very little in my specialized area due to the fact that NWFP does not have such schemes." (This participant received an M.Sc. degree in fodder research, thirty months at a California university, 1977, and is now a tobacco botanist).

"Recently I compiled a book to share my knowledge with my colleagues, teachers and students about breeding for disease resistance." This book has been published by the government press and has received good reviews from Government of Punjab agriculture officials and institutes of agriculture research and education in the Punjab, the province to which this trainee is assigned. (Funding for his M.Sc. and most of his Ph.D at Montana State were from (391-0296) with self-financed termination of Ph.D)

"I've not been able to make use of my training because of lack of facilities and appropriate recognition of problem. (Genetic resistance to insects of rice in Pakistan)." This trainee believes he is the first and only person trained in this field in Pakistan (Ph.D at IRRI).

"No contributions yet, but hope that the future may determine a change of aspect of life."

Several trainees indicated they have improved laboratory set-ups, increased yields of grain crops, can guide colleagues in their agriculture professions, are more qualified and skilled than before and can perform technical work with confidence.

One participant has generated twenty publications in national and international journals while another has written popular articles for extensionists.

"Research on evaluation of Septoria, which is a new field, has been started and will be a great contribution to control of wheat diseases".

"I have developed a curricula for the first M.Sc program in fisheries in Pakistan at the Department of Fisheries in Punjab (to be adopted at University of Lahore). "... preparing to launch an extensive program on fisheries research which is expected to augment fish production in Mingora, Swat.

"People in this area were busy cutting their apple orchards because of apple disease problems. I studied their apple disease and recommended central measures which proved 100% effective. I've also been able to control diseases of multiple crops and orchard trees after M.Sc. training in the U.S.". (Converted from M.Sc degree to Ph.D Auburn University, 1981 - 1984. Completed final months of Ph.D with University financing)

"... working on cross breeding of daily cattle in Pakistan". This person also has developed a white cheese in the laboratory which is ready for mass production. Pakistan has only one major mass produced cheese on the market, a Cheddar cheese. (M.Sc from South Dakota State University, 1981)

A (391-0296) Ph.D from IRRI is testing the third generation of improved basmati rice induced not by the typical method of cross breeding which would have lost the fine qualities of basmati rice, but through a manipulated cell technique heretofore not used in Pakistan. Also, two new rice varieties for the Punjab have been evolved: Swat I and Swat II were government approved in 1983.

Following are answers supplied to the question "What are the main factors that have prevented you from using more of your training?"

"Tight compartmentalization of disciplines and need to be placed in a higher job."

"Misunderstanding of officer and proper recognition of problem."

"Bureaucracy."

"Lack of staff assistance for completion of research programs."

"Entirely too lengthy to discuss on paper."

"Lack of planning from home country."

"Financial constraints. Inadequate lab and other working facilities."

"No problems."

"Problems are more of personnel nature than that of institute or financial."

Major topic replies concerning greatest benefits gained from training indicated that achieving a high degree of professional skill and broadening knowledge of field and laboratory skills in specific area of research were the greatest benefits.

As to the greatest problems of the training program, the replies included:

"Difficulty of adjusting to new culture."

"Frustration in repeating the same degree." (M.Sc. in Pakistan to additional M.Sc. in U.S.)

"financial hardships."

"Too many formalities and offices are involved for becoming a candidate from selection to processing to embarkment."

B. Mid-term trainee responses to (391-0296) participant questionnaire.

1. Personal Information:

The average age of the mid-term trainees at time of training was thirty-four years. Participants returned to the same provinces after training and have remained in the same provinces up to this time. Four percent are serving in Grade 16, 66% serve in Grade 17 and 30% serve in Grade 18. All participants returned to the same position after training but 35% have had changed job titles to a more responsible position since completing training. In no case did the training received change the level of educational degree. Forty-three percent of the trainees hold B.Sc. degrees and fifty-six percent hold M.Sc. degrees.

Only 38% reported other training experiences before USAID training. Two went to Thailand under auspices of the Rockefeller Foundation and three received training in-country.

2. Participant Selection:

The average time a participant had between learning of selection and departure date was two and one-half months. Replies ranged from seven days to one year. One reply of three years was not included in the

average. The majority indicated they had enough time to prepare for departure. Nevertheless, the yes answer is not completely positive. Many of those who answered yes said that there were too many steps in the selection process, that it was too lengthy. One suggested that selection should go by turn. Two of the twelve who offered comments suggested USAID should make the selection or that USAID should have the final approval. Fifty-five percent believed that the director of the organization where they worked determined the purpose of their training. This is in contrast to long-term trainees, 65% of whom thought PARC determined their training. Thirty percent of mid-term trainees said PARC determined their training, 8% said USAID, 3% said NARC, 2% said immediate supervisor and 2% said the advisor of their training programs.

Trainees response to whether the purpose of training was adequately explained before leaving Pakistan was as follows:

<u>Very inadequate</u>	<u>Somewhat inadequate</u>	<u>Neutral</u>	<u>Fairly adequate</u>	<u>Very adequate</u>
13%	4%	13%	30%	39%

Only 26% percent of long-term trainees felt purpose of training was adequately explained compared to 39% of mid-term.

Mid-term participants responded to the question "How much did you participate in determining the purpose of your training?".

<u>NA</u>	<u>No part</u>	<u>Little part</u>	<u>Moderate part</u>	<u>Substantial participation</u>	<u>Extensive part</u>
4%	4%	9%	17%	17%	48%

Only 26% of long-term candidates felt they had an "extensive part" in determining purpose of training compared to 48% of mid-term trainees.

The average time spent in training by responders was six months. Peak years of training were 26% in 1980, 22% in 1983 and 17% in 1978. A CIMMYT trainee from 1983 said training should be more specific than of a general nature. Several other remarks pertained to needing a better system for identifying candidates and examining their background before selection.

4. Pre-departure Questions:

Seventy-four percent said they had not received orientation prior to departing from Pakistan other than a short briefing by letter when advised of selection or orally when picking up tickets. As a group, the mid-term participants were not as concerned about need for orientation as long-term trainees. Nevertheless, many respondents suggested a one or two day orientation.

5. English Language Proficiency:

Most mid-term participants did not answer questionnaire sections on English language proficiency or support services. Since a major portion of them went to IRRI and CIMMYT where much of the training is practical work, they possibly did not feel the need of language training as much as those going into training involving more formal classroom work.

6. Support Services:

Only 35% replied to questions about support services from their training institution but they rated the effectiveness as an average of four on a scale from one to five. This pertained to orientation to training activities, program related travel arrangements, receipt of allowances and payments and general assistance.

7. Training Im

TABLE VI:

Trainers rated the effectiveness of training as follows:

	! NA	! Not Eff	! Somewhat Eff	! Very Eff
	!(1)	!(2)	!(3)	!(4)!(5)
a. Increase your knowledge of professional matters in your field	9%		22%	22% 48%
b. Improve technical skills	4%	4%	30%	22% 39%
c. Establish professional contacts	17%	4%	26%	30% 22%
d. Better understanding of USA or other Int'l organizations similar to yours	22%	4%	30%	22% 22%
e. Better understanding of USA culture	-	-	-	- -

TABLE VII:

8. Professional appropriateness of training was rated as follows:

a. With respect to training level:

(Much too low)	(Somewhat low)	(On Target)	(Somewhat high)	(Much too high)
0%	13%	74%	13%	-

b. With respect to training length:

(Much too short)	(Little short)	(On Target)	(Little long)	(Much too long)
13%	22%	61%	4%	-

To what extent have participants been able to utilize aspects of training on the job?

<u>NA</u>	<u>Not at all</u>	<u>Limited amount</u>	<u>Moderately</u>	<u>Substantially</u>
9%	-	9%	48%	35%

9. Training Impact:

Many replied they had increased their technical skills and knowledge and built confidence in themselves. One indicated he had done work in wheat rust and had obtained effective results in evaluation of resistant wheat gram plasm which was of benefit to the national wheat improvement program.

Another said he had evolved two lines of barley and three varieties of wheat: PAK-81, Maxi-Pak 65 and Pirsabak-85. These all come from improved CIMMYT strains of wheat. Yield has been increased almost 100% in the MWFP since 1965 with use of new varieties of grain and increased use of fertilizer introduced as a result of CIMMYT training. Also, Pirsabak CIMMYT trainees said information and techniques passed on to farmers have decreased disease and increased yields due to effective use of insecticides and herbicides and increased utilization of fertilizer and irrigation as well as use of organic fertilizer.

CIMMYT participants said they learned to be part of the agriculture process "with their own hands, from A to Z" during training. They said they couldn't have done the type of work mentioned above without training.

Another CIMMYT trainee mentioned he'd learned more about maintenance of farm machinery. An IRRI participant mentioned development of new rice crosses. A Muzaffarabad CIMMYT maize specialist said that increased maize yield per hectare resulted in some of first maize surplus in the area and allowed 5,000 maunds (1 maund=82 pounds) of surplus grain to be sold by farmers to RAFHAN industries. Eight hundred maunds of Sarhad white maize was produced as certified seed for further multiplication.

Only one said training was too general (CIMMYT 1983). Another who thought training did not contain high quality course content had already received his Ph.D. under earlier USAID funding from Beirut (AUB) and was probably over educated for the more practical short term coursework. A participant who had attended both CIMMYT and IRRI stated that CIMMYT offers more practical training while IRRI is more academically inclined. Only one complained that the training did not relate to his field and blamed it on those who selected his assignment, not the training institute

Factors which prevented participants from using their training included lack of laboratory facilities and greenhouses and administrative and political factors.

YT participants said they learned to be part of the agricultural process "with their own hands, from A to Z" during training. They said they couldn't have done the type of work mentioned above without training.

and improved
or technical

of their

One CIMMYT trainee mentioned he'd learned more about maintenance of farm machinery. An IRRI participant mentioned development of new varieties. A Muzaffarabad CIMMYT maize specialist said that increased maize yield per hectare resulted in some of first maize harvested in the area and allowed 5,000 maunds (1 maund=82 pounds) of grain to be sold by farmers to RAFHAN industries. Eight maunds of Sarhad white maize was produced as certified seed for multiplication.

was included:

those

from those

One said training was too general (CIMMYT 1983). Another who said training did not contain high quality course content had received his Ph.D. under earlier USAID funding from Beirut and was probably over educated for the more practical short term training. A participant who had attended both CIMMYT and IRRI said CIMMYT offers more practical training while IRRI is more theory inclined. Only one complained that the training did not meet his field and blamed it on those who selected his training and not the training institute.

degree candidates

in the short term

group and 6% from

to include in

CIMMYT trainees

etc. Sixty-four

questionnaire sent out by

which have bearing on

which prevented participants from using their training and lack of laboratory facilities and greenhouses and socio-economic and political factors.

"Eighty percent of CIMMYT trainees have been from the northern part of Pakistan - from Punjab, NWFP and the Federal areas.

Although the number of agricultural scientists trained from the northern area is still not sufficient, it is regrettable that more participants have not been trained from the southern half (Sind and Baluchistan).

"Nine out of every ten trainees are presently engaged in agricultural research at their respective stations and/or sites of their on-farm projects. Only 9% are working in agricultural extension programs in the country. Only 3% left their jobs, one person to work in private enterprise and one female who married and accompanied her husband to Europe.

"Thus almost all of the CIMMYT trainees are actively engaged in agricultural research and extension in the country.

"Seventy-one percent of CIMMYT trainees have continued to work on the same crop and discipline that they were trained in. Those who have shifted to other crops and/or disciplines still remain in the agriculture sector. Only 2% moved on to totally different work. Thus CIMMYT training has been useful/fruitful in Pakistan and should be continued."

APPENDIX 1

MANPOWER TRAINED UNDER PROJECT 0296

I. Foreign Trained

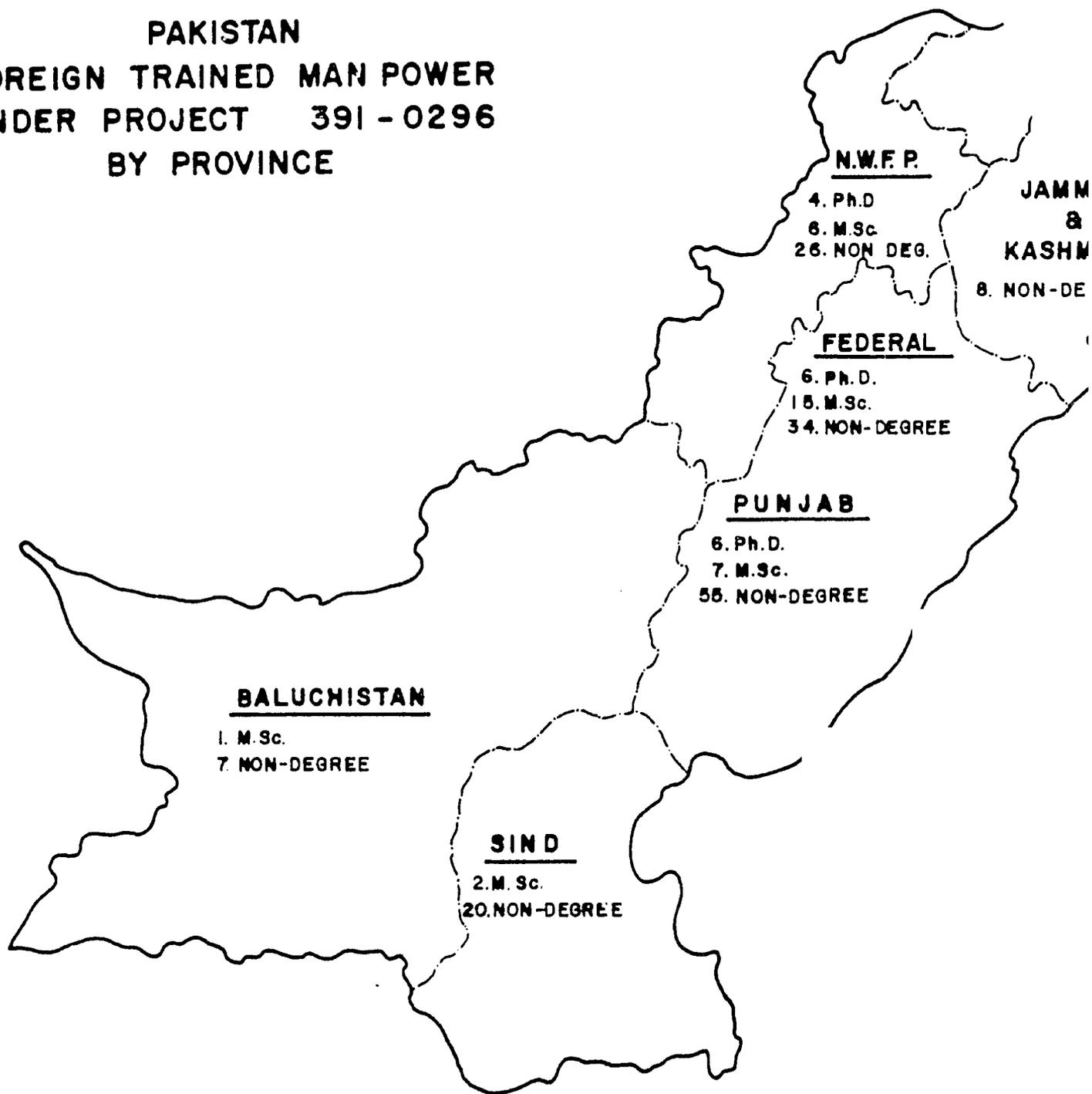
<u>A. Degree</u>	<u>Federal</u>	<u>Punjab</u>	<u>Sind</u>	<u>NWFP</u>	<u>BAL</u>	<u>AJK</u>	<u>TOTAL</u>
Ph.D.	6	6	-	4	-	-	16
M.Sc.	15	7	2	6	1	-	31
	—	—	—	—	—	—	—
Sub-total	21	13	2	10	1	-	47
<u>B. Non-Degree</u>							
IRRI	6	17	10	3	-	-	36
CIMMYT	13	26	8	17	4	6	74
USA & other Countries	15	12	2	6	3	2	40
	—	—	—	—	—	—	—
Sub-total	34	55	20	26	7	8	150
Total Foreign	55	68	22	36	8	8	197

II. Local Trained

Ph.D.	-	-	-	1	-	-	1
M.Sc.	19	53	10	-	2	-	84
	—	—	—	—	—	—	—
Total Local	19	53	10	1	2	-	85
Grand Total	74	121	32	37	10	8	282

APPENDIX 2

PAKISTAN
FOREIGN TRAINED MAN POWER
UNDER PROJECT 391-0296
BY PROVINCE



APPENDIX 3

Report of the Review Team on Agricultural Research in Pakistan
in relation to Loan Agreement No. (391-T-156). April 2, 1976

A. Training:

Provisions are made for practical or short-term training at international, U.S. or third country institutions. For training to the Master's degree at the Agricultural University, Layllpur (AUL) and at the American University, Beirut (AUB); and for training to the Doctorate level at AUL, AUB or at U.S. Universities. It was anticipated that about 25% of the foreign exchange component and 30% of the local currency component of the 5-year training budget would be expanded during the first two years.

As of April 1, 1976 persons already deputed, or in the process of being deputed for training under the terms of the Loan Agreement are as follows in comparison with the numbers planned:

	<u>Planned</u>	<u>Actual</u>
Practical	70	-
Masters-AUL	25	-
Masters-AUB	50	-
Masters-USA	-	1
Doctorate-AUL	35	-
Doctorate-USA	22	1

Clearly the training program has not progressed as rapidly as planned. Relatively, greater progress has been made in identifying and sending persons to CIMMYT and IIRI for practical training. Particularly notable is the absence of project supported doctoral candidates at AUL.

What are the reasons for the slow start in training? With the magnitude and scope of the training program it is difficult to see how the target can be achieved without someone in the ARC giving full time to this activity. Currently the Director for Soil and Irrigation has training as an additional responsibility, and this responsibility was assigned to him only three months ago. While commendable progress has been made under this ad hoc arrangement, it still results in inadequate attention to training, and must also exact a toll in the development of a strong research program in soil and water management. Thus staffing in ARC is a problem.

Second, we believe that training is being too narrowly interpreted. At present trainees are limited to those under the four approved commodity-oriented national research programs (wheat; rice; maize; sorghum and millets; and fodder and forages). Nominations have not been accepted for trainees to strengthen institutional capability per se - particularly in the agricultural universities and colleges but should be in the future. This is important in terms of the longer range scientific manpower problem for agriculture in the country. There is also a need to strengthen research supporting capabilities without individuals devoting full time to priority commodity research schemes. The Loan Agreement states that project funds will be used to "strengthen provincial and national research institutions and colleges". This must mean by training as well as by commodity procurement. Clearly all training needs for strengthening of research and teaching institutions cannot be met under this project agreement; determination of priorities will be required at the institution, provincial and ARC levels. We agree, however, that first priority for training under the Loan Agreement must be for direct support of the major research programs.

Recommendations:

In view of the foregoing, the following steps are recommended:

- 1) Appointment of a full-time training officer in ARC.

- 2) Re-examination by ARC and USAID/Islamabad of the scope for training under the Loan Agreement and a phased program that includes provisions for improving institutional strength in such centers as AUL the agricultural colleges and the major research institutions.

- 3) Establishment of systematic procedures for processing nominations.

APPENDIX 4

Project Paper Amendment (391-0296)
(April 1982. Page 34)

PROPOSED PARTICIPANT TRAINING PLAN
(For Overseas Training)

<u>Type of Training</u>	<u>Length of Training</u>	<u>Training Site</u>	<u>No. of Participants</u>	<u>Proposed Schedule</u>
Observational and Academic	1 month observational and 1 month short-term U.S.	U.S., Mexico Phillipines	1	1983
Specialized Course in Wheat	6 weeks	CIMMYT Mexico	24	12 in 1983 12 in 1984
Specialized Course in Maize	6 weeks	CIMMYT Mexico	20	12 in 1983 12 in 1984

-the Director of the organization where you work
-a project committee made up of the above
-Your supervisor where you work
-Your advisor in your training program
-I personally determined content of training

21. Why were you selected for training?.....
22. Was the purpose of your training adequately explained to you before you left Pakistan? (Circle the description closest to your opinion)
 Very somewhat neutral fairly very
 inadequate inadequate adequate adequate
23. How much did you participate in determining the purpose of your training? (Circle the phrase closest to your opinion)
 No little moderate substantial extensive
 part. part. part. participation part.
24. What was the nature of your training program? (Check appropriate choice)
 - a. Long term, non-degree program.....
 - b. Long term, degree program (what degree?).....
 - c. Short term, formal training (name of training agency and training program/course).....
 - d. short term, visitation program.....
 - e. other (describe briefly).....
25. What was the proposed length of your course: Month.....Year.... to Month.....Year.....
26. Did you complete your program within the expected period of time
 Yes..... No.....
 If no, why not?.....
 If no when did you complete training?.....
27. Were there any changes in original plans concerning designated level of training or institution selected? Yes..... No.....
 If yes, explain.....
28. Do you have any comments or suggestions regarding the process of determining the purpose of a specific training activity?.....

PRE-DEPARTURE ORIENTATION

29. Did you receive an orientation to your USAID/PT program prior to leaving Pakistan? Yes..... No:.....
30. If you did not attend an orientation, why not?.....
31. Overall, how would you rate the orientation you received before leaving? (Circle the number best describing your opinion: rate only the orientation you actually received)

	Very Poor	Poor	Average	Above Average	Excellent
AID/Islamabad	1	2	3	4	5
AID/Karachi	1	2	3	4	5
Other (Identify)	1	2	3	4	5

1. Indicate (with a check mark) what information was provided during your pre-departure orientation, whether the information was oral, written or both:

(check only those which you received)

	Received	Oral	Written	Both
your travel itinerary.....
training Expectations.....
contact person at destination.....
financial entitlement.....
likely costs.....
medical/insurance coverage.....
culture aspects of US.....
specific info re food.....
specific info re housing.....
specific info re climate.....
other (specify.....)

2. Indicate by circling the number closest to your opinion how useful the information you received actually was:

	Not Useful		Somewhat Useful		Very Useful
your travel itinerary	1	2	3	4	5
training expectations	1	2	3	4	5
contact person at destination	1	2	3	4	5
financial entitlement	1	2	3	4	5
Likely costs	1	2	3	4	5
medical/insurance coverage	1	2	3	4	5
specific info re food	1	2	3	4	5
Specific info re housing	1	2	3	4	5
Specific info re climate	1	2	3	4	5

3. Comment or suggestions regarding the pre-departure orientation:.....

ENGLISH LANGUAGE PROFICIENCY

4. Were you required to take an English language assessment test prior to placement? Yes.....No.....

If yes, which test was used? TOFEL..... ALIGU..... Other.....

5. Were you required to take GRE prior to placement? Yes.....No.....

If no, were you required to take this test prior to graduation?
 Yes.....No.....

6. Did you receive English language training in conjunction with the USAID PT Program? Yes...No... If not, why not?.....

If yes, identify which institute or organization provided the training:

a. English language training organization & location:.....

b. Dates when you started and completed; start.....end.....

46. Rate the effectiveness of services you received from the training institution:

(If you did not receive any support service, check the NA column)

	NA	Not Eff.	Somewhat Eff.	Very Eff.
a. assistance in focusing training	1	2	3 4 5
b. access to trainers/faculty	1	2	3 4 5
c. access to admin. staff(eg. advisor)....		1	2	3 4 5
d. assistance in finding housing, food....		1	2	3 4 5

7. How would you rate the effectiveness of your government or agency employer while you were in training:

a. in maintaining contact with you....	1	2	3	4	5
b. in keeping you informed about affairs relating your training to your job 1	2	3	4	5

TRAINING IMPACT

48. How would you rate the effectiveness of your training in each of the following areas: (check NA if appropriate)

	NA	Not Eff.	Somewhat Eff.	Very Eff.
a. increase your knowledge of professional matters in your field	1	2	3 4 5
b. improve technical skills	1	2	3 4 5
c. establish professional contacts	1	2	3 4 5
d. better understanding of USA or other Int'l Organizations similar to yours	1	2	3 4 5
e. better understanding of USA culture	1	2	3 4 5

49. Overall, how would you rate the professional appropriateness of your training, with respect to (circle the most appropriate description)

a. training level.....

(Much too low) (Somewhat low) (On Target) (Somewhat high) (Much too long)

b. training length...

(Much too short) (Little short) (On Target) (Little long) (Much too long)

50. To what extent have you been able to use aspects of your training in your job: (circle the most appropriate description)

(not at all) (limited amount) (moderately) (substantially)

51. Please give specific examples of uses you have made of your training.
If you have been able to make any notable contributions to your community, to your profession or if any aspect of your life has been changed as a result of training please elaborate:
.....
.....
.....
.....
.....
.....
52. Would you be willing to grant an interview based on answer of # 51
Yes..... No.....
53. What are the main factors that have prevented you from using more of your training?.....
.....
.....
54. In summary, what would you identify as the TWO greatest BENEFITS of your training program?
a.
.....
.....
b.
.....
.....
55. What would you identify as the TWO biggest Problems with the training program?
a.
.....
.....
b.
.....
.....

THANK YOU FOR YOUR COOPERATION IN COMPLETING AND PROMPTLY RETURNING THIS QUESTIONNAIRE: YOUR RESPONSE WILL HELP IMPROVE PARTICIPANT TRAINING.

RETURN THIS QUESTIONNAIRE BY JANUARY 25, 1986.

Ms. Susan Gant
0296 Evaluator
Agricultural Research Division
USAID
PO Box 1028
Islamabad, Pakistan

P.S. Please advise if you have addresses of any other 0296 colleagues who might have left Pakistan or are employed outside COP Offices.

APPENDIX 6

Persons Interviewed
Regarding Training for Project
(391-0296)

AHMED, Iftikhar	Participant Training Specialist USAID-HRT, Islamabad
AKHTAR, Izhar Hussain	Animal Sciences Institute NARC, (0296 participant)
AKHTAR, Nasim	Deputy Director Fisheries Research NARC (0296 participant)
ALI, Haider	Wheat Botanist Cereal Crop Research Institute Pirsabak
ATTAUDDIN, Syed	Wheat Botanist Cereal Crop Research Institute Pirsabak
BHUTTA, Mr.	Assistant Training Officer PARC
CHAUDHRY, Md. Ashraf	Principal Scientific Officer NARC (0296 participant)
CHOUDHARY, Anwar Ali	Senior Information Officer NARC
DAVIS, Ken	USAID Liaison Officer Peshawar
GANT, Jon	Division Chief HRT-USAID Islamabad
GUL, Khaista	Assistant Research Officer Cereal Crop Research Institute Pirsabak
HAFEEZ, Abdul	Director of Training PARC
HAMEED, Abdul	Agriculture Assistant Tarnab, MWFP
HASSAN, Faizul	Agriculture Research Officer Cereal Crops Research Institute Pirsabak (0296 participant)

KHAN, Dil Rosh	Rice Botanist, Mingora Swat (0296 participant)
KHAN, Mumtaz	Asst. Plant Pathologist, Mingora Swat (0296 participant)
SAEED, Mohammad	USAID/ARD, Program Specialist Islamabad
SIDDIQ, M.	Director General, Agricultural Research, Tarnab, NWFP
WAHID, Abdul	USAID/ARD, Program Specialist Islamabad
ZAHEER, Zahid	Participant Training Specialist USAID/HRT, Islamabad

APPENDIX 7

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Appendix 8

PERSONS TRAINED

391-0296

USAID/ARD - December 29, 1985

S.NO	NAME	PIO/P	DEGREE	PERIOD	COUNTRY	UNIVERSITY	FIELD	ETD	ETA	PROVINCE*
1.	Mohammad Ather	6269177	Ph.D	36 M	U.S.	Kansas St. Univ.	Agronomy	1/76	1/4/79	U.S.A.
2.	A.S.K. Ghouri	6269176	N.D	6 W	U.S.	Cornell University	Pest Management	7/17/76	9/27/76	London
3.	Ghulam Khan Jahangir		N.D	22 W	CIMMYT		Maize Production	11/27/76	4/23/77	NWFP
4.	Noor Mohammad	6259176	Ph.D	27 M	U.S.	Utah	Range Management	6/4/77	8/77	Federal
5.	Sultan Maqsood Khan	6259178	Ph.D	29 M	U.S.	CSU	Range Management	8/9/77	1/24/80	NWFP
6.	S. M. Mushtaq	6259177	N.D	6 M	U.S.	Texas	Fodder Resarch	7/16/77	1/17/78	U.S.A.
7.	Mohammad Aslam	70146	M.S.	30 M	U.S.	Kansas St. University	Maize Breed.	2/27/77	1/17/80	NWFP
8.	Sabir Hussain Shan	70228	N.D	3 M	CIMMYT		Maize Techqs.	3/30/77	6/27/77	NWFP
9.	Nazir Ahmed K. Zia	70229	N.D	7 M	CIMMYT		Wheat Path.	3/30/77	8/14/77	Punjab
10.	Ghulam Hussain	70230	N.D	7 M	CIMMYT		Wheat Production	4/15/77	12/8/77	Sind
11.	Naziruddin Chaudhry	70231	N.D	7 M	CIMMYT		Wheat Production	4/21/77	5/12/78	Punjab
12.	Muslim Shah	6259179	M.S.	30 M	U.S.	California University	Podder Research	10/1/77	3/3/80	NWFP
13.	Abdus Samad		N.D	10 M	CIMMYT		Mz. Prod. Agr.	7/10/77	5/26/78	NWFP
14.	Mian Ahmad Rashid	80007	N.D	12 M	U.S.	Oregon/W.	Forest Utilz. M	4/7/78	6/16/79	Punjab
15.	Javed Ahmad	80183	Ph.D	30 M	U.S.	CSU	Range Management	5/27/78	1/8/81	Punjab

*Present province or location

S.NO	NAME	PIO/P	DEGREE	PERIOD	COUNTRY	UNIVERSITY	FIELD	ETD	ETA	PROVINCE
16.	Abdul Shakoor	80251	N.D	2 W	U.S.	Montana	Fodder Research	1/6/79	1/18/79	Federal
17.	Rab Nawaz Lak	80189	N.D	6 M	IRRI		Rice Production	3/27/78	9/78	Punjab
18.	Mohammad Akram Ch.	80189	N.D	6 M	IRRI		Rice Production	3/27/78	9/78	Punjab
19.	Barat Ali	80189	N.D	6 M	IFRI		Rice Production	3/27/78	9/78	Punjab
20.	Mohammad Asnraf Ch.	80189	N.D	6 M	IRRI		Rice Production	3/27/78	9/78	Federal
21.	Badjaruddin Channa	80189	N.D	6 M	IRRI		Rice Production	3/27/78	9/78	Sind
22.	Bashir Hussain Shahani	80189	N.D	6 M	IRRI		Rice Production	3/27/78	9/78	NWFP
23.	Abdul Jabbar Soomro	80189	N.D	6 M	IRRI		Rice Production	3/31/78	9/15/78	Sind
24.	Ghulam Abbas Khuru	80181	N.D	6 M	IRRI		Ag. Chemistry	3/15/78	9/78	Sind
25.	Abdul Sattar Javed	80182	N.D	6 M	IRRI		Rice Production	3/14/78	9/15/78	Punjab
26.	Mohammad Noorullah	80173	N.D	2 M	CIMMYT		Wheat Breeding	3/13/78	6/1/78	Punjab
27.	Aleem Mehnud	80118	N.D	2 W	CIMMYT		Wheat Production	4/10/78	4/27/78	Punjab
28.	Abdul Rauf	80118	N.D	7 M	CIMMYT		Wheat Production	4/10/78	10/22/78	Punjab
29.	Mohammad Shaukat Ali	80159	N.D	2 M	CIMMYT		Wheat Research	3/13/78	6/1/78	Punjab
30.	Allaudin Khan Baluch	80136	N.D	3 M	CIMMYT		Wheat Breeding	2/27/78	6/1/78	NWFP

NS

S.NO	NAME	PIO/P	DEGREE	PERIOD	COUNTRY	UNIVERSITY	FIELD	ETD	ETA	PROVINCE
31.	Mohammad Qasim Chattha	80160	N.D	4 W	CIMMYT		Maize Research	2/27/78	4/3/78	Federal
32.	Chaista Gul	80119	N.D	7 M	CIMMYT		Wheat Breeding	2/20/78	10/23/78	NWFP
33.	Mohammad Anwar Zafar	80221	N.D	6 M	CIMMYT		Mz. Prod. Agr.	6/2/78	11/8/78	Punjab
34.	Abdul Razaq	80222	N.D	2 W	CIMMYT		Maize Breeding	6/2/78	6/20/78	Punjab
35.	Sadiq Hussain Ch.	80223	Ph.D	36 M	U.S.	Montanna State Univ.	Plant Breeding	11/20/79		Punjab
36.	Mohammad Tarin Nek	80225	N.D	8 M	U.S.	Chico, California	Plant Breeding	8/21/79	4/23/80	Baluchistan
37.	Abdul Sattar Ch.	80224	Ph.D	36 M	U.S.	Nebraska University	Plant Breeding	5/5/79	5/82	Punjab
38.	Mohammad Aqil Khan	80252	Ph.D*	39 M	U.S.	Montana St.	Plant Breeding	12/31/78	3/82	Punjab
39.	Shabbir A. Rizvi	80270	Ph.D	36 M	U.S.	North Dakota	Plant Pathology	8/27/79	8/82	Federal
40.	Abdul Wadud	80271	N.D	10 M	U.S.	Univ. of Kentucky	Maize Agronomy	5/15/79	12/15/80	NWFP
41.	Raja Mohammad Ashfaq	90010	M.S	12 M	U.S.	New Mexico St. Univ.	Range Management	5/26/79	6/12/80	NWFP
42.	Fazli Karim	90124	Ph.D	36 M	U.S.	Auburn Univeristy	Maize Breeding	11/20/79		NWFP
43.	Bakhat Roidar Khan	90126	Ph.D	30 M	U.S.	Kansas State Univ.	Wheat Agronomy	8/19/79		Federal
44.	Masood Amjad Rana	90129	M.S	24 M	U.S.	California/Dav. Univ.	Agronomy		12/25/79	Federal
45.	Mohammad Rafi	90029	N.D	7 M	CIMMYT		Wheat Agronomy	4/12/79	11/15/79	Punjab

S.NO	NAME	PIO/P	DEGREE	PERIOD	COUNTRY	UNIVERSITY	FIELD	ETD	ETA	PROVINCE
46.	Mohammad Sharif	90056	N.D	6 W	CIMMYT		Wheat Research	1/11/79	2/25/79	Federal
47.	Ali Haider Jaffry	90084	N.D	7 M	CIMMYT		Wheat Pathology	2/19/80	10/10/80	Punjab
48.	Ali Haider	90085	N.D	12 W	CIMMYT		Wt. Breeding	2/19/80	5/20/80	NWFP
49.	Adam Khan	90114	N.D	40 W	CIMMYT		Agronomy	2/23/79	8/22/80	NWFP
50.	Khizar Hayat	90115	N.D	20 W	CIMMYT		Mz. Technology	9/23/79	8/22/80	NWFP
51.	Ghulam Mustafa Avasi	90030	Ph.D	36 M	IRRI		Rice Breeding	10/25/78	2/8/81	Federal
52.	Mohammad Rashid	90125	Ph.D	24 M	IRRI		Soil Chemistry	5/28/80	5/83	Punjab
53.	Mohammad Salim Khan	00004	Ph.D	24 M	U.S.	Kansas St. Univ.	Maize	1/12/80	1/82	NWFP
54.	Abdul Hayee Bhutto	00014	N.D	16 W	IRRI		Soil Fertility	2/11/80	6/1/80	Sind
55.	Ch. Mohammad Afzal	00014	N.D	16 W	IRRI		Soil Fertility	2/13/80	6/2/80	Punjab
56.	Mohammad Ali Bhutto	00029	N.D	16 W	IRRI		Soil Fertility	2/18/80	6/19/80	Federal
57.	Mohammad Rashid	00029	N.D	16 W	IRRI		Soil Fertility	2/19/80	6/19/80	Punjab
58.	Mohammad H. Baloch	00071	N.D	40 W	IRRI		Soil Fertility	3/16/80	9/9/81	Sind
59.	Abdul Hameed	00072	N.D	24 W	CIMMYT		Mz. Prod. Agrny	5/27/80	12/2/80	Punjab

S.NO	NAME	PIO/P	DEGREE	PERIOD	COUNTRY	UNIVERSITY	FIELD	ETD	ETA	PROVINCE
60.	Ghulam Sabir	00070	N.D	24 W		CIMMYT				
61.	Mohammad Mansif Malik	00100	N.D	16 W		IRRI	Mz. Prod.Agrny	5/27/80	12/2/80	Baluchistan
62.	Abdullah Pathan	00100	N.D	16 W		IRRI	Gen.Ev.Ult.	8/16/80	12/10/80	Sind
63.	Ulfat-un-Nabi Khan	00049	M.S	24 M	U.S.	Georgia St. Univ.	Mz. Prod.Agrny	8/10/80	12/80	Sind
64.	Akhtar Ali	00035	M.S	30 M	U.S.	M.S.Univ.	Animal Breeding	9/15/80		Federal
65.	Safdar Ali Anwar	00037	M.S	30 M	U.S.	North Dakota	Plant Pathology	6/20/81		Punjab
66.	Ozair Ahmad Ch.	00048	M.S	24 M	U.S.	K.S.Univ.	Nematology	6/20/81		Punjab
67.	Syed Hassan Raza	00054	M.S	24 M	U.S.	Colorado S. Univ.	Agronomy	6/20/81		Federal
68.	Saifur Rehman Khan	00061	M.S	24 M	U.S.	North Dakota	Soil Sciences	6/20/81	3/6/83	Baluchistan
69.	M. Aslam Chaudhary	00050	M.S	24 M	U.S.	Colorado S. Univ.	Agronomy Sc.	6/20/81		Punjab
70.	Nasim Akhtar	00055	M.S	24 M	U.S.	Auburn	Econ./Market	11/8/80		Punjab
71.	Mumtaz Khan	00036	M.S	24 M	U.S.	Arkansas	Fish Acquac.	12/27/80		Federal
72.	Abdul Shakoor Ansari	00044	M.S	24 M	U.S.	Kansas S. Univ.	Plant Patholoty	1/27/81		MWFP
73.	Qazi Tauqir Azam	00058	M.S	24 M	U.S.	W.S.Univ.	Ag. Engineering	1/31/81		Sind
74.	Faizul Hassan	00040	M.S	24 M	U.S.	Colorado S. Univ.	Farming System	1/31/81		Federal
							Plant Breeding	2/3/81		MWFP

S.NO	NAME	PIO/P	DEGREE	PERIOD	COUNTRY	UNIVERSITY	FIELD	ETD	ETA	PROVINCE
75.	Abdul Ahad Qureshi	00051	M.S	24 M	U.S.	Oregon	Agronomy	2/10/81	5/11/82	Federal
76.	Mohammad Afzal Akhtar	00057	M.S	24 M	U.S.	Kansas S. Univ.	Plant Pathology	3/21/81		Federal
77.	Lal Khan Khoknar	00047	M.S	24 M	U.S.	Arkansas S. Univ.	Plant Pathology	3/31/81		Federal
78.	Mohammad Asgnar	00042	M.S	24 M	U.S.	N. Mexico	Plant Ecology	4/28/81		Punjab
79.	Izhar Hussain Athar	00062	M.S	24 M	U.S.	South Dakota	Dairy Tech.	4/28/81		Federal
80.	Mohammad Aslam	00045	M.S	24 M	U.S.	Ohio S. Univ.	Plant Breeding	5/5/81		Federal
81.	Inayatullah	00046	M.S	30 M	U.S.	Kansas S. Univ.	Entomology	6/16/81		Punjab
82.	Farooq Maqsood	00053	M.S	24 M	U.S.	Univ. of Colorado	Biochemistry	8/15/81		Federal
83.	Radiqul H. Usmani	00060	M.S	24 M	U.S.	Univ. of W. Virg.	Repr. Physiology	8/15/81		Federal
84.	Mohammad Naeem	10019	N.D	24 W	CIMMYT		Mz. Prod. Agro.	11/30/81	5/81	Federal
85.	Karamat Khan	10019	N.D	24 W	CIMMYT		Mz. Prod. Agro.	11/30/80	5/81	NWFP
86.	S. M. H. Gardezi	10019	N.D	24 W	CIMMYT		Mz. Prod. Agro.	11/25/80	5/81	Punjab
87.	N. Alam Khan	10079	M.S	16 M	U.S.	USA/bucen	S.sampling/Meth	8/28/81	12/82	Federal
88.	Rashid Akhtar Ch.	10087	N.D	20 W	CIMMYT		Protein Qlty.	3/10/81	8/81	Federal
89.	Dani Baknsh	10087	N.D	20 W	CIMMYT		Exp. Station	3/10/81	8/81	Sind
90.	Ms. Samina Ashraf Panwar	10087	N.D	24 W	CIMMYT		Management	3/10/81	8/81	Federal

S.NO	NAME	PIO/P	DEGREE	PERIOD	COUNTRY	UNIVERSITY	FIELD	ETD	ETA	PROVINCE
91.	Rashid Ahmad Shad	10096	Ph.D	30 M	IRRI		Rice Agronomy	10/26/80		Federal
92.	M. Ashraf Chowdry	10096	Ph.D	30 M	IRRI		Botany	10/26/80		Federal
93.	M. Sarfraz Iqbal	10096	N.D	24 W	IRRI		Rice Prod.	3/9/81	9/81	Punjab
94.	Dr. H. Hasnain	20143	N.D	6 W	U.S.		Mgt. & Engg.Chm.	4/27/82	6/82	Yemen
95.	Dr. Shahbuddin Suliman	20216	N.D	7 W	U.S.		Soybean	5/82	7/82	Federal
96.	Haq Nawaz	20196	N.D	24 W	CIMMYT		Mz. Breeding	1/82	7/82	Federal
97.	Abdul Azeem	20240	N.D	24 W	CIMMYT		Mz. Breeding	6/82	12/82	NWFP
98.	M. Aslam Saqar	20197	M.S	12 M	IRRI		Ag. Chemistry	5/82	1/83	Federal
99.	Dilrosin Khan	20198	M.S	12 M	IRRI		Pl. Brdg/Gntcs.	6/82	1/83	NWFP
100.	Sikandar Ali		M.S	24 M	IRRI		Microbiology	11/4/82	11/4/84	Punjab
101.	Khamiso K. Baluch	20199	M.S	12 M	IRRI		Plant Pathology	6/82	1/83	Sind
102.	M. Salim	20200	M.S	12 M	IRRI		Entomology	2/82	1/83	Federal
103.	Ijaz Ahmed	20201	N.D	4 M	IRRI		Insfer Con.	2/82	6/82	Sind
104.	Mohammad Manzoor Ali	20202	N.D	2 M	IRRI		Ag. Eco	2/82	4/82	Federal
105.	Sanaullah	20202	N.D	2 M	IRRI		Ag. Eco	2/82	4/82	Punjab
106.	Hervez Anir	20486	Ph.D AS	3 M	U.S.	Michigan State U.		11/84	1/85	Punjab

S.NO	NAME	PIO/P	DEGREE	PERIOD	COUNTRY	UNIVERSITY	FIELD	ETD	ETA	PROVINCE
107.	M Ajmal Khan	20489	N.D	2 W	Other	SriLanka	SoyBean	1/14/85	1/26/85	NWFP
108.	Ms. Zaibunisa Abdullah	20499	N.D	2 W	Other	Europe	Europe Study	6/17/85	6/30/85	Punjab
109.	Zahur Alan	20469	N.D	1 W	Other	Dhaka	Soil Test	2/13/84	2/20/84	Punjab
110.	Munir Ahmed	20469	N.D	1 W	Other	Dhaka	Soil Test	2/13/84	2/20/84	AJK
111.	Rao Abdur Razzak		N.D	7 M	CIMMYT		Breeding	06/78		Punjab
112.	Abdul Hamid		N.D	7 M	CIMMYT		Agronomy	06/80		Punjab
113.	Munir Ahmad		N.D	7 M	CIMMYT		Agronomy	12/80		Punjab
114.	Kirmat Khan		N.D	7 M	CIMMYT		Agronomy	12/80		NWFP
115.	Khawaja Abdul Ghani		N.D	7 M	CIMMYT		Agronomy	06/81		AJK
116.	Abdul Azim		N.D	7 M	CIMMYT		Breeding	11/82		NWFP
117.	Abdul Qayum Sahibzada		N.D	7 M	CIMMYT		Breeding	11/82		NWFP
118.	Rana Mohammad Rafique		N.D	7 M	CIMMYT		Breeding	11/82		Punjab
119.	Shamsuddin Soomro		N.D	7 M	CIMMYT		Agronomy	06/83		Sind
120.	Mohammad Sarwar Khan		N.D	7 M	CIMMYT		Agronomy	06/83		Punjab
121.	Rashid Ahmad Bugti		N.D	7 M	CIMMYT		Agronomy	12/83		Baluchistan

S.NO	NAME	PIO/P	DEGREE	PERIOD	COUNTRY	UNIVERSITY	FIELD	ETD	ETA	PROVINCE
122.	Sher Afsar		N.D	7 M		CIMMYT				
123.	Riaz Jawed		N.D	7 M		CIMMYT	Agronomy	06/85		AJK
124.	Khawaja Iftikhar Hussain		N.D	7 M		CIMMYT	Breeding	06/85		AJK
125.	Khawaj Ghulam Mohammad		N.D	7 M		CIMMYT	Production	11/85		AJK
126.	Faisal Hassan		N.D	9 M		CIMMYT	Production	11/85		AJK
127.	Saleem Mahmood		N.D	7 M		CIMMYT	Breeding	02/78	10-78	NWFP
128.	Abdul Salam Baluch		N.D	7 M		CIMMYT	Agronomy	04/78	10/78	Punjab
129.	Dhani Baksh Panwar		N.D	5 M		CIMMYT	Agronomy	04/80	10/80	Baluchistan
130.	Ms. Shaheena Yasmin		N.D	9 M		CIMMYT	Exp. Stat	05/81	09/81	Federal
131.	Syed Attauddin		N.D	9 M		CIMMYT	Cereal Tech	02/83	10/83	Federal
132.	Syed Abid Hussain		N.D	9 M		CIMMYT	Pathology	02/83	10/83	NWFP
133.	Nafees Sadiq Kisana		N.D	9 M		CIMMYT	Breeding	02/83	10/83	Sind
134.	Ahmed Ali Hakro		N.D	9 M		CIMMYT	Breeding	02/83	10/83	Federal
135.	Mohammad Saleem Sheikh		N.D	9 M		CIMMYT	Pathology	02/83	10/83	Punjab
136.	Nooral Hadi		N.D	8 M		CIMMYT	Breeding	02/83	10/83	Baluchistan
137.	Mohammad Saleem		N.D	9 M		CIMMYT	Agronomy	04/84	11/84	Federal
							Breeding	02/84	10/84	Federal

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S.NO	NAME	PIO/P	DEGREE	PERIOD	COUNTRY	UNIVERSITY	FIELD	ETD	ETA	PROVINCE
138.	Mithomal Bhattia		N.D	9 M	CIMMYT		Breeding	02/84	10/84	Sind
139.	Khalid Majid Akhtar		N.D	9 M	CIMMYT		Pathology	02/84	10/84	Punjab
140.	Ms. Shafqat Farooq		N.D	7 M	CIMMYT		Cytogenetic	01/85	07/85	Punjab
141.	Buzarg Jamher		N.D	9 M	CIMMYT		Breeding	02/85	10/85	NWFP
142.	Mohammad Arshad Khan		N.D	9 M	CIMMYT		Pathology	02/85	10/85	Punjab
143.	Mohammad Zahid Siddiqui		N.D	7 M	CIMMYT		Agronomy	04/85	10/85	Sind
144.	Ghulam A. Khushro		N.D	7 M	IRRI		RPTR*	03/78	09/78	Sind
145.	Chaudhry B. Ali		N.D	7 M	IRRI		RPTR	03/78	09/78	Punjab
146.	Mohammad Akram Chaudhry		N.D	7 M	IRRI		RPTR	03/78	09/78	Punjab
147.	Rab Nawaz Lak		N.D	7 M	IRRI		RPTR	03/78	09/78	Punjab
148.	Malik Fazal Ilahi		N.D	4 M	IRRI		GEU	02/79	05/79	NWFP
149.	Mohammad Hashim Khan		N.D	4 M	IRRI		GEU	02/79	05/79	Punjab
150.	Mohammad Munsif		N.D	5 M	IRRI		GEU	08/80	12/80	Punjab
151.	Zia Rahman		N.D.	6 M	IRRI		RPTR	03/81	08/81	NWFP
152.	Sheikh A. Ahmed		N.D	4 M	IRRI		INSFFER	02/82	05/82	Punjab
153.	Saleem Khan		N.D	4 M	IRRI		IPM	08/83	11/83	Punjab

*RPTR: Rice Production
GEU: Genetic Evaluation and Utilization
INSFFER: International Network on Soil Fertility
and Fertilizer Evaluation for Rice
IPM: Integrated Pest Management

S.NO	NAME	PIO/P	DEGREE	PERIOD	COUNTRY	UNIVERSITY	FIELD	ETD	ETA	PROVINCE
154.	N.A. Sindhu		N.D	6 M	IRRI					
155.	M.H. Sial		N.D	3 M	IRRI		CSTP*	09/83	02/84	Punjab
156.	Abdul Rahim		N.D	5 M	IRRI		Ag. Economics	10/83	12/83	Federal
157.	Faiz M. Faiz		N.D	1 M	IRRI		Water Mgmt	07/83	11/83	Federal
158.	Shafiq Ahmed		N.D	1 M	IRRI			1985		Punjab
159.	M.B. Baber		N.D	1 M	IRRI			1985		Federal
160.	Mohammad Aslam		N.D	1 M	Other	Bangkok		1985		Sind
161.	Dr. Mohammad Afzal		N.D	1 M	Other	Mexico	Maize	10/81		NWFP
162.	Tariq Masud		N.D	1 M	Other	Mexico	Maize	06/81		Punjab
163.	Sadique Sadiq		N.D	2 W	CIMMYT		Maize	03/81		AJK
164.	Ehsan ul Haq		N.D	2 M	CIMMYT			04/85		Punjab
165.	Meraj Kirmani		N.D	1 M	CIMMYT		Wheat Pathology	02/85	04/85	Punjab
166.	Mohammad Aslam		N.D	1 M	CIMMYT		Wheat Pathology	09/84	10/84	Punjab
167.	N. I. Hashmi		N.D	1 M	CIMMYT		Wheat Pathology	03/83	04/83	Punjab
168.	Nek Mohammad Tarin		N.D	1 M	CIMMYT		Wheat Breeding	03/83	04/83	Federal
169.	Khanzada		N.D	1 M	CIMMYT		Wheat Breeding	03/81	04/81	NWFP
							Wheat Pathology	08/81	09/81	Sind

* Cropping Systems Training Program

185. M.A. Bajwa

S.NO	NAME	PIO/P	DEGREE	PERIOD	COUNTRY	UNIVERSITY	FIELD	ETD	ETA	PROVINCE
186.	Ghazanfar Mohammad Khan		N.D	1 M	Other	Mexico	Wheat	03/82		Punjab
187.	Mohammad Tahir		N.D	1 M	Other	Madrid	Wheat	05/80		Federal
188.	Mohammad Noorullah		N.D	1 M	Other	Madrid	Wheat	05/80		Federal
189.	Mohammad Tahir		N.D	1 M	Other	Aleppo	Wheat	05/80		Federal
190.	Shaukat Ali Mirza		N.D	1 M	Other	Aleppo	Wheat	05/80		Federal
191.	Munwar Hussain		N.D	1 M	Other	Rome	Wheat	05/80		Federal
192.	Sahibzada Ayaz		N.D	1 M	Other	Mexico	Wheat	03/80		Sind
193.	Khan Bahdur		N.D	1 M	Other	Mexico	Wheat	03/80		NWFP
194.	Mohammad Tahir		N.D	1 M	Other	Algers	Wheat	05/79		Federal
195.	Mohammad Tahir		N.D	1 M	Other	Delhi	Wheat	02/78		Federal
196.	Dr. A. Rehman		N.D	1 M	Other	Delhi	Wheat	02/78		Punjab
197.	Dr. A. Shakoor		N.D	1 M	Other	Delhi	Wheat	02/78		Punjab
