

PA 1/3/82  
15/11/90/50

**A SHORT COURSE  
IN  
AGRICULTURAL RESEARCH PLANNING**

**December 1-13, 1990  
Islamabad, Pakistan.**

**A Consultant's Report  
by  
DR. DARRELL F. FIENUP  
DR. DALE D. HARPSTEAD  
DR. WAHEED AHMED**

**PARC • USAID • MART • WINROCK**

PN-ABS-832

isn 90750

**A SHORT COURSE  
in  
AGRICULTURAL RESEARCH PLANNING**

*December 1-13, 1990  
Islamabad, Pakistan*

**A CONSULTANT'S REPORT**

by

*Dr. Darrell F. Fienup*

*Dr. Dale D. Harpstead*

*Dr. Waheed Ahmed*

**PARC . USAID . MART . WINROCK**

A

**The MART (Management of Agricultural Research and Technology) Project is funded by the United States Agency for International Development (USAID). The MART Project's chief link to the Government of Pakistan is through the Pakistan Agricultural Research Council (PARC). A MART Project Coordination Committee composed of federal, provincial, and university representatives coordinates and guides project activities. Its purpose is to assist the Pakistani agricultural research system to strengthen its research management capabilities, and to improve communications, training, farming systems research, arid zone research, and research in the rural social sciences. Winrock International, through a contract with USAID, has responsibilities to assist with the first four of these tasks. Two international agricultural research centers, the international maize and wheat improvement center (CIMMYT) and the International Center for Agricultural Research in Dry Areas (ICARDA), are responsible for the other two tasks.**

**The mission of Winrock International Institute for Agricultural Development is to help reduce poverty and hunger in the world through sustainable agricultural and rural development. Winrock International assists people of developing areas - in Asia, Africa and the Middle East, Latin America and the Caribbean, and the United States - to strengthen their agricultural institutions, develop their human resources, design sustainable agricultural systems and strategies, and improve policies for agricultural and rural development. As an autonomous, nonprofit organization, Winrock International provides services independently as well as in partnership with other public and private organizations. The institute is recognized as a private voluntary organization.**

**B**

## TABLE OF CONTENTS

I.	Background .....	1
II.	Preparation of course outline in Michigan .....	1
III.	Final organization of course in Pakistan .....	1
IV.	Course participants .....	2
V.	Description of course contents .....	3
VI.	Observations on course presentation .....	10
VII.	Recommendations .....	11

## APPENDICES

Appendix A -	Terms of Reference .....	14
Appendix B -	Outline of "Training Program in Agricultural Research Planning" .....	16
Appendix C -	List of Participants .....	22
Appendix D -	List of Reference Materials Provided to Participants .....	24

## ABBREVIATIONS

AARI	Ayub Agricultural Research Institute (Faisalabad)
Adm	Admiral
FSR	Farming Systems Research
MSU	Michigan State University
NARC	National Agricultural Research Centre (Islamabad)
NCRP	National Coordinated Research Programme
PARC	Pakistan Agricultural Research Council
PSO	Principal Scientific Officer
T&V	Training and Visit

## **I. BACKGROUND**

Training in agricultural research planning is a basic need of senior managers, scientists and administrators who are involved in research planning. Further, one of the activities of the MART Project is to offer training in agricultural research management to scientists in Pakistan. These training activities are goal oriented and concentrate on the "how to" of agricultural research management rather than on a general theory of management. MART had previously organized two training courses. The first was "Organization and Implementation of Agricultural Research." This was offered twice: at the NARC, Islamabad and the AARI, Faisalabad. The second was a training course in "Experiment Station Management." This was held at NARC. The present course, "Agricultural Research Planning," was designed for senior agricultural research scientists and research managers.

## **II. PREPARATION OF COURSE OUTLINE IN MICHIGAN**

Professors Fienup and Harpstead spent a major part of the month of November reviewing background materials on Pakistan's agricultural research system provided by MART and in organization of the course and in preparation of lecture notes appropriate to the assignment. Reference materials on agricultural research planning and policy in Michigan State University's library were examined and specific references were selected for distribution to class participants (see Appendix D). Materials from a course on "Organization and Management of Agricultural Research in Developing Countries" given at MSU by the MSU professors, in addition to their own professional experience provided useful background in the course preparation.

## **III. FINAL ORGANIZATION OF THE COURSE IN PAKISTAN**

Drs. Fienup and Harpstead arrived in Pakistan on Monday, November 26, and spent the next four days making final course preparations. On Monday an initial meeting was held

with Dr. Bill Wright and a familiarization tour was made of the physical facilities of PARC and NARC. This was also an opportunity to meet Dr. Waheed Ahmed, a Pakistani consultant who had been engaged to join in the presentation of this course. On Tuesday it was possible to meet and discuss course goals and objectives with Dr. C. A. Ozair, Director, Training Institute, NARC; Dr. M. A. Sial, Director General, NARC; and Dr. C. M. Anwar Khan, Chairman, PARC.

These discussions contributed significantly to the development and fine-tuning of the final course outline. As a result of the review and discussion of the program a decision was made to contact Admiral M. F. Janjua, Minister of Agriculture from 1979 to 1985, to ask him to present a discussion of national planning in agriculture to the participants, a task which he readily accepted. Admiral Janjua recommended that we contact Dr. Agha Ikram Mohyuddin, Director of the PARC-Commonwealth Institute for Biological Control and arrange a visit to his laboratories for the participants. This resulted in a very fruitful and interesting class activity, which not only emphasized the importance of biological control technology but also demonstrated the role of the private sector in research support and development.

The meetings with the various administrators and the in-depth consultations with Dr. Waheed Ahmed resulted in a more relevant and effective course outline with shared responsibilities for class presentations. These interactions helped to further focus our goals and objectives for the course.

#### **IV. COURSE PARTICIPANTS**

Twenty six trainees nominated by the provincial governments and by the PARC, from its headquarters and NARC, participated in the course. Four of the participants from NARC were the Directors of research institutes, namely Crop Sciences, Animal Sciences, Natural Resources and Farm Machinery. Six were senior researchers of Principal Scientific Officer (PSO) level, one of whom is responsible for research monitoring and evaluation. One of

the two participants from PARC Headquarters has been involved in administration of provincial research projects funded through PARC, while the other was in an Agribusiness unit. Two more senior PARC researchers from Crop Diseases Research Institute at Karachi and Arid Zone Research Institute at Quetta participated.

Four of the participants came from the university faculties, two each from University of Agriculture at Faisalabad and Sindh Agriculture University at Tandojam. All remaining participants were nominees of various provincial research institutes, including two from Ayub Agricultural Research Institute at Faisalabad (Punjab), one from Tropical Agricultural Research Institute (Planning Officer) at Karachi (Sindh), one Research Officer each from Cereal Crops Research Institute at Pirsabak and Agricultural Research Institute at Tarnab (NWFP), and one Assistant Statistician from the Directorate of Agricultural Research at Sariab (Balochistan).

Hence, most of the participants were senior research scientists or managers who in one way or another are engaged in agricultural research planning. However, there were a few junior scientists who may not have gained as much from the course as was desired.

## V. DESCRIPTION OF COURSE CONTENT

This course on agricultural research planning and management was designed to provide an overview of the planning process from setting national development priorities to the creation and implementation of a national agricultural research plan through specific project activities. The importance of close interaction between researchers and their clients at the technology-using level and national planners and other top level decision makers who control budget and set agricultural policy was emphasized. Major attention was given to the need for research planning in developing countries, its components, methods used to establish research priorities, and the allocation of resources to agricultural research. Human resource planning was considered as an integral part of the total planning process. These principles of planning were presented as methods and

illustrated through discussion of Pakistan's institutional research structure and planning processes.

Special attention was directed towards planning at the individual researcher and departmental level. Facilitating research coordination and linkages among researchers in different institutions, regions, and levels through both formal and informal means were considered a major priority in the planning process. Use of budgeting and budget analysis as a device for planning, monitoring and control was presented. Various class exercises including development of an institutional mission statement, critique of national coordinated research programs, and the preparation of individual research projects were important means used to give class participants experience in research planning at the operating researcher level.

In addition to the foregoing presentations on research planning, related topics discussed included research/extension linkages; monitoring and evaluation of research; contemporary issues in research planning including biotechnology, sustainable agriculture, environmental degradation, and food safety and quality. A field trip to an integrated pest management research laboratory was arranged to gain a wider perspective on alternative approaches to research management. A second field visit included the Tarbela Dam and Lawrencepur Textile Mills, a well managed woolen factory.

The following list of topics or subject areas were presented during the course of the two week seminar. A brief description of the material covered under each heading is included:

- Development of agricultural research as a science.
- Evolution of agricultural research in Pakistan.
- Conceptual framework for national agricultural planning and policy.
- Preparation of a statement on research capacities and mission (participants).
- Research implementation as related to mission.
- Development of project managed research.

- Research linkages through national coordinated research programs (NCRP).
- Alternative approaches to setting research priorities.
- Development of research proposals.
- Generation and allocation of research resources.
- Budgeting and budget analysis as a planning tool.
- Research/extension linkages.
- Human resource planning.
- Research utilization.
- Contemporary issues in research planning.
- Research monitoring and evaluation.

### **Development of Agricultural Research as a Science**

Agricultural research activities have a proud history of service to humankind. Agricultural research emerged as a distinct and structured member of the science community almost two centuries ago with the application of chemistry and plant selection to the problems of the day. Throughout history the science of agricultural research has maintained interactive relationships and linkages with the various user groups within agriculture.

Three hallmarks of agricultural research were considered:

(1) successful research has been "demand driven," (2) it has been built upon well defined goals and objectives at all levels of activity, and (3) effective linkages have existed both with other research activities and with user groups.

### **Evolution of Agricultural Research in Pakistan**

Research in various disciplines of crop sciences, animal sciences, fisheries, forestry and wildlife has evolved since independence in 1947, with only a brief pre-independence history. The material presented covered the establishment of agricultural universities and colleges as well as research institutions in various provinces, the development of Pakistan Agricultural Research Council (PARC) at the federal level, the role of PARC in supporting and coordinating agricultural research and education in the provinces and in organizing

its own research facilities, including the National Agricultural Research Centre (NARC) at Islamabad.

### **Conceptual Framework for National Agricultural Planning and Policy**

The focus of this presentation was to provide an overall framework for planning and coordination of research programs that helps meet national development objectives as well as the needs of farmers, agri-business and consumers. The components and objectives of planning at all levels of decision making in the system (ministry, research institutions, departments and researchers) were presented and discussed in the context of agricultural research planning in Pakistan.

### **Preparation of Statement on Research Capacities and Mission**

Participants were asked to prepare an outline which would describe their institution in terms of: (1) research challenges, (2) research opportunities, (3) resources available, and (4) appropriate linkages. Subsequently these outlines were presented to the class and discussed. Each participant then prepared a "Mission Statement" which clearly and concisely presented the rationale for the existence of the respective research units.

### **Research Implementation as Related to Mission**

Productive research must be preceded by a series of well defined steps which include: (1) national plan, (2) national strategies, (3) established priorities, and (4) action programs of which "projects" are a part. Projects were defined in terms of plans and procedures to outline a directed research activity. They may describe the activities of a single scientist or a group of scientists who will cooperate on a specific research agenda. Project outlines are, in effect, a planning document designed to be useful "before," "during" and "after" the actual research activity.

### **Development of Project Managed Research**

Project managed research is the product of effective long range planning, the establishment of activity priorities, pre-proposals and preliminary investigations, and

consultation among the potential researchers. Projects must be commensurate with the mission of the unit, be identifiable with established national goals and objectives, and be coordinated with and complementary to other research activities proposed or in progress.

Individual research projects should be prepared by the person or persons who will carry out the activity. They should establish who will be responsible for the research proposed and the activities of each member of a research team.

### **Research Linkages through National Coordinated Research Programs**

The importance of research linkages between research institutions was emphasized, especially those between PARC and provincial agricultural institutions, with special reference to linkages achieved through national coordinated research programs (NCRP). These were discussed in terms of their mode of implementation, role of traveling seminars, overall contribution of PARC in promoting these linkages, constraints faced, extent of success of NCRPs, weaknesses in research linkages with universities and with extension, and suggested means to improve these linkages.

Participants were split into five groups, and each group was assigned, as an exercise, to examine the scope, responsibilities, funding, coordination and evaluation of a specific NCRP; and the critique was then presented to the class by each group leader for discussion.

### **Alternative Approaches to Setting Research Priorities**

Several types of processes for setting research priorities were described, including both quantitative and qualitative approaches. Methodologies of congruence, checklists, scoring models, and benefit/cost analysis were discussed. A case study in setting priorities for rice research in West and Central Africa including a staffing plan was presented. An important distinction was made between scientific judgement needed to determine the potential to advance technology in a given area if certain investments are made and the economic benefit to society if the new technology is actually developed.

### **Development of Research Proposals**

This exercise included the development of actual research proposals. Various formats were discussed and the importance of developing clear, concise title and justification statements was emphasized. The essential information about the proposal should appear on the cover page and be conveniently arranged so that persons who only read the first page will receive a clear picture of the activity proposed. Various techniques for quantifying, identifying and outlining proposed research activities such as log frames, two way table formats and other systematic research analysis procedures were discussed. Two examples of research project outlines were presented and discussed.

Each participant was asked to prepare an individual research proposal. These were subsequently critiqued with class participation.

### **Generation and Allocation of Research Resources**

Major sources of funding for agricultural research were presented including government appropriations from the national budget, foreign donor assistance, national science agencies that fund research, special taxes, and the private sector. Emphasis was given to the level and stability of funding and the need to develop multiple sources of support.

### **Budgeting and Budget Analysis as a Planning Tool**

Budgets are more than instruments of accountability. Budgeting is an essential element of planning and the identification of final research priorities. Effective budgets are developed from the anticipated requirements associated with the individual objectives of a research project. Zero based budgeting, as a concept, can contribute substantially to effective planning and management of research activities.

### **Research/Extension Linkages**

Lack of coordination between research and extension is a major problem in most developing countries. There are usually deficiencies on both sides which present serious obstacles to effective communication linkages between farmers and researchers. It is

important to recognize that the functions of research and extension overlap in the areas of technology adaptation and integration. Role of T and V and farming systems research (FSR) were discussed.

### **Human Resource Planning**

Manpower planning is an integral part of agricultural research planning at both national and institutional levels. Decisions must be made on which disciplines are needed, numbers of staff needed in each and the level of training (MSc, PhD) desired. Questions of in-country training vs. outside training in developed countries was discussed, including ways to make overseas training more relevant to developing country needs. A successful program of human resource development depends on good initial selection of participants for training, high quality and relevance of the training given (degree and non-degree) and an appropriate personnel policy that encourages research productivity through meaningful incentives to researchers.

### **Research Utilization**

Agriculture research has traditionally maintained close linkages with a wide variety of user groups which include, but are not limited to, agricultural extension services. Examples of other user groups include: seed production and marketing associations, animal breeders associations, various service societies, marketing organizations, and cooperatives. Research organizations have historically cultivated and maintained mutually beneficial linkages with agri-business. These linkages have resulted in valuable research critiques, joint research activities, and funding from the private sector. The potential impacts of plant patenting and technology ownership were discussed.

### **Contemporary Issues in Research Planning**

The international research community is continuously developing and evaluating new approaches to research and new groupings for existing research activities. External funding of research is frequently associated with the implementation of new research approaches. Current issues in research include: sustainable agriculture, biotechnology,

environmental protection, food and water safety, and agro-forestry. Existing research programs include farming system research, integrated pest management, and on-farm testing which were themselves "new" approaches less than a decade ago. The participants divided into sub-groups to discuss the possible impacts of sustainable agriculture and biotechnology research approach in relation to existing programs.

### **Research Monitoring and Evaluation**

A short presentation on research monitoring and evaluation at NARC was presented by the Director, Dr. A. A. Hashmi. Emphasis was given to the need to institutionalize peer review, including both professional criticism and support as part of the research process. Both formal and informal procedures were discussed.

## **VI. OBSERVATIONS ON COURSE PRESENTATION**

The presentation of this course was a pleasant and positive experience. In spite of a broad range of backgrounds and previous experience among the participants, they interacted effectively and engaged in spirited class discussion and commentary. Individual and group participant activities were effective supplements to the lecture/discussion teaching format. The use of guest speakers from both within and outside of NARC stimulated vigorous discussion and constructive evaluation of both current programs and potentially new activities for research development in Pakistan.

Throughout the course, emphasis was given to the concept that each research activity required a formal project-type outline which provided a clear but brief descriptive title, justification of the proposed activity, identification of principal researchers and a limited number of concisely stated research objectives. Individual projects can be linked together into larger research initiatives which constitute program thrusts to meet central planning objectives. Projects were discussed from the point of view of budget structuring, delegation of responsibilities, linkages with complementary research activities, and the

incorporation of scientists who may only be available to make specific, limited scope contributions to the overall research effort.

A series of lectures covered the relationships which exist between research initiatives and national goals, a master plan (i.e. NARC), established priorities, resource allocations or other overarching issues. No research planning activity can be developed or accomplished independent of these considerations or constraints. The fitting of individual research activities into the regional and national needs agendas was an important contribution to research planning activities.

A significant by-product of the training activities for some of the participants from provincial research institutions and universities was the opportunity to interact with administrative officers from PARC and with colleagues located at NARC. These interactions served to clarify the operational and administrative procedures within both PARC and NARC. The interaction occurred in formal and informal settings and increased the understanding of both opportunities for and constraints to increased joint program activity.

The presentation of this course at the headquarters facilities of NARC caused a number of difficulties for the participants from NARC. The proximity of their offices and the on-going day to day activities of their respective programs made it difficult for them to attend and participate on a regular basis. When local persons are involved in a training program, the use of more neutral facilities should be given consideration.

## VII. RECOMMENDATIONS

1. Length of the course is about right. At least 10 class days are needed to adequately cover the materials. A period longer than two weeks would be difficult in terms of time the participants can be away from their jobs as well as reaching a limit on their attention span.

2. Selection of participants is an important consideration. There are benefits from having diversity in terms of national, provincial and university affiliations. Inclusion of individuals from different levels of research responsibility is also beneficial if the gap is not too wide. All participants, however, should have some planning responsibilities.
3. Location of the course should be away from where a significant number of participants work. Otherwise, these participants will find it difficult to attend classes regularly and function as part of the group. This was a problem in the class just concluded.
4. Use of a Pakistani instructor to work with the outside consultant(s) is recommended for all courses. This individual should have background in the materials presented and in particular should know the country and its institutions well. Better linkage and rapport can be established between instructors and students. The co-instructor (Dr. Waheed) was very helpful in all regards and made significant contributions to both the development and presentation of the course.
5. Seminar room facilities were adequate but could be improved with a seminar seating arrangement rather than the theatre-type classroom seating. It is important to establish a free flow of interaction among participants and instructors.
6. Use of outside speakers and field trips are a must to provide additional insights and to give a "change of pace" from too many lectures from the same individuals. Finding out how others manage and plan expands understanding of subject matter and relevance to participants own experience.
7. More appropriate class projects could be developed by greater use of research planning and implementation situations existing in Pakistan. This could be accomplished through early consultations between the course leaders and

experienced research managers in NARC, provincial research centres, and/or universities. Attention would be directed to areas where the greatest problems exist in the organization and management of research in Pakistan.

8. The number of class projects to be developed during the period of the course should be increased. It would also be helpful to have time allocated to a class project cycle of proposal writing - critique - rewriting - and presentation. Additional library resources and other background materials would need to be available to develop these activities into meaningful learning experience.

## Appendix A

### TERMS OF REFERENCE

#### RESEARCH PLANNING

In the course of fulfilling project objectives, it is proposed that a series of training sessions, of approximately two weeks duration each will be organized to address various specific components of research management. This consultancy would address research planning of agricultural research. The consultant would be expected to develop lesson plans and conduct a training course for research managers and scientists from senior and midlevel positions in the national agricultural research system and the provincial institute of agricultural research. Other consultants will provide expertise in other specific areas such as monitoring and evaluation, support services, research organization and implementation, and information management.

- A. The content of the training course would include, but not necessarily be restricted to, the following:
1. Components of research planning.
  2. Setting research priorities, quantitative and qualitative methods used, and factors affecting priorities.
  3. Identification of research priorities.
  4. Allocation of resources for agricultural research.
  5. Long and mid-range research planning at the institutional, commodity, and department or division level.

6. Preparation of projects for national commodity research at multidisciplinary, multilocation level.
7. Preparation of multidisciplinary research projects at the project implementation level.
8. Preparation of projects at the single disciplinary level and integration of these with commodity research and national objectives.
9. Case studies of research planning at various levels.

B. In addition to conducting the training course, the consultant would:

1. Provide participants handouts of the lessons covered and reference books and materials to provide additional knowledge and experiences in research planning.
2. Prepare a consultancy report covering the course with subject matter covered, participants, and results of the training.

Appendix B

**TRAINING PROGRAM IN AGRICULTURAL RESEARCH PLANNING**

December 1-13, 1990

Sponsored by

Management of Agricultural Research and Technology Project (MART)

Pakistan Agricultural Research Council (PARC)

Held at

National Agricultural Research Centre, Islamabad, Pakistan

Instructors: Dr. Darrell Fienup

Dr. Dale Harpstead

Dr. Waheed Ahmed

Purpose of the course: To introduce the principles and practice of agricultural research planning; and apply these concepts to the organization, management, and implementation of agricultural research in Pakistan.

SATURDAY December 1, 1990

- |      |   |
|------|---|
| 0900 | Registration of participants  |
| 1000 | Inaugural Session<br>Welcome - Dr. C. A. Ozair, Dir T.I. NARC<br>Course overview - Dr. Bill Wright, COP MART<br>Inaugural address - Dr. C. M. Anwar Khan,<br>Secretary ARD/Chairman, PARC |
| 1100 | Refreshments  |

- 1130 Development of agricultural research as a science.  
(Dr. Harpstead)
- 1230 Lunch
- 1330 Evolution of agricultural research in Pakistan.  
(Dr. Waheed).

SUNDAY, December 2, 1990

- 0900 National policy objectives in Pakistan  
(Mr. Mashhood Qureshi, Joint Secretary  
Parliamentary Affairs Division, Government  
of Pakistan).
- 1000 National agricultural production goals and research priorities  
(Adm. M. F. Janjua, former Minister of Agriculture)
- 1100 Tea Break
- 1130 Continue discussion of agricultural priorities with Adm. M. F. Janjua
- 1230 Lunch
- 1330 Conceptual framework for national agricultural research planning and  
policy (Dr. Fienup)
- 1430 Participants were requested to prepare a summary of institutional  
research challenges, resources, and linkages available to their  
respective units.

MONDAY December 3, 1990

- 0900 Presentation of research statements by participants
- 1100 Tea Break
- 1130 Continuation of presentations
- 1230 Lunch
- 1330 Research mission and implementation by research  
units (Dr. Harpstead)

TUESDAY December 4, 1990

- 0900 NARC Research Master Plan (1988-2000)  
(Dr. A. A. Hashmi, CSO, NARC.)
- 1100 Tea break
- 1130 Discussion of Master Plan
- 1230 Lunch
- 1330 Development of Project Managed Research  
(Dr. Harpstead)
- 1430 Preparation of mission statements by class participants

WEDNESDAY December 5, 1990

- 0900 Research Linkages through National Coordinated  
Research Programs (NCRP) of PARC (Dr. Waheed).
- 1030 Organization of class exercise (participants assembled in five groups  
to analyze NCR programs in terms of scope; responsibilities between  
NARC, provincial research institutes and universities; funding;  
coordination; and evaluation.)
- 1100 Tea Break
- 1130 Groups working on assignments
- 1230 Lunch
- 1330 Slide presentation of "National Program on Pulses and Food  
Legumes" (Dr. Bashir A. Malik, Coordinator, NARC)
- 1400 Presentation of group reports on NCR Projects

THURSDAY December 6, 1990

- 0900 Continuation of reports on NCR projects
- 1030 Visit laboratories for tissue culture, soils, nutrition, and milling and  
baking research.

- 1100                    Tea break
- 1130                    Alternative approaches to setting research priorities. (Dr. Fienup).
- 1230                    Lunch
- 1330                    Exercise in development of research proposals. (Individuals assigned to prepare research proposals with emphasis on clarity of title, objectives and methodology)

FRIDAY December 7, 1990

No class

SATURDAY December 8, 1990

- 0900                    Critique of research proposals prepared by participants through class presentation and discussion
- 1030                    Tea break
- 1100                    Continuation of presentations
- 1230                    Lunch
- 1330                    Generation and allocation of research resources. (Dr. Fienup).

SUNDAY December 9, 1990

- 0930                    Visit PARC-Commonwealth Institute of Biological Control at Rawalpindi. (Dr. A. I. Mohyuddin, Director)
- 1230                    Lunch
- 1330                    Budgeting and budget analysis as a planning tool (Dr. Harpstead)

MONDAY December 10, 1990

- 0900                    Field Trip to Tarbela Dam and Lawrencepur Woolen Mills

1700 Return to Islamabad

TUESDAY December 11, 1990

- 0900 Goals and problems of agricultural extension in Pakistan - (Mr. Noor Hussain Supra, Director of Agriculture (Extension), Rawalpindi Region)
- 1000 Discussion
- 1030 Tea Break
- 1045 Research/extension linkages and interaction (Dr. Fienup)
- 1115 Human resource planning, management and development. (Dr. Fienup).
- 1230 Lunch
- 1330 Research utilization. (Dr. Harpstead)

WEDNESDAY December 12, 1990

- 0900 Contemporary issues in agricultural research planning - sustainable agriculture, environmental concerns, food safety, and biotechnology. (Dr. Harpstead)
- 0930 Class exercise - participants self selected into three groups to examine current work in sustainable agriculture and biotechnology in Pakistan and priority research that should be undertaken.
- 1030 Tea break
- 1100 Presentation and discussion of group reports
- 1230 Lunch
- 1330 Continuation of presentations

THURSDAY December 13, 1990

- 0900                    Research monitoring and evaluation at NARC  
                          (Dr. A. A. Hashmi; Head, Research Monitoring Cell, NARC)
- 0930                    Research constraints and opportunities in Pakistan  
                          (Open session)
- 1100                    Presentation of certificates and closing ceremony  
                          - Dr. C. A. Oazir, Director (T.I.)  
                          - Dr. Munawar Sial, DG, NARC  
                          - Dr. Waheed Ahmed, Course Instructor  
                          - Dr. Haider Ali Shah, Associate Prof. Entomology,    University of  
                          Agriculture, Faisalabad  
                          - Dr. Yar Mohammad Khoso, Asst. Prof. Agricultural    Tandojam  
                          Economics, Sindh Agricultural University,
- 1230                    Group Lunch

## Appendix C

### LIST OF PARTICIPANTS

#### BALUCHISTAN

1. Mr. Murtaza Khan, Assistant Statistician, Directorate of Agricultural Research, Sariab, Quetta

#### FEDERAL/NARC

2. Dr. Naeem Iqbal Hashmi, Director, Crop Sciences Research Institute, NARC
3. Dr. Abdul Shakoor, Director Farm Machinery Institute, NARC
4. Dr. Iftikhar Ahmad, Principal Scientific Officer, Crop Diseases Research Institute, NARC
5. Dr. M. A. Naqvi, Director Animal Sciences Institute, NARC
6. Dr. A. A. Hashmi, Principal Scientific Officer, Research Monitoring Cell, NARC
7. Mr. Sultan Mahmood Khan, Deputy Director, Agribusiness Cell, PARC
8. Dr. M. Aslam, Coordinator, National Maize Research Program, NARC
9. Dr. N. U. Durrani, Director (Animal Health), PARC
10. Dr. Abdul Majid, Coordinator, National Farming Systems Research Program, NARC
11. Dr. M. Saleem, Principal Scientific Officer, Land Resources, Natural Resources Institute, NARC
12. Dr. Shahid Ahmad, Principal Scientific Officer, Water Resources, Natural Resources Institute, NARC
13. Dr. M. I. Bajwa, Director, Natural Resources Institute, NARC
14. Mr. M. I. Nizami, Director Administration, NARC
15. Mr. Hassan Raza, Senior Scientific Officer, Arid Zone Research Institute, Quetta

16. Mr. Mohammad Aslam, Coordinator, National Oilseeds Research Program, NARC
17. Dr. A.K. Khanzada, Principal Scientific Officer, Crop Diseases Research Institute, Research Centre, University Campus, Karachi

#### N.W.F.P.

18. Mr. Fazli Subhan, Research Officer, Cereal Crops Research Institute, Pirsabak
19. Mr. Noor Mohammad, Research Officer, Agricultural Research Institute, Tarnab, Peshawar

#### PUNJAB

20. Dr. M. Arshad Chatha, Agronomist, Ayub Agricultural Research Institute, Faisalabad
21. Mian Irshad-ul-Haq, Horticulturist, Horticultural Research Institute, Faisalabad
22. Dr. Masood A. Qureshi, Chairman, Forestry Department, University of Agriculture, Faisalabad
23. Mr. Haider Ali Shah, Associate Professor, Entomology, University of Agriculture, Faisalabad

#### SINDH

24. Mr. Dhani Bux Chandio, Assistant Professor, Department of Plant Breeding and Genetics, Sindh Agricultural University, Tandojam
25. Mr. Atta Hussain Soomro, Planning Officer, Agricultural Research Institute, Sindh Agriculture-Livestock Department, Karachi
26. Dr. Yar Mohammad Khoso, Assistant Professor, Department of Agricultural Economics, Sindh Agricultural University, Tandojam.

## Appendix D

### LIST OF REFERENCE MATERIALS PROVIDED TO PARTICIPANTS

#### Organization and Management of Agricultural Research

1. "Considerations for the Development of National Agricultural Research Capacities in Support of Agricultural Development" ISNAR, October 1984.
2. "Changing Contexts and Goals and the Need for New Evaluative Approaches" in New Directions for Agriculture and Agricultural Research. Kenneth A. Dahlberg, Editor, Rawman and Allanheld, Publishers, 1986
3. "The Agricultural Research Institutions" Chap 3 in Agricultural Research Policy, Vernon W. Ruttan, 1982.
4. Agricultural Research Technology Transfer (Preface). I. Arnon, Elsevier Press, London, 1989.

#### Agricultural Research Planning and Policy

1. "Concept and Framework for Agricultural Research Planning and Policy" (D. Fienup lecture), based on I. Arnon Agricultural Research and Technology Transfer.
2. "The Logical Framework in Research Planning and Evaluation" D. Mclean, Working Paper No. 12. ISNAR, June 1988.
3. "Program Formulation in National Agricultural Research," M. Dagg and F. Haworth. Working Paper No. 17. ISNAR, October 1988.

### **Setting Research Priorities**

1. "Priority Setting in Agricultural Research" (D. Fienup lecture), based on ISNAR Working Paper No. 10. Priority Setting in Agricultural Research by R. Contant and A. Bottomby, May 1988.

### **Generation and Allocation of Resources for Research**

1. "Generation and Allocation of Resources for Agricultural Research" (D. Fienup lecture), based on I. Arnon, Agricultural Research and Technology Transfer, 1989.

### **Project Development**

1. "The Research Project" Chap 8, in I. Arnon Agricultural Research and Technology Transfer, Elsevier Press, 1989.
2. Five articles on writing research proposals.
3. Two examples for research projects and progress reports from the Agricultural Experiment Station, Michigan State University.

### **Manpower Development and Planning**

1. "Manpower Needs, Recruitments, and Personnel Policy" Chap 10, I. Arnon, Agricultural Research and Technology Transfer, Elsevier Press, 1989.

### **Case Studies and Research Planning**

1. Indonesia Master Plan for Food Crops, description of procedure used for development of 1988 Master Research Plan, D. Fienup.
2. Rice Study Group Report, for a rice research program in West and Central Africa, Randolph Barker, July 1986.

### **Miscellaneous Handouts**

1. "Lending by the World Bank for Agricultural Research" Anthony Pritchard, World Bank Technical Paper 116, May 1990.
2. "Strengthening Agricultural Research and Extension Linkages" -Notes by D. Fienup.
3. Pakistan's Seventh Five Year Plan, 1988-1993, Section on Agriculture, pp 161-177.