BANGLADESH AGRICULTURAL RESEARCH PROJECT PHASE

SIX MONTH PROGRESS REPORT IX

(July - December 1985)

presented by the

Project Supervisor Winrock

in cooperation with

The Bangladesh Agricultural Research Council

BANGLADESH AGRICULTURAL RESEARCH COUNCIL
WINROCK INTERNATIONAL INSTITUTE FOR AGRICULTURAL DEVELOPMENT
February 1986

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The Six-month Progress Report IX (1st July - 31st December 1985) of the Agricultural Research Project Phase-II presented on the following pages has been approved and authorized by the Bangladesh Agricultural Research Council.

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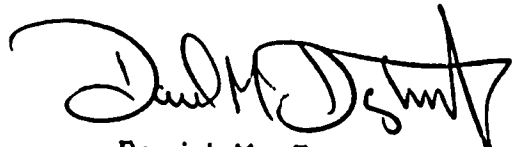
AGRICULTURAL RESEARCH PROJECT PHASE-II
SIX MONTH PROGRESS REPORT IX
(July - December 1985)

INTRODUCTION

This report, covering the period 1st July to 31st December 1985, is the first to be presented under the auspices of the Winrock International Institute for Agricultural Development which was formed by the merger on 1st July of the International Agricultural Development Service (IADS), the contractors under the Agricultural Research Project Phase-II (ARP-II), and two other organizations, the Agricultural Development Council and the Winrock International Livestock Research and Training Center. The new organization, usually referred to as "Winrock" or "Winrock International", has undertaken all the contractual and legal obligations of IADS.

This report consists of a summary plus detailed accounts of activities under the nine program areas of ARP-II. The activities follow the 1985-86 Work Plan. Where there have been difficulties in carrying out planned activities, these are also reported along with suggestions as to how they may be surmounted. The Work Plan was drawn up jointly by Winrock and the Bangladesh Agricultural Research Council (BARC).

Section 3 of the report consists of tables, showing respectively the status of expatriate staff positions (as extended by Amendment 17) at the end of the reporting period; a summary of consultancy services during these six months; and financial tables covering all nine program areas of the project.



David M. Daugherty
Project Supervisor/Advisor

SUMMARY

Staff

There were no new staff appointments during this reporting period. Four specialists departed post, namely Mr. Harvey Carr, Maintenance Specialist, on 23rd July; Dr. Dale Krigsvold, Plant Pathologist, on 19th August; Dr. Edward Loomis, Horticulturist, on 4th October; and Dr. David Gisselquist, Water Management Extension Specialist, on 6th December.

Major Activities of Program Areas

In Research System Management good progress has been made in integrating project accounting activities with those of BARC's accounting section, particularly in the matter of rationalizing the contract research accounts and reallocating unutilized funds under this program.

In August, two computerized statistics training courses for a total of 22 researchers were conducted by two expatriate trainers using the MSTAT program, while training in word processing has continued under Mr. Talukder. Computerization of project management has been advanced with development of a program to prepare the project's quarterly budget status statements, and plans were made for computerized bookkeeping of project accounts. Inventories of all commodities including household and office furniture and equipment should be completely computerized in the third quarter.

A consultancy to assist in planning and developing the research institutes' master plans, for incorporation in the revised National Agricultural Research Plan, was carried out by Dr. Guy Baird. Preparations for an international workshop on managing human resources in agricultural research were completed in December. The workshop was originally planned for January but had to be postponed until March. Dr. Byron Mook of the International Service for National Agricultural Research (ISNAR) visited Bangladesh to assist with arrangements.

Commodity procurement and customs clearance were about average for the period. A table showing the status of shipments as at 31st December will be found in the Research System Management section of this report.

Decisions of the Project Advisory Committee on the 44 recommendations made by the external evaluators of the project during the last reporting period are shown in Annex-I.

Constraints to all over project activity were experienced in two particular areas throughout these six months: clearance was refused by the Ministry of Agriculture for short-term training abroad in 66 per cent of all cases; and in-country training courses suffered a high cancellation rate due to regulations regarding payment of honoraria and per diem.

Project support for Farm Development came to an end during this period with distribution of farm equipment ordered in 1984-85 and completion of some minor construction projects.

In Maintenance a consultancy on instrumentation training was carried out by Dr. L. Mattick of Cornell University. Dr. Mattick has been identified as the replacement for Mr. Carr, who departed post early in the reporting period, with a resultant drop in activity in this sector of Technical Support Services. Dr. Mattick is expected to take up the Maintenance Specialist post in June 1986.

In Training support continued for 99 degree candidates, 43 of whom are studying in-country and 56 overseas. Only six persons obtained permission to attend short training courses abroad during this period, while seven were able to participate in out-of-country conferences and workshops. In-country training courses dropped to 13, with just over 200 participants. Three in-country workshops were held, attended by approximately 265 persons.

In the Agricultural Communication sector two issues of AGRESEARCH NEWS were produced and distributed, preparations were made for the Second National Symposium on Agricultural Research to be held in February 1986, and for the International Workshop on Managing Human Resources in Agricultural Research, originally scheduled for January but postponed until March. Work proceeded on the production of a Bangla version of Agricultural Research in Bangladesh, the English version of which continues to be in demand.

The proceedings of the Regional Workshop on Research Program Evaluation, Evaluating Agricultural Research Programs, were printed and distributed. In addition, assistance was given with editing and production of various other proceedings and reports.

Three consultancies took place: Ms. A. De Vivo completed her training workshop for editors of agricultural science journals started in the previous reporting period; Mr. A. Woodward installed a computer program for NALDOC and trained two staff members to use it to send Bangladesh data to the AGRIS system; and Dr. M. George undertook a consultancy on the development of library services for the Institute of Post Graduate Studies in Agriculture.

One planned consultancy on the communication needs of the agricultural research system was cancelled.

In the Farming Systems area of the project The National Farming Systems Research Programme proposed in 1984-85 was approved by BARC in September and approval for fund release given in December.

BARI initiated Farming Systems Research (FSR) activities at three new sites in Tangail, Barisal and Serajganj; continued FSR at sites such as Bogra and Rajshahi; and made progress in shifting to a more comprehensive FSR approach at Kalikapur, where 37 farmers participated in a homestead production study. Two surveys were carried out in

Kushtia and Chuadanga to determine the practices of innovative farmers; and 23 rural areas were chosen by seven institutes for research with a farming systems approach.

Multilocation Testing activities were conducted by BARI, BRRI, BAU and BJRI at 250 locations in 26 upazilas.

Guidelines for establishing FSR experiments have been drawn up in cooperation with other project program areas, namely Soil Management, Pest Management and Irrigation Water Management. Guidelines have also been prepared for Multilocation Testing and Pilot Production Programs.

Nine field days, five in Jessore and four in Ishurdi, involving about 300 farmers, extensionists and researchers, were organized during this reporting period. Five in-country training courses funded by FAO/UNDP went ahead at BARI, one at Joydebpur for 18 Subject Matter Officers of the Department of Extension, and four at the regional stations to improve the capabilities of 64 Field Assistants and 134 Field Men. Seven training sessions to improve wheat production practices were held in Jessore District for Field Assistants, Subject Matter Officers and farmers.

The Agronomy and Crops area of the project has been involved in strengthening the groundnut and maize improvement programs: BARI, BINA and BAU have cooperated to set up a network of experiments on groundnut, and have tested a considerable number of exotic germplasm lines for adaptability, yields, diseases and quality, identifying seven lines which significantly outyield local varieties. The on-going consultancy of Dr. L.J. Reddy, who is stationed at Mymensingh, has contributed to this work. In the case of maize, there has been further progress in planning and experimentation, some contract research was evaluated, and a status report prepared, with recommendations for long-term planning.

Assistance was given in preparing the BARI pulses section's 1985-86 work plan and a long-term action plan, and in drawing up the Sugarcane Research and Training Institute's master plan; a paper on conservation farming was prepared for the Ministry of Agriculture; and a lathyrus survey proposal was prepared in conjunction with Rajshahi University and the Ford Foundation.

From November the Winrock Crops Specialist became heavily involved with assisting the institutes to prepare their master plans, and with drafting the revised National Agricultural Research Plan in which elements of the institute master plans will be incorporated.

A consultancy on Homestead Gardening took place under the Horticulture sector of the Crops program. The consultant was Dr. J. Gershon of the Asian Vegetable Research and Development Center (AVRDC). Support continued for one Masters degree candidate in the US and two in Bangladesh. The Winrock horticulturist departed post during the reporting period. His replacement, Dr. D. Markarian, is expected to arrive in Bangladesh early in 1986.

During these six months the Agricultural Economics and Social Science program organized the fifth and sixth of a series of workshops on socio-economic analysis of Farming Systems Research Site data. Seventeen papers have so far been presented in this series and another 25 are in preparation. Assistance continued to BARD Comilla, RDA Bogra and BJRI with development of short courses in research methodology and descriptive analysis of socio-economic research data. Five such courses are planned for 1986. Use by researchers of the BARC computing facilities increased during the reporting period.

Activities in the Livestock program included a two-day workshop in November for 75 commercial poultry producers and poultry scientists on prospects and problems of the industry, particularly with regard to nutrient sources. A two-week training course was held at Savar for 25 animal scientists on the subject of Livestock and Poultry Research Methodology. The course was conducted in December by Drs. R. Temple and C. Chantalakhana.

Assistance was given to the joint Bangladesh Livestock Research Institute/Food and Agriculture Organization (BLRI/FAO) design team to gather information and prepare and edit BLRI's master research plan. This was completed in December.

Eleven contract research projects were reviewed during this period; two field training and orientation trips were made to FSR sites by BARC and BARI personnel; cooperation between FSR site personnel and field staff of the Directorate of Livestock Services (DLS) was initiated; and discussions were begun between DLS and the (British) Animal Health Assistance Team to set up training and conduct a study of current animal health.

Over the last six months the Soil Management program has proceeded as expected, with a somewhat slower rate of progress in developing a national soil fertility evaluation and improvement plan as the program reaches maturity.

Revision of the 1985 Fertilizer Recommendation Guide for Most Bangladesh Crops went ahead, with a Bengali version, incorporating the revisions, planned for July 1986. BARC approved five new contract research proposals for funding. These were on land use planning, problem soils, saline soils, minimum tillage, and maximum economic yield research.

Integration of the Soils Management program with other areas of ARP-II continues through use of the analytical services offered for soil and plant material by the BARI central laboratory; through participation in inter-divisional and inter-institutional task forces, and by the move from on-station to on-farm research.

In the Irrigation Water Management program the Water Management Extension Specialist completed his three-year assignment towards the end of the reporting period. Two local consultancies continued, one on the Annotated Bibliography for Irrigation and Water Management in Bangladesh, the other assisting the Economics and Social Science Division with economic aspects of irrigation.

Two courses on Remote Sensing for Agricultural Research were held in July. The first, for 28 researchers, lasted four weeks, the other was a two-day course for 15 agricultural administrators. In October a two-day workshop on Low Water Use Cropping Patterns for Irrigated Agriculture was held for 50 participants.

Assistance continued to be given to staff of the Agricultural Engineering Division of BARI in producing research papers. One of these was accepted for publication in a Bangladesh journal. A paper on evaluating irrigation system performance and one on monitoring an irrigated crop calendar were prepared for a regional training course on water management scheduled for February 1986.

Contract research received considerable attention: Monitoring and evaluation of eight projects continued; six new projects were funded; six projects were approved by the BARC Technical Committee and await funding approval; and four were reviewed, two of them being returned for modifications and two rejected. Details of titles, funding, etc., will be found in the individual IWM report.

Integrated Pest Management activities included four workshops for preparation of a national pest management plan. In November a consultant worked with the Crop Protection Committee constituted by BARC to produce a draft summary of a five-year crop protection plan. This realistic assessment of problems, available technology and research goals to achieve improved crop production requires some more inputs and revision. Preparation of the plan provided information which will form the basis for drawing up a guide to pest identification and damage assessment in Bangladesh.

Work in the Entomology program has been organized into six working sections, namely Fruits and Spices, Storage Pests, Vegetable Pests, Field Crop Pests, Insecticide Toxicology, and Insect Pathology and Biological Control.

The 1985-86 rabi experimental programs addressed major problems limiting crop production with minimal dependence on insecticide application. An effort was made to reduce the number of experiments to a level commensurate with the limited number of staff in BARI's Entomology Division. Progress was made towards controlling damage to sweet gourd, bittergourd and kakrul, using mostly indigenous materials, control of mealybug infestation of croton plants was achieved through soil drench applications of a systemic insecticide, and monitoring of cabbage plots at BADC's farm at Kashimpur led to a greatly reduced use of pesticides.

Intensive training on mango insect identification and instruction on insect collection methods, preservation and cataloguing were given to the Scientific Officer assigned to Chapainawabganj.

Work proceeded on the plans to construct an insectary/screenhouse at Joydebpur for the Entomology and Plant Pathology divisions, and the land allocated for entomology research was improved on time for the 1985-86 rabi experiments.

In Plant Pathology a consultancy/training course on meristem-tip culture of bananas was carried out in August-September. The departure of the Plant Pathology Specialist in August on completion of his assignment, plus problems regarding recruitment of local consultants, funding for in-country training and refusal of government permission for short-term training abroad, combined to pull down the level of activity in this sector of the Pest Management program.

3.1

Table 1: ARP-II Specialist Staff

Program Area	Total Person Months per Amendment 17	Person Months 1 July - 31 Dec 1985	Person Months Accumulated up to 31 Dec 1985	Balance of Person Months
1. RESEARCH SYSTEM MANAGEMENT				
1.1 Project Supervisor and Administrator	72.5			18.5
1.1.1 Murray D. Dawson		0	19	
1.1.2 David M. Daugherty		6	35	
1.2 Administration Specialist	67.5			24.5
1.2.1 Raphael Semmes		0	20	
1.2.2 Edward Rosentel		6	23	
1.3 Program Assistant/Asstt. Editor	18			7
Iris Gill		6	11	
2. TECHNICAL SUPPORT				
2.1 Farm Development Specialist	36			0
D. N. Sharma		0	36	
2.2 Maintenance Specialist	38			18.75
Harvey L. Carr		.75	19.25	
2.3 Training Specialist	36			0
Dorsey F. Davy		0	36	
2.4 Communication Specialist	48			14.5
Theodore Hutchcroft		6	33.5	

Program Area	Total Person Months per Amendment 17	Person Months 1 July - 31 Dec 1985	Person Months Accumulated up to 31 Dec 1985	Balance of Person Months
3. FARMING SYSTEMS RESEARCH				
3.1 Farming Systems Specialist	68			16
Alejandro H. Manzano		6	52	
3.2 Production Agronomist Ishurdi	48			17
3.2.1 Robert Drew		0	12	
3.2.2 R. N. Mallick		6	19	
3.3 Production Agronomist Jessore	60			16
Leopoldo M. Villegas		6	44	
3.4 Production Agronomist Jamalpur	54.5			19.5
3.4.1 Timothy G. Kelly		0	27	
3.4.2 Nadarajah Vignarajah		6	8	
3.5 Production Agronomist Hathazari	24			0
R. N. Mallick		0	24	
3.6 Production Agronomist Joydebpur	26			16
Eduardo Perdon		6	10	
4. CROP RESEARCH				
4.1 Agronomy	24			1.5
Russell D. Frazier		0	22.5	
4.2 Crops	59			18
Avtar K. Kaul		6	41	
4.3 Horticulture	42			19.5
Edward Loomis		3	22.5	

Program Area	Total Person Months per Amendment 17	Person Months 1 July - 31 Dec 1985	Person Months Accumulated up to 31 Dec 1985	Balance of Person Months
5. ECONOMICS AND SOCIAL SCIENCE				
5.1 Agricultural Economist	65			17.5
Brook A. Greene		6	47.5	
6. LIVESTOCK RESEARCH				
6.1 Livestock Specialist	35			17.5
6.1.1 Hugh E. Henderson		0	6	
6.1.2 James R. Dickey		6	11.5	
7. SOIL MANAGEMENT				
7.1 Soil Fertility Specialist	55			18
Sam Portch		6	37	
8. WATER MANAGEMENT				
8.1 Water Management Specialist	46			17
8.1.1 Jan J. Gerards		0	18	
8.1.2 Rogelio Lazaro		6	19	
8.2 Water Management Extension Specialist	36			.75
David Gisselquist		5.25	35.25	
8.3 Agricultural Engineer	44.5			17
Carlos Garces		6	27.5	

Program Area	Total Person Months per Amendment 17	Person Months 1 July - 31 Dec 1985	Person Months Accumulated up to 31 Dec 1985	Balance of Person Months
9. PEST MANAGEMENT				
9.1 Plant Pathologist	24			1.25
Dale T. Krigsvold		1.75	22.75	
9.2 Entomologist	36			14.5
Travis Everett		6	21.5	
	1063	186.75	752.75	310.25

3.2

Table 2: ARP-II Consultants/Trainers
1st July - 31st December 1985

Name	Arrived	Departed	Title of Report
Dr. Jagdish Kumar	3 July 1984	4 July 1985	Pulses Improvement at the Bangladesh Agricultural Research Institute: Present Status and Recommendations for Future Work
Mr. Alan H. Thomas	10 Jan	15 July	Technical Assistance Training for the Bangladesh Agricultural Research Council
Mr. A.N. Choksi	1 May	31 July	Furthering the Bangladesh Agricultural Research Council's Proposed Rural Finance Study Project
Dr. Ben Wallace	24 May	22 July	Women's Work in Rural Bangladesh
Dr. Michael Harris	28 May	13 Aug	A preliminary report: Inheritance Patterns and Land Fragmentation in a Bangladesh Village
Ms. Anita DeVivo	7 June	5 July	Technical Course for Editors of Bangladesh Agricultural Science Journals
Dr. L.J. Reddy	1 July 1985	30 Jun 1986	On-going; no report.
Mr. Kevin Dalsted	2 July	2 Aug	Remote Sensing Techniques for Agricultural Research in Bangladesh; report on two training courses
Mr. Robert G. Best	2 July	19 July	
Ms. Mary E. DeVries	16 July	26 July	
Mr. Victor I. Myers	21 July	28 July	
Dr. Frederick C. Westin	23 July	2 Aug	
Dr. Byron T. Mook	19 July	28 July	Visits in connection with International Workshop on Managing Human Resources in Agricultural Research, scheduled for March 1986; no report.
	13 Oct	22 Oct	
Mr. Anthony M. Woodward	12 July	13 Aug	Development of a Computerized Agricultural Library Network in Bangladesh
Mr. Padam Prasad Sharma	28 July	31 Aug	MSTAT Training Courses at BARC
Mr. Kris Merschrod	29 July	27 Aug	
Mr. Guy B. Baird	16 Aug	8 Oct	Planning Monitoring and Evaluation of Agricultural Research

Name	Arrived	Departed	Title of Report
Ms. Alice C. Woods	30 Aug	20 Sept	Banana Tissue Culture: Techniques and Applications for Banana Improvement in Bangladesh
Dr. Jack Gershon	27 Sept	14 Oct	Homestead Gardens for Bangladesh
Dr. Leonard R. Mattick	25 Oct	20 Dec	In preparation.
Dr. Marvin K. Harris	8 Nov	1 Dec	Summary of a 5-Year Plan for Crop Protection in Bangladesh
Dr. Melvin R. George	3 Dec	19 Dec	Developing Library Service for the Institute of Post-Graduate Studies in Agriculture
Dr. Robert S. Temple	1 Dec	13 Dec	Conducted a training workshop on Research Methodology in Livestock and Poultry; no report.
Dr. Charan Chantalakhana	12 Dec	22 Dec	

5.3

Table 3: Budget Comparison Statement
All ARP-II Program Areas
1st July 1981-31st December 1985

FIGURES IN US DOLLARS

BUDGET CATEGORY	TOTAL CONTRACT BUDGET 7/81-6/87	ACTUAL COSTS 7/81-12/85	% OF BUDGET	(A) COMMITTED FUNDS 12/85	% OF BUDGET	TOTAL ACTUAL & COMMITTED COSTS	% OF BUDGET	BUDGET AVAILABLE 1/86-6/87	% OF BUDGET
SPECIALISTS	7244920	5232851	72.23%	106914	1.48%	5339765	73.70%	1905155	26.30%
CONSULTANTS	1648750	1449640	87.92%	37163	2.25%	1486803	90.18%	161947	9.82%
LOCAL SUPPORT	1482300	999262	67.41%	19164	1.29%	1018426	68.71%	463874	31.29%
OVERSEAS TRAINING	2261000	1443213	63.83%	147496	6.52%	1590709	70.35%	670291	29.65%
INCOUNTRY TRAINING	1135000	638151	56.22%	23198	2.04%	661349	58.27%	473651	41.73%
CONTRACT RESEARCH	1350000	506909	37.55%	187090	13.86%	693999	51.41%	656001	48.59%
EVALUATION	80000	8463	10.58%	0	0.00%	8463	10.58%	71537	89.42%
COMMODITIES	2727300	2008017	73.63%	155811	5.71%	2163828	79.34%	563472	20.66%
CONSTRUCTION	223800	143781	64.25%	6959	3.11%	150740	67.35%	73060	32.65%
HQ STAFF EXPENSES	451610	331832	73.48%	5000	1.11%	336832	74.58%	114778	25.42%
DIRECT COSTS	18604680	12762119	68.60%	688795	3.70%	13450914	72.30%	5153766	27.70%
MANAGEMENT FEE	2979320	2018635	67.75%	99668	3.35%	2118303	71.10%	861017	28.90%
PROCUREMENT FEE	191000	140427	73.52%	10907	5.71%	151334	79.23%	39666	20.77%
CONTINGENCIES	0	0	0.00%	0	0.00%	0	0.00%	0	0.00%
PRE-CONTRACT EXP.	25000	25000	100.00%	0	0.00%	25000	100.00%	0	0.00%
TOTALS	21800000	14946181	68.56%	799370	3.67%	15745551	72.23%	6054449	27.77%

(A) : See explanatory notes, p. 24a.

Table 4: Budget Comparison Statement
All ARP-II Program Areas
1st July - 31st December 1985

FIGURES IN US DOLLARS

BUDGET CATEGORY	ANNUAL BUDGET 85-86	ACTUAL COSTS 7/85-12/85	% OF BUDGET	[A] COMMITTED FUNDS 12/85	% OF BUDGET	TOTAL ACTUAL & COMMITTED COSTS	% OF BUDGET	BUDGET AVAILABLE 1/86-6/86	% OF BUDGET
SPECIALISTS	1470600	883959	60.11%	106914	7.27%	990873	67.38%	479727	32.62%
CONSULTANTS	340700	239080	70.17%	37163	10.91%	276243	81.08%	64457	18.92%
LOCAL SUPPORT:									
Local employees	105000	50568	48.16%	7407	7.05%	57975	55.21%	47025	44.79%
Local consultants	40500	7996	19.74%	1910	4.72%	9906	24.46%	30594	75.54%
Office operations	105000	49699	47.33%	5638	5.37%	55337	52.70%	49663	47.30%
Research sup/services	15000	242	1.61%	33	0.22%	275	1.83%	14725	98.17%
Household furniture	5000	3022	60.44%	394	7.88%	3416	68.32%	1584	31.68%
Vehicle operation	67000	16569	24.73%	2143	3.20%	18712	27.93%	48288	72.07%
Incountry travel	22000	11820	53.73%	1196	5.44%	13016	59.16%	8984	40.84%
Internal evaluation	5400	1701	31.50%	0	0.00%	1701	31.50%	3699	68.50%
Miscellaneous	30000	1688	5.63%	443	1.48%	2131	7.10%	27869	92.90%
Total Local Support	394900	143305	36.29%	19164	4.85%	162469	41.14%	232431	58.86%
OVERSEAS TRAINING	579250	242894	41.93%	147496	25.46%	390390	67.40%	188860	32.60%
INCOUNTRY TRAINING	452975	228486	50.44%	23198	5.12%	251684	55.56%	201291	44.44%
CONTRACT RESEARCH	291800	74955	25.69%	187090	64.12%	262045	89.80%	29755	10.20%
EVALUATION	40000	1917	4.79%	0	0.00%	1917	4.79%	38083	95.21%
COMMODITIES	741300	72792	9.82%	155811	21.02%	228603	30.84%	512697	69.16%
CONSTRUCTION	98500	17725	17.99%	6959	7.06%	24684	25.06%	73816	74.94%
HQ STAFF EXPENSES	90000	21620	24.02%	5000	5.56%	26620	29.58%	63380	70.42%
DIRECT COSTS	4500025	1926733	42.82%	688795	15.31%	2615528	58.12%	1884497	41.88%
MANAGEMENT FEE	702900	348285	49.55%	99668	14.18%	447953	63.73%	254947	36.27%
PROCUREMENT FEE	51900	4956	9.55%	10907	21.01%	15863	30.56%	36037	69.44%
CONTINGENCIES	0	0	0.00%	0	0.00%	0	0.00%	0	0.00%
PRE-CONTRACT EXP.	0	0	0.00%	0	0.00%	0	0.00%	0	0.00%
TOTALS	5254825	2279974	43.39%	799370	15.21%	3079344	58.60%	2175481	41.40%

(A) : See explanatory notes, p. 24a.

Table 5: Budget Comparison Statement
ARP-II Research System Management Program Area
1st July - 31st December 1985

FIGURES IN US DOLLARS

BUDGET CATEGORY	ANNUAL BUDGET 85/86	ACTUAL COSTS 7/85-12/85	% OF BUDGET	[A] COMMITTED FUNDS 12/85	% OF BUDGET	TOTAL ACTUAL & COMMITTED COSTS	% OF BUDGET	BUDGET AVAILABLE 1/86-6/86	% OF BUDGET
SPECIALISTS & CONSULTANTS	229500	179872	78.38%	28034	12.22%	207906	90.59%	21594	9.41%
LOCAL SUPPORT:									
Local employees	105000	50568	48.16%	7407	7.05%	57975	55.21%	47025	44.79%
Local consultants	0	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Office operations	105000	49699	47.33%	5638	5.37%	55337	52.70%	49663	47.30%
Research sup/services	15000	242	1.61%	33	0.22%	275	1.83%	14725	98.17%
Household furniture	5000	3022	60.44%	394	7.88%	3416	68.32%	1584	31.68%
Vehicle operation	67000	16569	24.73%	2143	3.20%	18712	27.93%	48288	72.07%
Incountry travel	22000	11820	53.73%	1196	5.44%	13016	59.16%	8984	40.84%
Internal evaluation	5400	1701	31.50%	0	0.00%	1701	31.50%	3699	68.50%
Miscellaneous	30000	1688	5.63%	443	1.48%	2131	7.10%	27869	92.90%
Total Local Support	354400	135309	38.18%	17254	4.87%	152563	43.05%	201837	56.95%
OVERSEAS TRAINING	67250	44172	65.68%	6092	9.06%	50264	74.74%	16986	25.26%
INCOUNTRY TRAINING	63750	55522	87.09%	2133	3.35%	57655	90.44%	6095	9.56%
CONTRACT RESEARCH	0	0	0.00%	0	0.00%	0	0.00%	0	0.00%
EVALUATION	0	0	0.00%	0	0.00%	0	0.00%	0	0.00%
COMMODITIES	185200	15489	8.36%	9117	4.92%	24606	13.29%	160594	86.71%
CONSTRUCTION	0	0	0.00%	0	0.00%	0	0.00%	0	0.00%
HQ STAFF EXPENSES	90000	21620	24.02%	5000	5.56%	26620	29.58%	63380	70.42%
TOTAL COSTS	990100	451984	45.65%	67630	6.83%	519614	52.48%	470486	47.52%

(A) : See explanatory notes, p. 24a.

3.6

Table 6: Budget Comparison Statement
ARP-II Technical Support Services Program Area
1st July - 31st December 1985

FIGURES IN US DOLLARS

BUDGET CATEGORY	ANNUAL BUDGET 85/86	ACTUAL COSTS 7/85-12/85	% OF BUDGET	(A) COMMITTED FUNDS 12/85	% OF BUDGET	TOTAL ACTUAL & COMMITTED COSTS	% OF BUDGET	BUDGET AVAILABLE 1/86-6/86	% OF BUDGET
SPECIALISTS & CONSULTANTS	242900	106881	44.00%	8932	3.68%	115813	47.68%	127087	52.32%
LOCAL SUPPORT	0	0	0.00%	0	0.00%	0	0.00%	0	0.00%
OVERSEAS TRAINING	19300	14694	76.13%	175	0.91%	14869	77.04%	4431	22.96%
INCOUNTRY TRAINING	45625	5432	11.91%	1328	2.91%	6760	14.82%	38865	85.18%
CONTRACT RESEARCH	0	0	0.00%	0	0.00%	0	0.00%	0	0.00%
EVALUATION	0	0	0.00%	0	0.00%	0	0.00%	0	0.00%
COMMODITIES	226300	33109	14.63%	26403	11.67%	59512	26.30%	166788	73.70%
CONSTRUCTION	57500	17725	30.83%	6959	12.10%	24684	42.93%	32816	57.07%
DIRECT COSTS	591625	177841	30.06%	43797	7.40%	221638	37.46%	369987	62.54%

(A) : See explanatory notes, p. 24a.

3.7

Table 7: Budget Comparison Statement
ARP-II Farming Systems Research Program Area
1st July - 31st December 1985

FIGURES IN US DOLLARS

BUDGET CATEGORY	ANNUAL BUDGET 85/86	ACTUAL COSTS 7/85-12/85	% OF BUDGET	[A] COMMITTED FUNDS 12/85	% OF BUDGET	TOTAL ACTUAL & COMMITTED COSTS	% OF BUDGET	BUDGET AVAILABLE 1/86-6/86	% OF BUDGET
SPECIALISTS & CONSULTANTS	377700	214996	56.92%	36157	9.57%	251153	66.50%	126547	33.50%
LOCAL SUPPORT	0	0	0.00%	0	0.00%	0	0.00%	0	0.00%
OVERSEAS TRAINING	47000	10467	22.27%	18995	40.41%	29462	62.69%	17538	37.31%
INCOUNTRY TRAINING	9600	3028	31.54%	290	3.02%	3318	34.56%	6282	65.44%
CONTRACT RESEARCH	7500	0	0.00%	0	0.00%	0	0.00%	7500	100.00%
EVALUATION	0	0	0.00%	0	0.00%	0	0.00%	0	0.00%
COMMODITIES	37200	4870	13.09%	13879	37.31%	18749	50.40%	18451	49.60%
CONSTRUCTION	0	0	0.00%	0	0.00%	0	0.00%	0	0.00%
DIRECT COSTS	479000	233361	48.72%	69321	14.47%	302682	63.19%	176318	36.81%

(A) : See explanatory notes, p. 24a.

3.8

Table 8: Budget Comparison Statement
ARP-II Crops Research Program Area
1st July - 31st December 1985

FIGURES IN US DOLLARS

BUDGET CATEGORY	ANNUAL BUDGET 85/86	ACTUAL COSTS 7/85-12/85	% OF BUDGET	[A] COMMITTED FUNDS 12/85	% OF BUDGET	TOTAL ACTUAL & COMMITTED COSTS	% OF BUDGET	BUDGET AVAILABLE 1/86-6/86	% OF BUDGET
SPECIALISTS & CONSULTANTS	246200	127802	51.91%	17253	7.01%	145055	58.92%	101145	41.08%
LOCAL SUPPORT	0	0	0.00%	0	0.00%	0	0.00%	0	0.00%
OVERSEAS TRAINING	124550	65016	52.20%	34507	27.71%	99523	79.91%	25027	20.09%
INCOUNTRY TRAINING	12525	19839	158.40%	0	0.00%	19839	158.40%	-7314	-58.40%
CONTRACT RESEARCH	16800	23313	138.77%	45270	269.46%	68583	408.23%	-51783	-308.23%
EVALUATION	0	0	0.00%	0	0.00%	0	0.00%	0	0.00%
COMMODITIES	59300	167	0.28%	32006	53.97%	32173	54.25%	27127	45.75%
CONSTRUCTION	0	0	0.00%	0	0.00%	0	0.00%	0	0.00%
DIRECT COSTS	459375	236137	51.40%	129036	28.09%	365173	79.49%	94202	20.51%

(A) : See explanatory notes, p. 24a.

Table 9: Budget Comparison Statement
ARP-II Economics and Social Science Program Area
1st July - 31st December 1985

FIGURES IN US DOLLARS

BUDGET CATEGORY	ANNUAL BUDGET 85/86	ACTUAL COSTS 7/85-12/85	% OF BUDGET	[A] COMMITTED FUNDS 12/85	% OF BUDGET	TOTAL ACTUAL & COMMITTED COSTS	% OF BUDGET	BUDGET AVAILABLE 1/86-6/86	% OF BUDGET
SPECIALISTS & CONSULTANTS	112800	99051	87.81%	13577	12.04%	112628	99.85%	172	0.15%
LOCAL SUPPORT	0	0	0.00%	0	0.00%	0	0.00%	0	0.00%
OVERSEAS TRAINING	53400	10416	19.51%	30380	56.89%	40796	76.40%	12604	23.60%
INCOUNTRY TRAINING	39000	8972	23.01%	748	1.92%	9720	24.92%	29280	75.08%
CONTRACT RESEARCH	28500	24510	86.00%	14809	51.96%	39319	137.96%	-10819	-37.96%
EVALUATION	0	0	0.00%	0	0.00%	0	0.00%	0	0.00%
COMMODITIES	22200	1654	7.45%	6303	28.39%	7957	35.84%	14243	64.16%
CONSTRUCTION	0	0	0.00%	0	0.00%	0	0.00%	0	0.00%
DIRECT COSTS	255900	144603	56.51%	65817	25.72%	210420	82.23%	45480	17.77%

(A) : See explanatory notes, p. 24a.

3.10

Table 10: Budget Comparison Statement
ARP-II Livestock Research Program Area
1st July - 31st December 1985

Annual Budget
Livestock Research

FIGURES IN US DOLLARS

BUDGET CATEGORY	ANNUAL BUDGET 85/86	ACTUAL COSTS 7/85-12/85	% OF BUDGET	[A] COMMITTED FUNDS 12/85	% OF BUDGET	TOTAL ACTUAL & COMMITTED COSTS	% OF BUDGET	BUDGET AVAILABLE 1/86-6/86	% OF BUDGET
SPECIALISTS & CONSULTANTS	98100	59654	60.81%	7553	7.70%	67207	68.51%	30893	31.49%
LOCAL SUPPORT	0	0	0.00%	0	0.00%	0	0.00%	0	0.00%
OVERSEAS TRAINING	39200	14193	36.21%	3767	9.61%	17960	45.82%	21240	54.18%
INCOUNTRY TRAINING	34800	6284	18.06%	5110	14.68%	11394	32.74%	23406	67.26%
CONTRACT RESEARCH	0	0	0.00%	0	0.00%	0	0.00%	0	0.00%
EVALUATION	0	0	0.00%	0	0.00%	0	0.00%	0	0.00%
COMMODITIES	18100	827	4.57%	19739	109.06%	20566	113.62%	-2466	-13.62%
CONSTRUCTION	0	0	0.00%	0	0.00%	0	0.00%	0	0.00%
DIRECT COSTS	190200	80958	42.56%	36169	19.02%	117127	61.58%	73073	38.42%

(A) : See explanatory notes, p. 24a.

3.11

Table 11: Budget Comparison Statement
ARP-II Soil Management Program Area
1st July - 31st December 1985

Annual Budget
Soils Management Research

FIGURES IN US DOLLARS

BUDGET CATEGORY	ANNUAL BUDGET 85/86	ACTUAL COSTS 7/85-12/85	% OF BUDGET	[A] COMMITTED FUNDS 12/85	% OF BUDGET	TOTAL ACTUAL & COMMITTED COSTS	% OF BUDGET	BUDGET AVAILABLE 1/86-6/86	% OF BUDGET
SPECIALISTS & CONSULTANTS	109300	78554	71.87%	6527	5.97%	85081	77.84%	24219	22.16%
LOCAL SUPPORT	0	0	0.00%	0	0.00%	0	0.00%	0	0.00%
OVERSEAS TRAINING	57900	15132	26.13%	17611	30.42%	32743	56.55%	25157	43.45%
INCOUNTRY TRAINING	42175	15962	37.85%	1557	3.69%	17519	41.54%	24656	58.46%
CONTRACT RESEARCH	0	0	0.00%	0	0.00%	0	0.00%	0	0.00%
EVALUATION	12100	0	0.00%	0	0.00%	0	0.00%	12100	100.00%
COMMODITIES	12500	5726	45.81%	8526	68.21%	14252	114.02%	-1752	-14.02%
CONSTRUCTION	6000	0	0.00%	0	0.00%	0	0.00%	6000	100.00%
DIRECT COSTS	239975	115374	48.08%	34221	14.26%	149595	62.34%	90380	37.66%

(A) : See explanatory notes, p. 24a.

Table 12: Budget Comparison Statement
ARP-II Irrigation Water Management Program Area
1st July - 31st December 1985

Annual Budget
Irrigation Water Management

FIGURES IN US DOLLARS

BUDGET CATEGORY	ANNUAL BUDGET 85/86	ACTUAL COSTS 7/85-12/85	% OF BUDGET	[A] COMMITTED FUNDS 12/85	% OF BUDGET	TOTAL ACTUAL & COMMITTED COSTS	% OF BUDGET	BUDGET AVAILABLE 1/86-6/86	% OF BUDGET
SPECIALISTS & CONSULTANTS	222800	154438	69.32%	11335	5.09%	165773	74.40%	57027	25.60%
LOCAL SUPPORT	40500	7996	19.74%	1910	4.72%	9906	24.46%	30594	75.54%
OVERSEAS TRAINING	115900	47294	40.81%	40305	34.78%	87599	75.58%	28301	24.42%
INCOUNTRY TRAINING	182900	112329	61.42%	11879	6.49%	124208	67.91%	58692	32.09%
CONTRACT RESEARCH	239000	43790	18.32%	127011	53.14%	170801	71.46%	68199	28.54%
EVALUATION	27900	1917	6.87%	0	0.00%	1917	6.87%	25983	93.13%
COMMODITIES	100100	8234	8.23%	38733	38.69%	46967	46.92%	53133	53.08%
CONSTRUCTION	0	0	0.00%	0	0.00%	0	0.00%	0	0.00%
DIRECT COSTS	929100	375998	224.70%	231173	24.88%	607171	65.35%	321929	34.65%

(A) : See explanatory notes, p. 24a.

3.13

Table 13: Budget Comparison Statement
ARP-II Pest Management Program Area
1st July - 31st December 1985

Annual Budget
Pest Management Research

FIGURES IN US DOLLARS

BUDGET CATEGORY	ANNUAL BUDGET 85/86	ACTUAL COSTS 7/85-12/85	% OF BUDGET	[A] COMMITTED FUNDS 12/85	% OF BUDGET	TOTAL ACTUAL & COMMITTED COSTS	% OF BUDGET	BUDGET AVAILABLE 1/86-6/86	% OF BUDGET
SPECIALISTS & CONSULTANTS	172000	101792	59.18%	14709	8.55%	116501	67.73%	55499	32.27%
LOCAL SUPPORT	0	0	0.00%	0	0.00%	0	0.00%	0	0.00%
OVERSEAS TRAINING	54750	21512	39.29%	7556	13.80%	29068	53.09%	25682	46.91%
INCOUNTRY TRAINING	22600	1118	4.95%	153	0.68%	1271	5.62%	21329	94.38%
CONTRACT RESEARCH	0	0	0.00%	0	0.00%	0	0.00%	0	0.00%
EVALUATION	0	0	0.00%	0	0.00%	0	0.00%	0	0.00%
COMMODITIES	80400	2716	3.38%	1105	1.37%	3821	4.75%	76579	95.25%
CONSTRUCTION	35000	0	0.00%	0	0.00%	0	0.00%	35000	100.00%
DIRECT COSTS	364750	127138	106.80%	23523	6.45%	150661	41.31%	214089	58.69%

(A) : See explanatory notes, p. 24a.

WINROCK INTERNATIONAL INSTITUTE FOR AGRICULTURAL DEVELOPMENT
AGRICULTURAL RESEARCH PROJECT - PHASE II

Notes on Budget Comparison Statement

The following is an explanation of the calculation for committed funds:

1. Specialists and Consultants: Estimate equals previous months expenditure.

2. Local Support: Actual expenditure of this month not yet recorded.

3. Overseas Training:

   Long-Term Training PhD & MS - Estimated expenditure for remaining months of the fiscal year for the trainess who are already admitted.

   Short-Term Training-Advances outstanding for overseas trainees at end of this month.

4. In-country Training: Per commitment records of individual courses.

5. Contract Research:

   Ongoing research project's total budget up to June 86 less actual expenditure as of this month.

   Research project budgets have not been adjusted for reallocations made by the Finance Committee for these statements.

6. Commodities:

   Balance of commodities requisitioned and ordered internationally at the end of this month.

7. Construction:

   Total minor construction already approved by Chairman, BARC and Winrock Project Supervisor less amount paid during this period.

1.1 Research System Management (see pp. 3-5 of Work Plan)

A. Major Activities and Progress

* Strengthening competence in financial management, accounting and clerical support services:

Good progress has been achieved in integrating project accounting activities with those of BARC's accounting section. Several joint meetings with the staff accountants of BARC and Winrock have resulted in a rationalization of accounts in the Contract Research program, enabling the reallocation of resources and more efficient use of funding. This interaction has also provided the basis for agreement and accurate adjustment of accounts.

Plans to provide training in the USA for two members of the BARC accounting staff had to be cancelled because the Ministry of Agriculture refused clearance. There is an urgent need to up-date the skills of BARC's accounting staff in view of the greatly expanded funding sources and the additional responsibilities placed on them. Because of this, BARC will attempt to secure a re-assessment by the Government of this request and their concurrence to send the accountants for training.

Training in the use of the computer to increase speed, accuracy and efficiency has been continued in this reporting period. Skills in word processing have been developed through training provided by Mr. Talukder at the BARC Computer Centre. Training has also been effective in increasing the capacity of some BARC personnel and researchers of other institutes to become familiar with designing and using databases and spreadsheets.

Expatriate trainers from Michigan State University conducted two MSTAT computer training courses designed especially for research officers. This in-depth program was designed to provide a statistical package for use by field researchers in planning, designing and evaluating their research experiments.

Computerization of project management has progressed throughout the six-month period. A computer program to prepare quarterly budget status statements was written and implemented. Research and study on computer needs for project bookkeeping have been completed; actual computer use for bookkeeping should begin in the fourth quarter of this fiscal year. In addition, computerized inventories of commodities and household and office furniture and equipment will be completed in the third quarter.

* Increase competence in planning and evaluation:

Dr. Guy Baird, Winrock Senior Program Officer, served as consultant to BARC assisting in the planning and development of procedures for formulating the master plans of the research institutes. Progress was made towards integrating the institutes' master plans into the National Agricultural Research Plan which is the responsibility of BARC. This work will enable BARC to respond to the World Bank's request to strengthen research management throughout the system. BARC has undertaken an ambitious program to assist the constituent research institutes in developing master research plans. Using a newly-developed format, these plans will then be fully integrated, thus greatly strengthening BARC's ability to coordinate the research network, determine priorities, measure progress and evaluate the efficiency of resource use. Dr. Avtar Kaul has been asked to assist BARC in this activity over the next few months. In addition, personnel of the Training Cell are participating in the work by focusing their attention on data collection and research plans which have an impact on training. Data obtained by the Training Cell will be used to measure levels of current scientific training, identify training deficiencies and project future training requirements for the country.

* Create and implement a system to enable access to human resource information at BARC and constitutent institutions:

In concert with BARC's program to collect and collate human resource data for better management of the national research system, an international workshop was scheduled for inauguration in January. Planning for this activity was completed during the last few weeks of the reporting period but the workshop had to be postponed until March, 1986. Dr. Byron Mook, of the International Service for National Agricultural Research (ISNAR), visited Bangladesh to assist with program arrangements.

During the report period the Training Cell was allocated some additional space. In October Mr. Alan Thomas, a World Bank training specialist, took up a resident assignment at BARC. Mr. Thomas will be a strong link with the project in future development of the Training Cell to handle the expanded training resources provided by the Bank.

* Provide financial support for research:

Several important decisions have been taken and progress made in providing improved financial support to research, including the agreement reached on financial details and status of each contract research project mentioned above.

Agreement was also reached on the re-allocation of unutilized funds in some contract research projects. This action will allow provision of funds for new contract research proposals made to BARC.

Analysis of commodity purchases on an individual item basis has been completed for the project since inception of Phase II. Computerization of this information and a system of up-dating will be implemented in the third quarter. All household and office furniture and equipment were physically inventoried in December 1985.

Commodity procurement and customs clearance have been about average for the period. A summary report on shipments imported to Bangladesh by the project is given on the following page. About half of the shipments at port or arriving during the period had been cleared by the end of December 1985. However, the CIF value of the goods cleared during the period equalled only about 25% of the value of the total goods shipped.

Plans are being made to hold another contract research workshop in the fourth quarter to allow Principal Investigators to present their findings. A revision of the Contract Research Manual will be completed beforehand so that changes in administration of the program may be announced at the meeting.

* Evaluation of project activities:

The Internal Evaluation of the project will take place in April, as specified in the contract. The review will be conducted by local administrators and research managers. Results of the evaluation will be presented to BARC along with recommendations for refinement of the project.

The Agricultural Research Council conducted an evaluation of the performance of Winrock International in implementing the ARP-II. The evaluators concluded that Winrock had performed satisfactorily in providing resident specialists to Bangladesh; in meeting the audit requirements of the Government; and implementing the project in a satisfactory manner. The Committee recommended that the project be extended to complete all the objectives.

B. Constraints and Action Required:

* Constraints to funding wharfrent and other charges delayed several shipments of commodities. This problem was not overcome until December, but timely release of future shipments can now be expected.

WINROCK INTERNATIONAL/USAID ARP II
PROGRESS REPORT ON SHIPMENTS TO BANGLADESH
FOR THE PERIOD JULY TO DECEMBER 1985

	AIR	SEA	TOTAL	PERCENTAGE
1. Number of Shipments:				
At Port at 1 July 1985	10	8	18	46%
ADD: Arrived at Port (July-Dec '85)	15	6	21	54%
Total Shipments	25	14	39	100%
LESS: Custom Cleared (July-Dec 1985)	16	5	21	54%
In Process of Clearance (31 Dec '85)	9	9	18	46%
2. CIF Value of Shipments:				
At Port at 1 July 1985	$7,883.46	$125,935.89	$133,819.35	
LESS: Adjustment of Cost on B/L #45	0	9127.69	9127.69	
Adjusted balance (1 July 1985)	7883.46	116808.20	124691.66	47%
ADD: Arrived at Port (July-Dec. '85)	19177.57	41027.25	60204.82	53%
Total Shipments	27061.03	157835.45	184896.48	100%
LESS: Custom Cleared (July-Dec 1985)	5941.53	40419.91	46361.44	25%
In Process of Clearance(31 Dec '85)	$21,119.50	$117,415.54	$138,535.04	75%

* It was planned that the project accounting systems should be computerized during 1985-86. However the Project Supervisor has decided that this would be inappropriate in view of the fact that the Administration Specialist will be completing his contract in June. The task will be undertaken by his successor.

* The last three progress reports have made mention of the severe constraints under which the Training Cell operates. Although hesitant to address the matter again, it can be stated that attempts by the World Bank and USAID to persuade BARC to provide reasonable space and staffing levels, commensurate with the Training Cell's functions, have been largely unsuccessful. The present report provides details of the many training activities administered by the Training Cell, and emphasizes again the need for better space and more staff.

4.2 Technical Support

4.2.1 Farm Development (see pp. 9-10 of Work Plan)

As stated in the Work Plan, project support for Farm Development is limited during 1985-86 to commodities and construction funding committed during the last financial year.

* Commodities:

  Farm equipment worth $24,900 was received and distributed.

* Construction:

  Seven minor construction projects ordered in 1984-85 have now been completed.

4.2.2 Maintenance (see pp. 12-13 of Work Plan)

* Specialist:

The Maintenance Specialist departed post on 23rd July on termination of his contract. A replacement has been recruited, namely Dr. L. Mattick, who has carried out three consultancies on Instrumentation Repair and Maintenance under the project, all of them with a strong training component. Dr. Mattick is expected to take up his duties as a long-term specialist towards the end of this financial year.

* Overseas Training:

A candidate for short-term training in the USA on maintenance will be nominated by the BARC Member-Director for Agricultural Engineering.

* In-Country Training:

Dr. Mattick carried out his consultancy on instrumentation training in October - December. As part of the consultancy he conducted a one-week course on Fundamental Analytical Chemistry and Instrumentation for 12 persons at BARI Joydebpur. He also gave three weeks of hands-on training for six people in Instrument Repair and Maintenance. This training took place at the BARI headquarters and regional research stations at Ishurdi and Jessore, as well as at BAU and BINA, Mymensingh.

* Commodities:

Submission of the list of repair spares for laboratory equipment has been postponed until the third quarter due to the delay in receiving the parts manual. A partial list of spares required has, however, been submitted by Dr. Mattick.

* Construction:

The store and tool sheds at BARI will be constructed in the third or fourth quarter. The renovation of the BARC Computer Centre will also take place during that period.

4.2.3 Training (see pp. 14-16 of Work Plan)

A. Major Activities and Progress

* General Observations:

An expatriate consultant was hired for a period of three weeks in continuation of his contract from the previous reporting period. A longer term appointment funded by UNDP and managed by World Bank was expected to be made within a month. The gap was eventually three months and an expatriate consultant was appointed at the end of October for a period of twelve months.

* Provide support for the training activities of the other program areas:

Tables (a) to (i) appended to this section of the report detail training activities over the six-month reporting period.

The Training Division helped to secure the necessary clearances for persons participating in the above-mentioned activities; assisted scholarship awardees to gain admission to their institutions; provided administrative and financial support where necessary; reviewed and monitored the progress of trainees.

All training is included here irrespective of funding source. This gives a comprehensive picture of the overall training effort of BARC.

* The necessary support was provided to 99 degree candidates. A summary of the candidates is provided in Table e, p.42.

Participants in short-term training-

The number of in-country training courses (see Table g, p.44) numbered thirteen, ten USAID funded, one funded under IDA 1215 BD and two under IDA 1455 BD with over 210 participants.

Out-of-country courses (Table f, p.43) numbered six, of which four were funded by USAID, one by CIP and one by IDA 1215 BD. A total of six persons attended.

Conferences and Workshops-

Seven persons attended five out-of-country seminars/ workshops (Table h, p.45). Six persons were funded by USAID and one by Australian ACIAR.

Three workshops were held in-country (Table i, p.46), all funded by USAID, attended by approximately 265 persons.

Sabbatical Study Leave-

One six-month sabbatical study was awarded in this reporting period to Dr. M. A. Jalil Mia, CSO (Plant Breeding) at BINA. He has been working on tissue cultures at the Department of Botany, Dhaka University, since July.

B. Constraints and Action Required

* Government criteria for approving staff travel and training abroad have continued to be strict and the numbers of persons actually approved and departed the country have decreased over the previous six months. The processing of these applications still requires a great deal of work and even more time spent in discussion, resubmitting cases and communicating with applicants. Out of 66 applications made to the Ministry of Agriculture only 22 were approved.

There has also been a sharp drop in the number of in-country courses held. This has been due to the financial constraints and review of the payment of honorarium and per diem both to participants and local guest trainers. A decision is still awaited on this.

The sabbatical study leave program is still under-utilized despite an increase in the stipends offered.

The future training plans have been approved by the National Training Council and the decision on finances for in-country training is expected shortly. When this is cleared the workload from all funding sources will be enormous and the staff and space of the Training Cell will still be insufficient to manage it effectively.

Table a: Ph D Candidates Studying Abroad
1st July - 31st December 1985

NAME	BDG Institution	Field of Study	University	Departure Date	Projected Return
USAID - 388 - 0051					
1. Kazi Murtuza Kabir, SO	BARI, Joydebpur	Plant Breeding	North Dakota State, USA	16 Aug 1983	Aug 1987
2. Quayum Parvez, SSO	BRRI, Joydebpur	Agronomy	Florida, USA	23 Aug 1983	Aug 1987
3. Ch. Md. Amiruddin Khan Asstt. Prof. Ag. Engg.	BAU, Mymensingh	Water Mgmt	Colorado State, USA	23 Aug 1983	Aug 1987
4. Mufakharul Islam, SSO	BARC	Econ/Stat	Purdue, USA	1 Jan 1984	Dec 1988
5. Parvin Sultana, SSO	BARI, Joydebpur	Pest Mgmt	Colorado State, USA	25 Mar 1983	Returned Oct 1985
6. Muslea Uddin Mia, SSO	BARC	Soil Science	UPLB, Philippines	27 May 1983	May 1987
7. Abdur Razzaque, SSO	BARC	Agronomy (Farming Systems)	UPLB, Philippines	27 May 1983	May 1987
8. S. Salahuddin Kibria, SSO	BARC	Animal Science	UPLP, Philippines	27 May 1983	May 1987
IDA 1215 BD					
9. K. C. Roy, SSO	BARI	Water Mgmt	Utah State, USA	1 Jan 1985	Jan 1989
10. Jalaluddin Ahmed, SSO	BARI	Agronomy	UPLB, Philippines	27 May 1985	May 1989
11. Mrinal Kanti Chowdhury, SSO	BARI	Agronomy	UPLB, Philippines	27 May 1985	May 1989
CIP/Australian Grant					
12. M. A. Bari, SSO	BARI	Potato Pathology	Pant Nagar, India	24 Jan 1985	Jan 1989
13. A. Enamder Hossain, SSO	BARI	Potato Breeding	Pant Nagar, India	24 Jan 1985	Jan 1989
14. Gour Pada Das, SSO	BARI	Potato Entomology	UPLB, Philippines	Dec 1985	Dec 1989
A/D/C					
15. S. Z. Sadeque	Rajshahi University	Rural Sociology	Cornell, USA	Aug 1980	Jul 1985

Table b: MS Candidates Studying Abroad
1st July - 31st December 1985

NAME	Employing Institution	Subject	Institution	Departure Date	Projected Return
USAID - 388 - 0051					
1. A.J.M. Sirajul Kibria, SSO	BARI, Joydebpur	Soil Science	Colorado State, USA	23 Aug 1983	Feb 1986
2. Rafiqul Islam Mondal, SO	BARI, Joydebpur	Agronomy	Cornell, USA	23 Aug 1983	Feb 1986
3. Monomohan Biswas, SSO	BARI, Joydebpur	Horticulture	Hawaii, USA	23 Aug 1983	Feb 1986
4. Harun-ur-Rashid, SO	BARI, Pahartali	Research Mgmt	Cornell, USA	23 Aug 1983	Returned Dec 1985
5. Shahabuddin Khan, SSO	BARI, Joydebpur	Soils & Water	North Dakota State, USA	15 Aug 1984	Feb 1987
6. Joynal Abedin, SO	BRRI	Ag. Economics	UPLB, Philippines	24 Apr 1983	Returned Aug 1985
7. Tajul Islam, SO	BARI	Agronomy	UPLB, Philippines	27 May 1983	Returned Dec 1985
8. Ashraf Khan, SSO	BARI	Plant Pathology	UPLB, Philippines	27 May 1983	Returned Dec 1985
9. Liakat Ali, SO	BRRI	Plant Breeding	CLSU, Philippines	29 May 1983	Oct 1985
10. Azizur Rahman, SSO	BARI, Jamalpur	Agronomy	CLSU, Philippines	29 May 1983	Returned Dec 1985
11. Sabjal Uddin, SO	BARI, Hathazari	Agronomy	CLSU, Philippines	15 Nov 1983	May 1986
12. Abdul Aziz Palwan, SSO	BARI	Water Mgmt Extension	CLSU, Philippines	15 Nov 1983	May 1986
13. Wais Kabir, SSO	BARC	Irrigation	AIT, Thailand	3 Jan 1984	Returned Aug 1985
14. Bazlur Rahman Khan, SSO	BARI, Jessore	Farm Machinery	AIT, Thailand	3 Jan 1984	Returned Aug 1985
15. Kazi Mesbahul Alam, SO	BARI	Ag. Economics	UPLB, Philippines	28 Apr 1984	Sept 1986
16. Mustafizur Rahman Khan	BARI, Jamalpur	Agronomy	UPLB, Philippines	27 May 1984	Dec 1986
17. Nazrul Islam, SSO	BARI	Entomology	CLSU, Philippines	27 May 1984	Dec 1986
18. Nazrul Islam, SO	BARI	Ag. Economics	CLSU, Philippines	1 June 1984	Dec 1986

	NAME	Employing Institution	Subject	Institution	Departure Date	Projected Return
19.	Rafiqul Islam, SO	BRRI	Ag. Economics	CLSU, Philippines	1 June 1984	Dec 1986
20.	Habibur Rahman Chowdhury, SSO	BARC	Farm Machinery	UPLB, Philippines	1 June 1984	Dec 1986
21.	Rajat Kumar Pandit, SO	BARI	Vertebrate Pest Mgmt	UPLB, Philippines	1 Nov 1985	Apr 1988
IDA 1215 BD						
22.	A. Rahim, SSO	BARI	Ag. Communications	Missouri, USA	24 May 1985	Nov 1987
23.	Muklesur Rahman, SSO	BARI	Soil Mgmt	Mississippi, USA	24 May 1985	Nov 1987
24.	Md. Shamsul Alam, SSO	BARI	Ag. Economics	CLSU, Philippines	28 Oct 1985	May 1988
25.	Md. Mustafizur Rahman, SO	BARI	Ag. Economics	CLSU, Philippines	28 Oct 1985	May 1988
26.	Ismail Miah Bhuiyah, SSO	BARI	Post Harvest Technology	CLSU, Philippines	15 Nov 1985	Jun 1988
A/D/C						
27.	M. A. Hakim	RDA, Bogra	Ag. Economics	UPLB, Philippines	Jun 1983	Jul 1985
28.	Habibur Rahman	DU	Anthropology	National Univ., Singapore	Jun 1983	Jul 1985
29.	Naseem A. Hussain	JU	Social Anthropology	Univ. of New South Wales, Australia	Mar 1985	Apr 1987
30.	Umme Salma	MDP	Devt. Economics	Australian National Univ.	Mar 1985	Apr 1987
31.	Makbul Hussain	CU	Forest Economics	UPLB, Philippines	Apr 1984	Jun 1986
32.	Nitai Ch. Nag	CU	Economics	UPLB, Philippines	Apr 1984	Jun 1986
33.	Meherun Nisa	DU	Human Geography	Australian National Univ.	Mar 1984	Apr 1986
34.	M. Hasan Imam	RU	Rural Sociology	UPLB, Philippines	Nov 1984	Dec 1986
35.	Nazmir Nur Begum	DU	Social Work	Massey Univ., New Zealand	Apr 1984	Apr 1986
36.	Ishrat Jahan	MOA	Ag. Economics	UPLB, Philippines	Apr 1985	Jun 1987

	NAME	Employing Institution	Subject	Institution	Departure Date	Projected Return
37.	Madan Mohan Dey	BRRI	Ag. Economics	UPLB, Philippines	Apr 1985	Jun 1987
38.	Mozibur Rahman	MOF*	Ag. Economics	UPLB, Philippines	Apr 1985	Jun 1987
39.	Kazi B. Karim	RDA, Bogra	Rural Sociology	UPLB, Philippines	Jun 1985	Jun 1987
40.	A.H.M. Mustafizur Rahman	RU	Rural Sociology	UPLB, Philippines	Jun 1985	Jun 1987
41.	Wazed Ali Shah	BARI	Ag. Economics	Ateneo de Manila, Philippines	May 1985	Aug 1987

* Ministry of Food

Table c: Ph D Candidates Studying in-Country
1st July - 31st December 1985

NAME	Subject	University	Starting Date	Expected Completion Date
USAID - 388 - 0051				
1. S. Mahbubur Rahman, SSO, BINA	Soil Science	DU	Oct 1982	Oct 1986
2. Ali Ahmad, PSO, BARI RARS, Jamalpur	Plant Breeding	BAU	June 1983	June 1987
3. Ashraful Islam, PSO, BARI In-charge, RARS, Ishurdi	Agronomy	BAU	July 1983	July 1987
4. Ataur Rahman, Asstt. Professor, BAU	Livestock	BAU	July 1983	July 1987
5. Abul Basher, Asstt. Professor, BAU	Ag. Economics	BAU	Oct 1983	Oct 1987
6. Masood Ahmed, Asstt. Professor, BAU	Agronomy	BAU	Feb 1984	Feb 1988
7. A.S.M. Ziaul Karim, Asstt. Professor, BAU	Ag. Extension & Training	BAU	Feb 1984	Feb 1988
8. Muyeen Uddin Ahmed, Asstt. Professor, BAU	Plant Pathology	DU	Aug 1984	Aug 1988
9. Mazibur Rahman, Asstt. Professor, BAU	Soil Science	BAU	Sept 1984	Sept 1988
10. Matiur Rahman, Asstt. Director (Training), DAE	Ag. Extension & Training	BAU	Nov 1984	Nov 1988
11. Abdul Hoque, Asstt. Professor, BAU	Livestock	BAU	Nov 1984	Nov 1988
12. Lutfur Rahman, BJRI	Agronomy	BAU	Mar 1985	Mar 1989
13. Enamul Hoq, PSO, BARI	Agronomy	BAU	Mar 1985	Mar 1989
14. Mansur Majid, DU	Ag. Economics	DU	Jul 1985	Jul 1989
15. Abdus Samad, Asstt. Professor, BAU	General Animal Science	BAU	Oct 1985	Oct 1989
16. Abdul Majid, Asstt. Professor, BAU	Animal Breeding	BAU	Oct 1985	Oct 1989

NAME	Subject	University	Starting Date	Expected Completion Date
CIP/AUSTRALIA				
17. A.J.M. Enamul Hoq Chowdhury, PSO, BARI	Agronomy	BAU	Nov 1985	Nov 1989

Table d: MSc Candidates Studying in-Country
1st July - 31st December 1985

NAME	Subject	University	Starting Date	Expected Completion Date
USAID - 388-0851				
1. Murshidul Hoq	Agronomy	BAI	Feb 1984	Aug 1985
2. Ashratun Nessa, SO, (Agronomy), BARI	Agronomy	BAU	Feb 1984	Aug 1985
3. S. M. Saiful Hasan, PO, SRTI, Ishurdi	Soil Physics	BAU	Feb 1984	Aug 1985
4. Md. Fazlul Karim, SO, Agronomy, BARI	Agronomy	BAI	Feb 1984	Aug 1985
5. Mainul Islam, Economics Principal Officer, RCD, Sonali Bank, Dhaka	Ag. Economics	BAU	Feb 1984	July 1985
6. Tazul Islam, BAU	Economics	BAU	Feb 1984	July 1985
7. Zebun Nessa, SO, (Potato), BARI	Entomology	BAU	Mar 1984	Sept 1985
8. Rezaul Karim, SO, TCP, BARI	Soil Microbiology	BAU	Mar 1984	Sept 1985
9. Ittafaqul Azad	Horticulture	BAU	Aug 1984	Feb 1986
10. Golam Mustafa, BARI, Comilla	Plant Breeding	BAU	Aug 1984	Feb 1986
11. Shamsul Hoq, BRRI, Joydebpur	Plant Breeding	BAU	Aug 1984	Feb 1986
12. Suranjan Kumar Shaha, SO, (Fruit), BARI	Horticulture	BAI	Sept 1984	Mar 1986
13. A.K.M. Azmal, SO, BARI	Soil Microbiology	BAU	Sept 1984	Mar 1986
14. Naresh Chandar Deb Barma, SO, BARI	Plant Breeding	BAI	Sept 1984	Mar 1986
15. Q. Rezaul Islam, CERDI	Ag. Extension	BAU	Sept 1984	Mar 1986
16. Mahbub Uddin Ahmed,	Plant Pathology	BAU	Sept 1984	Mar 1986
17. Nurul Alam Khan, BAI, Dhaka	Agronomy	BAU	Sept 1984	Mar 1986
18. Shamsun Nahar Begum	Soil Science	BAU	Mar 1985	Sept 1986
19. Majibur Rahman	Ag. Engineering	BAU	Mar 1985	Sept 1986
20. Masood Alam	Veterinary Medical	BAU	Mar 1985	Sept 1986
21. Habibur Rahman	Veterinary Parasitology	BAU	Mar 1985	Sept 1986
22. Nurun Nahar	Animal Breeding	BAU	Apr 1985	Oct 1986

NAME	Subject	University	Starting Date	Expected Completion Date
23. Emdadul Hoq	Gen. Animal Science	BAU	Apr 1985	Oct 1986
24. Mujaffar Hossain	Gen. Animal Science	BAU	Apr 1985	Sept 1986
25. Nazrul Islam	Veterinary Microbiology	BAU	Apr 1985	Sept 1986
CIP/Australia				
26. Sarifur Rahman Khan, DAE	Plant Breeding	BAI	Sept 1984	Mar 1986

Table e: Summary of Degree Candidates
1st July - 31st December 1985

Country	Funding				Totals		
	USAID	IDA-1215	CIP/Australia	A/D/C	PhD	MS	TOTAL
Bangladesh	16 PhD	-	1 PhD	-	17	-	
	25 MS	-	1 MS	-	-	26	43
Australia	-	-	-	3 MS	-	3	3
India	-	-	2 PhD	-	2	-	2
New Zealand	-	-	-	1 MS	-	1	1
Philippines	3 PhD	2 PhD	-	-	5		
	14 MS	3 MS	-	10 MS	-	27	32
Singapore	-	-	-	1 MS	-	1	1
Thailand	-	-	1 PhD	-	1	-	-
	2 MS	-	-	-	-	2	3
USA	5 PhD	1 PhD	-	1 PhD	7		
	5 MS	2 MS	-	-	-	7	14
TOTALS:	24 PhD	3 PhD	4 PhD	1 PhD	32	-	-
	46 MS	5 MS	1 MS	15 MS	-	67	99

Table f: Out-of-Country Short-Term Training
1st July - 31st December 1985

Name	Field	Duration	Univ/Inst/Country
USAID - 388 - 0051			
Mr. Manjur Ahmed SO, BARI	Agricultural Economics	14 Oct - 13 Dec	IRRI, Philippines
Mr. Ruhul Amin SO, BARI	Irrigation and Water Management	26 Aug - 4 Oct	IRRI, Philippines
Mr. Abid Hossain SO, BARI	Cowpea & Soybean Research & Production Technology	7 Oct - 29 Nov	IITA, Ibadan, Nigeria
Dr. Mejbahuddin Ahmed Asstt. Professor, BAU	Rotavirus associated with Diahorrea Research	5 Oct - 5 Jan 86	Lister Institute, Philadelphia, USA
IDA 1215 BD			
Mrs. Suraiya Yasmin Asstt. Professor Ag. College	Management & Analysis of Statistical Data	10 Jul - 17 Sept	UK
CIP			
Dr. Mahbubur Rahman Asstt. Professor, BAU	Bacterial Diseases of Potato	15 Oct - 22 Nov	CIP, Lima, Peru

Table 9: In-Country Short-Term Training
1st July - 31st December 1985

Name of Training Course	Duration	Venue	No. of Participants
USAID - 388 - 0051			
Remote Sensing Techniques for Agricultural Research (for mid-level scientists)	7 Jul - 1 Aug	SPARRSO	26
Remote Sensing Techniques for Agricultural Research (for senior-level scientists)	24 Jul - 25 Jul	SPARRSO	15
Word Processing on Micro Computers	20 Jul - 26 Jul	BARC	8
MSTAT I	3 Aug - 13 Aug	BARC	13
MSTAT II	14 Aug - 25 Aug	BARC	9
Meristem-Tip Culture of Bananas	7 Sept - 12 Sept	BARI	6
Training on IBM System 36	24 Oct - 8 Nov	IBM Centre Dhaka	1
Fundamental Analytical Chemistry and Instrumentation	9 Nov - 14 Nov	BARI	12
Two levels of hands-on training on Instrument Repair and Maintenance	Three weeks beginning 16 Nov	BARI/RARS, BAU & BINA	6
Livestock and Poultry Research Methodology	5 Dec - 18 Dec	BLRI, Savar	25
IDA 1215 BD			
Training for BARI field men and non-diploma holders	One year beginning 20 Sept	AETI	31
IDA 1455 BD			
Horticultural Course for Subject Matter Specialists	20 Oct - 30 Oct	CERDI	30
Training for BJRI junior field men and non-diploma holders	One year beginning 20 Oct	AETI	25

Table h: Out-of-Country Seminars, Workshops, Conferences and Study Tours, 1st July - 31st December 1985

N A M E	Field	Duration	Univ/Inst/Country
USAID - 388 - 0051			
Dr. Z. H. Bhuiya Prof. of Soil Science BAU	Rhizobium Conference	12 Jul - 16 Jul	Waikiki, Hawaii USA
Dr. M. A. Jabbar Asstt. Prof. Ag. Economics, BAU	XIX International Conference on Economics	26 Jul - 4 Aug	Malaga, Spain
Mr. M.O. Farooque Asstt. Prof. Animal Breeding & Genetics, BAU	International Workshop on Enzyme Immuno Assay Techniques in Animal Production & Health	19 Aug - 31 Aug	Bangkok, Thailand
Dr. Lutfun Hossain Associate Prof. Zoology BAU	Fifth International SABRAD * Congress	25 Nov - 28 Nov	Bangkok, Thailand
Dr. Shah-E-Alam Asstt. Prof. Plant Breeding & Genetics, BAU	Fifth International SABRAD * Congress	25 Nov - 28 Nov	Bangkok, Thailand
Dr. S.M.I. Salehuzzaman Assoc. Prof. Botany, Chittagong University	Fifth International SABRAD * Congress	25 Nov - 28 Nov	Bangkok, Thailand
Australian ACIAR			
Dr. A.M.M. Tareque Associate Prof. BAU	Workshop on Draught Animal Power for Production	9 Jul - 16 Jul	ACIAR, Australia

* Society for the Advancement of Breeding Researches in Asia and Oceania

Table i: In-Country Seminars, Workshops & Conferences
1st July - 31st December 1985

Field of Training	Duration	Venue	No. of Participants
USAID - 388 - 0051			
Technical Discussion on Fertilizer Nitrogen Deep Placement for Rice	8 Jul - 9 Jul	BARC	75
Workshop on Low Water Cropping Patterns for Irrigated Agriculture	13 Oct - 14 Oct	BARC	120
Workshop on Commercial Poultry Farming	10 Nov - 11 Nov	BARC	75

4.2.4 Agricultural Communication (see pp. 19-20 of Work Plan)

A. Major Activities and Progress

* Improve the understanding and increase the support for agricultural research in Bangladesh by decision-makers:

  Preparations for the Second National Symposium on Agricultural Research to be held 11th-13th February 1986 were coordinated. These included development of background and organizational documentation, and communication with administrators and scientists of the national agricultural research system.

  Progress continues to be made in the production of a Bangla edition of Agricultural Research in Bangladesh. Mr. Faiz Ahmad has completed the translation. The Member-Director (A&F) is seeking proposals for printing the 5,000 copies required.

  Meanwhile, there is continuing demand for copies of the original book. There are about 500 copies remaining in the inventory.

  Assistance was provided for the preparation and printing of the BARC publication, A Review of Results of the National Coordinated Cropping Systems Research Project in Bangladesh.

* Improve the interchange of research and other relevant information among agricultural scientists and related personnel in Bangladesh:

  Two issues of the newsletter, AGRESEARCH NEWS, were prepared and published. The September issue was 16 pages (and included a copy of the "Guide to Opportunities for Training and Research Project Support") and the November-December issues was 12 pages. The newsletter distribution list was put onto computer to make it easier to correct and maintain an up-to-date file, and for quicker production of mailing labels.

  The consultancy of Ms. Anita DeVivo, a specialist in science journal production, was completed on 3rd July. The recommendations of the Technical Course for Editors of Agricultural Science Journals, conducted by Ms. DeVivo, were distributed to the participants. Some of the journal editors have requested that a committee of their group be formed to maintain a continuing contact with BARC and other elements of the national agricultural research system. Preparations for establishing such a group are in process.

Production of the proceedings of the National Symposium of Agricultural Research continue to be delayed due to numerous difficulties encountered by the printer. No completion date can be set, though some progress has been made during the period.

Provided basic editing and recommendations for follow-up for the publication by BARC of "Highlights of Agricultural Research, 1982-83".

Provided basic editing and recommendations for further improvement for the text of the report of the "National Seed Technology Workshop - 1985".

Advised and provided recommendations for the production of several publications by BARC on water and irrigation management.

Provided basic editing and recommendations for further improvement for the publication of the On-Farm Water Management Handbook.

The consultancy of Mr. Hal Taylor was cancelled. He was to make an evaluation of the communication needs of the national agricultural research system.

* Assist in providing effective library and documentation services to support the research scientists of Bangladesh:

A specialist in the management of library and documentation services (including computerization), Mr. Anthony Woodward, was brought to Bangladesh from 12th July to 13th August. He installed a computer program for NALDOC and trained two of its staff members in its use so NALDOC can begin sending Bangladesh data to the AGRIS system. He also conducted other staff training for NALDOC. Preparations are underway for a follow-up consultancy in mid-1986.

Two staff members of NALDOC, Mr. Minhaj Uddin Ahmed and Ms. Mansura Begum, completed short-term training begun last reporting period at agricultural libraries in the USA.

Dr. Melvin R. George, Director of Libraries, Oregon State University, USA, provided consultancy services for the development of the library of the Institute of Postgraduate Studies in Agriculture. He made recommendations for operating the library and developed extensive acquisition lists of journals, serials and monographs.

Researchers in the national agricultural research system have advised Winrock specialists in the preparation of lists of books to be acquired for libraries of the research centers.

Advised and assisted in the production of the annotated bibliography of water management literature, including the plans for completing the project.

The process was started for renewing subscriptions to agricultural science journals for research libraries. These subscriptions were first ordered by ARP-II two years ago.

* Related service activities:

The report of the Regional Workshop on Research Program Evaluation, Evaluating Agricultural Research Programs, was printed and distributed to the participants and other key leaders. ISNAR received 350 copies for distribution to its cooperators.

Coordinated the preparations for the International Workshop on Managing Human Resources in Agricultural Research, to be co-sponsored by BARC, ISNAR and Winrock, with major funding by ARP-II. The workshop was planned for 13th-15th January 1986 but had to be postponed until March. Preparations include organization and planning of the workshop, coordination with ISNAR, and preparations for the report. Arrangements were made for the consultancy visits of Dr. Byron T. Mook of ISNAR in July and October to plan for the workshop, and for his advising on collection and filing of personnel data for the research system.

Advised the CIMMYT Representative in Bangladesh on preparations of a slide program on wheat research in Bangladesh.

Prepared the distribution plan and supervised its implementation for the BARC publication, "Guide to Opportunities for Training and Research Project Support", to administrators, training officers, contract research officers, and scientists of the national research system.

Advised the editor of the newsletter of the Fisheries Research Institute on ways to improve preparation and production of the publication.

Assisted with the preparation of the ARP-II annual work and financial plan.

Assisted with the preparation of the ARP-II six months report (January-June 1985).

B. Constraints and Action Required

* Production failures continue to delay the publication of the proceedings of the National Symposium on Agricultural Research, Ten Years of Agricultural Research in Bangladesh. Problems encountered by the printer have stretched well over a year, and it is not possible to give a probable completion date. Every effort has been made to assist the printer to overcome the handicaps, but little progress has been made in the period.

* The number of communication service activities continues to emphasize the importance of this activity at BARC. The service of one expatriate specialist is not sufficient to fill the demand, and points again to the need for BARC to employ national personnel able to perform these duties. It is essential that BARC provide a trained counterpart to work with the expatriate specialist so that this person can take over the duties and begin to form a capable staff.

4.3 Farming Systems (see pp. 22-29 of Work Plan)

A. Major Activities and Progress

* Farming Systems Research:

A proposal for organizing a National Farming Systems Research Programme elaborated in the latter part of 1984-85, which aimed to give continuity to the activities of the National Cropping Systems Programme organized in 1980, was approved by BARC in September 1985. Approval for release of funds was given by the Finance Committee in December 1985.

Field research activities continued normally at the three sites operated by BARI and funded through USAID. Other institutes participating in the National Coordinated Cropping Systems Programme (BAU, BJRI, BRRI) continued their activities in four on-going sites, to the extent of their capacities.

BARI initiated Farming Systems Research (FSR) activities in some of the new sites, namely, Tangail, Barisal and Serajganj. This institute has also continued with FSR activities at other sites such as Bogra and Rajshahi.

Significant progress in shifting to a more comprehensive FSR approach has been made at Kalikapur, operated by BARI. Thirty-seven farmers participated in a homestead production study. Vegetable gardens were established to provide farmers with crops such as cauliflower, cabbage, radish, tomato and spinach. Although the main objective of this program was to produce vegetables for the farmers' family consumption, they obtained some cash benefits from the sale of radish.

Two surveys to determine the practices of innovative farmers were conducted in Kushtia and Chuadnagar. The main objective was to describe the farmers' successful techniques for relaying wheat in fields grown with transplanted aman rice plus their techniques for groundnut cultivation.

A total of 23 rural areas were selected by seven agricultural research institutes for research with a farming systems approach (Appendix-1). The budget for three years of operating this program is Tk.460.365 lakh (US$1,587,465). Most of the funds will originate from the IDA II Project, but USAID ARP-II will provide operational funds until July 1987 for five of the 23 sites selected by BAU, BARI and BJRI. The proposal provides for the organization of a Coordination Unit in BARC with a full-time Coordinator and PSOs from the

divisions of Crops, Agricultural Economics and Social Science, Livestock and Forestry. In addition, institutional coordination units will be organized.

* Multilocation Testing (MLT) and Pilot Production Program:

BARI, BRRI, BAU and BJRI continued MLT activities in different extrapolation areas of their cropping systems research sites. The MLT programs of the various institutes covered a total of 250 locations in 26 different upazilas. Eighty-five locations were selected by BARI in the extrapolation areas of Ishurdi, Jamalpur, Jessore and Hathazari.

The 1985-86 Work Plan included the organization of five pilot production programs, one each at Hathazari, Jessore, Ishurdi, Trishal and Kishoreganj. A plan for implementing a pilot production program has been prepared for Jamalpur . Plans for the other locations are pending for the early and late kharif seasons.

* Preparation of Guidelines:

Different program areas of the project, namely Soil Management, Pest Management and Water Management, participated in drawing up the "Guidelines for the Establishment of Research Experiments with a Farming Systems Research Approach". Copies of these guidelines were distributed to the Institutional Coordinators of the FSR programs.

Guidelines for implementing Multilocation Testing Programs were prepared. These guidelines included the technology for the different cropping patterns selected from the results of four years of research at the cropping systems sites. The Multilocation Testing Guidelines represent an attempt to advance the developed crop technology from the research site to as many areas with a similar agro-environment as possible. The guidelines have not been distributed.

The document "Procedures for Implementation of Pilot Production Programmes" was prepared for two sites, Jamalpur and Hathazari. General guidelines are under preparation for use by other institutes.

* Field Days:

Nine field days, five in Jessore and four in Ishurdi, were organized. Five of the field days took place at the FSR sites and others in farmers' fields where some trials were carried out by the On-Farm Research Division (OFRD). The objective was to inform the participants (farmers, extensionists and researchers) about progress of the field research carried out with the farmers'

participation. About 300 persons participated in these field days.

* Specialists:

The following Winrock staff members all served for the six months of this reporting period:

Dr. Alejandro H. Manzano	-	Farming Systems Specialist
Dr. R. N. Mallick	-	Associate Production Agronomist, Ishurdi
Mr. Leopoldo M. Villegas	-	Associate Production Agronomist, Jessore
Dr. N. Vignarajah	-	Associate Production Agronomist, Jamalpur
Mr. Eduardo Perdon	-	Production Agronomist, Joydebpur.

Dr. Manzano also served as Deputy Project Supervisor for three of these six months.

* Consultants:

The 1985-86 Work Plan made provision to obtain the services of two expatriate consultants for Farming Systems and Horticulture and two local consultants for Statistics and Agricultural Economics. These services will be obtained during the second semester, once the National Farming Systems Programme starts operating.

* Overseas Training:

One PhD candidate continues his studies at the University of the Philippines. He started his thesis work in September 1985 and is expected to complete the work late in 1986. His thesis is concerned with evaluating crop-livestock interactions.

One MSc candidate was supposed to complete his degree at the end of 1985. However his program has been delayed and he is now expected to complete his work early in 1986.

* Six Months Training in TWC:

Four scientists have been selected by BARC for a six-month training course in Farming Systems which IRRI will offer in March 1986.

* International Conferences:

One Bangladeshi scientist was proposed by BARI to attend a Farming Systems Symposium in Kansas. It was not possible for him to obtain Government clearance for this trip. The Winrock production agronomist posted in Ishurdi attended the event and presented the paper on behalf of the Bangladeshi scientist.

* Staff Travel:

Six study tours for scientists working on Farming Systems Research are included in the 1985-86 Work Plan. The visits were to be scheduled throughout the year. These have not so far been implemented because of the delay in starting the FSR program activities.

* In-Country Training:

The Farming Systems Research Methodology courses planned for September and October 1985 were postponed indefinitely because of restrictions on in-country training funds.

A one-week training course was conducted by BARI OFRD for Subject Matter Officers of the Department of Extension, in October. There were 18 participants from different upazilas. This training was sponsored and funded by FAO/UNDP/BGD Project.

Four training courses for Field Assistants, one in each of the four Regional Stations of BARI, were conducted. The objectives were to improve the capabilities of the Field Assistants (FA) and Field Men (FM) working at the farming systems and multilocation testing sites. The trainees of the first Farming Systems Research Methodology Course held in the first semester of 1985, served as coordinators and trainers of the course. A total of 198 participants (64 FA and 133 FM) were trained in the different regions. The training was organized by BARI OFRD and was sponsored and funded by an FAO/UNDP/BGD Project.

Seven training sessions were conducted in Jessore District, two for Field Assistants and five for SMOs and farmers. The objective was to improve the capability of the participants in wheat production practices, mainly in the system Rice/Wheat (wheat relayed on fields previously planted with t.aman rice).

Fortnightly seminars were organized in the BARI stations at Ishurdi and Jamalpur. Local scientists from various institutes and organizations have been invited as speakers in the seminars, whose main objective is to upgrade the capabilities of local scientists in preparing scientific papers.

Two discussion meetings were organized with local livestock officers of Ishurdi and Pabna. The aim was to initiate livestock research as part of the FSR activities in the area.

The production agronomists posted at Ishurdi, Jamalpur and Jessore participated in the District Technical Committees and assisted in preparing lesson sheets for the guidance of Subject Matter Officers. These meetings are held monthly.

One internal review workshop was held in Jamalpur Region, 2nd to 4th July, 1985. The OFRD and station research results for kharif I and II 1984 and rabi 1984-85 were reviewed and recommendations made for future programs.

Two planning workshops were conducted at BARI, Joydebpur to reorientate FSR planning. Plans for three new FSR sites, namely Tangail, Barisal and Serajganj, were discussed. Location planning meetings were also held in Barisal, Tangail and Serajganj before the workshop mentioned above.

* Contract Research:

The operation of three FSR sites, Laharikanda (Jamalpur), Kalikapur (Ishurdi) and Janakinathpur (Rangpur), has been funded by ARP-II since 1983. The total budget for these three sites amounts to Tk. 1,011,564. At the end of financial year 1983-84, 39 per cent of the budget had been executed but funds were not released for these sites during the last semester, because the financial statements had not been submitted to BARC.

As mentioned before, 23 FSR sites have been selected. A contract research proposal has been drawn up for each with assistance provided by BARC. Five of these sites will be funded by USAID.

* Commodities:

A list of commodities to be purchased in 1985-86 has been submitted for approval.

4.4 Crops Research

4.4.1 & 4.4.2 Agronomy and Crops (see pp.36-37 of Work Plan)

A. Major Activities and Progress

* Strengthening of crops research activities:

The most significant activity undertaken during the reporting period has been the strengthening of groundnut and maize improvement programs. A multilocation, inter-institutional network of experiments on groundnut has been laid out. The institutes involved are BARI, BAU and BINA. A large number of exotic germplasm lines of groundnut have been tested for their adaptability, yielding capacity, disease resistance and quality characteristics. Seven identified strains have significantly outyielded local varieties. All these strains are being tested once again in the rabi season for a number of attributes, including nitrogen fixation. The consultancy of Dr. L.J. Reddy, which began in July 1985, has contributed significantly to this work.

In the case of maize, further progress has been made in planning and experimentation. Several contract research proposals were evaluated, including some on Biological Nitrogen Fixation.

The Crops Specialist toured several research stations to assist with field plot techniques and experimental layout of many crops. He assisted in the preparation of the following projects and plans:

- National paper on conservation farming for the Ministry of Agriculture.
- The 1985-86 work plan and a long-term action plan for the BARI pulses section.
- Lathyrus survey proposal in cooperation with Rajshahi University and the Ford Foundation.
- Sugarcane Research and Training Institute's master work plan.
- Maize status report and recommendations for a long-term action plan.

Through a close working association with the FSR scientists, the crops component has been strengthened.

* Manpower improvement:

The post-graduate training program in the US and Third World countries progressed as planned except for the following:

a. A trainee for the cotton breeding program was not nominated.

b. The study tour of pulses scientists to India was postponed till February 1986.

c. The training course on breeding methodology at BAU/BINA was dropped, due to managerial constraints at those institutions, and could not be revived despite several attempts. The venue and responsibility for putting on the course may need to be shifted.

d. A short training course on maize, scheduled for December 1985, could not be held due to strike action. It will be rescheduled for March 1986.

* Updating the crops information base:

The surveys of haor and char areas have not yet been taken up. However, a survey of the lathyrus growing areas and of two lathyrism-affected upazilas has been initiated in cooperation with Rajshahi University and the Ford Foundation. The information obtained will be useful in planning for this important crop.

The Crops Specialist attended the International Symposium on Lathyrus in France. He served as Chairman of the concluding session and was nominated as Chairman of the publication committee.

* Strengthening of research capabilities:

Most of the commodities requested have been ordered and those already received have been distributed to the end users.

* Program planning and development:

Beginning in November 1985, the Crops Specialist became fully engaged with the drafting of the National Agricultural Research Plan and providing assistance to various institutes in the preparation of their master plans.

4.4.3 Horticulture (see pp. 43-44 of Work Plan)

* Specialist:

The Horticultural Specialist departed post on 4th October 1985, on completion of his assignment. Another specialist, Dr. Deran Markarian, has been recruited and is expected to take up his duties early in 1986.

* Consultants:

A consultancy on Homestead Gardening was carried out by Dr. J. Gershon of the Asian Vegetable Research and Development Center (AVRDC), Taiwan, in September-October.

A consultancy on Vegetable Breeding is planned for the third or fourth quarter.

* Overseas Training:

Support continued for one MS degree candidate studying Horticulture at the University of Hawaii.

The Ministry of Agriculture refused permission for two junior scientists of BARI to participate in an AVRDC vegetable production training course at Kasetsart University, Thailand.

* In-Country Training:

A short training course for 30 Subject Matter Specialists took place at CERDI in October.

Support continued for two students working towards MSc degrees in Horticulture, one at BAU, the other at BAI.

* Commodities:

Commodities, including books and journals, are on order. Part of the order has been received and is being distributed.

4.5 Agricultural Economics and Social Science (see pp. 30-31 of Work Plan)

A. Major Activities and Progress

* Development of a standardized methodology for the collection, storage, analysis and reporting of socio-economic research data:

July: The fifth workshop on socio-economic analysis of Farming Systems Research Site (FSRS) data was held at BARC. Only one paper was presented from the Bangladesh Water Development Board; the other two proposed papers were delayed.

November: The sixth workshop was held, as above, at BARC and three papers were presented, two from BARI and one from BJRI.

To date, 17 papers have been presented in this series. Fourteen of them have been published in the AESS paper series, while the remaining three are being finalized.

The following papers are in various stages of preparation and should be presented during the third and fourth quarters:

BARI - Elahi Baksh. Income Analysis for three seasons, Janakinathpur FSRS, Rangpur, 1985.

- Ranjan K. Saha. Two papers, Analysis of Livestock Data, Ishurdi FSRS, and Multiple Regression.

- Shamsul Alam. Analysis of Livestock Data, Laharikanda FSRS, Jamalpur.

- Habibul Haque. Four papers under preparation on Labour Utilization, Use of Loreng Curve, Income Distribution, Agro-Economic Analysis of Cropping Patterns.

- Rezaul Karim. Income Anslysis, Hathazari Cropping Systems Research Site (CSRS), 1982/83.

- Alamgir Hossain. Labour Utilization Patterns, Hathazari CSRS. (Total papers: 10).

BJRI - Nurun Nabi and A.K. Azad. Analysis of Credit, Choto Kalampur FSRS.

- Jibhan K. Saha. Two papers. Homestead Economic Survey and Livestock Survey, Faridpur FSRS.

- S.S. Chowdhury. Multiple Regression.

- A.K. Azad et al. Agro-economic Analysis of Cropping Pattern Trials (a paper on each of three sites). (Total papers: seven).

BRRI - Eusuf Harun. Marketing of T. Aman Seedlings, 1984.

- Shaheena Aktar. Price Analysis (Total papers: two).

BARD - Abdul Khaleque. Three papers.

- Alauddin Ahmed. Land Transfer (paper completed). (Total papers: four).

RDA, Bogra - Kamrul Hassan. Two papers, socio- Economic Survey: Changes over Ten Years in a Selected Village in Bogra, and Potato Price Analysis.

(Total Papers: two)

Total number of papers in preparation: 25.

Continuing assistance is being given to personnel of BARD, RDA, Bogra and BJRI to develop a short course in research methodology and descriptive analysis of socio-economic research data. The following short course have been prepared (or are in process):

RDA: 7th - 21st March 1986, first course on Descriptive Analysis of Research Data. Course leader: M. Sultan, Statistician.

BARD: 3rd - 26th March 1986, second course on Research Methodology for Rural Development. The third course on Research Methodology has been tentatively planned for July 1986. Course leader: Dr. A.M. Akhanda.

BJRI: Date to be fixed. First Course on Descriptive Analysis of Research Data. Course leader: A. Taher (Statistician). Second Course on elementary statistics data to be determined.

* Establishment of a computerized data base for agro-economic research:

Further short training courses have been planned for early 1986. Increasing numbers of research personnel from many institutes have been using the micro-computer centre, the organization of which has been consolidated. The IBM 34 is being used to develop 'ata bases, which is a long-term process. An IBM 36 will shortly be installed.

* Contract Research Activities:

Dr. Ben Wallace, SMU, arrived on 31st December for a two-week consultancy on the role of women project as planned.

Dr. Robert Van Kemper arrived at the same time as Wallace for a two-week consultancy on the dynamics of landless and marginal farmers as planned.

No other consultancies have been included in the current annual plan.

* Other activities completed to date:

The Winrock Specialist presented a paper at a Farming Systems Research Symposium, Kansas State University, Manhattan, Kansas, 13th-16th October. He also participated in preparation of the Farming Systems Research project paper.

B. Constraints and Action Required

None to date.

4.6 Livestock (see pp. 45-47 of Work Plan)

A. Major Activities and Progress

* Help build the livestock research capacity of the Bangladesh Livestock Research Institute (BLRI) personnel along with those of collaborating institutes:

Training of 25 animal scientists in Livestock and Poultry Research Methodology was completed in a two-week short course in December. The course was co-sponsored by BLRI and presented by two expatriate consultants, Drs. Charan Chantalakhana and Robert Temple.

Two senior-level researchers of livestock and poultry science were provided travel grants to attend an animal health training program and an international poultry science meeting.

The BLRI/FAO design team was assisted over a two-month period with the gathering of information, and preparation and editing of the BLRI Master Plan of Research which was completed in December 1985.

Support continues for 11 degree candidates who are studying animal science. Four are working for PhDs and six for Masters degrees in-country, and one is a PhD student in the Philippines.

* Strengthen collaborative Farming Systems Research between the livestock institutes and the crop institutes:

In anticipation of a six-months livestock data collection training program for FSR site teams of BLRI and the crop institutes, candidates for both local and expatriate consultancies have been solicited and applications reviewed. Selection is in process by a Ministry review committee.

Eleven contract research proposals were reviewed of which six were recommended for approval by BARC and five were sent back to the authors for suggested alterations. Four livestock contract research proposals have been approved for BARC funding from a total of sixteen presented since January 1985 (including the FSR Project).

Two field training and orientation trips were made to crop institute Farming Systems Research sites with BARC Livestock Division and BARI personnel. Dialogue was initiated between the site teams and animal scientists of the Directorate of Livestock Service's (DLS) field staff to provide technical help to the teams while taking advantage of the sites for DLS extension purposes.

* Increase the awareness of quality forage production and utilization to provide animal products and draft power in the integrated farming system:

  The opportunities, the problems and some possible solutions to problems of the poultry industry were discussed by 75 commercial poultry producers and poultry scientists at a two-day workshop held at BARC on 10th and 11th November. Discussions centered on the source of nutrients.

  The contract study of draft power requirements, availability and utilization in agriculture was completed, a draft report presented and a debriefing conducted on 4th November. Certain revisions have been requested to render the report more useful.

  Preparations have been made by DLS for a short course for their field agents in Feeding and Breeding for Efficient Livestock Production. The course should be conducted early in the third quarter.

* Encourage research and training directed toward a better animal health delivery system:

  Discussions are in process with DLS and the British Technical Cooperation Animal Health Assistance Team to conduct training and carry out a study of current animal health status and the effects of the delivery system.

B. Constraints and Action Required

  Inadequate trained manpower and poor livestock research infrastructure remain the primary constraints to the livestock research program. Progress towards resolving these problems has been less than anticipated for several reasons:

* There has been no Member-Director for the Livestock Division throughout the reporting period, though it is understood that a new Member-Director has been identified. In addition, the directorship of BLRI has been periodically inactive due to uncertain and contested reassignments. It is essential that these appointments be made to provide the necessary administrative guidance.

* Restrictions on the use of training funds have led to cancellation of some planned activities, e.g., a course in cooperation with DLS on veterinary laboratory sampling. However, BARC is taking action on this issue.

* Refusal by government to permit external travel of local scientists remains an obstacle to the training program as in the case of scientists refused permission to attend conferences on Poultry and Farming Systems Research. The problem could be resolved by giving BARC the authority to approve travel for training purposes.

4.7 Soil Management (see pp. 51-60 of Work Plan)

A. Major Activities and Progress

* Development of a national soil fertility evaluation and improvement program:

This program has six phases: a) sampling procedures and handling, b) laboratory development and analysis, c) data interpretation, d) research, e) recommendation development, and f) out-reach. Progress in these areas was thoroughly discussed in the January-June 1985 progress report (pp. 70-72). In general, progress continues along the same lines. However, it is only natural that as the program reaches maturity, progress is slower and more difficult to achieve. Therefore, rather than repeat what has been documented earlier, more emphasis is given to problems rather than progress in this section.

a) Sampling procedures and handling:

A research proposal prepared on soil sampling was submitted to BARC and returned for revision. This proposal was integrated into the soil test crop response project already approved by BARC. This project needs to be initiated as quickly as possible because its results will answer two very important soil sampling questions: (i) the frequency of sampling necessary within a field, and (ii) the variability between fields within a selected area.

Shipment of samples to the laboratory is not systematized. This arises from confusion within BARI as to the appropriate mechanism, and because of lack of funds. The result is that the system is being underutilized and farmers are not able to get their samples into the laboratory directly through a BARI agency.

Allocation of adequate operating funds is needed for the laboratory so that a system can be organized.

b) Laboratory development and analysis:

The laboratory can readily handle 150 soil samples per day. During the reporting period, however, only 2458 soil samples were received and analyzed. This accounted for 29,496 determinations. At the same time, 2000 plant samples with 18,000 determinations were made.

The under-utilization of this facility is due to the sample handling policy mentioned above, and slow progress in the out-reach program mentioned below.

c) Data interpretation:

This is progressing at a normal rate.

d) Research:

This is progressing fairly well considering the lack of contract research funds for soil test crop response correlation research. A new proposal for this has been approved for financing during 1986-90.

e) Recommendation development:

Revision of the 1985 Fertilizer Recommendation Guide for Most Bangladesh Crops has begun with the collection of written suggestions from users and scientists. Further feedback is expected from the out-reach program. A Bengali version, incorporating these revisions, is targeted for July 1986.

f) Out-reach:

Implementation of this phase has been slow. Confusion over daily allowances and honoraria has resulted in postponement of a series of two-day courses designed to teach DAE personnel the techniques of soil sampling and handling, and the preparation of fertilizer recommendations using the fertilizer guide. These courses are now scheduled for early 1986.

Regardless, some training has been done by participating in courses organized by other agencies.

* Improvement of other soil management areas:

Besides the contract research proposals for soil test crop response correlation, new contract research proposals for a) land use planning, b) problem soils, c) saline soils, d) minimum tillage, and e) maximum economic yield research have been approved for funding by BARC. This is a whole new series of projects whose design was largely based on previous research experience.

A new project for biological nitrogen fixation is in process out it will not be submitted to BARC until the on-going project has been finally evaluated.

A project on the problems of Hill Tract soils has had a preliminary review.

* Integration of Soil Management activities with those of other ARP-II programs:

  Obviously, the analytical services offered for soil and plant material by the central laboratory at BARI presents a direct link with all other program areas. The laboratory offers all a very useful and reliable source of information.

  Further integration occurs when the heads of soils divisions at the various institutes participate in task forces of other institutes or divisions.

  Recent research (on-going or in the planning stage) emphasizes more on-farm and farming systems type investigations. For example, at the BARI Soil Chemistry Division approximately 40 per cent of the research is now off-station. This is a marked change from the almost 100 per cent on-station research observed a couple of years ago.

* Other activities:

  The Bangladesh soils management program spearheaded by BARC has recently received good publicity both nationally and internationally. This has occurred through personnel attending international meetings, by publications in international bulletins, and through organizational activities for two international symposia scheduled for February and April, 1986 at BARC.

* A summary indicating the status of planned program activities for the reporting period is given below:

Activity	Planned	Initiated or Completed	Remarks
Consultants	0	1	Dr. Len Mattick, instrumentation specialist was assisted by the soils program during his eight-week consultancy.
Overseas Training PhD (TWC)	1	1	
MS (USA)	2	2	
Up to 6 months (USA)	1	0	Could not get Government clearance.
Up to 6 months (TWC)	1	0	Could not get Government clearance.

Activity	Planned	Initiated or Completed	Remarks
International Conferences	1	3	Two persons received outside financing from the International Potassium Institute.
In-Country Training Courses	0	2	Two training courses associated with Mattick's visit were coordinated by the soils program.
Workshops	1	0	A cooperative program with the information specialist was planned, but never got off the ground.
Sabbatical Studies	1	0	One candidate is initiating the paperwork for this.
Scholarships			
PhD	2	2	
MS	1	4	Two are carry-overs.
Contract Research			
On-going	4	3	Maximum yield research project delayed because BARC could not release funds.
New Projects	15	0	No funds were released during this period. However, eight projects have been reviewed and most approved. In some cases two of the originally planned proposals were consolidated into one project.
Evaluation	0	0	
Commodities			Only requests for spare parts have been made to date.

Activity	Planned	Initiated or Completed	Remarks
Construction			About a quarter of available funds has been committed and requests for most of the remainder are under study.

B. Constraints and Action Required:

* From the beginning, restrictions on out-of-country training have limited the "nationalization" of the program. Until personnel are properly and specifically trained for the specific program activities required of them, one cannot expect proper performance. The misconception that in-country training is always equal to out-of-country training seems to plague the latter.

  A concerted effort by donors, BARC and the institutes is needed to streamline the approval system. Program leaders in conjunction with the institute's director general should be able to select candidates for specific training to meet the institute's and program's present and future needs.

* In-country training has not moved as well as had been hoped because of the confusion over travel and daily allowances.

  A policy must be adopted that is fair to the trainees as well as the trainers. This should be uniform throughout the agricultural sector of Bangladesh.

* Several constraints to the soil fertility evaluation program were mentioned earlier in the report.

C. General Observations

* The soil management program of BARC is progressing reasonably well. However, progress was slower this reporting period due to several factors mentioned above. Most of these constraints are manageable and changes can be expected.

  The new series of contract research projects should provide work incentives, cooperation, and stimulation amongst soil scientists of the agricultural research institutes. BARC has a major role in managing these programs efficiently and effectively.

4.8 Irrigation Water Management (see pp. 66-74 of Work Plan)

A. Major Activities and Progress

* Specialists:

Dr. David Gisselquist, Water Management Extension Specialist, completed his three-year assignment in December 1985. Dr. Roger C. Lazaro, Water Management Specialist, and Dr. Carlos Garces, Agricultural Engineer, each rendered six months service during this reporting period.

* Consultants:

The Work Plan called for two consultancies: i) Irrigation Scheduling in October and ii) Conjunctive Use of Surface and Groundwater in November. After screening more than twenty names, Dr. I. Wymore was selected to undertake the first consultancy, now scheduled for January 1986, and Dr. A. M. Michael is due in February to carry out the second.

* Local Support:

Only eighteen person months of consultancy services out of the thirty-five called for under the plan have been used. Cumbersome government regulations on recruitment of local consultants have made it impossible for the program to achieve the desired goal. Only those activities that had been initiated during the previous year were able to continue as follows:

Two local consultants for a total of 12 person months to work on the Annotated Bibliography for Irrigation and Water Management in Bangladesh; and

One local consultant for six person months assisting the Economics and Social Sciences Division on economic aspects of irrigation.

* Overseas Training:

- PhD study in USA
  One is on-going at Colorado State University.

- MS study in USA
  Two are on-going, one at North Dakota State University (this candidate transferred from Fresno State) and one at Colorado State University.

- MS study in TWC
  Two of three students at the Asian Institute of Technology completed their degrees and returned to Bangladesh (BARC and BARI). The other student received a diploma certificate and is also back at post (BRRI).

  Three are on-going at Central Luzon State University.

  Four are on-going at the University of the Philippines at Los Banos.

- Up to six months training in the USA or TWC
  Six courses were proposed for 1985-86. They have been identified and are scheduled for the second half of the fiscal year.

* International Conferences:

The proposed participant to the International Conference on Irrigation, Drainage and Flood Control at Reno, Nevada, USA was turned down by the Government. The alternative candidate did not receive his Government Order on time. Only the IWM Specialist was able to attend.

Two papers, prepared with assistance from the specialists, on 1) Animal Driven Pump Development (from BRRI) and 2) Pump Discharge Measuring Device (from BARI) were accepted for presentation at an IRRI workshop in October. Only the BRRI paper was presented by the Head of the Agricultural Engineering Division (also currently the Member-Director for Agricultural Engineering/Irrigation at BARC) with funding from IRRI-BRRI collaboration.

* Staff Travel:

A two-week trip for three persons to study irrigation systems in Sri Lanka has been postponed indefinitely.

* In-country Training:

Pump Irrigation in Bangladesh: A short awareness course has been cancelled.

A four-week course on Techniques for Use of Remote Sensing in Agricultural Research was held in July as scheduled with 28 participants.
A two-day course on Use of Remote Sensing in Agriculture for agricultural administrators was held in July as scheduled. There were 15 participants.

A Diagnostic Analysis Course (4 weeks) was postponed.

A course on Irrigation and Water Management for DAE personnel (two weeks) was postponed.

The first cycle of the professional development of the IWM staff at BARI's Agricultural Engineering Division ended with the completion of five mini research papers. One of the papers was accepted for publication in the Bangladesh Journal of Scientific Research and another for presentation in a workshop at IRRI. The rest will be presented at the Thursday Seminars at BARI. The second cycle began with exploratory tests at the BARI farm. This is preparatory to formulating a contract research project in the areas identified by the IWM program area for consideration by BARC at a later time.

Two papers, 1) Evaluation of Irrigation System Performance and 2) Monitoring Irrigated Crop Calendar as a System Management Tool for Extension Agents, were prepared by the Agricultural Engineer and IWM Specialist for the IDRC-sponsored Regional Training on Water Management to be held at BRRI in February 1986.

The IBM microcomputer at BARC was used for hands-on, informal training for BARC, BRRI and BARI IWM personnel. The database for the Roy computerized Irrigation Scheduling at BARI and BRRI headquarters was started by a member of staff based at BARC.

* Discussions/Seminars:

A two-day workshop on Low Water Use Cropping Patterns for Irrigated Agriculture was held in October for 50 participants.

The proceedings of the workshop on Improved Distribution Systems for Minor Irrigation held in July 1984 were published and distributed.

* Sabbaticals:

Two planned for this fiscal year have been cancelled for lack of applicants.

* Scholarships:

Three scholarships were awarded.

* Contract Research:

This line item has received great emphasis during the reporting period, as follows:

Monitoring and evaluation activities for eight on-going projects (titles compressed):

1) Soils & water management for crop production (S&I Division)
2) Problem soils (S&I Division)
3) Saline water and crop production (S&I Division)
4) Command area development (S&I Division)
5) Land use survey in irrigated areas (ESS Division)
6) Economic viability of DTW (ESS Division)
7) Cropping systems defined area at Jamalpur (Crops Division)
8) Survey of irrigation equipment (Ag. Eng. Division).

Three projects terminated during the period (titles compressed):

1) Micronutrients in irrigated and non-irrigated conditions (S&I Division)
2) Socio-economic studies in irrigated areas under BWDB (ESS Division)
3) Efficiency of bamboo tubewells (Crops Division).

Six new projects were funded (titles compressed):

1) Ergonomics, energy and performance of manual pumps (Ag. Eng. Division; funding under IDA)
2) Groundwater in Tangail area (Ag. Eng. Division; funding under IDA)
3) Economics of supplementary irrigation (ESS Division; funding under ARP-II)
4) History of irrigation in Comilla (ESS Division; funding under ARP-II)
5) Response to STW running dry (ESS Division; funding under ARP-II)
6) Economics of STW irrigation (ESS Division; funding under ARP-II).

Six projects were approved by the Technical Committee and are pending approval by the Finance Committee (titles compressed):

1) Groundwater at Bogra and Comilla areas (Ag. Eng. Division)
2) Role of reservoirs in IWM (Ag. Eng. Division)
3) Mechanization strategies in irrigation (Ag. Eng. Division)
4) Groundwater at Muktagacha (Ag. Eng. Division)
5) Groundwater - well spacing (Ag. Eng. Division)
6) Groundwater at Jessore (Ag. Eng. Division).

The following four projects were either not approved or returned for modification by the Technical Committee (titles compressed):

1) Animal draft power for irrigation (Ag. Eng. Division; rejected)
2) Expansion of saline water project (S&I Division; rejected)
3) Distribution of benefits in irrigated areas (ESS Division; returned for modifications)
4) Different management arrangements of irrigation equipment (ESS Division; returned for modifications).

* Commodities:

Several institutions received commodities during the period: BAU, BINA, BARI, BUET and BRRI.

The improvised auger-hole type hydraulic conductivity test apparatus for high water table conditions, patterned after that developed at the US Bureau of Reclamation, was developed and tested at the BARI headquarters farm and at the Coconut Research Farm in Barisal. Slight modifications are to be carried out. The development of an alternative set-up, for low water table conditions, is on the drawing board.

A list of workshop equipment to enable the BARI irrigation water management section to continue developing and testing flow measuring devices recommended in the measuring device consultancy report, was drawn up.

A list of foreign publications has been prepared and is now in the approval process.

A new equipment list, totalling about US $40,000 has been prepared, benefitting BINA, BRRI and BARI. The list will be submitted for approval in early January 1986.

B. Constraints and Action Required

* Approvals for project activities: Activities included in the Work Plan, and which therefore already have the approval of the Member-Director concerned, the BARC Chairman, the Winrock Supervisor/Adviser, and the concurrence of USAID, still have to undergo a time-consuming re-approval process which often results in postponement or cancellation of planned activities. This has been drawn to the attention of the relevant authorities.

* Contract Research approval process: The average approval period for projects under IWM is 14 months. There are indications that the process is beginning to move much faster.

* Fund release for Contract Research: This continues to be a universal complaint of Principal Investigators. Both the Council and Winrock have made considerable progress in tackling the issue. The real constraint seems to lie now with the participating institutes. The Council should move to help them overcome their constraints.

* Hiring of local consultants: Present government regulations have brought this activity almost completely to a stop. Several planned activities have been impaired as a result. The matter should be brought to the attention of the proper authorities if the Council feels that local consultants have a role to play in ARP-II.

* IWM manpower at BARC: This problem has been somewhat alleviated with the addition of the Appropriate Agriculture Technology Cell (AATC) personnel to assist with IWM program activities. However, some important research areas, such as Groundwater, need more qualified personnel within the Council.

4.9 Pest Management

* General Observations:

Implementation of the Pest Management Work Plan has been hampered by the departure of the Winrock Plant Pathology Specialist and the Denver Wildlife Center Vertebrate Pest Management Specialist within the first quarter of 1985-86. Both of these specialists initiated action to implement proposed programs prior to departure from post; lack of follow-up action has resulted in stagnation or cancellation of some programs. A replacement has been proposed for the VPM specialist and his anticipated arrival in the third quarter should revitalize this component of the program. No replacement is anticipated for the Plant Pathology Specialist.

4.9.1. Joint Entomology, Plant Pathology and Vertebrate Pest Management (see p. 76 of Work Plan)

A. Major Activities and Progress

* Workshops were held in July, September, October and November to review progress and prepare documentation for a national pest management plan. From 9th November to 1st December Dr. Marvin K. Harris worked with the Crop Protection Committee constituted by BARC to prepare a draft summary of the five year crop protection plan. This document provides a realistic assessment of pest problems, available technology, and research goals to achieve improved crop production through integreted pest management technology. After final review, a documentary report will be prepared for reference of BARC in developing research plans and programs.

  Additional inputs are required for special sections on pesticide toxicology, extension, biological control (including insect pathogens), and taxonomic support services.

* Documents prepared in conjunction with the crop protection planning process contain descriptions of the major crop pests in Bangladesh and their damage. These will provide the basic information for preparation of a guide to pest identification and damage assessment for use in Bangladesh pest management.

B. Constraints and Action Required

* The voluminous data compiled in preparation of the crop protection plan should be processed as soon as possible. This will require a greater input of technical and clerical time than is currently available among BARC and Winrock staff within their assigned responsibilities.

This constraint may be relieved by (1) reallocation of currently available staff time to concentrate on this task or (2) by obtaining additional assistance through local or expatriate consultants and clerical assistance for a period of three to six months.

C. Additional program items not included in original Work Plan:

* Funds should be allocated for reproduction of the Crop Protection Plan and for publication of A Guide to Pest Identification in Bangladesh.

4.9.2 Entomology (see pp. 76-78 of Work Plan)

* General Observations:

The work program for the period has proceeded according to plan except that an Integrated Pest Management training course has not been scheduled due to allowance restrictions for participants. The additional programs should be included in the plan for implementation this fiscal year. They are: (1) Staff travel tours to review lac and mango insect research programs in India; (2) staff travel to establish working contacts and collaborative research among regional jute research entomologists; and (3) Staff travel to observe and participate in the Texas IPM system field activities by research and extension entomologists.

A. Major Activities and Progress

* Research programming and development:

The entomological activities of the Division at BARI have been organized into six working sections or investigations:

(1) Fruits and Spices
(2) Storage Pests
(3) Vegetable Pests
(4) Field Crop Pests
(5) Insecticide Toxicology
(6) Insect Pathology and Biological Control.

Each investigation area is under the leadership of a PSO or SSO who is responsible for developing research programs, preparing experimental projects and reports and serves as the Division's representative for the Crop Production Task Force under his investigation area. The 10 SOs are assigned to assist the Principal Investigators in developing experiments to achieve program goals and have primary responsibility for day-to-day conduct of experiments, data processing and report preparation on the experiments. Regional Station personnel are assigned specific crop responsibilities in addition to the regional programs of the station.

This working plan has been developed on the basis of current sanctioned staff. Recognizing the inadequacy of current levels of staffing, and using the documents prepared for the National Crop Protection Research Plan, a staffing pattern with two CSOs, seven PSOs and 27 SSO/SOs has been drawn up for future development.

The 1985-86 rabi experimental programs were planned to address major problems limiting crop production with a minimal dependence on scheduled applications of

insecticides. Monitoring pest infestations and applications based on "best guess" damage thresholds has been incorporated into most of the experiments. An attempt was made to reduce the number of experiments commensurate with the staff and resources available in an effort to achieve quality and utility of results. This was vitiated to some extent due to demands by the Crop Task Force that additional pest problems be added.

The melon fly trapping research has provided information that promises to bring a breakthrough in the control of damage to sweet gourd, bittergourd and kakrul. In experiments to evaluate baits and trap numbers per unit area, the adult female fly population was reduced to such low densities that damage was nil. This technology, using indigenous materials (except for a small quantity of insecticide) is more readily available to cultivators than similar pheromone trapping and should effect more rapid control since females as well as males are lured to the poisoned bait.

Experiments to control mealybug with soil drench applications of a systemic insecticide have demonstrated total control of severely infested croton plants with a single application of 0.5 to 1.0 ml of a 40 per cent formulation of dimethoate in one liter of water. The insecticide solution was poured on the soil as a normal watering. Mealybug intoxication was evident within 24 hours. The experiment also demonstrated the feasibility and desirability of biological testing of experimental insecticides. One formulation of dimethoate was found to be inactive; this had been purchased for use in experimental trials by the Entomology Division at BARI. A second formulation was confirmed to be active and was the material used in subsequent experiments.

Monitoring of cabbage plots at Kashimpur BADC farm in November and December of 1985 confirmed the efficacy of monitoring, as reported in 1984-85, to establish the need for pesticide applications. Infestations fluctuated from 10 to 20 per cent in the pre-heading stage and natural control resulted in insignificant damage. Based on these results, treatments are restricted to infested heads only and curative applications are found to provide adequate control; thus only 10 to 20 per cent require treatment in contrast to 100 per cent under prophylactic schedules.

* Staff development:

Quantitatively, the staff strength of the Entomology Division, BARI, remains below the strength needed to accomplish the assigned tasks. In the past six months, one SSO has returned from the UK with an MSc degree and one SO has been recruited to fill the position of Lac Research Scientist at Chapainawabganj. During the same

period, one SSO and one SO have been deputed for graduate studies in the Philippines. Current active strength is 40 per cent of the sanctioned positions.

Regular staff meetings have been held on the first Saturday of each month to provide an opportunity to exchange information.

The Lac Research Entomologist was assigned responsibility for mango insect research at Chapainawabganj. He was assigned to Joydebpur for a period of three weeks for intensive training in mango insect identification. He proved to be an apt student and now has a good working knowledge of the subject. Instruction was also provided in proper insect collection methods, preservation and cataloguing.

Government approval was not given for the staff travel tour for the Toxicologist at BARI to visit the Pesticide Toxicology Laboratory at NCPC, the Philippines.

The Integrated Pest Management training course programmed for the reporting period has been postponed pending resolution of the problems regarding attendance allowances.

* Improving facilities for research:

Working drawings and a cost estimate for remodelling and renovation of space assigned to the Entomology Division have been prepared by the Engineering Division and approved for implementation. Release of funds allocated under ARP-II has been requested in order to call for bids.

The Insectary/Screenhouse facility for Entomology and Plant Pathology has been designed and specifications and cost estimates prepared by the BARI Engineering Division. The first estimates were over budget and are being revised. When this is done, plans will be submitted to Winrock and USAID for approval. Saran screening material for this facility was requested but could not be ordered since it falls under a government ban on import of synthetic fabrics. Saran's qualities of mesh size, light transmission, resistance to deterioration in sunlight and lack of insecticidal properties are not considered. No similar product is available in Bangladesh.

The land allocated to the Entomology Division for research plots at Joydebpur has been improved with the addition of sand procured with PL-480 funds. This has resulted in improved research plots for rabi 1985-86. Some areas require additional improvements and have been specifically identified for further attention.

A list of equipment has been prepared and submitted to BARC for processing and ordering through Winrock International. This, plus those items ordered previously, will provide the basic items needed for the Entomology Division at BARI, Joydebpur to do a credible job of research at the headquarters. Additional items are needed at the regional stations and transport continues to be a limiting factor for off-station research, survey and monitoring.

* Technology transfer to the cultivator:

Appropriate technology for outreach activities is emerging with the melon fly research and it is anticipated that it will be available for on-farm trials in kharif 1986.

Emerging technology to support substitution of curative sprays to infected plants only in lieu of prophylactic schedules of insecticide application for diamondback moth and cut worm control in cabbage should be available for farm trials in rabi 1986-87.

B. Constraints and Action Required

* Staffing continues to pose a major obstacle to pest management research. Both qualitative and quantitative improvement is needed. New recruits will most likely require a period of in-service training under the tutelage of experienced researchers, or postgraduate work, in order to gain experience to do acceptable research. This in turn diminishes the number of researchers available on a full-time basis to accomplish necessary research. It would be desirable to plan for additional staffing to counteract this cycle of deficiencies.

* Attention is called once more to the need for mobility of staff at headquarters as well as the regional stations to permit off-station surveys and pest monitoring trials on farmers' fields. A reliable four-wheel vehicle at headquarters and small pickup trucks or at least a motorcycle are needed at the regional stations.

* A general constraint for field plot research work at BARI, Joydebpur is the failure to provide timely field preparation and irrigation. Consideration should be given to increasing the capability of the Farm Service Division to provide services as and when needed.

4.9.3 Plant Pathology (see pp. 83-89 of Work Plan)

A. Major Activities and Progress

* Specialist:

The Plant Pathology Specialist completed his assignment and departed post on 19th August 1985.

* Consultants:

A consultancy on meristem-tip culture of bananas took place in August-September. Ms. Alice Woods completed training on this topic and made a survey of plantations for banana diseases.

The local consultancies on seed technology, banana diseases and a plant disease index have all been held up due to government regulations concerning the employment of local consultants.

* Overseas Training:

Support continued for one MS degree candidate studying at the University of the Philippines, Los Banos.

The Ministry of Agriculture refused permission for a BARI plant pathologist to go to Cornell University for a three-month training course on the taxonomy of plant pathogenic nematodes.

Permission was also refused for the planned three-month training of a plant pathologist on the diseases of coconut palms which was to have taken place at the Philippines Coconut Authority.

The three-month training at the Indian Agricultural Research Institute in techniques of plant disease herbaria has been delayed pending Indian Government clearance.

* In-Country Training:

Support continued for four MSc candidates, one studying Plant Pathology, the other three Plant Breeding.

* Commodities:

An equipment list has been drawn up and submitted to BARC for funding.

* Construction:

Plans are under way for construction of the Insectary/ Screenhouse for Entomology and Plant Pathology, as described in the Entomology section of this report.

ANNEX - I

Decisions taken at the Project Advisory Committee Meeting on 30 June, 1985 on the 44 Recommendations of the 1985 External Evaluation of ARP-II (USAID).

Recommendations

1. BARC/IADS* and USAID should review the fiscal situation, set targets for scientific/administrative accomplishments and budget, and self-consciously use the annual work and financial plan progress to allocate resources to various program areas.

   Revisions/Comments

   Agreed. It should be noted that IPSU is no longer relevant to Phase-II (USAID) Project.

2. GOB/BARC should remove the above constraints and establish an effective Training Division at BARC as expeditiously as possible. The Team also recommends that both IADS and USAID use resources at their command to assure execution of the manpower development program.

   Revisions/Comments

   Agreed.

3. While the World Bank is financing additional construction, BARC should consider renting temporary office space.

   Revisions/Comments

   USAID will look into the possibility of diverting $ 40,000/- for minor construction for office accommodation.

4. BARC/IADS and USAID should review the maintenance policy under ARP-II, determine whether it is causing under-utilization of AID-procured equipment, and set a policy accordingly.

   Revisions/Comments

   Agreed. The USAID ARP-II project should take care of installation and maintenance of equipment procured under the project during the project period.

5. BARC, based on priorities for research programs established in NARP and other available sources, should make an indicative allocation of available contract research funds to the various program areas, holding some portion in reserve.

* Now Winrock

Revisions/Comments

Agreed.

6. BARC should advertise the availability of contract research resources and invite proposals based on the prioritized research programs.

Revisions/Comments

To be deleted.

7. BARC should re-establish technical committees for each program area (the Team understands that this is now being done informally, but to be really effective, and so the research system can understand what is going on, the arrangement should be formalized) and these committees should meet quarterly.

Revisions/Comments

Agreed.

8. BARC should involve IADS expertise, along with local expertise, in technical review of proposals.

Revisions/Comments

To be deleted as it is being done already.

9. BARC should consider simplification of the management of approved contract research projects as suggested elsewhere in this report (see section VI).

Revisions/Comments

Agreed; this will require simplification of the Contract Research Manual.

10. BARC should ensure that its contract research project monitoring and evaluation responsibilities are carried out.

Revisions/Comments

System is in operation but needs strengthening.

11. BARC should ensure that new contract research funds from the World Bank and other donors are administered using uniform proposal approval, monitoring, and evaluation procedures, with IADS Specialist assistance when necessary.

Revisions/Comments

Agreed.

12. BARC should assure that the results coming out of contract research are appropriately utilized in the research system and particularly in the extension system.

Revisions/Comments

Agreed.

13. BARC should manage the program on an annual rather than a quarterly basis, purely for simplification; more financial and monitoring responsibility should be shifted to the administrators of the institutes and universities, and additional incentives should be provided to PIs to increase competition for awards, and then require commensurate substantive inputs from the PI into the project. It is recognized that annual financial monitoring will not be sufficient but AID/BARC/IADS should do some creative thinking to simplify procedures now in force.

Revisions/Comments

To be deleted as impracticable.

14. BARC/IADS should carry out a systematic study of the response of farmers to improved technologies developed at CSR sites and regional stations. Specially, researchers should look at such issues as: how much farmers know about new technologies, their information sources, their evaluation of various technologies, constraints to adoption, adoption rates, and measurable consequences of adoption. This study should compare villages close to and distant from CSR sites. Promising sites for these studies include Kalikapur in Ishurdi, which has fairly active researcher-farmer and research-extension linkages with surrounding villages, Jamalpur or Hathazari sites where there have been less active outreach efforts, and a set of villages in some area where there is no CSR site or regional station.

Revisions/Comments

Agreed.

15. Publications covering all aspects of production of a particular crop should be prepared as research results permit. This will require scientists in crops, soils, entomology, plant pathology, irrigation, and economics to pool their knowledge and make recommendations useful to extension workers and Bangladeshi farmers.

Revisions/Comments

Agreed.

16. BARC should carry out a solid manpower analysis of the research system and develop a strong training program and personnel policy to address recognized needs.

Revisions/Comments

Agreed.

17. If USAID and BARC are interested in increasing the effectiveness of FSR site research and the quality and relevance of regional station research, they should extend the Associate Production Agronomist positions through the life of the project.

Revisions/Comments

Agreed as revised: "If USAID and BARC are interested in increasing the effectiveness of FSR site research and the quality and relevance of regional station research, they should extend the Associate Specialist positions through the life of the project."

18. BARC/IADS should document several cases of successful transfer of improved technology and see that this information reaches the hands of appropriate administrators and scientists within the system.

Revisions/Comments

Agreed.

19. IADS and BARC should ensure that BARC Member-Directors and program area staff are trained in these relevant research management skills (i.e., annual work plan and financial plan; progress reports) by participating fully in document preparation and evaluation of progress.

Revisions/Comments

Not relevant; to be deleted.

20. Given inadequate operating funds for an effective agricultural research system USAID should either continue to provide funds under direct project assistance or Title III funds should be provided through BARC.

Revisions/Comments

Agreed.

21. Every GOB organization in the channel of approvals for new research projects - the institutes, BARC, MOA, the Planning Commission, and the Ministry of Finance - should give careful attention during the approval process to the balance in project budget between personnel and operating costs.

It is the feeling of the Team that additional senior scientific and administrative staff are needed to support each BARC Member-Director and to gradually take over many of the duties now being performed by IADS Specialists. These administrative and scientific professionals should be able to provide continuity during changes in Member-Director staffing.

Revisions/Comments

Agreed.

22. There should be a manpower analysis of BARC itself, to determine what personnel at which levels of training are necessary to effectively accomplish duties assigned to BARC. The GOB should then establish and fill the needed positions and provide associated salaries and operating expenses.

Revisions/Comments

Agreed.

23. BARC, USAID, and other major donors (e.g., World Bank) should have frank discussions about the adequacy of present contract research procedures (as presented in the Contract Research Manual) and agree on necessary adjustments.

Revisions/Comments

To be deleted as duplication of no.9.

24. This evaluation leads the Team to conclude that the objectives (proposed outputs) of the project were appropriate as originally conceived, are still valid for building a national agricultural research system, and are only partially accomplished. USAID should continue to support these objectives until the bulk of the outputs have been satisfactorily achieved.

Revisions/Comments

Agreed.

25. The Team agrees with the draft proposal's emphasis on decentralization of technical assistance to regional stations and CSR sites, and with the emphasis on full development of the farming systems research activities. To ensure that both of these objectives are met, the Associate Production Agronomists working at the BARI regional research stations should be retained, but should expand their attention to work in support of all agricultural research institutes active in the region. Furthermore, they should work closely with the Mobile Farming Systems Team.

Revisions/Comments

Agreed as revised: "The Team agrees with the draft proposal's emphasis on technical assistance to regional stations and with the emphasis on full development of the farming systems research activities. To ensure that both of these objectives are met, the Associate Specialists working at the BARI regional stations should be retained, but should expand their attention to work in support of all agricultural research institutes active in the region."

26. The proposed extension should provide technical assistance to the core disciplines of Crops and Soils Management to encourage basic research (e.g., development of new varieties) that will lead to new technologies for testing at FSR sites.

The Team strongly endorses proposed support for operating expenses and believes that USAID should ensure, throughout the remaining life of the project, that lack of operating expenses does not constrain the productivity of the research system.

Revisions/Comments

Agreed as revised: "The proposed extension should provide technical assistance to the core disciplines to encourage research (e.g., development of new varieties) that will lead to new technologies for testing at FSR sites."

27. The Team endorses the proposed direct payment procedures for contract research.

Revisions/Comments

Agreed as revised: "The Team endorses the direct proposed payment procedures for contract research through BARC."

28. The Team has concluded that the overall performance of the IADS has been at a satisfactory level. For the Project Extension, it is recommended that a Host Government Contracting arrangement be continued between BARC/GOB and IADS.

Revisions/Comments

For the short one-year extension this is O.K. but for the extension for four years beyond 1987 further examination is needed. In this respect the performance of IADS should be evaluated as desired by the Government.

29. All CSR sites should conduct corresponding high input and low input trials, measure residual soil fertility effects and devise other approaches to reach both rich and poor farmers.

Revisions/Comments

Agreed.

30. Components which are essential to food production at the system level - water management, pest management, grain storage technology - must eventually be incorporated into trials at the CSR sites.

Revisions/Comments

Agreed.

31. The links between the Bangladesh agricultural research system and the international and regional centers should be increasingly shifted from IADS Specialists to Bangladesh scientists. Project funds should support visits of Bangladesh scientists to international centers and their participation in research conferences. Since GOB approval delays often limit timely travel of Bangladesh scientists, project funds should also be used to bring international center scientists to Bangladesh.

Revisions/Comments

Agreed as revised: "Project funds should support visits of Bangladesh scientists to international centers and their participation in research conferences. Since GOB approval delays often limit timely travel of Bangladesh scientists, project funds should also be used to bring international center scientists to Bangladesh."

32. ARP-II resources should be utilized to assist in this major undertaking. In the interim, BARC and IADS should take available livestock and forage research results and begin to incorporate them into the FSR program.

Revisions/Comments

Agreed.

33. Lower levels of fertilizer and other inputs should be researched, resulting in technology packages that will be more appropriate for Bangladesh farmers at the lower end of the resource availability scale.

Revisions/Comments

Not relevant; FSR will cover this.

34. There should be more CSR research on rhizobium inoculation trials with HYV grain legumes and sulfur and zinc inputs.

Revisions/Comments

Not relevant; FSR will cover this.

35. Field soil test-crop yield correlations should be carried out on selected farms at CSR sites.

Revisions/Comments

Not relevant; FSR will cover this.

36. BARC/IADS and USAID should analyze Water Management fund requirements for the life of the project and make reallocations to other programs as appropriate and feasible.

Revisions/Comments

Agreed.

37. The Vertebrate Pest Management program is working well and should be continued.

Revisions/Comments

Agreed as revised: "The Vertebrate Pest Management program is working well and should be continued until project assistance completion date or to the extent resources are available."

38. Required physical facilities and equipment for adequate pest management research (e.g., nethouse for plant pathology, screenhouse/insect rearing facility, and toxicology lab.) should be included in the next Annual Work and Financial Plan by BARC/IADS.

Revisions/Comments

Agreed.

39. The Horticulture research program should be strengthened, making use of the AVRDC linkage. A new seed production, distribution and promotion program should be established as part of it.

Revisions/Comments

Agreed.

40. Greater emphasis should be given to working with junior level scientists at research institutes and field stations emphasizing inter-disciplinary research and preparation of commodity oriented publications for extension and farmers.

Revisions/Comments

Agreed.

41. BARC and the associated institutes should initiate their National Farming Systems Research Program by adding livestock, horticulture, and other research components to the CSR sites in 1985-86.

Revisions/Comments

Agreed.

42. Give high priority to analysis of data previously collected and largely un-analyzed and preservation of data in a computerized data bank.

Focus their socio-economic analyses on major policy and developmental issues affecting the achievement of FYP goals and objectives (e.g., crop diversification, rural employment, markets, and risk management).

Revisions/Comments

Agreed.

43. Arrange regular fora at BARC and the institutes for interchange/discussion among agricultural scientists from all program areas and the agricultural economists.

Revisions/Comments

Agreed.

44. Institutionalize the research skills training at BAU and other training institutions.

Revisions/Comments

Agreed.