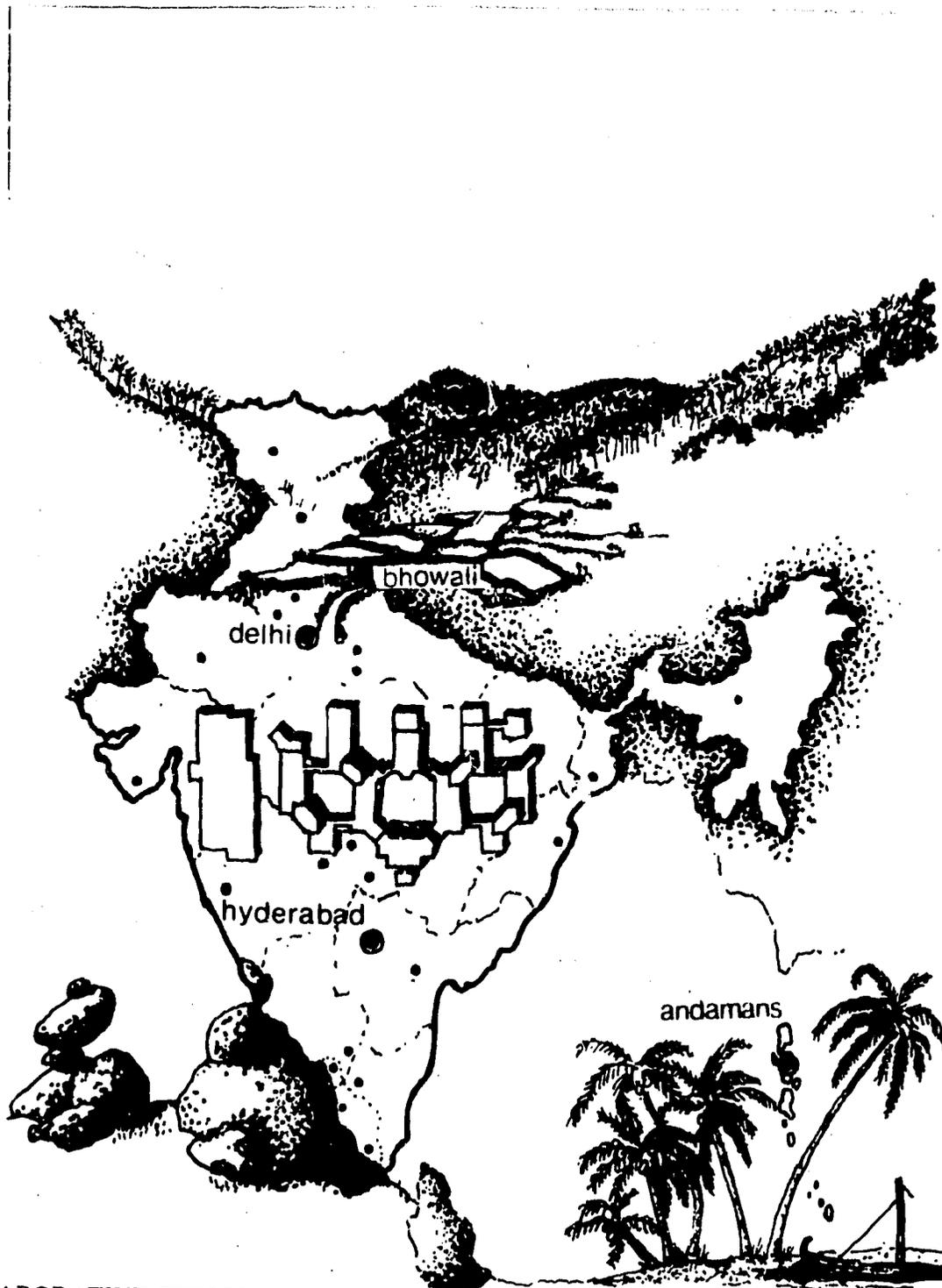


Plant Genetic Resources Project

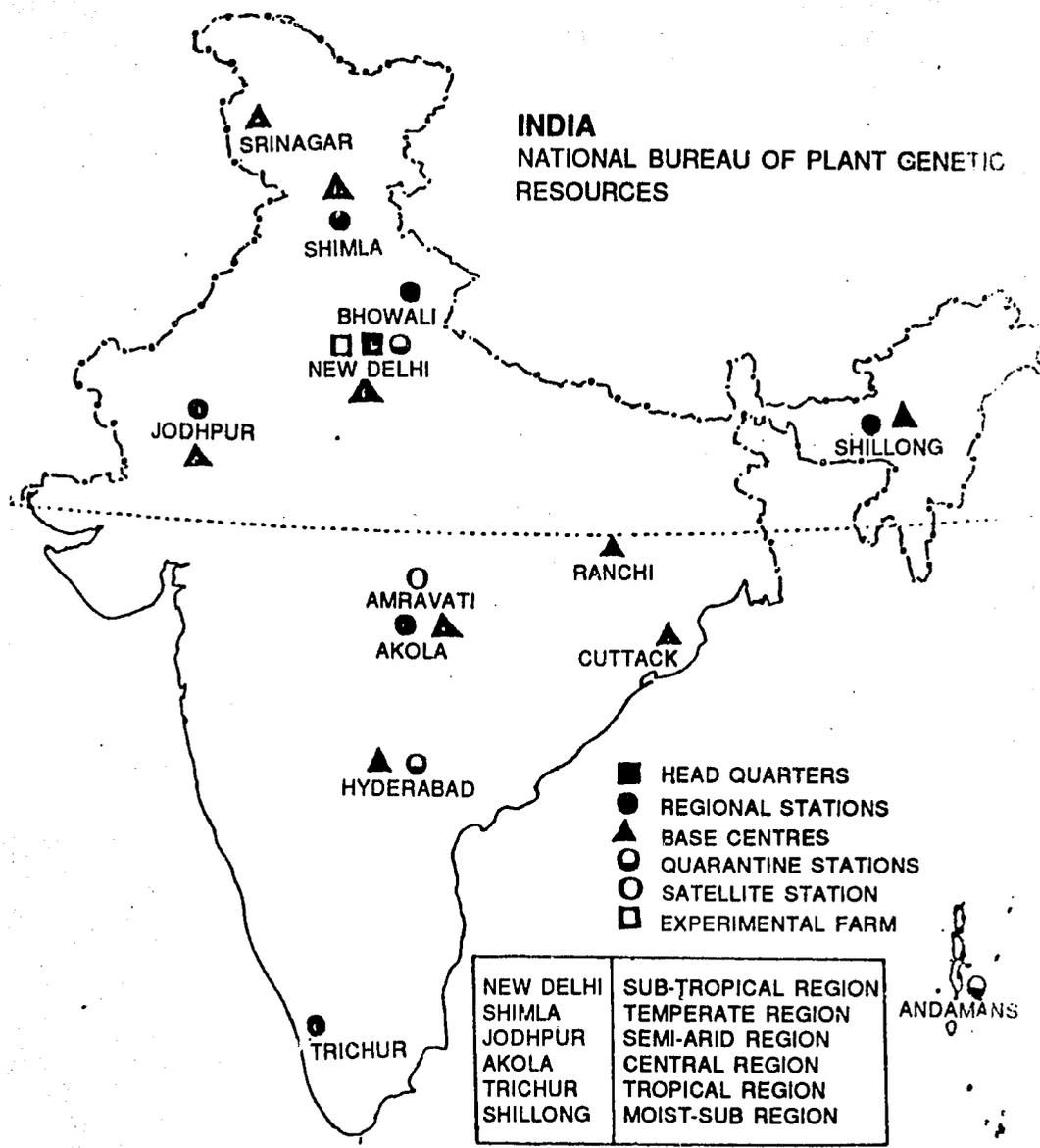
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A COLLABORATIVE EFFORT OF THE :

- National Bureau of Plant Genetic Resources of the Indian Council of Agricultural Research
- United States Agency for International Development
- Office of International Cooperation and Development of the United States Department of Agriculture
- Winrock International

INDIA
NATIONAL BUREAU OF PLANT GENETIC RESOURCES



LOCATION OF DIFFERENT STATIONS/CENTRES OF NBPGR

PD-ABE 908

PGR QUARTERLY REPORT (92-1 & 2)

JUNE 30, 1992

**Submitted to the
U.S. Agency for International Development
Mission to India**

**A Report of Contract 386-0513-C-00-2007-00
Plant Genetic Resources (PGR) Project**

by

Winrock International

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INTRODUCTION:

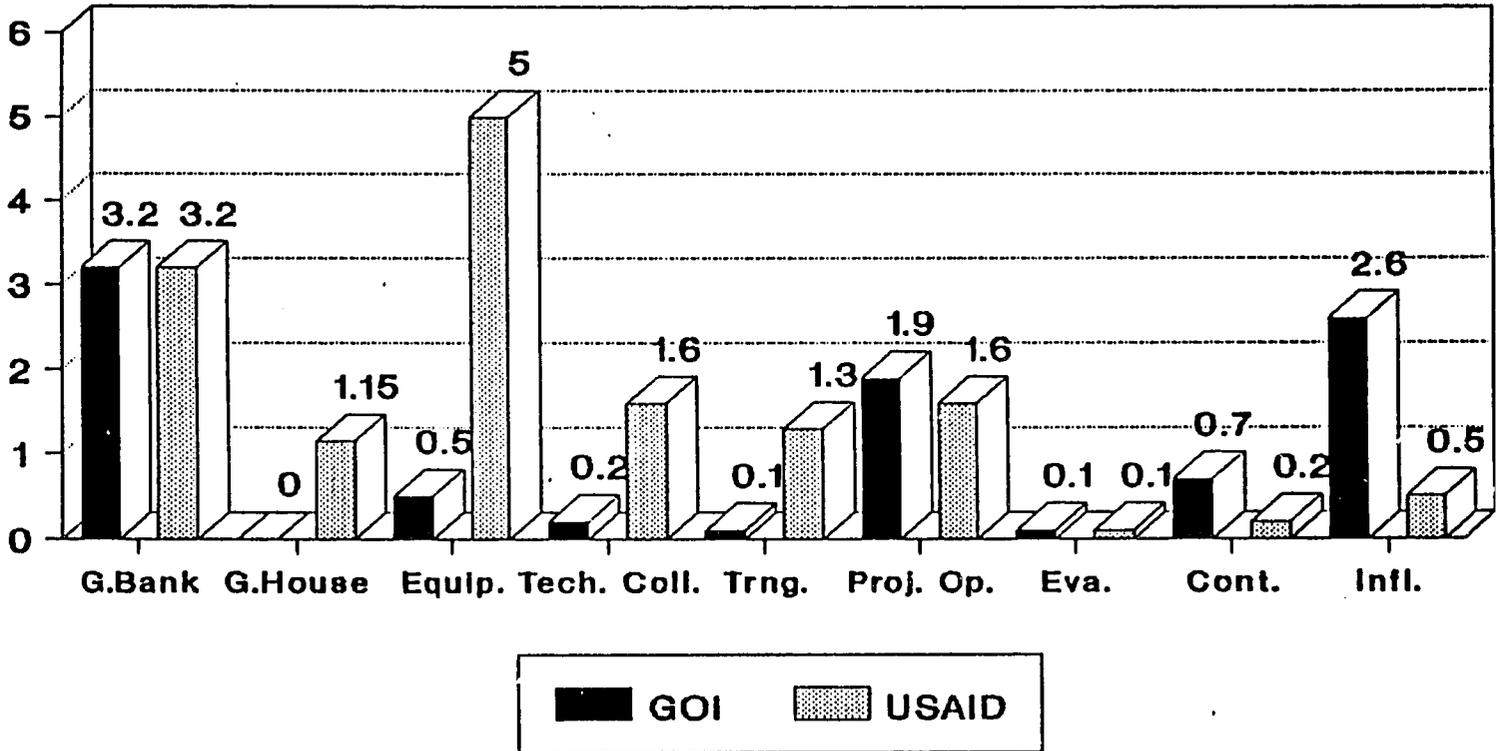
The Plant Genetic Resource (PGR) Project is a joint effort between the National Bureau of Plant Genetic Resources (NBPGR) of the Indian Council of Agricultural Research (ICAR), Office of International Cooperation and Development (OICD) of the United States Department of Agriculture (USDA), the United States Agency for International Development (USAID), and Winrock International. Winrock International has a contract with USAID to provide implementation and management support services for the PGR. The center piece of the PGR project is the construction of a modern gene bank and head quarters building at NBPGR in New Delhi. The gene bank will house up to 600,000 accessions in long term storage. The Government of India (GOI) and USAID are sharing the construction costs of the genebank. USAID will fund the fabrication/erection of four plant quarantine greenhouse facilities in different ecological regions of India as well as procurement of equipment for the new gene bank and selected equipment for regional stations and associated ICAR institutions. USAID is also providing funds for training, short-term technical assistance and collaborative research as well as funds for the management support services contract. The total funds committed to the PGR are US \$23,450 million. The U.S. commitment of \$14.65 million to the PGR is the largest biodiversity activity in which USAID is involved (Fig. 1).

PROJECT GOALS:

- * Assist India's efforts to fully develop a National Plant Germplasm Resources System to preserve its rich and diverse plant genetic resources.
- * Strengthen the physical, administrative, and technical resources of the NBPGR and associated institutions to manage a modern national germplasm system which sustains all aspects of exploration, collection, preservation, and exchange of plant germplasm.
- * Enhance India's regional and global capability in plant genetic resource conservation and use.

Fig.1

FUNDING for the PGR PROJECT (in millions of dollars)



GOI Funding \$M 9.30
USAID Funding \$M 14.65
Total Funding \$M 23.95

NATIONAL BUREAU OF PLANT GENETIC RESOURCES (NBPGR):

The NBPGR was established in 1976. It is headquartered in New Delhi on the campus of the Indian Agricultural Research Institute (IARI). NBPGR is organized into five divisions - plant exploration and collection, germplasm evaluation, germplasm conservation, germplasm exchange, and plant quarantine, (Annex 1). NBPGR operates through the headquarters and regional stations located in different agro-climatic zones throughout India (see inside front cover). Eleven base centers conduct work on plant exploration and collections and two sites serve as plant quarantine stations.

As of March 31, 1992 a total of 154,964 accessions of germplasm were in long term storage modules at the NBPGR center in Delhi (Annex 2). Working collections of germplasm are maintained at ICAR crop-based institutes, State Agricultural Universities, and All India Crop Improvement Projects throughout the country (see inside back cover).

DEVELOPMENT AND DESIGN PHASE: 1986 - 1988

In 1984 the Indo-U.S. Subcommittee on Agriculture selected plant genetic resource conservation as a top priority area for joint collaboration between Indian and U.S. scientists. The GOI formally requested USAID to initiate the development of project papers in September of 1985. Two design teams from the United States visited India in 1986 and 1987 to work jointly with Indian scientists in drawing up project proposal documents. The project grant agreement between the GOI and the United States was signed on August 31, 1988.

The design and pre-project planning activities were carried out under the PGR sub-project in the USAID funded Agricultural Research Project (ARP) which was managed by Winrock International through a Management Support Services (MSS) contract. U.S. scientists visited India to draw up plans for the genebank, the quarantine facilities, and for the equipment which should be procured. Indian scientists visited the United States to observe the U.S. National Germplasm System and to plan program activities (Fig. 2).

FIG. 2 ACTIVITIES DURING THE DEVELOPMENT AND DESIGN PHASE : 1986-1988

ACTIVITY	1986				1987				1988			
	(quarters)				(quarters)				(quarters)			
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
MANAGEMENT / ACTIVITY :												
ARP/WI pre-project	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
GOI/USAID sign grant											X	
DESIGN : INDIA												
ICAR/USAID discussion	XXX											
Kahn/Roos/Skrdla (Overall)				X								
Pino/Jones/Mau (Overall)					XXX							
Stanwood (Cryopreservation)									X			
Mowder (Automation)									X			
Gamborg (Tissue Culture)												X
DESIGN / STUDY : U.S.A.												
P.P. Khanna (Conservation)										X		
P.P. Singh (Conservation)										X		
M.W. Kopper (Evaluation)											X	
T.A. Thomas (Evaluation)											X	
V.K. Mathur (Quarantine)												X
K.S. Varaprasad (Quarantine)												X

ARP/WI - Agricultural Research Project/Winrock International
 GOI/USAID - Government of India/U.S. Agency for International Development

- 4 -

ACTIVITIES DURING THE PERIOD: 1989 - 1991

In order to establish long term linkages between the National Plant Germplasm System of USDA and the NBPGR, in February 1990 a Participating Agency Service Agreement (PASA) was signed. OICD/USDA consultants assisted in the development of the plans for long-term institutional collaboration in the areas of technical assistance, training, collaborative research, and joint exploration. Collaborative research areas selected included tissue culture, conservation techniques, DNA finger printing, biosystematics and cryopreservation.

During this period land was obtained on the campus of IARI for the genebank and the design and layout were approved. The conceptual designs were prepared for the construction/fabrication of plant quarantine greenhouses at four locations. Local equipment worth Rs.53.15 was procured for NBPGR and several associated centers. Training and study tours in the U.S. were arranged for twenty three scientists (Fig. 3).

PROPOSED ACTIVITIES DURING THE PERIOD : 1992 -1994

On January 1, 1992 a Management Support Services (MSS) contract for the PGR was initiated with Winrock to arrange for the fabrication/erection of quarantine greenhouses at four sites, to procure foreign and locally manufactured "deemed export" equipment as well as to organize special training activities. The MSS contract will also supplement, where appropriate, project activities related to the construction of the genebank and the execution of technical collaboration. Timeliness for the major activities are shown in Fig. 4.

FIG. 3 ACTIVITIES DURING THE PERIOD : 1989 - 1991

ACTIVITY	1989				1990				1991			
	(quarters)				(quarters)				(quarters)			
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
MANAGEMENT :												
ARP/WI	XXX	XXX	XXX	XXX	X							
PASA/USDA					XX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
GENE BANK :												
Chang/Eberhart	X											
Eberhart/Chang				X								
Dietz				X								
Design development (CPWD)									XXX	XXX	XXX	XXX
GREENHOUSES :												
Mears			X									
Kahn							X					
Kahn								X				
Mears									X			
EQUIPMENT :												
Stanwood	X											
TRAINING / COLLABORATION :												
R.S. Rana (Management)	X											
Ram Nath (Management)	X											
Neeta Singh (Tech. Training)				XX	XXX							
B.R. Verma (Tech. Training)				XX	X							
Deep Chand (Tech. Training)				XX	X							
B.D. Sharma (Conservation)						XX	X					
N.K. Gautam (Conservation)						XX	X					
D.L. Karchaloo (Tech. Training)							X					
I.P. Singh (Tech. Training)							X					
S.S. Naraynan (Germplasm/Cotton)								X				
K.C. Alexander (Germplasm/Sugarcane)								X				
N.R. Bhagat (Germplasm/Groundnut)								X				
D.S. Rathore (Germplasm/Potato)								X	X			
M.Kazim (Germplasm exchange)									X			
Bhag Mal (Management)									X			
J.B. Tomar (Exploration)											X	
D.C. Bhandari (Maintenance)											X	
B.D. Joshi (Maintenance)											X	
S.S. Duhoon (Exploration/Sunflower)											X	XX
J.N. Gupta (Exploration/Evaluation)											X	X
K.S. Negi (Evaluation/Documentation)											X	XX
Neelmani Dixit(Exploration/Conser.)											X	XX

ARP/WI - Agricultural Research Project/Winrock International
PASA/USDA - Participating Agency Service Agreement/US Department of Agriculture
CPWD - Central Public Works Department of the Government of India

FIG. 4 TIME LINE FOR ACTIVITIES DURING THE PERIOD : 1992 - 1994

ACTIVITY	PROJECT MANAGE- MENT	1992				1993				1994			
		(quarters)				(quarters)				(quarters)			
		1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
AGREEMENTS :													
PASA	USDA	XXX	XXX	X									
PASA extention	USDA			XX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	X	
MSS	WI	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
GENE BANK :													
Design development	CPWD	X											
Const. & bid documents	CPWD	XXX	X										
Approval of documents	NBPGR/AID		XX										
Invitation for bids	CPWD		XX	X									
Reveiw & approve bids	NBPGR/AID			XX									
Award contract	CPWD				X								
Construction	CPWD				XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	
Testing & commissioning	CPWD												XXX
GREENHOUSES :													
Prequalification	WI			XX									
RFP	WI			X	X								
Proforma invoice	CNTRCT/WI				X								
NMIC clearance	CNTRCT/WI				XX								
Fabrication/site prep	CNTRCT/WI					XXX	XXX						
Shipping/clear customs	CNTRCT/WI							XXX					
Erection & commissioning	CNTRCT/WI								XXX	XXX	XXX		
Training											XX		
EQUIPMENT :													
Tranche I	WI	XX	XXX	XXX	XXX	XXX	XXX	X					
Tranche II	WI			XXX	XXX	XXX	XXX	XXX	XXX				
Tranche III	WI				XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	
TRAINING/TECH.ASSIST :	USDA	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	X	
JOINT EXPLORATION :	USDA		X	XXX	XXX		XXX	XXX			XXX		
COLLABORATIVE RES. :	USDA			XXX	XXX	XXX	XXX	XXX	XXX	XXX			

USDA - U.S. Department of Agriculture
 WI - Winrock International
 CPWD - Central Public Works Department
 CNTRCT/WI - Contractor/Winrock International

PROJECT COMPONENTS:

GENE BANK:

Activities During the Period: The timeline prepared by CPWD for the construction of the gene bank is shown in Fig.5. Monthly meetings of the Coordination Committee were held regularly to review progress as per the planned timeliness. The CPWD completed the development of the working drawings for the genebank and headquarters building and prequalified potential contractors and prepared the tender documents. The CPWD and NBPGR presented construction plans to the local municipal authorities for the approval of a construction permit.

Plans for Next Quarter: The following activities are proposed to be completed during the next quarter:

- * Foundation stone laying ceremony conducted.
- * Approval of the tender documents by USAID and NBPGR.
- * Issuance of invitation to tenders by CPWD.
- * Review and approval of award of contract by CPWD, NBPGR, and USAID.
- * Award contract by CPWD.

QUARANTINE GREENHOUSE FACILITIES:

Activities During the Period: A time line was developed for the fabrication, erection, testing, and commissioning of the four quarantine facilities (Fig.6). Bidding documents were prepared to select a contractor to fabricate and construct the quarantine greenhouse facilities on a turnkey basis. Five companies responded to the prequalification advertisement. The Request For Proposal (RFP) was prepared for advertisement. Site visits were made to the NBPGR center in New Delhi and to Bhowali to access the needs for preparing the sites for construction. The New Delhi site is flat and easily accessible. The Bhowali site presents much more difficult challenges for the contractor. All materials for the quarantine facility must be manually carried approximately one kilometer down a steep narrow road to the office area, across a small bridge, and up a steep hill to the site.

Plans for Next Quarter: The following activities are proposed to be completed during the next quarter:

- * Evaluate and select companies which meet prequalification standards.
- * Send the request for proposal to companies which meet the prequalification standards.
- * Visit Hyderabad and Bhowali to collect additional information on the construction sites.
- * Collect information on the availability and quality of various greenhouse components made in India.
- * Develop a strategy for the import of appropriate components into India.

EQUIPMENT PROCUREMENT:

Activities During the Period: Time lines were developed for the procurement of three tranches of equipment (fig 7). Twenty three major steps are involved in the procurement process.

The Project Implementation Order (PIO) for Tranche I was issued February 12, 1992. Performance specifications and estimated costs for the eight types of equipment were prepared and the bidding process initiated. Details of the Tranche I equipment are given in table 1.

The PIO for Tranche II was issued June 17, 1992. Trace II has 36 items of equipment to procure (table 2). The process of finalizing performance specifications was initiated.

Plans for Next Quarter: The following activities are proposed to be completed during the next quarter:

Tranche I: (Table 3)

- * Review bids.
- * Develop proforma invoices.
- * Initiate the process of obtaining NMICs or Passbook clearance.

Tranche II:

- * Complete the performance specs and obtain cost estimates.

Tranche III:

- * Assist NBPGR to set priorities on the equipment to procure within the context of limited funds and some building dependent equipment which is essential for the new gene bank and headquarters building.

TABLE I - TRANCHE I EQUIPMENT

SER NO.	EQUIPMENT	NOS.	EST. UNIT COST	ACTUAL COST FOB	TOTAL COST FOB	EST.CIF COST (25%)	DELIVERY POINT (NBPGR)	IN-STALL
1	ULTRACENTRIFUGE	1	50,000	167,400	167,400	207,576	NEW DELHI	YES
		1	50,000	167,400	167,400	207,576	HYDERABAD	YES
2	MICRO-SPECTROPHOTOMETER	1	180,000	220,000	220,000	272,800	NEW DELHI	YES
3	AUTOMATIC GLASSWARE WASHER	4	28,000	7,250	29,000	35,960	NEW DELHI	NO
4	AUTOMATIC MOISTURE TESTER	19	38,000	2,174	41,306	51,219	NEW DELHI	NO
5	ELISA INSTRUMENTATION KIT	2	4,000	18,334	36,668	45,468	NEW DELHI	YES
		1	2,000	18,334	18,334	22,734	HYDERABAD	YES
6	PIPETTING MACHINE	2	5,600	2,257	4,514	5,997	NEW DELHI	NO
7	MECHANICAL HOMOGENIZER	2	13,000	7,652	15,304	18,977	NEW DELHI	NO
8	CONTINUOUS SEED BLOWER	11	77,000	7,160	78,760	97,662	NEW DELHI	NO
TOTALS		44	447,600		778,686	965,571		

TABLE 2 -- TRANCHE II EQUIPMENT

SER NO.	EQUIPMENT	NOS.	EST. UNIT COST	ACTUAL COST FOB	TOTAL COST FOB	EST. CIF COST (25%)	DELIVERY POINT (NBPCR)	IN-STALL
9	SEED DRYING CABINETS	25	200,000				NEW DELHI	NO
10	BAR CODE PRINTER AND SCANNER	1	15,000				NEW DELHI	NO
11	MICROSCOPE, TRINOCULAR	1	30,000				NEW DELHI	YES
12	FREEZE DRYER	1	20,000				NEW DELHI	YES
13	TEMPERATURE GRADIENT PLATE	1	12,000				NEW DELHI	YES
14	VACUUM HEAD SEED PLANTER	1	1,000				NEW DELHI	NO
15	SPECTROPHOTOMETER, DIODE ARRAY	1	36,300				NEW DELHI	YES
16	MICRO BALANCE	1	12,000				NEW DELHI	YES
17	PHOTO DOCUMENTATION SYSTEM	1	15,000				NEW DELHI	YES
18	MICROSCOPE, STEREO WITH CAMERA ATTACHMENTS	1	100,000				NEW DELHI	YES
19	MICROSCOPE, COMPOUND, TRINOCULAR	1	6,000				NEW DELHI	YES
20	FIELD DATA RECORDER	23	161,000				NEW DELHI	YES
21	CAMERA	14	28,000				NEW DELHI	NO
22	DEEP FREEZER	3	27,000				NEW DELHI	YES
23	SPECTROPHOTOMETER	2	25,000				NEW DELHI	YES
24	DENSITY GRADIENT FRACTIONATOR	2	36,000				NEW DELHI	YES
25	BALANCE, ANALYTICAL	2	5,000				BHOWALI	NO
26	ELISA KIT	1	22,734				NEW DELHI	YES
27	NITROCELLULOSE MEMBRANE	2	3,000				NEW DELHI	NO
28	LABORATORY JACKS	2	800				NEW DELHI	NO
29	MAGNETIC STIRRING BARS	2	1,000				NEW DELHI	NO
30	DIALYSIS TUBES	2	1,600				NEW DELHI	NO
31	PARAFILM WITH DISPENSER	2	900				NEW DELHI	NO
32	MULTI MAGNESTIR	2	3,000				NEW DELHI	NO
33	STIRRER, MICRO-PROCESSOR CONTROLLED	2	1,400				NEW DELHI	NO
34	DIGITAL APPENDORF PIPETTORS	1	2,500				NEW DELHI	NO
35	ELECTROPHORESIS SYSTEM	2	20,000				NEW DELHI	YES
36	MB - DISPENSER	12	9,000				NEW DELHI	NO
37	MULTIGAS DETECTOR	10	15,000				NEW DELHI	NO
38	AMBIENT AIR ANALYSER	1	5,000				NEW DELHI	YES
39	DIGITAL POLARIMETER	1	16,000				NEW DELHI	YES
40	GAS CHROMATOGRAPH	1	27,000				NEW DELHI	YES
41	ROTARY EVAPORATOR	1	3,400				NEW DELHI	YES
42	SCANNING CALORIMETER	1	34,000				NEW DELHI	YES
43	FREEZER, PROGRAMMABLE	1	26,000				NEW DELHI	YES
44	INCUBATOR SHAKER, GYRATORY	1	18,000				NEW DELHI	YES
TOTALS		128	939,634			1,456,432		

THE EXPERIENCE IN THE TRANCHE I EQUIPMENT COSTS INDICATE THAT THE DIFFERENCE BETWEEN THE ESTIMATED COST AND ACTUAL FOB COST PLUS AN ESTIMATED 24% TO COVER FREIGHT, INSURANCE, TRANSHIPMENT, CUSTOMS CLEARANCE AND INLAND TRANSPORTATION IS NEARLY 100 PERCENT. IT MAY THEREFORE BE SAFE TO ASSUME THAT THE ESTIMATED COST FOR TRANCHE TWO WHICH IS \$939,634 TO WORK OUT ESTIMATED COST PLUS 25% TO PROVIDE FOR ESCALATION AND 24% TO COVER TRANSPORTATION.

TABLE 3 - TRANCHE I EQUIPMENT ESTIMATED ACTIVITY IN QUARTERS JULY-DEC. 199

SER NO.	EQUIPMENT	NOS.	EST.CIF COST	REVIEW BIDS (1992)	RECEIVE PROFORMA (1992)	PROCESS NMIC PASSBOOK	SIGN CONTRACTS
1	ULTRACENTRIFUGE	1	207,576.00		SEPT 20	OCT	OCT-NOV
		1	207,576.00		SEPT 20	OCT	OCT-NOV
2	MICROSPECTROPHOTOMETER	1	272,800.00	OCT-NOV			
3	AUTOMATIC GLASSWARE WASHER	4	35,960.00		SEPT 20	OCT	OCT-NOV
4	AUTOMATIC MOISTURE TESTER	19	51,219.44		SEPT 20	OCT	OCT-NOV
5	ELISA INSTRUMENTATION KIT	2	45,468.32	SEPT			
		1	22,734.16	SEPT			
		1	22,734.16	SEPT			
6	PIPETTING MACHINE	2	5,597.36		SEPT 20	OCT	OCT-NOV
7	MECHANICAL HOMOGENIZER	2	18,976.96		SEPT 15	OCT	OCT-NOV
8	CONTINUOUS SEED BLOWER	11	97,662.40		SEPT 20	OCT	OCT-NOV

14a

TRAINING AND TECHNICAL ASSISTANCE:

Activities During the Period: Nine scientists from six different regional stations/institutions and NBPGR headquarters participated in professional development programs in the U.S (Table 2). A total of 6.75 person months of training time was conducted.

TABLE 4 - PROFESSIONAL DEVELOPMENT TRAINING CONDUCTED IN THE U.S.A. DURING THE PERIOD JANUARY 1 TO JUNE 30, 1992

Name	Institution	Dep. Date	P.M.	Area studied
Dr.A. Seetharam	IIHR, Bangalore	Apr. 4	3/4	Evaluation, documentation & maintenance - Sm. Millets
Dr.N.Vyaya Nair	Coimbatore	Apr. 4	3/4	- do -
Dr.D.P. Patel	NBPGR, Akola	Apr. 4	3/4	- do - Pulses and Oilseeds
Mr.S.S. Malik	NBPGR, Cuttack	Apr. 4	3/4	- do - Paddy
Dr.S.D. Daijaide	IIHR, Bangalore	Jun. 6	3/4	Horticultural Plants
Dr.Mathura Rai	NBPGR, Delhi	Jun. 6	3/4	Tropical Fruits
Dr.Bhaj Singh	NBPGR, Delhi	Jun. 6	3/4	Evaluation & Documentation
Dr.Sheo Raj	CICR, Nagpur	Jun. 6	3/4	Quarantine
Dr.V.K.Srivastava	NBPGR, Delhi	Jun. 6	3/4	Chemical Evaluation

P.M. = person months

A team of two scientists from the U.S. (Mr. Jimmie Mowder and Dr. Edward M. Bird) spent two weeks in India reviewing the Database Management and Automation needs of the National Plant Germplasm System.

Plans for Next Quarter: The following activities are proposed to be completed during the next quarter:

- * Sending of 12 scientists to the U.S. for approximately 30 person months of training.
- * Visit of one consultant to India.

JOINT EXPLORATION:

Activities During the Period: A joint exploration was conducted in the U.S. for the collection of wild sunflower material. Over 150 accessions of germplasm were collected.

Plans for Next Quarter: The following activities are proposed to be completed during th next quarter:

- * collection of jojoba and oil bearing halophytes adapted to saline affected soil conditions in southern California.

COLLABORATIVE RESEARCH:

Activities During the Period: Proposals were developed and processed for collaborative research in the following four areas:

- * Evaluating genetic stability of in vitro conserved Musa germplasm using PCR and RAPDs techniques (USDA/ARS, Griffin, Georgia)
- * Biosystematic studies on cultivated eggplant and its wild relatives using modern biochemical and molecular techniques (University of California, Davis)
- * Physiological and chemical attributes of deterioration in soybean seeds kept in storage (NSSL, Fort Collins)
- * Efficient detection of viruses and therapeutic treatments relevant to Citrus and Prunus budwoods (USDA/ARS, Beltsville)

Plans for Next Quarter: The following activities are proposed to be completed during the next quarter:

- * Implementation of the above collaborative research programs.

SYSTEMS DEVELOPMENT:

Activities During the Period: Jimmie D. Mowder and Edward M. Bird reviewed the "Automation Needs for the NBPGR". They reported that progress had been made in the procurement of some equipment and training and that it was now time to give attention to the development of the overall system. They prepared a list of equipment and personnel which will be needed to develop a modern data management system.

Plans for Next Quarter: The following activities are proposed to be completed during the next quarter:

- * The leader of the data processing unit will participate in a data management training program at USDA/ARS, Beltsville.
- * Plans will be further developed and refined for the procurement of computer equipment and accessories as well as staffing requirements.

FINANCIAL PROGRESS:

Activities During the Period: The status of project finances for the MSS are shown in Tables 5 and 6.

MANAGEMENT OPERATIONS:

Activities During the Period: The Indian Coordinator began his assignment in India on February 4, 1992. The office staff in Delhi and Washington began working part time on the project at that time but shared the work load with closing out of the Agricultural Research Project. Considerable savings in time and money for the project was realized due to the office, staff, and office procedures already being in place. Some surplus computers were obtained from USAID and plans were made for the procurement of additional office equipment to improve communications, word processing and data management.

Plans for Next Quarter: The following activities are proposed to be completed during the next quarter:

- * Arrange for a long-term lease for the office and renovate as needed.
- * Arrange for professional development opportunities for the staff in the use of computers.

**Table 5 – India Plant Genetic Resources (PGR) Project
 Contract No: 386-0513-C-00-2007-00
 MSS Contract Ependiture as of June 30, 1992**

Line Item	Budget Amount	Apr-Jun Qtr	Inception To Date	Variance Budgeted Vs Inception
I. Salaries	502,773	28,214	38,806	463,967
II. Fringe benefits	165,353	8,487	12,046	153,307
III. Allowances	113,633	38,765	41,335	72,298
IV. Training	144,301	0	0	144,301
V. Travel	69,477	4,652	8,830	60,647
VI. Per Diem	55,142	1,760	3,407	51,735
VII. Transportation	24,207	7,061	9,756	14,451
VIII. Non-Exp. Equip.	4,000,000	7,101	15,815	3,984,185
IX. Other Direct Costs	246,111	10,261	11,089	235,022
X. Subcontracts	700,000	0	0	700,000
XI. Indirect Costs	798,186	28,371	38,832	759,354
Total Costs (\$)	6,819,183	134,672	179,916	6,639,267

Note: Of \$ 6,819,183 budgeted amount only \$ 3,070,000 committed as of June 30, 1992

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**Table 6 – India Plant Genetic Resources (PGR) Project
Total Project Expenditure as of June 30, 1992**

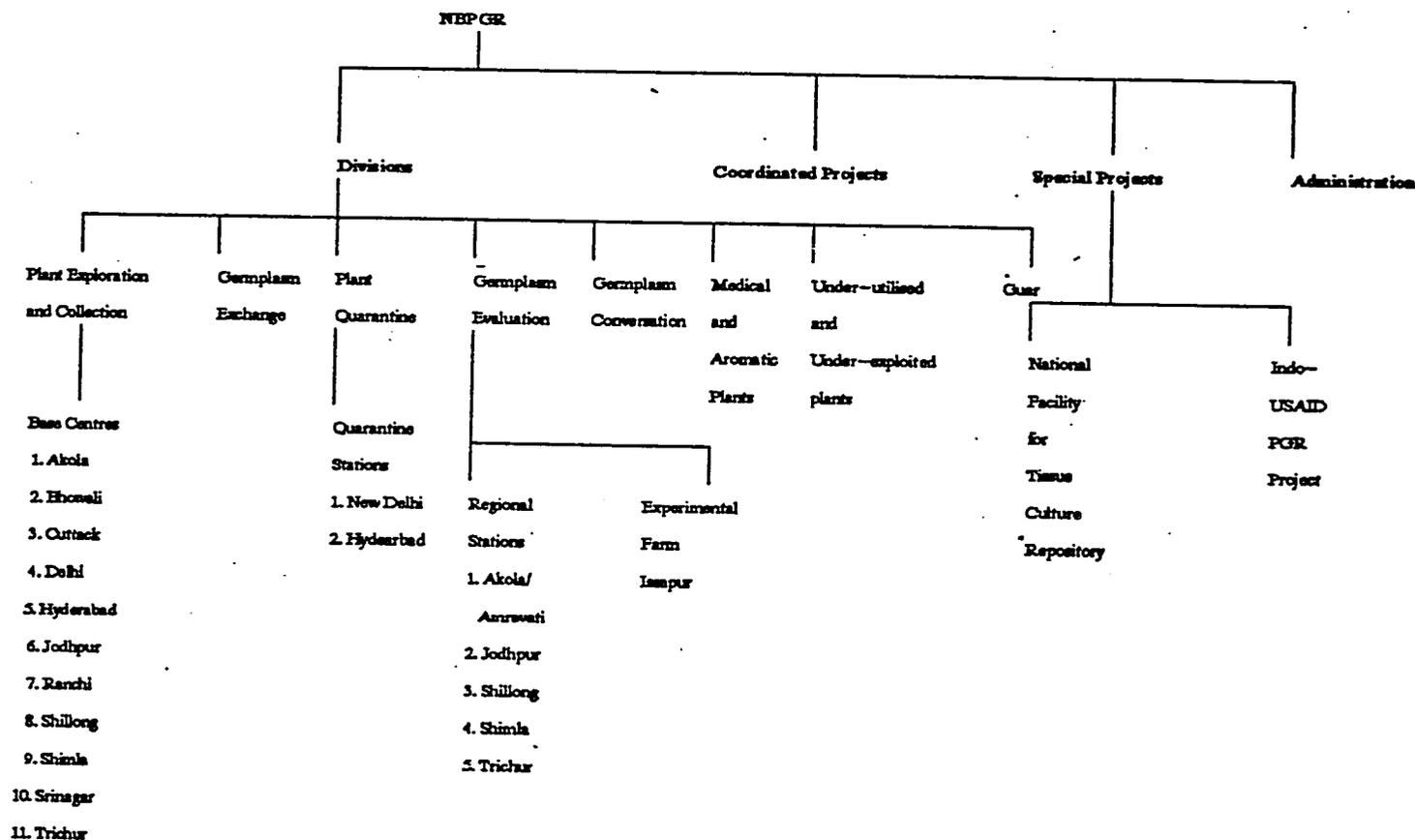
Element	Earmark	Committed	Cum. Exp. 3/31/92	Apr–Jun Qtr.	Total * 6/30/92
10 TA	806,685	806,685	399,297	43,500	442,797
20 Trng.	588,732	588,732	133,433	236,300	369,733
# MSS	100,000	100,000	0	0	0
30 IN–Count. Trng	110,000	110,000	4,121	506	4,627
40 Commod.					
MSS	1,800,000	1,800,000	8,714	7,101	15,815
LC	400,000	400,000	150,000	0	150,000
50 Const.					
MSS	600,000	600,000	0	0	0
LC	1,950,000	1,950,000	300,000	152,828	452,828
60 Other Direct Costs					
MSS	570,000	570,000	36,530	127,571	164,101
LC	130,000	100,000	0	0	0
70 Conting.	0	0	0	0	0
Total Costs (\$)	7,055,417	7,025,417	1,032,095	567,806	1,599,901

Note: * Figures include actual expenditure plus estimated accruals.
Components under the Winrock MSS Contract.

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ANNEX – 1 Organizational Chart of the NBPGR

NATIONAL BUREAU OF PLANT GENETIC RESOURCES ORGANISATIONAL SET UP

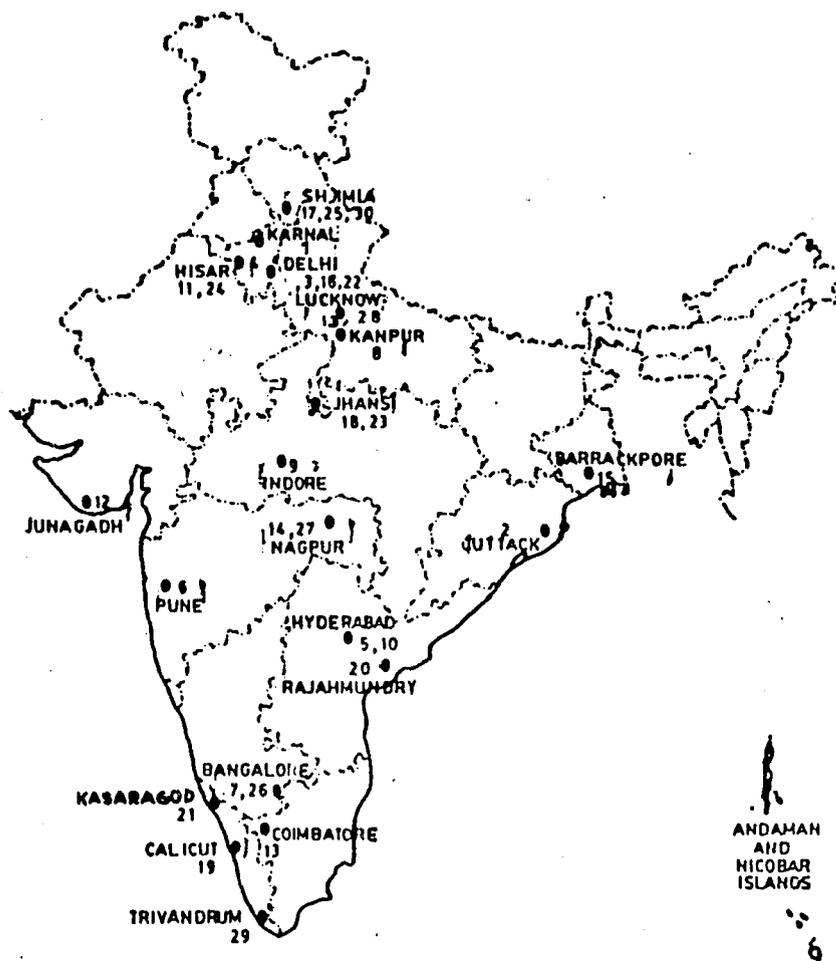


**ANNEX II – NUMBER OF GERMLASAM ACCESSIONS STORED
IN LONG TERM STORAGE**

BASE COLLECTIONS IN NATIONAL GENE BANK AT NBPGR	
GERMLASAM KEPT FOR LONG TERM STORAGE IN SEED REPOSITORY MAINTAINED AT -20 DEG. C	
Crop Groups	No. of Accessions
Cereals	43,014
Pulses	21,799
Millets & Minor millets	14,344
Oilseeds	13,463
Vegetables	5,081
Fibre Crops	3,212
Narcotics	790
M. & A.P.	653
Pseudocereals	152
Improved (Named) varieties	690
Voucher specimens of Exotics	20,760
Ref. samples of indigenous collection	31,006
Total	154,964

STATUS OF IN VITRO CONSERVATION PROGRAMME AT NFPTCR			
Crop	No. of accessions in culture	storage temp. deg. c	storage period (months)
Allium sativum	38	10	16
Allium spp.	9	10	12
Ipomoea batatas	205	25	12
Dioscorea spp.	28	25	12
Zingiber officinale	70	25	12
Curcuma spp.	3	25	8
Musa spp.	120	25	12
Citrus aurantifolium (Root culture)	1	25	10
Rauvolfia serpentina	3	15	15

NFPTCR – National Facility for Plant Tissue Culture Repository



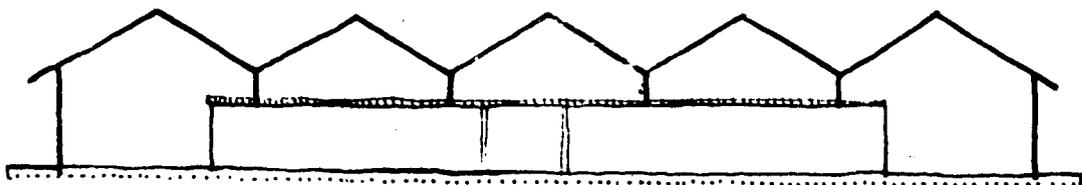
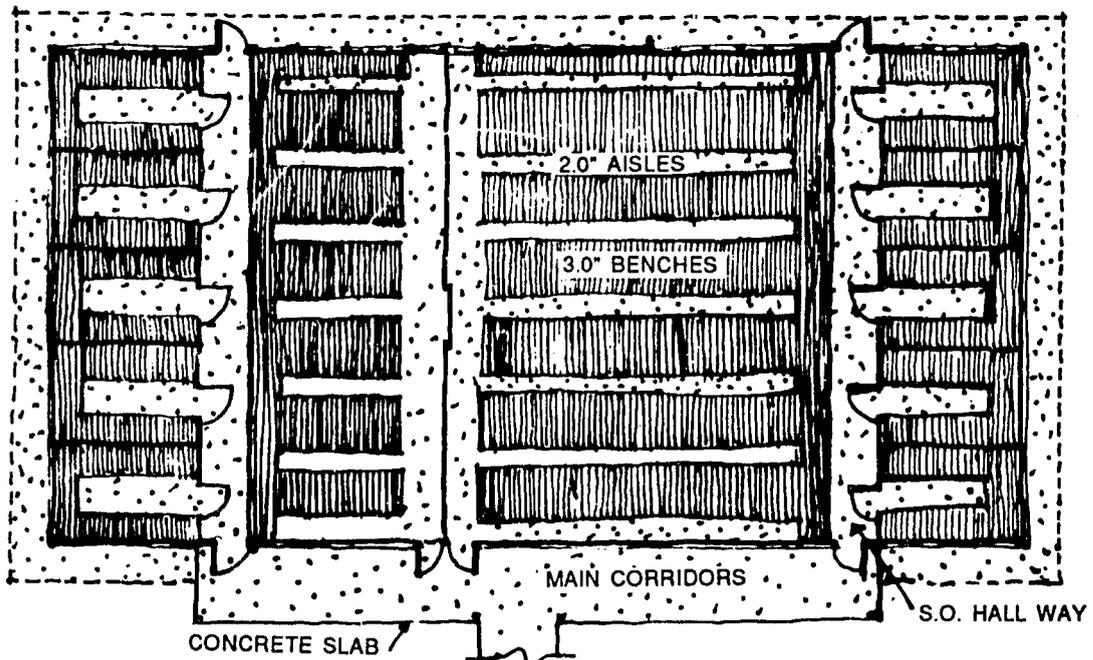
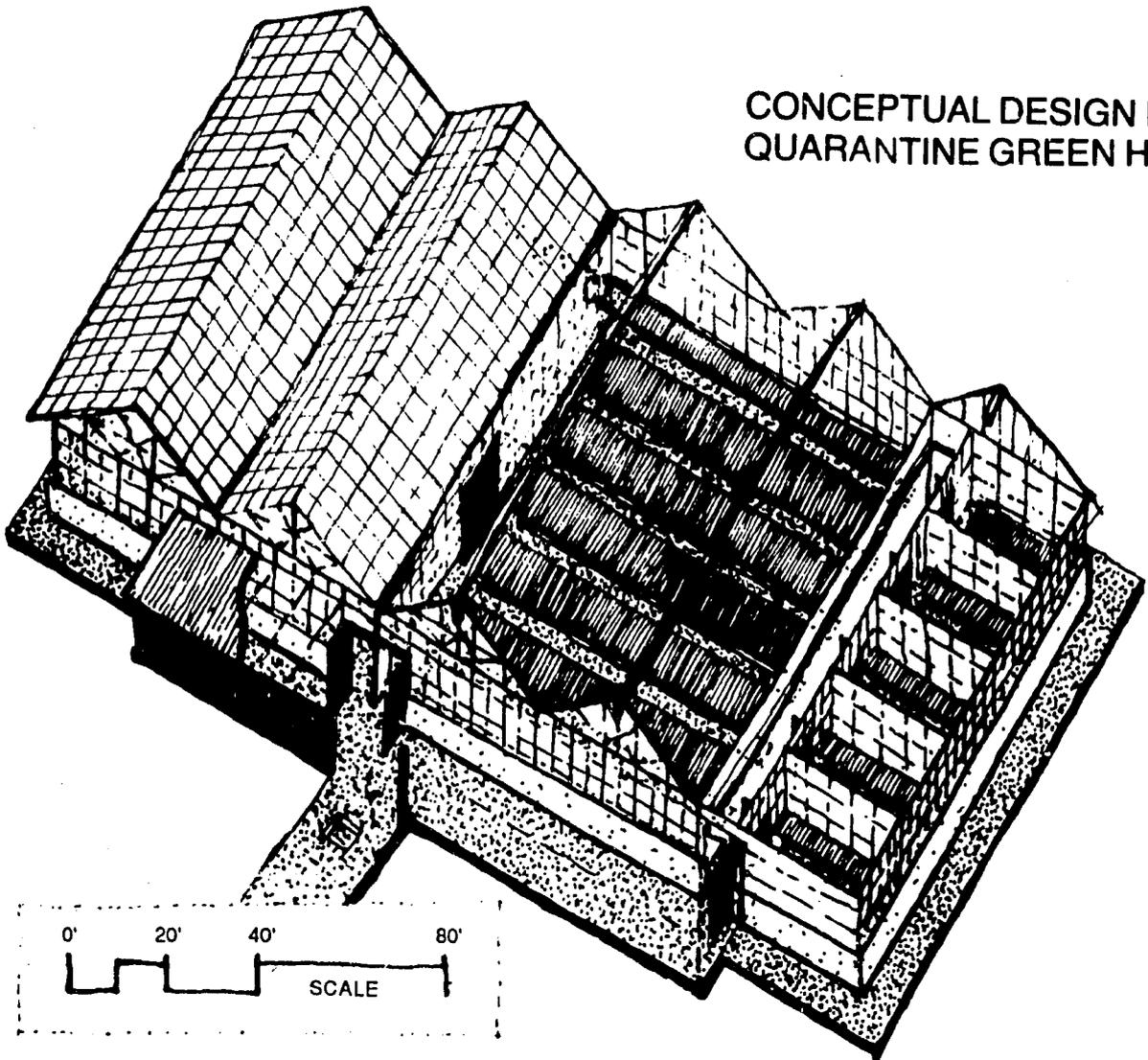
Location of National Active Germplasm Sites working in partnership with NBPGR.

List of Crops and Stations in India

Sl.	Crop	Station	Sl.	Crop	Station
1	Wheat	DOW (ICAR), Karnal	16	Vegetables	NGPGR, New Delhi
2	Rice	CRRI, Cuttack	17	Potato	CPRI, Shimla
3	Maize	IARI, New Delhi	18	Forages	IGFRI, Jhansi
4	Barley	IARI, Karnal	19	Spices	NRCS, Calicut
5	Sorghum	NRC, Hyderabad	20	Tobacco	CRRI, Rajahmundry
6	Pearl Millet	Agril. College, Pune	21	Plantation Crops	CPCRI, Kasaragod
7	Minor Millet	GKVKC, Bangalore	22	Medicinal and Aromatic Plants	AIC (M&AP) IP, New Delhi
8	Pulses	DPR (ICAR), Kanpur	23	Agro-Ferestry Plants	NRCA (IGFRI), Jhansi
9	Soybean	NRCS Indore	24	Fruits (semi-arid)	HAU, Hisar
10	Oilseeds	DOR (ICAR), Hyderabad	25	Fruits (subtrop. and Temp)	NBPGR, Shimla
11	Rapeseed and Mustard	HAU, Hisar	26	Fruits (tropical)	IIHR, Bangalore
12	Groundnut	NRCC, Gujarat	27	Citrus	NRCC, Nagpur
13	Sugarcane	SBI, Coimbatore and IISR, Lucknow	28	Fruits (Northern Plains)	CIHNP, Lucknow
14	Cotton	CICR, Nagpur	29	Tuber Crops	CTCRI, Trivandrum
15	Jute and Allied Fibres	CIJAF, Barrackpore	30	Pseudo-Cereals	NBPGR, Shimla

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CONCEPTUAL DESIGN FOR QUARANTINE GREEN HOUSE.



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