IDRC - BIS PROGRAMME

WORK PLAN AND BUDGET DETAILS

FOR THE PERIOD

APRIL 1991 - MARCH 1992

BAIF DEVELOPMENT RESEARCH FOUNDATION

'KAMDHENU' , SENAPATI BAPAT MARG, PUNE 411 016

The IDRC - BIS Programme enters the fourth year from 1st April 1990. Various projects initiated during the first, second and third year will be continued during the fourth year.

The two Community Based Research Projects in two communities are now synthesised into a single project having focus on a number of common themes. These are presented as a unified CBR Project.

A very important new project idea has been conceived for establishment of **BAIF Management Training Centre (BMTC)** and has been incorporated in the Work Plan as Project No. 17. The BAIF Management Training Centre will enable strenghtening of techno-managerial capacity of BAIF and also help to extend the programme benefits to other NGOs.

There will be twelve projects in operation during the fourth year. Work Plans and Budget Details for these projects are enclosed. A complete list of projects and a Summary Statement of the proposed project outlays is given at the outset.

RESEARCH PROGRAMMES UNDER IDRC - BIS

IV YEAR

PROJECT NO.	PROJECT TITLE
1.	Information Resource Centre.
2.	Community Based Research
6.	Upgradation of Frozen Semen Technology for the development of buffaloes
7.	Rural Polytechnic
8.	Development and standardisation of production technology for VA Mycorrhiza Innocula
9.	Standardisation of Micro-carrier Culture Technology for Improving Quality and Development of Immunobiologicals using Marek's Disease Vaccine as a Model
11.	Development of Mushroom Production Technology
12.	Development of Economic Feeding Systems for Ruminants from locally available by-products
14.	Development of Sericulture Technology
15.	Exploratory Studies and Operations Research on Post Production Technologies
16.	Germplasm Collection and Adaptability Study of Bamboo Species
17.	BAIF Management Training Centre (BMTC)

I D R C - B I S PROJECTS
PROPOSED BUDGET FOR THE YEAR 1991 - 92

SUMMARY

S.No.	Particulars	Amount (RS.)
BAIF Administered		
1.	Salaries	34,97,040
2.	Research Expenses	17,60,700
3.	Consultancy	85,000
4.	Reports/Documentation	3,09,800
5.	Training	4,08,500
6.	Travel	3,48,000
7.	Capital Equipments	17,37,000
8.	Infrastructure	1,01,28,100
9.	Books/Periodicals	2,28,000
10.	Administrative Overheads	6,63,704
	SUB TOTAL	**1,91,65,844**
IDRC Administered IDRC Contribution		
1.	Consultancy	0
2.	Training	1,00,000
3.	Travel	1,90,000
4.	Capital Equipments/ Databases	8,20,000
	SUB TOTAL	**11,10,000**
Unallocated Expenses		**3,35,000**
TOTAL IDRC CONTRIBUTION		**2,06,10,844**

PROJECT NO 1

INFORMATION RESOURCE CENTRE

The Information Resource Centre has been set up with a view to provide a sound information science base for planning and implementing all the developmental and research activities. The main function of this centre is to generate and provide the required information services to BAIF Scientists, Researchers, Extension Workers and the management. The objectives of the IRC are :

1 To provide support services to BAIF's programmes in the areas of Information Sciences, Communication, Training and Social Sciences.

2 To assist in Programme Monitoring with appropriate feedback to BAIF Management.

3. To design Systems and services to answer needs of BAIF Scientists and Field Staff.

4. To document and create database on BAIF's research findings.

The IRC has been divided into four sections or cells :

Library and Information Services
Computer Cell
Communications and Publications Cell
Social Science Cell.

The activities of each cell and work plan for the coming year, in terms of the objectives and research studies have been detailed out separately under these four sub-sections. The activity phasing and budget details for each cell is included in the relevant annexures in the corresponding sections.

A Summary of the budget for Information Resource Centre as a whole is enclosed as **Annexure IRC-A.** Budget notes for expenditure items not covered in the budgets of the individual cells are provided in **Annexure IRC-B.**

ANNEXURE - IRC A

I D R C - B I S PROJECTS
PROPOSED BUDGET FOR THE YEAR 1991 - 92

INFORMATION RESOURCE CENTRE

SUMMARY

S.No.	Particulars	Amount (RS.)
BAIF Administered		
1.	Salaries	4,91,700
2.	Research Expenses	3,10,500
3.	Consultancy	20,000
4.	Reports/Documentation	2,24,800
5.	Training	75,500
6.	Travel	60,000
7.	Capital Equipments	6,95,000
8.	Infrastructure	1,60,000
9.	Books/Periodicals	1,33,000
10.	Administrative Overheads	1,31,550
	SUB TOTAL	**23,02,050**
IDRC Administered IDRC Contribution		
1.	Consultancy	--
2.	Training	--
3.	Travel	--
4.	Capital Equipment / Databases	70,000
	SUB TOTAL	**70,000**
Unallocated Expenses		**35,000**
TOTAL IDRC CONTRIBUTION		**24,07,050**

ANNEXURE IRC - B

BUDGET NOTES

(AMOUNT IN RS.)

1.	**RESEARCH EXPENSES :**		
	Operational Services such as maintenance, electricity, etc.	60,000	
	Allocated Expenses	2,500	62,500
2.	**INFRASTRUCTURE :**		
	Fixtures and Furniture	1,20,000	1,20,000

IRC - LIBRARY & INFORMATION SERVICES CELL

1.0 INTRODUCTION :

Information is only of value when it is used. To make use of the information, potential users must be made aware of its existence. The BIRC has initiated a major activity of creating and maintaining various databases of information of use to the different user groups within BAIF viz. the Management, Profressionals and Field staff. The L & I S cell is in the process of desigining and promoting new information dissemination services, to make the fullest use of these databases, thereby facilitating the effective and efficient implementation of the research and development activities undertaken by the BAIF Development Research Foundation.

OBJECTIVES :

- To set up a central Information resource base (BIRC) and regional information dissemination centres at other BAIF campuses (in phases).

- To effectively use the computer facilities at the BIRC for creation and maintenance of useful databases.

- To initiate new information dissemination services and products for the various user groups within BAIF.

- To maximise the use of the BIRC.

2.0 STUDIES IN PROGRESS :

2.1 Survey of the Users' Information Needs :

The findings of the preliminary survey were further worked upon to create well defined user profiles. The interests were categorised according to a standard set

of subject headings and matched for precise information outputs. The users consisted primarily of senior scientific and research officers within BAIF; Many other NGOs and outsiders expressed that the information available at the IRC would be of interset to them, hence it has been decided to include them as members during the next year. Therefore the work emphasis in the IVth year would be mainly on :

1. Extending Information services to a greater number of users, including those outside BAIF involved in development activities.

2. Creating comprehensive institutional profiles to cover the information requirements of member institutions.

2.2 Database of Institutions

Three separate databases have been created, based on the information collected so far viz. experts, institutions and NGOs. Contents of the databases have been printed out in the form of directories which will be useful to identify information sources and to provide effective **Referral services**. Regular annual updates to these directories have been planned and accordingly the following specific work components have been identified :

1. To collect information for updation of the experts, institutions and NGOs databases for prospective resource sharing and information exchange in BAIF's areas of interest.

2. To compile supplementary directories of the entries added during the current year.

2.3 Information Services and Products

The five information services initiated last year were continued primarily for the senior scientific and research staff of BAIF. A new recording system has been installed for efficient management of the information services, which will also cater to the increased number of users. Depending upon the information needs, new services/ products will be designed. The specific work components would be :

1. To extend the coverage of the services in terms of user number and specific subject scope.

2. To design new information products like topic specific compilations/ booklets.

2.4 Creation of topic specific databases

Information collection for creating topic specific, comprehensive databanks has been initiated. The topics identified include sustainable agricultural technologies like earthworm farming - vermiculture; sericulture;etc. indegenous knowledge in agriculture, medicine and appropriate technology. This information will be stored in the computer for easy access and retrieval. The work components would thus include :

1. Selection of suitable software viz. CDS/ISIS or dBASE III+

2. Database design and creation.

2.5 Regional libraries / Information centres

Collection building has been initiated to set up small libraries at BAIF's regional campuses. These libraries also have printed lists of holdings of other libraries (within the BIRC) in subject areas of interest for reference. It is proposed that these libraries will function as regional information centres in future and hence the following work components have been planned :

1. Procurement of reading material as per needs at campus level.

2. Setting up uniform recording and circulation procedures according to those followed at the BIRC.

ACTIVITIES TO BE UNDERTAKEN :

Newsletter/Bulletin :

Rationale :

In order to communicate with the users at the various field campuses as well as those outside BAIF, circulation of a Newsletter has been felt necessary. This newsletter will cover information of interest to users. The work components would include :

1. Planning the content of the newsletter : BIRC activities, new publications, on-going projects, forthcoming events and research and development news in subjects of interest.

2. In-house design, physical layout of the newsletter using Ventura/DTP, to produce six issues a year.

BIRC Compilations

Rationale :

Information collection, repackaging and dissemination are the main functions of the BIRC. In order to achieve these the BIRC has planned production of various compilations, in addition to the existing information products, viz.

Serial publications :

* BIRC Newsletter - bimonthly; private circulation

* BIRC Holdings list - annually; informing users of the availability of documents in the BIRC library.

Occasional publications :

* Directories - Experts/Institutions/NGOs/Members

* Specialised bibliographies - comprehensive list of references available at the BIRC

* Self-instructional booklets - topic specific, technical manuals

* Slide Presentation sets - on specific topics, with a description of each slide in an accompanying booklet

Technical information on specific topics will have to be assembled/ collected as basic material for the compilations. Therefore the main work components would be :

1. Building up resources to support the various compilations.

2. Production of the compilations with the assistance of the communication cell.

4.0 PHASING :

The Activity Phasing for the next year is provided in Annexure 1.

5.0 BUDGET :

The Budget Summary for 1991 - 92 is presented in Annexure 2 and the Budget Notes in Annexure 3.

ANNEXURE 1

ACTIVITY PHASING

Work Plan IV Year

PROJECT TITLE : IRC - LIBRARY AND INFORMATION SERVICES

SR. NO	PARTICULARS	ACTIVITY PHASING (Month) 1 2 3 4 5 6 7 8 9 10 11 12
1.	Survey of users' Information needs	----------
	(Profiles)	----------
2.	Database of Institutions	_____
	Directories	----------
3.	Information services and products	_____
4.	Creating topic specific databases	_____
5.	Newsletter	_____
6.	Compilations	_____

ANNEXURE 2

I D R C - B I S PROJECTS
PROPOSED BUDGET FOR THE YEAR 1991 - 92

PROJ. NO : 1
PROJ. TITLE : IRC - LIBRARY & INFORMATION SERVICES CELL

BUDGET SUMMARY

S.NO.	PARTICULARS	AMOUNT
BAIF Administered		
1.	Salaries	1,06,200
2.	Research Expenses	44,000
3.	Consultancy	--
4.	Reports/Documentation	60,000
5.	Training	30,000
6.	Travel	8,000
7.	Capital Equipments	10,000
8.	Infrastructure	10,000
9.	Books/Periodicals	1,15,000
10.	Administrative Overheads	36,320
	SUBTOTAL	**4,19,520**
IDRC Administered		
1.	Consultancy	0
2.	Training	0
3.	Travel	0
4.	Capital Equipments/ Databases	0
Unallocated Expenses		**25,000**
	Total IDRC Contribution	**4,44,520**

ANNEXURE 3

BUDGET NOTES

(Amount in Rs.)

1.	**SALARIES :**		
	a. Information Scientist	47,000	
	b. Junior Librarians (2)	34,000	
	c. Administrative Assistant	16,000	
	d. Allocated salaries of Programme Monitoring Staff	9,200	
		----------	1,06,200
2.	**RESEARCH EXPENSES :**		
	a. Data Entry (for Databases)		
	IRC	5,000	
	b. DIALOG Subscription renewal	5,000	
	c. Retrospective searches & Online searches (12-15)	30,000	
	d. Modem Rent	2,500	
	e. Allocated Expenses	1,500	
		------	**44,000**
3.	**REPORTS & DOCUMENTATION :**		
	a. Cost of providing Information Services	12,000	
	b. Newsletter	18,000	
	c. Publications	30,000	
		------	**60,000**
4.	**TRAINING :**		
	a. Attending Courses/ Seminars on Information management, library automation etc.	5,000	
	b. Conducting courses	15,000	
	c. User orientation workshops (5)	5,000	
	d. Honorarium to Information scientists (training)	5,000	
		------	**30,000**

5. TRAVEL :		
a. Local Conveyance	3,000	
b. Visits - 4 campuses	5,000	
	-----	**8,000**
6. CAPITAL EQUIPMENT :		
Thermal Binding Machine	10,000	
	-------	**10,000**
7. INFRASTRUCTURE :		
a. Furniture	10,000	
	------	**10,000**
8. BOOKS/PERIODICALS :		
Books:		
IRC	30,000	
Regional Libraries (2,000 x 3)	6,000	
Journals:		
IRC	20,000	
Regional Libraries (3,000 x 3)	9,000	
CD-ROM Databases :		
CABI updates	50,000	
	-------	**1,15,000**

IRC - COMPUTER CELL

1.0 INTRODUCTION :

The activites taken up by BAIF have increased in size and complexities and strong need has been felt to process and analyse data using electronic means. This will ensure speedy processing of data that is vital to decision making in the organisation. Recognising the need for computerisation BAIF has set up an independent Computer Section under the Information Resource Centre (IRC).

OBJECTIVES :

1. To identify the areas for computerisation within BAIF and develop application systems.

2. To analyse research data depending upon the needs of BAIF's scientists and researchers.
3. To impart training to BAIF staff about the use and capabilities of micro computers.

2.0 SYSTEMS DEVELOPMENT :

2.1 Work In Progress :

The Systems Development that is in progress is as follows :

a. Inventory Control System for BAIF, Urulikanchan :

The Receipts, Issues and Returns of all items from the stores at BAIF, Urulikanchan will be recorded online into the computer. Reports and statements on Stock keeping and Stores Accounting will be generated through this system.

A study of the present manual system of the Stores and the Costing department was undertaken. The system design was finalised and programming has been taken up. The coding structure for item code, department code, project code and A/c code has been finalised.

It is planned to implement the system at Urulikanchan during the next year.

b. Room Allocation System for Nature Cure Ashram :

To get admitted to the Ashram the patient has to book a room/bed in advance. In case there is no room available a waiting list is prepared and later on the patient is informed about the avalibility.

With the help of this system allocation of rooms/beds , preparing waiting list and printing letters regarding room availibility etc .. will be done by the computer.

The study of the present working was taken up and a system is being designed to computerise the operations involving correspondence regarding waiting lists and room allocation.

During the next year this system will be tested and implemented at the Ashram.

c. **Case History, Examination and Follow-up System for Nature Cure Ashram :**

The clinical findings, systemic examination and diagnosis at the time of admission will be recorded for every patient. During his stay at the Ashram the diet and treatment given will be monitored through this system. Various reports on the examination, treatment and condition of patient will be printed freqently.

The condition of the patient at the time of discharge will be recorded and the treatment and diet prescribed during his stay will be stored in a Historical database for future reference.

At present there is no reporting system for followup and monitoring. A system is being designed to followup on the diet and treatment being given.

This system will be tested and implemented in the Ashram during the next year.

2.2 Proposed Application Systems to be taken up during 1991-90.

a) Billing System for Nature Cure Ashram :

The Room rent, food charges and other expenses will be collected from the Room Allocation system and the Examination system and the billing will be done through the computer.

It is planned to take up development of this system. The programming will be done at the BIRC. After installing the system in the Ashram a parallel run will be taken up and the system will be tested and implemented.

b) **Health Care Monitoring System for WADI families of Akola :**

This system involves noting the demographic data of all the WADI families in the project area. The monthly health camps envisaged for the area will note the prognosis of all the patients attending the camp which in turn will be recorded. The system will also inform the health team on the exact follow-ups to be done in each WADI family before the next camp.

The work involves standardising input formats, system designing and programming. After testing this will be implemented at BIRC, Pune.

c) **Sericulture Monitoring System (for the Extension and Research Programme) :**

Research Programme :

The research activities will be taken up at three locations, two in Maharashtra and one in Gujarat. Research data during the rearing stage and cocoon stage will be recorded for various races of silkworms. A few races will be selected for Gujarat and Maharashtra afer evaluation of the data.

It is planned to store all the research data. To evaluate the races, comparison between races for each location and multilocational comparison for every race will be done through SPSS/PC+.

Extension Programme :

The recording of data will be done at BAIF during the first four moulting periods and the remaining recording regarding adult rearing till sale of cocoons will be done at the field level. The performance of the activities of farmers taking up sericulture will also be monitored.

The Data input sheets will be standardised to record data on silkworm rearing, monitoring of mulberry plantation and cocoon weighing etc.. A system will be designed and developed to monitor the activities of the farmers taking up sericulture and also generate payment based on cocoon collection.

c) **Payroll System :**

The payroll system that is being used at present was developed only to generate payslips and related reports. There has been a change in the salary structure and many new schemes have been introduced. To cater to the changes a new payroll system will have to be developed which will take care of integration with the Provident Fund System and the Personnel Information System.

It is planned to design another system which will take care of all future changes in pay structure. The programming will be done and the system will be run in parallel with the existing system for a few months.

Data Analysis :

The Computer Cell will contine to extend support to BAIF's scientists and researchers to anslyse data from surveys and studies that are planned for the year 1991-92. Analysis will be taken up for the following :

1. **Socio-Economic Baseline Studies of WADI Projects :**

The aim of the study is to create a baseline database of socio-economic information on WADI participants and non-participants in WADI project areas. Migration and labour patterns will be analysed along with the data on health, diet and agricultural practices. This will provide a baseline against which future changes in the socio-economic status of the communities in WADI areas can be monitored.

The work will involve preparing the survey form and code sheets. The data that is recorded will be keyed in the computer and the analysis will be done using various software packages.

2. **Nutritional Status of Mothers and Underfives at Vansda and Urulikanchan :**

The survey will be conducted in the villages of Vansda taluka, Gujarat and Urulikanchan, Maharashtra to find out the prevalence of malnutrition in under fives and other nutritional deficiencies associated with PEM.

The data will be collected from Vansda, Gujarat and Urulikanchan, Maharashtra and will be sent to the BIRC, Pune for entry and analysis.

3.0 OTHER ACTIVITIES :

3.1 Training Programmes :

The Computer Cell has conducted a few training programmes to teach BAIF's staff to use various standard packages avalaible on micro computers. Training in specialised software packages like SPSS/PC+ was also conducted. After gaining experience from these programmes the Computer Cell will conduct more such programmes for the benefit for BAIF's staff and also outsiders.

Training for the Staff :

Advanced SPSS/PC+ and Harvard Graphics :

This course will cover Multivariate analysis of variance, cluster analysis, multiple regression, discriminant analysis and graphics.

Wordprocessing using WORDPERFECT :

This course will be conducted for all secretarial staff like steno typists, typists and other users. It will cover all features of text processing using WORDPERFECT including use of spell checker and thesauras.

Desk Top Publishing :

This course will be conducted for the secretarial staff. This will cover designing a layout, loading text and graphics into VENTURA. This course will also cover all the features of VENTURA and the Laser Printer for typesetting.

FOCUS Database Management System :

This course will be conducted to teach users how to create a database in FOCUS, to use functions of FOCUS for statistical analysis and the use of applications developed in FOCUS.

Training for Computer Cell Staff :

Applications Development using FOCUS :

This course will be conducted only for programmers and will cover topics in database creation, screen painter, report writing and application development.

Mapping and Geographic Information System (GIS) :

A training programme will be conducted in GIS and Mapping for the Computer cell about the use of the software package and various hardware required for digitising, scanning and plotting.

Other Training :

Training will be conducted for outsiders in specialised applications like SPSS/PC+, Desk Top Publishing, Harvard Graphics & Data processing using Transcript Card in regional languages.

3.2 Geographic Information Systems (GIS)/Mapping :

To procure and make use of GIS or Mapping software for activites like Contour mapping, Watershed development programmes, planning for Agroforestry etc..

3.3 Using Computers for preparing training material and presentations :

To make use of high resoulution monitors and graphics software packages for preparing graphics and text slides which can be used for training, field programmes and also for presentations.

3.4 Connecting the various PC-AT's and PC-XT's at BIRC through Local Area Network (LAN) :

It is planned to procure an AT-386 and NOVELL Netware software and add LAN cards to the various microcomputers at BIRC so that information can be shared. This will help in saving the cost of buying multiple copies of the same software and disk space will also be utilised optimally as the same software will be accesible to all the nodes.

A few more PC's are planned to be added to the network to take care of the increase in data processing and data analysis work.

4.0 PHASING :

The activity phasing for the year 1991-92 is given in Annexure 1.

5.0 BUDGET :

The Budget Summary for 1991-92 is presented in Annexure 2 and the Budget Notes in Annexure 3.

ANNEXURE 1

ACTIVITY PHASING

Work Plan IV Year

PROJECT TITLE : IRC - COMPUTER CELL

Sr. No.	Particulars	Activity Phasing (Month) 1	2	3	4	5	6	7	8	9	10	11	12
1.	Systems Development on Hand	----------											
2.	Training in WORDPERFECT	--											
3.	Sericulture Monitoring System	---------											
4.	Room Allocation System for Ashram				-------								
5.	Data Analysis		---			---			----				
6.	Payroll System									---------			
7.	Implementing GIS					---------							
8.	Health Care Monitoring System for Akola			----------									
9.	Training in FOCUS for Computer Cell		---										
10.	Billing System for Ashram								------				
11.	Other Training for Staff				----				----			-----	
12.	Training for Outsiders		----								-----		

ANNEXURE 2

I D R C - B I S PROJECTS
PROPOSED BUDGET FOR THE YEAR 1991 - 92

PROJ. NO : 1
PROJ. TITLE : IRC - COMPUTER CELL

BUDGET SUMMARY

SR. NO.	PARTICULARS	AMOUNT(RS.)
BAIF Administered Contribution		
1.	Salaries	1,81,800
2.	Research Expenses	10,400
3.	Consultancy	10,000
4.	Reports & Documentation	1,09,800
5.	Training	21,500
6.	Travel	21,000
7.	Capital Equipment	5,85,000
8.	Infrastructure	30,000
9.	Books & Periodicals	5,000
10.	Administrative Overheads	35,950
	SUB TOTAL	10,10,450
IDRC Administered		
1.	Consultancy	--
2.	Training	--
3.	Travel	--
4.	Capital Equipment	70,000
		70,000
Unallocated Expenses		--
TOTAL IDRC CONTRIBUTION		**10,80,450**

ANNEXURE 3

IRC - COMPUTER CELL

BUDGET NOTES

(AMOUNT IN RS.)

1.	**SALARIES :**		
	Systems Analyst	46,000	
	Programmers (4)	1,20,000	
	Allocated Salaries of Programme Monitoring Staff	15,800	
			1,81,800
2.	**RESEARCH EXPENSES :**		
	Scanning/Digitising Maps for GIS	10,000	
	Allocated Monitoring Expenses	400	
			10,400
3.	**CONSULTANCY :**		
	Workshop on GIS	10,000	
			10,000

4. REPORTS & DOCUMENTATION :

	Avg. Monthly Consumption	Amount for the year	
a. Stationery Cost :			
10 x 12	3,000	10,000	
15 x 12	3,000	12,000	
			22,000
b. Floppies :			
48 TPI	5	2,400	
96 TPI	5	4,800	
			7,200
c. Ribbons/Toner Cartridge			
Printer Ribbons	8	9,600	
Typewriter Ribbons	2	1,500	
Laser Printer Cartridge		5,500	
			16,600

d.	Preparation of System Documentation (@ 400 each)		4,000
e.	Data Entry Costs		10,000
f.	Annual Maintenance (for existing Hardware)		50,000
		SUB TOTAL	1,09,800

5. TRAINING :

Course material for staff training (@ 300 per programme)	1,500	
Training to be conducted for outsiders (2 programmes)	10,000	
Trainings to be attended for Unix, Systems analysis,etc.	10,000	
	-------	21,500

6. TRAVEL :

Visiting computer installations at Vansda and Baroda (@750 per trip)	7,500	
Local Conveyance (Visits to 'Kamdhenu'& Urulikanchan)	3,500	
Attending Seminars,Trainings (@ 2000 each)	10,000	
	-------	21,000

7. CAPITAL EQUIPMENT

7.1 Hardware	Nos.	
1. PC-AT with 300 MB Disk and VGA color monitor	1	1,75,000
2. Active and Passive Hubs	2	20,000

3.	Upgrading PC/AT to a File Server with 155 MB Hard Disk and 4 MB RAM	1	40,000	
4.	LAN Cards	11	44,000	
5.	PC-AT with 40 MB Disk	2	70,000	
6.	Dot Matrix Printers	3	90,000	
9.	0.5 KVA UPS	1	23,000	
10.	Transcript Cards	2	20,000	
			---------	4,82,000

7.2 Laying Cables for LAN 8,000

7.3 Software

1. NOVELL NETWARE ELS II	35,000	
2. FOXBASE+ 2.1	45,000	
3. LAN Pack for FOCUS	15,000	
	--------	95,000
	TOTAL	5,85,000

IDRC Administered

1. HP Plotter	30,000	
2. Digitiser	40,000	
	----------	70,000

8. INFRASTRUCTURE :

FURNITURE AND FIXTURES	30,000	

		30,000

9. BOOKS AND PERIODICALS :

An amount of Rs. 5000 has been provided for procuring books and periodicals.

IRC : COMMUNICATIONS CELL

1. INTRODUCTION :

Development communication is a significant instrument of development process. The job of development communication is to remove the communication gap between Scientists and Researches and the grass root level, to ensure the transfer of technology from lab to land. Development Communication aims at, on one hand conveying these messages effectively to the participants in the process and on the other hand to prepare communication aids to help the village level workers who actually work in the field, as catalist in the process of development.

OBJECTIVES :

To assess communication needs of BAIF Scientists and Research Workers. The areas have been identified as follows:

a. Animal Science, specifically, on the subjects of Clean Milk Production, Prevention of Ticks and Flies, Care of Cross Breed Cow, Care of Liquide Nitrogen Container and Frozen Semen;

b. Agroforestry, afforestation and horticulture;

c. Bio-energy and

d. Human Health : With regard to the purpose, method of instruction, the target group and type of aid.

TYPE OF AID

Printed : Flash Cards, Flip Charts, Posters, Pamphlets, Pocket Charts, Chain Charts, Story Cards, Booklets.

Audio-Visuals : Films/video cassettes, Slide sets, Audio Cassettes.

Models : Plywood, Plaster of Paris, Cloth.

Puppets : Glove puppets, Puppets for use of field functionaries.

To develop various kinds of communication aids to facilitate training of the field workers and various target groups viz Farmers, agricultural labourers and other rural and tribal folk in the areas of animal science, agroforestry and agriculture, Bio-energy; human health and watershed management.

2.0 RESEARCH STUDIES :

2.1 Studies in Progress :

1. Communication Needs Survey :

Rationale :

Communication needs survey would be continuous process. Communication needs survey of the BAIF scientists, the field functionaries and the grass root level farmer, would be undertaken this year also. Specific questionaire would be evolved for specific subjects to assess the target group; the type of aid; Methodology to be adopted in the development, such as; in case of printed aids, the colours the pictures, the matter, the size etc.

Objectives :

To decide the most effective media and methodology of conveying a message to the rural audience and field functionaries.

Methodology

Data on the communication needs survey will be collected through structured questionnaire which will aim to assess the following requirements before making the training aid.

a. Objective of making the aid, educative, informative, Instructional.

b. The type of aid :
cost effectiveness; accessibility, mobility.

c. The target group
literate, illiterate, women, trainers,

d. Method of desimination of information
Mass communication Person to person communication.
printed; Audio-visual, three dimentional.

Type of Aids Proposed

Printed : Pamphlets, flip charts, posters, Booklets.

Audio-visual : Slide sets, video cassettes, audio programmes for Narrow Casting.

3-D Aids : Models - Paper, Plaster of Paris, Wooden.
Puppets - Glove puppets, Pappets for field demonstrations.

2. Pre-testing of Communication Material

Rationale :

At each step of planning and development of an aid, some kind of evaluation should take place. This evaluation may range from asking few simple questions to highly controlled evaluation studies.

Objective :

To assess the effectiveness of the communication material.

Methodology:

a. Controlled evaluation studies through questionnaires on following points.

The idea to be communicated useful, important valid.

2. The receiver :
Will he understand the message idea ? Is it relevant for him ? Will he get motivated ? If not what change is needed ?

3. The message material :
Is it accurate ? Is it any where offending? How the message will be disseminated.

4. The presentation :
Was it timely ? Was it clear ?

5. Modifications :
As regards content; type of media; language; mode of communication; groups; person to person; mass.

3.0 OTHER ACTIVITIES :

3.1 Data base of Training Material :

BAIF has a large collection of training material in form of printed Media, Audio visual form and 3-Dimentional form evolved from time to time, at different centres in the states, viz, Maharashtra, Gujrath and Karnataka. With a view to create a data base, inventory of communication material of the various campuses have been undertaken to prepare a complete holdings list. The survey will be further continued to find out details and to assess whether these aids require replacements/modifications.

Slide Sets

There are large number of slide sets at different campuses on varied subject matter. The entire information will be compiled in the communication cell. The cell will decide in consultation with the subject specialist, whether the slide set requires any modification, alteration, replacement in the slides. The III stage will be deciding the slide sets having permanent nature and the IV and the last stage will be taking out a master copy to retain permanently at the communication cell.

Central Archival of Audio visuals :

It is also proposed in the IV year to initiate an archival of audio visuals, particularly on the BAIF activities & the subjects related to Rural Development, Afforestation and Ecology. Sophisticated Audio and video recording machines will be acquired for recording of the debase of research findings/results, for further analysis and adaptation.

Radio Programmes :

There are number of local Radio Stations coming up in India along with Regional centres. It has been planned in the IV year to broadcast programmes on various BAIF's activities in order to motivate the farmers; the agricultural labourers and tribals, to accept the developmental programmes. The programmes would include talks, discussions, interviews, dialogues. Radio Reports, skits, lessons on Radio in a series; and even news items. The farmer's active participation would be ensured by involving them in the production process of the programmes and giving them token prizes for best participation.

Narrow Casting :

It is also proposed in the IV year to use narrow casting as a mode of group communication and person to person communication. The message will be recorded in form of a talk/narration/interview. Copies of such cassette recordings will be distributed to different target groups at different centres. The target group can return the cassette with qurries/ doubts if any, about the subject communicated which can be replied back on the same cassette. This will be started on an experimental basis from this year. Depending on the results, this will be applied on a macro scale.

Publications :

BAIF Journal and the annual report will continue to be published. Besides this the cell will also be involved in bringing out brouchers on the various activities of BAIF. The publications will be handled in house using the 'Desk Top publishing facilities' (ventura) at the BIRC.

Production of Training Material

1. One training film a year will be made on one specific subject area of BAIF Scripts will be written for the same.

2. Printed material like Booklets & Referene manuals will be developed, pre-tested and mass scale production will be taken up. For this subject specialist have been already contacted and following areas identified -

   1. Health : Purification of drinking water
      - House level
      - Community level

   2. Wadi Tribal Development Projects
      - Grafting
      - soil erosion
      - land development
      - plantation of forest areas
      - live hedge feasing
      - pits digging & filling

   3. Energy : 1. Gassifier a) operation
      b) maintenance
      2. Bio-gass without cattle dung

3. Flipcharts on following subjects will be prepared.
   1. Clean milk production
   2. Prevention of ticks & flies.
   3. Care of cross bred calf.

4. Models of plywood, paper pulp, plaster of paris and cloth will be acquired particularly for training in Health & MCH.

5. Slide sets will be produced in the subject areas where required, in consultation with subject specialists.

4. PHASING

The activity pleasing for the IV year is provided in Annexure -1.

5. BUDGET

The Budget summary for 1991-92 is presented in Annexure-2 and the budget notes in Annexures-3.

ANNEXURE 1

ACTIVITY PHASING

Work Plan IV Year

PROJECT TITLE : IRC : Communication & Publication Cell

SR. NO	PARTICULARS	ACTIVITY PHASING (Month)											
		1	2	3	4	5	6	7	8	9	10	11	12
1.	Communication needs Survey	----------											
2.	Development of AIDs												
	1. Printed booklets & Reference Mannuals	----------											
	2. Flip charts		----------										
	3. Slide sets							----------					
	4. Film										----------		
3.	Pre-testing of communication material.	----------											
4.	Data-Base of Training material	----------											
5.	Narrow Casting Audio Programmes Programmes										----------		

ANNEXURE 2

I D R C - B I S PROJECTS
PROPOSED BUDGET FOR THE YEAR 1991 - 92

PROJ. NO : 1
PROJ. TITLE : IRC Communication Cell

BUDGET SUMMARY

SR. NO.	PARTICULARS	AMOUNT(RS.)
	BAIF ADMINISTERED	
1	Salaries	85,400
2	Research Expenses	1,57,400
3	Consultancy	5,000
4	Reports & Documentation	45,000
5	Training	10,000
6	Travel	10,000
7	Capital Equipment	1,00,000
8	Infrastructure	—
9	Books & Periodicals	5,000
10	Administrative overheads	31,780
	SUB TOTAL	**4,49,580**
IDRC Administered		
	Consultancy	--
	Training	--
	Travel	--
	Capital Equipment	--
	SUB TOTAL	--
Unallocated		--
Total IDRC Contribution		**4,49,580**

ANNEXURE 3

BUDGET NOTES

(AMOUNT IN RS.)

1.	**SALARIES**		
	Communication staff	78,000	
	Allocated Salaries of Prog. Monitoring Staff	7,400	
		----------	85,400
2.	**RESEARCH EXPENSES**		
	a) Production of Printed material	20,000	
	b) BAIF Journal	32,000	
	c) Production of Training Film	1,00,000	
	d) Allocated Monitoring Expenses	5,400	
		----------	1,57,400
3.	**CONSULTANCY**		
	For Production of Audio-visuals		5,000
4.	**REPORTS AND DOCUMENTATION**		
	a.Annual Report		45,000
5.	**TRAINING**		
	1 Attending courses & Seminars on development of communication material	5,000	
	2 Training courses for field functionaries/organising seminars	5,000	
		----------	10,000
6.	**TRAVEL**		
	Visit to BAIF Campuses for pre-testing		10,000
7.	**CAPITAL EQUIPMENT**		
	Audio Recording Machines (numbers two) Ultra-portable tape recorders, speed 7.5 inches per second) from 'Meltrons'.		1,00,000

IRC - SOCIAL SCIENCE CELL

1.0 INTRODUCTION :

BAIF is planning and implementing development programmes for tapping the potential and improving the lives of the rural poor. Its commitment to value-based development led BAIF to thoroughly study and understand the socio-economic scenario in rural India. Programmes had to be developed keeping in mind the needs of rural communities and with respect for their traditions, beliefs and values. An understanding of social factors must govern the course of each and every development activity. This is the reason why a social science approach has always been an integral part of BAIF's programmes. An analysis of social factors led BAIF to develop family oriented programmes for providing sustainable self-employment to the rural poor. These programmes have been successfully implemented in different parts of the country.

With the expansion of BAIF's activities, a need was felt to place this social science orientation and understanding on a more formal footing. The Social Science Cell was set up to provide social science inputs and support to BAIF's development programmes and projects. The two main areas then identified were training and research. Training is imparted to new personnel in community organisation, social work methods and techniques and social research. Regular workshops and seminars on various social science issues are conducted for senior staff members. Research studies on various facets of BAIF's programmes are also conducted.

These aim at improving the functioning of current programmes and help in developing new ones.

2.0 RESEARCH STUDIES :

2.1 Studies in progress :

1. **Identification and validation of development indicators :**

Rationale :

A need is felt within BAIF for identifying indicators of socio-economic status, standard of living and quality of life which will be useful in terms of measuring the impact of its programme in a larger social perspective. These indicators will provide a guideline for the evaluation and monitoring of various programmes.

Objectives :

The objective is to identify and validate various indicators which are sensitive and accurate guides to socio- economic change brought about by different development programmes. From this data, a basic package of indicators for use in various BAIF projects and field areas will be developed.

Work Components :

This study involves library research as well as field work. Data will be collected at three levels :

1. An extensive review of the literature will be carried out and detailed information on possible indicators collected. The information collected will be documented and used to identify these indicators which are most suited to BAIF's programmes and activities.

2. Senior staff members of BAIF who have long and wide-ranging field experience have seen the kind of changes that are brought about by various programmes. Their observations on how these indicators can be monitored are of great value.

3. The perceptions of project participants regarding social progress and status are also important while selecting indicators. Their views will be elicited through semi-structured interviews. Protocols will be prepared and information gathered in various BAIF project areas.

2. Socio-Economic Baseline of Wadi Participants:

Rationale :

The WADI Programme has now been extended to other areas in Gujarat, Maharashtra and Karnataka. To monitor and evaluate the progress of these projects and the Vansda Project, together involving over 8000 families, it is necessary to have baseline data on their socio-economic status. Therefore, a socio-economic baseline study will be conducted in all new areas where the project is being extended as well as with a sample of the new participant families in Vansda.

Objectives :

1. To create a database of socio-economic data about families in Wadi project areas.

2. To help develop a set of development indicators for monitoring and evaluation of development projects.

Work Components :

The list of participating families will be used as the sampling frame for this study. A random sample of 100 families will be generated.

A questionnaire has been prepared and is presently being pre-tested. The data collected will be used to create a database of baseline information regarding the socio-economic status of participating families.

3. **Socio-Economic Status of Women in different project areas of BAIF :**

Rationale :

Vast differences distinguish the life of women in different parts of the country and within different caste, religions and ethnic groups. It is necessary to understand their life style, struggles to raise their socio-economic status. Therefore the study of socio-economic status of the women will be conducted in the BAIF project areas, where the Wadi project has been undertaken - viz Vansda, Akola, Mawal and H.D.Kote.

Objectives :

1. To understand daily routine of women and their social participation, and identify constraints if any.

2. To assess attitudes of women and men towards present income generating activities.

3. To identify interventions by BAIF which would help in improving the status of women.

Work Components :

So far data has been collected from Pune district. A guideline has been prepared for group discussions for the women from other BAIF project areas. The training will be arranged for the investigators in the technique of conducting group discussions. Data will be collected mainly through group discussions. Rapid appraisal methods will also be tested for their applicability to studies on the status of women.

2.2 Studies to be undertaken :

1. Assessment of Food Security Status :

Rationale :

It is generally found that rural communities in India, particularly tribal communities, live at a bare subsistence level. In many cases, it has been found that they are unable to meet even their basic dietary needs. Given such a situation, it is found that any monetary benefits that accrue from development programmes are immediately diverted by participating families towards improvement of their food security status. As such, it is likely that the food security situation will prove to be an accurate reflection of economic status and improvements in this situation will indicate the progress of a development programme.

Objectives :

1. To develop a methodology for assessing the food security status of rural and tribal communities.

2. To collect data on the food security status of project participants.

Work Components :

During various studies conducted by the health and social science teams, detailed data on dietary patterns and nutritional status has already been collected. This data will be analysed to judge its usefulness for analysis of food security. Different methods of assessing food security will be developed and tested for their validity.

Rapid assessment of food security is also an important thrust area. A methodology for conducting rapid assessments of food security will also be developed.

Finally, data will be collected on participants in a few project areas. This data will provide a benchmark against which future improvements in the food security status can be assessed.

2. Impact of Dairy Cattle Production Programme :

Rationale :

The Dairy Cattle Production Programme is the oldest programme run by BAIF and has now been in operation for over 20 years. The purpose of this programme has been to create gainful self-employment opportunities for the rural poor. This is done by means of creating productive assets in the form of dairy cattle. The dairy cattle are bred by artificially inseminating the nondescript cattle owned by rural households with frozen semen from progeny tested exotic bulls. Elaborate facilities for semen-freezing have been set up at Urulikanchan and a delivery sytem ensures that frozen semen is supplied as required to field stations. late, freezing of semen from crossbred bulls has also been taken up. At the field level, each Cattle Breeding Centre (CBC) is staffed by a trained technician and crossbreeding services are made available at the farmer's doorstep.

The programme has benefitted a large number of families in the six states where the programme is being implemented. Cases have been recorded of families living at the bare subsistence level who have achieved relative prosperity due to the programme. These cases need to be documented. Also, survey data on the wider impact of the programme is required.

Objectives :

1. To make a preliminary assessment of the impact of the cattle development programme.

2. To develop the methodology for a detailed assessment of the impact.

Work Components :

A survey of participants will be conducted in three areas where the programme is being implemented - one each in the states of Karnataka, Maharashtra and Gujarat. A questionnaire will be developed and administered to a sample of 100 participants from each of these areas. The sample will be selected by stratified random sampling, with a greater portion of IRDP beneficiaries (poor participants) being included in the sample.

Some case studies will also be conducted as part of this study. A separate protocol will be prepared for case studies and the case studies will be conducted by trained investigators.

3.0 OTHER ACTIVITIES :

Training :

1. **BAIF Staff :**

A one-day workshop on "Rapid Rural Appraisal Methods" will be conducted for senior staff. This workshop will cover the basic rapid appraisal methods and techniques. Experiences of the staff members in this method will be pooled and methods of rapid appraisal for different field situations will be discussed.

Regular training will be conducted for field staff in "Survey - Methodology, Case Study Research, Community Organisation and Group Work."

2. **Training to the Community :**

Training in income generating activities will be provided to rural and tribal women. Self-help groups will be organised for group income generating activities.

Training will be given to V.H.Ws (Village Health Workers) and Balsevikas (Kindergarten teachers) in techniques of evolving greater community participation in their activities.

Two more teacher training camps in non-formal methods of education will be conducted in Akole and Mawal areas.

Support to studies conducted by other groups :

1. **Social Forestry :**

The BAIF initiated a social forestry programme in 1987 in Pune district, Maharashtra. The programme implementation requires full involvement of the people, both as individuals and as members of local communities. It aims at the introduction and establishment of tree cover on land areas which have become degraded. This will help to restore the environmental balance close to the villages and farm lands and contribute to soil protection and soil improvement.

The Social Science Cell will help to assess the impact of the programme and draw out future plans.

2. **Health Systems and Farming Systems Research :**

The Social Science Cell will continue to provide inputs to studies in these fields as and when required.

4.0 PHASING :

The Activity Phasing for the next year is provided in Annexure 1.

5.0 BUDGET :

The Budget Summary for 1991 - 92 is presented in Annexure 2 and the Budget Notes in Annexure 3.

ANNEXURE 1

ACTIVITY PHASING

Work Plan IV Year

PROJECT TITLE : IRC - SOCIAL SCIENCE CELL

SR. NO	PARTICULARS	ACTIVITY PHASING (Month)											
		1	2	3	4	5	6	7	8	9	10	11	12
A.	**Research Studies**												
1.	Validation of indicators	———	———	———									
2.	Socio-Economic baseline	———	———	———	———	———	———	———	———	———	———	———	———
3.	Socio-Economic Status of rural women	———	———	———	———	———							
4.	Food security status				———	———	———	———					
5.	Impact of dairy cattle programme					———	———	———	———	———	———	———	———
B.	**Training and Workshops**												
1.	Senior staff					—							
2.	Field staff				—			—			—		
3.	Community												
	a. V.H.Ws / Balsevikas			—			—			—			
	b. Non-formal education					—							
C.	**Support to other studies**	———	———	———	———	———	———	———	———	———	———	———	———

ANNEXURE 2

I D R C - B I S PROJECTS
PROPOSED BUDGET FOR THE YEAR 1991 - 92

PROJ. NO : 1
PROJ. TITLE : IRC - SOCIAL SCIENCE CELL

BUDGET SUMMARY

Sr.no.	Particulars	Amount
BAIF Administered Contribution		
1.	Salaries	1,18,300
2.	Research Expenses	36,600
3.	Consultancy	5,000
4.	Reports/documentation	10,000
5.	Training	14,000
6.	Travel	21,000
7.	Capital Equipments	-
8.	Infrastructure	-
9.	Books/Periodicals	8,000
10.	Administrative Overheads	21,290
	SUB TOTAL	**2,34,190**
IDRC Administered		
1.	Consultancy	-
2.	Training	-
3.	Travel	-
4.	Capital Equipments	-
		-
Unallocated		10,000
TOTAL IDRC CONTRIBUTION		**2,44,190**

ANNEXURE 3

BUDGET NOTES

(AMOUNT IN RS.)

1. SALARIES

Social Scientist (1)	56,000	
Jr.Social Scientist (1)	34,000	
Administrative Assistant (1)	18,000	
Allocated Salaries of Programme Monitoring Staff	10,300	
	---------	1,18,300

2. RESEARCH EXPENSES

A. Ongoing studies :

1. Identification of indicators

- Investigatiors (2) x 2 months @ Rs.1,000	4,000
- Travel for investigators	1,000

2. Socio-economic baseline study

- Investigators (2) x 3 months @ Rs.1,000	6,000
- Travelling for investigators	2,000

3. Status and role of women

- 2 investigators x 3 months @ Rs.1,000	6,000
- Travel for investigators	2,000

B. New Studies :

1. Assessment of food security status

- 1 Assistant x 2 months @ Rs.1,200	2,400	
- Travel	2,000	
2. Impact of dairy cattle production programme		
- 2 investigators x 3 months @ Rs.1,000	6,000	
- Travel for investigators	4,000	
C. Allocated Monitoring Expenses	1,200	
	---------	36,600

3.CONSULTANCY :

Subject specialists will be consulted as and when required for specific inputs in research activites.	5,000

4.TRAINING :

1.	Workshop for BAIF staff	5,000	
2.	Training for field staff	2,000	
3.	Training for the community		
	a. V.H.W. & Balsevika training	2,000	
	b. Training in non-formal education	5,000	
			14,000

5.TRAVEL :

1.	For co-ordination of research amd data collection	15,000	
2.	For staff to attend meetings / seminars Rs.3,000 x 2 scientists	6,000	
			21,000

PROJECT NO 2

COMMUNITY BASED RESEARCH

1.0 INTRODUCTION :

The Community Based Research (CBR) programmes in rural and tribal areas have now been in operation for three years. These projects were initiated in two different areas and among populations living under different socio-economic and cultural conditions. Given these differences in geographical location and social environment, two separate projects - Community Based Research in Rural Areas (CBR(R)) and Community Based Research in Tribal Areas (CBR(T)) - were formulated.

As the projects have progressed, a certain commonaliy of themes, issues and approaches has become evident. There has been a steady convergence of the two projects on the conceptual, methodological and practical levels. It is clear that the objectives of the programme will best be served by synthesizing these two projects into one comprehensive research and action programme.

To facilitate this process, the project will be organised around the common themes that have emerged during the implementation of the projects. Research and action oriented activities will be undertaken under each of these themes in both non-tribal and tribal areas. One advantage of this is that comparative analysis of project performance in different locations and among different populations will be possible. It will become possible to try a variety of approaches and then select those strategies which best suit different populations. Furthermore, the cross-fertilisation of ideas will become possible within a common conceptual framework. The themes that have been identified as a result of the experience from these projects are :

1. Health Systems :

Various research studies will be undertaken in the field of Water and Sanitation, Maternal and Child Health, Nutrition and Health Services etc. Universal immunisation programme, ANC activities, Supplementary nutrition, and Village level medicine depots will be the development activities included under this head.

2. **Social Sciences :**

Research studies will be undertaken in the areas of Baseline surveys, Community studies, Rapid rural appraisals, Development indicators, Food security status, and Impact evaluation,

Leadership training will be given to community youth. Training in survey and case study methods and training in community organisation will be conducted by the Social Science Cell for field staff.

3. **Farming Systems :**

Research and development activities will be taken in the areas of Land-use and cropping patterns, Farming practices ect alongwith appropriate interventions such as the Agro Service Centre.

4. **Women in Development :**

Research and development activities in the areas of Status and role of women, Wavli, Development of self-help groups, and Income-generating programmes will be included under this head.

5. **Programmes for Children :**

This will cover research and development activities in the areas of Nutritional status of under-fives, School based programmes, and Non-formal education.

OBJECTIVES

1. To help in livelihood and income generation activities of the Tribal and Non-tribal Communities.
2. To introduce appropriate health care interventions.
3. To provide input support, technological services in agriculture and livestock development.
4. To develop training methodologies.

2. Ongoing training of field officers and village health workers in relevant topics related to MCH care and sanitation will continue.

3. Health education of the community through awareness and diagnostic camps, as well as through child-to-child approach will be done.

4. Training of community members especially women's groups in topics like basic MCH care, nutrition and hygiene will be undertaken.

5. Traditional birth attendants will be involved in MCH care delivery, through periodic meetings cum trainings sessions and provision of kits containing antiseptic lotion, dressing material etc.

6. Analysis and reporting of the data will be carried out concurrently.

2. Control of Worm Infestations : A Trial

(Previously planned as '**Hookworm Control Trial**')

Rationale

Worm infestations is a common cause of eminently treatable and preventable morbidity in the population, especially in children. Unprotected sources of drinking water and lack of awareness of the causative factors as well as unhygienic practices, lead to perpatuation of the problem of high prevalence of worm infestations with resultent drain on the overall health status of the population.

During the diagnostic camps conducted in this area, we noted high prevalence of 'positive history of the passing small womrms' in the population. The prevalence of anaemia (Haemoglobin less than 10 gm%) was above 60% in general population. We even came across two adult males with Hb values of 2.5 and 3 gm%. This was most probably due to hookworm infestation.

In the school children history of passing worms was almost universal. Random stool examinations showed very high rates of mixed worm infestations. Taking into consideration the above situation, it was thought relevant to undertake a worm control trial.

Objective :

To determine prevalence of worm infestations and changes in it over the year of interventions.

Methodology :

Initially we had planned a village level study. We intended to collect data through special camps for determining prevalence of hookworm infestation and anaemia, periodically.

Interventions in the form of health education about use of footwear and importance of cleanliness, incentives and education for construction and use of sanitary latrines, sanitation inputs and administration of deworming agent to as many of the population as possible, as well as to any case detected during routine clinics were planned.

However, our initial experience with the community level activities was not very encouraging. Further we noticed very high prevalence of not only Hookworm but also other worms like Ascaris, E. vermicularis etc. and hence we have modified our approach. We intend to focus on health education

and inculcation of hygienic habits in the school children as major intervention. We will study this school based, child-to-child approach for control of worm infestations in the students.

Work components :

1. Data collection about prevalence of worm infestations and other morbidity like anaemia in the school children.

2. Conduction of 'Balmelas' - Nonformal education and creative activities for students/ children - in the schools for imparting knowledge about hygiene in general and control of worm infestations in particular.

3. Followup in the schools where programmes have been conducted previously, for judging the impact of these and for continuing interventions.

4. Inputs at community level, as well as in the schools for improving sanitation; like construction of sanitory latrines

3. To study impact of health education on knowledge attitude and practices of traditional birth attendants.

Rationale :

Traditional Birth Attendants are the major providers of intranatal care in the villages where hospitals and qualified doctors are not easily available. T.B.A. are the opinion leaders and are respected in villages.

However, the knowledge they have is largely gathered through practical experience and the teachings by their predecessors. With little extra knowledge they can provide good quality intranatal as well as pre and post natal care which is needed at village levels.

Objectives :

1. To know about existing knowledge, attitudes and practices of T.B.A.'s.

2. To improve upon existing MCH Care situation.

3. To measure efficacy of health education.

During this year good rappot was established with the Traditional Birth Attendents. Training programmes were conducted for the T.B.A.s. Kits containing antiseptic lotion, dressing material etc. were distributed to the practicing T.B.A.s and their use taught to them. The baseline KAP of the T.B.A.s were recorded in the schedules, as well as during the informal disscussions. Dais were taught to record birthweight, which they will now record regularly. Some more observations and recording of mother's interviews will now procede.

Work Components :

1. Periodic meetings cum training sessions for Dais (TBAs) will be arranged.

2. Periodic inspection and replenishment of consumables in the kits given to T.B.As. will be done.

3. Observations regarding changing KAP will be documented.

4. Report on baseline KAP of the TBAs.

4. Nutritional Status of underfive children in relation to weaning / feeding practices :

Rationale :

Protein energy malnutrition and anaemia are common problems in underfive children. Major part of underfive mortality is in the undernourished group. It was thought necessary to study the causes and prevalence of PEM and other deficiencies in underfive and plan interventions.

Objectives :

1. To find out prevalence of Grade I,II,III malnutrition in the underfive children.

2. To find out relationship between weaning practices and nutritional status of underfive children.

3. To find out prevalence of other nutritional deficiences assosciated with P.E.M.

4. To plot growth curves for underfives for the population.

During this year, the research work schedule and methodology were discussed in detail and sample size defined after discussions with the statistical expert. Schedules for recording the KAP related to child nutrition and weaning have been finalised. Balwadi teachers have been trained to record anthropometric measurements of the children. Systematic, monthly recording of these measurements has begun from November '89.

Work Components

1. Data Collection / Recording in the schedules will be done for the underfive children from the sample households.

2. Anthropometric data on Balwadi attending children, will be collected regularly.

3. Training of Balwadi teachers for correct recording of relevant measurements.

4. Analysis and report on the study undertaken.

5. Morbidity pattern and impact of health education on school children :

Rationale :

It is observed that large number of school going children are anaemic, have skin infections and symtoms suggestive of worm infestation. Such chronic drains on health can lead to severe impairment of growth and working capacity in adult life. Through proper education certain healthy habits can be inculcated in the children which will reduce morbidity.

Objectives :

1. To find out morbidity pattern in school children.

2. To estimate impact of health education.

3. To motivate school children to take the knowledge home and apply it in practice.

During this year all the school teachers from the schools in the project villages were contacted and the idea was introduced to them. Detailed discussion were done with statistical expert for defining methodology and sampling plan. Schedules for recording baseline hygienic and health situation in the schools as well as KAP of the school children, have been defined. The school health check-ups will now be initiated.

Work Components

1. School health check ups.
2. Training of local teachers
3. Health education programmes in the schools.
4. Analysis of baseline data on health status and KAP.

6. Impact of improved drinking water sources on morbidity related to G.I. Tract :

Rationale :

More than 20 % of general morbidity is due to gastrointestinal tract diseases. More so in villages where contaminated drinking water sources lead to frequent episodes of diarrhoeas and claim heavy toll of underfive children. Much of this could be prevented by improving quality of water available for drinking.

Objectives :

1. To know prevalence of G.I.T. disease at present.
2. To study effects of improved drinking water sources on this morbidity.
3. To study impact of health education on handling of water and its potability at community sources and home.

During this year, geohydrological survey of probable sites for borewells was conducted and eight new borewells were installed. Potability test was applied to water samples from major drinking water sources from these villages and majority were found to be contaminated. Routine chlorination of these sources has been initiated. Recording schedules for KAP and morbidity related to waterborn diseases have been finalised. Regular recording will now commence.

Work Components

1. Analysis of baseline data collected.
2. Development of database on village drinking water sources and their potability.
3. Regular chlorination of drinking water sources and maintenance of borewells and handpumps.
4. Regular recording of GIT morbidity.
5. Health education programmes for the community.

7. Study of Farming System :

Rationale

A number of studyies have beene taken up as part of Farming Systems Research to understand in depth the farming systems and be able to identify interventions for increased productivity and income. This is necessary so as to help increase the carrying capacity of land.

Objectives

1. Study of prevailing Farming System at different locations.

2. Identify and introduce relevant interventions to improve productivity and income on a sustainable basis.

Progress made so far

Various individual studies have been taken up in tribal as well as non-tribal areas. These are as reported in the Technical Report.

Work components

A number of studies in progress will be continued. These will be synthesised and developed into a comprehensive understanding of Farming Systems; the knowledge and attitude of farmers; and the rationale behind their practices. Suitable interventions will be planned and introduced and their impact monitored.

8. Study of different methods for construction of low cost check dams

Rationale

As water is the lifeline for utilisation of wastelands for productive purpose, it is necessary to harvest runoff water to overcome its shortage, BAIF has introduced a system of creating water pondages along the nallahs (streams) by temporary and lost cost check bunds using gunny bags and silt. However a search for more durable checkdams preferably using materials that can be reused and which will be economical, needs to be continued.

Objectives

To determine the best method of constructing check dams using materials that will be durable and of low cost.

Progress made so far

4 different types of checkbund designs have been planned. 3 locations have been identified for pilot construction and engineering surveys completed. Conventional designs have been worked out for these locations.

Work components

Detailed prototype design for alternate checkbund types will be developed for the above locations. These bunds will be erected before the next monsoon. Observations would be noted to assess the effectiveness and cost comparison of different designs.

9. Study of organisation and management aspects of an Agro Service Centre :

Rationale

An Agro Service Centre which will make available necessary inputs to the farmers will be required for improvement of the farming practices. Small farmers cannot afford to purchase tractors and other machinery but they can hire these if available and improve their cultivation methods and output. Timely availability of inputs like Pesticides, Fertilisers, Micro-nutrients, improved seeds etc. will also help the farmers to increase the productivity of their land. Such a centre is proposed to be set up at Vrindavan Campus of BAIF at village Lachhakadi.

Objective

1. To study the feasibility aspect of setting up an Agro Service Centre.
2. To determine the equipments tools, implements and other inputs like fertilisers etc. that will be required for improved farming.
3. To set up a well equipped Agro Service Centre which will cater to the needs of farmers in the area.
4. To study the impact of an Agro Service Centre.

Progress made so far

An Agro Service Centre has been set up and a set of implements, accessories and services are made available from the Centre.

Work Components

Newer implements / services will be added during next year. The details of utilisation patterns, operational costs and impact on time / labour utilisation will be recorded and analysed.

- relate equipment type capacity & cost to most productive use — ie., to replace more onerous & least productive hand tasks.
- cost analysis. Investment level ? charges ?

10. Social Science Studies

Studies concerning the status of women and Baseline socio-economic studies will be continued during next year. These have been elaborated under the Work Plan of the Social Science Cell.

2.2 Studies to be undertaken :

1. Study of the Impact of Livelihood Programme on the Maternal Nutrition and Birth Weights of Infants

Rationale

Low birth weight is a serious challenge in maternal and child health. It is considered to be the main contributing factor in perinatal and infant mortality.

The causes of low birth weight are not known with certainty, with unknown factors operating in upto 50% cases. It has been said that as far as India is concerned, maternal malnutrition and anaemia are the two important factors.

The Hypothesis

Increased income will result in a better nutritional intake, esp. during pregnancy. This increased nutritional intake will result in the mother gaining adequate weight during her pregnancy and the infant born will be of a normal weight.

Objectives

1. To estimate the current prevalence of Low Birth Weight Neonates (LBW).

2. To assess the impact of livelihood programme on the prevalence of LBW Neonates.

Work components

The study will be conducted in the Akola Project area, where we have 1213 families, participating in the Tribal Rehabilitation Programme.

1. Listing of Pregnant women in the area, with special referance to their existing nutritional status and their participation in the programme.

2. Follow up of the enlisted women and recording of the birthweights of as many of the neonates as feasible.

3. Continuing contact with the women with special reference to their obstretical carrier.

4. MCH Care activities and health education programmes for the village community, especially women.

2. Assessment of Food Security Status

This study is elaborated under the Work Plan of the Social Sciences Cell.

3.0 OTHER ACTIVITIES

3.1 Training visits/study tours of village health workers and field officers :

As a part of ongoing training for village health workders and field officers study tours will be arranged. The participants will benefit from observing others working in similar areas towards the same goal of development. Also introductory visits for observing newer income-generation profjects will generate cofnfidence in the participants.

3.2 Training of Senior Staff :

Senior staff will undergo training in research related areas and improving skills and knowledge as and when necessary.

3.3 Drinking Water Programme :

Regular 'chlorination' of drinking water at community sources through community participation will continue. Repeated testing of drinking water for potability of existing sources as well as of newer sources developed will be done.

3.4 Child to child activities :

Promotion of health through child to child activities, through schools will continue. This will be done with the help of non-formal activities for children and health education and training of the teachers.

3.5 Women's programmes :

To promote women's organization and activities especialy for the women from the newer tribal area included in the programme, trips and 'Melas' (women's meetings) will be arranged. During these along with the income generation skills, various other health related skills and knowledge will be taught.

3.6 Special camps :

To make the specialist services available, at the field level; special camps will be arranged to address any such health problems.

4.0 PHASING :

The activities conducted under the Community Based Research, are of continuous nature. Every month a review meeting with the senior field staff is conducted to finalize details of the activitiy timetable for the month and tentative plan for the next month. Camps, Melas and the other community activities are planned considering the suitability of the programme to the peoples needs; usually when the agricultural activities are minimum and the season suitable. The school based programmes are planned as per the academic timetable. The Activity Phasing for the project is presented in Annexure 1.

6.0 BUDGET :

The Budget Summary for 1991 - 92 is presented in Annexure 2 and the Budget Notes in Annexure 3.

ANNEXURE 1

ACTIVITY PHASING

Work Plan IV Year

PROJECT TITLE : Community Based Research

SR. NO	PARTICULARS	ACTIVITY PHASING (Month) 1	2	3	4	5	6	7	8	9	10	11	12
1.	Trainings of TBA	-	-	-	-	-	-	-	-	-	-	-	-
	Observations on TBA-KAP Report on Baseline KAP-TBA	———	———	———	———	———	———	———	———	———	———	———	———
2.	Data collection on Nutritional status of underfive	———	———	———	———								
	Analysis of records				———	———	———	———	———	———	———	———	———
3.	School health checkups and health education programmes		———				———						
	Report on baseline school health				———	———							
4.	Chlorination of water	———	———	———	———	———	———	———	———	———	———	———	———
	Database on drinking water sources	———	———	———									
	Recording of GIT morbidity	———	———	———	———	———	———	———	———	———	———	———	———
	Community H.E. programmes	———	———					———	———	———	———		
5.	Trainings of V.H.W.	———	———					———	———	———	———		
6.	Diagnostic support	———	———	———	———	———	———	———	———	———	———	———	———
7.	Supply of educational kits to Balwadis				———	———							

Sr.No.	Activity	1	2	3	4	5	6	7	8	9	10	11	12
8.	Worms control												
9.	Special Camps - Eye Camp												
	- Gynaecological Camp												
10.	Raising of seedlings Agroforestry												
	Horticulture												
11.	Seedling distribution												
12.	Minikit Trial												
13.	Land and crop study												
14.	Equipment procurement												
15.	Survey for watershed management												

ANNEXURE 2

I D R C - B I S PROJECTS
PROPOSED BUDGET FOR THE YEAR 1991 - 92

PROJ. NO : 2
PROJ. TITLE : COMMUNITY BASED RESEARCH

S.No.	Particulars	Amount Rs.
BAIF Administered		
1.	Salaries	10,76,800
2.	Research Expenses	5,74,400
3.	Consultancy	10,000
4.	Reports/Documentation	10,000
5.	Training	77,000
6.	Travel	96,000
7.	Capital Equipments	92,000
8.	Infrastructure	5,25,000
9.	Books/Periodicals	15,000
10.	Administrative Overheads	1,85,920
	SUBTOTAL	**26,62,120**
IDRC Administered		
1.	Consultancy	-
2.	Training	50,000
3.	Travel	-
4.	Capital Equipment	-
	SUBTOTAL	**50,000**
Unallocated		-
TOTAL IDRC CONTRIBUTION		**27,12,120**

ANNEXURE 3

BUDGET NOTES

(AMOUNT IN RS.)

1. **SALARIES :**

Sr.No.	Post	Amount	
1.	Co-ordinator (1)	55,000	
2.	Joint Co-ordinators (2)	86,000	
3.	Joint Field Coordinators (6)	2,16,000	
4.	Allocated Salaries of Subject Matter Specialsts (4) (Agri.,Health,Engineering)	1,00,000	
5.	Field Officers (20)	2,70,000	
6.	Field Assistants/Laboratory Technicians (4)	86,400	
7.	Secretarial Staff (3)	54,000	
8.	Village Level Functionaries(50)	1,20,000	
9.	Allocated Salaries of Programme Monitoring Staff	89,400	

			10,76,800

2. **RESEARCH EXPENSES :**

2.	Construction of checkdams @ Rs.30,000/checkdam X 2	60,000
3.	Costs of operation of Agro-Service Centre (Such as implements for demonstration and custom hiring and inputs like improved seeds, biofertilisers etc.)	30,000
4.	Health care supplies @ Rs.1/ person for about 75,000 population	75,000

5.	Laboratory supplies @ Rs. 1000/month	12,000	
6.	Consumable items such as dressing material, antiseptic for old health kits @ Rs.15/month/kit x (100)	18,000	
7.	Health Care kits villages @ Rs.1000/kit x (15)	15,000	
	TBA Kits @ Rs.50/kit x (60)	3,000	
	Medicine kits for schools	1,000	
8.	Recording and Monitoring @ Rs. 2000/month	24,000	
9.	Drinking water source development, rooftop harvesting etc.	30,000	
10.	Water treatment	10,000	
11.	Promotion of School Based Programmes	10,000	
12.	Support for promotion of Sanitation	40,000	
13.	Vehicle Running @ Rs. 4000/month/Jeep x (1)	48,000	
	@ Rs.800/month/Motorcycle x (13)	1,24,800	
14.	Data entry and Analysis cost @ Rs.8/Schedule app. 3,000 Schedules covering all the research studies	24,000	
15.	Organising Health Camps	15,000	
16.	Allocated Monitoring Expenses	19,600	
		----------	5,74,400

. **CONSULTANCY :**

	Consultancy fees for expert guidance in planning and implementation of project as well as research	10,000

4.	**REPORTS / DOCUMENTATION :**		
	Reports on Research Studies conducted and on development activities undertaken	10,000	
5.	**TRAINING :**		
	Lodging & Boarding Expenses		
1.	Continuing training of R.D.O.s @ Rs.20/person/day x 30 days x (20)	12,000	
2.	Continuing training of V.H.W @ Rs.20/person/day/ x 12 days x (50)	12,000	
3.	Short duration trainings of community members @ Rs.1000/training x (24)	24,000	
4.	Health education programmes for the community / schools @ RS.2000/programme x (12)	24,000	
5.	Trainings/Workshops attendance for the senior staff	5,000	
		----------	77,000
	IDRC ADMINISTERED :		
1.	Training of BAIF staff abroad in courses relevant to project activities	50,000	
6.	**TRAVEL :**		
	Travel for monitoring, training, research and experts visits to the multiple field locations @ Rs.8000/-per month	96,000	

7. CAPITAL EQUIPMENT :			
1.	Equipment for Agro-service centre Iron ploughs, seed drills, etc.)	50,000	
2.	V.C.P. layer.	12,000	
3.	16 mm projector	20,000	
4.	Slide projector	10,000	
		---------	92,000
8. INFRASTRUCTURE :			
	Training centre, office space in the newer project area @ Rs.150/sq.ft. x 1500 sq.ft.	2,25,000	
	Community Health Centre, 2000 sq.ft. @ Rs. 150 sq.ft	3,00,000	
		---------	5,25,000
9. BOOKS/ PERIODICALS :			
	Renewal of subscriptions New subscriptions and purchase of relevant new books	15,000	

PROJECT NO 6

UPGRADATION OF FROZEN SEMEN TECHNOLOGY FOR THE DEVELOPMENT OF BUFFALOES

1.0 INTRODUCTION :

Buffaloes play an important role in our national economy. Recognising this need buffalo breeding has to be put on a sound footing.

Acceptance of artificial insemination is poor by the farmers because of two major problems :

1. Low fertility by artificial insemination on account of poor preservability of sperm.

2. Heat detection in female buffaloes.

Through this project efforts will be taken to solve the problems by evolving appropriate technology for preservation of buffalo sperm. The frozen buffalo semen produced through improved technology will be utilised for AI through already existing cattle breedng centres of BAIF for development of buffaloes. For this purpose field AI technicians will be trained.

2.0 RESEARCH STUDIES :

2.1 Studies completed in 1989-90.

The techniques have been standardised for the following studies.

1. Study on seasonal variation in quality and production of frozen semen in buffalo bulls.

2. Study of different methods of glycerolisation for processing of buffalo semen.

3. Study of the reproductive behaviour as regards libido mounting, seeking and ejaculatory thrust as well as dismount.

4. Study on the seasonal variation in frozen buffalo semen quality as assessed by Glutamic oxaloacetic transminase release in extra cellular fluid and acrosome morphology.

2.2 Studies undertaken in 1990-91.

1. Standardisation of straws for packaging buffalo semen.

2. Training of senior officers/technicians for handling of buffalo semen, heat detection and artificial insemination and preparation of manual on the subject.

2.3 Studies to be undertaken in 1991-92.

Standardisation of freezing rates for deep freezing of buffalo semen using biofreezer (Digitcool).

Rationale :

Buffalo semen is required to be handled carefully. The buffalo sperm are more fragile and get affected by variation in temperatures during processing and freezing. So far optimum freezing rate for buffalo semen has not been worked out. Through this project different freezing rates will be tried and optimal rate will be worked out.

Methodology :

5 Murrah and 5 Surti buffalo bulls will be involved in this study. Programmed freezer (Digitcool) will be used. Three different rates for deep freezing will be tried and based on the laboratory tests for quality, optimum freezing rate will be determined.

The tests which will be undertaken for determining the quality of frozen semen will be as follows.

1. Live count.
2. Progressive motility.
3. Acrosomal morphology.
4. Leaching of aspertate amino transferese enzyme.
5. Leaching of Hyaluronidase enzyme and measuring the hyaluronidase activity in extracellular fluid.
6. Sephadex gel filtration test.

Testing of frozen semen in the field for fertility.

Rationale :

The ultimate test for quality of frozen semen is the fertility. The frozen semen produced using optimum freezing rates based on laboratory evaluation should be tested in the field for fertility in buffaloes.

Methodology :

The frozen semen from 5 Murrah and 5 Surti buffalo bulls, produced in the laboratory using optimal packaging and freezing rate will be sent to the field AI centres in Maharashtra, Karnataka and if possible in Gujarat for testing its fertility on buffaloes after artificial insemination.

The buffalo frozen semen will be given to field AI centres managed by BAIF Development Research Foundation in Maharashtra and Karnataka where Murrah and Surti bulls will be used respectively.

A total of 200 conceptions from each breed will be aimed at for determining overall fertility rates of frozen semen.

3.0 OTHER ACTIVITIES :

Following equipment are planned to be imported in the first quarter of 1991-92.

a) Wide mouth semen storage cum freezing containers with canister equipment MVE 320 - Two.

These containers will be required to freeze and stock buffalo semen in the semen bank. One each for surti and Murrah buffalo semen. The capacity of each will be for 1.5 lakh doses.

b) Spares for equipment :

These spares are normally required for replacement on account of normal wear and tear of equipment. Some of the spares like microscopic bulbs, printing ink, double sided sticking plaster filling tubes for filling and sealing machines etc. are some examples.

4.0 PHASING :

The Activity Phasing for the next year is provided in Annexure 1.

5.0 BUDGET :

The Budget Summary for 1991 - 92 is presented in Annexure 2 and the Budget Notes in Annexure 3.

ANNEXURE 1

ACTIVITY PHASING

Work Plan IV Year

PROJECT TITLE : Upgrading of frozen semen technology for the development of buffaloes.

SR. NO	PARTICULARS	ACTIVITY PHASING (Month) 1 2 3 4 5 6 7 8 9 10 11 12
1.	Standardisation of freezing rates using digitcool (Biofreezer).	----------
2.	Testing of frozen semen frozen using different rates.	----------
a)	Sephedex filtration	----------
b)	Hyaluronidase	----------
c)	GOT Test	----------
d)	Acrosome morphology by interference contrast microscopy.	----------
3.	Importation and Installation of equipment.	---------- -------

ANNEXURE 2

I D R C - B I S PROJECTS
PROPOSED BUDGET FOR THE YEAR 1991 - 92

PROJ. NO : 6
PROJ. TITLE : Up-grading of Frozen Semen Technology for Development of Buffaloes

BUDGET SUMMARY

SR. NO.	PARTICULARS		AMOUNT(RS.)
BAIF ADMINISTERED			
1.	Salaries		1,39,100
2.	Research Expenses		51,800
3.	Consultancy		--
4.	Reports documentation		10,000
5.	Training		5,000
6.	Travel		10,000
7.	Capital Equipments		80,000
8.	Infrastructure		--
9.	Books and Periodicals		10,000
10.	Administrative Overheads		22,590
		SUBTOTAL	**3,28,490**
IDRC administered			
	Consultancy		--
	Training		--
	Travel		--
	Capital Equipment		5,00,000
		SUBTOTAL	**5,00,000**
Unallocated			--
TOTAL IDRC CONTRIBUTION			**8,28,490**

ANNEXURE 3

BUDGET NOTES

(Amount in Rs)

1. SALARIES :

The break-up of the staff inclusive of benefits is as follows:

Sr. Research Scientist (1)	66,000	
Lab. Asstt. (1)	25,000	
Lab. attendents (2)	36,000	
Allocated salaries of Programme Monitoring Staff	12,100	
		1,39,100

2. RESEARCH EXPENSES :

An amount of Rs. 50,000 has been budgeted for purchase of replacable glass ware, chemicals for enzyme assays luch as GOT, hyaluronidase and Sephadex etc. and repairs and spares for local equipment purchased under the project.

Replacable glassware	15,000		
Chemicals	25,000		
Spares	10,000		
		50,000	
Allocated Monitoring Expenses		1,800	
			51,800

3. REPORTS/DOCUMENTATION :

An amount of Rs. 10,000/- has been proposed for covering expenses on stationery, report preparation, publication of papers, preparation of slides for trainings etc.

4. TRAINING :

An amount of Rs. 5,000/- has been budgeted for training. Project staff will attend the training

5. TRAVEL :

An amount of Rs. 10,000 has been provided for travel expenses of the staff for attending workshops, National symposiums, visit to other Institutions etc. @ Rs. 2,500/- per visit for atleast 4 visits during the year.

6. BOOKS AND PERIODICALS :

An amount of Rs. 10,000/- has been budgeted for purchase of important books and journals, reprints etc.

7. CAPITAL EQUIPMENT :

BAIF Administered

S.No.	Particulars	Amount
1.	Bulk Semen Storage Containers at field stations (5 Nos) @ Rs. 12,000	60,000
2.	Stabilizers	20,000
		80,000

IDRC Administered

S.No.	Particulars	Amount
1.	Wide mouth semen Storage cum freezing tanks with canister equipments MvE 320 (2)	4,00,000
2.	Spares for equipment like Printing, Filling and sealing machine, Photometer, Microscopes etc.	1,00,000
		5,00,000

This amount is provided as a part of IDRC administered funds. This will be required for storage of buffalo semen frozen during these years. The spares will be required as normal wear and tear will take place plus bulbs for photometer and microscopes will be required.

PROJECT NO 7

RURAL POLYTECHNIC

1.0 INTRODUCTION :

One of the biggest problems in rural India is that of unemployment and underemployment. The uneven pattern of development in India has seen the villages being neglected and allowed to stagnate. Agricultural development has been limited in nature and in areas where it has taken place, has reached a productivity plateau. It appears unlikely that agriculture will be able to sustain completely the increasing population in the villages. Therefore, alongwith further development in land-based activities to the extent possible, it is necessary to develop the off-farm sector as well.

Technical training to rural youth in both traditional and modern activities is an important tool for generation of gainful self-employment opportunities. A process has to be initiated through which the necessary skills are imparted to rural youth to enable them to get gainful self-employment with the environs of their own village. Also, skills of existing artisans in the villages must be upgraded in order that productivity and product quality inproves and they are able to compete effectively with mass-produced goods from the industrial sector. The BAIF Rural Polytechnology Institute being set up in Urulikanchan is an institute which will impart such skills to persons in rural areas.

Objectives :

1. To identify training needs of rural youth and artisans in activities leading to sustainable and gainful self-employment.

2. To develop appropriate training courses in relevant areas.

3. To impart training to the beneficiaries in concerned fields.

4. To provide the pest training guidance and support to the beneficiaries to ensure that the gained skills are used for gainful livelihood activities.

2.0 ACTION RESEARCH STUDIES :

2.1 Need Identification :

As a followup of the study conducted during the previous year for identification, 2 meetings will be conducted with rural artisans. During these meetings, further activities for training will be identified. Existing courses will be reviewed to elicit the views of local artisans on the relevance of these courses to their needs. The courses will be suitably modified based on the feedback received.

2.2 Development of Training Modules :

It is proposed to develop detailed training modules on the training areas to be taken up during this year. Also, the modules which have already been developed will be modified based upon discussions and consultations with experts in the concerned fields and feedback from trainees.

A training workshop on 'Development of Training Modules' will be conducted for BAIF staff concerned with the activities of the Polytechnic. Also, workshops for development of modules in specific areas of training will also be conducted. These workshops will be mainly for subjects in which the expertise is not available within BAIF itself, like leather craft. These workshops will bring together BAIF staff, subject experts and rural artisans. Inputs from each of these groups will contribute towards the development of modules.

3.0 OTHER ACTIVITIES :

3.1 Training Courses :

Training courses will be conducted in each of the areas in which courses were conducted during the previous year. These are :

1. Horticulture (Nursery Raising, Grafting, Planting and Aftercare of Fruit Trees)

2. Ferrocement construction and fabrication technology.

Apart from these, training courses will also be conducted in the following subjects :

1. Leather Craft.
2. Mushroom Production.
3. Fruit and Vegetable Processing.
4. Masonry and Carpentry.
5. Dairy Cattle Management.
6. Repair of domestic appliances.

Two training courses for batches of 10 trainees each will be conducted in each of the eight above mentioned areas.

3.2 Development of Training cum Production facilities :

Apart from facilities for training, it is necessary to create production facilities. These facilities will serve as practical training facilities for trainees, common production facilities for activities for which capital investment may be required and a centre where skills upgradation training can be provided. Based on the needs of the programme, it is proposed to set up training-cum-production centress for the following courses :

1. Mushroom Production :

Mushroom Production is an activity which does not require much capital investment or space. There is a ready market for the product in the urban areas and marketing should not therefore be a problem. This is also a skill that can be learnt very easily. The difficulty is largely with the supply of spawn as seed material for Mushroom Production. BAIF has already developed the technology for Mushroom Production and facilities for production of spawn have already been set up.

- harvest
packaging
dist^n
market study - handling
location
quantity
quality

2. Fruit Processing :

Horticulture is now an established activity in rural areas due to the extension efforts of the Government and NGOs like BAIF. But a situation is seen in which the farmers who produce fruits do not get satisfactory returns and most of the profits are skimmed off by intermediaries. This is because the farmer is unable to store fruits and has to sell them immediately after harvesting when there is a glut in the market. If processing of fruits becomes established, then the farmers will be able to tap urban markets at a time when the prices are at their peak. The technology for fruit processing is quite simple and a low cost unit can be set up and operated by a farmer after basic training. The training-cum-production centre will also be able to process the fruits produced by farmers who are unable to set up their own processing facilities. Mangoes, grapes, tomatoes and guavas are some of the fruits produced around Urulikanchan which can easily be processed for value addition.

In periurban areas processing of fruits and vegetables also offers good selfemployment opportunities. Such areas have a good access to the above farm produce as well as ready market for the processed products such as jams, preserve, sauces etc. Training can therefore be imparted to rural youth, especially women, in making such products and arranging retail sales. The training facility could also be made available as a production facility for part of the time.

3. Ferrocement and Fabrication Technology :

Due to the steady growth of urban areas there has also been a construction boom in many rural areas. There has been an acute shortage of trained masons and carpenters and those that do exist earn very high incomes. Very little investment is required for these trades. Villagers are also in favour of low-cost technologies like ferrocement. Training in this skill can be provided both to practicing masons and carpenters as well as unemployed youth. The production centre would provide them with a central facility where expensive welding machinery etc could be provided and used by these craftsmen.

After selecting the subjects which could be directly effective in creating opportunities for self employment of rural youth and women, the course structure is being planned keeping the following factors in mind :

Most of the beneficiaries may not be able to attend if the courses are conducted continuously over a period of several months. The courses would, therefore, be spread out so as to enable beneficiaries to attend while taking care of their routine activities.

The eligibility conditions for these courses are not strictly defined, except where absolutely necessary, so as to enable youth who do not have much formal education but possess aptitude, technical knowledge and skills, to attend these courses.

The module on 'Business Management' would be included in every course with the objective of enabling youth to better manage their own enterprises.

The persons conducting the training courses will be drawn from among the existing technical staff available in the M.G.Vidyalaya and BAIF and other experts will visit as guest faculty as and when required.

4.0 PHASING :

The Activity Phasing for the next year is provided in Annexure 1.

5.0 BUDGET :

The Budget Summary for 1991 - 92 is presented in Annexure 2 and the Budget Notes inAnnexure 3.

ANNEXURE 1

ACTIVITY PHASING

Work Plan IV Year

PROJECT TITLE : Rural Polytechnic

SR. NO	PARTICULARS	ACTIVITY PHASING (Month) 1 2 3 4 5 6 7 8 9 10 11 12
1.	Meetings with rural artisans.	____
2.	Development of Training modules	_____
3.	Training courses for rural youth and artisans	_____
4.	Development of Training-cum-production facilities	_____

Annexure 2

I D R C - B I S PROJECTS
PROPOSED BUDGET FOR THE YEAR 1991 - 92

PROJ. NO : 7
PROJ. TITLE : RURAL POLYTECHNIC

Sr.No.	Particulars		Amount (Rs.)
BAIF Administered			
1.	Salaries		1,73,100
2.	Research Expenses		10,400
3.	Consultancy		5,000
4.	Reports/Documentation		10,000
5.	Training		1,52,000
6.	Travel		30,000
7.	Capital equipments		5,30,000
8.	Infrastructure		7,43,100
9.	Books/Periodicals		10,000
10.	Administrative overheads		39,090
		SUB TOTAL	**17,02,650**
IDRC Administered			
1.	Consultancy		-
2.	Training		-
3.	Travel		50,000
4.	Capital Equipment		-
		SUB TOTAL	**50,000**
Unallocated			50,000
TOTAL IDRC CONTRIBUTION			**18,02,650**

ANNEXURE 3

BUDGET NOTES

(AMOUNT IN RS.)

1. **SALARIES** : The salary and allowances break-up inclusive of benefits is given below :

Sr.No.	Post	Amount	
1.	Project co-ordinator (1)	60,000	
2.	Training and Production Supervisor (1)	30,000	
3.	Demonstrators (3)	36,000	
4.	Remuneration to resource persons Rs.4000 per training course x 8	32,000	
5.	Allocated Salaries of Programme Monitoring Staff	15,100	
			1,73,000

2. **RESEARCH EXPENSES** :

Feasibility studies and marketing studies	10,000	
Allocated Monitoring Expenses	400	
		10,400

3. **TRAINING** :

Workshops for development of training modules. 4 workshops of 2 days each will be conducted. Rs.24,000 are kept for this purpose @ 6,000 per workshop.

In all 16 batches of 10 trainees will be trained in this year. Training expenses per batch of 10 participants would be Rs.8,000. For sixteen such courses, the training expenses would be Rs.1,28,000.

Total 1,52,000

4. **TRAVEL :**

Study tours will be taken up for studying training and production facilities in leather craft and ferrocement. Expenses per study tour - Rs.10,000 for 2 persons. (Total 20,000). Also travel for participants and project staff Rs.2,500 per training batch for four batches Rs.10,000/- are provided. (Total 30,000).

IDRC Administered :

A Study Tour abroad is planned to be undertaken to study similar programmes. An allocation of Rs. 50,000 is provided for the same.

5. **REPORTS /DOCUMENTATION :**

Rs.10,000 are allocated for preparation of training material.

6. **CAPITAL EQUIPMENTS AND INFRASTRUCTURE :**

Infrastructure and capital equipment as given below will be required during the year for setting up training-cum-production facilities.

Total Capital Expenses :

Ferrocement Technology Unit	77,000
Fruit and Vegetable Processing Unit	50,000
Mushroom Production Unit	1,03,000
Common Facilities	3,00,000
	5,30,000

Total Infrastructure Expenses :

Ferrocement Technology Unit	2,27,600
Fruit and Vegetable Processing Unit	87,500
Mushroom Production Unit	2,08,000
Common Facilities	2,20,000
	7,43,100

Unitwise details of the above are given below.

FERROCEMENT TECHNOLOGY AND FABRICATION UNIT

A. Infrastructure :

1.	Workshed 1500 sq.ft @ Rs.120/per sq.ft.	1,80,000
2.	Raw material depot/godown 340 sq.ft @ Rs.140 per sq.ft	47,600
		2,27,600

B. Capital Cost :

1.	Plant & Machinery (with details) a. Generator 5 kw capacity b. Welding machine 2 kw capacity c. Cutting machine d. Weaving machine for expanded mesh e. Weaving machine for chicken mesh f. Drilling machine	67,000
2.	Tools & equipments @ Rs.1650 x 6 sets	10,000
		77,000
	Grand Total :	**3,04,600**

FOOD PROCESSING UNIT

A.	**Infrastructure :**	
1.	Workshed 250 sq.ft @ Rs.200/per sq.ft.	50,000
2.	Raw material depot/godown 150 sq.ft @ Rs.150 per sq.ft	37,500
		87,500
B.	**Capital Cost :**	
1.	Plant & Machinery (with details) a. Pulper / Fruit Mill b. Strainers c. Crown corking machine d. Cooking gas e. Screw type juice extractor f. Miscellaneous equipment g. Miscellaneous utensils	50,000
		50,000
	Grand Total :	**1,37,500**

MUSHROOM PRODUCTION

A.	**Infrastructure :**	
1.	Workshed a. Preparation room 300 sq.ft @ Rs.140/per sq.ft. b. Growth unit 1000 sq.ft @ Rs.140 per sq.ft	1,82,000
2.	Raw material depot/godown 200 sq.ft @ Rs.130 per sq.ft	26,000
		2,08,000

B.	**Capital Cost :**	
1.	Plant & Machinery (with details) a. Humidifier b. Refrigerator c. Airconditioner	68,000
2.	Tools & equipments a. Exhaust fans b. Racks and stands	35,000
		1,03,000
	Grand Total :	**3,11,000**

COMMON FACILITIES

A.	**Infrastructure :**	
1.	Land and site development	10,000
2.	Workshed a. Dormitory 750 sq.ft @ Rs.150/per sq.ft. b. Classroom - 250 sq.ft @ Rs.150 sq.ft	1,50,000
3.	Office 200 sq.ft @ 150 sq.ft	30,000
4.	Sales outlets 200 sq.ft @ 150sq.ft	30,000
		2,20,000
B.	**Capital Cost :**	
1.	Vehicle	2,50,000
2.	Others (Training eqpt) Furniture, blackboards etc	50,000
		3,00,000
	Grand Total :	**5,20,000**

8. **BOOKS/ PERIODICALS** : Rs.10,000 is allocated for this purpose.

PROJECT NO 8

DEVELOPMENT AND STANDARDISATION OF PRODUCTION TECHNOLOGY FOR VA MYCORRHIZA INNOCULA

1. INTRODUCTION

Mycorrhiza in a fungus which is associated with the root system of higher plants. Very little is known of the life cycle of these organisms, mainly because pure culture methods are not available. Hence the development and standardisation of monosporal cultures is of prime importance for culturing the organisms in vitro system or in host plant. The pathogenic effects and physiological behaviour trials and thereafter develop a system of mass production of VA Mycorrhiza Inocula. This calls for sporal culture identification and mass propogation of the inocula.

OBJECTIVES :

1. To develop techniques for mass production of pathogen free end-mycorrhiza.
2. To determine and standardize the conditioning modes of different forms of inoculum.
3. To study the effectiveness of the innoculum at host plant level.
4. To establish and standardise the methodology for inoculum at host plant.
5. To establish and standardise the methodology for inoculum handling and its distribution.

2.0 RESEARCH STUDIES :

1. GERM PLASM BANK

Screening of wide range of cultivated crops will be undertaken to select a suitable host plant applying Root Organ Culture (ROC) technique.

Screening of host plants will be done on the basis of response of the plant to colonization and growth with different VAM species.

The Germ Plasm preserved under ROC technique will ensure viable preservation of pure VAM cultures to be used for primary inoculum production in the pilot growth unit.

2. PRIMARY MULTIPLICATION

Preparation of primary cultures of different VAM strains using sterilized substrate and nutrient solution.

Provision of optimum conditions for the growth of the seedlings.

Application of quality control measures after 6-8 weeks of inoculation to test efficacy of the culture.

3. SECONDARY MULTIPLICATION

In the scale up process of production of VAM inoculum secondary inoculum production will consist of production of the inoculum under partially controled conditions of plant growth.

The production of VAM inoculum will be undertaken using standardised host plant and substrates under a canopy specially designed to control wind borne pathogens in green house conditions.

4. MASS PRODUCTION AT PILOT SCALE

Mass Prodcution of selected VAM strains will be undertaken at pilot scale with provision of following Plant Growth parameters in the pilot growth unit :

* Control of temperature between 25 to 28 C.
  o
* Provision of Fluorescent and incandescent light to maintain intensity upto 15 Klux.
* Arranging photoperiod of 14-18 hours per day

* Maintainance of humidity to 60-80%

* Proper aeration and supply of clean air through provision of micro filters.

* Substrate, host Plant and VAM strain will be selected on the basis of their experimental performance in terms of colonisation and plant growth.

5. QUALITY CONTROL

On line testing of the inoculum will be done to observe the following :

Presence of Pathogenic bacteria, nematodes, mites in the inoculum under the microscope. Disease to eleminate pathogenic fungi and bacteria for quality of the inoculum.

Formation of Vesicles, Arbuscles and Hyphae to test the VAM infection.

6. INOCULUM CONSERVATION AND STORAGE

Shelf life studies will be conducted to evaluate appropriate conditions of conservation and storage of the inoculum. This will consist of screening number of test plants adopting the Most Probable Number (MPN) technique and observing their performance in terms of viability of the inoculum under given conditions of temperature humidity and time of storage.

Studies will also be conducted for

-- Initial testing of selected pesticides for their impact on VA Mycorrizal density in selected MPTS.

-- And to determine interaction of VAMycorrhizal fungi with soil born plant pathogens, with a view to control soil born diseases biologically.

-- This is to evaluate the impact of pesticides on the host and VA Mycorrhizal growth.

7. TESTING GROWTH CONDITIONS

Pot experiments will be conducted on selected MPTS which have not been tried in the experiments and are promising one, to select a suitable host plant and to screen other species on the basis of their performance in effective colonization and inoculum production.

The experiment will be conducted under green house/glass house conditions.

8. AUTHENTICATION OF THE INOCULUM

Multilocational field trials will be conducted using the VA Mycorrhiza strains, showing better performance in the present field trials being conducted in Gujarat, Karnataka and Maharashtra state. These field trials will be undertaken involving Agricultural Universities, State Agricultural Department, State Forest Department, Private and Government Nurseries and Voluntary Research Organisations.

Statistical designs such as Randomised Block Design (RBD) and Split Plot Design (SPD) will be adopted in the preparation of the plan for experiments.

Data collection and analysis will be done to formulate recommendations for field use of the inoculum and to select VA Mycorrhiza strain specific to given Agro-climatic conditions. Analysis of the data will be done emphasizing agronomic and statistical analysis to know the statistical significance.

9. STANDARDISATION OF TERTIARY INOCULUM PRODUCTION TECHNIQUE

Tertiary Inoculum Production will consists of producing VA Mycorrhizal inoculum on farmers field by standardising and applying the techniques as under :

-- Selection of Farm site

-- Preparatory land operations

-- Method of inoculum application

-- Quantity of Production seed

-- Depth and time of application

-- After care, intercultivation and application of plant protection measures.

-- Time and method of harvest

-- Method of collection of the inoculum and preservation for further use.

This will enable production of fairly large scale VA Mycorrhizal inoculum for his own use.

10. SELECTING FORMS OF INOCULUM

To maintain undiminished viable count of the inoculum upto the users end, various forms of inoculum will be tried.

Present form of granular type containing a mixture of VA Mycorrhizal infected root segments, fungal spores and the substrate, will be improvised by making PELLET forms for easy handling and application. Encapsulated inoculum and a slurry form are some of the types which will be selected after adequate trials.

3.0 OTHER ACTIVITIES :

NETWORKING

VA Mycorrhizal inoculum of selected strains produced under pilot growth unit will be delivered in the field for evaluating their performance in the field under different agro-climatic conditions.

VA Mycorrhizal inoculum of

Glomus Aggregatum
Glomus Fasciculatom
Glomus Mosseae
Glomus Spp.
Gigaspora Margarita
Gigaspora Gilmori

have been sent for field trials to various research organisations in the country and abroad. Feed back on the performance is invited to assess parameters of

-- Survival and growth of plant

-- Effectiveness in colonisation and sporulation

-- Effective utilization of Phospharous

-- Biomass productivity

and to assess and improve, if required the potentials of the inoculum in terms of spore density, number of infective propagules, per unit of the inoculum, percentage root infection and quantity of the substrate.

EXTENSION ACTIVITIES

Extension and motivation of the farmers will be done through training, demonstration, meetings, discussions and film/slide shows with the help of audio visuals aids.

4.0 PHASING :

The Activity Phasing for the next year is provided in Annexure 1.

5.0 BUDGET :

The Budget Summary for 1991 - 92 is presented in Annexure 2 and the Budget Notes inAnnexure 3.

ANNEXURE - 1

ACTIVITY PHASING

Work Plan IV Year

PROJECT TITLE : DEVELOPMENT AND STANDARDISATION OF PRODUCTION TECHNOLOGY FOR VA MYCORRHIZA INOCULUM

SR. NO	PARTICULARS	ACTIVITY PHASING (Month) 1 2 3 4 5 6 7 8 9 10 11 12
1.	Germ Plasm bank	----------
2.	Primary multiplication	----------
3.	Secondary multiplication	--------- ----------
4.	Mass Prodiction at Pilot scale	----------
5.	Quality control	----------
6.	Inoculum Conservation and Storage	----------
7.	Testing Growth conditions (Pot Trials)	----------
8.	Application in the field (field trials)	----------
9.	Methodology for tertiory inoculum production	-------- ----------
10.	Selecting forms of inoculum	--------
11.	Net working	----------

ANNEXURE 2

I D R C - B I S PROJECTS
PROPOSED BUDGET FOR THE YEAR 1991 - 92

PROJ. NO : 8
PROJ. TITLE : DEVELOPMENT AND STANDARDISATION OF PRODUCTION TECHNOLOGY FOR VA MYCORRHIZA INOCULUM

BUDGET SUMMARY

SR. NO.	PARTICULARS	AMOUNT(RS.)
BAIF ADMINISTERED		
1.	Salaries	2,38,800
2.	Research Expenses	88,000
3.	Consultancy	--
4.	Reports Documentation	5,000
5.	Training	15,000
6.	Travel	15,000
7.	Capital Equipments	--
8.	Infrastructure	--
9.	Books and Periodicals	5,000
10.	Administrative Overheads	36,680
	SUB-TOTAL	**4,03,480**
IDRC Administered		
1.	Consultancy	--
2.	Training	--
3.	Travel	40,000
	SUB-TOTAL	**40,000**
Unallocated		50,000
TOTAL IDRC CONTRIBUTION		**4,93,480**

ANNEXURE 3

BUDGET NOTES

		AMOUNT RS.	
1. SALARIES :			
Salaries of the Staff working under the Project. The same staff will be continued To work in the Project in the year 1991-92			
POST			
Microbiologist	1	48,000	
Phytopathologist	1	40,000	
Cytopathologist	1	33,000	
Lab Assistants	2	55,000	
Field Assistant	1	28,000	
Driver	1	14,000	
Allocated Salaries of Programme Monitoring Staff		20,800	
			2,38,800
2. RESEARCH EXPENSES			
Details of expenses required for research works under various heads are as under :			
Casual Labour		15,000	
Chemicals		10,000	
Glasswares		10,000	
Small tools and materials		4,000	
Culture media		10,000	
Vehicle Fuel and Maintainance		36,000	
Allocated Monitoring Expenses		3,000	
			88,000

3. **REPORTS AND DOCUMENTATTION :** 5,000

4. **TRAINING :**

An amount of Rs. 15,000 is provided for conducting training programmes for the farmers and also attending various workshops, trainings related to Mushroom Production.

5. **TRAVEL :**

An amount of Rs. 15,000 is provided for visits to field areas for data collection and extension work.

IDRC Administered :

An amount of Rs. 40,000 has been provided for visit abroad for the network meetings.

6. **BOOKS AND PERIODICALS :**

An amount of Rs. 5000 is provided for procuring books and periodicals.

PROJECT NO 9

STANDARDISATION OF MICRO-CARRIER CULTURE TECHNIQUE FOR IMPROVING QUALITY AND DEVELOPMENT OF IMMUNOBIOLOGICALS USING MAREK'S DISEASE VACCINE AS A MODEL

1.0 INTRODUCTION :

1.1 Animal cells : Animal cells are cultured for three reasons -

a) To use cells themselves as product.
b) To use cells to grow viruses for production of human and veterinary vaccines.
c) To use cells for production of pharmaceuticals like enzymes, insulin interleukin and proteins.

1.2 Microcarrier Cell Culture Technology (MCT).

Animal cell cultures are vital for the study of cell structure, function and differentiation, and also provide important biologicals, namely viral vaccines, enzymes, hormones and antibodies. Microcarrier Cell Culture Technology implies that the anchorage dependent animal cells are grown on the surface of small spheres, maintained in suspension cultures. Besides making available high surface area to volume ratio, the MCT offers following advantages over conventional monolayer cultures.

- Higher production capacities in terms of cells/viruses.
- Reduced labour and input requirements.
- Lower risks of communication.
- Improved quantum of quality biomass/antigens, a prerequisite of immunobiologicals.
- Cost effectiveness.

1.3 Immunobiologicals :

Amongst a variety of immunobiologicals, the vaccines and diagnostics are important tools for controllingmajor health problems inlivestock and poultry. Therefore, livestock development programs have succeeded through providing preventive health cover by vaccinations. The major diseases that are vaccine-controllable include Foot and Mouth disease, and Rinderpest in cattle and Marek's disease, Newcastle disease and Gumboro disease in poultry.

The common feature in preparation of vaccines against these diseases is use of anchorage dependent cell culture for propogation of viruses.

Therefore, application of Microcarrier Cell Culture Tecniques for preparation of precursors of these products shall readily after the advantages of this tecniques. This will not only improve the quality of these vaccines but also make these available to a larger population of rural beneficiaries in BAIF's development programmes, maintaining the price-line, over a longer period of time.

Marek 's disease and its vaccine

Marek's disease is one of the major scourages of poultry. The susceptible chicks after infection with this disease, develop cytolytic changes, especially in lymphoid tissues leading to tumor formation alongwith immunosupression. Since last 20 years, afreezedried live vaccine is available against this disease which contains a Herpes Virus of Turkey Origin. The detailed immune mechanism though not completely known, so far, the vaccine prevents only Tumor formation by MD virus. This is acheived by vaccinating the chicks before the disease virus establishes in the lymphoid system in body, to tranform lymphocytes to tumor formation. Thus, the vaccine virus has to competitively inhibit the disease virus, first by early establishments and secondly by over numbering it. Therefore, MD vaccine needs a large of vaccine virus counts, available at the time of vaccination. Under tropical conditions this quality of vaccine is impaired due to thermodegradation of major live virus counts during storage/handling . hence, huge number of live virus is needed to be incorporated in veaccine at the time of preparation.

This is readily achievable through use of MCT for propogation of this thermolaile virus onto primary chick embryo fibroblast cell cultures which are otherwise grown in conventional monolayer cultures. Moreover this will serve as a developmental model for like natured, immunobiologicals.

1.4 On Selection : On selecting the proper Microcarrier, The studies on initiation and control of particular cell culture conditions are undertaken. These broadly include -

- Cell inoculation.
- Concentration of microcarriers.
- Culture media.
- Stirring speed.
- Temperature and speed.
- Oxygenation.
- Harvesting and subculturing.
- Culture vessels (small and large scale).

OBJECTIVES :

1. To develop and standardise cell culture technology using new generation Microcarrier Cell Culture system for anchorage dependent cells.

2. To adopt and study growth kinetics of viruses in cells cultured by using Microcarriers.

3. To establish quality assay procedures for evaluation of immunobiologicals prepared in above systems.

4. To establish condition for increasing scales of Microcarrier systems.

5. To apply various models of animal cell culture studied as precursors of immunobiological/ biological products.

2.0 RESEARCH STUDIES :

2.1 Research Studies in Progress :

Studies and growth characterisation of Herpes Virus of Turkey onto Primary CEF cells grown onto
- stationary microcarrier cultures.
- Microcarrier cultures.

Preparation of lyophilised live vaccine of Marek's disease using HVT grown onto microcarrier cultures.

Studies on growth characterisation of Foot and Mouth disease virus onto Baby Hamster Kidney (BHK-21) cell given on stationary / microcarrier cultures.

2.2 **Research Studies to be Undertaken :**

The Microcarrier System in the Roller Bottles and Spinner Vessels will be studied for following animal cell culture model.

- Studies on Vero cell cultures and Rinderpest virus.

- Studies on BHK-21 cells and Foot and Mouth disease virus.

- Studies on primary CEF cells and Avian Viruses (Newcastle, Infectious Bronchitis)

- Studies for optimisation of cell culture yield to pilot scale levels.

METHODOLOGY :

1. **Cell Culture Technology :**

- Specific Pathogen Free Poultry flock for making available embryonated eggs for cell culture work.

- Mammalian cell cultures namely BHK, Vevo for studies of cattle viruses.

- Kinetics of cell growth by single cycle growth of different cell culture systems under study.

- Optimisation of selected cell culture tecniques for increased cell yield and acceptable cell quality.

2. **Virus Growth Studies :**

- Single growth cycles for virus into corresponding cell culture systems.

- Optimisation of virus yields through employing different physio-chemical conditions for growth.

3. **Quality Assay Procedures :**

- Assessment of cell/virus cultures for specificity assay of counts, safety in host and efficacy of immunobiological preparations.

- Quality assurance and testing methods - their standardisation and use for immunobiologicals, thus developed.

4. **Conditions for increasing scales of Microcarrier System :**

- Physiochemical conditions for optimal yields of cell cultures of pilot scale levels. ex. - 2 to 5 lit volume.

- Modification in culture programmes to increase scales of culture volumes.

5. **Application of Animal cell cultures/ Microcarrier models.**

3.0 OTHER ACTIVITIES :

3.1 Training :

A short term training at local biological institute within the country is envisaged in the field of standardisation of technologies and application of equipments being procured.

3.2 Literature Surveys :

The computer aided database literature surveys with international organisations is planned in the feild of research subjects in the work plan.

4.0 PHASING :

The Activity Phasing for the next year is provided in Annexure 1.

5.0 BUDGET :

The Budget Summmary for 1990-91 is presented in Annexure 2 and the budget notes in Annexure 3.

ANNEXURE 1

ACTIVITY PHASING

Work Plan IV Year												
PROJECT TITLE :	STANDARDISATION OF MICRO-CARRIER CULTURE TECHNIQUE FOR IMPROVING QUALITY AND DEVELOPMENT OF IMMUNOBIOLOGICALS USING MAREK'S DISEASE VACCINE AS A MODEL.											
SR. NO	PARTICULARS	ACTIVITY PHASING (Month)										
		1	2	3	4	5	6	7	8	9	10	11	12
1.	Maintaining of SPF flock.	----------											
2.	Studies on CEF cells and avian Virus.	----------											
3.	Studies on BHK-21 cells and FMD Virus.		----------										
4.	Studies on Vero cells and Rinderpest Virus.				----------								
5.	Studies on scaling of animal cell cultures.				----------								
6.	Quality Assay of systems developed.		----------										

ANNEXURE 2

I D R C - B I S PROJECTS
PROPOSED BUDGET FOR THE YEAR 1991 - 92

PROJ. NO : 9
PROJ. TITLE : Standadisation of Micro-carrier Culture Technique for Improving Quality and Development of Immunobiologicals Using Marek's Disease vaccine As a Model.

BUDGET SUMMARY

SR. NO.	PARTICULARS		AMOUNT(RS.)
BAIF Administered			
1.	Salaries		27,400
2.	Research Expenses		1,03,500
3.	Consultancy		-
4.	Reports/Documentation		10,000
5.	Training		~~20,000~~ 10,500
6.	Travel		20,000 17,000
7.	Capital equipment		-
8.	Infrastructure		-
9.	Books/Periodicals		10,000
10.	Administrative Overheads		~~19,090~~ 17,100
		SUB TOTAL	**2,09,990**
IDRC Administered			
1.	Consultancy		-
2.	Training		-
3.	Travel		-
4.	Capital equipments		1,00,000
		SUB TOTAL	**1,00,000**
Unallocated Expenses			50,000
TOTAL IDRC CONTRIBUTION			**3,59,990**

ANNEXURE 3

BUDGET NOTES

(AMOUNT IN RS.)

1. SALARIES :

Only salaries of programme monitoring staff are alocated to this project on the basis of total budgeted outlay during year 1991-92. BAIF will employ research assistant under the project.

	Post	Amount	
1.	Allocated Salaries of		
1.	Project Leader Technical Officer Research Technician	25,000	
2.	Allocated Salaries of Programme Monitoring Staff	2,400	
			27,400

2. RESEARCH EXPENSES:

Chemicals	50,000	
Glassware	20,000	
Culture media/reagents	10,000	
Diagnostic reagents/strains	20,000	
Allocated Monitoring Expenses	3,500	
		1,03,500

3. REPORTS /DOCUMENTATION

Preparation of slides /visuals Report	10,000

4. TRAINING :

Visit to biological institution in country for a period of 3 to 7 days two persons	20,000

5. TRAVEL :

An amount of Rs. 20,000 has been provided for visits to the various institutions and field areas.

6. BOOKS /PERIODICALS : 10,000-00

7. CAPITAL EQUIPEMENTS :

IDRC Administered :

Biostir 6 - magnetic stirrer
Bubble free air / perfusion system 1,00,000.00

The sealing-up operations from 500ml to 5000 ml of microcarrier culture systems that have been procured last year need higher duty stirring equipements. Moreover controlled gas/air supply for enhancing growth of cells in spinner vessels is required as part of sealing-up operation using optimally environment available to cells.

PROJECT NO 11

DEVELOPMENT OF MUSHROOM PRODUCTION TECHNOLOGY

1.0 INTRODUCTION

Considering the objectives formulated for the project, mass scale production of the mushroom and standardisation of various parameteres and techniques of mass production for tropical climatic conditions are of prime importance. As these standardised techniques of spawn production, substrate selection, sterilisation, inoculation etc. are to be tought to the farmers in the field. Needs to be perfected and optimised carefully before farmers adopt them for cultivation on fairly large scale in the field.

Further to the work of optimisation of production process, field application is important which consists of application of production techniques with the use of available resources as substrate and designing of a canopy using available agricultural waste material at village level. Considering the tropical climatic conditions, cultivation of agricultural crops and abundance of agricultural waste materials, selected mushroom strains have to be recommended for mass production in the field.

Standardisation of this technology both at laboratory and at field level will enable to deliver a complete package of practices of mushroom cultivation to farmers, to make this proposition a economic one.

OBJECTIVES

1. To evaluate the various bio-technological methods for mushroom cultivation in tropical conditions.
2. To develop and extend mushroom farming technology at rural level.
3. To promote the transfer of technology to rural areas to create awareness for self reliance and for economic rehabilitation.
4. To utilise agricultural and other waste material for productive purposes.

2.0 RESEARCH STUDIES

1. PILOT SCALE SPAWN PRODUCTION

Selection of a suitable mushroom strains on the basis of fast and consistent growth on different media under laboratory conditions.

Selection of suitable spawning material such as Wheat Grain, Jowar Grain etc.

Preparation of substrate with cleaning, sieving, calibration and selection of good quality grains followed by cooking and mixing of additives.

Filling the substrate material in selected production containers

Inoculation of Fungal cultures in the substrate

Optimisation of incubation period and other growth parameters for good fungal growth.

Quality control parameters

2. DEVELOPMENT OF SPAWN DELIVERY SYSTEM

Developing and economical packing kits for supply of spawn material to rural areas. This will emphasize delivery of viable and undiminished count of fungal cultures upto users end. Material such as plastic bags and/or disposal cups of plastic material will be tried for supply of the spawn material to rural areas.

3. EVALUATION OF MUSHROOM STRAINS

Based on tropical agro-climatic conditions, availability of the substrate and local resources, suitable mushroom strains will be selected and applied in the field.

4. DESIGNING LOW COST HOUSING FACILITY

The low cost housing facility for mushroom production consists of following :

Standardisation of conditions of housing to retain adequate humidity, temperature and light conditions.

Use of easily available low cost agricultural waste material and a simple design of mushroom house capable of providing ideal growth conditions.

Simple construction of mushroom house easy to be put up by rural people.

3.0 OTHER ACTIVITIES :

TRANSFER OF TECHNOLOGY TO RURAL AREA :

Identifing and selecting farming communities interested in mushroom cultivation.

Creating awareness and motivation among the farmers.

Training and demonstration of mushroom production technology

Application and feedback from the farmers to enable formulation of recommendations for effective field application and enhancing food and feed resources in the rural area.

4.0 PHASING :

The Activity Phasing for the next year is provided in Annexure 1.

5.0 BUDGET :

The Budget Summary for 1991 - 92 is presented in Annexure 2 and the Budget Notes in Annexure 3.

ANNEXURE 1

ACTIVITY PHASING

Work Plan IV Year

PROJECT TITLE : DEVELOPMENT OF MUSHROOM PRODUCTION TECHNOLOGY

SR. NO	PARTICULARS	ACTIVITY PHASING (Month) 1 2 3 4 5 6 7 8 9 10 11 12
1.	Pilot scale spawn Production	----------
2.	Development of spawn delivery system	----------
3	Evaluation of suitable mushroom strains for tropical conditions	----------
4.	Extension activities, transfer of technology creating awareness for enhancing food and feed resources at village level	----------

ANNEXURE 2

I D R C - B I S PROJECTS
PROPOSED BUDGET FOR THE YEAR 1991 - 92

PROJ. NO : 11
PROJ. TITLE : DEVELOPMENT OF MUSHROOM PRODUCTION TECHNOLOGY

BUDGET SUMMARY

SR. NO.	PARTICULARS	AMOUNT(RS.)
BAIF Administered Contribution		
1.	Salaries	84,~~100~~ 200
2.	Research Expenses	1,34,600
3.	Consultancy	--
4.	Reports & Documentation	10,000
5.	Training	5,000
6.	Travel	20,000
7.	Capital Equipment	--
8.	Infrastructure	
9.	Books & Periodicals	10,000
10.	Administrative Overheads	26,370
	SUB TOTAL	**2,90,070**
IDRC Administered		
1.	Consultancy	--
2.	Training	--
3.	Travel	--
4.	Capital Equipment	--
Unallocated Expenses		--
TOTAL IDRC CONTRIBUTION		**2,90,070**

ANNEXURE 3

BUDGET NOTE

(AMOUNT IN RS.)

1. **SALARIES :**

Salaries to staff on project		
1) Research Scientist (1)	24,000	
2) Research Scientist (1)	24,000	
3) Research Technicians (2)	28,800	
4) Allocated Salaries of Programme Monitoring Staff	7,300	
		84,100

2. **RESEARCH EXPENSES**

1) Chemicals and Glassware	15,000	
2) Mushroom Cultivation/Demonstration Unit.	15,000	
3) Spawn Production Laboratory and Construction of a Model of low cost Housing as Demonstration Unit for Mushroom cultivation	1,00,000	
4) Allocated Monitoring Expenses	4,600	
		1,34,600

3. **REPORTS AND DOCUMENTATION :**

An amount of Rs. 10,000 is provided for preparation of reports, documentation and slides for training.

4. **TRAINING :**

The provision has been made for training to the field level workers.

5. **TRAVEL :**

Travel to another Research Institutions and for field trials.	20,000

6. **BOOKS AND PERIODICALS :**

An amount of Rs. 10,000 is provided for procurement of books and periodicals.

PROJECT NO 12

DEVELOPMENT OF ECONOMIC FEEDING SYSTEMS FOR RUMINANTS FROM LOCALLY AVAILABLE AGRICULTURAL BY PRODUCTS

1.0 INTRODUCTION:

The cross-breeding programme has been undertaken on a large scale to improve milk production potential of indegenous cattle. To express genetic potential introduced through such programmes, the animals must receive adequate quantities of nutrients. Availability of green fodder and conventional feedstuffs is limited and unlikely to increase because of population pressure. It is therefore necessary to include more and more of by-products for feeding of animals.

OBJECTIVES:

1. To survey the feeding practices and availability of feed resources.
2. To analyse and assess the nutritive value of locally available by-products.
3. To study the effect of treatment on improvement in digestibility of crop residues.
4. To compare nutritive values of complete feeds based on treated and untreated crop residues.
5. To take field trials using complete feeds and feed supplements.

2.0 RESEARCH STUDIES :

1. Analysis of data collected during survey :

The work on survey of feeding practices is in progress at two centres from Rajastan with fifty farmers at each centre. This work will be completed by March 1991.

The data collected during survey will be analysed to find out the differences in feeding practices due to farmer type and Season.

2. Growth studies with maize stovers :

Comparative performance of the growing animals will be studied by feeding urea treated maize stovers and untreated maize stovers. There will be a minimum six growing animals in each group. The study will be conducted for a period of 180 days during which records of daily feed intake and fortnightly body weight changes will be maintained.

3.0 OTHER ACTIVITIES :

On farm studies on urea treatment :

The technology of urea treatment will be introduced to the farmers from the project area by conducting demonstration experiments by treating the crop residues available with the farmers. The information about farmer response and performance of animals fed on urea treated material will be collected.

4.0 PHASING :

The Activity Phasing for the next year is provided in Annexure 1.

5.0 BUDGET :

The Budget Summary for 1991 - 92 is presented in Annexure 2 and the Budget Notes inAnnexure 3.

ANNEXURE 1

ACTIVITY PHASING

Work Plan IV Year

PROJECT TITLE : DEVELOPMENT OF ECONOMIC FEEDING SYSTEM FOR RUMINANTS FROM LOCALLY AVAILABLE AGRICULTURAL BY-PRODUCTS.

SR. NO	PARTICULARS	ACTIVITY PHASING (Month)											
		1	2	3	4	5	6	7	8	9	10	11	12
1.	Survey work												
	i) Collection & compilation of the data.	-------											
	ii) Analysis of the data.			-------									
2.	Growth studies with maize stovers.												
	i) Treatment of maize stovers	-------											
	ii) Feeding trial				----------								
3.	Onfarm studies on urea treatment of crop residues.	----------							----------				

ANNEXURE 2

I D R C - B I S PROJECTS
PROPOSED BUDGET FOR THE YEAR 1991 - 92

PROJ. NO : 12
PROJ. TITLE : Development of economic feeding system for Ruminants from locally available Agricultural By-products.

BUDGET SUMMARY

SR.No.	PARTICULARS	AMOUNT(Rs.)
BAIF ADMINISTERED		
1.	Salaries	2,41,000
2.	Research expenses	46,600
3.	Consultancy	-
4.	Reports/Documentation	5,000
5.	Training	5,000
6.	Travel	15,000
7.	Capital equipment	-
8.	Infrastructure	-
9.	Books and periodicals	5,000
10.	Administrative overheads	31,760
	SUB TOTAL	**3,49,360**
IDRC Administered		
1.	Consultancy	-
2.	Training	-
3.	Travel	-
4.	Capital equipment	-
	SUB TOTAL	
Unallocated Expenses		**50,000**
TOTAL IDRC CONTRIBUTION		**3,99,360**

ANNEXURE 3

BUDGET NOTES

1. SALARIES :

Staff salaries and administrative overheads are as given below.

Sr.No.	Post	Amount(Rs.)
1.	Research officer (1)	55,000
2.	Chemists (2)	45,000
3.	Field workers (2)	40,000
4.	Laboratory Assistants (2)	40,000
5.	Animal Attendents (3)	40,000
6.	Allocated salaries of Programme Monitoring Staff	21,000
		2,41,000

2. RESEARCH EXPENSES :

The Research expenses include cost of chemicals, glass-wares and other laboratory consumables required for analysis of feeds/fodders Appoximately Rs.10,000/- will be required for this. In addition Rs.15,000/- will be required to meet the feed costs for on station feeding experiments.

A provision for farm level studies amounting to Rs.20,000/- has been made to cover recording expenses, cost of supplies farmer compensation etc.

The allocated monitoring expenses will be Rs. 1,600/-.

The total amount required under this head is Rs. 46,600/-.

3. REPORTS/DOCUMENTATION :

A provision of Rs.5,000/- is made for the expenditure on preparation ofthe reports/documents concerning the project.

4. **TRAVEL :**

An amount of Rs. 15000/- has been allocated for local travel for attending workshops/Symposia by the project leader and Research Officer at the rate of Rs.3750/- per person per meeting.

5. **TRAINING :**

The field workers will be given training to carry out on farm feeding studies to be undertaken this year Rs.5000/- have been allocated for this purpose to cover the training expenses.

6. **BOOKS AND PERIODICALS :**

Rs. 5,000/- have been allocated for purchase of relevant literature for the project.

PROJECT NO 14

DEVELOPMENT AND STANDARDISATION

OF

SERICULTURE TECHNOLOGY

1.0 INTRODUCTION :

Sericulture is a labour intensive agro based activity having a tremendous potential of absorption of rural labour locally. Sericulture has a short gestation period, the production technology is quite simple and requires low initial investment. All these aspects make sericulture a highly feasible activity for providing self employment to the rural poor. Therefore BAIF has taken up work in sericulture as an important programme area.

Work was initiated to develop and apply an appropriate package of sericulture technology. This work has been taken up in the following main areas :

1. Production and supply of disease free layings.
2. Standardising and introducing appropriate mulberry cultivation practices in different project areas.
3. Extension of sericulture activity to small and marginal farmers.

Work under this project has been taken up with the following objectives :

OBJECTIVES :

1. To acquire and adapt appropriate technology for production of disease free layings of silkworms of different breeds and races.
2. To study and develop the methods of transport and distribution of disease free layings from the grainage to the sericulturist in remote locations.

3. To study the suitability of different mulberry varieties for different agro-climatic conditions and develop recommendations for specific field implementation.

2.0 RESEARCH STUDIES :

2.1 Research Studies in Progress :

Work has been initiated in the following four studies and will be continued during the next year. Details of these are as below :

1. Collection and Establishment of Germplasm and its multiplication :

Rationale :

Mulberry as a tree is found in many areas of India. These plant species distributed in different zones are evolved according to specific patterns of life cycles, which normally do not suit other regions. Thus the variety suitable for each region has to be selected by a careful study. Mulberry leaves being the feed of silkworms have direct effect on silk produced by the worms. Thus achieving maximum yield of high quality leaves is essential.

Under this study number of varieties would be planted at three locations and yield trials would be taken.

Objectives :

1. Collection of different clones of mulberry.
2. To establish and multiply germplasm for field trials.

3. To conduct leaf yield studies.

Work Components :

A number of varieties (15) have been procured and established at Urulikanchan and Kadod. These are being multiplied. Nursery has been established for each variety at each of these locations. Transplanting of these saplings from these nurseries into plots has been initiated for multiplying these varieties. For multiplication of germplasm - plots have been developed. It has been planned to train some varieties as trees and high bushes to be planted on the field bunds. The growth of plants of each variety is being monitored and recorded periodically.

2. Silkworm rearing studies :

Rationale :

Sericulture, due to its low investment and low gestation period, is looked at as the activity for the rural poor. In order to get more cocoon yield per unit area it is essential to rear proper silkworm hybrids. C.S.R.T.I. Mysore has evolved the bivoltine races suitable for South Indian conditions (Bivoltine Sericulture Development 1988). At the same time these bivoltine races are mainly used as the male parents towards the production of Multivoltine hybrid seeds (Performance of Bivoltine hybrids at CSRTI, Mysore, 1987). KA, NB7, NB4, D2, NB18 are popular in Karnataka. Their combinations with pure Mysore have increased the cocoon weight, shell weight, and filament length. Central Silk Board has taken large scale experiments in Karnataka, Tamil Nadu & Andhra Pradesh to assess the quantity and quality of cocoons in different seasons for different combinations with indigenous races. Due to increased productivity of multi-bivoltine

combination, production of cocoons has increased within a short period of two decades. Similar type of research will definitely be useful to increase production level of sericulturists in Gujarat and Maharashtra.

Objectives :

1. To study the performance of different silkworm races in non-traditional areas during different seasons.

2. To evolve a recommendation package for bivoltine, multivoltine and cross-races to be used in project areas.

Work Components :

Various pure and crossbred silkworm races both indigenous and exotic have been procured. These are now being reared and maintained at Uruli, Vansda and Kadod. It is proposed to take up rearing trials on a number of multivoltine and bivoltine races and crossbreeds to standardise their performances for specific areas at Kadod, Vansda and Uruli. Rearing under this study would be carried out at all the above locations. These races will be subjected to further trials of rearing - and comparative data will be collected - multilocational trial data and interrace comparative data will be used to select variety most suitable for the areas in which farmers would be given silkworm races for production of commercial cocoons. Under these trials cellular rearing trials will be undertaken to assess exact value of observed parameters.

3. Studies in Leaf Preservation :

Rationale :

During the total period of silkworm rearing the silkworms feed voraciously particularly in 4th and 5th stage of larval period. The appropriate quantity and quality of mulberry leaves fed to silkworms have a definite effect on silk quality from cocoons. Thus, regular feeding of leaves is most essential to obtain a good crop. Normally these leaves are plucked in morning and evening and are stored for not more than five hours and hence the methods used are wrapping in moist cloth or storing in wooden leaf chamber and covering it with wet cloth.

This storage method has a shortcoming that leaf quality cannot be maintained if these are stored for more than 6-8 hours. Similarly in summer season when evaporation loss is more this storage method does not give proper results. There is an increasing demand to take this silkworm rearing activity to the landless families and this creates a situation where procurement of mulberry leaves from another farmer is essential and hence needs a proper preservation method. A landless family or the farmer who has a very low landholding, can be supplied with leaves from a central organisation having large plots under mulberry. This requires at least 2-3 days storage of mulberry leaves between transportation from mulberry plot to feeding of silkworms. Thus this study was taken up to compare various leaf preservation techniques with objectives as outlined below.

Objectives :

a. To study present techniques of mulberry leaf storage.

b. To develop improved preservation technique

for longer storage period and better quality of leaves.

Work Components :

Comparative studies of different leaf preservation methods have been initiated. The methods to be tried consist of :

a. Zero Energy Cool Storage.

b. Double Walled Earthen Vessel.

These will be collected on various bio-chemical parameters as per research plan presented in the Technical Report.

4. Study on different mountage designs :

Rationale :

After feeding silkworms for about 25 days the silk producing glands develop fully and start secreting silk. These mature silkworms start searching for a suitable spot and anchorage for spinning cocoons. If proper space is not made available to silkworms at this stage the whole laborious work done for feeding these worms might be wasted totally. This is the time when intensive labour is required to mount these silkworms at a proper instant so that silk is not wasted.

Presently a traditional mountage namely **'Chandrika'** is generally used in tropical Indian states. This **'Chandrika'** is made out of bamboo coiling composition on a bamboo mat. A number of problems are encountered in the use of Chandrika. It is therefore necessary to develop improved mountage designs. Thus it was decided to study new designs or use new raw materials

for mountages to improve the quality of cocoons and silk.

Objectives :

a. To develop different mountage designs.

b. To study suitability of different designs and draw recommendations for usage.

Work Components :

Different prototype mountage designs have been prepared and tried out. These different designs will be tested and observations recorded and analysed. The most suitable mountage design will then be introduced in the field for field level feedback.

2.2 Studies to be undertaken :

The following study is proposed to be initiated during the next year.

1. Study on dfls transportation and distribution :

Rationale :

Different techniques are employed for transportation of dfls within India and abroad.

Usually dfls are placed on cardsheets which are stacked in cardboard boxes with holes for aeration.

The seed cocoons are packed loosely in perforated boxes or bamboo baskets. Plastic

crates are also used. Transportation is done during the cooler hours of the day to avoid effect of higher temperature.

If cocoons are to be transported over long distances air conditioned vans need to be used to provide the nearest optimum conditions of temperature (24 ^{o}C to 26 ^{o}C) and humidity (70 to 80 % RH).

Objectives :

Faulty methods of packing and transportation of eggs results in losses due to damage to eggs in transport and / or hatching of eggs during transport due to delays.

Work Components :

A study of different techniques / methods will be undertaken followed by trial application. Effectiveness and cost of different methods will be compared and appropriate method will be selected / developed to ensure speedy transport of eggs without hatching or damage.

Of late, practice of loose egg packing is becoming popular. One gram of eggs are weighed and numbercounted accurately. Based on this weight of 20000 eggs is derived and that quantity (by weight) of eggs is packed in loose egg cases made of bamboo or wood with adequate aeration facility.

A thorough study of existing packaging and transportation practices will lead to development of an appropriate combination of methods which will be most suitable for different destinations.

3.0 OTHER ACTIVITIES :

Necessary equipment as detailed in the budget notes will be procured.

4.0 PHASING :

The Activity Phasing for the next year is provided in Annexure 1.

5.0 BUDGET :

The Budget Summary for 1991 - 92 is presented in Annexure 2 and the Budget Notes in Annexure 3.

ANNEXURE 1

ACTIVITY PHASING

Work Plan IV Year

PROJECT TITLE : DEVELOPMENT AND STANDARDISATION OF SERICULTURE TECHNOLOGY

SR. NO	PARTICULARS	ACTIVITY PHASING (Month) 1	2	3	4	5	6	7	8	9	10	11	12
1.	Procurement of Equipment	———											
2.	Germ plasm Collection and Multiplication	———	———	———	———	———	———	———	———	———	———	———	———
3.	Silkworm Rearing studies	———	———	———	———	———	———	———	———	———	———	———	———
4.	Studies on Leaf Preservation	———	———	———	———	———	———	———	———	———	———	———	———
5.	Study on Mountage designs	———	———	———	———	———	———	———	———	———	———	———	———
6.	Studies on egg transportation	———	———	———	———	———	———	———	———	———	———	———	———
7.	Standardising of loose egg production method	———	———	———	———	———	———	———	———	———	———	———	———

ANNEXURE 2

I D R C - B I S PROJECTS
PROPOSED BUDGET FOR THE YEAR 1991 - 92

PROJ. NO : 14
PROJ. TITLE : DEVELOPMENT AND STANDARDISATION OF SERICULTURE TECHNOLOGY

S.No.	Particulars	Amount (Rs.)
BAIF Administered		
1.	Salaries	2,46,500
2.	Research Expenses	1,77,000
3.	Consultancy	20,000
4.	Reports/Documentation	5,000
5.	Training	10,000
6.	Travel	28,000
7.	Capital Equipments	2,40,000
8.	Infrastructure	50,000
9.	Books/Periodicals	10,000
10.	Administrative Overheads	49,650
	SUB TOTAL	**8,36,150**
IDRC ADMINISTERED		
1.	Consultancy	-
2.	Training	50,000
3.	Travel	-
4.	Capital Equipments	1,50,000
	SUB TOTAL	**2,00,000**
Unallocated Expenses		-
TOTAL IDRC CONTRIBUTION		**10,36,150**

ANNEXURE 3

BUDGET NOTES

(AMOUNT IN RS)

1. **SALARIES :**

The staff salaries for the year 1991-92(inclusive of benefits) are as follows :

S.No.	Post	Amount	
1.	Sr. Sericulturist (1)	60,000	
2.	Jr.Agronomist(1)	27,500	
3.	Jr.Granage Officer(2)	50,000	
4.	Silkworm Rearing Supervisor (1)	27,500	
5.	Technicians(3)	60,000	
6.	Allocated salaries of Programme Monitoring Staff	21,500	
			2,46,500

2. **RESEARCH EXPENSES :**

1.	Chemicals, glassware for granage	10,000
2.	Mulberry Cultivation Costs @ Rs.10,000 per ha (Total 2 ha)	20,000
3.	Purchase of seed and breeding of cocoons	10,000
4.	Wages for silkworm rearing and for granage (16 persons round the year at about Rs. 500 per month)	96,000
5.	Collection of germ plasm	5,000

6.	Expenses on different techniques for leaf preservation.	10,000	
7.	Cost of developing different mountage designs.	10,000	
8.	Expenses on different dfls transportation methods	10,000	
9.	Allocated Monitoring Expenses	6,000	
			1,77,000

3. **CONSULTANCY :**

Senior scientists having experience in silkworm egg production and field operations of silkworm rearing programme will be consulted to take guidance on quality control aspects.

4. **REPORTS AND DOCUMENTATION :** 5,000

5. **TRAINING :**

The amount will be utilised for trainig to project staff in leaf preservation, silk rearing etc. @ Rs. 2500 each for 4 staff members. Visits and training of two scientist are proposed to Institutions in sericulturally advanced countries to study seed Organisation and granage management.

IDRC Administered :

An amount of Rs.50,000/- has been provided under IDRC - Administered funds for visits and trainings of two scientists in sericultarally advanced countries.

6. **TRAVEL :**

Travel costs & local conveyance for project staff :

a) Visits to Research Institutes, other Granages etc. 4 person visits @ Rs.4000 each. 16,000

b) 12 Visits to Project areas @ Rs. 1000 each. 12,000

28,000

7. **CAPITAL EQUIPMENT :**

An amount of Rs.2,40,000 has been allocated for purchase of capital equipment to be purchased locally as per enclosed list. One equipment is to be imported and Rs.1,50,000 has been provided for the same.

S.No.	Particulars	Qty	Amount (Rs)
1.	Research microscope and its accessories		60,000
2.	Dissection binoculars		50,000
3.	Room heaters and emergency lights		10,000
4.	Hot air oven		10,000
5.	Distilled water unit		10,000
6.	pH Meter		10,000
7.	Cocoon sorting machine		10,000
8.	Single basin reeling unit		60,000
9.	High speed centrifuge		10,000
10.	Laboratory equipment		10,000
			2,40,000

IDRC ADMINISTERED :

Electronic balance 1,50,000

8. **INFRASTRUCTURE :**

Internal furnishing for sericulture laboratory	50,000

7. **BOOKS / PERIODICALS :**

An amount of Rs. 10,000 has been provided for procurement of books and periodicals.

PROJECT NO 15

EXPLORATORY STUDIES AND OPERATIONS RESEARCH IN POST PRODUCTION TECHNOLOGY

1.0 INTRODUCTION :

Among the identified areas for introducing Post Production Technologies, processing of horticultural produce was emphasised more in the period upto December '90. Exploratory studies and trial processing of mango was under taken .

For introducing post harvest activities for paddy and oilseeds, some equipment such as threshers and an expeller has been procured.

Selection of suitable wood working machinery is under way and these will be procured shortly.

SPECIFIC OBJECTIVES :

1. To standardise the mango processing activity.
2. To introduce pilot processing activity for wood.
3. To take up entrepreneurship development activities.

2.0 RESEARCH STUDIES :

2.1 Research Studies in Progress

1. Characterisation of Mango Pulp :

Rationale :

In the operational area there are four main varieties of mango namely Rajapuri, Alphonso, Kesar, Langda. Though Alphonso is generally processed, very little experience of the other three varieties is known. These three varieties form a major part of the total produce. Hence it is proposed to study and record, for these varieties. the physical and chemical characteristics relevant to processing.

Objectives :

1. To study the pulp characteristics like sugar content, acidity (pH value), total solids (TS) and pulp yield for different varieties and at different stages of ripening of the fruit.

2. To study the change in these characteristics at various stages in processing to help in process standardisation.

Work Components :

Work has already been initiated for one of the varieties of mango viz. Rajapuri.

The study will be continued during the next mango season for the other three varieties.

2. Standardisation of processes for traditional mango products

Rationale :

The traditional products like mango leather, dried mango slices and mango pulp concentrate are mainly prepared from varieties like Alphonso. Most of the existing knowledge is traditional. The study will be initiated to develop standardised process for these products for all varieties to assess their suitability. This study will include trials with different blends of varieties, different sugar addition levels and individual varieties. The parameters like crispness, colour, taste and product yield will be recorded and used to standardise the process.

Objectives

1. To standardise the process for producing mango leather.

2. To standardise the process for producing mango pulp concentrate.

Work Components :

Work has already been initiated for one of the varieties of mango viz. Rajapuri.

The study will be continued during the next mango season for other three varieties.

3. Use of solar dryer for production of mango leather

Rationale :

In the project area the mango harvesting season is late and comes at the end of the summer season. This poses the difficulty in natural sun-drying of mango pulp for preparing dried products due to approaching monsoon season and higher cloud cover.

Hence the use of a solar drier will enable speedier production and ensure better quality.

Objective

1. To procure existing designs of solar dryers.
2. To study the suitability of different designs for production of mango leather.
3. To evolve modified designs if necessary.

Work Components :

One solar dryer has been procured and another low cost design is being fabricated.

Both these dryers will be commissioned and tested for their effectiveness. Trials of Mango Leather production will be taken up by using both these driers with direct sun-drying as a control method.

Production trials will also be taken up using an electric cabinet dryer. These designs will be studied and recommendations will be drawn out by the next mango season (May 1991).

2.2 Studies to be undertaken :

1. Entrepreneurship development in Post Production Activities :

Rationale :

Equipment like threshers and hullers is expected to be an appropriate post-harvest technology for paddy in the project area. Motivation to local youth to operate these units as small enterprises would provide an off-farm self employment activity. Number of such small units can be installed in the area catering to the needs of cultivators in scattered villages.

The following units are planned to be installed with Entrepreneurs :

1. Paddy dehusker
2. Flour mill
3. Paddy thresher
4. Oil Expeller
5. Raspador machine

Work Component :

Identify sites for installing these units and identify the tribal youths as operators.

Install the units and train entrepreneures.

Monitor the operation of these units and record data.

Analyse the economics of operation.

2. **Studies on Wood Preparation Methods**

Rationale

It is necessary to adopt proper seasoning methods and preservative treatments for wood to ensure long life and dimensional stability.

During the next year, work will be concentrated on these two aspects.

Work Component

Simple seasoning and preservation methods will be adopted on a pilot scale.

The prepared wood will be subjected to destructive and non-destructive testing. Pilot production of various wood products will be undertaken by using this wood.

3.0 OTHER ACTIVITIES :

Training :

Staff training as well as training of entrepreneurs will be taken up during the next year. Staff training will be in wood-seasoning and preservation methods and fruit processing techniques. Training of entrepreneurs will be undertaken in operation and maintenance of various units as well as in financial management.

4.0 PHASING :

The Activity Phasing for the next year is provided in Annexure 1.

5.0 BUDGET :

The Budget Summary for 1991 - 92 is presented in Annexure 2 and the Budget Notes in Annexure 3.

ANNEXURE 1

ACTIVITY PHASING

WORK PLAN IV YEAR

PROJECT TITLE : EXPLORATORY STUDIES IN POST PRODUCTION TECHNOLOGY

SR. NO.	PARTICULARS	ACTIVITY PHASING (Month)											
		1	2	3	4	5	6	7	8	9	10	11	12
1.	Trials on mango pulp production	———											
2.	Procurement of cabinet dryer	———											
3.	Trials on mango leather production	———									———		
4.	Trials on mango pulp concentrate										———		
5.	Trials on wood treatment	———						———					
6.	Installation of units												
7.	Data recording in operation	———											

ANNEXURE 2

I D R C - B I S PROJECTS
PROPOSED BUDGET FOR THE YEAR 1991 - 92

PROJ. NO : 15
PROJ. TITLE : POST PRODUCTION TECHNOLOGY

Sr.No.	Particulars	Amount(Rs.)
BAIF Administered		
1.	Salaries	1,10,600
2.	Research Expenses	56,900
3.	Consultancy	30,000
4.	Reports/Documentation	5,000
5.	Training	24,000
6.	Travel	24,000
7.	Capital Equipments	1,00,000
8.	Infrastructure	1,50,000
9.	Books/Periodicals	10,000
10.	Administrative Overheads	26,050
	SUB TOTAL	**5,36,550**
IDRC Administered		
1.	Consultancy	-
2.	Training	-
3.	Travel	-
4.	Capital Equipments	-
	SUB TOTAL	-
Unallocated Expenses		
TOTAL IDRC CONTRIBUTION		**5,36,550**

ANNEXURE 3

BUDGET NOTES

(AMOUNT IN RS.)

1. **SALARIES** : The salary break up of the staff (inclusive of benefits) is as follows :

S NO.	POST	AMOUNT	
1.	Project Co-ordinator (1)	38,000	
2.	Development Engineer (1)	33,000	
3.	Food Technologist (1)	30,000	
4.	Allocated salaries of Programme Monitoring Staff.	9,600	
			1,10,600

2. **RESEARCH EXPENSES :**

1.	MANGO		
	a. Market studies	10,000	
	b. Operating expenses for processing	20,000	
	c. Consumable material	10,000	
2.	WOOD		
	Operational expenses in different processes	15,000	
3.	Allocated Monitoring Expenses	1,900	
			56,900

3. **CONSULTANCY :**

Rs. 30,000 has been kept for consulting fees for experts in mango processing and wood preparation techniques.

4. **REPORTS / DOCUMENTATION :**

Rs. 5,000 has been provided for compiling of reports and documentation of observations.

5. **TRAINING :**

Rs. 12,000 has been allocated for training of tribal families in improved post production activities and Rs.12,000 for training of project staff in food processing, wood seasoning,etc.

Total : 24,000

6. **TRAVEL :**

A total amount of Rs. 24,000 (@ Rs. 2,000 per month) has been allocated for travel expenses and local conveyance costs of the project staff.

7. **CAPITAL EQUIPMENT :**

1.	Universal machine	55,000	
2.	Drilling machine	20,000	
3.	Milling machine	25,000	
		---------	1,00,000

8. **INFRASTRUCTURE :**

Workshed for wood processing
1000 sq.ft. @ Rs.150 per sq.ft. 1,50,000

9. **BOOKS & PERIODICALS :**

Relevant books and periodicals dealing with post production technology will be purchased and an amount of Rs. 10,000 is provided under this head.

PROJECT NO 16

GERMPLASM COLLECTION AND ADAPTABILITY STUDY OF BAMBOO SPECIES

1.0 INTRODUCTION

Bamboo constitutes one of the most important renewable biomass resources. It is one of the few plant species cultivated by the farmers since ages in India. Bamboo is planted by people in the backyard, farm bunds and wastelands to meet their household needs. Besides its important socio-economic role in the countryside its use in rayon and paper industries has led to a manifold increase in its importance and consequently consumption.

With the present rate and trend of consumption bamboo may well be a scarce commodity in not too distant future affecting first of all the poor who depend on it for their livelihood. Great emphasis has, therefore, been given by BAIF by introducing Bamboo as one of the major species to be promoted through kisan nurseries and afforestation programmes through rural areas.

There are a large number of bamboo species and provenances grown naturally in India and other parts of South-east Asia. However, in absence of any systematic work it is extremely difficult to understand their potential. Therefore, to improve the productivity and income generation through bamboo plantation, a scientific study of germplasm collection, evaluation and multiplication under different agroclimatic conditions was intiated, during last year.

OBJECTIVES

1. Collection of different species and provenances of Dendrocalamus and Bambusa.

2. Setting up of three arborata, one in each state.

3. To study adaptability of different germplasm on eight different locations in the states of Maharashtra, Karnataka and Gujarat.

4. Promotion of bamboo cultivation in rural areas.

2.0 RESEARCH STUDIES

2.1 Studies in Progress

1. **Collection of Germplasm -**

Rationale :

There are a large number of Bamboo species and provenances grown naturally in India and other parts of South-east Asia. However in the absence of any systematic work it is extremely difficult scientific study on germplasm collection of bamboo is essential.

Objective :

a. To collect different species and provenances of Dendrocalamus and Bambusa from India and other parts of South-east Asia.

b. To collect information about the characters and performances of various bamboo species and provenances.

Progress Made So Far :

Based on literature available many research institutes, and state forest departments were contacted. Simultaniously BAIF scientists visited some bamboo growing areas and collected provenances of Dendrocalamus and Bambusa. They are being established in the arborata located in the states of Maharashtra, Gujarat and Karnataka.

Work Components :

Germplasm collection has been initiated during the last year, the same will continue during the current year.

In addition to the three states, BAIF scientists will also visit research institutes and field areas located in other parts of India and collect adequate number of rhizomes/seeds of Dendrocalamus and Bambusa. The details about the characters and performance will be also gathered while collecting the material.

The germplasm to be collected may be either in the form of rhizomes or seeds or shoots. The planting material collected will be initially raised in the nursery and then transplanted in the arboratum.

2. Establishment of Arborata

Rationale :

India is the second richest country in bamboo genetic resources after China. These countries together hold more than half the total bamboo wealth distributed all over the world. With increased population pressure, natural stands of Bamboo are being indiscriminately cut for household and industrial use. This has resulted in the near elimination of some of the valuable germplasm from natural habitats. Therefore, there is need to conserve this germplasm and establish them in different regions for conservation.

Objective :

To set up 3 arborata under different agroclimatic conditions and replicate germplasm lines of known origin from different provenances of Dendrocalamus and Bambusa.

Progress made so far :

The germplasm collected during last year is being established in the arborata located in three locations namely Urulikanchan, Lakkihalli, and Kadod. In addition to these three locations, the germplasm is also established on other campuses of BAIF.

Since the germplasm collected was in the form of seeds/rhizomes, it was initially established in the nursery.

Work Components :

The germplasm collection and its establishment in the arboratum will continue during the current year. Four samples, each of the provenances of Dendrocalamus and Bambusa will be establised in the arboratum. The spacing within the plants and the rows will be 3 x 3 m. Germplasm of other bamboo genera and species collected during the field visit will also be introduced in the arboratum. While collecting rhizomes from similar type of bamboo plants within an area, the rhizomes from 2 - 3 different plants will be collected so as to have a wider genetic base.

Information about the provenance will be maintained in the data bank. For collecting the data, a data sheet format will be used.

2.2 Studies to be undertaken :

1. Bamboo Germplasm Adaptability Studies

Rationale :

Once the germplasm is collected from different areas it is necessary to evaluate their performance under different agroclimatic conditions. With this view following study is proposed.

Objective :

To study the adaptability of different germplasm at eight different locations.

Work Components :

The planting material of different germplasm collected will be multiplied on the campus. Once adequate material is available it will be established at following locations - Lakkihalli, Shiradhon, Nagarla, Urulikanchan, Nanodara, Kadod, Vansda, Bakrol.

The number of provenances to be established at these locations will depend on the quantity of planting material available of each provenance.

For the provenance for which seeds are available, it should be possible to raise the seedlings on all the locations and establish them as and when the seedlings are ready. However, in cases where germplasm collected is in the form of rhizomes, multiplication will take 1 - 2 years.

At least eight rhizomes of each provenance will be established on each site with an idea to evaluate their performance. Out of the eight rhizomes, four will be watered whenever necessary, to ensure their survival. The remaining four will not be watered after the initial period of establishment. This will enable us to analyse the site provenance interaction at two moisture regimes.

3.0 OTHER ACTIVITIES :

Promotion of Bamboo Cultivation :

Based on the information about the best available bamboo provinances from the local areas, the seed material will be collected and seedlings will be raised at the BAIF Research Station in the respective areas. These seedlings will be distributed to the farmers for plantation on the field bunds and backyards. Once the farmers develop the interest to cultivate bamboos, the other promising varieties can be supplied to them as and when sufficient number of seedlings are produced on the farm. The farmers will be invited to BAIF Research Station and various techniques of bamboo cultivation and its management practices will be explained to them.

4.0 PHASING

The activity phasing for the next year is provided in Annexure 1.

5.0 BUDGET

The Budget summary for 1991 - 92 is presented in Annexure 2 and the Budget notes in Annexure 3.

ANNEXURE 1

ACTIVITY PHASING

Work Plan IV Year

PROJECT TITLE : GERMPLASM COLLECTION AND ADAPTABILITY STUDY OF BAMBOO SPECIES

SR. NO	PARTICULARS	ACTIVITY PHASING (Month) 1 2 3 4 5 6 7 8 9 10 11 12
1.	Contact Research Institute and forest depts in India to collect information on species and provenances	———
2.	Approach all the International organ-isations covered under IDRC Bamboo Newtwork for germplasm collection	———
3.	Visit various sites and collect seeds /rhizomes and raise nursery	———
4.	Establish germplasm	———
5.	Collect & store information about history of various provenances collected from India and abroad.	———
6.	Initiate Bamboo germplasm adoptability study.	——— ----------

7. Training of staff ----------

8. Overseas training & visits _____

9. Farmers visits to research station _____

ANNEXURE 2

I D R C - B I S PROJECTS
PROPOSED BUDGET FOR THE YEAR 1991-92

PROJ. NO. : 16
PROJ. TITLE : GERMPLASM COLLECTION AND ADAPTABILITY STUDY OF BABOO SPECIES

SR.NO.	PARTICULARS	AMOUNT (Rs.)
BAIF Administered		
1.	Salaries	6,67,940
2.	Research Expenses	2,07,000
3.	Consultancy	-
4.	Reports/Documentation	15,000
5.	Training	20,000
6.	Travel	30,000
7.	Capital Equipments	-
8.	Infrastructure	-
9.	Books/Periodicals	10,000
10.	Administrative Overheads	94,994
	SUB TOTAL	**10,44,934**
IDRC Administered		
1.	Consultancy	-
2.	Training	-
3.	Travel	1,00,000
4.	Capital equipment	-
	SUB TOTAL	**1,00,000**
Unallocated		1,00,000
TOTAL IDRC CONTRIBUTION		**12,44,934**

ANNEXURE 3

BUDGET NOTES

(AMOUNT IN RS.)

1. **SALARIES** : The break up of the staff inclusive of benefits is as follows.

Sr.No.	Post	Amount
1.	Project Coordinator (1)	59,400
2.	Research Scientists/ Agricultural Development Officers (8)	3,16,800
3.	Supervisors (9)	2,13,840
4.	Research Assistant (1)	19,800
5.	Allocated Salaries of Programme Monitoring Staff	58,100
		6,67,940

2. **RESEARCH EXPENSES** :

Casual Labour at 8 sites	2,00,000
Allocated Monitoring Expenses	7,000
	2,07,000

3. **REPORTS/ DOCUMENTATION** : An amount of Rs. 15,000 has been proposed for covering expenses on stationery, reports preparation, publication of papers, communication at National and International levels etc.

4. **TRAINING** :

Staff training	10,000
Farmers training at 8 sites	10,000
	20,000

5. **TRAVEL :**

An amount of Rs. 30,000 has been provided for the staff for travelling. This includes expenditure on Travelling incurred during Germplasm collection. In addition, subject matter specialist from Pune will visit all the sites regularly to monitor the project.

IDRC Administered :

An amount of Rs. 1,00,000 has been provided for participation in Bamboo network activities and International Training courses in South East Asia.

6. **BOOKS AND PERIODICALS :**

An amount of Rs. 10,000 has been budgeted for purchase of books and periodicals and for carrying out literature searches.

PROJECT NO 17

BAIF MANAGEMENT TRAINING CENTRE

1.0 INTRODUCTION :

BAIF Development Research Foundation has been involved in implementation of various research and development programmes with innovative intervention approaches and adaptation of often highly sophisticated technologies to conditions prevailing at the farmers' level. Its various programmes now cover a wide range of disciplines and a geographical reach extending to six states in India.

Over the last few years BAIF's programmes have strengthened and have been reinforced through an increase in technological diversity of the programmes, increase in the geographical scale of operations, and strengthening of the management functions relating to programme planning, design, delivery and monitoring. BAIF is on the threshold of a further expansion of its programmes. In view of this it is necesary to consolidate the present programme operations.

Such a consolidation of programme benefits will require inputs to strengthen the techno-managerial capacity within BAIF through regular management development programmes, training of senior staff at the headquarters as well as at the field levels, and establishing a central facility for these programmes in the form of a central operational headquarters for BAIF's programmes. This will improve BAIF's capacity to operate ongoing and future programmes more effectively.

Institutional Strengthening, being an important objective of the IDRC - BIS Programme, it is proposed to establish the BAIF Management Training Centre (BMTC) at Pune, to take up these functions.

A large number of non-government organisations (NGOs) are involved in operating rural development programmes in India. These agencies have dedicated persons but are often in need of professional inputs. The proposed Centre will also help to strengthen such NGOs by enabling BAIF to extend human resource development support to such NGOs in the areas of management and technical training.

As part of BAIF's work over the last two decades as well as under the BAIF Institutional Support Programme, working systems have been developed in various programme areas and diverse technologies. These technologies and working systems can also be transferred to such NGOs to make possible a wider extension of these programmes.

2.0 OBJECTIVES :

1. To consolidate and sustain BAIF Programme benefits through establishment of a central facility for management development and training programmes.

2. To enable wider extension of BAIF programme approach and working system thorugh training support to NGOs.

3.0 WORK COMPONENTS :

The BAIF Management Training Centre will be housed at a suitable location in Pune. The broad work components for establishment of the BMTC are :

1. Procurement of land.

2. Finalising BMTC design and layout.

3. Construction of facilities.

4. Furnishing of facilities.

5. Planning of management development and training programmes.

6. Development of training modules.

7. Organising above programmes as well as conventions, workshops, seminars etc in topics relevant to BAIF's area of work.

During 1991- 1992 it is proposed to complete the first two work components as well as commence construction of facilities. All the above work components will be completed over a period of two years i.e. 1991 - 1993.

4.0 PHASING :

The Activity Phasing for the next year is provided in Annexure 1.

5.0 BUDGET :

The Budget Summary for 1991 - 92 is presented in Annexure 2 and the Budget Notes in Annexure 3.

ANNEXURE 1

ACTIVITY PHASING

Work Plan IV Year												
PROJECT TITLE : BAIF Management Training Centre												
SR. NO	PARTICULARS	ACTIVITY PHASING (Month)										
		1	2	3	4	5	6	7	8	9	10	11	12
1.	Land Procurement	-------											
2.	Construction				----------								

ANNEXURE 2

I D R C - B I S PROJECTS
PROPOSED BUDGET FOR THE YEAR 1991 - 92

PROJ. NO : 17
PROJ. TITLE : BAIF Management Training Centre

BUDGET SUMMARY

SR. NO.	PARTICULARS	AMOUNT(RS.)
BAIF Administered Contribution		
1.	Salaries	--
2.	Research Expenses	--
3.	Consultancy	--
4.	Reports & Documentation	--
5.	Training	--
6.	Travel	--
7.	Capital Equipment	--
8.	Infrastructure	85,00,000
9.	Books & Periodicals	--
10.	Administrative Overheads	--
	SUB TOTAL	**85,00,000**
IDRC Administered		
1.	Consultancy	--
2.	Training	--
3.	Travel	--
4.	Capital Equipment	--
Unallocated Expenses		
TOTAL IDRC CONTRIBUTION		85,00,000

ANNEXURE 3

BUDGET NOTES
(Amount in Rs)

1. INFRASTRUCTURE :

1. Cost of Land 1 ha @Rs. 400 per sq.ft 40,00,000

2. The builtup area of the building will be as under :

S.No.	Particulars	Area (Sq.M)
1.	Auditorium	300
2.	Conference Room	100
3.	Committee Rooms	100
4.	Library	100
5.	Computer Centre	50
6.	Services (Reception, Telecommunication Room, Pantry, etc.)	100
7.	Faculty Units	1500
8.	Storage	150
9.	Guest Rooms	100
	Total Area	2500

Building cost for 2500 sq.mtr. Rs.3000 sq. mtr. 75,00,000

3. Furnishings for the building including office furniture, training and conference rooms, auditorium @ Rs. 1500 sq. mtr for 2500 Sq Meter 37,50,000

Out of the above amount it is estimated that the following funds will be rquired in 1991 - 92.

1.	Procurement of land	Rs.	40,00,000
2.	Construction Cost (60 % of total cost)	Rs.	45,00,000
