

## CHAPTER-XIX

### EXTERNALLY AIDED PROJECTS

Activities under externally aided projects in ICFRE during the year have been as follows :

**Title of the project: UNDP-ICFRE PROJECT- STRENGTHENING AND DEVELOPING ICFRE**

UNDP-ICFRE Project "Strengthening and Developing Indian Council of Forestry Research and Education" to be completed in March 1999 was extended for a period of one year i.e till March 2000. During this extended period ICFRE has utilised funds amounting to US \$ 36,013.83 (Rs.15,57,598). Main emphasis during the extended period of the project was on development and imparting training to women and unemployed youths in the 126 project adopted villages which were scattered in 22 districts of different agro-ecological zone of the country in 14 states. The detailed reports with photographs, illustrations, tables, charts and graphs etc. on the project is under preparation.

The plantations activities under the project have increased availability of fuel wood. The project has increased awareness among the farmers of adopted villages as well as surrounding villages about the raising of high quality planting material on their fields using modern farm forestry techniques. The farmers have also started raising their own nurseries after getting training under the project in seed technology and plantation management.

#### **BENEFICIARIES AND IMPACT OF THE PROJECT**

The ultimate beneficiaries of the project are the farmers, poor tribals, women, economically backward classes, unemployed youths, and the wood based industries.

The Project has provided very fruitful contact between scientists and rural beneficiaries and has increased capacity of adoptive research. The terminal mission of the project has noted that ability of ICFRE scientists within ICFRE Institutes to transfer science and technology from lab to land has improved. The area in and around adopted villages are now more green and tree planting has become an integral part of the farmers activity.

**Title of the project: ICFRE-NABARD PROJECT FOR DEVELOPMENT OF AGROFORESTRY MODELS FOR VARIOUS AGRO-ECOLOGICAL REGIONS OF INDIA**

This research project is being implemented by ICFRE since September 1995 under the sponsorship of National Bank for Agriculture and Rural Development (NABARD). The original outlay for the project was Rs.126 lakhs which has been scaled down to about Rs.50 lakh. This 5 years project is expected to be completed in September 2000. The objective of the project is to identify and develop different agroforestry models taking micro-watershed approach and ensure self sustainability of ecosystem under different agro-ecological zones. The project is being implemented in the following four Institutes:-

- Institute of Forest Genetics and Tree Breeding, Coimbatore : Hot semi arid loamy soils.
- Tropical Forest Research Institute, Jabalpur: Hot sub-humid red black soils:
- Centre for Social Forestry & Eco-Rehabilitation, Allahabad: Hot sub-humid-alluvial soils.
- Arid Forest Research Institute, Jodhpur: Hot arid-desert and saline soils.

12 Micro-watersheds in 16 villages covering an area of 6600 ha have been selected.

2,84,836 seedlings of forestry species have been raised in different nurseries. 50,253 fruit trees have been raised in project nurseries.

Number of plants raised is given below:-

**Model Wise ( Plants in Numbers)**

	Coimbatore	Allahbad	Jodhpur	Jabalpur	Total
Silvi-agro	73,780	11,865	12,553	28,225	1,25,066
Silvi-passtoral	4,280	10,000	369	2,035	12,684
Silvi-horti	8,000	20,455	1,237	10,854	39,868
Other	7,692	39,501	6,776	43,166	88,742
<b>Total</b>	<b>93,752</b>	<b>71,821</b>	<b>20,935</b>	<b>84,280</b>	<b>2,66,360</b>

**Pattern-Wise ( Plants in Numbers)**

	Coimbatore	Allahabad	Jodhpur	Jabalpur	Total
Bund Planting	35,800	18,613	12,300	50,299	1,17,012
Line Planting	27,845	3,789	1,571	5,042	38,247
Row Planting	15,915	5,593	110	-	21,618
Block planting	14,192	43,826	6,954	28,939	93,911
<b>Total</b>	<b>93,752</b>	<b>71,821</b>	<b>20,935</b>	<b>84,280</b>	<b>2,70,788</b>

**Casualty Replacement ( Plants in Numbers)**

	Coimbatore	Allahabad	Jodhpur	Jabalpur
Tree Species	15,300	1,992	3,144	20,436
Horti Species	900	85	796	645

Data on different growth parameters like height and girth from plantations raised in 1996, 1997, 1998, and 1999 are being collected and will be analysed to develop and suggest suitable agro-forestry models.

**Title of the project:** WORLD BANK ASSISTED FORESTRY RESEARCH, EDUCATION AND EXTENSION (FREE) PROJECT (1999-2000)

Forestry Research, Education and Extension (FREE) Project was launched on 30<sup>th</sup> September, 1994 with the assistance of the World Bank. Executing agencies are the Indian Council of Forestry Research & Education (ICFRE), the Ministry of Environment & Forests (MOEF), and the states of Himachal and Tamil Nadu. The total estimated cost of the project is Rs. 2151.48 million equivalent to US\$ 56.48 million. IDA credit (Cr-2572 IN) is for US\$ 47.0 million equivalent.



The total project expenditure till March 2000 is Rs. 140.83 crores against an outlay of Rs. 168.360 crores. The progress of important project programmes implemented by ICFRE is as follows:

### **Research Management**

**Objectives:** (a) To improve the management and coordination of forestry research at national, state and Institute level. (b) To strengthen procedures to ensure that research priorities are linked to national and state priorities. (c) To develop National Forestry Research Plan (NFRP) and to improve the extension research results. There are two sub-components under Research Management.

#### **(i) Development of ICFRE:**

Development of Indian Forestry Research Information System (IFRIS) is progressing well. The technical review of all ongoing projects under FREEP was carried out by World Bank Supervision Mission during 1999 - 2000. Workshops for Research Priority setting and research advisory group were held at ICFRE institutes during the year 1999-2000. Annual meetings Research Advisory Group (RAG) were held in all the institutes in which current research programmes; research needs of SFDs, ICFRE; collaboration with SFDs, Universities; and research priorities of all the states were discussed. The follow up action on National Forestry Research Plan (NFRP) has been initiated.

#### **(ii) Forestry Extension:**

Twenty three extension proposals worth Rs. 17.2 million have been sanctioned, and funds worth Rs. 14.40 millions have been released so far. Monitoring of ongoing projects was carried out by Media Division, Directorate of Extension, ICFRE. Altogether 51 brochures, 13 Newsletters, 20 Bulletins, 24 pamphlets, 8 reports and 26 books have been published.

“The Forestry Research Extension Strategy - ICFRE” has been prepared and drafted, reviewed copies of the programme have been sent to all the Directors of ICFRE institutes for implementation. Sufficient number of copies are being printed for distribution.

### **Research Programme Support:**

**Objectives:** (a) To provide infrastructure, equipment and operating expenses for research programmes in ICFRE institutes. (b) To establishment of Research Grant Fund to commission research by public and private sector agencies. (c) To take measures to improve the quality of planting stock to support forestry research system as a whole and carry out scientific reviews of institutes and on-going research programmes.

Thirty research programmes covering many forestry disciplines initiated during 1994 at ICFRE institutes were continued during the year 1999-2000 also. 910 ha. area of Seed Production Areas (SPAs) were culled during the year 1999-2000. Besides, 156 ha. of CSO, 340 ha. of SSO, and 52 ha. of VMG were established during the year. The project also provides for grant of funds (for undertaking specific research programmes) to State Forest Departments, Universities and other private sector organizations. Till March, 2000, 158 Research Programmes were sanctioned, amounting to Rs. 170.53 million. National Forest Library and Information System at Dehra Dun, and a network involving libraries under ICFRE and related Institutes (IFLIN) have been further developed. One Chief Consultant and 18 state consultants, Grey Literature Survey, appointed for collection and documentation of grey literature on forestry. The project also includes a provision to develop a “Forest Statistical Unit” within ICFRE to co-ordinate compilation and analysis of national forest statistics. “Forest Statistics India 1996” has been published in June, 1999. Bio-metrical support was provided to 92 research projects under different Institutes of ICFRE.

## **Forestry Education:**

**Objectives:** (a) To develop and validate forestry curricula. (b) To develop the Deemed University at FRI, to finance post-graduate research awards for socio-economic as well as technical research.

This involves development and validation of forestry curricula in formal education through provision of funds for review and revision of work and development of Deemed University, Dehra Dun. Two M.Sc. Courses (Forestry and Wood Science & Technology), were started in addition to the two ongoing P.G. Diploma Courses (Plantation Technology and Pulp & Paper Technology). In the above four courses 101 students were enrolled during the year 1999-2000. To build up research manpower, 17 SRFs, 121 JRFs, and 20 Research Associates were kept in position. A total of 216 fellowships were allotted to various Institutes.

International Training under FREEP were arranged through FAO from the year 1994-95 till December 1999-2000. In all, 324 personnels have undergone study tour, three months training and 12 months training December, 1999. Five training courses on Research Methodology with emphasis on Statistics for Junior Scientists were organized at Delhi and Bangalore. Two courses of two weeks duration for Scientists E&F were also organized for 43 scientists during the year 1999. 14 officials of ICFRE and its Institutes dealing with accounts related matters received training at Institute of Management Development, Lucknow. In March 2000, a training course on "Emotional Intelligence for 40 officers of ICFRE was conducted.

## **Title of the Project: HIMALAYA ECO-REHABILITATION (ICFRE-IDRC).**

In order to develop a regional policy and management framework for the sustainable rehabilitation of the Himalaya, a project on "Himalaya Eco-rehabilitation" was started in April, 1993 with the financial support from IDRC, Canada (\$ 0.5 million CAD) and ICFRE's contribution of 31.65 Lakh. The participating countries have been India, Nepal, China and Bhutan.

**Objectives:** (a) To assess and quantify damage due to shifting cultivation, mining and other common land uses, {employing Geographic Information System (GIS)}. (b) To develop and test agroforestry interventions to contain shifting cultivation. (c) To rehabilitate mine damaged areas with specific micro-interventions. (d) To undertake baseline and eco-socio-economic impact studies in selected areas. (e) To strengthen the socio-economic and interdisciplinary research capability of ICFRE. (f) To review and recommend national/regional policy for rehabilitation of Himalaya.

The project was implemented in identified field sites of the North-Eastern states and Western Himalayan region of India and the case studies of degraded lands of different regions were taken up.

## **Following reports have been prepared for dissemination.**

- (i) Technical Report on Himalaya Eco-rehabilitation.
- (ii) Report on Socio-economic Survey of Himalaya Eco-rehabilitation.
- (iii) Forest Policy and Legal Framework in Himachal Pradesh, Uttar Pradesh, Jammu & Kashmir and North-Eastern Region of India.
- (iv) Forest Policy and Legal Framework in Nepal, Bhutan and China.

On conclusion of the project a seminar on "Regional Consultation on Eco-rehabilitation of Himalaya/ Sharing of national and local experiences" was also organised.



**Title of Project:** DEVELOPMENT OF NEEM IN VARIOUS AGRO-ECOLOGICAL REGIONS OF INDIA(FRI: PUNJAB, HARYANA, WESTERN UTTAR PRADESH; TFRI: MP & ORISSA; AFRI: GUJARAT; IFGTB: TAMILNADU, ANDHRA PRADESH & KARANATAKA).

**Objectives:** (a) Seed Resource assessment, collection and storage. (b) Phenological and chemical evaluation for characterization & improvement. (c) Tree Improvement to get quality and reliable seed source. (d) Techniques for mass multiplication, particularly clonal propagation; availability of quality planting material. (e) Model village plantation including agroforestry models. (f) Development of post harvest tools and technology, oil extraction and utilization (g) Exploitation of neem oil and by-products for pesticidal medicinal and fertilizers etc. (h) Dissemination of information. (i) Training of various target groups.

**Results and achievements/progress made :**

**Identification of Candidate Plus Trees (CPT's):** A survey was made by scientists of FRI in various regions in the state of Punjab, Haryana & Western Uttar Pradesh. 453 CPT's were identified.

**Seed Collection:** Fruits were collected from 453 CPT's and 16 provenances. Seeds weighing 306.00 kg were obtained from fruits and used for different studies like raising nursery stock, exchange programme, chemical evaluation and storage etc.

**Seed Germination:** From each CPT's/Provenance studies on germination test in the nursery and seed laboratory were undertaken to determine the germination percent immediately after collection. Germination data in respect of CPTs varies from 0.5%-90% during 1999.

**Neem Nursery:** Seeds were sown in earthen pots, enameled trays and were observed for germination percentage, time taken to germination, mean germination time, survival percentage and rate of growth. The germination media used for germination test was river sand. The height growth and collar diameter growth of neem seedling for different provenance were recorded.

Total Number of seedlings available in the nursery is given below:

Component	No. of Seedlings
CPTs	36,230
Provenance	8,130
General	13,800
Polybag	570
Transplant beds	520
<b>Total</b>	<b>59,250</b>

**Vegetative Propagation:** For mass multiplication of high oil yielding trees, vegetative propagation technique have been standardized. Vegetative propagation techniques includes rooting of branch cuttings, rooting of soft wood cutting(nodal) and air layering. Soft wood cutting were treated with I.B.A. (Indole Butyric Acid) 1000 ppm planted in vermiculite media, kept in Mist Chamber (35°C) gave about 50% rooting).

**Phenological Studies:** Phenological studies in respect of trees selected in different agroclimatic zones were taken up during February, 2000. The observations in respect of leaf shedding, flowering, emergence of new flush and fruiting were recorded in different provenance. The tentative conclusion drawn from the results indicate that leaf shedding, flowering, commencement of new flush and fruiting occurs early in dry areas like Agra, Mathura, Aligarh as compared to Haridwar, Saharanpur, Muzzafarnagar and Meerut areas.

**Training & Extension: (a) Trainers Training:** One Trainers training attended by 33 participants was organized on 6<sup>th</sup> & 7<sup>th</sup> March, 2000 at FRI, Dehra Dun. **(b) Farmers Training:** One Farmers training attended by 50 farmers of Gurgaon District (Haryana) was organized at Sohana (Haryana) on 27<sup>th</sup> and 28<sup>th</sup> March, 2000.

#### ICFRE-FORD FOUNDATION PROJECT

Sl. No. : 1

Project identification No. : TFRI-95/FFP-21

Name of the principal investigator: Amit Sahai

Title of the project: PRODUCTIVITY ENHANCEMENT - MANAGEMENT FOR PEOPLE'S PARTICIPATION.

Year of start of the project: 1995

Target year of completion: 2000

Cost of the project : Rs. 67.77 lakhs

**Objectives:** (a) To study the silvicultural options to be recommended. (b) To organise national seminar for sharing of the experiences. (c) To support activities for mushroom and medicinal plants cultivation rope making, pisciculture, etc. through village institutions. (d) To study the gender issues.

**Scientific importance of investigations:** Peoples participation in management will help conservation of flora and fauna more effectively.

**Results/Achievements:** A National Seminar "Sustainable Forestry through Joint Forest Management" was organised on 7-8 February 2000. The productivity yield tables for *mahua* flowers and seeds and *char* were prepared and a correlation developed between fruit yield and crown and tree girth. The methodology for identifying indicators for selection of potential JFM sites has been developed. Pisciculture was continued at Raoria alongwith mushroom cultivation at all the site villages. The marketing of the fish produce of last year was done by the Forest Protection Committee and income obtained credited to the committee's account. This amount was cycled back for desilting of the pond. The results of species trial conducted during the previous years were utilised for distribution of suitable MPTs to the villagers for planting along the field bunds. Lac cultivation was continued at both Jabalpur and Sambhalpur sites. Vegetable gardens at Sambhalpur became remunerative. Ashwagandha and Senoy plant were distributed among villagers. Socio-economic profiles was completed. Studies on Gender issues were conducted in all selected villages.