

CHAPTER-XV

FORESTRY EXTENSION

Forestry extension programme of Indian Council of Forestry Research and Education plays a vital role in connecting research institutes with the end users through transfer of technology; extension support to State Forest Departments, NGOs etc; research collaboration with various organisations; and establishment of synergic linkages with user groups. Activities under forestry extension are primarily aimed at motivating and educating the people on the role of forests, their conservation, development, management of community land, public forest, the need for increasing forest productivity and scientific use of forest products. The Indian Council of Forestry Research and Education has accorded top priority to Forestry extension by establishing a full-fledged Directorate of Extension. The user of ICFRE extension services mainly include State Forest Departments, Forest Corporations, Forest industries, farmers, non-governmental organisations and others.

Forestry extension is a two way process : On the one hand tested technologies and scientific information is transferred to the users and on the other, requirement of users is ascertained for evolving research priorities and keep abreast the researchers with the field realities. Extension Directorate has three important wings. The extension wing that extends technologies to the identified users, mainly manufacturing wooden products, small scale entrepreneurs both in urban and rural areas, willing would be entrepreneurs as well as organisations involved in using forestry technologies of ICFRE or traditional technologies.

The library wing makes available facilities of using a great number of books and journals on forests and related subjects. Recent emphasis has been on modernization so as to make it upto-date, user friendly and connected to other libraries and many more distant users.

The third wing is publication, which is responsible for publishing all the written research findings and reports, including monograph and books. It is also involved in making available to the interested user various brochures and pamphlets being published by it regularly.

Identifying and prioritising technologies for Extension

Dissemination of research results depends on the mechanism of transfer of technology and availability of technology that can bring improvements over the existing technology in the field. In the recent past, ICFRE has identified 33 tested technologies out of which 17 tested technologies have been prioritized on the basis of clients demand for extension.

Extension Methodology

The extension methodologies presently adopted are : through demonstration in the field; through extension materials like films, vedios, brochures, handouts; and exhibition; through workshops, seminars and conferences; and by personal contacts. The choice of methodology depends upon the nature of technology and the client group.

Demonstration of technology in the field

Demonstration of technologies to prospective client is one of the most effective methods of extension. This is being undertaken though 'extension support fund' and 'Industrial technology demonstration fund' as provided under World Bank project.

Projects under Extension Support Fund (ESF)

FREE project provides support for improvement of research/extension linkages. This is achieved, inter alia, by supporting demonstration of research results in the field for which the project provides fund for extending tested technologies to the user agencies like SFDs, State Forest Corporations, NGOs, universities and other potential extension agencies. The Extension Support Fund is also available for the tested technologies developed by the SFDs, universities and other organisations. During the year 1997-98 proposals under ESF were invited on continuous basis as per World Bank Mission agreement. More than 60 proposals were received during the year, out of which 12 proposals were found suitable for funding by the Extension Grant Committee which met twice in the year. These proposals worth Rs. 11.00 million were approved and are under funding process. Regular monitoring of all the ongoing projects was also done.

To apprise the clients of the tested technologies developed by ICFRE, regular demonstration workshops are held using industrial technical demonstration fund. In 1997-98 the demonstration workshops were held for the tested technologies on 'Catamaran building' developed by IWST, Bangalore and shown to fishermen of Andhra Pradesh and Tamil Nadu. Clonal propagation, bamboo propagation and other technologies of TFRI were demonstrated to many users in different forms including Kisan melas. Various technologies of FRI like conversion of Eucalyptus, sawing and seasoning of Eucalyptus, bending of wood, pencil making, preservative treatment of Eucalyptus, reusable packing cases, colouring of wood, dyes from forest waste and agarbatti substitute etc. are regularly demonstrated to various old and new entrepreneurs, several extension agencies and NGOs. Further, FRI's paper and pulp technology was demonstrated to representative from nine paper mills and plywood technologies to plywood manufacturers from Gurgaon, Sonapat, Hapur, Chandigarh, Ludhiana, Jalandhar, Kanpur, Yamuna Nagar, Parwanoo, Ram Nagar, New Delhi, Jammu, Haridwar and Dehra Dun.

Joint venture with industries under Industrial Technology Demonstration

One joint venture which was approved in 1995-96 namely Match-splint manufacturing from Eucalyptus wood has been going on.

Training, Seminar, Conferences, Personal contacts

Book Fair

During 1997-98 ICFRE participated in an international book fair held at Delhi, apart from organising and participating in several other local book fairs.

Organisation of workshop

One international seminar on sandal and two workshops viz. on development of nurseries and 'Linkages between Forestry Research and Forestry Practices' were organised during the year. Most of the demonstration workshops, participation in kisan melas and other extension efforts are aimed at making direct personal contacts with the users. This has resulted in development of extension linkages with the user fishermen and fisheries departments of Tamil Nadu and Andhra Pradesh, SFDs and with farmers, NGOs and industries throughout the country.

Production of Extension Materials

Film production

Electronic media is a very important tool for extending the message. Special emphasis was given to film preparation. ICFRE has produced one film during the year namely *Neem: The Green Gold*.

Following films and various T.V. spots which were mainly taken up during 1997-98 are at different stages of preparation :

1. Agroforestry in India
2. Non-wood forest products and 3 TV spots
3. Utilization of Eucalyptus - 3 parts and 6 TV spots
4. Extension strategy of ICFRE
5. Bamboo in Central India - 2 parts and one TV spot
6. Treated Catamarans for poor fishermen and 2 TV spots
7. Economic utilization of Casuarina and one TV spot

Extension literature

1. **ICFRE Annual Report: English and Hindi versions.**

2. **BROCHURES ON**

1. Laminated Veneer Lumber (LVL) from Poplar for Door/Window Shutters.
2. Veneer Boxes - A Tool to Wood Saving in Packaging.
3. Forestry Tools and Machines
4. Forest Tree Seed Laboratory
5. Nursery Techniques of Ornamental Bamboos
6. Teak
7. Door/Window Shutters from Laminated Poplar Wood.

3. **PAMPHLETS/FOLDERS**

1. Facilities for research and training in Pulp and Paper Science and Technology at Cellulose and Paper Division, Forest Research Institute, Dehra Dun
2. Forest Products Division in the Service of Wood Based Industries
3. Structural timber from lops and tops of Eucalyptus and Poplar

4. **BOOKS**

1. Environmental Management Concepts, Strategies and Legislation for Mine Areas (By P. Soni, Veena Chandra and S.D. Sharma)
2. Changing Facets of Weather and Climate of Doon Valley (by Dr. Laxmi Rawat)
3. Neem - A Wonder Tree (by Dr. B.N. Gupta and K.K. Sharma)
4. Marine wood - Infesting Organisms in the Destruction of Living Mangrove Vegetation along Goa Coast (by L.N. Santhakumaran and Surekha G. Sawant)
5. Forestry Statistics, India 1988-94

5. **OTHER PUBLICATIONS**

1. Methodology for setting research priorities for ICFRE.
2. Van Anushandhan Patrika, February, 1998.
3. Consultancy Reports, U.N.D.P.
4. AFRI Newsletter Vol.3, No.2 July - Decmber, 1995.

5. Timber/Bamboo Trade Bulletin No. 10, March, 1997.
6. Timber/Bamboo Trade Bulletin No. 11, June, 1997.
7. Timber/Bamboo Trade Bulletin No. 12, Septembers, 1997.

STRATEGY TO ACHIEVE CERTAIN NATIONAL GOALS

During the last few years with the support of extension component of FREE project of World Bank, ICFRE has been able to extend its tested technologies, which are in consonance with national forest policy. Technologies like better use of plantation grown juvenile timber such as Eucalyptus, Poplar; and prolonging life of juvenile wood through use of sawing, seasoning and preservative treatment reduce the demand for wood and thereby reduce the pressure on natural forest.

Likewise, other technologies like macropropagation of bamboo, reusable packing cases, manufacturing of pencil from fast growing species like poplar and Paulownia, not only serve the above purpose but also promote the substitution of forest product that are in short supply.

With the regular efforts made hitherto, a total of nine projects spread over the states of U.P., Tamil Nadu, Orissa, Kerala and Karnataka have been sanctioned by the Extension Directorate during the year to various SFDs/institutions/NGOs who have willingly come forward to extend the above tested technologies of ICFRE.

To institutionalise the various extension methodologies being adopted by ICFRE and continuously improve as well as create a full-fledged self-sustainable Extension Directorate, plans are being prepared. Some of these are described hereunder :

Creation of a Media Centre

To develop in house capabilities for producing international standard videos and films of various technologies and extension methodologies developed by ICFRE as well as those existing elsewhere to educate various users and willing entrepreneurs and relevant section of population, there is a proposal to create a fully equipped electronic media centre. The centre is proposed to be equipped with the electronic gadgets for all facilities from capturing the subject matter to producing the final film. It would also have the facility to regularly show these films and videos to various users and visitors. Subsequently developing the capability to regularly carry out publicity and extension through print media and radio is also proposed.

Satellite technology demonstration extension centre

Certain reputed and well organised institutes have been recognised which may become the technology demonstration satellite centres of ICFRE. These are mainly either Govt. institute or non-Governmental renowned science and technology institutes like Birla Institute of Scientific Research at Ranchi etc., Industrial Production Unit at Kotdwar and Garhwal Mandal Vikas Nigam (GMVN), and Birla's Small Industry Research and Development Organisation at Bhimtal. In these institutes important wood based tested technologies have been already established and are expected to become available for public demonstration on a regular basis in due course.

Media Library-cum-Reference Centre

It is proposed that with the growing experience in extension methodologies and availability of films, videos, books etc. on extension methodologies of forestry technologies, in due course media wing would develop into a library-cum-reference centre. This could then be available for the information and reference of willing users and visitors to the proposed media centre.

NATIONAL FOREST LIBRARY AND INFORMATION CENTRE

The activities at National Forest Library and Information Centre are directed to transform the existing store house of information to dynamic information centre and to provide customerized information to the users.

In the past, NFLIC has been working as a conventional library as a store house of books, journals and other documents. Lending of documents has been its key service to the users. But, now the NFLIC has metamorphosed into a vibrant, professionally managed library and information centre. It has introduced modern methods/practices of processing documents and offering information services to it's clientele. Professional activities such as effective collection building, creation of machine readable catalogue to offer Online Public Access Catalogue (OPAC), barcoding of documents, improving retrospective search service sharing with ICFRE institutes, improving communication facilities, providing internet access, human resource development, etc. are playing vital role in promotion of the user oriented facilities in NFLIC.

Collection Development

During 1997-98, to total of 3709 new books worth Rs.93,98,110.00 lakhs were added to NFLIC collection. NFLIC have procured 206 foreign journals and 37 Indian journals during 1997-98.

New Library Services

The NFLIC has started Current Awareness Service (CAS) and Selective Dissemination of Information (SDI) for the Scientists and foresters at ICFRE and its institutes. The bibliographic services are provided on demand. The Inter Library Loan (ILL) has been introduced to avail and share facilities of local libraries for mutual benefit.

Barcode Generation

For facilitating automation of circulation of books (issue/return) and stock verification of library, Barcoding of books has been started in NFLIC. During the reported period about 12,000 books in stock have been barcoded.

CD-ROM databases available : 1997-98

Sl.No.	Title	Coverage
1.	Biological Abstracts	1985 – present
2.	Chemical Abstracts	1996
3.	Science Citation Index	1991-1995
4.	Agris	1993-1996
5.	Eco-Disc	1990-1996
6.	TREE-CD	1939 – present
7.	CAB Abstracts	1982-1995

The CD-ROM databases acquired have been made available to the NFLIC users, and the ICFRE institutes. The databases are available as remote login facility outside Dehra Dun with the help of V-SAT available at six ICFRE institutes.

Network Development and Management

Local Area Network at ICFRE/FRI

Order for laying of LAN is placed with M/S. CMC Ltd. A high speed 100 mbps switched Ethernet fiber optic backbone is proposed. Backbone switch will be connected to access switches in different buildings via high speed links. Access switches in turn will be connected to

server and working hubs. End systems (server and client computers) will be connected to the working hubs by user access links. UTP structured cabling is the wiring of choice for access links.

The LAN will be functional by end of October, 1998.

List of servers ordered

	Hardware	Software
1.	Two 64 bit RISC based server	UNIX
2.	Three Pentium class machine	Windows NT 4.0
3.	One 32 bit RISC	TCP/IP Networking servers and Desktop Publishing package Netscape Navigation Gold Web publishing Document import and export in HTML Postscript, adobe acrobat JPEG, GIF & DVI Formats.

a) Existing WAN Link

The current WAN link is provided by National Informatics Centre (NICNET), it is a VSAT based solution. This is totally inadequate to meet the goal of intensive access to the information and database over Wide Area Network. The bandwidth of WAN link is 1200 pbs which is extremely slow. Access to remote databases is very slow. Therefore extensive access to a large group of researcher who require such services cannot be provided.

Similar WAN link are available at other institute (IFGTB, Coimbatore; IWST, Bangalore; HFRI, Shimla; TFRI and Jabalpur and AFRI, Jodhpur) of ICFRE. One of the main services in WAN will be access to remote database at Dehra Dun by all the institutes of ICFRE Institutes/Centre at Ranchi, Allahabad and Jorhat are having dial up modems based access.

The problem with existing VSAT based WAN link is its speed and reliability.

The Internet access is from shell account.

b) Wide Area Network (WAN)

A VSNL leased link with 128 kbps bandwidth is planned at ICFRE, Dehra Dun. We will be getting a class-C address also. Almost all the server which are proposed under the local Area network will be Internet visible and can be accessed directly by telnet. For security Firewall software will be installed by which access to these server can be checked, only user's authorized by ICFRE can log and access the database on these server's. One of these server will be the configured as Internet Server.

An IP-advantage VSAT with 64 kbps bandwidth is already procured for ICFRE Dehra Dun and will be installed shortly in the new building.

Similar LAN is planned at four institutes of ICFRE viz. TFRI, IWST, IFGTB and AFRI. The basic topology will be same, but only one server is planned for each institute. The LAN at Institutes will provide easy access of information to researcher's on their desktop. All institutes LAN once connected by VSAT will allow us to develop services for ICFRE INTRANET.

Software Upgrade

The library automation package Libsys currently running on SCO UNIX is to be upgraded to client server architecture. The server will be running SCO UNIX only while the

client will be on Windows (GUI) environment. This will provide a graphical user interface to the users.

Training of Staff

Short term training programme from 21st July 1997 to 25th July, 1997 was conducted on Library and Information Sciences. Eight participants from various institutes of ICFRE were trained in accessing the bibliographic databases on CD-ROM and library and information science. The intricacies of CD-ROM search demonstration of the techniques for downloading references from CDs, and hands on practice session were conducted during the training.

Trainings

International training under the FREE Project were planned to keep abreast of latest trends in information technologies relevant to library and information science. In addition, similar training was planned for the library staff of ICFRE institutes and NFLIC at national level.

A. International

Five participants from various institutes of ICFRE were trained in Library and Information Science at CABI, U.K. from 17th March, 97 to 17th June, 1997.

B. National

Six participants from various ICFRE institutes were trained in Computer Application to Library & Information activities at INSDOC, New Delhi from 5th January to 6th Feb., 1998.

DOCUMENTATION

Routine Activities

Classification has been accomplished for more than a thousand documents received under the category of conventional and non-conventional literature. 2300 cards and 2000 reference sheets have been prepared for the material and 24 new species files have been opened. More than five hundred records have been abstracted, indexed and computerised. About six dozen queries and questionnaires put forth by govt. depts., universities, NGOs, institutes and individuals have also been answered to by the Documentation Section.

Electronic Forestry Compendium

NFLIC can pride itself on being one of the contributors to the compendium being published by Centre for Agriculture and Biosciences International (CABI), U.K. Information on 13 important tree species with illustrations has been provided for which a payment of nearly US \$ 2500 will be made by CABI.

ENVIS centre on forestry

In the Environmental Science Information System (ENVIS) under the aegis of the Ministry of Environment and Forests, Delhi, NFLIC at ICFRE, Dehra Dun has been chosen as the Centre for Forestry. NFLIC will be the nodal or focal point both for the receipt and dissemination of forestry information in India. With the wide circulation of invitation letters many articles on forestry and allied issues are being received from officers at ICFRE and government departments at Dehra Dun for publication in the ENVIS newsletter.

Grey Literature

The Documentation Section is working on an ambitious project on grey literature search in India under the aegis of the World Bank. In this project, grey literature consultants in all the

states of the Indian Union shall be collecting non conventional literature on forestry related topics from forest departments, universities, NGOs, district committees and other places and sending them to NFLIC, for technical processing.

More than 500 documents have been received in this section under the category of Grey Literature. They have been classified, abstracted, indexed and fed into the computer for instant use of forestry professionals. Work by the state consultants is in progress.

Shri D.N. Lohani, Retd. PCCF of U.P. who has joined as the Chief Consultant will be coordinating the job of collection of non-conventional literature through the State Consultants in the States of the Indian Union.