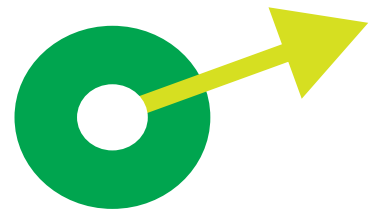


7

FORESTRY EXTENSION FOR TAKING RESEARCH TO PEOPLE





Forestry Extension for Taking Research to People

The Council has the mandate to evolve extension strategies, its periodic revision and issue guidelines for effective dissemination of technologies developed under the research projects to the stakeholders and the end users. It endeavors to transfer simple implementable technologies to the intended target groups especially the farmers. It also engages in development and dissemination of forestry extension programmes. It coordinates various extension activities of ICFRE institutes and centres. It also provides consultancy/technical services in the field of forestry, environment and allied sciences and environment impact assessment and other related areas. The Council is committed to disseminate its research outputs to the stakeholders through various schemes such as Van Vigyan Kendras, Demo Villages, Direct to Consumer Scheme, through organizing and participating in various extension activities and by means of quality publications.

7.1 Collection, Compilation and Publication of Forestry Reports/Journals

7.1.1 Publications:

❖ Following books, newsletters etc. were published by ICFRE Hqs. during the year:

- A coffee table book on '**Forest Biodiversity in India**' was published for providing insight into the unique treasure of India's forest biodiversity. The book was released by Smt. Jayanti Natranjan, Hon'ble Minister of State (Independent Charge), Ministry of Environment and Forests, Government of India during COP-11 of CBD at Hyderabad on 17 October 2012.
- A book on '**Forest Sector Report**' was published with the aim to reflect the performance of forestry sector. The book was released by Smt. Jayanti Natranjan, Hon'ble Minister of State (Independent Charge), Ministry of Environment and Forests, Government of India during COP-11 of CBD at Hyderabad on 17 October 2012.
- ICFRE has brought out a booklet titled '**Forestry Research ICFRE Supporting Rural & Tribal Livelihoods**'. This booklet contains significant ICFRE research highlights viz. recent technologies, products, procedures and extension strategies. This would be of great use to the people especially those living in the rural, forest fringe as well as forest areas, besides other stakeholders such as forest departments and industries.
- Annual Reports of ICFRE, Annual Hindi Magazine '*Taruchintan*' and bi-annuals 'ICFRE Newsletter' and '*Vaniki Samachar*'.
- A book on 'Changing Frontiers of Research Programmes in ICFRE based on XIII Research Policy Committee (RPC) 2012 Meeting' was published which highlighted the new initiatives taken recently in the research planning and prioritization system of Council.
- A book on '**ICFRE Vision 2040**' was published which will give new direction to the forestry research system of Council. It also addresses the issue of food security, livelihood support, biodiversity conservation, ecological security,



forest genetic resource management for improving productivity and impacts of climate change and its adaptation/ mitigation strategies.

- 'Forestry Statistics India 2011' was published by statistics division and released by Director General of ICFRE on 22 January 2013.
 - 'Timber Bamboo Trade Bulletin' Volume 64 and 65 were published.
 - 'Guidebook on Afforestation and Reforestation CDM Projects in India' was published.
 - 'ICFRE Climate News' (4 Issues) covering the latest developments and upcoming events etc. in the field of forests and climate change were prepared and uploaded in ICFRE website.
- ❖ Following publications were brought out under the SLEM project:
- SLEM-CPP Newsletters-Vol.3 No.1 and Vol. 4 No.1

- Proceedings of the Seminar on 'Healthy Soil: Healthy Life' and interactive workshop on 'Findings of the Baseline Study and Monitoring and Evaluation Framework'.
 - Flyers brought on 'Participatory model for water harvesting and development of community pastures in Thar Desert', 'Rehabilitation of degraded bamboo forests in Madhya Pradesh', 'Agarbatti preparation from degraded bamboo forests of Madhya Pradesh', 'Agro-biodiversity innovations for sustainable land and ecosystem management in Orissa' and 'Sustainable land and ecosystem management in shifting cultivation areas of Nagaland'.
- ❖ A total of 359 research articles were published by ICFRE institutes in scientific journal of national and international repute and in books during the year as per the following details:

Sl. No.	Name of the Institute	Number of research articles published in scientific journals and books		
		National Journal	Foreign Journal	Book Chapter
1	FRI, Dehradun	56	31	17
2	IWST, Bangaluru	45	16	21
3	IFGTB, Coimbatore	22	14	28
4	AFRI, Jodhpur	17	12	08
5	RFRI, Jorhat	16	10	03
6	TFRI, Jabalpur	16	01	01
7	HFRI, Shimla	07	04	01
8	IFP, Ranchi	07	01	02
9	IFB, Hyderabad	-	02	01
	Total	186	91	82

- ❖ A total of 72 research articles were presented in seminar/conferences/ workshops and 62 abstracts and 28 popular articles were also

published by ICFRE institutes during the year as per the following details:



Sl. No.	Name of the Institute	Number of articles presented in seminar/conferences/workshops and abstracts & popular articles published		
		Article presented	Abstract published	Popular article
1	FRI, Dehradun	29	11	06
2	IFGTB, Coimbatore	15	09	01
3	AFRI, Jodhpur	06	18	-
4	HFRI, Shimla	08	03	02
5	IWST, Bangaluru	12	-	-
6	RFRI, Jorhat	01	12	10
7	TFRI, Jabalpur	01	09	09
	Total	72	62	28

❖ A total of 16 books and 21 booklets, brochures/pamphlets were published by the

ICFRE institutes during the year as per following details:

S. No.	Name of the Institute	Number of books and booklet, brochures/pamphlets published	
		Books	Booklets/Brochures/ Pamphlets
1	IFGTB, Coimbatore	4	9
2	IWST, Bangalore	3	6
3	HFRI, Shimla	4	4
4	FRI, Dehradun	4	-
5	IFP, Ranchi	1	1
6	RFRI, Jorhat	-	1
	Total	16	21

7.1.2 National Forest Library and Information Centre

The National Forest Library and Information Centre (NFLIC) is the richest in document collection on forestry and allied sciences. It provides all types of library and information services to its users. During the year, 26,372 books were loaned to the users for outside reading and 55,448 documents were consulted inside the Library.

The document collection of NFLIC was enriched by the addition of 3,757 books and other documents. It subscribed 61 Indian and 100 foreign periodical titles and also received 485 periodical titles as *gratis*. It had also subscribed 47 most useful

e-journals for all the institutes and centres of ICFRE. A bibliographical database on 'Forest Science Database' and SCOPUS were also subscribed for providing access to old as well as latest research articles and abstracts on forestry to the institutes and centres of ICFRE.

The NFLIC has sold ICFRE publications (435 books and 13 VCDs) through its Book Depot to the state forest departments, universities, etc.

7.1.3 Environmental Information System Centre

The Ministry of Environment and Forests, Government of India established Environmental



Information System (ENVIS) Centre on Forestry at National Forest Library and Information Centre. The ENVIS Centre, during the year, enriched the online accessible databases (Indian Forestry Abstracts, Participatory Forest Management, *Prosopis juliflora*, Poplars, Environment and Forest) by the addition of new references. It has also published two issues of 'ENVIS Forestry Bulletin' and compiled five issues of the 'Environment and Forests News Digest'.

7.2 Dissemination of Developed Technologies

7.2.1 Van Vigyan Kendras (VVKs) and Demo Villages (DVs)

- Model Nurseries were established by FRI, Dehradun in VVKs at Chandigarh and Pinjore (Haryana). Establishment of model nursery in other VVKs was also initiated.
- Developed a nursery with the facility of low cost mist chamber, propagation unit, irrigation facilities, mounted angle iron beds, shade house, seed drying platform, vermi-compost unit and root trainers at Demo Village, Shyampur (Dehradun).
- The interactive meet with Tree Growers of Cuddalore, Puducherry and Villupuram Districts were organized at KVK, Tindivanam



Tree Growers Mela at IFGTB, Coimbatore

under the networking of VVK and KVK on 10 December 2012.

- Organised a field training programme to the frontline staff and the employees of the Andaman & Nicobar Forest Department on vegetation survey at VVK, Port Blair (Andaman & Nicobar Islands).
- IFGTB, Coimbatore organized 5th Tree Growers Mela on 21 and 22 February 2013. A workshop on "Sustainable Tree Farming: Wood Security, Food Security and Livelihood options" was also organized as part of the Tree Growers Mela. More than 1700 farmers from all districts of Tamil Nadu, Puducherry and Palakkad district in Kerala participated in the Tree Growers Mela.
- Regular budgetary support and literature on various technologies in Hindi, English and regional languages were provided by TFRI, Jabalpur to the VVKs for dissemination of the technologies through organizing training programmes.
- Hi-Tech Nursery was established at VVK, Bichhawal Nursery, Bikaner (Rajasthan) and about 3000 quality seedlings of *Prosopis cineraria* and *Dalbergia sissoo* were raised in Hi-Tech nursery for the demonstration and distribution to the farmers to promote agroforestry under VVK during 2012-13.
- Hi-Tech nursery was maintained at VVK, Chhipardi Beedi (Gujarat) and raised grafted plants of *Emblica officinalis* and *Ziziphus mauritiana* and high quality seedlings of *Casuarina equisetifolia*, *Eucalyptus* hybrid to promote agroforestry among the farmers.
- Nursery was maintained through different silvicultural practices at Demo Village, Salavas, (Jodhpur). Demonstrated technologies on soil and water conservation and silvipastoral model of *Cenchrus ciliaris* grass along with



Cordia gharaf and *Ziziphus nummularia* with intervention of *in situ* water conservation in Demo village.

- The herbal garden and medicinal plant propagation units were maintained at Demo Village, Gram Gaurav, Gumla (Jharkhand). Regular maintenance and demonstration of oil extraction unit, production of vermicompost and bamboo propagation techniques were carried out by IFP, Ranchi.
- Maintained the demonstration nursery, demonstration plantation and Vermi-compost unit at Demo Village, Lanabaka, Sirmour (HP). A camp workshopcum-villagers meeting at Demo village was organized by HFRI, Shimla on 28 January 2013. About 40 participants from local farmers and frontline field functionaries of Himachal Pradesh State Forest Department took active participation in the meeting. Technologies for cultivation of agroforestry species and medicinal plant species were transferred to the villagers of Lanabanka.
- Training programme on 'Non Timber Forest Products of Arunachal Pradesh, its Prospects in Rural Development' was organized by RFRI, Jorhat at Rono Auditorium, Doimukh under Doimukh Circle of Arunachal Pradesh on 20 March 2013 and 40 participants mainly farmers, entrepreneurs, and field functionaries of different Departments like Horticulture, Agriculture and Environment & Forests, Government of Arunachal Pradesh attended the training programme.
- Training on Bamboo, Rattan and Vermi-composting for Forest Department of Jorhat, Forest Development Agency, JFMC members of Jorhat District was organized at RFRI, Jorhat under Van Vigyan Kendra, Assam on 3 and 4 April 2012.



Field demonstration on Vermi-composting

- Training programme on 'Forests and Wildlife Management in Arunachal Pradesh' was organized by RFRI, Jorhat at Drupong Forest Range Office under Banderdewa Circle of Arunachal Pradesh on dated 21 March 2013. The training programme was attended by fifty Forest Officers/ Officials.
- RFRI established participatory rural appraisal programmes at Melang Grant, a hamlet of three villages in the fringe of Hollangapara Gibbon Wildlife Sanctuary under Demo Village programme. The permanent nursery was established and quality planting stocks of *Bambusa vulgaris* var. *wamin* and other bamboo species were raised. Seedlings of *Aquilaria malaccensis* and *Anthocephalus* were also raised on the demand of farmers and other agencies. Farmers generate extra income through production of *Capsicum chinense* (Bhoot Jolokia).

7.2.2 Direct to Consumer Scheme

ICFRE launched a new scheme called 'Direct to Consumer', wherein, the technology/research findings having maximum potential of public service are extended to the stakeholders (farmers, rural poor, forest departments and industry). Under



'Direct to Consumer Scheme', the project outcomes, those have been found to be of tremendous use for rural communities is being implemented jointly with rural institutions.

FRI, Dehradun had conducted the following activities under 'Direct to Consumer Scheme':

- Centre for Bamboo Processing and Training was established.
- A component entitled 'Awareness-cum-Extension' Activity of the Product 'SAMRIDDHI' developed under ICFRE funded project among silkworm farmers and sericulture industry, through organizing trainings and interactive meetings' was taken up under training programme on 'Quality Silk Production using Herbal Product Samriddhi' was organized for farmers at Sahapur and Balluwala villages under Dehradun District on 30 March 2013.
- Tested promising *Eucalyptus* clones of M/s Pragati Biotech for disease resistance against leaf and twig blight.

IFGTB, Coimbatore had conducted following activities under Direct to Consumer Scheme:

- *Melia dubia* is one of the most preferred species of the farmers today and finds a place in the 'Tree Cultivation in Private Lands (TCPL)' Scheme of the Government of Tamil Nadu. Institute provided quality planting stock of *Melia dubia* (to cover an area of 20 ha) and distributed publications/extension material in Tamil/English on *M. dubia* for wider publicity.
- Pest/disease tolerant clones of *Casuarina* were multiplied for supply to farmers and tree growers.
- Grafting and cleft grafting of superior accessions of Red and Sweet Tamarid was carried out and about 2000 quality planting materials have been produced and provided to

the various stakeholders during Tree Growers Mela, 2013.

AFRI, Jodhpur had conducted following activities under Direct to Consumer Scheme:

- A training programme on "Management of Insect pests and diseases in Mehndi and Isabgol" at Krishi Vigyan Kendra, Pali was organized on 20 March 2013 and about 45 farmers from different villages of Pali District (Rajasthan) participated.



One day training programme on "Management of Insect pests and diseases in Mehndi and Isabgol" at KVK, Pali

- Following two brochures in Hindi were also published for distribution to the stakeholders.
 - ◆ Cure and Prevention of Diseases and Insects Attacking Mehndi Crop.
 - ◆ Cure and Prevention of Diseases and Insects Attacking Isabgol Crop.
- AFRI also organized training-cum-workshop on 'Rainwater Harvesting and Afforestation for the Rehabilitation of Degraded Hills' at Banswara (Rajasthan) on 13 March 2013. Following brochures in Hindi and English were published for distribution to the stakeholders:
 - ◆ Rainwater harvesting in restoration of degraded hills and people livelihood.
 - ◆ Carbon sequestration during rehabilitation of degraded hills.



IFP, Ranchi had conducted the following activities under Direct to Consumer Scheme:

A project on “Exploration of Lac cultivation on non-traditional host *Flemingia sp.* and its possibility in sustainable plantation forestry” was launched in August 2012 at Jiwri and Janum Pidi village of Khunti district of Jharkhand with the aim to improve the rural livelihood of forest fringe villagers. In first stage, a total 10297 *Flemingia* plants were distributed to the farmers and technical support was provided at field level. Additionally, 8000 *Flemingia* plants were also distributed to the farmers in the month of September, 2012. Harvesting of lac from 1600 plants was done in the month of February, 2013 and 245 kg of brood lac was obtained by the farmer. The farmer earned an amount of ₹ 2.45 Lakh after selling the brood lac ₹ 1000/- per kg. The earning of the farmers through lac cultivation on *Flemingia semialata* host plant is proving a successful model of Khunti district. This model can be replicated throughout the state or even in another part of the country.

HFRI, Shimla conducted the following activities under Direct to Consumer Scheme:

- A meeting with the members of local Panchayat and progressive farmers was organized at village Khatnol, Distt. Shimla, Himachal



Exposure Visit of farmers to Shillaru Nursery, HFRI, Shimla

Pradesh on 8 September 2012. During the meeting, the relevance of the scheme to the participants with special reference to cultivation of medicinal plants especially Atish, Chora, Kutki etc. was highlighted.

- A one day training programme on 'Nursery Techniques of Atish and Chora - Important Temperate Medicinal Plants' was organized for skill development of farmers at village Khatnol of District Shimla, (H.P.) on 25 November 2012.
- One day 'Exposure Visit' of motivated farmers from Khatnol (Shimla) and Nichar (Kinnaur) villages of Himachal Pradesh was organised on 16 March 2013 for practical demonstration of various techniques for raising temperate medicinal plants at Shillaru, distt. Shimla (HP).
- IWST, Bangalore organised a one-day interactive cum information sharing extension programme at Bagalkot on 7 March 2013 under Direct to Consumer Scheme. Over 100 farmers, tree growers, NGO's and forest officials had participated in the programme.
- RFRI, Jorhat conducted various field demonstrations to the visitors of Demo Village from time to time and also trained youngsters from Demo Village at Bamboo Composite Centre for the training on Bamboo Handicrafts under Direct to Consumer scheme.
- IFB, Hyderabad organized a training programme on Agro-forestry of *Givotia rottleriformis* Griffith for providing livelihoods to artisans and farmers under Direct to Consumer Scheme at Nirmal on 9 March 2013.

7.2.3 Technologies Transferred

- The technique for reshaping of gums was transferred to M/s Anand Gond Udyog, Nagpur by charging licence fee of ₹ 1.4 Lakhs on 18



June 2012 by Forest Research Institute (FRI), Dehradun.

- Full sib seeds of *Eucalyptus* and *Corymbia* were released by IFGTB, Coimbatore to M/s TNPL Ltd. and M/s ITC Ltd.
- Isolated and cultured potassium mobilizing microorganism *Frateuria aurantia* and the culture was released as a product called K mobilizer during Tree Growers Mela on 21 February 2013 by IFGTB, Coimbatore.
- Seed Handling Technology of Shola species was transferred to the stakeholders by IFGTB, Coimbatore.
- Technology for 'Windbreak agroforestry systems with superior clones to minimize crop damage: A Protective support to plantain growers' was transferred to farmers by IFGTB, Coimbatore.
- Technology package for raising sandal plantations from Quality Planting Stock was transferred to the stakeholders by IWST, Bangalore.
- Macropropagation technique for raising *Dendrocalamus stocksii* was transferred to stakeholders by IWST, Bangalore.
- A seminar-cum-workshop programme was organized by the TFRI, Jabalpur for "Outreach of Research Findings" on 30 September 2012. This programme was organized to disseminate research findings of the technologies on, sustainable harvesting of *Arjuna* bark, integrated pest management of white grubs in forest nurseries, biological control of insect pest of teak in plantations, Teak-turmeric silvi-medicinal system, drought type drum dryer techniques of drying seeds of important non-wood forest species, tree species suitable for different stress sites in central India, VAM and *Azospirillum* production techniques for teak

stump production, micro-propagation of *Rauwolfia serpentina* development of a *Metarhizium* based mycoinsecticide (peststat) for management of forest pests, biopesticide product - vilvekam - *Aegle marmelos* seed oil based bio-pesticide, micro-catchment for plantation establishment, apparatus for preservative treatment of bamboos, handmade paper from *Lantana camara*, and demonstration of forest fire fighting tools and management of forest fire.

- Technologies for PRA techniques and microplanning, bamboo treatment, vermicompost, apiculture, patchouli agrotechniques, *Trichoderma* production and field application, mycorrhizal technology, biopesticide production and field application, seed handling - grading and sowing techniques, technology on chili based agroforestry model, technology on air layering of various economic important tree species using *Sphagnum*, technology on low-cost vermicompost, and technology on raising of agar (*Aquilaria malaccensis*) plantations and Cultivation of Muskdana (*Abelmoschus moschatus*) were transferred to the end users by RFRI, Jorhat.

7.3 Evolving and Coordinating Comprehensive Extension Strategies in Forestry Research

7.3.1 Sustainable Land and Ecosystem Management (SLEM)

Following activities were carried out under the project during the year:

- A draft baseline study report at national and eight selected states namely: Madhya Pradesh, Uttar Pradesh, Andhra Pradesh, Rajasthan, Nagaland, Uttarakhand, Kerala and Orissa had been prepared for the SLEM components viz.



land degradation, biodiversity conservation and impact of climate change/variability on land use practices across the country.

- A seminar was organized on 17 June, 2012 to commemorate The World Day on Combat Desertification at ICFRE, Dehradun with the theme “Healthy Soil: Healthy Life”. The seminar was attended by about 125 participants including senior officers and scientists of ICFRE & FRI. The deliberations during the seminar highlighted the role and importance of soil in securing water energy and building resilience to climate change.
- A two-day 'Interactive workshop on findings of the baseline study and monitoring and evaluation framework' under SLEM project was organised on 16 and 17 July 2012 at ICFRE, Dehradun. The two-day deliberations focused on findings of the baseline study on various thematic areas, viz. land management, climate change, biodiversity conservation, policy and institutional reform, monitoring and evaluation framework and communication strategy for SLEM-CPP.
- The fourth meeting of National Steering Committee (NSC) was held on 4 and 5 April 2013 at Hyderabad. The Meeting was attended by officials from Ministry of Environment and Forests, members of NSC, representatives from World Bank, UNDP and FAO, SLEM-TFO



Releasing of flyers on SLEM activities

members, officials from project partners, SPACC, CARE, Soil and Land Use Survey, Ministry of Agriculture, Institute of Forest Biodiversity, and NGOs.

- A workshop on “Integrating forest based enterprise with rural development for livelihood support and economic growth” was organised on 21 March 2013 at ICFRE, Dehradun. The workshop highlighted the importance of Panchayat Raj Institutions (PRI) in the scheme of governance and the role of ICFRE in implementing the government policies and programmes with the involvement of rural institutions. Representatives from Gram Panchayat shared their experiences regarding use of natural resources to provide livelihood in rural areas.
- A training programme for frontline staff of Madhya Pradesh Forest Department was organised from 25 to 27 September, 2012 at Tropical Forest Research Institute (TFRI), Jabalpur. The training module covered various aspects of soil and water conservation, cultivation of lac for livelihood and rehabilitation of bamboo forests.
- A training programme on “Role of Biodiversity Conservation in Poverty Alleviation and Rural Livelihood” for officials from Revenue, Agriculture, Horticulture and Husbandry departments, NGOs and farmers was organized at IFGTB, Coimbatore from 29 to 31 October, 2012.
- A training programme on “Shifting cultivation practices vis-a-vis livelihood opportunities in North East India” was organized at RFRI, Jorhat from 25 to 27 February 2013. The training programme was attended by 25 participants from State Forest Department, Universities, Soil and Water Conservation Department, NGOs and progressive farmers.



- A training programme on “Climate change adaptability and impact on land degradation and biodiversity conservation” for various stakeholders was held at Institute of Forest Biodiversity (IFB), Hyderabad from 26 to 28 February 2013.

7.3.2 Seminars/Symposia/Workshops Organized

- An Interactive workshop on REDD+ was organized by ICFRE, Dehradun in collaboration with Climate Change Department, Government of Gujarat at Gandhi Nagar, Gujarat on 27 and 28 September 2012.
- ICFRE and FRI, Dehradun organized 24th Session of International Poplar Commission and 46th meeting of its Executive Committee in October 2012 at Dehradun. It is for the first time that such a prestigious event of IPC was held in India. Various technical sessions were held simultaneously during the mega event. A total of 227 delegates from 23 countries participated in the sessions. Besides, the meeting of National Poplar Commission of India was also held and its scope was enhanced by introducing new species and re-designating it as "National Commission on Poplars, Willows and other Short- Rotation Crops" with its secretariat at FRI, Dehradun.



Inaugural Session of 24th Session of IPC

- FRI, Dehradun organized the following:
 - Workshops- cum- Kissan Mela on 'Role of Kissan Mela in sustainable supply of wood for industries' to the farmers and other stakeholders at PAU, Ludhiana on 6 and 7 March, 2013 and at Yamuna Nagar on 23 March, 2013.
 - Workshop on 'Sustainable management practices and livelihood at Dehradun on 3 and 4 October 2012.
 - Side Event on 'Forest Insect Diversity in India: Facts and challenges' during CBD CoP-11 at Hyderabad on 11 October 2012.
- IFGTB, Coimbatore organized the following:
 - Series of three awareness training workshops on 'The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)' for various enforcement agencies involved in CITES implementation in India.
 - A stakeholder meeting on 'Validation of Descriptors of *Casuarina* and *Eucalyptus*' on 15 June 2012
 - A stakeholder meeting with Tamil Nadu Forest Plantation Corporation Limited at Tiruchirappalli on 2 July 2012.
 - Fourth Stakeholders Meet 2012 in Office of PCCF, Tamil Nadu Forest Department, Panagal Maaligai, Chennai on 8 August 2012.
 - Fourth Stakeholders Meet of IFGTB with the Kerala Forest Department at Department of Forests and Wildlife Headquarters, Vazhuthacaud, Thiruvananthapuram on 13 August 2012.
 - Interactive meet of Tree Growers and distribution of *Casuarina* seedlings developed by IFGTB for the Thane Cyclone affected farmers was organized by IFGTB, Coimbatore under Networking of VVK and KVK at Krishi Vigyan Kendra, Villupuram located at Tindivanam, Tamil Nadu on 10 December 2012.




- IWST, Bangalore organized the following:
 - Training- cum- workshop on 'Cultivation and Nursery Practices of Sandalwood and *Melia dubia*' from 21 to 24 August 2012 to the officials of the Karnataka Forest Department.
 - Brain storming session for finalization of Comprehensive Environmental Management Plan (CEMP) with active participation of various NGOs was organized by IWST, Bangalore on 23 October 2012.
 - First Technology Marketing Meet on 5 December 2012 and Second Technology Marketing Meet on 14 December 2012. Around 30 business persons from various categories attended the events.
 - An Interactive meet on 'Agarbathis' on 20 December 2012.
 - Interactive meetings on 'Integrated Pest Management in Forestry' was organized by IWST, Bangalore on 29 January 2013 and 22 February 2013.
 - An interactive meet on advanced wood working machines for KSFIC/entrepreneur/industrialist/sawmill owners/ construction sector and carpenters on 8 February 2013.
 - An interactive -cum -information sharing meeting on "Insect pest and disease problems of sandalwood under cultivation and their management" for sandalwood growers, farmers and forest officials was organized by IWST, Bangalore on 7 March 2013 at Krishi Vigyan Kendra, Bagalkot, Agricultural University, Dharwad (Karnataka).
- TFRI, Jabalpur organized the following:
 - Workshop on 'Strengthening Network for Outreach of Research Findings' on 30 November 2012.
 - A workshop-cum-Training programme on 'Recent Advances in Forestry Research and Sustainable NTFPs Harvesting' from 4 to 7 March 2013 for the officials of Maharashtra State Forest Department.
- workshop-cum-training on 'Achanakmar-Amarkantak Biosphere Reserve' for the front line staff of Achanakmar-Amarkantak Biosphere Reserve at Bilaspur, Chhattisgarh on 23 March 2013.
- AFRI, Jodhpur organized the following:
 - Training- cum- workshop on 'Rainwater harvesting and afforestation for the rehabilitation of degraded hills' on 13 March 2013 at Banswara (Rajasthan).
 - Workshop for the development of Coordinated Programme on Arid and Semi-Arid Regions (CP-ASAR) in collaboration with Department of Science and Technology, Government of India at Jodhpur from 16 to 18 April, 2012.
 - Stakeholders' meeting at Jaipur, Rajasthan for officials from SFD, Universities, research institute, leading farmers and NGOs on 22 August 2012.
 - Stakeholders' meeting held at FTI, Gandhinagar, Gujarat, in which officials from SFD, Universities, research institute, leading farmers and NGOs on 10 September 2012 participated.
 - Workshop on Biodiversity in collaboration with Rajasthan State Biodiversity Board at Jaipur on 13 December 2012.
- IFB, Hyderabad organized an interactive meeting on Research methods on forest biodiversity on 18 March 2013 at Hyderabad.
- HFRI, Shimla organized the following:
 - 7th Network Project Partner's Workshop at Srinagar, Garhwal (Uttarakhand) in collaboration with High Altitude Plant Physiology Research Centre, Srinagar on 27 September 2012.



- A workshop- cum- review meeting on 'Cumulative Environmental Impact Assessment of Sutlej Basin (Himachal Pradesh)' at Shimla on 11 October 2012.
- Workshop-cum-Villager's Meeting at Rajgarh, Solan (H.P.) in collaboration with the State Forest Department of Himachal Pradesh on 31 January, 2013.
- RFRI Jorhat, organized the following:
 - Training- cum- workshop on 'Application of Global Positioning System in Forestry' for 25 officers from Nagaland Forest Department at Jorhat from 30 July to 01 August 2012.
 - Awareness generation programme on 'Livelihood development and creation of carbon pool through bamboo plantation in degraded jhum land' at Johner Sinar village (Silonijan) Karbi Anglong on 2 November 2012.
 - 'Motivation and Training- cum- Workshop' on *Agarbatti* sticks making at Borholla, Jorhat on 19 March 2013 for 42 women from 12 self help groups and at Sipahikhola Block, Jorhat on 23 March, 2013 for 78 women from 30 self help groups.

7.3.3 Special Activities

Name of Occasion and date	Name of institutes	Activities performed
Himalayan Day 9 September 2012	FRI, Dehradun, HFRI, Shimla, RFRI, Jorhat	A Panel Discussion, a workshop - New Growth Measures for the Nation and Himalaya and a talk.
International Biodiversity Day 22 May 2012	AFRI, Jodhpur	seedlings of tree species were planted
National Technology Day 11 May 2012	FRI, Dehradun	A special exhibition
Sadbhawna Pakhwara 20 August 2012 to 3 September 2012	TFRI, Jabalpur	
Van Mahotsava	FRI, Dehradun (2 July); AFRI, Jodhpur (19 July)	Planting of seedlings
Vigilance Awareness Week 29 October to 3 November 2012	FRI, Dehradun; IFGTB, Coimbatore, IWST, Bangalore; TFRI, Jabalpur; AFRI, Jodhpur; RFRI, Jorhat	
Wild Life Conservation Week 1 to 7 October 2012	TFRI, Jabalpur	
World Day to Combat Desertification 17 June 2012	ICFRE, Dehradun; TFRI, Jabalpur; AFRI, Jodhpur	
World Forestry Day 21 March 2013.	FRI, Dehradun; RFRI, Jorhat	2500 students and teachers attended World Forestry Day at RFRI, Jorhat
World Environment Day 5 June 2012	FRI, Dehradun (also observed FRI Day); AFRI, Jodhpur	campaign against use of polythene, painting competition for children on "our environment"



7.4 Consultancy Services

In order to put in place the scientific mining and rehabilitation of mined out areas, the Hon'ble Supreme Court of India through Central Empowered Committee and the Government of Karnataka had entrusted the task of preparation of Rehabilitation and Reclamation (R&R) Plans to ICFRE. During the year 2012-13, ICFRE had completed the preparation of 60 R&R plans which were subsequently approved by the Hon'ble Supreme Court of India and scientific mining has started in the state of Karnataka after its closure for about one and half years.

ICFRE has also prepared a draft Cumulative Impact Assessment and Implementation Plan for the districts of Bellary, Chitradurga and Tumkur of Karnataka for ensuring biological, physical and social rehabilitation of erstwhile degraded areas. In addition, ICFRE is working on the preparation of R&R Plans for additional 106 mines of the districts which will be completed during the year 2013-14.

ICFRE is also carrying out two important projects on 'Cumulative Environmental Impact Assessment of Hydro-electric Projects on Sutlej River Basin in Himachal Pradesh' and 'Cumulative Impact Assessment of Hydro-electric Projects on River Yamuna and Tons and its Tributaries in the State of Uttarakhand'. Also, there are five separate hydro-power projects of Himachal Pradesh for which the impact assessment work is in the final stage. Similarly, for Bunakha and Sankosh Multi-purpose Hydro Electric Projects of Bhutan, the studies are in the advanced stage. Biodiversity study in the Coal Mines of Bina Extension and Krishnashila OCP of Northern Coalfield Limited, Singrauli district of Madhya Pradesh was also completed in 2012-13.

FRI, Dehradun conducted following consultancy services to the various stakeholders:

- Technical services were provided to 35 firms through the testing of wood and wood products.
- Wood identification services provided to various departments of Railways, Vigilance, Customs, Forest, Anti-corruption, Housing corporations, LIC, Indian Oil, NTPC, CPWD, BHEL, Central Warehousing Corporations, Ordnance Factories, Power Grid Corp., Municipal Corporation, Tourism and Transport Corporation, MES, Telecom, NBCC Ltd., and private timber merchants.
- Identification services provided for bio-piracy samples received from different Police Stations, Forest Departments etc.
- Paper samples received from Government organizations and private industries such as Employment News New Delhi, NCERT New Delhi, Indian Railways Varanasi, ISRO Ahmedabad, Radex Stationary New Delhi, Rama News Print Bijnor, Sri Krishna Paper New Delhi, Anand Triplex Board Ltd., Meerut, Army New Delhi, Chhatisgarh Pathyapustak Nigam, Raipur, State Printing Roorkee, Directorate of Education Dehradun etc. were tested for physical and optical properties.
- Provided technical services to three industries namely (i) M/S Suncare Pharmaceuticals Pvt. Ltd., Plot No. 8, Pharma City, Selaqui, Dehra Dun (ii) M/S Shnakhubaba International, Sidcul, Haridwar, and (iii) M/S Auro Sundaram Ply and Door (Pvt.) Ltd., Bhawanipur, Roorkee
- The wood sample of Southern Cooling Tower Pvt. Ltd., Kolkata was tested for essential oil contents.
- Advisory to APSARA Authority, Cambodia and ASI for conservation of trees at Ta Prohm temple, Cambodia.



- Advisory to Bodhgaya Temple Management Committee for maintenance and conservation of Bodhivriksha at Bodhgaya.
- Consultancy project: To inspect the health status of Mahabodhi Tree at Bodhgaya, Bihar.
- Advisory to Kurukshetra Development Board for the conservation of Vatvriksha at Jyotisar, Kurukshetra.

IFGTB, Coimbatore initiated a consultancy project on *Casuarina* seed orchards for BILT Tree Tech Limited.

IWST, Bangalore rendered the services, such as, wood identification, determination of moisture content, density and strength properties to various organizations.

TFRI, Jabalpur conducted studies on 'Assessment of green cover and its tangible and intangible benefits and tree cover management plan for STPP-Korba Project'.

AFRI, Jodhpur evaluated the plantation sites for 'Dry Land Agroforestry Project' at Salawas, Jodhpur and Data, Sikar funded by ONGC. Technical consultancy to grow *Jatropha curcas* in Rajasthan was also provided to State Biofuel Authority, Jaipur, Rajasthan.

7.5 Activities of Rajbhasha

ICFRE Hqs. and its Institutes are continuously working in the direction of implementation of Rajbhasha rules and regulations issued by the Government of India in its day to day functioning with a view to promoting the use of Rajbhasha to the maximum. ICFRE Hqs. organized a Hindi training workshop on "सरकारी काम-काज में हिन्दी को बढ़ावा" on 19 December 2012. ICFRE is regularly publishing a Hindi magazine *Taruchintan* and half yearly



Lighting the lamp at the closing ceremony of *Hindi Saptah* at ICFRE, Dehradun

Newsletter *Vaniki Samachar* with a view to promoting the implementation of Rajbhasha Hindi. AFRI, Jodhpur also published Hindi Magazine *AFRI Darpan* regularly.

Hindi Saptah was organized from 7 to 14 September 2012 at ICFRE Hqs. FRI, Dehradun organized Hindi Week from 11 to 17 September 2012. *Hindi Pakhwara* was observed at TFRI, Jabalpur from 1 to 15 September 2012 and from 14 to 28 September 2012 at AFRI, Jodhpur. Various competitions including Essay, Hindi Typing, Noting Drafting in Hindi and recitation of poems were organized during the *Hindi Saptah/Pakhwara*.



Dr.P. P. Bhojvaid, Director, FRI giving prizes during *Hindi Saptah*



Official Language Implementation Meetings were conducted on regular interval basis at ICFRE and its institutes. Quarterly Progress Report was sent to the Official Language Department of the Ministry of Environment and Forests. ICFRE and its institutes also celebrated Hindi Diwas on 14 September 2012. ICFRE and its institutes regularly participated in the "TOLIC" Meetings.

Training programme on Hindi software 'Saransh' were organized at ICFRE and its institutes. IWST, Bangalore organized Rajbhasha Orientation Programmes for the officers and scientists of the institute on 29 June 2012 and 5 September 2012 and Hindi Workshops for clerical staff were organized on 18 December 2012 and 24 January 2013. During the year, two LDC's were deputed for 40 days full Hindi Typing Training to Central Hindi Training Sub-institute, Bangalore.

7.6 Awards and Honours

- Dr. V.K. Bahuguna, DG, ICFRE was elected as Member of the Executive Committee of International Poplar Commission for 2012-2016.
- Dr. Dinesh Kumar, Scientist F, Silviculture Division, FRI, Dehradun was elected as Member of the Executive Committee of International Poplar Commission for 2012-2016.
- Ms. Neetu Bhatt, Dr. P. K. Gupta and Dr. Sanjay Naithani of FRI, Dehradun were awarded second prize for the oral presentation on topic titled "*Lantana camara* a potential weed for preparing alpha cellulose and its cellulose sulphate derivatives" in the 7th Uttarakhand State Science and Technology Congress organized by Uttarakhand State Council for Science and Technology at Dehradun from 21 to 23 November 2012.
- Dr. Rashmi and Sh. Panakj Tiwari were awarded with the *Innovator of the Year Award (2012)* for *Samridhhi: A product of green technology for silkworm farmers in 7th Uttarakhand Science and Technology Congress*, held on from 21 to 23 November 2012 at Dehradun.
- Dr. Modhumita Dasgupta, Scientist E, IFGTB, Coimbatore was nominated as member of International Climate-Resilient Crop Genomics Consortium towards preparation of white paper on *Eucalyptus* for drought and salinity tolerance traits. Dr. Dasgupta, was also nominated by Department of Biotechnology, Government of India as DBT representative on the IBSC constituted at Rubber Research Institute of India, Kottayam and Bharathidasan University, Trichy.
- Dr. K. K. Pandey, IWST, Bangalore was awarded "National Awards for Excellence in Forestry Research" by ICFRE for the year 2006-2008. He was also elected as a Fellow of the International Academy of Wood Science in 2013.
- Dr. N. Bala, Sh. Pramod Kumar, Dr. N.K. Bohra, Sh. N.K. Limba, Sh. S.R. Baloch and Dr. G. Singh of AFRI, Jodhpur were awarded the prestigious S.K. Seth Prize for the year 2010 by The Indian Forester for their research article on "Production and decomposition of litter in plantation forests of *Eucalyptus camaldulensis* along the canal command area in Indian desert".
- Dr. Bhimi Ram, SRF, IFB, Hyderabad awarded first prize in poster presentation on 'Molecular analysis of micropropagated *Melia dubia* plants using RAPD and ISSR markers for creating clonal fidelity' at CMR College, Bangalore on 6 March 2013.



Visit of Dignitaries

- Parliamentary Committee on Science and Technology, Environment & Forests headed by Dr. T. Subbarami Reddy visited FRI, Dehradun on 4 July 2012. Committee appreciated the efforts of ICFRE. Chairman of the committee has written letters to the Hon'ble Prime Minister, Hon'ble Forest Minister and Chairman Planning Commission regarding the recent initiatives by ICFRE and requesting for additional allotment of budget to take forestry research to higher levels.
- The Third Sub-Committee of Committee of Parliament on Official Language including Hon'ble Members of Parliament Prof. Alka Balram Kshatriya, Shri Hukumdev Narayan Yadav, Dr. Raghuvansh Prashad Singh and Dr. Ram Prashad visited FRI, Dehradun on 29 May 2012 and inspected the progress on implementation of Rajbhasha Hindi in FRI and ICFRE, Dehradun.
- His Excellency Shri Shekhar Dutt, Hon'ble Governor, Chhattisgarh visited FRI on 9 August 2012. The visiting dignitary interacted with the officers and scientists of ICFRE and FRI, Dehradun and launched the web portal <http://ntfpmarketwatch.icfre.gov.in/> which is a price dissemination system to help farmers and tribal community to watch the market prices of non-timber forest products in India.