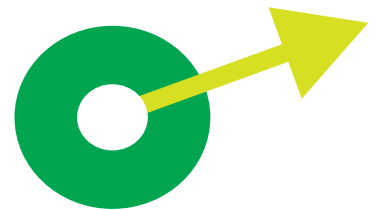


6

FORESTRY EDUCATION AND POLICY RESEARCH TO MEET EMERGING CHALLENGES



Forestry Education and Policy Research to Meet Emerging Challenges

Indian Council of Forestry Research and Education (ICFRE) provides financial support in the form of Grant-in-Aid to state agricultural universities at under-graduation and post-graduation level for strengthening the infrastructural facilities, enhancing teaching and research facilities.

6.1 Improving Formal Forestry Education

ICFRE provides grants to develop technical capabilities and strengthen infrastructure for forestry faculties in the universities imparting forestry education at the Graduation and Post-Graduation level. ICFRE is supporting the deficiency in basic infrastructure to a limited extent in these colleges and over the years, has tried to provide the facilities for promoting wider dissemination of education.

As on date, the ICFRE has provided the financial assistance to the tune of ₹ 5406.82 lakh to 27 Agricultural Universities for their infrastructure development since 1991 till 2011-12. In the year 2012-13, ICFRE has released Grant-in-aid to the tune of ₹ 115.00 lakh to 10 Universities for various educational programmes being undertaken by these universities.

6.1.1 FRI University

The FRI (Deemed) University has been offering the following academic courses on a regular basis:-

- Two years M.Sc. courses in Forestry, Environment Management, Wood Science and



Students during the visit to South India

Technology and Cellulose and Paper Technology.

- One year course in Post Graduation Diploma in Aroma Technology. This course, first of its kind in India, is being conducted in collaboration with Fragrance & Flavour Development Centre, Kannauj.
- Ph.D. Degree was awarded to 46 Research Scholars on various topics including Forest Ecology & Environment, Silviculture, Forest Biotechnology, Forest Botany, Forest Genetics, Forest Management, Soil Science, Forest Pathology, Wildlife Science, Forest



Student of M.Sc. EM during the tour to Baddi



Sl. No.	Company	Selected students
1	Megha Plantation Agro Products Ltd, Yash Nagar	Salman Khan (Fr.), Neeta Lohani (C&PT) Ankur Dwivedi (C&PT)
2	Sonear Industries Ltd., New Delhi	Ashutosh Chaudhary, Shikhar Shukla, Prasad Pathak
3	Marque Impex (Moradabad)	Dnyaneshwar Hambarde
4	Basant, Jodhpur	Sourav Kumar, Nitin Dayma
5	Vedanta Polychem Pvt. Ltd.	Akhilesh Yadav, Anil Kumar Kewat Praveen Ukey, Sayan Roy Chaudhary
6	Rashtriya Ispat Nigam Limited- Visakhapatnam Steel Plant (RINL-VSP)	Subhash Kumar
7	M/s A.K. Lumbers Ltd.	Prabhav Sharma, Vibhor Agrawal Prashant Jadhav, Deepak Kumar Tailor Chirange Lal Chaudhary, Dnyaneshwar Hambarde
8	M/s CMF, Jaipur	Nikita Soni as a Project Associate
9	Aztec Shiva Handicrafts & Arts Pvt. Ltd., Jodhpur	Manjul Gupta as a Junior Merchandiser
10	Quetzel Total Environment Woodwork Pvt. Ltd.	Manjul Gupta as a Technical Assistant
11	M/s Bhandari Associates	Anuradha Ray

Entomology, Chemistry of Forest Products, Wood Science & Technology, Non Wood Forest Products.

- Campus interviews were conducted with different Organizations/Industries/Companies/NGOs and placement of students for academic year 2012-13 carried out.

In addition to the above, 21 students were selected in different capacities in various Government and Private Banks.

6.2 Accreditation of Universities

To ensure delivery of quality forestry education in the universities, a system of accreditation on the pattern of AICTE/ICAR/NAC, has been put in place by ICFRE to establish a mechanism for

maintenance of appropriate standards of teaching, research, examination and other academic activities with a view to imparting quality professional education in forestry. One of the main reasons behind accreditation is to encourage the forestry colleges/faculties to continuously strive towards the attainment of excellence. ICFRE has received proposal, as per the guidelines, from 18 Universities, and till date, all the 18 universities have been accredited. Efforts are being made to bring other Universities also in the accreditation fold.

6.3 Networking Forestry Education with Research and Extension

- The Non-Timber Forest Products (NTFPs) is one of the India's largest unorganized sector having a dependent population of



about 275 million and business turnover of more than ₹ 6000 crores per annum as per the Sub Group Report of the Planning Commission.

A networking project has been formulated involving universities/institutes of ICFRE, i.e., H.N.B. Garhwal, University, Srinagar Garhwal, Uttarakhand, S.K. University of Agricultural Sciences and Technology of Kashmir, Shalimar Srinagar, Sam Higginbottom Institute of Agriculture, Technology and Sciences, Naini, Allahabad, Aspee College of Horticulture and Forestry, Navsari Agricultural University, Navsari, Forest College and Research Institute Tamil Nadu, Agricultural University, Mettupalayam, College of Forestry, Kerala Agricultural University, Vellanikkara, Thrissur, Kerala, Tripura University, Mizoram University and Birsa Agricultural University, Ranchi, Forest Research Institute, Dehradun, Arid Forest Research Institute, Jodhpur, Himalayan Forest Research Institute, Shimla, Rain Forest Research Institute, Jorhat, Institute of Forest Genetics and Tree Breeding, Coimbatore, Institute of Forest Productivity, Ranchi.

Nine Status Reports on NTFPs of the States and Detailed Project Reports (DPRs) have been received.

- FRI, Dehradun has networked with national as well as international centers of research, i.e., National Institute of Hydrology, Roorkee, Central Soil Water Conservation Research and Training Institute, Dehradun, Indian Institute of Remote Sensing, Dehradun. International collaboration with York University, Canada in the field of forest hydrology and assessment of ecosystem services has been initiated. The institute conducted the following :

- A Workshop on “Livelihood opportunities in the Fringe Forests: Management and Research Perspectives” and interactive session with Sh. Shekhar Dutt, Governor of Chhattisgarh was organized on 9 and 10 August 2012.
- A Workshop on “Integrating Forest based Enterprises with Rural Development for livelihood Support and Economic Growth” in presence of Sh. T.K.A. Nair, Advisor to the Hon'ble Prime Minister of India was organized on 21 March 2013.

6.3.1 Participation in Seminars/Symposia/Workshops/Trainings/Meetings

Over 250 scientists, officers and officials participated in different Seminars/Symposia/Workshops/Trainings /Meetings organized by various organizations throughout the country on variety of subjects including, Climate Change-Evolution of REDD+ under UNFCCC, carbón trading, REDD Plus Architecture, India-ASEAN Network on Climate Change, Forest and Carbon Monitoring, Climate Change and Carbon Mitigation, Hydrological Modelling using RS/GIS, Green India Mission, Awareness Training Workshop on CITES, Plant Microbe Interactions for the Management of Soil-borne Plant, Validation of Descriptors of Casuarinas and Eucalypts, Genetic Engineering, Molecular Microbiology and Pathology, Protection of Wood from Weathering, Data Warehousing and Data Mining, Biodiversity Conservation and Sustainable Livelihoods, Bamboo Cultivation, Processing and Utilization, Agroforestry System, Nanotechnology Production, Estimation and characterization, Lac Cultivation, Processing and its Marketing, NWFP, Forest Insects and Biological Control etc. The details regarding same is mentioned below:



Sl. No.	Hqs./Institutes	No. of trainings	No. of Participants	Duration (in days)
1.	ICFRE, Dehradun	13	15	37
2.	FRI, Dehradun	9	Over 150	69
3.	IFGTB, Coimbatore	12	9	56
4.	IWST, Bangalore	16	10	159
5.	TFRI, Jabalpur	38	10	79
6.	AFRI, Jodhpur	9	8	34
7.	IFP, Ranchi	14	15	246
8.	IFB, Hyderabad	4	5	6
9.	HFRI, Shimla	29	20	101
10.	RFRI, Jorhat	10	10	46
		154	Over 252	833

6.3.2 Visits Abroad

Facilitated 75 cases of foreign visits, which were approved by the Government of India with funding from various sources for providing a much needed International Exposure to the scientific cadre.

- Dr. R.S. Rawat, Research Officer, ICFRE, Dehradun visited United States to attend USDA Forest Service International Training Programme on "Forest and Carbon Monitoring from 29 March to 13 April 2012.
- Dr. I.D. Arya, Scientist-F Dr. Sarita Arya, Scientist-F, AFRI, Jodhpur and Dr. O.K. Remadevi, Scientist-F, IWST, Bangalore visited Belgium to attend "9th World Bamboo Congress" from 9 to 20 April 2012.
- Dr. V.K. Bahuguna, DG, Sh. Omkar Singh, DDG(Edu), ICFRE, D.Dun visited Colorado University, US and Swedish University of Agricultural Sciences (SLU) in connection with Mid Career Training for IFS officers from 18 to 28 April 2012.
- Shri Rakesh Kumar Dogra, ADG(Edu), ICFRE, D.Dun visited Colorado University, US for internal monitoring of Mid Career Training for IFS officers and to coordinate the programme as International Coordinator from 14 to 28 April 2012.
- Shri Senthil Kumar, DCF (Admin), ICFRE, D.Dun visited Swedish University of Agricultural Sciences (SLU) for internal monitoring of Mid Career Training for IFS officers and to coordinate the programme as International Coordinator from 15 to 28 April 2012.
- Dr. B.N. Mohanty, GC(Res.), IWST, Bangalore and Sh. K.K. Uniyal, RA-I, FRI, D.Dun visited China to attend "Technology Training Course on Bamboo Cultivation, processing and utilization for Developing Countries" from 24 April to 18 June 2012.
- Dr. G.S. Ginwal, HoD, G&TP Division, Sh. Vasanthan B., IFS and Sh. J. Sriram, IFS, Student of FRI DU, D.Dun visited Malaysia for study tour for the Course in "Forest Genetics, Tree Improvement and Biotechnology" under Hari Singh Fellowship Programme from 29 April to 6 May 2012.
- Dr. (Mrs.) Sangeeta Gupta, Scientist-F, FRI,



Dehra Dun visited Portugal to participate in “IUFRO conferece-2012 Division 5 Forest Products” from 8 to 13 May 2012.

- Shri V.R.S. Rawat, Scientist 'E'/Addl Director, FCC Division, ICFRE participated in the 36th Session of SBSTA/SBI, 15th Session of AWG-LCA, 17th Session of AWG-KP and 1st Session of Ad-hoc Working Group on Durban Platform for Enhanced Actions (ADP) of UNFCCC from 14 to 25 May 2012 at Bonn, (Germany) as a member of official Indian Delegation.
- Dr. Ashok Kumar, Scientist-E; Ms. Parveen, Scientist-C, FRI, D.Dun and Sh. H.C. Sindhu Veerendra, Scientist-B, IFP, Ranchi visited Turkey to attend “Seed Orchard and Breeding Theory Conference” from 21 to 25 May 2012.
- Dr. N. Krishnakumar, Director, and Dr. A. Karthikeyan, Scientist-D, IFGTB, Coimbatore visited Malaysia to attend International Symposium on Reclamation, Restoration and Rehabilitation towards a Greener Asia” from 3 to 5 July 2012.
- Dr. T.P. Singh, ADG (Forests and Climate Change), ICFRE and Sh. V.R.S. Rawat, Add. Director, FCC Division, ICFRE participated in workshop on “Profiling for Regional Learning on REDD+ in South Asia” at ICIMOD, Kathmandu, Nepal from 24 to 27 July 2012.
- Sh. R.K. Meena, Scientist-B, RFRI, Jorhat, Sh. T.C. Bhuyan, R.O., and Ms. Amita Pandey, Scientist-B, IWST, Bangalore visited China to participate in the “Bamboo Technology Training Course from 20 June to 14 August 2012.
- Dr. Dinesh Kumar, Scientist-F, and Dr. Ombir Singh, Scientist-D, FRI, D.Dun visited Nepal to inspect field works of their Ph.D. scholars from 30 July to 3 August 2012.
- Dr. V.R.R. Singh, Director, HFRI, Shimla visited Nepal to make inspection of field work of Ph.D. Students of Institute of Forestry, Nepal from 30 July to 03 August 2012.
- Dr. V.K. Bahuguna, DG, ICFRE, D.Dun, Dr. P.P. Bhojvaid, Director, Sh. A.S. Rawat, Head, Silviculture Division, FRI, D.Dun, Dr. S.C. Joshi, Director, IWST, Bangalore and Sh. Sudhir Kumar, Scientist-F, Special Director, ICFRE, D.Dun visited China to attend 6th Assembly Meeting of APAFRI and International Symposium on “Sustainable Management of Tropical Forests (ISSMTF)” from 31 August to 03 September 2012.
- Dr. Sudhanshu Gupta, Secretary, ICFRE, D.Dun visited Bhutan to participate in the Sixth Governing Board Meeting of SAARC Forestry Centre on 3 and 4 September 2012.
- Dr. B. Nagarajan, Scientist-F, IFGTB, Coimbatore visited USA to attend International Conference on “Phonology-2012” from 10 to 13 September 2012.
- Dr. N. Krishnakumar, Director, IFGTB, Coimbatore visited Malaysia to attend “Regional Workshop on Forest Genetics Resources in Asia from 12 to 14 September 2012.
- Dr. R.K. Kalita, Scientist-D, RFRI, Jorhat visited Thailand to attend workshop on “Mitigation of Climate Change through Precision Agriculture from 17 to 19 September 2012.



- Dr. Ranjeet Kumar, Scientist-C, RFRI, Jorhat visited Japan to attend DST sponsored Training Programme under scheme “National Programme for Training of Scientists and Technologists working in Govt. Sector from 21 to 29 September 2012.
- Dr. V.K. Bahuguna, DG, Sh. Saibal Dasgupta, DDG(Extn.) and Sh. Pankaj Agrawal, ADG(EM), ICFRE, Dehra Dun visited Italy to attend panel discussion session of the World Forest Week 3 from 24 to 28 September 2012.
- Dr. P.P. Bhojvaid, Director, FRI, D.Dun visited Thailand to attend “Expert Group Meeting on National Forest Finance Strategy” on 28 and 29 September 2012.
- Dr. R. Sundararaj, Scientist-F, Dr. O.K. Remadevi, Scientist-G, and Sh. S.H. Jain, Scientist-C, IWST, Bangalore visited Hawaii, USA to attend International Sandalwood Symposium from 21 to 24 October 2012.
- Dr. N.S. Bisht, Director (IC), ICFRE, Dehradun visited Bhutan to participate in the meeting of Heads of Forestry Research Institutes /Centres of the SAARC Region on 10 and 11 October 2012.
- Dr. K.P. Singh, Scientist-C, FRI, Dehradun visited Sri Lanka to attend workshop on “Stakeholder Engagement to Enhance Development and Product of Tree Outside Forests (TOF) from 14 to 16 November 2012.
- Shri V.R.S. Rawat, Scientist 'E'/Addl Director, FCC Division, ICFRE, participated in the UNFCCC Climate Change Negotiations at COP 18/CMP 8, 37th Session of SBSTA/SBI, 15-2 Session of AWG-LCA, 17-2 Session of AWG-KP and 1-2 Session of *Ad-hoc* Working Group on Durban Platform for Enhanced Actions (ADP) (Qatar) from 26 November to 7 December 2012 at Doha (Qatar) as a member of official Indian Delegation.
- Dr. K. Palanisamy, Scientist-F, IFGTB, Coimbatore visited Republic of Korea to attend International Symposium on “Forest Biodiversity” on 24 and 25 January 2013. He also visited Thailand to attend "World Teak Conference" from 25 to 30 March 2013.
- Dr. Sangeeta Gupta, Scientist-F, FRI, D.Dun visited Japan to participate in the “219th RISH Symposium” from 17 to 23 February 2013. She also visited Tanzania to participate in the “World Wood Day Event” from 17 to 27 March 2013.
- Dr. P.P. Bhojvaid, Director and Sh. M.P. Singh, Head, Climate Change and Forest Influence Division FRI, Dehradun visited Indonesia to participate in the Third Training Workshop “Transitions to sustainable Forest Management and Rehabilitation in Asia-Pacific region” from 23 to 28 February 2013.
- Dr. V.K. Bahuguna, DG; Sh. Saibal Dasgupta, DDG(Extn.); Dr. Sudhanshu Gupta, Secretary; Sh. Pankaj Agrawal, ADG(EM); Sh. Sudhir Kumar, Spl. Director, ICFRE, Dehradun; Dr. N. Ramarao, Scientist-E, IFB, Hyderabad; Dr. H.B. Vashishtha, Scientist-E, FRI, D.Dun and Dr. V. Mohan, Scientist-E, IFGTB, Coimbatore visited Australia to visit “various mineral areas, industries and meeting with Govt. official” with regard above from 4 to 8 March 2013.
- Sh. Sandeep Tripathi, DDG(Res.), Smt. Neelu Gera, ADG(P&HD), ICFRE, D.Dun, Sh. S.P.



Singh, APCCF, (R&E), Madhya Pradesh, Sh. K.P. Singh, Scientist-C, FRI, Dehra Dun and Shri D.K. Sharma, DIG (RT), MoEF, GoI visited Edinburg to deliberate upon the formulation of DFID supported UKFC-ICFRE Forest Landscape Restoration Collaborative Umbrella Project from 9 to 15 March 2013.

6.4 Capacity Building of Scientific and Management Cadre

As part of the HRD initiatives for capacity building of scientific personnel, 11 training programmes were organized at ICFRE Institutes as well as in a number of training organizations of repute in which 142 participants were trained during the year as below:

Apart from the above, various trainings on subjects including Remote Sensing, GIS and GPS, Soil Quality Indicators, Bamboo Making Handicraft Items and Jewellery, Nursery and Clonal Propagation, Role of Forestry in Disaster



Participants and organizers of short-term training course on Development of Green Belts at FRI, Dehradun

Training	Duration (in days)	Institutions	No. of Participants
Laboratory Management	5	TFRI, Jabalpur	25
Value addition of non wood forest product, Analytical methods, medicinal plants etc	5	AFRI, Jodhpur	25
Agro forestry and land management	5	PAU, Ludhiana (Punjab)	05
Analytical instrumentation for value addition	4	SICART, Anand (Gujarat)	03
Extension strategies in Forestry	5	IIFM, Bhopal (MP)	10
Nursery and clonal propagation techniques	5	FRI, Dehradun	10
Molecular microbiology & pathology	10	NBAIM, Mau Nath Bhanjan	10
Data warehouse and data mining	5	ICFRE, Dehradun	10
Genetic Engineering	12	IFGTB, Coimbatore	04
Nanotechnology, Production, estimation and characterization of Nanoparticles	5	IWST, Bangalore	15
Induction training of Scientists/ Research Officers	126	FRI Deemed University, Dehradun	25



Management, Development of Green Belts, Artificial cultivation of *Cordyceps sinensis* (Yarsha Gumba), Various aspects of CITES, NWFP value addition, processing and marketing, Bio-fertilizers and bio-pesticides, Diseases and their control measures in forest nurseries and plantations, vermi-compost, Reclamation and revegetation of mined overburden dumps, Scientific Methods of Lac Cultivation, Significance and Scope of REDD / REDD+ for India's Forests and Climate Change and Carbon Mitigation etc. were organized by ICFRE Hqs. and its institutes are as follows:



Participants and organizers of training-cum- demonstration programme on medicinal plants at HFRI, Shimla

Hqs./Institute	No. of trainings	Duration (in days)
ICFRE, Dehradun	6	27
FRI, Dehradun	32	267
IFGTB, Coimbatore	3	15
TFRI, Jabalpur	5	19
CFRHRD, Chhindwara	13	13
AFRI, Jodhpur	23	95
IFP, Ranchi	12	25
IFB, Hyderabad	2	2
HFRI, Shimla	11	11
Total	107	474