



RESEARCH HIGHLIGHTS



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Introduction

Directorate of Research at ICFRE headquarters plan, coordinate and monitor the forestry research in all the eight research institutes and four centres of the Council and evaluate the progress of various research projects. The Council through Biodiversity Conservation and Climate Change Division addresses the problems in Biodiversity Conservation and Climate Change at international echelon at various platforms and represents the nation in this field.

The BCC Division has been proactive on climate change and related forestry issues. The Division is actively engaged in capacity building programmes by conducting various national and international workshops, and training programmes on climate change, Clean Development Mechanism (CDM) and forestry for forest officers and other stakeholders. The Division is working on forestry and climate change related policy issues leading to international negotiations under United Nations Framework Convention on Climate Change (UNFCCC).

The BCC Division is actively involved in providing technical inputs on "Forestry Sub-Group on Climate Change" to the Ministry of Environment and Forests (MoEF), Government of India, and contributes towards the development of country submissions to the UNFCCC.

Recognising the work done by ICFRE in the area of desertification, climate change and forestry, ICFRE has been awarded the **"Observer Status"** by the United Nations Convention to Combat Desertification (UNCCD) and United Nations Framework Convention on Climate Change (UNFCCC). ICFRE also applied to obtain "Observer Status" in the COP-10 to the CBD meeting to be held in Nagoya, Aichi

Prefecture, Japan from 18th to 29th October 2010. An application form for accreditation along with all supporting documents was submitted to CBD Secretariat in March 2010.

BCC Division has compiled and prepared a report of ICFRE on celebration of International Day for Biological Diversity on 22nd May 2009 under theme "Invasive Alien Species" given by Convention on Biological Diversity (CBD), and submitted to MoEF, for onward transfer to the CBD Secretariat, Montreal, Canada.

The BCC Division has taken up three externally aided projects related to climate change:

i. Assessment of soil carbon stocks and dynamics in forest soil of India for the period 1995-2007: The project is funded by the UNDP-GEF. The project activity is subcontracted to ICFRE by the Ministry of Environment and Forests, Government of India through Winrock International India under its project: "Enabling Activity for Preparation of India's Second National Communication to the UNFCCC" ICFRE is executing the project in collaboration with Indian Institute of Remote Sensing (IIRS), Dehradun. The BCC Division of ICFRE, the nodal point of communication with collaborator and regional institutes of ICFRE, initiated all activities pertaining to the project.

Draft final report of the project activity has been submitted to the Winrock International India, New Delhi.

ii. Measurement of forest carbon exchange using eddy covariance and CDM potential studies in India: The project is a partnership study between the Department of Forest Science and Resources (DISAFRI),



University of Tuscia (Italy), Indian Institute of Remote Sensing, Indian Council of Forestry Research and Education and Uttarakhand Forest Department.

Under this project, BCC division of ICFRE is entrusted to work on curriculum Development for CDM forestry project and CDM potential studies in forestry sector.

iii Research Needs and the Financial, Technological and Capacity Needs and Constraints to Address Climate Change Concern vis-a-vis Forests and Forest Products in India:

The project activity is sub-contracted to ICFRE by the Ministry of Environment and Forests, Government of India through Winrock International India with the following three objectives:

- To provide an overview of the current status of knowledge related to adaptation and mitigation in the forestry sector of India.
- To identify gaps and constraints to undertake research activities related to adaptation and mitigation aspects for forests.
- To identify and develop specific research themes and proposals to adaptation and mitigation aspects of forests.

Biodiversity and Climate Change (BCC) Division, ICFRE has also undertaken several short and long term policy programmes to address the problems of Biodiversity Conservation and Climate Change.

Research Planning Division under the Directorate of Research deals with the planning, formulation and finalization of Council's plan funded forestry projects. It coordinates the stakeholders meets, Research Advisory Group (RAG) meetings at each institute and Research Policy Committee (RPC) meeting at National level at ICFRE hqrs. following bottom-up, transparent and participatory approach. It also

reviews the ongoing projects under five years rolling plan.

During the year 2009-10, following achievements have been made by this division:

- Research Advisory Group (RAG) meetings of each of the eight ICFRE institutes were convened at Institute level on the dates mentioned below to consider for approval the new research projects proposed by the ICFRE institutes.

IFGTB, Coimbatore	- 16 th - 17 th Nov. 2009
TFRI, Jabalpur	- 14 th - 15 th Dec. 2009
IFP, Ranchi	- 7 th - 8 th Dec. 2009
AFRI, Jodhpur	- 21 st - 22 nd Dec. 2009
IWST, Bangalore	- 7 th - 8 th Dec. 2009
HFRI, Shimla	- 23 rd - 24 th Nov. 2009
FRI, Dehradun	- 17 th - 18 th Nov. 2009
RFRI Jorhat	- 26 th - 27 th Nov. 2009

Research Advisory Groups were chaired by PCCFs of the states falling in the jurisdiction of the concerned institutes and attended by the member from different strata of scientists, a range of forest officials, diverse stakeholders viz. NGOs, industries, progressive farmers and universities. The projects were evaluated by two subject experts/referees and accordingly projects were modified to suit the requirement of user group.

- The projects approved by RAGs were placed before **Research Policy Committee (RPC)** in its Meeting, convened from 22nd to 24th February 2010 under the chairmanship of Dr G.S Rawat, DG, ICFRE to give final approval to the new research proposals submitted by eight research institutes under ICFRE.
- During XI RPC, 201 new projects and II All India Co-ordinated Projects (AICP) were



discussed by RPC members, of which 137 projects were approved at institute level through ICFRE funding amounting to ₹1478.16 lakh. Approval was also given for two All India Coordinated Projects in Principle. The abstract of institute wise sanctioned new research projects during the period under report is as under:

Abstract of Sanctions of New Projects

Name of the Institute	Number of Projects	Total Amount Sanctioned (₹ in Lakh)
HFRI, Shimla	3	32.17
IFP, Ranchi	7	87.19
TFRI, Jabalpur	15	108.93
IWST, Bangalore	17	194.19
RFRI, Jorhat	14	144.34
FRI, Dehradun	45	413.72
IFGTB, Coimbatore	29	314.06
AFRI, Jodhpur	7	183.55
Total	137	₹1478.16

- On 25th September 2009, IV **Directors' Meet** was organized in the Board Room of ICFRE hqrs, under the chairmanship of Dr. G.S Rawat, DG, ICFRE. The Directors' Meet was organized to discuss some important issues for which agenda was finalized by different directorates in consultation with the Directors of the institutes.
- ICFRE has been recognized as a Bamboo Technical Support Group (BTSG) by National Bamboo Mission, Ministry of Agriculture, Govt. of India to cater to the research and development needs of eleven States viz., Jammu & Kashmir, Punjab, Haryana, Himachal Pradesh, Uttarakhand, Uttar Pradesh, Bihar, Madhya Pradesh, Chhattisgarh, Rajasthan and Gujarat in order to facilitate the implementation of the programmes of National Bamboo Mission.

BTSG–ICFRE came into existence in July 2007. Activities of BTSG include organizing seminars and trainings for the farmers and field functionaries, publication of bamboo literature, and other promotional campaigns.

During 2009-10, BTSG–ICFRE organized following five days training programmes for the farmers and field functionaries of State Forest Departments:

- For Madhya Pradesh by TFRI, Jabalpur from 7th to 11th September 2009.
- For Chhattisgarh by IFP, Ranchi from 14th to 18th September 2009.
- For Himachal Pradesh by HFRI, Shimla from 26th to 30th October 2009.
- For Gujarat by AFRI, Jodhpur from 5th to 9th October 2009.
- For Rajasthan by AFRI, Jodhpur from 26th to 30th October 2009.
- For Bihar by IFP, Ranchi from 9th to 13th November 2009.
- For Chhattisgarh by TFRI, Jabalpur from 7th to 11th December 2009.
- For Punjab by FRI, Dehradun from 8th to 12th February 2010.
- For Punjab by FRI, Dehradun from 8th to 12th March 2010.

Ten thousand copies of the Hindi posters titled **“Bans aajeevika ka ek sadhan”** were reprinted for free distribution to National Bamboo Mission, State Bamboo Missions and ICFRE institutes for conducting trainings programmes. Distribution was also made to the sister organizations and SFRI for further distribution up to grass root stakeholders.

- The apex body–Variety Releasing Committee (VRC) was constituted to institutionalize the registration of superior varieties and clones on a uniform basis in forestry sector



throughout the country as per “Guidelines for Testing and Releasing of New Tree Varieties and Clones”. Director General (Forests) and Special Secretary to the Government of India, MoEF and Director General, ICFRE are the Chairman and Co-Chairman of VRC respectively.

First meeting of VRC was held on 19th January 2010 at MoEF, New Delhi, which considered the “Variety Release Proposals 2009” submitted by the Institute of Forest Genetics and Tree Breeding (IFGTB), Coimbatore in July 2009 and released elite entries of *Eucalyptus camaldulensis* (IFGTB-EC1, IFGTB-EC2, IFGTB-EC3 and IFGTB-EC4 – 04 nos. for cultivation in Tamil Nadu, and Andhra Pradesh) and *Casuarina equisetifolia* (IFGTB-CE1, IFGTB-CE2, IFGTB-CE3 and IFGTB-CE4– 04 Nos. for cultivation in Tamil Nadu, Karnataka and Union Territory of Pondicherry) developed by the IFGTB, Coimbatore as a maiden venture.

- **Quinquennial Review** in four institutes FRI, Dehradun; AFRI, Jodhpur; RFRI, Jorhat and IFGTB, Coimbatore and one Centre i.e. FRC, Hyderabad (under IWST, Bangalore) was carried out on pilot basis for the period 2002-2007. Reports submitted by the Quinquennial Review Teams were analyzed and necessary directions issued.
- Issues pertaining to the establishment of **National Bureau of Forest Genetic Resources (NBFGR)** were deliberated and revised proposal was submitted to the Ministry of Environment and Forests for consideration.

Monitoring and Evaluation Division deals with review of all the ongoing research projects of ICFRE institutes and suggests corrective measures for timely completion and

achieving the objectives meaningfully. Also independent evaluation of some research projects of ICFRE institutes through independent subject matter specialist/experts/agency was done for improvement in the quality of research and transfer of technology developed, to the stakeholders.

To ensure proper implementation of ongoing research projects, the progress of the research projects was monitored on quarterly basis through **Quarterly Progress Review (QPR) by the directors**. Thereafter, information in prescribed format on progress of research projects for each quarter was furnished by the institutes to this division. Quarterly Progress Reports were scrutinized in conformity with the approved action plan and corrective measures, if any, were suggested to expedite the physical and financial achievements for meeting the project objectives.

During 2009-10, 328 (229 ICFRE plan funded and 99 externally aided) ongoing research projects of all ICFRE institutes were reviewed and evaluated. Reviews of research projects of all institutes (as per schedule) were completed by October 2009. Annual Review Reports were communicated to Directors of the ICFRE institutes by December 2009 to take follow up action on the observations made in the report.

Independent External Evaluation (IEE) of 22 projects randomly selected from each institute was carried out through independent subject matter specialists/agencies from outside ICFRE system.

Total 76 projects have been completed during the year 2009-10. Their **Project Completion Reports (PCRs)** were received and scrutinized. The institute wise research projects reviewed as per schedule during 2009-10 is as follows:



Institute-wise Ongoing Research Projects Reviewed During 2009-10

Sl. No.	Name of Institute	Date of Review	No. of Ongoing Projects Reviewed		
			ICFRE funded	EAP	Total
1.	AFRI, Jodhpur	26 th - 27 th May 2009	16	9	25
2.	TFRI, Jabalpur and FHRDC, Chhindwara	24 th - 26 th June 2009	13	17	30
3.	IFGTB, Coimbatore	9 th - 11 th July 2009	32	11	43
4.	IWST, Bangalore and FRC, Hyderabad	13 th - 15 th July 2009	32	15	47
5.	FRI, Dehradun and CSF&ER, Allahabad	11 th - 13 th & 17 th August 2009	94	30	124
6.	RFRI, Jorhat	1 st - 3 rd September 2009	9	8	17
7.	IFP Ranchi	4 th - 6 th September 2009	16	2	18
8.	HFRI, Shimla	12 th - 13 th September 2009	17	7	24
		Total	229	99	328

Project Formulation Division continued to act as a facilitator between the ICFRE institutes/centres and potential donor agencies for the formulation of research projects in the identified thrust areas and their submission to various national and international donor agencies for funding as per their funding policies. It also coordinated the implementation of the research projects by ICFRE institutes/centres and maintained the record of sanctioned, submitted, completed and rejected projects through preparation of Status Reports.

The division has been collaborating with a number of National and International donor agencies for project funding. During the year 106 projects worth ` 37.22 crore sanctioned by National donor agencies and 10 projects worth ` 4.07 crore sanctioned by International donor agencies were being implemented in eight institutes and four centers of ICFRE.

Project proposals like “Planting Stock Improvement and Demonstration for Neem (*Azadirachta indica*), Pungam (*Pongamia pinnata*) and Alexandrian laurel (*Calophyllum inophyllum*) in Tamil Nadu”; “Dissemination of Technological Innovations of Neem and Karanj

Prominent TBOs to Farming Communities and End Users to Jharkhand”; and “Post- Harvest Processing of Non-Edible Oilseeds of Arid Zone” were processed for their approval and submitted to NOVOD Board for financial assistance under their scheme on integrated development of Tree Borne Oilseeds.

Two more proposals “Marker assisted Selection of *Eucalyptus* for Adaptation to the Impacts of Elevated CO₂ and Gall Wasp Resistance” and “All India Coordinated Programme for Improvement of Fast Growing *Phyllodinous acacias*” were submitted to CSIRO, Australia and ITTO, Japan through MoEF.

A Project Concept Note on “Community Based Sustainable Natural Resource Management for Poverty Alleviation in Ten States” has been submitted to MoEF for funding through Planning Commission of India.

A project on “Forestry Research Support for Poverty Alleviation” has been submitted for funding through the World Bank.

Project proposal “Development, Evaluation and Standardization of Silvicultural /



Agri-silvi model for treatment of inland waterlogged areas in selected districts of North Bihar” was submitted to MoEF for arranging funds through suitable funding agencies.

A number of MoUs and agreements for the implementation of collaborative projects/programmes of ICFRE institutes were scrutinised, finalised and processed for the approval of the competent authority such as MoUs of IFGTB, Coimbatore with (i) IFS, Sweden, (ii) CSIRO, Australia and (iii) ITC R&D Centre, Hyderabad and MoU of AFRI, Jodhpur with SFD, Gujarat.

All India Coordinated Projects (AICPs) duly revised and submitted by ICFRE Institutes were scrutinised, finalised and processed for necessary approval and financial assistance. Detailed Project Reports (DPRs) of 17 AICPs with an estimated budget of ₹ 115.61 crore for a period of 3 to 5 years addressing a number of identified species viz, Jatropha, Poplar, Casuarina, Shisham, Bamboo, Sal and various emerging forestry issues viz Biological control of Eucalyptus Gall Wasp, Genetic improvement and tree improvement strategies, Fuelwood utilization etc. were finalised, compiled and submitted to the Ministry of Environment & Forests for arranging funds through Planning Commission.

A poplar based agroforestry project 'Samudai Adharit Samanavit Van Prabhandhan Evam Van Sanrakshan Yojana'(Phase-I) popularly called Bihar project has been implemented by ICFRE in Vaishali district of Bihar through Forest Research and Extension Centre (FREC), Patna under IFP. The project is executed by providing training, technical support and quality planting stock to the farmers. This also includes establishing kisan/high-tech nurseries and demonstration plots. Under the project, about 47 lakh poplar plants and about 12 lakh plants of

other species viz. teak, mahogani, gamhar, kadamb, semal, jamun, arjun, kathal etc. have been planted by farmers in their fields and it is proposed to plant 14 lakh plants of poplar and 3 lakh plants of other species on farmers' fields by March 2011.

Poplar plants were raised by farmers in Kisan Nurseries. Farmers were provided with poplar cuttings and technical support. The good quality plants of poplar so produced by the farmers were purchased back by FREC at the rate of ₹ 5/- per plant. These plants were then distributed to the farmers, free of cost, and the farmers planted them in their fields.

Regarding training of farmers, 1561 farmers have been trained till now at Jadua training centre at Vaishali. The farmers were trained in their respective villages also and a total of 3568 farmers have been trained so far. Under "Training-of-trainers" programme, 314 trainers have been trained which include training of 231 staff of the Bihar Forest Department. For visit to the successful models, educational tours were arranged for the farmers and 39 tours of farmers (each tour having a group of 25 farmers) were arranged to Forest Training Academy, Haldwani. Poplar has now gained a very important place in the district of Vaishali. Due to its fast growth, short rotation cycle and good economic returns, poplar has been readily adopted by the farmers in a short span of 3 to 4 years.

The Division examined and updated the Annual and Quarterly Status Reports of approved, submitted, rejected and completed projects with National and International donor agencies as per the inputs received from ICFRE institutes and centres. The discrepancies were communicated to the institutes/centres for correction, wherever required.

Theme based research achievements of the Council follow in the sub-chapters ahead.