Comprehensive Plan on Research and Extension

Indian Council of Forestry Research and Education, Dehradun
(An Autonomous Council of Ministry of Environment, Forest and Climate Change, Government of India)

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CONTENT

Introduction

Forest resources in our country are valuable natural endowment that must be sustainably managed for present and future generations. They offer a range of benefits and opportunities for local and national economic development, improved livelihoods and provision of environmental goods and services such as watershed protection, ecosystem services and carbon sequestration. Therefore, forest conservation and management continue to face a number of challenges.

ICFRE has made concerted efforts in furthering of scientific forestry research base with significant achievements in the country with an outreach extension programs with well-defined strategies. The research conceptualization and execution methodology are project based, mostly through bottom-up approach where the team share in the decisions based on the regional and national mandates, where the research proposals are conceived as per the scientific understanding, interest and expertise of the researchers with a proactive team at every step of the management and project executing process. Such approach has contributed in laying a strong foundation for the forestry research with scientific capacity building and generation of vast knowledge base. The research outcomes are extended to the stakeholders/endusers through various extension programs. The extension strategies are updated periodically incorporating new product concept with the changing scenario and match stakeholder needs.

1. Research Strategy

The research requirements in the field of forestry need to be updated in accordance with the emerging research needs. In an effort to streamline the research process into stakeholder's requirements, National Forestry Research Plan (NFRP) was launched in 2000 keeping in view the national requirement and linkages with Five year Plan. Research Advisory Group (RAG) at Institute level prioritize the project as per guidelines and themes given in NFRP and are finally approved by Research Policy Committee (RPC) at the National level. RPC ensures the balance among international, national, regional and state research requirements and decide investments in high quality research giving priority for livelihood support. The process has now well established in ICFRE system. However, in order to meet emerging challenges and to adopt people centric approach, the revised National Forestry Research Plan (NFRP) 2020-2030 was prepared and released in the 57thBoG of ICFRE held on 16.12.2019.

Research programs in the council attempts to address the issues related various stakeholders including State Forest Departments (SFDs), forest based

industries, universities, farmers, livelihood of rural poor, tribal and other forest dependent communities apart from meeting the needs of goods and services from forests and trees outside forests (TOF), improve forest productivity, conservation and address the impacts of climate change on forests.

1.1 Methodology for formulation of research projects

The formulation of research projects is a rigorous process where the inputs of stakeholders and burning research needs are given priority. To improve the quality of research projects Periodical Seminars/Conferences are organized at Institute/Regional/National levels to discuss needs to identify the research priorities. It also facilitates and provides opportunity to share knowledge and ideas with the stakeholders as well as provide an in-depth analysis of themes and directions for priority setting for ICFRE. Broad formats for organizing such seminars/conferences at various levels are given below:

1.1.1 Institute Level Research Seminars

Venue	Location of Institute itself
Theme	One or more of the broad subject/priority areas (Appendix-I)or any specific subject.
Presentation Team	The presentation team will consist of officers/ scientists of the respective Institute working in the subject area. Researchers from other organizations/stakeholders may be invited, if required.
Broad structure	It will being seminar format for discussion/brainstorming on current research/future strategies.
Periodicity	Once in a month
Duration	Half day/Full day
Expected outcome of the seminar	i) Identification of research needs ii) Formulation of future strategies/roadmap iii) Networking research options & opportunities
Coordinator	Director of the respective institutes or DDG(R) incase of ICFRE HQ/FRI
Proceedings	Outcome of the seminar shall be communicated to DDG(R), ICFRE in the form of proceedings within 7 days

1.1.2. Regional Research Conference (RRC)

Venue	Any convenient/appropriate location in the regional states in consultation with ICFRE HQ. For this purpose, country shall be divided into Northern, Southern, Eastern and Western regions.
Theme	As per the agenda a approved by ICFRE.
Participation	i) Officers/Scientists of ICFRE Institutes. ii) Various stakeholders (State Forest Deptt. Officials, representatives of industries, other research organizations, universities, NGOs etc.)
Broad structure	i) ICFRE HQ and the institutes in region will present research & extension initiatives, followed by discussions. ii) Speakers from various stakeholder groups will discuss issues related to them. iii) Working groups on identified themes.
Periodicity	Once in a year in each of the four regions
Duration	1-2 days
Expected outcome of the presentation:	i) Status of knowledge ii) Research needs of the region iii) Future directions/recommendations iv) Networking research options & opportunities v) New concepts leading to new research projects
Coordinator	Director of concerned ICFRE Institute, as decided by ICFRE HQ.
Proceedings	Outcome of the conference shall be communicated to ICFRE in the form of proceedings with 7 days.

1.1.3. National Forestry Research Conference(NFRC)

Venue	Any of the ICFRE Institutes or any other convenient location as decided by ICFRE,HQ.
Theme	Any of the issues of contemporary/national significance.
Periodicity	Once in a year
Duration	One/two day(s)
Expected outcome of the presentation	i) Strategy paper on the subject ii) Future directions/recommendations iii) Networking research options/opportunities and national level presence
Coordinator	DDG(R) & Director of the designated host Institute
Proceedings	Outcome of the seminar shall be communicated to MoEF&CC in the form of proceedings and strategy paper.

After preparation the projects are evaluated by two external experts and modification are made based on their suggestions, if any. The research projects are then screened at institute level through a Research Advisory Group (RAGs). With the approval of the RAG the projects are placed before the Research Planning Committee (RPC) at ICFRE level. The composition and functioning of both the committees as proposed in the National Forestry Research Plan (NFRP) 2020-2030 are as follows:

1.1.4. Research Advisory Group (RAGs) of Institutes:

a) Composition

RAG is a body which technically evaluates the research projects for their fitness to carry out high quality research within the overall mandate of the institute and ICFRE. This body although has sufficient representation from various quarters, but needed to be strengthened by inclusion of more subject matter experts. Without increasing the number of members and by only internal re-adjustment a new composition of RAG along with function were approved by Board of Governors (BOG) of ICFRE in January 2018 and is reproduced below. The nomination of the members of RAG will be approved by DG, ICFRE on recommendation of respective Director of the Institute.

Sl. No.	Constitution of RAG as per Notification No. 58-21/55//2017-ICFRE dated 6 February 2018	Role
01	Director of the Institute	Chairman
02	Head of the research wing of the forest departments of concerned states or their representatives	Members
03	ADG (Research Planning)/ DG ICFRE's representative	Member
04	Two senor scientists of the institute	Members
05	One senior forest officer of the institute	Member
06	One representative of the universities imparting education in forestry and allied subjects at the level of Dean or Head of the Department	Member
07	One representatives from a funding organization	Member
08	Two representatives of forest based industries	Members
9	One eminent forester outside ICFRE	Member
10	One eminent scientist outside ICFRE	Member
11	One representative of ICAR / CSIR/ NMPB	Member
12	One representative of sister organizations	Member
13	One representative of progressive farmer / prominent NGO / JFM /Local Government / Grass root level organization	Member
14	Six subject matter experts from outside ICFRE institutes covering the subject areas of the institutes	Members
15	Group Coordinator (Research)	Member Secretary

b) Functions of Research Advisory Group:

- RAG will provide directions in forestry research of the institutes with in overall framework of research priorities setup by ICFRE.

- RAG will technically evaluate project proposals for their high quality within the overall mandate of the institute and will recommend only those projects for RPC which are found suitable to be funded from ICFRE plan funds. Project proposals rejected by RAG will not be brought for consideration of RPC.

- RAG will critically examine the monitoring parameters and deliverables that can be achieved during and at the end of the project to ensure effective monitoring and evaluation.

- RAG may recommend the proposed standal one projects to be included in the AICRPs.

- RAG may propose the projects to be taken up under funding from other sources.

- RAG will approve the modifications proposed by institutes in the ongoing projects.

- RAG will carry out any other function related with forestry research assigned by the institute from time to time.

1.1.5. Research Policy Committee (RPC)

a) Composition

The Research Policy Committee (RPC) is the apex body at ICFRE level to recommend the research projects for final approval to DG ICFRE. The role of the committee is to provide policy directions to research; bring innovation in research and decide investment in high quality forestry research; promote effective coordination of the research work among different institutes of ICFRE and optimize resource utilization; ensure balance among different international, national, regional and state level research requirements; consider current and emerging research issues; explore and establish synergetic alliance with other agencies engaged in forestry research; examine the project proposals recommended by RAGs of institutes for final approval. During the meeting of Board of Governors (BOG) of ICFRE held in January 2018, the new composition of RPC was approved, to bring in more subject area experts without altering the total number of members. New approved composition of RPC along with functions is given below:

Sl. No	Composition of RP Casper Notification No. 58-21/55/2017- ICFRE dated 6 February 2018	Role
01	Director General, ICFRE	Chairman
02	DDGs (Education, Extension, Administration)	Members
03	Director (International Cooperation)	Member
04	All Directors of ICFRE institutes	Members
05	One senior scientist of the Council (ICFRE)	Member
06	One forester of the ICFRE	Member
07	ADG (RP), ICFRE	Member
08	ADG (M&E), ICFRE	Member
09	DDG (Research), ICFRE	Member Secretary
10	One representative from WII/FSI/BSI and others	Member
11	Two representatives of forest based industries	Members
12	One eminent forester outside ICFRE	Member
13	One eminent scientist outside ICFRE	Member
14	One representative of ICAR/CSIR/NMPB	Member
15	One representative of NITI Aayog	Member
16	One representative of MoEF&CC	Member
17	One representative of universities imparting forestry education the level of Dean or Head of the Department	Member
18	One representative of progressive farmer/prominent NGO/Local Government/JFM	Member
19	Six subject matter experts	Members

b) Functions of the Research Policy Committee:

i) RPC being the apex advisory body at the council level will provide policy directions to research to bring in innovation in research and decide investment in high quality forestry research. It will also provide research leadership so as to make ICFRE a model research organization with International leadership in forestry research.

ii) RPC will approve the Annual Research Plan of ICFRE and its institutes on the basis of recommendations of RAGs of the respective institutes.

iii) RPC will approve All India Coordinated Research Projects (AICRPs) recommended by Project Expert Group involved in formulation of AICRPs. AICRPs will be directly approved by RPC without being routed through RAG channels.

iv) RPC may propose new subject areas for AICRPs and for institute based projects.

v) RPC will provide effective coordination of the research work among different institutes of ICFRE and optimize resource utilization.

vi) RPC will ensure balance among different International, National, regional and states research requirements.

vii) RPC will consider current and emerging research issues, and keeping these in view, will prioritize research projects and programmes of each institute.

viii) RPC will help to explore and establish synergetic alliance with agencies engaged in forestry research.

ix) RPC will also carry out any other function related with forestry research assigned by the Council from time to time.

Further to the above, the Board of Governors has authorized that:

- DG ICFRE shall nominate the members, and review the composition and functions of RAGs and RPCs after every 4 years.

- The tenure of nominated members shall be 2 years. However, position falling vacant due to retirement/ transfer/ repatriation/ resignation or otherwise, can be filled up for the remaining tenure.

1.2. All India Coordinated Research Project (AICRP)

To provide a complete package and address most of the aspects through an integrated holistic approach the emphasis is now on All India Coordinated Research Project (AICRP). AICRP is defined as a project, where more than one research institutes and disciplines are collectively involved to implement the identified objectives together. The emphasis is on networking of resources, capabilities and core competencies of participating institutions.

The priority of AICRPs is to develop output driven multidisciplinary programs for addressing priority species or research areas based proposals of national concern, wherein subject matter specialists from multi-disciplines will join hands to achieve targeted outputs. Such programs are highly output driven flagship ventures of ICFRE. AICRPs are long term programs spanning over several years (5 years and more, normally five years).
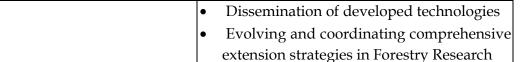
At present 31 AICRPs are implemented through CAMPA funds.

1.3. Thrust Areas and Themes of Research at ICFRE

To optimize the research outputs, four research thrust areas and thirty-five themes were identified. In addition, two thrust areas, one each for Education and Extension with four themes each were also identified. The focus was to undertake planning on prioritized thrust areas to help in optimum resource allocation, avoiding duplication of efforts and minimized regional and sectoral imbalances in the research endeavors. The thrust areas and themes for research, education and extension are as follows:

Thrust Areas (4+2)	Themes (35+8)
A. Research	
1. Managing Forest and Forest Products For Livelihood Support and Economic Growth 2. Biodiversity Conservation and Ecological Security 3. Forests and Climate Change	• Silviculture • Social Forestry, Agro-forestry, Farm Forestry • Sustainable Forest Management (SFM) • Forest Economics • Forest Biometrics and Yield Modelling • Participatory Forest Management • Wood Science and Technology • Chemistry of Forest Products • Wood Based Industries • NTFP Resource Development

4. Forest Genetic Resource Management and Tree Improvement	- Bio-prospecting and Bio-piracy - Seed Science and Technology - Forest Certification - Forest Hydrology - Food Security - Bio-fuels and Bio-energy - Integrated Pests and Disease Management - Application of Microbes in Forestry - Weeds and Invasive Species - Forest Fire and Grazing - Bio-informatics and Geo-informatics - Policy and Legal Issues - Biodiversity Conservation - Forest Botany - Ethnic and Traditional Knowledge Systems - Forest Soils and Land Reclamation - Wetland and Marine Ecology - Watershed Management - Climate Change and Forests - Forest Ecology - Conservation of Forest Genetic Resources - Tree Improvement - Vegetative Propagation - Biotechnology - Environment Management
B. Forestry Education	
Forestry Education and Policy Research to Meet Emerging Challenges	- Improving Formal Forestry Education - Accreditation of Universities - Networking Forestry Education with Research and Extension - Capacity Building of Scientific and Management Cadre
C. Extension	
Forestry Extension for Taking Research to People	Collection, Compilation and Publication of forestry reports / journals

	• Dissemination of developed technologies • Evolving and coordinating comprehensive extension strategies in Forestry Research • Consultancy services

The details of Research strategy are in the National Forestry Research Plan (NFRP) 2020-2030.

2. Extension Strategy

ICFRE since its inception has emphasised on the extension of research outputs through various means. The Directorate of Extension at ICFRE Headquarters with the clear vision enrich the forestry extension to fulfil the requirements of National Forest Policy. The ICFRE came up with a forestry research extension programme in 2000 which was extensive, innovative and complete in every sense. The extension methodology is flexible with the vision and revision of the programme every 5 years. The Extension Strategies in Forestry Research for ICFRE 2010 programme was reviewed and revised in 2010 with 12 strategies with indicated activities to be conducted with actionable points in a concise manner. Based on the past experience, in 2018 a new extension strategy having essence of earlier strategies along with new initiatives was formulated to accelerate the extension efforts for better delivery of research outputs. Subsequently, the Extension Strategy and Extension Action Plan for ICFRE 2018-2023 was release in 56th meeting of BoG held on 15.10.2018.

The conventional methods of extension and centralized extension schemes such as Van Vigyan Kendras (VVKs), Demo Villages (DVs), Networking of VVKs with Krishi Vigyan Kendras(KVKs), Tree Growers' Mela (TGM) etc have been taken care of in the light of changing requirements. The extension strategy was also introduced the new extension initiatives like establishment of Technology Demonstration Centres and introduction of concept of Vigyan Rath (Extension Van). The Direct-to-Consumer (DTC) Scheme was modified with a view to provide ready to use solutions to the stakeholders. Frequency of TGMs was doubled and the use of extension webpage and social media was upscaled. The institutes are expected to identify the technologies available for dissemination at institute level as well as at other ICFRE institutes.

2.1. Components of extension strategy

a) Centralized Extension Schemes

   i. Van Vigyan Kendras (VVKs)

   ii. Networking of VVKs with KVKs

   iii. Demo Villages (DVs)

iv. Tree Grower Melas (TGMs)

v. Direct to Consumer (DTC)

b) Conventional extension activities

i. Awareness campaigns

ii. Extension trainings

iii. Workshops

iv. Field visits

v. Radio and TV talks

vi. Publications

c) New Extension programmes

i. Updation of existing extension schemes

- *Establishment of new VVKs*
- *Shifting of the DV every third year*
- *Increase in frequency of TGM*

ii. Introduction of new extension schemes

- *Modified Direct to Consumer Scheme*
- *Vigyan Rath (Extension Van)*
- *Technology Demonstration Centres (TDCs)*
- *Social media campaigns*
- *Preparation of documentaries*

The extension of research outcomes is financed by ICFRE Plan budget. The activities planned could not be achieved as envisioned due to inadequate fund flow. However, of late, funds from CAMPA are sanctioned for implementation of Extension Strategy and Extension Action Plan of ICFRE.

The details of extension strategy are in the Extension Strategy and Extension Action Plan for ICFRE 2018-2023

2.2 Synergy between Research and Extension

To have synergy in research and extension, in the second Extension Strategy of ICFRE in the strategy statement it was incorporated that all research activities should have inbuilt extension programme with an objective to prepare research project based on stakeholders need. To take up need-based projects, it was proposed to have pre–project liaison meetings with stakeholders. In NFRP 2020-2030, the project format was revised and action plan for extension was included. It is proposed that extension strategy of research projects should be thoroughly reviewed in the RAG and RPC while approving the research projects. For effective

implementation of extension activities, a committee at institute and ICFRE has been suggested in section 2.4.

Further, in the 59thBoG held on 30/12/2021it was suggested, "*ICFRE should take the research to the conclusion so that the research benefits should reach the stakeholders. The research projects should compulsorily have an extension component with its onus on the prime research scientists.*"

2.3 Plan for thrust area wise extension of research outputs

A plan is formulated for dissemination of research outcome for each thrust area. The thrust area wise extension strategy is as follows:

Thrust Areas	Target Groups	Dissemination of research outcome	
		Mode	Extension schemes
Managing Forest and Forest Products for livelihood support and economic growth	Farmers, industries, entrepreneurs, SFDs, tribals, SHGs, etc.	Trainings, TGMs, demonstration plots, products, apps etc.	VVK, DV, TGM, IIM (Institute Industry Meet) etc.
Biodiversity Conservation and Ecological Security	SFDs, PSUs (Mining, Hydropower etc.).	Trainings and consultancies	Demand driven trainings and consultancies.
Forest and Climate Change	SFDs, NGOs, and Govt. agencies.	Trainings and consultancies.	Awareness campaigns, trainings, consultancies etc.
Forest Genetic Resource Management and Tree Improvement	SFDs, Industries and farmers	Trainings, TGM, demo plots, products, apps etc.	Trainings, Material Transfer Agreement, Licence Agreement etc.

* The above categorization is based on existing ICFRE approved ongoing projects. The target groups and dissemination of research projects approved in future may vary depending upon the research outcomes of the project.

2.4 Review of extension of research outcomes

Extension of the research outcomes are an essential component of a research project. To review the status of extension of research output, it is proposed to constitute committee at Institute and ICFRE level. The composition of committee at Institute and ICFRE is as follows:

Institute level committee
  i. Director
  ii. Group Coordinator (Research)
  iii. Head, Extension/In-charge
  iv. External Experts (2)

ICFRE level committee
   i. DDG (Extension), ICFRE
   ii. DDG (Research), ICFRE
   iii. ADG (M&E), ICFRE
   iv. ADG (M&Extn.), ICFRE
   v. External Experts (2)

The above committee shall examine the research outcome at Institute and ICFRE level respectively and facilitate to accelerate the extension mechanism for better and fast delivery of the research outcomes to the end users. The institute level committee headed by Director would examine the findings of research results of the projects and explore the suitable extension strategy for implementation, every six months and submit a detailed report with action plan to ICFRE level committee for review and directions.

1. **Future Plan**

The ICFRE has proposed for a coordinated approach by integrating state-of-the-art methods in order to improve the utility and visibility of the extension research outcomes.For more effective dissemination of research results, it is proposed to further improve the extension process as follows:

- Strengthening of VVKs

   ✓ Establishment of a Central VVK at each institute/Centre

   ✓ Establishment of new VVKs each year

   ✓ Collaboration with NGOs, KVKs, universities and other organizations for establishing and functioning of new VVKs.

   ✓ Posting of staff at each VVK

   ✓ Revolving fund for each VVK for maintaining the core activities of VVK

   ✓ Notifying some KVKs as the extension partners of VVKs and providing them technical, programmatic and financial support.

- The project outcomes to be evaluated by committee before their dissemination.

- The extension of research outcome to stakeholder would be the responsibility of project investigator and team.

- Increase in frequency of TGM/IIM (Industry-Institute Meet)

- Establishment of Incubation Centres for technologies

- Procurement of Extension Van

- Preparation of database of beneficiaries for developing long term association for green development

- Strengthening of Extension Directorate at Headquarter and Divisions at Institutes.

- Capacity Building of Scientists/Technical Officers on extension.

- Dedicated funding pattern for collaboration with Progressive farmers, NGOs and SHGs to establish new VVKs/DVs/Demo plots as practiced for extension of Agriculture.

- Availability of land with each institute needs to be ensured for field experiments, establishment of CSO, SSO and VMGs of high yielding varieties etc. Planting of best performing clones/varieties for the purpose of demonstration.

- Adequate and regular fund flow for extension activities - some 5-10% percentage of total research grants should be earmarked.

- User friendly IT based extension and mobile based advisory

Reference

ICFRE: Vision 2040

ICFRE Vision 2030

Proceedings of the XXI Research Poly Committee (RPC) Meeting 22 & 23 February 2021

Extension Strategy and Extension Action Plan for ICFRE 2018-2023

Forestry Research Extension Programme ICFRE

National Forestry Research Plan (NFRP) 2020-2030

Media and Extension Division
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