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*Proceedings of Brainstorming Workshop*

# Strengthening of Forestry Extension System in India

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# ***Proceedings of Brainstorming Workshop*** **Strengthening of Forestry Extension System in India**

under  
**Ecosystem Services Improvement Project**

**14 July 2023**



**Indian Council of Forestry Research and Education**

(An Autonomous Body of Ministry of Environment, Forest and Climate Change, Government of India)  
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महानिदेशक  
भारतीय वानिकी अनुसंधान एवं शिक्षा परिषद्  
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(An ISO 9001 : 2008 Certified Organization)

## Foreword



Forests in India are a significant source of sustenance for tribal and vulnerable populations living inside and on the fringes of the forests. Forests also play a critical role in supporting biodiversity which constitutes a good part of income generation for the forest fringe communities. As a result of anthropogenic pressure on natural resources, the scale and impact of land degradation and desertification are severe in the country. Unlike agricultural crops, the economic returns from tree crops are generally realised late. Also, the absence of regularised market, assured price of the produce, transit rules and regulations make it difficult to motivate the farmers to venture into tree planting as an entrepreneur. Due to long gestation period of tree crops and lack of vibrant extension activity calendar, the success in forestry extension has not been as per the expectations.

The World Bank is supporting Ecosystem Services Improvement Project (ESIP) in selected landscapes of Madhya Pradesh and Chhattisgarh with an overall objective to improve forest quality, sustainable land management and NTFPs benefits for forest dependent communities. ESIP supports the goals of Green India Mission by demonstrating models for adaptation-based mitigation through sustainable land and ecosystem management and livelihood benefits.

In the aforesaid background, ICFRE organized a brainstorming workshop on 'Strengthening of Forestry Extension System in India' with the aim to share forestry extension experiences of ICFRE, ICAR, State Forest Departments and to get the views and ideas of experts for developing suitable strategies and action plan for strengthening of forestry extension system in India.

I am thankful to the invited speakers, panelists and delegates for their participation in the workshop and sharing their experiences. I appreciate the efforts of scientists, consultants and staff of Biodiversity and Climate Change Division, Directorate of International Cooperation, ICFRE and all team members of workshop organizing committees for successful organization of the workshop. Efforts made by the editors and rapporteurs for bringing out the proceeding of workshop in an articulate manner are highly appreciated.

Dated: 28 July 2023

(A. S. Rawat)

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## Abbreviations Used

ADG	:	Assistant Director General
APCCF	:	Additional Principal Chief Conservator of Forests
ATARI	:	Agricultural Technology Application Research Institute
CARB	:	California Air Resources Board
CCF	:	Chief Conservator of Forests
CSR	:	Corporate Social Responsibility
DCF	:	Deputy Conservator of Forests
DDG	:	Deputy Director General
DFO	:	Divisional Forest Officer
ESIP	:	Ecosystem Services Improvement Project
FSI	:	Forest Survey of India
HESCO	:	Himalayan Environmental Studies and Conservation Organization
HoFF	:	Head of Forest Force
ICAR	:	Indian Council of Agricultural Research
ICAR-IISWC	:	ICAR- Indian Institute of Soil and Water Conservation
ICFRE	:	Indian Council of Forestry Research and Education
ICFRE-AFRI	:	ICFRE- Arid Forest Research Institute
ICFRE-ERC	:	ICFRE- Eco-Rehabilitation Centre
ICFRE-FRI	:	ICFRE- Forest Research Institute
ICFRE-HFRI	:	ICFRE- Himalayan Forest Research Institute
ICFRE-IFB	:	ICFRE- Institute of Forest Biodiversity
ICFRE-IFGTB	:	ICFRE- Institute of Forest Genetics and Tree Breeding
ICFRE-IFP	:	ICFRE- Institute of Forest Productivity
ICFRE-IWST	:	ICFRE- Institute of Wood Science & Technology
ICFRE-RFRI	:	ICFRE- Rain Forest Research Institute
ICFRE-TFRI	:	ICFRE- Tropical Forest Research Institute
ICT	:	Information and Communication Technologies
IGKV	:	Indira Gandhi Krishi Vishwavidyalaya
ITC	:	India Tobacco Company
KVKs	:	Krishi Vigyan Kendras
MFP	:	Minor Forest Produce
MoEFCC	:	Ministry of Environment, Forest and Climate Change
MoEFCC-IRO	:	MoEFCC- Integrated Regional Office
MoU	:	Memorandum of Understanding
MP	:	Madhya Pradesh
NGOs	:	Non-Governmental Organizations
NIHE	:	Govind Ballabh Pant 'National Institute of Himalayan Environment'

NTFPs	:	Non-Timber Forest Products
PCCF	:	Principal Chief Conservator of Forests
PMVDY	:	Pradhan Mantri Van Dhan Yojana
QPM	:	Quality Planting Material
RKVY	:	Rashtriya Krishi Vikas Yojana
SAMETI	:	State Agriculture Management & Extension Training Institute
SAUs	:	State Agricultural Universities
SFD	:	State Forest Department
SLEM	:	Sustainable Land and Ecosystem Management
TGM	:	Tree Growers Mela
TOF	:	Trees Outside Forests
ToT	:	Training of Trainers
TREE-D	:	Transformational Restoration for Ecological and Economic Development
VVKs	:	Van Vigyan Kendras
WG	:	Working Group
ZTM-BPDU	:	Zonal Technology Management- Business Planning & Development Unit





## Executive Summary

About 300 million population in the country are directly or indirectly depending on forests for their livelihood. Due to high degree of dependence on the forest, the per capita availability of forest land in India is one of the lowest in the world. Forests are not only a significant source of sustenance for tribal and vulnerable populations living inside and on the fringes of the forests but also play a critical role in supporting biodiversity which constitutes a good part of income generation for the forest fringe communities. Due to high anthropogenic pressure on natural resources, the impact of forest degradation is severe. Degraded forest landscapes become more vulnerable to invasion by invasive species leading to further degradation, loss of productivity and biodiversity. In order to meet the demands of the communities and also the national targets and international commitments, combating degradation of land becomes important. Indian Council of Forestry Research and Education (ICFRE) and its institutes for the past more than three decades have been working for long term ecological stability, sustainable development and economic security through conservation and scientific management of forests by undertaking studies in different aspects of forestry. However, forestry extension is not robust as required may be due to long gestation period of tree species, lack of assured buy-back system, lack of sufficient funds, lack of vibrant calendar of forestry extension activities etc. Evaluation study on functioning of the existing Van Vigyan Kendras (VVKs) has highlighted some of the gaps which require brainstorming to strategize extension activities for dissemination of the technologies, package of practices, models, clones, varieties and products developed by ICFRE to the end users/ stakeholders.

The World Bank has supported Ecosystem Services Improvement Project (ESIP) with an overall objective to improve forest quality, sustainable land management and non-timber forest products (NTFPs) benefits for forest dependent communities in selected landscapes of Madhya Pradesh and Chhattisgarh. ESIP supports the goals of Green India Mission by demonstrating

models for adaptation-based mitigation through sustainable land and ecosystem management and livelihood benefits. ICFRE as one of the project implementing agencies of ESIP, implemented the components on measurement and monitoring of forest carbon stocks, capacity building of State Forest Departments and scaling-up of sustainable land and ecosystem management (SLEM) best practices to prevent land degradation and desertification and to increase above-ground forest carbon stocks. The brainstorming workshop on 'Strengthening of Forestry Extension System in India' was organised on 14 July 2023 at ICFRE, Dehradun under ESIP with a motive to share forestry extension experiences of ICFRE, Indian Council of Agricultural Research (ICAR), State Forest Departments and to get the views and ideas of experts for identification of suitable strategies and actions for strengthening of forestry extension system in India. Participants from Ministry of Environment, Forest and Climate Change (MoEFCC), the World Bank, ICFRE, ICAR, State Forest Departments, S&T Organisations, Academic & Training Institutions, Krishi Vigyan Kendras, NGOs, Forest-based Enterprises/ Cooperatives, Wood-based Industries, Mining Companies, Tree Growers and Farmers participated in the workshop. Four Working Groups (WG) targeting the stakeholders' specific forestry extension requirements were formed for group exercises and group discussion in the workshop viz. WG 1: Forestry extension for State Forest Department; WG 2: Forestry extension for farmers and tree growers, and deliberation on scope of extension w.r.t. amendments in seed rules etc.; WG 3: Forestry extension for forest-based enterprises, wood-based industries and mining companies, and deliberation on development of synergies with Van Dhan Yojana focused on value addition to NTFPs and WG 4: Forestry extension/ knowledge sharing for academic & training institutions, key ministries/ departments, S&T organisations, and deliberation on capacity constraints faced by nurseries of ICFRE's institutes. The four working groups were formed with about 20 participants in each group.

During the opening session of the workshop presentations on the extension strategies of ICFRE, ICAR, Haryana State Forest Department, Madhya Pradesh State Forest Department and formation of working groups and expectation from the group exercises and discussion were made. The first part of group exercise was focused on “Identification of issues & challenges, gaps and needs of forestry extension” and the second part was focused on “Development of suitable strategies and action plan for strengthening of forestry extension system”. The facilitators of each

group made a brief presentation in their respective groups highlighting the existing forestry extension system and expectation from the Working Group. After due deliberations by each working group, the outcomes of the group exercises were presented by the group facilitators in the plenary session.

**Recommendations of the Workshop:** Following recommendations were synthesized from outcomes of the group exercises and discussions of four working groups of the workshop:

Issues and Challenges for Strengthening of Forestry Extension	Strategies for Strengthening of Forestry Extension	Actions for Strengthening of Forestry Extension
<b>1). Strengthening of infrastructure, manpower and lack of capacity building of the staff for forestry extension of SFDs and ICFRE Institutes</b>		
<ul style="list-style-type: none"> <li>Lack of focused vision and strategy for forestry extension</li> </ul>	<ul style="list-style-type: none"> <li>Development of Focussed vision and strategy for forestry extension</li> </ul>	<ul style="list-style-type: none"> <li>Preparation of Forestry Extension Action plan(s) for stakeholders for implementation of Forestry Extension Strategy</li> <li>Implementation of Forestry Extension Action Plan(s)</li> </ul>
<ul style="list-style-type: none"> <li>Policy for transfer of technologies/ practices in the field of forestry</li> </ul>	<ul style="list-style-type: none"> <li>Policy Guidelines to be in place for transfer of technologies/ package of practices</li> </ul>	<ul style="list-style-type: none"> <li>Actions for transfer of technologies/ practices in the field of forestry as per the Policy Guidelines</li> <li>Application of proper communication platforms for transfer of technologies/ package of practices</li> </ul>
<ul style="list-style-type: none"> <li>Insufficient infrastructure for forestry extension activities</li> </ul>	<ul style="list-style-type: none"> <li>Development of infrastructure (modern nurseries, demonstration plots, testing laboratories etc.)</li> </ul>	<ul style="list-style-type: none"> <li>Setting up of Technology Incubation Centres with appropriate funding at research institutions</li> <li>Establishment/strengthening of modern nurseries and demo plots at ICFRE institutes and State Forest Departments (SFDs)</li> </ul>
	<ul style="list-style-type: none"> <li>Strengthening of Van Vigyan Kendras</li> </ul>	<ul style="list-style-type: none"> <li>Implementation of recommendations of the study on Strengthening of Van Vigyan Kendras</li> </ul>
<ul style="list-style-type: none"> <li>Non-availability of land for research and for technology demonstrations (forestry extension) with research institutions</li> </ul>	<ul style="list-style-type: none"> <li>Provision for providing lands for forestry extension to the research institutions by SFDs</li> </ul>	<ul style="list-style-type: none"> <li>Allotment of lands to the research institutions for the purpose of forestry extension activities</li> </ul>
<ul style="list-style-type: none"> <li>Lack of extension specialists and social scientists in ICFRE</li> </ul>	<ul style="list-style-type: none"> <li>Engagement of extension experts/ professionals and social science expert and staff</li> </ul>	<ul style="list-style-type: none"> <li>Recruitment of experts/ professionals and social science scientists in ICFRE</li> </ul>
<ul style="list-style-type: none"> <li>Man-power constraints in ICFRE and SFDs</li> </ul>	<ul style="list-style-type: none"> <li>Strengthening of Extension Division/ Wings of SFDs and research institutions</li> </ul>	<ul style="list-style-type: none"> <li>Regular recruitment of vacant positions in the SFDs and ICFRE</li> </ul>

<ul style="list-style-type: none"> <li>• Lack of trained and motivated extension personnel in ICFRE and SFDs</li> <li>• Lack of regular capacity building programmes for the frontline staff of SFDs</li> </ul>	<ul style="list-style-type: none"> <li>• Organisation of capacity building programme for the extension staff of ICFRE and frontline staff of SFDs</li> </ul>	<ul style="list-style-type: none"> <li>• Conduction of training need assessment exercises</li> <li>• Develop training modules for strengthening the capacity of extension staff in research institutions and SFDs</li> <li>• Develop online training modules in you-tube channel for forestry extension</li> <li>• Organisation of trainings/ capacity building programmes for staff of the Extension Wings of SFDs and ICFRE</li> </ul>
	<ul style="list-style-type: none"> <li>• Building of institutional support for forestry extension programmes</li> </ul>	<ul style="list-style-type: none"> <li>• Execution of formal courses/ specialization of forestry extension in forestry universities</li> </ul>
<b>2). Awareness generation, communication &amp; knowledge sharing and networking for forestry extension</b>		
<ul style="list-style-type: none"> <li>• Poor community participation in the forestry programmes</li> </ul>	<ul style="list-style-type: none"> <li>• Motivating stakeholders for taking up new technologies, package of practices and best practices in forestry</li> </ul>	<ul style="list-style-type: none"> <li>• Documentation of success stories, package of practices and best practices (in multilingual formats) in the field of forestry for sharing with stakeholders</li> </ul>
<ul style="list-style-type: none"> <li>• Limited awareness in SFDs and local communities about new and innovative technologies and practices in forestry</li> </ul>	<ul style="list-style-type: none"> <li>• Awareness generation and developing effective mechanism for knowledge sharing</li> <li>• Application of Information and Communications Technology (ICT) as modern extension tool</li> <li>• Documentation and dissemination of extension best practices and sharing</li> </ul>	<ul style="list-style-type: none"> <li>• Exposure visits of nurseries producing QPM including collection of seeds</li> <li>• Knowledge sharing in public domain through social media platform (ICT extension platforms)</li> <li>• Publication and printing of extension material in simple vernacular languages</li> <li>• Publication of findings of forestry research project in open access journals</li> </ul>
<ul style="list-style-type: none"> <li>• Lack of effective communication and coordination mechanism between SFDs, research institutions, academic institutions, training institutions and industries for sharing of knowledge</li> </ul>	<ul style="list-style-type: none"> <li>• Two-way communication (Lab to land and vice versa) for strengthening forestry extension</li> <li>• Development of roadmap for networking of research, academic and training institutions for knowledge sharing and transfer of technologies</li> </ul>	<ul style="list-style-type: none"> <li>• Participation of research institutions in business expos, trade fairs etc.</li> <li>• Organization of regular Silviculture Conference</li> <li>• Organisation of Annual Forestry Extension Conference</li> <li>• Organization of regular stakeholders meet to discuss the forestry research and extension needs and sharing of research findings</li> </ul>
	<ul style="list-style-type: none"> <li>• Mechanism for sharing of ICAR extension infrastructure facilities for forestry extension</li> <li>• Networking of Van Vigyan Kendras and Krishi Vigyan Kendras</li> </ul>	<ul style="list-style-type: none"> <li>• Effective implementation of MoU for utilization of ICAR extension facilities including networking of KVKs and VVKs for forestry extension by ICFRE and SFDs.</li> <li>• Periodical monitoring and reviews (indicator based) of the extension activities</li> </ul>

### 3). Funding mechanism for forestry extension

- Lack of sufficient fund for forestry extension and capacity building
- Provision of sufficient regular funding for forestry extension activities and capacity building programmes
- Provision of compulsory extension component with sufficient funds in a research project for implementation of the extension activities
- Annual activities calendar to be framed for dissemination of technologies and capacity building programmes
- Execution of the extension activities of the research project as per the work plan

### 4). Policy and regulatory issues for promotion of tree outside forests for forestry extension

- Complex felling and transit regulations for tree species growing on non-forest areas and private lands
- Stakeholders awareness generation about the latest rules and guidelines for felling and transit of forest produce to promote forestry activities outside the forest areas.
- Submission to the Government for liberalizing felling and transit regime for tree species grown in non-forest and private lands
- Lack of policy on certification of forest produces
- Development of certification mechanism/ policy for planting materials and forest products
- Protocols and standards for certification of forest products, forest seeds and planting stocks

### 5). Production of quality planting materials and certification of forest products for forestry extension

- Non-availability of quality planting materials (QPMs) of forestry species
- Development of QPMs of forestry species
- Standard operating procedures and standards for production of QPM of forestry species
- Lack of certification of forest nurseries, forest produces and wood products
- Development of standards for accreditation of forest nurseries for production of QPMs of forestry species
- Development of minimum seed standards for forestry species
- Development of domestic certification system and facility
- Certification of planting materials, forest produces and wood products

### 6). Marketing mechanism of forest products for forestry extension

- Lack of proper markets and value chain for NTFPs
- Policy guidelines for marketing of NTFPs
- Development of value addition for NTFPs, and forward and backward market linkages for NTFPs and other forest products in line with Pradhan Mantri Van Dhan Yojana
- Lack of value addition and proper packaging of the forest products
- Policy guidelines for introduction of MSP for NTFPs and other forest products
- Online platform for marketing NTFPs and other forest products
- No provision for Minimum Support Price (MSP) for NTFPs and other forest products





## Background

In India, about 300 million population is directly or indirectly depending on the forests, most of them are rural poor, with small land holdings and limited livelihood options. With such high degree of dependency on the forest, the per capita availability of forest land in India is one of the lowest in the world. Forests in India are a significant source of sustenance for tribal and vulnerable populations living inside and on the fringes of the forests. Forests also play a critical role in supporting biodiversity which constitutes a good part of income generation for the forest fringe communities. As a result of anthropogenic pressure on natural resources, the scale and impact of forest degradation are severe. Degraded forest landscapes are more prone to invasion by invasive alien species, which compete with native species and lead to further land degradation, productivity reduction and biodiversity loss. Managing land that is undergoing degradation and desertification, is therefore a significant priority in the context of achieving India's national targets, international commitments related to Nationally Determined Contribution, Land Degradation Neutrality, and Sustainable Development Goals. The Indian Council of Forestry Research and Education (ICFRE) with its nine research institutes and six Centres has the mission "to generate, advance and disseminate scientific knowledge and technologies for ecological security, improved productivity, livelihood enhancement and sustainable use of forest resources through forestry research and education". In this endeavour, ICFRE for the past more than three decades have been working for long-term ecological stability, sustainable development and economic security through conservation and scientific management of forest ecosystems by undertaking studies in different aspects of forestry. This has resulted in production of high yielding improved varieties of some of the fast-growing species, development of agroforestry models of different species for different agroclimatic zones of the country, development of bio-boosters to boost the growth of seedlings in the nursery, development of harvesting techniques of bamboos, development of ways and means for sustainable harvesting of non-timber forest produces, development of restoration

models for mined out areas etc. All these efforts of ICFRE and its institutes are making contribution to meet the national targets of bringing one third area of the country under forest and tree cover besides conforming to targets of Sustainable Development Goals and Land Degradation Neutrality and Nationally Determined Contribution.

Unlike agricultural crops, the economic returns from tree crops are generally realised late. Also, the absence of regularised market, assured price of the produce, transit rules and regulations make it difficult to convince the farmers to venture into tree planting as an entrepreneur. Consequently, the utility of improved clones or varieties of commercially important trees fail to scale up despite the high economic return they are expected to make. Agriculture crops find their way straight to the farmers at the remotest place of the country with vibrant extension service delivered through the network of Krishi Vigyan Kendras for dissemination of technical knowhow, quality seeds or planting materials and onsite demonstration tests besides programmes aired on All India Radio and national TV Channels like Krishi Darshan with far reaching impacts. ICFRE with its main stakeholder- the State Forest Department in majority of the states have signed memorandum of understanding of leveraging their complimentary competences and sharing of resources, has been making consistent efforts to disseminate its research findings to the farmers. ICFRE has also signed a memorandum of understanding with Indian Council of Agricultural Research (ICAR) and collaborating with Krishi Vigyan Kendras (KVKs) to effectively involve rural communities not only in afforestation activities but also making them understand livelihood support that forestry sector can generate. ICFRE has also established 41 Van Vigyan Kendras (VVKs) through its nine research institutes for dissemination of its research findings with active support of the State Forest Departments and KVKs to the stakeholders by organising training and demonstration programmes and exposure visits. ICFRE has also established Demo villages for extending the technologies from lab to land. Performance and

usefulness of these villages need to be discussed so that further action to strengthen this program could be taken.

However, due to long gestation period of tree crops, lack of assured buy-back and lack of vibrant extension activity calendar with continuity of the programme to convince the stakeholders, success has not been as per the expectations. An evaluation of the functioning of the existing Van Vigyan Kendras in ICFRE has highlighted some of the gaps which require brainstorming to strategize the extension activities for transfer of technologies, clones/ varieties, products/ models developed by ICFRE and use by the stakeholders.

The World Bank is supporting Ecosystem Services Improvement Project (ESIP) in selected landscapes of Madhya Pradesh and Chhattisgarh with an overall objective to improve forest quality, sustainable land management and NTFPs benefits for forest dependent communities. ESIP supports the goals of Green India Mission by demonstrating models for adaptation-based mitigation through sustainable land and ecosystem management and livelihood benefits. Strengthening of the VVKs is one of the activities under ESIP. Accordingly, a study was conducted to evaluate working and effectiveness of VVKs established in different states in fulfilling the objectives of forestry extension services to enable technologies from lab to land and make practicable suggestions to improve upon the working and effectiveness of VVKs in future. ICFRE organised a national workshop on Agroforestry and Farm Forestry for Sustainable Land and Ecosystem Management in the month of January 2023 under ESIP. One of the recommendations of the workshop related to forestry extension was to develop a mechanism for knowledge sharing and its dissemination for extension of agroforestry related research findings, best practices, success stories from lab to land, and to strengthen the VVKs. The brainstorming workshop on Strengthening of Forestry Extension System in India was organised on 14 July 2023 at ICFRE, Dehradun under ESIP with a motive to share forestry extension experiences of ICFRE, ICAR, State Forest Departments and to get the views and ideas of experts for developing suitable strategies and action plan for strengthening of forestry extension system in India.

Participants from MoEFCC, the World Bank, ICFRE, ICAR, State Forest Departments, S&T Organisations,

Academic & Training Institutions, Krishi Vigyan Kendras, NGOs, forest-based enterprises/ cooperatives, wood-based industries, mining companies, tree growers, farmers etc. participated in the brainstorming workshop. Following four Working Groups targeting the stakeholders' specific forestry extension need were formed for group discussion and group exercises in the brainstorming workshop:

- Working Group 1: Forestry extension for State Forest Departments
- Working Group 2: Forestry extension for farmers and tree growers, and deliberation on scope of extension w.r.t. amendments in seed rules etc.
- Working Group 3: Forestry extension for forest-based enterprises, wood-based industries and mining companies, and deliberation on development of synergies with Van Dhan Yojana focused on value addition to NTFPs
- Working Group 4: Forestry extension/ knowledge sharing for academic & training institutions, key ministries/ departments, S&T organisations, and deliberation on capacity constraints faced by ICFRE nurseries

With presence of 94 delegates from State Forest Departments, S&T Organisations, Krishi Vigyan Kendras, Universities, the World Bank, wood-based industries, NGOs and farmers; each Working Group consisted of about 20 participants representing the different stakeholders. Working Groups conducted group exercises and discussion related to issues and challenges, gaps and needs of forestry extension with respect to the targeted stakeholders. The Working Groups identified strategies and actions for strengthening the forestry extension in India. Each Working Group was supported by one Facilitator for fruitful outcomes of the group discussion and exercises. Display boards, working table, meta cards, flip charts, marker pens etc. were provided for group exercise to each Working Group. Facilitator of the Working Group initiated the group exercise. After completion of the group exercises and discussion, facilitator of each Working Group made a presentation before the participants of the workshop on the findings of the group exercise/ discussion for further deliberation and finalization in the Plenary Session of the workshop. Agenda of the brainstorming workshop is placed at Annexure I and list of the participant is placed at Annexure II.



# Opening Session

**Dr. Sudhir Kumar**, Dy. Director General (Extension), ICFRE in his welcome and introductory remarks informed the gathering that extension in ICFRE is more than three decades old, even during 1990s ICFRE under the World Bank funded FREE project had demonstrated various technologies to the stakeholders. Realising the importance of the extension, Extension Division in each institute was constituted and satellite centres were opened during the period. The research outcomes are extended to the stakeholders/ end users through various extension programs. The extension strategies are updated periodically incorporating new product concept with the changing scenario and match stakeholder needs

and for more effective dissemination of research results, it is proposed to further improve the extension process by strengthening of VVKs and by signing of MoU with KVKs; increase in frequency of TGM (Tree Grower Mela/ IIM (Industry-Institute Meet); establishment of Incubation Centres for technologies; preparation of database of beneficiaries for developing long term association for green development and social media outreach. He said that the brainstorming workshop on Strengthening of Forestry Extension System is being organised with the objective to develop suitable strategies and action plan for strengthening of forestry extension system in India. He also elaborated on the structure and agenda of the workshop.



**Dr. Anupam Joshi**, Senior Environmental Specialist, the World Bank, in his welcome remarks said that forests of India contribute less than 2% to the country's GDP however, more than 300 million people in India depend on forests for their livelihoods. Forests are resilient natural capital as they play important role in protecting and supporting livelihoods of local communities and also serving as vital safety nets during disasters and crises. Besides providing food, energy, water and shelter, they also act as buffers to mitigate the impact of climate change and extreme weather events. Forests provide large number of goods and ecosystem services for the sustenance of humankind. Continuous supply of the green water for present and



future need will depend on the health of the forests. Advancement in carbon modelling is required to know the carbon sequestration potential of the forests. Concept of extension forestry is difficult but there is a need to make forestry extension more effective. India is world leader in agricultural crop production and same is also required in the forestry sector. He also stated that systematic survey of NTFPs and their value addition with value chain are required to fetch higher prices by the forest dependent communities. Agroforestry can play an important role in achieving the NDC target

of forestry sector. Forward and backward linkages for NTFPs and agroforestry produces need to be developed for enhancing income of the farmers and forest fringe communities. Forestry extension can roll out in the country for benefit of more than 3 million community members and also contribute for conservation of forest and natural resources. He also stated that the deliberations and outcomes of the brainstorming workshop on Strengthening of Forestry Extension System in India will be useful in the strengthening of forestry extension in the country.

**Sh. A.S. Rawat**, Director General, ICFRE in his address apprised the gathering that ICFRE and its institutes for the past more than three decades have been working for long term ecological stability, sustainable development and economic security through conservation and scientific management of forests by undertaking studies in different aspects of forestry. All these efforts are making contribution to meet the national targets of bringing one third area of the country under forest and tree cover, besides, conforming to the targets of Sustainable Development Goals and Land Degradation Neutrality and Nationally Determined Contribution. He also highlighted that the long gestation period of tree crops takes it longer to realize the economic returns besides the absence of regularized market, assured price of the produce, transit rules make it difficult to motivate the farmers to take up tree planting as an entrepreneur. ICFRE with its main stakeholder, the State Forest Department, in majority of the states have signed memorandum of understanding of leveraging their complimentary competences and sharing of resources, has been making consistent efforts to disseminate its research findings to the farmers. He also highlighted the activities done by ICFRE under the World Bank funded Ecosystem Services Improvement



Project and a study conducted to evaluate working and effectiveness of VVKs established in different states in fulfilling the objectives of forestry extension services to enable technologies from lab to land and make practicable suggestions to improve upon the working and effectiveness of VVKs in future. He said that the final outcome of the brainstorming workshop on Strengthening of Forestry Extension System in India will be useful in providing research backstopping to different stakeholders for meeting national targets and international commitments related to forest sector of the country.





**Presentations of the Workshop:** Following five presentations were made during the opening session of the workshop:

1. ICFRE's Extension Strategies: Dr. Geeta Joshi, ADG (Media & Extension), ICFRE, Dehradun
2. ICAR's Extension Strategies: Dr. Bankey Bihari, Principal Scientist, ICAR-Indian Institute of Soil and Water Conservation, Dehradun
3. Extension Strategies of Haryana Forest Department: Sh. Jagdish Chander, Principal Chief Conservator of Forests & HoFF, Haryana State Forest Department
4. Extension Strategies of Madhya Pradesh Forest Department: Sh. Ankit Pandey, DCF, Madhya Pradesh State Forest Department
5. Formation of Working Groups and Expectation from the Group Exercises and Discussion: Dr. R. S. Rawat, Project Manager, ESIP, ICFRE

**Dr. Geeta Joshi**, Assistant Director General (Media and Extension), ICFRE made a presentation on "ICFRE's Extension Strategies". She discussed in detail about the journey of ICFRE extension strategies formulated in 2000, 2010 and 2018. Dr. Joshi talked about the major thrust areas, target groups, mode of dissemination of research and extension schemes. While talking about the conventional extension activities, she emphasised on the awareness campaigns (exhibitions, melas, awareness programmes, radio/TV talks and print media), Prakriti (a scientist-student connect programme), seminars, symposium, workshops and conferences organised, museums, museums cum interpretation centres, repositories, photo gallery and digitization of herbarium and insectarium. She also discussed about the centralized extension schemes focusing on VVKs, networking of VVKs and KVKs, demonstration villages and tree growers mela. She also informed that as new extension initiatives,

Technology Demonstration Centers have been set up, mobile apps have been developed, direct to consumer scheme has been modified, documentaries have been prepared and information has been uploaded on social media platforms for maximum outreach. Inadequate manpower for extension and irregular and insufficient fund flow were highlighted as the main challenges to the forestry extension. While talking about future plan, she highlighted that coordinated approach need to be developed by integrating state-of-the-art methods to improve the utility and visibility of the research outcomes through strengthening of VVKs, increase in frequency of Tree Growers Melas/ Industry-Institute Meets, Institute-specific Extension Programmes, trainings of personnel involved in forestry extension activities, adequate and regular fund flow for extension activities, and User-friendly IT based extension and mobile based advisory.



**Dr. Bankey Bihari**, Principal Scientist, ICAR-Indian Institute of Soil and Water Conservation, Dehradun made a presentation on “ICAR’s Extension Strategies”. He apprised the gathering about the agriculture technology transfer /extension schemes in India. He talked about the Krishi Vigyan Kendras being coordinated by Agricultural Technology Application Research Institute (ATARI). He also

talked about the technology development/ testing / refinement and transfer process, and other capacity building institutions such as Trainer’s Training Centres, Extension Education Institutes and National Institute of Agricultural Extension Management. He emphasised on community participation and rapport building for effective implementation of the extension strategy.



**Sh. Jagdish Chander**, Principal Chief Conservator of Forests & HoFF, Haryana State Forest Department made a presentation on Extension Strategies of Haryana State Forest Department. He deliberated on Extension Forestry, Forestry Extension and Extinction Forestry. He highlighted that there is a need to keep in mind the international and national requirements. He also presented the global scenario of forests and reason for their vanishing and the challenges faced by the forests. He also presented the forest scenario in Haryana. He emphasised that nearly half of the forests in Haryana are along railway tracks, roads and canals. Roadsides, canal sites, railway lands,

municipal parks and urban areas, schools, colleges and universities, govt. offices and institutional lands, hospital compounds, historical buildings, industrial areas, grain markets and sub-urban areas are major areas where extension forestry is undertaken in the state. He apprised that Forest Publicity and Extension Division is working in Haryana since 1980 and various awareness programmes are undertaken through publications, films, workshops, quiz etc. for the farmers, teachers and students. While highlighting the challenges of the Extension Forestry, he also discussed the role of ICFRE in Extension Forestry in the state of Haryana.





**Sh. Ankit Pandey**, DCF, Madhya Pradesh State Forest Department made a presentation on the Extension Strategies of Madhya Pradesh State Forest Department. He discussed about the social forestry circles and operational nurseries. He also talked about the extension forestry schemes, projects and research schemes and social forestry nurseries. Trainings on

nursery management and forestry extension, field visits and institution visits, symposiums organised by Madhya Pradesh State Forest Department were also elaborated. He also informed the gathering about the Nursery Management Information System developed by the department.



**Dr. R. S. Rawat**, Project Manager, ESIP, ICFRE made a presentation on Formulation of Working Groups and Expectations from the Group Exercises and Discussion. He presented the formulation of four Working Groups targeting the stakeholder's specific forestry extension needs for group discussion and group exercises:

**Working Group 1:** Forestry extension for State Forest Departments

**Working Group 2:** Forestry extension for farmers and tree growers, and deliberation on scope of extension w.r.t. Seed Rules etc.

**Working Group 3:** Forestry extension for forest-based enterprises, wood-based industries and mining

companies, and deliberation on development of synergies with Van Dhan Yojana

**Working Group 4:** Forestry extension/ knowledge sharing for academic & training institutions, key ministries/ departments, S&T organisations, and deliberation on capacity constraints faced by ICFRE nurseries

Each Working Group consisted of about 20 participants representing the different stakeholders. He also presented the expectations from the group exercises on the issues and challenges, gaps and needs, suitable strategies and actions for strengthening of forestry extension.











## Working Group Exercise and Discussion Session

The first part of group exercise was focused on “Identification of issues and challenges, gaps and needs of forestry extension” and the second part was focused on “Development of suitable strategies and actions for strengthening of forestry extension system”.

The outcomes of the group exercise after due deliberations in the groups were presented by the group facilitators during the plenary session. Group wise activity details and outcomes are as under:

**Working Group 1: Forestry Extension for State Forest Departments:** This Group comprised of following participants:

S. No.	Name of the Participant	S. No.	Name of the Participant
1.	Sh. R. K. Dogra, DDG (Administration), ICFRE	12.	Sh. Alok Kumar Tiwari, DCF, Chhattisgarh SFD
2.	Sh. Pankaj Agarwal, Deputy Director General of Forests, MoEFCC-IRO	13.	Dr. R.S. Rawat, Project Manager, ESIP, ICFRE
3.	Sh. P. P. Singh, APCCF (Publicity & Extension), Uttar Pradesh SFD, Lucknow	14.	Sh. Sushant Kumar, ADG (Administration), ICFRE
4.	Dr. Nitin Kulkarni, Director, ICFRE-TFRI, Jabalpur	15.	Sh. Ankit Pandey, DCF, Madhya Pradesh SFD
5.	Sh. Monish Mullik, PCCF (Retd.), Uttarakhand SFD	16.	Mrs. Anjana Suchita Tirkey, DCF, ICFRE-IFP, Ranchi
6.	Dr. V. K. Varshney, Scientist-G, ICFRE-FRI	17.	Sh. Jatender Singh, Scientist-D, ICFRE
7.	Dr. P.S. Rawat, ADG (RP), ICFRE	18.	Dr. Gaurav Mishra, Scientist-D, ICFRE
8.	Dr. Santan Barthwal, Scientist-G, ICFRE-FRI	19.	Sh. N.P.S. Nain, Consultant, ESIP- ICFRE
9.	Dr. A.K. Sharma, Professor and Programme Coordinator, KVK, Dhakrani	20.	Sh. Mahaling, Head, Extension Division, ICFRE-FRI (Group Facilitator)
10.	Dr. Arun Pratap Singh, Scientist-G, ICFRE-FRI	21.	Dr. Md Shahid, Consultant, ESIP- ICFRE (Rapporteur)
11.	Dr. V. P. Panwar, Scientist-F, ICFRE-FRI		

Working Group 1 identified following issues, challenges and gaps for strengthening the forestry extension:

Issues	Challenges	Gaps
<ul style="list-style-type: none"> <li>• Lack of focused strategy and vision for forestry extension</li> <li>• Man-power constraints in State Forest Departments (SFDs)</li> <li>• Lack of trained and motivated extension personnel with SFDs</li> <li>• No dedicated Division with SFDs for forestry extension</li> </ul>	<ul style="list-style-type: none"> <li>• Insufficient infrastructure for forestry extension activities</li> <li>• Building institutional support for forestry extension programmes</li> <li>• Non-availability of land for research with research institutions</li> <li>• Insufficient funds for capacity building of frontline staff of SFDs</li> </ul>	<ul style="list-style-type: none"> <li>• Non-availability of quality planting materials and SOPs for developing QPM</li> <li>• No MSP for forest produces</li> <li>• Lack of validated planting stock/ methodologies/ technologies</li> <li>• No proper documentation of already extended/ developed package of practices</li> </ul>

<ul style="list-style-type: none"> <li>• Lack of funds for forestry extension.</li> <li>• Lack of capacity building for extension personnel of SFDs</li> <li>• Lack of awareness and capacity building of SFDs in management of nurseries</li> <li>• Lack of effective communication mechanism and liaisoning among SFDs and research institutions</li> <li>• Lack of certification of forest produces</li> <li>• Lack of proper markets for forest produces</li> <li>• Lack of awareness in SFDs about new innovative technologies in the forestry</li> <li>• Complexity in the procedures for felling of trees and transportation (Transit Permit) in many states</li> </ul>	<ul style="list-style-type: none"> <li>• Motivating stakeholders for taking up forestry activities and reluctance among stakeholders to adopt new technologies.</li> <li>• Developing markets for forest produces</li> <li>• Insufficient funds for development of certification mechanism/ standards for forest produces</li> <li>• Long gestation period for validation of technologies/ methodologies/ models</li> <li>• Long administrative channel for communicating issues to the experts</li> </ul>	<ul style="list-style-type: none"> <li>• No mechanism of regular meetings for sharing of problems and research findings</li> <li>• Poor inter-sectoral linkages between ICFRE institutes, ICAR and SFDs</li> <li>• Communication gap and lack of knowledge sharing system</li> </ul>
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Working Group 1 also identified following needs, strategies and actions for strengthening the forestry extension:

Needs	Strategies	Actions
<ul style="list-style-type: none"> <li>• Availability of QPM</li> <li>• Alternate forest-based livelihood option</li> <li>• Sharing of success stories and best practices for scaling up</li> <li>• Establishment of incubation centres in research institutions for hand-holding</li> <li>• Allotment of sufficient budget for extension activities</li> <li>• Regular dialogues between research institutions and SFDs</li> <li>• Buy-back arrangement for the farmers' tree produce</li> <li>• Accreditation of forest nurseries and certification of planting materials</li> <li>• Strengthening the capacity of extension workers in research institutions and SFDs</li> <li>• Mechanism for sharing of research outcomes on annual basis</li> <li>• Recruitment of professional/ extension specialists in extension wings</li> <li>• Development of digital platform in forestry extension</li> <li>• Organization of regular stakeholders meet to discuss research issues and extension</li> <li>• Availability of land for technology demonstrations (forestry extension)</li> </ul>	<ul style="list-style-type: none"> <li>• Documentation and dissemination of extension best practices and sharing</li> <li>• Application of Information and Communications Technology (ICT) as modern extension tool</li> <li>• Certification of planting materials and forest produces</li> <li>• Allotment of lands to the research institutions for extension activities</li> <li>• Setting up of Technology Incubation Centres with appropriate funding at research institutions</li> <li>• Mechanism for sharing of ICAR extension infrastructure facilities for forestry extension</li> <li>• Periodical or regular capacity building programme for the extension workers</li> <li>• Recruitment/ engagement of extension experts/ professionals and social science expert in a project mode</li> <li>• Annual Forestry Extension Conference for research institutions and SFDs to showcase new technologies and knowledge, and sharing thereof</li> <li>• Liberalizing felling and transit regime for tree species grown in non-forest areas and private lands</li> <li>• Initiation and execution of SFDs demand driven research projects from the financial supports from SFDs</li> </ul>	<ul style="list-style-type: none"> <li>• Regular interface between research organizations and SFDs</li> <li>• Recruitment of extension professionals in SFDs and ICFRE</li> <li>• Adoption of bottom-up participatory approach in forestry extension activities of SFDs and research institutions</li> <li>• Training and capacity building, information dissemination and collaborative research</li> <li>• Provision of funds for extension activities</li> <li>• Publication and printing of extension material in simple vernacular languages</li> <li>• Organization of regular Silviculture Conference</li> <li>• Publication of forestry research results in open domain.</li> <li>• Action for liberalizing felling and transit regime for tree species grown in non-forest and private lands</li> <li>• Knowledge sharing in public domain through digital social media platform</li> <li>• Execution of formal courses/ specialization of forestry extension in forestry universities</li> <li>• Effective implementation of MoU for utilization of ICAR extension facilities for forestry extension by research institutions and SFDs.</li> </ul>





**Working Group 2 (Forestry extension for farmers and tree growers, and deliberation on scope of extension w.r.t. amendments in seed rules etc.):** This Group comprised of the following participants:

S. No.	Name of the Participant	S. No.	Name of the Participant
1.	Sh. M. R. Baloch, Director, ICFRE-AFRI, Jodhpur	11.	Dr. Sanjay Singh, Scientist-G, ICFRE-ERC, Prayagraj
2.	Dr. C. Kunhikannan, Director, ICFRE-IFGTB, Coimbatore	12.	Sh. A. K. Sinha, In -Charge, IT Division, ICFRE
3.	Dr. Ratnaker Jauhari, DDG (Research), ICFRE	13.	Sh. Pingale Bhanudas Narayan, DCF, ICFRE
4.	Ms. Richa Misra, Head, Silviculture Div., ICFRE-FRI	14.	Ms. Vijaya Ratre, DCF, ICFRE-FRI
5.	Dr. Dinesh Kumar, Scientist-G, ICFRE-FRI	15.	Sh. Sudhir Kumar, Scientist-C, ICFRE
6.	Dr. Manisha Thapliyal, Scientist-G, ICFRE-FRI	16.	Dr. Manoj Kumar, Scientist-C, ICFRE
7.	Dr. Sanjay, Professor Agronomy, KVK, Dhakrani	17.	Sh. Narayan Swamy, Secretary, Coimbatore Herbal and Tree Growers Association, Coimbatore
8.	Dr. Bankey Bihari, Principal Scientist Ag. Extn., ICAR-IISWC, Dehradun	18.	Sh. Abhay Rod, Bhoomi Natural, Shamli

9. Dr. S.S. Paliyal, Principal Scientist & Head, KVK, Dhaulakuan	19. Sh. R. Bisen, Consultant, ESIP, ICFRE
10. Sh. Muthu Prasad, Scientist-B, ICFRE	20. Dr. S. Saravanan, Head, Extension Division, ICFRE-IFGTB, Coimbatore (Group Facilitator)
11. Mr. Puran Bartwal, People's Science Institute, Dehradun	21. Dr. Arun Thakur, Consultant, ESIP, ICFRE (Rapporteur)

Working Group 2 identified following issues, challenges and gaps for strengthening the forestry extension:

Issues	Challenges	Gaps
<ul style="list-style-type: none"> <li>Non-availability of quality planting materials (QPM) for farmers and tree growers</li> <li>Lack of sufficient fund for forestry extension</li> <li>Lack of certified nurseries</li> <li>Absence of market linkages</li> <li>Lack of value addition, supply chain distribution and proper packaging of forest produces</li> <li>Poor community participation in forestry programmes</li> <li>Insufficient trained manpower in forestry extension</li> <li>Lack of technical know-how and listing of site-specific species</li> <li>Complicated felling and transit rules for tree species</li> </ul>	<ul style="list-style-type: none"> <li>Development of minimum seed standards for forestry species</li> <li>Availability of site-specific species for plantation</li> <li>Effective mechanism for knowledge sharing</li> <li>Protection of plants from fire, grazing etc.</li> <li>Non-effective market mechanism</li> <li>Strengthening the laboratories of research institutions as per the available accreditation standards</li> </ul>	<ul style="list-style-type: none"> <li>Non-availability of standards and authorised agencies for certification</li> <li>Non-availability of quality planting materials of forestry species</li> <li>No trained manpower for extension</li> <li>Communication gap between scientist and farmers/ tree growers</li> <li>Poor community participation in the forestry programme</li> <li>Insufficient publicity of technologies and practices developed so far and their transfer to lands</li> <li>No action plans for forestry extension for farmers</li> <li>Insufficient market for forest produces</li> </ul>

Working Group 2 identified following needs, strategies and actions for strengthening the forestry extension:

Needs	Strategies	Actions
<ul style="list-style-type: none"> <li>Sufficient funds availability for extension</li> <li>Requirement of standard operating procedures and standards for production of quality plating materials</li> <li>Establishment of demo plots for forestry extension</li> <li>Trained manpower for forestry extension</li> <li>Effective use of print and electronic media to publicize the technologies and practices developed</li> <li>Functional Van Vigyan Kendras</li> <li>Separate section for forestry seeds in Seed Rules</li> <li>Regular interaction between farmers/ tree growers and scientists</li> <li>Digital platform and multilingual extension materials for sharing of knowledge</li> </ul>	<ul style="list-style-type: none"> <li>Strengthening of Van Vigyan Kendras</li> <li>Networking of VVKs with KVKs</li> <li>Strengthening of Extension Division/ Wings of the SFDs and research institutions</li> <li>Viable, location specific and profitable technological packages</li> <li>Development of market linkages</li> <li>Periodical monitoring and reviews (indicator based) of the extension activities</li> <li>Promotion of agroforestry and farm forestry through relaxation in timber harvesting and transit rules, and product traceability, certification and carbon credits</li> </ul>	<ul style="list-style-type: none"> <li>Functional MoUs with SFDs and SAUs</li> <li>Handholding support to progressive farmers</li> <li>Participatory monitoring mechanism</li> <li>Organisation of regular trainings</li> <li>Multilingual ICT extension platforms</li> <li>Development of certification system</li> </ul>





**Working Group 3: Forestry extension for forest-based enterprises, wood-based industries and mining companies, and deliberation on development of synergies with Van Dhan Yojana focused on value addition to NTFPs:** This Group comprised of the following participants:

S. No.	Name of the Participant	S. No.	Name of the Participant
1.	Dr. Sudhir Kumar, Dy. Director General (Extension), ICFRE	12.	Dr. Vinay Kant Misra, ADG (Edu & Recruitment Board), ICFRE
2.	Dr. Rajib Kr. Borah, Director, ICFRE-RFRI	13.	Dr. Vishavjit Kumar, Scientist-E, ICFRE
3.	Dr. Rajesh Sharma, ADG (BCC), ICFRE	14.	Dr. Shilpa Gautam, Scientist-E, ICFRE
4.	Dr. Charan Singh, Principal Scientist, ICAR-IISWC, Dehradun	15.	Ms. Ismita Nautiyal, Scientist-E, ICFRE
5.	Dr. N.K. Upreti, Scientist- G, ICFRE-FRI	16.	Dr. Krishna Giri, Scientist-D, ICFRE
6.	Dr. Vineet Kumar, Scientist-G, ICFRE-FRI	17.	Dr. Manish Kumar, Scientist-B, ICFRE
7.	Dr. N. Bala, Scientist-G, ICFRE-FRI	18.	Sh. Gajendra Rajput, Wood Technologist Association, Yamunanagar
8.	Dr. Geeta Joshi, ADG (Media & Extension), ICFRE	19.	Sh. Ashok Sharma, Archidply Industries Limited, Rudrapur
9.	Dr. P.K. Gupta, Scientist-G, ICFRE-FRI	20.	Dr. Manoj Kumar Dubey, Head, Extension Division, ICFRE-IWST (Group Facilitator)
10.	Dr. Jagdish Singh, Scientist-G, ICFRE-HFRI	21.	Dr. Nepolion Bohra, Consultant, ESIP, ICFRE (Rapporteur)
11.	Dr. Charan Singh, Scientist-F, ICFRE-FRI		

Working Group 3 identified following issues, challenges and gaps for strengthening the forestry extension:

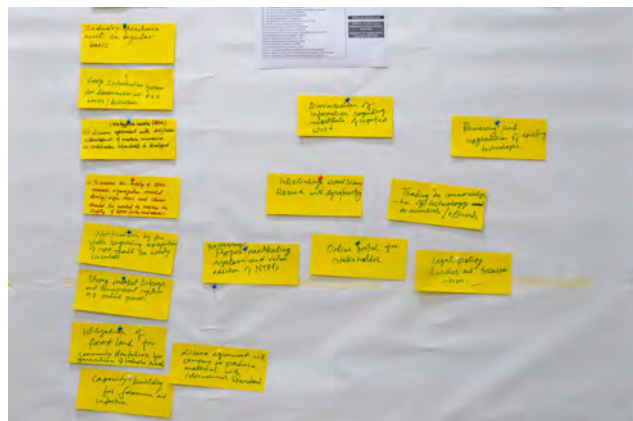
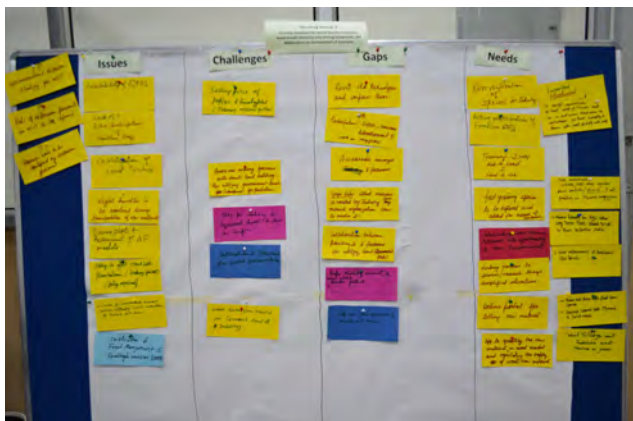
Issues	Challenges	Gaps
<ul style="list-style-type: none"> <li>Limited awareness among stakeholders</li> </ul>	<ul style="list-style-type: none"> <li>Adoption of new technologies and processes by wood-based industries</li> </ul>	<ul style="list-style-type: none"> <li>Lack of participation of stakeholders in extension programs</li> </ul>

<ul style="list-style-type: none"> <li>• Less availability of quality planting material (QPM)</li> <li>• Certification of forest and wood products</li> <li>• Legal and procedural hurdle regarding felling and transport of trees growing on non-forest areas and private lands</li> <li>• Price fluctuations of tree crop due to gap in demand and supply</li> </ul>	<ul style="list-style-type: none"> <li>• Viable market place for forest products</li> <li>• Policy for marketing of agarwood etc.</li> <li>• Adoption of international standards for wood preservation</li> <li>• Involvement of farmers and industries in forestry research and extension</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of awareness among farmers</li> <li>• Ineffective coordination mechanism between the research organizations and industries</li> <li>• No marketing channel for value-added products of bamboo</li> <li>• No SOP for restoration of mined out areas in public domain</li> </ul>
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Working Group 3 also identified following needs, strategies and actions for strengthening the forestry extension:

Needs	Strategies	Actions
<ul style="list-style-type: none"> <li>• Diversification of species for industrial use</li> <li>• Exploring fast growing species for agroforestry</li> <li>• Two-way communication (Lab to land and vice versa) for strengthening forestry extension</li> <li>• Interlinkages between wood science, agroforestry and tree improvement</li> <li>• Online platform for marketing raw materials for wood-based industries</li> <li>• Replacement of imported hard wood with indigenous one</li> <li>• Sharing of knowledge with stakeholders</li> <li>• Relaxation in rules for felling and transport of trees growing on non-forest areas and private lands</li> </ul>	<ul style="list-style-type: none"> <li>• Awareness generation of stakeholders</li> <li>• Development of standards for forest and wood products</li> <li>• Development of quality planting material</li> <li>• Capacity building of the stakeholders</li> <li>• Development of forward and backward market linkages for forest and wood products</li> <li>• Certification of forest and wood products</li> <li>• Development of infrastructure (modern nurseries, demonstration plots, testing laboratories etc.)</li> <li>• Value addition of NTFPs</li> <li>• Relaxation in felling and transportation rules for tree species grown outside the forests areas for promotion of forest and wood-based industries</li> </ul>	<ul style="list-style-type: none"> <li>• Frequent Industry-Institute/ Academia Meet</li> <li>• Active involvement of industries in project formulations.</li> <li>• Sharing of knowledge and technologies</li> <li>• Participation in business expos, trade fairs etc.</li> <li>• Strengthening testing infrastructure</li> <li>• Development of domestic certification system and facility</li> <li>• Development of standards at par international ones</li> <li>• Reviewing and upgrading existing technologies</li> <li>• Improvement in the technologies for processing of agroforestry species</li> <li>• Diversification of species. Identification of short rotation species for plywood and panel industry</li> <li>• Non-license agreement with industries for production of material in large scale</li> <li>• Demonstration plot on panchayat land</li> <li>• Linkage between farmers, industry and other stakeholders</li> <li>• Development and assessment of AF models</li> <li>• Strong market linkage and transparent system</li> <li>• Training on commercialization of technology to Scientists/ Officials</li> <li>• Processing, value addition and marketing value of NTFP in line with Pradhan Mantri Van Dhan Yojana</li> </ul>





**Working Group 4: Forestry extension/ knowledge sharing for academic & training institutions, key ministries/ departments, S&T organisations, and deliberation on capacity constraints faced by ICFRE nurseries:** This Group comprised of the following participants:

S. No.	Name of the Participant	S. No.	Name of the Participant
1.	Dr. Renu Singh, Director, ICFRE-FRI	12.	Dr. Gautam Roy, Sr. Scientist & Head, IGKV, Raipur
2.	Smt. Kanchan Devi, Dy. Director General (Education), ICFRE	13.	Dr. Rajiv Pandey, Scientist-E, ICFRE
3.	Dr. Sandeep Sharma, Director, ICFRE-HFRI, Shimla	14.	Smt. Bhawana Sharma, Scientist-E, ICFRE-AFRI
4.	Sh. E. Venkat Reddy, Director, ICFRE-IFB, Hyderabad, Telangana	15.	Dr. Sanjay Singh, Scientist-E, ICFRE
5.	Dr. H.S. Ginwal, Scientist-G & Dean FRI (Deemed to be University)	16.	Sh. Kamal Pandey, Dy. Director, FSI, Dehradun
6.	Dr. Sumit Chakravorti, ADG (M&E), ICFRE	17.	Dr. K.C. Sekar, Head, GB Pant NIHE-Garhwal Regional Centre
7.	Dr. Sangeeta Gupta, Scientist-G, ICFRE-FRI	18.	Sh. Anil Kumar, KVK Yamunanagar
8.	Dr. Amit Pandey, Scientist-G, ICFRE-FRI	19.	Dr. D. Kurrey, Consultant, ESIP-ICFRE
9.	Dr. A. N. Singh, ADG (EM), ICFRE	20.	Dr. Nanita Berry, Head, Extension Division, ICFRE-TFRI (Group Facilitator)
10.	Sh. Rajib Kr. Kalita, Scientist-F, ICFRE-RFRI	21.	Dr. Nivedita Thapliyal, Consultant, ESIP, ICFRE (Rapporteur)
11.	Dr. Kiran Negi, Principal Scientist, HESCO, Dehradun		

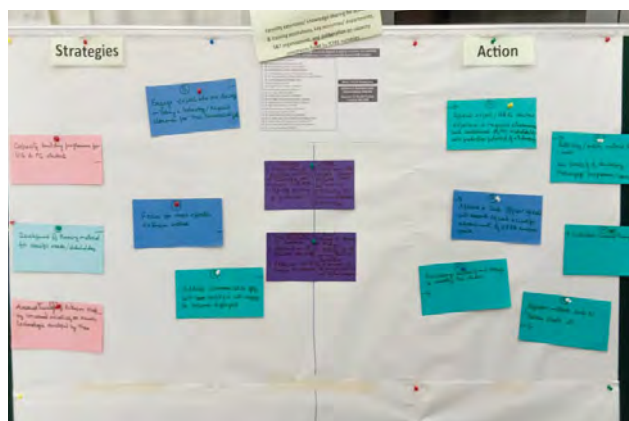
Working Group 4 identified following issues, challenges and gaps for strengthening the forestry extension:

Issues	Challenges	Gaps
<ul style="list-style-type: none"> <li>Knowledge exchange and sharing between ICFRE, ICAR, SAU, S&amp;T institutions</li> </ul>	<ul style="list-style-type: none"> <li>Upgradation of Infrastructure</li> </ul>	<ul style="list-style-type: none"> <li>Insufficient manpower</li> </ul>

- Lack of trained manpower
- Strengthening of forestry education for extension
- Lack of networking of research, academic and training institutions
- Lack of sufficient funds for extension
- Old infrastructure in nurseries of ICFRE institutes
- Networking of research, academic and training institutions
- Development of roadmap for collaboration and networking
- Less Financial Resources
- Knowledge and communication gap
- Insufficient financial support
- Weak national and international collaborations
- No. Action Plans for collaboration and networking
- Less provision for capacity building of the staff

Working Group 4 also identified following needs, strategies and actions for strengthening the forestry extension:

Needs	Strategies	Action
<ul style="list-style-type: none"> <li>• Strengthening of VVK</li> <li>• Policies for transfer of technology</li> <li>• Periodic training need assessment</li> <li>• Dedicated and Sustainable funding for extension of forestry techniques at national level</li> <li>• Dedicated staff at ICFRE to enable networking – ICFRE National Network Group</li> <li>• MoU with related institutes for transfer of technologies</li> <li>• Dedicated extension experts</li> <li>• Diversify the mode of communication</li> </ul>	<ul style="list-style-type: none"> <li>• Development and implementation of action plan for extension</li> <li>• Training and capacity building of extension staff</li> <li>• Subject specific training need assessment and development of training modules</li> <li>• Recruitment of dedicated staff for extension wing</li> <li>• MoU for technology transfer with national and international institutes</li> </ul>	<ul style="list-style-type: none"> <li>• Appointment of extension experts</li> <li>• Develop online training modules/ you-tube channel</li> <li>• Schedule annual training calendar</li> <li>• Encourage university and college to sensitize students on forestry extension</li> <li>• Release of sustained and sufficient budget</li> </ul>







## Plenary Session

**Dr. Anupam Joshi**, Senior Environmental Specialist, the World Bank highlighted that farmers should grow plants according to the requirements of the industry. He also said that in the working groups of the workshop ways to bridge the gap between science and farmers was discussed. He said that many interconnected points have emerged during the discussion related to the focus of research undertaken if it is species specific, focused on processing, based on industries' requirements, demands of farmers or is it supply based/ driven. Important points arising out of working group discussion was on commercialization aspect and market linkages, developing online market platforms for selling products, and certification. He said that during discussions some very useful concepts especially on felling of trees and transit rules have emerged. There is still some work to be done on the felling of trees grown in private/ community lands and licence agreement point of view. He expressed his happiness to see lot of willingness to learn from the ICAR-KVK experiences and learnings and adoption of some of good practices into the VVK which will be helpful for forestry extension. He ended his remarks by mentioning that the road ahead is challenging but equally exciting and rewarding as well.

**Dr. Renu Singh**, Director ICFRE-FRI, in her concluding remarks congratulated all the working groups for extensively working and highlighting very important issues related to how to strengthen the forestry extension in our country. She said that word agriculture extension always draws attention to a well-developed mechanism with proper funding and smooth process but when we talk about forestry extension, many issues are there due to which forestry extension system in the country needs to be strengthened. She said that the workshop has been very important as all the working groups have pointed out very important issues, identified challenges and gaps, and at the same time they also talked about strategies which can strengthen forestry extension system in the country. ICFRE institutes can carry out various important research activities which can benefit farmers, industries and societies as a whole. Develop linkages and make use of ICAR facilities for strengthening forestry extension as well. ICFRE institutes have very important role to play for strengthening forestry extension activities as well as giving direction of research in the country in the context of benefitting society as a whole and to meet the requirements of forestry sector through various research activities. Many suggestions have come up and these all can be summarised as recommendations of this workshop.



**Dr. Rajesh Sharma**, Assistant Director General (Biodiversity and Climate Change), ICFRE proposed a vote of thanks, thanking Sh. A.S. Rawat, Director General, ICFRE, Dr. Anupam Joshi, the World Bank, participants from ICFRE headquarter and institutes, representatives of the State Forest Departments, S&T

institutions, academic institutions, representatives of industries, farmers and NGOs for gracing the occasion. He also thanked the officers, scientists and staff of ICFRE who were associated in the organisation of the workshop in various capacities and at different stages.







## Recommendations of the Workshop

Following recommendations were synthesized from outcomes of the group exercises and discussions of four working groups of the workshop:

Issues and Challenges for Strengthening of Forestry Extension	Strategies for Strengthening of Forestry Extension	Actions for Strengthening of Forestry Extension
<b>1). Strengthening of infrastructure, manpower and lack of capacity building of the staff for forestry extension of SFDs and ICFRE Institutes</b>		
<ul style="list-style-type: none"> <li>Lack of focused vision and strategy for forestry extension</li> </ul>	<ul style="list-style-type: none"> <li>Development of Focussed vision and strategy for forestry extension</li> </ul>	<ul style="list-style-type: none"> <li>Preparation of Forestry Extension Action plan(s) for stakeholders for implementation of Forestry Extension Strategy</li> <li>Implementation of Forestry Extension Action Plan(s)</li> </ul>
<ul style="list-style-type: none"> <li>Policy for transfer of technologies/ practices in the field of forestry</li> </ul>	<ul style="list-style-type: none"> <li>Policy Guidelines to be in place for transfer of technologies/ package of practices</li> </ul>	<ul style="list-style-type: none"> <li>Actions for transfer of technologies/ practices in the field of forestry as per the Policy Guidelines</li> <li>Application of proper communication platforms for transfer of technologies/ package of practices</li> </ul>
<ul style="list-style-type: none"> <li>Insufficient infrastructure for forestry extension activities</li> </ul>	<ul style="list-style-type: none"> <li>Development of infrastructure (modern nurseries, demonstration plots, testing laboratories etc.)</li> </ul>	<ul style="list-style-type: none"> <li>Setting up of Technology Incubation Centres with appropriate funding at research institutions</li> <li>Establishment/strengthening of modern nurseries and demo plots at ICFRE institutes and State Forest Departments (SFDs)</li> </ul>
	<ul style="list-style-type: none"> <li>Strengthening of Van Vigyan Kendras</li> </ul>	<ul style="list-style-type: none"> <li>Implementation of recommendations of the study on Strengthening of Van Vigyan Kendras</li> </ul>
<ul style="list-style-type: none"> <li>Non-availability of land for research and for technology demonstrations (forestry extension) with research institutions</li> </ul>	<ul style="list-style-type: none"> <li>Provision for providing lands for forestry extension to the research institutions by SFDs</li> </ul>	<ul style="list-style-type: none"> <li>Allotment of lands to the research institutions for the purpose of forestry extension activities</li> </ul>
<ul style="list-style-type: none"> <li>Lack of extension specialists and social scientists in ICFRE</li> </ul>	<ul style="list-style-type: none"> <li>Engagement of extension experts/ professionals and social science expert and staff</li> </ul>	<ul style="list-style-type: none"> <li>Recruitment of experts/ professionals and social science scientists in ICFRE</li> </ul>
<ul style="list-style-type: none"> <li>Man-power constraints in ICFRE and SFDs</li> </ul>	<ul style="list-style-type: none"> <li>Strengthening of Extension Division/ Wings of SFDs and research institutions</li> </ul>	<ul style="list-style-type: none"> <li>Regular recruitment of vacant positions in the SFDs and ICFRE</li> </ul>

<ul style="list-style-type: none"> <li>• Lack of trained and motivated extension personnel in ICFRE and SFDs</li> <li>• Lack of regular capacity building programmes for the frontline staff of SFDs</li> </ul>	<ul style="list-style-type: none"> <li>• Organisation of capacity building programme for the extension staff of ICFRE and frontline staff of SFDs</li> </ul>	<ul style="list-style-type: none"> <li>• Conduction of training need assessment exercises</li> <li>• Develop training modules for strengthening the capacity of extension staff in research institutions and SFDs</li> <li>• Develop online training modules in you-tube channel for forestry extension</li> <li>• Organisation of trainings/ capacity building programmes for staff of the Extension Wings of SFDs and ICFRE</li> </ul>
	<ul style="list-style-type: none"> <li>• Building of institutional support for forestry extension programmes</li> </ul>	<ul style="list-style-type: none"> <li>• Execution of formal courses/ specialization of forestry extension in forestry universities</li> </ul>
<b>2). Awareness generation, communication &amp; knowledge sharing and networking for forestry extension</b>		
<ul style="list-style-type: none"> <li>• Poor community participation in the forestry programmes</li> </ul>	<ul style="list-style-type: none"> <li>• Motivating stakeholders for taking up new technologies, package of practices and best practices in forestry</li> </ul>	<ul style="list-style-type: none"> <li>• Documentation of success stories, package of practices and best practices (in multilingual formats) in the field of forestry for sharing with stakeholders</li> </ul>
<ul style="list-style-type: none"> <li>• Limited awareness in SFDs and local communities about new and innovative technologies and practices in forestry</li> </ul>	<ul style="list-style-type: none"> <li>• Awareness generation and developing effective mechanism for knowledge sharing</li> <li>• Application of Information and Communications Technology (ICT) as modern extension tool</li> <li>• Documentation and dissemination of extension best practices and sharing</li> </ul>	<ul style="list-style-type: none"> <li>• Exposure visits of nurseries producing QPM including collection of seeds</li> <li>• Knowledge sharing in public domain through social media platform (ICT extension platforms)</li> <li>• Publication and printing of extension material in simple vernacular languages</li> <li>• Publication of findings of forestry research project in open access journals</li> </ul>
<ul style="list-style-type: none"> <li>• Lack of effective communication and coordination mechanism between SFDs, research institutions, academic institutions, training institutions and industries for sharing of knowledge</li> </ul>	<ul style="list-style-type: none"> <li>• Two-way communication (Lab to land and vice versa) for strengthening forestry extension</li> <li>• Development of roadmap for networking of research, academic and training institutions for knowledge sharing and transfer of technologies</li> </ul>	<ul style="list-style-type: none"> <li>• Participation of research institutions in business expos, trade fairs etc.</li> <li>• Organization of regular Silviculture Conference</li> <li>• Organisation of Annual Forestry Extension Conference</li> <li>• Organization of regular stakeholders meet to discuss the forestry research and extension needs and sharing of research findings</li> </ul>
	<ul style="list-style-type: none"> <li>• Mechanism for sharing of ICAR extension infrastructure facilities for forestry extension</li> <li>• Networking of Van Vigyan Kendras and Krishi Vigyan Kendras</li> </ul>	<ul style="list-style-type: none"> <li>• Effective implementation of MoU for utilization of ICAR extension facilities including networking of KVKs and VKs for forestry extension by ICFRE and SFDs.</li> <li>• Periodical monitoring and reviews (indicator based) of the extension activities</li> </ul>



### 3). Funding mechanism for forestry extension

- Lack of sufficient fund for forestry extension and capacity building
- Provision of sufficient regular funding for forestry extension activities and capacity building programmes
- Annual activities calendar to be framed for dissemination of technologies and capacity building programmes
- Provision of compulsory extension component with sufficient funds in a research project for implementation of the extension activities
- Execution of the extension activities of the research project as per the work plan

### 4). Policy and regulatory issues for promotion of tree outside forests for forestry extension

- Complex felling and transit regulations for tree species growing on non-forest areas and private lands
- Stakeholders awareness generation about the latest rules and guidelines for felling and transit of forest produce to promote forestry activities outside the forest areas.
- Submission to the Government for liberalizing felling and transit regime for tree species grown in non-forest and private lands
- Lack of policy on certification of forest produces
- Development of certification mechanism/ policy for planting materials and forest products
- Protocols and standards for certification of forest products, forest seeds and planting stocks

### 5). Production of quality planting materials and certification of forest products for forestry extension

- Non-availability of quality planting materials (QPMs) of forestry species
- Development of QPMs of forestry species
- Standard operating procedures and standards for production of QPM of forestry species
- Lack of certification of forest nurseries, forest produces and wood products
- Development of standards for accreditation of forest nurseries for production of QPMs of forestry species
- Development of minimum seed standards for forestry species
- Certification of planting materials, forest produces and wood products
- Development of domestic certification system and facility

### 6). Marketing mechanism of forest products for forestry extension

- Lack of proper markets and value chain for NTFPs
- Policy guidelines for marketing of NTFPs
- Development of value addition for NTFPs, and forward and backward market linkages for NTFPs and other forest products in line with Pradhan Mantri Van Dhan Yojana
- Lack of value addition and proper packaging of the forest products
- Policy guidelines for introduction of MSP for NTFPs and other forest products
- Online platform for marketing NTFPs and other forest products
- No provision for Minimum Support Price (MSP) for NTFPs and other forest products

## Agenda of the Workshop

09:00-10:45 Hrs.	<b>Opening Session</b>
	<p><b>Introduction of the workshop by:</b></p> <ul style="list-style-type: none"> <li>• Dr. Sudhir Kumar, DDG (Extension), ICFRE</li> </ul> <p><b>Welcome Remarks by:</b></p> <ul style="list-style-type: none"> <li>• Sh. A. S. Rawat, Director General, ICFRE</li> <li>• Dr. Anupam Joshi, Senior Environmental Specialist, the World Bank</li> </ul> <p><b>Presentation on ICFRE's Extension Strategies by:</b></p> <ul style="list-style-type: none"> <li>• Dr. Geeta Joshi, ADG (Media &amp; Extension), ICFRE</li> </ul> <p><b>Presentation on ICAR's Extension Strategies by:</b></p> <ul style="list-style-type: none"> <li>• Dr. Bankey Bihari, Principal Scientist, ICAR-IISWC</li> </ul> <p><b>Presentation on SFD's Extension Strategies by:</b></p> <ul style="list-style-type: none"> <li>• Sh. Jagdish Chander, PCCF &amp; HoFF, Haryana Forest Department</li> <li>• Sh. Ankit Pandey, DCF, Madhya Pradesh Forest Department</li> </ul> <p><b>Presentation on Formation of Working Groups and Expectation from the Group Exercises and Discussion by:</b></p> <ul style="list-style-type: none"> <li>• Dr. R. S. Rawat, Project Manager, ESIP, ICFRE</li> </ul>
10:45-11:00 Hrs.	<b>Group Photo &amp; Tea/ Coffee</b>
11:00-15:30 Hrs.	<b>Working Group Exercise and Discussion Session</b>
11:00-13:00 Hrs.	<p><b>Group Exercise and discussion on "Identification of issues &amp; challenges, gaps and needs of forestry extension" by:</b></p> <ul style="list-style-type: none"> <li>• Working Group 1: Forestry extension for SFDs (Facilitator: Head, Extension Division, ICFRE-FRI)</li> <li>• Working Group 2: Forestry extension for Farmers and Tree Growers etc. (Facilitator: Head, Extension Division, ICFRE-IFGTB)</li> <li>• Working Group 3: Forestry extension for forest-based enterprises/ cooperatives, wood-based industries and mining companies (Facilitator: Head, Extension Division, ICFRE- IWST)</li> <li>• Working Group 4: Forestry extension/ knowledge sharing for academic and training institutions, key ministries/ departments, S&amp;T organisations (Facilitator: Head, Extension Division, ICFRE-TFRI)</li> </ul>
13:00-14:00 Hrs.	<b>Lunch Break</b>
14:00-15:30 Hrs.	<p><b>Group Exercise and discussion on "Development of suitable strategies and action plan for strengthening of forestry extension system" by:</b></p> <ul style="list-style-type: none"> <li>• Working Group 1: Forestry extension for SFDs (Facilitator: Head, Extension Division, ICFRE-FRI)</li> <li>• Working Group 2: Forestry extension for Farmers and Tree Growers etc. (Facilitator: Head, Extension Division, ICFRE-IFGTB)</li> <li>• Working Group 3: Forestry extension for forest-based enterprises/ cooperatives, wood-based industries and mining companies (Facilitator: Head, Extension Division, ICFRE- IWST)</li> <li>• Working Group 4: Forestry extension/ knowledge sharing for academic and training institutions, key ministries/ departments, S&amp;T organisations (Facilitator: Head, Extension Division, ICFRE-TFRI)</li> </ul>
15:30-15:45 Hrs.	<b>Tea/ Coffee Break</b>
15:45-17:30 Hrs.	<p><b>Plenary Session: Synthesis and finalization of outcomes of the workshop</b></p> <p>Panellists:</p> <ul style="list-style-type: none"> <li>• Dr. Renu Singh, Director, ICFRE-FRI, Dehradun</li> <li>• Dr. Anupam Joshi, Senior Environmental Specialist, the World Bank, New Delhi</li> </ul>



**Presentation on outcomes (highlighting the issues & challenges, gaps and needs, suitable strategies and action plan for strengthening of forestry extension) of the group exercise and discussion by:**

- Working Group 1: Forestry extension for SFDs (Facilitator: Head, Extension Division, ICFRE-FRI)
- Working Group 2: Forestry extension for Farmers and Tree Growers etc. (Facilitator: Head, Extension Division, ICFRE-IFGTB)
- Working Group 3: Forestry extension for forest-based enterprises/ cooperatives, wood-based industries and mining companies (Facilitator: Head, Extension Division, ICFRE-IWST)
- Working Group 4: Forestry extension/ knowledge sharing for academic and training institutions, key ministries/ departments, S&T organisations (Facilitator: Head, Extension Division, ICFRE-TFRI)

17:15-17:30 Hrs.

**Concluding Remarks by Panellists**

**Vote of Thanks**



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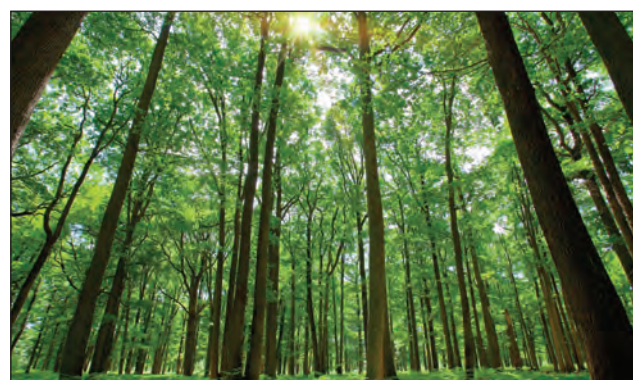
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80	Sh. Gajendra Rajput Wood Technologist Association, 5B, Block F, Professor Colony Yamunanagar-135001, Haryana	9215928163	info@wtaindia.com
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82	Mr. Puran Bartwal Head, Natural Resources Management Director, People's Science Institute, Dehra Doon - 248 001, Uttarakhand	0135 - 3500308, 09, 10, 11	puranb@rediffmail.com
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85	Sh. Mukesh Kumar Wood Technologist Association, Yamunanagar		
86	Sh. Manoj Gwari Wood Technologist Association, Yamunanagar		
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# Presentations of the Workshop

## 1. Presentation on ICFRE's Extension Strategies by Dr. Geeta Joshi, Scientist-G & ADG (Media & Extension), ICFRE, Dehradun



### ICFRE VISION AND MISSION

**Vision:**  
To achieve long-term ecological stability, sustainable development and economic security through conservation and scientific management of forest ecosystems.

**Mission:**  
To generate, advance and disseminate scientific knowledge and technologies for ecological security, improved productivity, livelihood enhancement and sustainable use of forest resources through forestry research and education.

**ICFRE HQ: DEHRADUN**

**Institutes**

1. HFRI, Shimla
2. FRI, Dehradun
3. AFRI, Jodhpur
4. TFRI, Jabalpur
5. IWST, Bengaluru
6. IFB, Hyderabad
7. IFGTB, Coimbatore
8. IFR, Ranchi
9. RFRI, Jorhat

**Forest Research Centers**

1. FRC-ER, Prayagraj
2. FRC-SD, Chhindwara
3. FRC-CE, Visakhapatnam
4. FRC-BR, Aizawl
5. FRC-LE, Agartala

### KEY THRUST AREAS & THEMES....

**Research**

- Managing Forests and Forest Products for Livelihood Support & Economic Growth
  - Silviculture, Social Forestry, Agroforestry/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, 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 fires and grazing, Bio-informatics and Geo-informatics, Policy and legal issues
- Biodiversity Conservation and Ecological Security
  - Forest Botany, Ethnic and Traditional Knowledge System, Forest Soils and Land Reclamation, Wetland and Marine Ecology, Watershed Manage, Environment Management
- Forests and Climate Change
  - Biodiversity Conservation, Climate Change and Forests, Forest Ecology
- Forest Genetic Resource Management and Tree Improvement
  - Conservation of Forest Genetic Resources, Tree Improvement, Vegetative Propagation, Biotechnology

**Education and Extension**

- Forestry Education and Policy Research to meet Emerging Challenges
- Forestry Extension for taking Research to People

### Research output for stakeholders

**Genetics and Tree Improvement**

Clones/ Varieties released (2010 to 2022): 69

Quality Planting Material (Seed/seedlings/TC plants)

**Agroforestry**

**Livelihood Support**

**Non-Timber Forests Products**

### Research output for stakeholders

**Biopesticides and Biofertilizers**

**Wood Products**

**Consultancies**

### JOURNEY OF ICFRE EXTENSION....

- Prior to Formation of ICFRE in 1986, extension of research work through:**
  - Silviculture Conferences/ Forestry Conferences, Quinquennial programmes and Liaison meetings
  - Public Liaison officer for dissemination of research results
- World Bank FREE Project - Extension** was given emphasis
  - Directorate of Extension was established at ICFRE in 1994-95
- Extension Strategies were formulated for the first time in 2000**
  - Reviewed after 2005:
    - The facilities for extension are inadequate
    - Linkages with stakeholders to be strengthened
    - Strengthening of extension wings
    - Linking of VKVs with KVKs
    - Silviculture conferences to be revived
    - Provisions for sufficient funds
- The second Extension Strategies was formulated in 2010**
  - Establishment of VKVs and DVS
  - Initiated networking of VKVs with KVKs
  - Conducting Tree Grower Melas
  - Introduced Direct to Consumer Scheme
  - Interactive portal on extension activities was initiated
  - Stakeholders Meets were organized
  - Silviculture Conferences were reintiated
  - All research activities should have inbuilt extension programme

### ONGOING EXTENSION STRATEGY....

- Third Extension Strategy & Extension Plan (2018-2023) was formulated in 2018**
  - Conventional Extension Activities
  - Centralized Extension Schemes
  - New Initiatives
- In NFRP 2020-2030** - the project format was revised and action plan for extension was included
- Comprehensive Research and Extension Strategy (2022)**

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.



### Extension Activities

- Trainings
- Supply of Quality planting material
- License/Material transfer agreement for commercial propagation/supply/sale of QPM
- Transfer of technology/ Package of practices
- Establishment of demonstration trials
- Patents
- Testing services
- Consultancy
- Advisories to SFDs
- Awareness campaigns
- Workshops/ Seminars/ Conferences
- Repositories
- Publications
- Documentaries
- Development of App
- Social Media Campaigns
- PRAKRITI: Students-scientists connect programme

**Stake holders**

- Forest Departments
- Farmers
- Industries
- Plantation companies
- Tribals
- SHGs
- PSUs/ Corporates
- NGOs
- Universities
- Colleges
- Research Institutes, etc.

### Conventional Extension Activities

**Trainings...**

Year	No. of Trainings
2015-16	99
2016-17	181
2017-18	380
2018-19	342
2019-20	274
2020-21	185
2021-22	289
2022-23	262

**Number of trainees:**

Year	No. of trainees
2015-16	807
2016-17	5380
2017-18	13263
2018-19	10173
2019-20	12853
2020-21	9875
2021-22	13413
2022-23	9142

**Green Skill Development Programme (GSDP)**

44 trainings 826 trainees from 2018-21  
Through FRI-ENVIS and IFGTB-ENVIS

### ECOSYSTEM SERVICES IMPROVEMENT

Ecosystem Services Improvement Project in MP and CG

**Measurement of Forest Carbon Stocks**      **Scaling up of SLEM best practices**

Trained 1032 Forest officers/ officials and 2215 JFMC members      Trained 15000 members of local community

Rainwater Harvesting    Improved Cook Stoves    Lac cultivation    Improved Seeds    System of Rice Intensification

Vermicomposting    Bio-pesticides    Sprinkler Irrigation    Drip Irrigation    Azolla cultivation    WADI system - Agroforestry

**Scaling up SLEM Best Practices: Benefited 25,000 forest dwellers & marginal farmers, in 20,000 ha**

### Conventional Extension Activities

- Awareness Campaigns**
  - Participation in Exhibitions and Melas
  - Observing various days of environmental importance
  - Awareness programmes including field visit for farmers, students, researchers, etc.
  - Radio and TV Talk
  - Print media
- Prakriti : A scientist – student connect programme**

MoUs signed with Kendriya Vidyalaya Sangathan and Navodaya Vidyalaya Samiti

- 2018-19- 35 programmes and 6639 students
- 2019-20 – 421 programmes and 25,000 students
- 2020-21 - 08 programmes and 700 students
- 2021-22- 07 programmes and 1782 students
- 2022-23- 131 programmes and 13500 students

### Conventional Extension Activities

**Seminar/ Symposium/Workshops/ Conference**

International Cooperation for Resilient Landscapes ICFRE & IUFRO    Assessing the availability of tree seed sources for forest & landscape restoration    Chintan Satra    Enhancing Ecosystem Services by Improving Forest Quality & Productivity & SLEM Knowledge

Agroforestry & Farm Forestry for Sustainable Land & Eco-system Management    World Day to Combat Desertification & Drought    Availability, Sustainability, Processing Issues & Marketing linkage of Medicinal Plants    Regional Research Conference

### Conventional Extension Activities

- Museums:**
  - FRI, Dehradun
    - Entomology Museum
    - NWFP Museum
    - Forest Pathology museum
    - Silviculture Museum
    - Timber Museum
  - IFGTB, Coimbatore
    - Gass Museum
- Museum-cum-interpretation center**
  - TFRI
  - IWST
  - IFGTB
  - AFRI
- Insect Repository, TFRI**
- Archarium, TFRI**
- Xylarium , FRI and IWST**
- Fungarium, FRI and TFRI**
- Photo Gallery, FRI**
- Digitization of Herbarium, Insectarium, FRI**

### Centralized Extension Schemes

- Van Vigyan Kendras (VVKs)
- Networking of VVKs with VVKs
- Demonstration villages (DVs)
- Tree Growers Mela (TGM)

### Van Vigyan Kendras (VVKs)

**VVKs Established : 40**

**Trainings organized in ICFRE under VVK...**

Year	No. of Trainings
2015-16	9
2016-17	16
2017-18	26
2018-19	39
2019-20	50
2020-21	34
2021-22	49
2022-23	78

**No. of trainees**

Year	No. of trainees
2015-16	293
2016-17	3263
2017-18	1786
2018-19	3689
2019-20	4646
2020-21	138
2021-22	1710
2022-23	9146

**Target groups:**

- Frontline staff of SFD
- Farmers
- NGOs
- Tribals
- SHGs

**Topics...**

- NWFPs and Medicinal plants
- Agroforestry
- PSIP
- Seed Technology
- QPM
- Integrated pest & disease management
- Biofertilizers
- Composting
- Bamboo propagation, cultivation and utilization
- Wood Preservation

### Networking of VVKs with KVKs of ICAR


- Networking of VVKs with Krishi Vigyan Kendras (KVKs) of ICAR was initiated in consultation with Directorate of Extension of ICAR in 2013.

**Activities undertaken**

- Consultative meetings/ workshops
- Training/ Demonstration of technologies
- Raising of quality seedlings
- Tree Growers Mela/ exhibition
- Demo plots
- Establishment of VVK in collaboration with KVK

**Tree Growers Melas (TGMs)/ Industry Institute Meet (IIM)**

- TGMs started since 2009
- 2009 to 2023 organized 21 TGM



### Demo Villages (DVs)

Initiated establishment of Demo Village in 2007-08 with the objective of dissemination of various technologies

**Number of DVs: 10**

**The activities and technologies :**

- Agroforestry models, Model/ High tech-nurseries, Demonstration/ trainings, Demo plots, transfer of technologies, etc.

**Demo Trials:**

- Melia dubia* at Khunti and Ranchi, Jharkhand
- Mahogany at Ramgarh, Jharkhand
- Neolamarckia Cadamba* at Arepalayam, TN
- Windbreak Clonal Plants at Coimbatore, TN
- Agroforestry model at Attivata, Karnataka
- Guggul at Mohangarh, Jaisalmer, Rajasthan
- Calophyllum inophyllum*, *Gmelina arborea*, Tamarind, Teak (T.C.), *Cadamba*, Precision Silvicultural Technique with Teak and *Casuarina*, Tree Fodder Species, Medicinal Plants at Talamalai, TN



### New extension initiatives

**Technology Demonstration Centres (TDCs): 07**



**Mobile Apps**



**Preparation of Documentaries: 40**



**Modified Direct to Consumer Scheme**

To provide ready to use solution/ products:

- Production of QPM, biofertilizers, biopesticides, establishment of demo trials

**Social Media Campaigns:**



### Publications

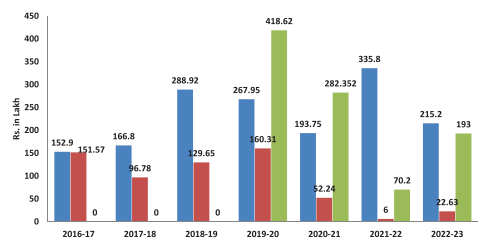
Publications	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Research papers	307	273	395	334	364	358	388	385
Books and Manuals	08	10	17	30	41	23	43	26
Pamphlets and Brochures*	23	110	34	49	79	132	88	56
Popular articles	33	46	45	49	63	76	114	155
Chapters Book/ Proceedings	105	107	117	87	97	63	92	117

\* In English, Hindi and local Language



### Challenges.....

- Inadequate manpower for extension
- Irregular and insufficient fund flow



Year	Budget Proposed	Budget Allotment	CAMPA Allotment
2016-17	152.9	151.57	0
2017-18	166.8	96.78	0
2018-19	288.92	129.65	0
2019-20	267.95	160.31	418.62
2020-21	193.75	52.24	282.352
2021-22	335.8	6	70.2
2022-23	215.2	22.63	193

### Future Plan

- Coordinated approach by integrating state-of-the-art methods to improve the utility and visibility of the research outcomes through extension.
- For more effective dissemination of research results, it is proposed to further improve the extension process by:
  - Strengthening of VVKs**
    - Establishment of a Central VVK at each institute/Centre
    - Posting of staff at each VVK
    - Revolving fund for each VVK for maintaining the core activities of VVK
    - Collaboration with KVKs, universities and other organizations
    - Notifying some KVKs as the extension partners of VVKs and providing them technical, programmatic and financial support.
  - Increase in frequency of TGM/IIM (Industry-Institute Meet)
  - Establishment of Incubation Centres for technologies
  - Preparation of database of beneficiaries for developing long term association for green development
  - Institute-specific extension programmes

### Future Plan

- Strengthening of Extension Directorate at Headquarter and Divisions at Institutes.
- Appointment of Scientist in each Institute and centers for planning and execution of extension activities under VVKs
- Training of personnel posted involved in extension activities
- 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.
- Adequate and regular fund flow for extension activities - some 5-10% percentage of total research grants should be earmarked
- Regular impact assessment of extension activities
- User friendly IT based extension and mobile based advisory



## Thank you !!!



## 2. Presentation on Extension Systems/ Strategies of ICAR by Dr. Bankey Bihari, Principal Scientist (Agricultural Extension), ICAR-Indian Institute of Soil & Water Conservation, Dehradun

### EXTENSION SYSTEMS/ STRATEGIES OF ICAR

by

**Dr. Bankey Bihari**  
Pr. Scientist (Agril. Extension)

ICAR-Indian Institute of Soil and Water Conservation, Dehradun – 248195

### Agril. Technology Transfer/Extension systems in India

1. ICAR/ SAUs – First line Extension system
2. Ministry of Agri.& Farmers Welfare and State Departments of Agriculture/ Horticulture/ Animal Husbandry
3. Ministry of Rural Development and State Rural Development Departments
4. NGOs and Business houses under their CSR schemes

### The First- line Extension System

**ICAR**  
Agricultural Universities

- a. National Demonstration (ND)-1964
  - b. Operational Research Project (ORP)-1974
  - c. Krishi Vigyan Kendra (KVK)-1974
  - d. Lab to Land Project (LLP)-1979
- In 1992 all above programmes were merged to KVK

### MANDATE OF KVKs

1. On-farm testing (OFT) to assess location specificity of agril. technologies
2. Frontline demonstrations to establish production potential of technology on the farmers field
3. Capacity development of extension officials and farmers
4. To work as knowledge and resource centre
5. Provide farm advisory using ICT and other media sources

**Total no. of KVKs in India: 731**  
One KVK in each district (Total-797)

1. State Agril. Universities - 472
2. Central Agril. Universities- 22
3. ICAR Institutes- 66
4. NGOs- 104
5. Public Sector Undertakings- 03
6. State Govts.- 38
7. Central Universities- 03
8. Deemed Universities- 08
9. Other Educational Institutes- 05

**Coordinated by**  
Agricultural Technology Application Centres (ATARI)

1. ATARI, Ludhiana, Panjab
2. ATARI, Jodhpur, Rajasthan
3. ATARI, Kanpur, U.P.
4. ATARI, Patna, Bihar
5. ATARI, Kolkata, West Bengal
6. ATARI, Guwahati, Assam
7. ATARI, Barapani, Meghalaya
8. ATARI, Pune, Maharashtra
9. ATARI, Jabalpur, M.P.
10. ATARI, Hyderabad, Telangana
11. ATARI, Bangalore, Karnataka

### Technology Development /Testing / Refinement and Transfer Process

1. Land to Lab- Problem Identification
2. Lab to Lab -Research and Technology Refinement
3. Lab to Land -Technology Transfer
4. Land to Land -Technology Diffusion/ spread

### Other Capacity Building Institutions

- Trainer's Training Centres (TTCs)
- Extension Education Institutes (EETs)
- National Institute of Agricultural Extension Management (MANAGE)

## An Outline of Agricultural Extension Organization in India



## COMMUNITY PARTICIPATORY EXTENSION

### Programmes with Community Participation

1. Watershed Management Projects: 1991
2. Institute-Village Linkage Programme: 1996
3. National Agriculture Technology Project: 1998
4. National Agriculture Innovation Project: 2004
5. Farmer FIRST Programme: 2016 onwards

### HISTORY OF COMMUNITY PARTICIPATION

#### Firka Development Project : 1946

#### Etawah Pilot Project : 1948

(Albert Mayer)

Village: Mahewa

District: Etawah (Uttar Pradesh)

1. Village Level Worker
2. Involvement of local people in development programmes
3. Most effective extension teaching methods: method & result demonstration

### Committee on Plan Projects: 1957

- Pre- Extension Stage - One year ( Skeleton budget )  
 First Stage - Five years ( Full budget )  
 Second Stage - Five years ( Full budget )  
 Post Second Stage - One year ( Skeleton budget )

It was envisaged that within a span of about 12 years the rural people and their institutions would be so much developed as to be able to take over the substantial, if not the entire responsibility, of future development works.

Govt.'s programme with people's participation  
 Will Change to  
 People's programme with Govt.'s participation

- TOP - DOWN APPROACH
- SUCCESS & SUSTAINABILITY ?

### OTHER MAJOR PROBLEMS

- Participation in terms of what ?
- Problem of attitude
- What should be the mechanism/ procedure ?

### Dr. Hanumanta Rao committee

DDP

DPAP

Despite huge expenditure in natural resource management programmes, results are not visible in the real field situations.



## MAIN FEATURES OF PARTICIPATORY APPROACH

- INSTITUTIONAL ARRANGEMENTS
- RAPPORT BUILDING
- PARTICIPATORY RURAL APPRAISAL (PRA)
- PARTICIPATORY PLANNING
- PARTICIPATORY IMPLEMENTATION
- PARTICIPATORY MONITORING AND EVALUATION
- PARTICIPATORY MAINTENANCE

## RAPPORT BUILDING

### RAPPORT BUILDING

TO EXPLAIN PROGRAMME OBJECTIVES IN DETAIL TO EACH AND VERY HOUSEHOLD

- WHAT IS TO BE DONE ?
- WHY IT IS TO BE DONE ?
- HOW IT IS TO BE DONE ?
- HOW IT WILL BENEFIT TO THE FARMERS ?







## PARTICIPATORY RURAL APPRAISAL (PRA)

## PARTICIPATORY LEARNING AND ACTION (PLA)

## PARTICIPATORY URBAN APPRAISAL (PUA)

### Resource base

- History of Developments
- Social Details
- Resource Availability
- Details of Dev. Agencies
- Livelihood Details
- Market network etc.

### Seasonality

- Temp.
- Rainfall
- Labourers requirement
- Dependency on forest
- Cropping Pattern
- Natural calamities etc.

### Farm activities

- Farmers Preferences for crops, plantations, livestock
- Farmers Preferences for micro-enterprises
- Farmers Preferences for innovations/ITKs

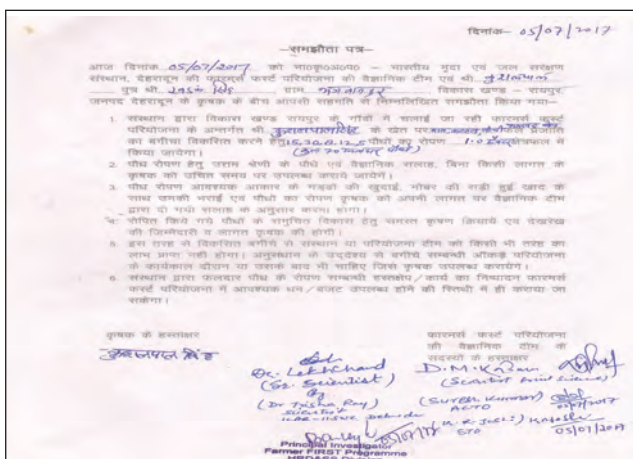
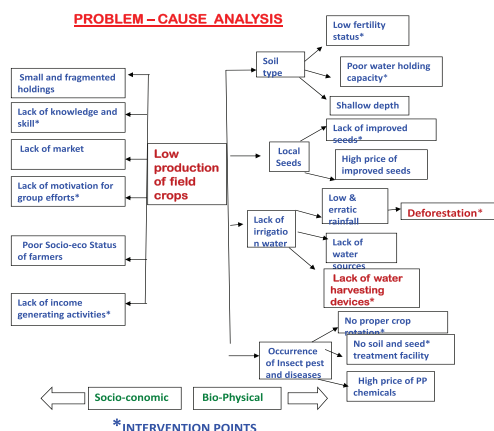
### PROBLEM IDENTIFICATION AND PRIORITIZATION

Max. score for each problem = 10  
Total Max. score = 150

Problems	FARMERS															Total	Rank
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15		
Lack of drinking water	7	6	5	8	9	10	9	8	10	10	8	7	5	7	6	115	III
Lack of Irrigation water	9	7	8	8	9	8	9	7	9	8	9	6	8	9	10	124	II
Lack of fodder availability	6	5	5	6	7	9	8	7	9	8	8	7	9	4	6	97	VII
Lack of fuel wood availability	3	6	4	2	4	3	5	6	5	6	5	3	4	5	6	67	IX
Lack of inputs	7	6	8	5	7	8	7	8	8	7	8	5	6	9	7	106	V
Lack of transport	5	3	6	7	8	9	8	6	7	6	7	8	9	5	5	100	VI
Land slides	4	2	5	4	5	6	5	4	5	6	3	4	5	3	4	65	X
Lack of market	7	8	4	8	7	8	9	7	8	8	4	9	7	5	8	107	IV
Lack of support system	4	6	5	6	8	5	6	4	6	7	6	8	3	5	4	83	VIII
Low production of field crops	8	7	6	9	8	9	10	7	8	10	9	8	10	7	9	125	I

## Technology Inventory (List of Possible Solutions) Followed by PARTICIPATORY PLANNING

### PROBLEM - CAUSE ANALYSIS







**Small spring with very low discharge (0.72 ltrs.) per minute**



**Four poly lined tanks with 120 gsm geo-membrane having a capacity of 1900 ltr., has been constructed. During the lean period about 1000 ltr. water is being collected in 24 hrs.**

**In hills these types of small ponds have been found suitable and sustainable. This system is cost-effective and if needed, can be repaired by farmers on their own.**







### Jack fruit Plantation in Farmers field



Expected return (Rs./ha) from Jack fruit Orchard

Years after plantation	1	2	3	4	5	6	7	8
<b>Income</b>								
Yield kg per plant	Nil	Nil	Nil	Nil	50	100	150	300
Yield kg per ha	Nil	Nil	Nil	Nil	7800	15600	23400	46800
Gross Income (Rs.)	Nil	Nil	Nil	Nil	54600	109200	163800	327600
Net Income (Rs.)	-59380	-13390	-19280	-23445	20430	70190	119950	277070

### Bael Plantation in Farmers field



Expected return (Rs./ha) from Bael Orchard

Years after plantation	1	2	3	4	5	6	7	8
<b>Income</b>								
Yield kg per plant	Nil	Nil	Nil	5	15	30	50	70
Yield kg per ha	Nil	Nil	Nil	1385	2770	8310	13850	19390
Gross Income (Rs.)	Nil	Nil	Nil	20775	41550	124650	207750	290850
Net Income (Rs.)	-57485	-12175	-16050	-100	14585	94990	175540	256740



Fruit Spp	Variety	Spacing	% Survival
Mango	Mallika	8m*8m	90.00
Jackfruit	Gumless	8m*8m	92.78
Kagzi lime	Seedling	5m*5m	95.65
Litchi	Rose Scented	8m*8m	93.33
Bael	NB-5	6m*6m	85.48

### Lemon Plantation in Farmers field

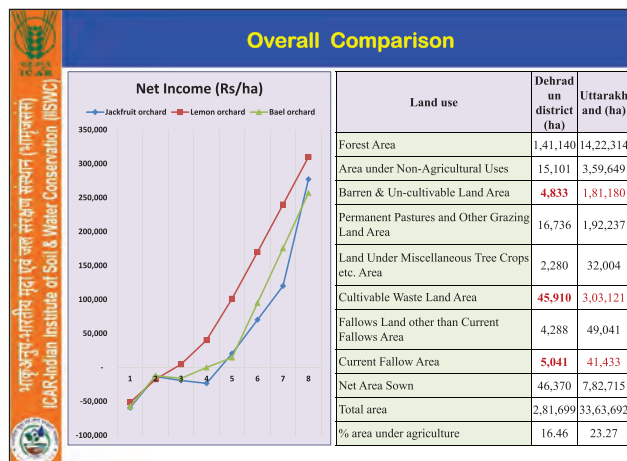


Expected return (Rs./ha) from Lemon Orchard

Years after plantation	1	2	3	4	5	6	7	8
<b>Income</b>								
Yield kg per plant	Nil	Nil	2	5	10	15	20	25
Yield kg per ha	Nil	Nil	800	2000	4000	6000	8000	10000
Gross Income (Rs.)	Nil	Nil	28000	70000	140000	210000	280000	350000
Net Income (Rs.)	-51600	-17400	4600	40250	101150	169850	239850	309850







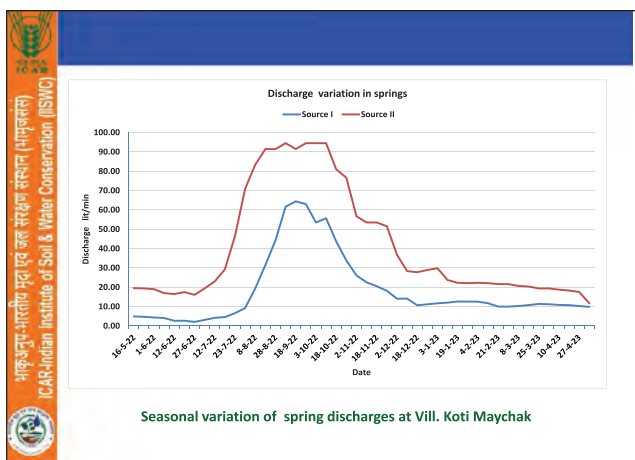
### SPRING REJUVINATION IN COMMUNITY FOREST AREA

No. of Villages affected: **Two**  
No. of farm families Affected: **68** (population about 340)  
Critical months: **May-June**

**साम पंचायत कोटी मय चक**  
विकास क्षेत्र-समथल, जिला-देहरादून (उत्तराखण्ड)

समथल, जिला-देहरादून, उत्तराखण्ड  
समथल, जिला-देहरादून, उत्तराखण्ड  
समथल, जिला-देहरादून, उत्तराखण्ड

समथल, जिला-देहरादून, उत्तराखण्ड  
समथल, जिला-देहरादून, उत्तराखण्ड  
समथल, जिला-देहरादून, उत्तराखण्ड



### Measurement of spring discharge during winter and summer season

Area covered: **1.5 acre**  
Size of trench: **6 \* 2 \* 1.5 ft.**  
Total no. of trenches : **76**

Two spring sources in the project area are being monitored for the temporal variation of Discharges in pre and post monsoon period. The catchment of the springs has been treated with contour staggered trenches during the current year, its impact is being monitored for post monsoon flows and temporal variation.

## Mechanisms for community participatory water resources development, its success and sustainability



A samiti from among the possible beneficiaries was formed and an MOU was signed.

### MOU

- Expenditure towards all kind of labour charges, cost of sand & stones and any other locally available materials, farmers will manage either in terms of labour or cash. Samiti will be responsible to ensure all kind of participation from farmers side.
- Expenditure towards purchase of materials from market/outside (bricks/cement etc.) and hiring of skilled labourers will be done by the Institute.
- Samiti will keep watch on execution of works and will also ensure quality of works and will provide solutions to the conflicts if any among farmers group immediately by taking them in to confidence.

Parameters	Details
Year	1997-1998
<b>Financial details</b>	
Total cost	Rs.1,97,927.00
Service Provider's contribution	Rs.1,29,212.00 ( 65.0%)
Farmers' Contribution (Labour & Material)	Rs. 68,715.00 ( 35.0%)
<b>System Specifications</b>	
Size of the Tank	21m x 8m x2m
Capacity of the Tank	336 cu. m
Structure Model	Dugout pond for surface and sub-surface water harvesting
Command area	16 ha
Beneficiaries	50 Farm families ( Kalimati-33, Badasi-17)

### Success and Sustainability Mechanism

- Purchase of materials and hiring of skilled labourers was done with consent of the samiti members & beneficiaries.
- Details of expenditure was kept open to all the beneficiaries and the farmers.
- Quality of works was ensured upto the satisfaction of the beneficiaries.
- Regular visits of multidisciplinary technical team helped to clear the doubts (technological, social, financial) in mind of the beneficiaries.
- Mechanism for judicious distribution of water was developed.

- One *suitable* operator was selected for water distribution from among the beneficiaries.
- Charges per hour for irrigation water was decided in the *open meeting*.
- It was decided that water will be made available on *first come first serve* basis.
- Cost of repair and maintenance, if any, will be taken from water charges deposited in the samiti account.

(by doing so you can minimize or nullify the scope of conflicts)

Parameters	Pre-Project	Post- Project
Area under Paddy-direct sowing(ha.)	11.0	1.5
Production(q/ha.)	9.0	24.0
Area under paddy-transplanted(ha.)	0.5	12.0
Production(q/ha.)	15.0	39.0
Area under maize(ha.)	9.0	2.0
Production(q/ha.)	8.5	36.0
Area under wheat(ha.)	4.5	12.5
Production(q/ha.)	11.5	33.0
Area under fodder crops(ha.)	-	1.5
Area under vegetables and flowers(ha.)	-	2.0
Vermicompost units(Nos.)	-	10
Mushroom units(Nos.)	-	12
Polyhouse units(Nos.)	-	6

### MOTIVATING/ CONVINCING FACTORS FOR FARMERS, FROM THE WHOLE PROCESS

Factors	Rank
1. Benefits from the project	IV
2. Maintenance mechanism	V
3. Open details of expenditure	I
4. Quality of works	II
5. Behavior of the project team	VI
6. Participatory approach	VIII
7. Judicious distribution of benefits	III
8. Efforts of the samiti	VII



Power of transparency is so strong  
that after this episode we did not  
go behind the farmers

**In contrary**

Farmers started running behind us

*and examples are here-----*



Parameters	Details
<b>Year</b>	<b>2000-2001</b>
<b>Financial details</b>	
<b>Total cost</b>	<b>Rs.2,81,000.00</b>
<b>Service Provider's contribution</b>	<b>Rs.2,20,396.00 ( 78.4%)</b>
<b>Farmers' Contribution (Labour &amp; Material)</b>	<b>Rs. 60,625.00 ( 21.6%)</b>
<b>System Specifications</b>	
<b>Head</b>	<b>34.29 m</b>
<b>Length of pipeline</b>	<b>1764 m</b>
<b>Size of pipe</b>	<b>PVC-110mm and GI-100mm</b>
<b>Discharge of risers</b>	<b>14.3 lit./sec.</b>
<b>Command area</b>	<b>25 ha</b>
<b>Beneficiaries</b>	<b>125 Farm families</b>

Parameters	Details
<b>Year</b>	<b>2002-2003</b>
<b>Financial details</b>	
<b>Total cost</b>	<b>Rs.10,00,000.00</b>
<b>MLA Fund</b>	<b>Rs.2,00,000.00 ( 20.0%)</b>
<b>Doon vally Directorate of W/S mgt.</b>	<b>Rs. 6,00,000.00 ( 60.0%)</b>
<b>Farmers' Contribution (Labour &amp; Material)</b>	<b>Rs. 2,00,000.00 ( 20.0%)</b>
<b>System Specifications</b>	
<b>Tank capacity</b>	<b>50,000lit.</b>
<b>Head</b>	<b>41.0 m</b>
<b>Length of pipeline</b>	<b>2268 m</b>
<b>Discharge of risers</b>	<b>10.0 lit./sec.</b>
<b>Command area</b>	<b>25 ha</b>
<b>Beneficiaries</b>	<b>44 Farm families</b>







Parameters	Details
<b>Year</b>	<b>2003-2004</b>
<b>Financial details</b>	
<b>Total cost</b>	<b>Rs.9,15,000.00</b>
<b>M.P. Fund</b>	<b>Rs.6,70,000.00 ( 73.2%)</b>
<b>Farmers' Contribution (Labour &amp; Material)</b>	<b>Rs. 2,45,000.00 ( 26.78%)</b>
<b>System Specifications</b>	
<b>Tank capacity</b>	<b>50,000 lit.</b>
<b>Head</b>	<b>45 m</b>
<b>Length of pipeline</b>	<b>2934 m</b>
<b>Discharge of risers</b>	<b>12.0 lit./sec.</b>
<b>Command area</b>	<b>25 ha</b>
<b>Beneficiaries</b>	<b>44 Farm families</b>







#### Technology Adoption and Adopter categories

1. Innovators-	2.5 %	9.5 %
2. Early adopters-	13.5%	32.0 %
3. Early majority –	34.0%	41.0%
4. Late majority –	34.0%	12.0%
5. Laggards-	16.0%	5.5%

- *Top Down Approach*
- *Community Participatory Approach*



### Production Oriented Approach To Income/Market Oriented Approach

#### Initiatives

1. Self Help Groups (SHGs)
2. Farmer Interest Groups (FIGs)
3. Farmer Producer Organizations (FPOs)

#### Supported by

1. Agri-Infrastructure fund
2. Skill Training of Rural Youth & Farmer's Capacity Assessment and Certification
3. Agri-Clinics and Agri -Business Centres
4. Diploma in Agricultural Extension Services for Input Dealers
5. Extension Reforms (SAMETI/ATMA/BTT/FACs)
6. National Rural Livelihood Mission
7. e-NAM





### 3. Presentation on Expanding Forestry Beyond Forests by Sh. Jagdish Chander, Principal Chief Conservator of Forests & Head of Forest Force, Haryana



#### Catch-22 Situation

1. Extension Forestry
2. Forestry Extension
3. Extinction Forestry

#### The outlines...

1. Introduction
2. Why extension forestry ?
3. What an extension specialist should know ?
4. Extension forestry in Haryana
5. Role of premier ICFRE.

#### Before we plan to extend forests Cont...

- ❖ We need to keep in mind the international & national requirements.
- ❖ If we are able to afford nature forest outside legal forest, we need to take care of biodiversity conservation, habitat requirement and improvement of wildlife from invisible microorganism to the biggest mammal including pollinators.
- ❖ Long living species serving as "Permanent Green Lungs" for "Ecological Security".
- ❖ Conservation and sustainable use of water. 60% water comes from forests.

#### Before we plan extension forestry for domestic issues

- ❖ We need to consider:
- ❖ Income, especially in the case of agroforestry/farm forestry and panchayat land plantations.
- ❖ Timber, fuelwood & fodder requirement.
- ❖ Plan raising of species for specific requirements like Triveni, Panchvati, Nakshatra Van & Rashhi Van etc.
- ❖ Plan raising of species for specific site requirements like Temples, Churches, Gurudwaras and Masjids etc.
- ❖ Health, mood changing and recreational forests like Chitvan, Rishi Van, Antriksh Van, Neer Van, Sugandh Van and Smriti Van etc.

#### Forests: Global Scenario

- About a century ago, forests occupied 70% of global land.
- Cover about 1/3rd of global land area.
- 30 crore people live in forests.
- 1.6 billion people depend on forests for their livelihood.
- Home to 80 percent territorial biodiversity.
- Home to 70 % agriculture biodiversity.
- Provide habitat for variety of plants and animals
- Green lungs of mother earth.

#### Vanishing Forests

- Area equal to football ground is lost every minute.
- 750 Square Km. being lost every day.
- Area equal to Britain is lost every year.
- 23 hectares land is becoming desert every minute.
- 20,000 hectares are disturbed due to human activities every day.
- 120 lakh hectare land is becoming desert every year every year due to man made reasons.
- 30% forests have fragmented habitats.
- 200 to 2000 species being lost every year.
- 1000 to 10,000 times higher than the natural extinction every year.

#### २१ वीं सदी में वनों की चुनौतियाँ

- 270 million tonnes of fuelwood, 5 times more than sustainability.
- Fuel-wood meets about 40% of the energy needs of the country.
- 60% of Indian population, around 80% of rural people & 48% of urban people use fuel-wood.
- 2800 million tonnes of fodder
- 3,000 metric tonnes paper annually from more than 400 mills.
- Wood-based processing industries like furniture consume about 30 million cubic metres of wood.



## बोझ तले वन

- 75 mh.
- One in 60 trees in India.
- 4% of world's land mass.
- 2 percent of global forests.
- Harbour 17% world's human population
- Every 6<sup>th</sup> person lives in India.
- Harbour 17% world's cattle population
- 70% population population still uses fuelwood to cook food.
- 4% of world's geographical area.
- One percent of world's pasture lands
- Only 4 % water resources

## So, what we need to do before planning Extension Forestry ?

- ❖ Identification and knowledge of local flora and fauna
- ❖ Develop propagation techniques for local floral species.
- ❖ Plan near natural forests where money in not a criterion.
- ❖ Plan for ground flora, grasses, moss, ferns, shrubs, climbers, middle canopy etc.
- ❖ Knowledge about plant phenology, physiology & reproductively, seed germination and seed viability etc.

## So, what we need to do before planning Extension Forestry

- ❖ Forestry Extension for SFD
- ❖ Forestry Extension for Industries
- ❖ Forestry Extension for tree growers
- ❖ Forestry Extension for students, NGOs
- ❖ Knowledge about insect pests and diseases and their control.
- ❖ Knowledge about high productive clone and varieties.
- ❖ Knowledge about local culture & traditions

## Forestry Extension in Haryana

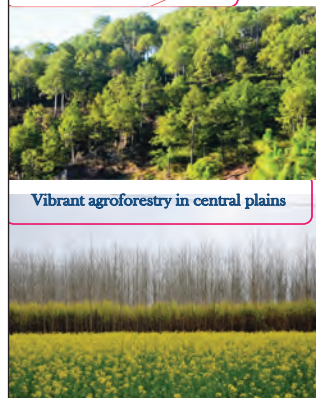
### Forest Scenario in Haryana



- Geographical Area 44,21,200 ha (< 1.4% area of country)
- Forest Area 178467 ha (3.8%)
- Forest & Tree Cover 3,00,300 ha (6.83%)
- PA: 30662 Ha

- April, 2023
- ❖ 19888 ha added (In Aravallis)
- ❖ % Forest area: Nearly 4.0%
- ❖ Tree cover : 3.8%
- ❖ Forest & Tree cover: 7.8 %

### Shiwalik



Vibrant agroforestry in central plains

### Aravallis



Semi arid western region

### Half of our forests are along rail, roads and canals



### Eucalyptus and Poplar have revolutionized agroforestry



आवश्यकता आविष्कार की जननी है

## Here we go for Extension Forestry

- Farmer's fields
- Panchayat lands
- Salt affected soils-  
are our thrust areas

## Here we go for Extension Forestry

- Roadsides
- Canal Sides
- Railway Lines
- Municipal Parks/Urban Areas
- School, Colleges & Universities
- Govt. offices and Institutional lands
- Hospital Compounds
- Historical Buildings
- Industrial Areas
- Grain Markets
- Sub Urban Area

## How we do this ?

We supply plants  
free of cost.  
This year we will  
supply 80 lakh  
plants

## Forestry Extension in Haryana: Target Areas

- Jal Shakti Abhiyan: 30 lakhs to be provided free of costs.
- Paudhgiri for school children: 20 Lakhs during 2023-24.

## Hariyanka Bani Punarwas

- Refers to "Rejuvenation of Village Forests"
- Planting to habitat specific species like *Ficus benghalensis*, *Ficus religiosa*, *Ficus virens*, *Azadirachta indica*, *Acacia nilotica*, *Azadirachta indica*, *Salvadora oleoides*, *Crateva religiosa*, *Grewia tenax*, *Cordia myxa*, *Syzygium cumini* etc.
- Rejuvenation of water bodies
- Habitat for birds and animals
- Plantation by villagers

## Extension Forestry in Haryana: Target Areas

### Amrit Van

- Planting of species associated with our mythology & culture
- Species like *Ficus krishnae*, *Crateva nervosa*, *Aegle marmelos*, *Saraca asoca*, *Ficus religiosa*, *Azadirachta indica*, *Mitragyna parvifolia*

## Extension Forestry in Haryana: Target Areas

### Amrit Sarovar

- More than 18000 johads (village ponds)
- Planting of shady species on Johads (Water ponds)
- Species like *Ficus benghalensis*, *Neem*, *Ficus religiosa*, *Azadirachta indica*
- Old women & men (respected citizens ) of the village are involved in plantation

## छाँव भी हरियाली भी



जोहड़ों के किनारे  
अमृत वन



## Shiv Dham

- Planting of cultural species like Neem, Peepal and Barh on cremation ground
- Species like *Ficus benghalensis*, *Ficus religiosa*, *Azadirachta indica*, *Bael* to be planted during current year.

## Water broke barriers between people and forest department



Denuded Sukho Majri Dam catchment in 1981

Lush Green Sukho Majri Dam catchment in 2022



पानी ने जोड़ा

## Jauli village Raipur Rani

रूखी-सूखी भूमि में लहलहाई खेती



जल ही जीवन है

60% पानी हरे-भरे जंगलों की देन है मेरे भाई

Over 250 eco-friendly water harvesting dams constructed

We are learning to raise species of ecological and economic importance.

## Mitragyna parvifolia (Krishan Kadam)



## Broken Bone Tree (*Oroxylum indicum*)





They count humans- we counted trees as well

### Tree Census Exercise-22-23

- A huge exercise really
- We counted each and every tree outside the in Haryana in 20-23
- Each and every has been geotagged and photographed.
- Species name and girth recorded.
- Village and town wise acreage is now known to us.
- Will help in better village wise planning.

Who saw peafowl dancing in jungle ?



### लोगों से तार जोड़ने के गुर ...

- ❖ जैसा देश वैसा भेष
- ❖ Try to mix with people
- ❖ Appoint a link worker
- ❖ पहले उनकी सुनो फिर अपनी सुनाओ
- ❖ Don't ignore women as they constitute 50% of our population
- ❖ Evening time is the best for talking to people.

### Forestry Extension in Haryana

- Forest Publicity & Extension Division working since 1980.
- Film shows, Quickies, workshops for farmers, teachers, students in pre electronic era.
- Publication of Hariyali & Forest News
- Quiz & Painting competitions for students.
- Nature visits

### Forestry Extension in Haryana

- Quiz for farmers.
- Tours for farmers
- Workshop for Tree Growers
- Dialogues between farmers and industries
- Nature visits for students
- **Made 150 Km long Nature Trail from Kalesar to Kalka**

### Forestry Extension in Haryana

- Articles in newspapers and magazines.
- Regular talks on Radio & TV
- Celebration/observance of forestry & Environment related days, weeks and fortnight
- Involvement of women in decision making process. Somwati, Kamlesh- National speakers.
- Within women participation, involvement of all sections of society.
- Involvement of all sections of society

### Teaching them environment





## They are 50% of us



## They will plant a tree for their future



By educating girl child, you can educate 3 generations

## They are 50% of us-Involve them



## They are planting a sapling for humanity



## आम भी खास भी

**आम से लेकर खास सभी लोगों ने रोपे पौधे, प्रकृति में किया बड़ा निवेश**  
रोडवर - 1 स्थित देवीताल पार्क में अतिथियों ने पौधे रोपकर किया शुभारंभ, जिला परिषद वेयरहसैन ने विकास भवन परिसर में भी किया पौधारोपण

**प्रकृति में निवेश**  
जिला परिषद वेयरहसैन, जिला मुख्यालय, जिला मुख्यालय परिसर में रोपे पौधे, प्रकृति में किया बड़ा निवेश। जिला परिषद वेयरहसैन, जिला मुख्यालय परिसर में रोपे पौधे, प्रकृति में किया बड़ा निवेश। जिला परिषद वेयरहसैन, जिला मुख्यालय परिसर में रोपे पौधे, प्रकृति में किया बड़ा निवेश।

**आम से लेकर खास सभी लोगों ने रोपे पौधे, प्रकृति में किया बड़ा निवेश**  
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## It has to be people's programme

**मानसून में विद्यार्थी करेंगे 'पौधगीरी'**  
वन और शिक्षा विभाग मिलकर लगाएंगे 45 हजार पौधे, देखभाल की भी सौंपी जाएगी जिम्मेदारी

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**हरियाणा**  
दैनिक ट्रिब्यून, चंडीगढ़, बुधवार, 5 जुलाई, 2023

**ग्रामीण परियोजना को बचाने की मुहिम, दिखेगी प्राचीन संस्कृति की झलक**  
अमृत वन से छायेगी हरियाली, तालाबों पर लौटेगी रौनक

**एक जिला एक अमृत वन की योजना**  
हरियाणा सरकार ने एक जिला एक अमृत वन की योजना शुरू की है। इस योजना के तहत हर जिला में एक अमृत वन का विकास किया जाएगा। इस योजना के तहत हर जिला में एक अमृत वन का विकास किया जाएगा।

**my city**  
अमर उज्जा

**मानसून में विद्यार्थी करेंगे 'पौधगीरी'**  
वन और शिक्षा विभाग मिलकर लगाएंगे 45 हजार पौधे, देखभाल की भी सौंपी जाएगी जिम्मेदारी

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### They know the importance of planting trees



### The joy of gifting a plant



### Towards permanent friendship with nature



### Nature Education in the Nursery



### Challenges of Extension Forestry

- Availability of land is a limiting factor.
- Extension Forestry is mainly for money.
- Environment is not a consideration for the most of the stakeholders.
- Industries plant under compulsion.
- **Forestry crops are unable to compete with orchard crops for economic returns.**
- Limited choice of species, clones and varieties.

### Suggestions for successful Extension Forestry

- Make it a people's programme.
- Involve all sections of the society.
- Involve print and electronic media to carry your voice.
- Plant species associated with our traditions and culture.
- **Prefer a multipurpose species**
- Develop propagation techniques for species of ecological and economic importance.
- WE all have to be technically sound.

### Role of Premier ICFRE

- ❖ Upgrading the knowledge skill of forest department.
- ❖ No sociology department
- ❖ Extension specialist
- ❖ Arrange workshop for forest officers & officials once in six months.
- ❖ The training modules should be without cost.
- ❖ Superior genetic material should be provided without cost.

### Role of Premier ICFRE

- ❖ A series of trainings for frontline staff.
- ❖ No costs for the transfer of technology.
- ❖ Incentive to those posted in Extension Division of ICFRE.
- ❖ If not special, the posting on Extension Division is to be treated at par with research out.
- ❖ Amendment in rules.



#### 4. Presentation on Forestry Extension System in Madhya Pradesh by Sh. Ankit Pandey, DCF, Madhya Pradesh Forest Department



Brainstorming Workshop

On

Strengthening of Forestry Extension System in India

Presentation on

Forestry Extension System in Madhya Pradesh

14.07.2023

by

Ankit Pandey, IFS DCF

Madhya Pradesh Forest Department

#### Introduction

Forest extension play an important role in;

- Maintaining the integrity of natural forests outside naturally occurring high forest systems
- Meeting local demands
- environment improvement
- Mitigating the effects of climate change

Social forestry wing under MPFD was constituted to fulfill the above mentioned goals and objectives.

#### Initiation

Social forestry started in 1981-82 through a 6-year USAID sponsored project- 48000 ha plantation.

Between 1987-88 and 1995-96 projects related to Farm forestry, Social forestry,

Gram Nikunj, establishment of Demonstration fields were implemented- plantation & maintenance-16000 ha

1996-97 – plantations carried out on community lands were handed over to PRI institutions.

#### Research and Extension Circles

1995- Advent of Madhya Pradesh Forestry Project- Social Forestry circles were renamed- constituted in each of the 11 agro-climatic zones of M.P. viz. Betul, Bhopal, Gwalior, Indore, Jabalpur, Gwalior, Indore, Jabalpur, Jhabua, Khandwa, Ratlam, Rewa, Sagour, and Seoni.

Objectives were:

- ✓ Improvement of the productivity of forests in M.P.
- ✓ Promotion of afforestation on community and private lands outside forest areas enhance the availability of forest produce for dependent communities.
- ✓ Under the aegis of MP Forestry Project- infrastructure strengthening works were carried out and technical trainings were organized for the staff of R&E circles.

Social Forestry Rezig.

- ✓ Social Forestry name being more popular and known far-wide- requirement of re-naming was evident.
- ✓ Research and Extension circles were renamed as Social Forestry circles vide govt. notification 25-65-2003-das-3 dated 24.08.2020.
- ✓ Research, Extension & Social Forestry wing has been organized within the MP SFD and the 11 Social Forestry Circles were brought within its ambit.
- ✓ Research, Extension & Social Forestry wing is headed by PCCF (RE&SF) assisted by APCCF (RE&SF) and DCF (RE&SF)
- ✓ Each Social Forestry circle is headed by CCF (RE&SF) and assisted by two DCF (RE&SF).

#### R&E Circles and location of Nurseries



Social Forestry circles and 171 nurseries are functional in the state.

#### Social Forestry Circles- Organization

S. No.	Circles	Constituent Districts
1	Betul	Betul, Narmadapuram, Harda
2	Bhopal	Bhopal, Raisen, Rajgarh, Sehore
3	Gwalior	Gwalior, Bhind, Shivpuri, Datia, Morena, Guna, Ashoknagar, Sheopur
4	Indore	Indore, Dewas
5	Jabalpur	Jabalpur, Mandla, Katni, Dindori
6	Jhabua	Jhabua, Dhar, Alirajpur
7	Khandwa	Khandwa, Khargone, Burhanpur, Badwani
8	Ratlam	Ratlam, Mandsaur, Neemach, Ujjain, Shajapur, Agar
9	Rewa	Rewa, Shahdol, Satna, Umaria, Anuppur, Sidhi
10	Sagour	Sagour, Damoh, Chattarpur, Tikamgarh Panna
11	Seoni	Seoni, Chhindwara, Narsinghpur, Balaghat

#### Objectives of the RE&S Wing

Objectives are:

- ✓ Raising of saplings and their sale/disposal
- ✓ Forestry extension, training and promotion outside forest areas
- ✓ Forestry research

#### Social Forestry Schemes

Schemes are:

- ✓ Raising saplings in nurseries (6397)
- ✓ Forestry Extension/Environmental Forestry (2536)
- ✓ Forestry Research (5108)
- ✓ Lokvaniki Scheme

## Social Forestry Schemes

Schemes are:

- ✓ Raising saplings in nurseries (6397)
- ✓ Forestry Extension/Environmental Forestry (2536)
- ✓ Forestry Research (5108)
- ✓ Lokvaniki Scheme

## Raising of Saplings in Nurseries Scheme (6397)

- ✓ Raising of high quality planting stock for departmental plantation and for plantation outside forest areas as per requirements.
- ✓ Quality seedlings of Forestry/RET/Medicinal plant species along with Fruit-bearing/Decorative/Grafted species in limited quantities are prepared.
- ✓ 171 nurseries are operational within the ambit of Social Forestry circles. Each nursery is equipped with Shade house, mist chamber, Poly-house, Compost shed, Clonal Multiplication Area, Improved arrangements for irrigation etc. As per requirement infrastructure development and restructuring in nurseries and new nursery establishments are carried out.

## Raising of Saplings in Nurseries Scheme (6397)

- ✓ Establishment and management of Seed Production Areas.
- ✓ Skill up-gradation training of staff and forestry promotional activities are undertaken.
- ✓ Sale of saplings for plantation outside forest areas.
- ✓ Scheme implemented through 11 Social Forestry Circles.

सोशल फॉरेस्ट्री सर्कल के वार्षिक कार्यक्रम											
क्र.सं.	कार्यक्रम	जनवरी	फरवरी	मार्च	अप्रैल	मई	जून	जुलाई	अगस्त	सितम्बर	अक्टूबर
1	नर्सरी कार्य										
2	पौधे, फल, वन आदि										
3	नर्सरी के कार्य										
4	वन आगरोन कार्य										
5	नर्सरी कार्य										
6	नर्सरी कार्य - अग्र										
7	वन आगरोन कार्य/ नर्सरी										
8	नर्सरी कार्य - अग्र										
9	नर्सरी कार्य										
10	नर्सरी कार्य - अग्र										
11	नर्सरी कार्य										
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29	नर्सरी कार्य										
30	नर्सरी कार्य										

## Extension Forestry Scheme (2536)

- ✓ Scheme to promote tree plantation outside forest areas.
- ✓ Sanskritik van/vatikas; plantation along road-side and on canal banks, plantation in schools, academic institutions particularly in urban areas are taken in the project.
- ✓ Van- mahotsav, seminars, symposiums are organized to promote public awareness.
- ✓ Scheme implemented through Territorial Forest Divisions.

## Projects and Research Scheme (5108)

- ✓ Research Projects are selected by a committee under the chairperson-ship of PCCF & HoFF.
- ✓ Selected projects are carried out through State Forest Research Institute (SFRI) and Tropical Forest Research Institute (TFRI)
- ✓ Minor projects can also be carried out independently by Social Forestry Circles.
- ✓ A tissue culture lab has been established under the aegis of Social Forestry Circle Indore.

## Lokvaniki Scheme

- ✓ Farmers can reap benefits by planting economically important species in their fields under this scheme. Launched by MPFD since 01.05.2003.
- ✓ For implementation Madhya Pradesh Lokvaniki adhiniyam, 2001 and Madhya Pradesh Lokvaniki niyam, 2002 have been passed by the Madhya Pradesh Vidhan Sabha.
- ✓ Aim is to promote scientific management of private revenue lands with tree cover; promotion of farm forestry and to make it profitable.
- ✓ Under the scheme the farmers are helped to realize the true value of their forest produce.

Social Forestry Nurseries



Amravati Nursery, Raisen, Bhopal Social Forestry Circle



Jayanti Kunj Nursery, Rewa Social Forestry Circle





### Social Forestry Nurseries



### Improved Irrigation Systems



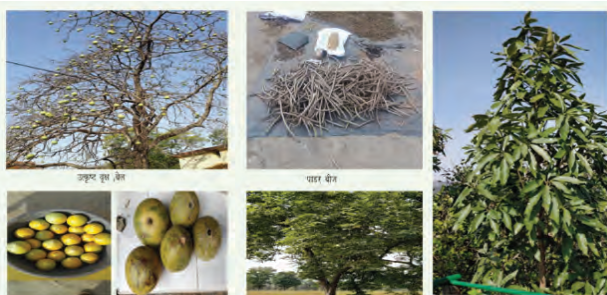
### Bio-fertilizers- Quality Improvements Azotobacter, Trichoderma, Pseudomonas and PSB culture



### High Quality Planting Stock of Bamboo and Teak raised through tissue culture Method in Nurseries



### Collection of High Quality Seeds



### Trainings on Forestry Extension: Anubhuti



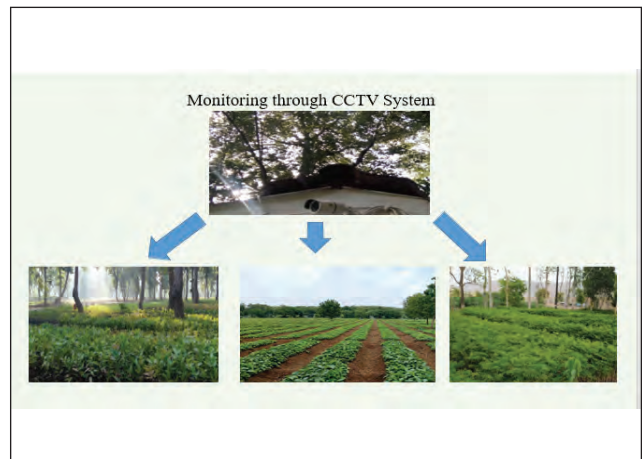
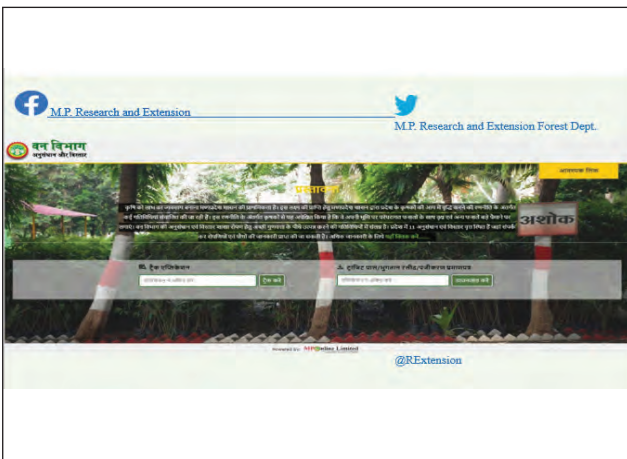
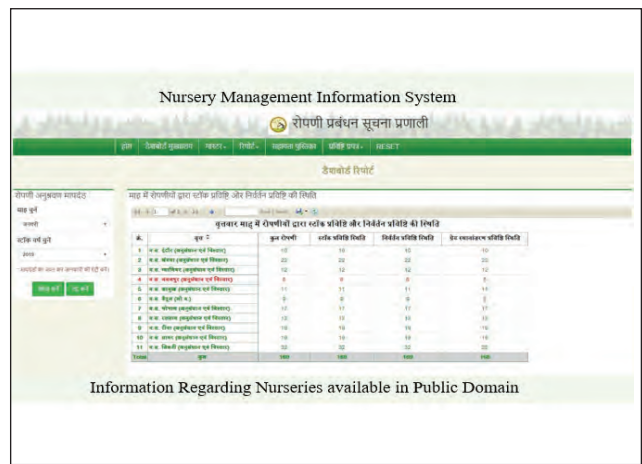
### Extension Activities



### Extension Activities









## 5. Presentation on Formation of Working Groups and Expectation from the Group Exercises and Discussion by Dr. R. S. Rawat, Project Manager, Ecosystem Services Improvement Project, ICFRE

### Brainstorming Workshop: Strengthening of Forestry Extension System in India

#### Formation of Working Groups and Expectation from the Group Exercises and Discussion



Dr. R. S. Rawat  
Project Manager, Ecosystem Services Improvement Project  
ICFRE, Dehradun

#### Ecosystem Service Improvement Project (ESIP)

- ESIP is implemented with an overall objective of improving forest quality, sustainable land management and NTFPs benefits for forest dependent communities.
- ESIP supported the goals of GIM by demonstrating models for adaptation-based mitigation through SLEM and livelihood benefits.
- Strengthening of the VVKs was one of the activities under ESIP. Accordingly, study was conducted to evaluate working and effectiveness of VVKs in fulfilling the objectives of forestry extension services to enable technologies from lab to land.



- National workshop on Agroforestry and Farm forestry for SLEM was organised under ESIP and one of recommendations was to strengthen the forestry extension system of the country.

- This brainstorming workshop is planned in such a way to share the experiences, and to get the views and ideas of the delegates/ experts for developing suitable strategies and action plan for strengthening forestry extension system in India.



#### Formation of Working Groups

Four Working Groups targeting the stakeholders' specific forestry extension need are formed for group discussion and group exercises:

- Working Group 1:** Forestry extension for State Forest Departments
- Working Group 2:** Forestry extension for farmers and tree growers, and deliberation on scope of extension w.r.t. Seed Rules etc.
- Working Group 3:** Forestry extension for forest-based enterprises, wood-based industries and mining companies, and deliberation on development of synergies with Van Dhan Yojana
- Working Group 4:** Forestry extension/ knowledge sharing for academic & training institutions, key ministries/ departments, S&T organisations, and deliberation on capacity constraints faced by ICFRE nurseries

Each Working Group is consist of about 20 participants representing the different stakeholders.

#### Working Group 1: Forestry Extension for SFDs

- Sh. R.K. Dogra, DDG (Administration), ICFRE
- Sh. Pankaj Agarwal, Deputy Director General of Forests, MoEFCC-IRO
- Sh. P. P. Singh, APCCF (Publicity & Extension), Uttar Pradesh SFD, Lucknow
- Dr. Nitin Kulkarni, Director, ICFRE-TFRI, Jabalpur
- Sh. Monish Mullik, PCCF (Retd.), Uttarakhand SFD
- Sh. Naresh Kumar, CCF Garhwal, Uttarakhand SFD
- Dr. P.S. Rawat, ADG (RP), ICFRE
- Dr. V. K. Varshney, Scientist - G, ICFRE-FRI
- Dr. Santan Barthwal, Scientist - G, ICFRE-FRI
- Dr. Arun Pratap Singh, Scientist - F, ICFRE-FRI
- Dr. V. P. Panwar, Scientist-F, ICFRE-FRI
- Sh. Alok Kumar Tiwari, DCF, Chhattisgarh SFD
- Dr. R.S. Rawat, Scientist - E, ICFRE
- Sh. Sushant Kumar, ADG (Administration), ICFRE
- Sh. Ankit Pandey, DCF, Madhya Pradesh SFD
- Mrs. Anjana Suchita Tirkey, DCF, IFB, Ranchi
- Sh. Jatender Singh, Scientist D, ICFRE
- Dr. Gaurav Mishra, Scientist D, ICFRE
- Sh. N.P.S. Nain, Consultant, ESIP-ICFRE

VENUE: ICFRE BOARD ROOM

Facilitator: Sh. Mahaling, Head,  
Extension Division, ICFRE-FRI

Rapporteur: Dr. Md Shahid,  
Consultant ESIP, ICFRE

#### Working Group 2: Forestry extension for farmers and tree growers, and deliberation on scope of extension w.r.t. amendments in seed rules etc.

- Sh. M. R. Baloch, Director, ICFRE-AFRI, Jodhpur
- Dr. C. Kumhannan, Director, ICFRE-IFGTB, Coimbatore
- Dr. Ratnakar Jauhari, DDG (Research), ICFRE
- Ms. Richa Misra, Head, Silviculture Div., ICFRE- FRI
- Dr. Dinesh Kumar, Scientist-G, ICFRE-FRI
- Dr. Manisha Thapliyal, Scientist-G, FRI
- Dr. Sanjay, Professor Agronomy, KVK, Dhakrani
- Dr. Bankey Bihari, Principal Scientist Ag. Extn., ICAR-IISWC, Dehradun
- Dr. S.S. Paliyal, Principal Scientist & Head, KVK, Dhaulakuan
- Sh. Sudhir Kumar, Scientist-C, ICFRE
- Sh. A. K. Sinha, In-Charge, IT Division
- Sh. Pingale Bhanudas Narayan, DCF, ICFRE
- Ms. Vijaya Ratna, DCF, ICFRE-FRI
- Sh. Sudhir Kumar, Scientist-C, ICFRE
- Dr. Manoj Kumar, Scientist C, ICFRE
- Sh. Narayan Swamy, Secretary, Coimbatore Herbal and Tree Grower's Association
- Sh. Abhay Raut, Bhoomi Natural, Shamli
- Mr. Purnan Bartwal, People's Science Institute, Dehradun
- Sh. Muthu Prasad, Scientist B, ICFRE
- Sh. R. Bisen, Consultant, ESIP, ICFRE

VENUE: ICFRE Committee ROOM

Facilitator: Dr. S. Saravanan,  
Head, Extension Division, ICFRE-  
IFGTB  
Rapporteur: Dr. Arun Thakur,  
Consultant ESIP

#### Working Group 3: Forestry extension for forest-based enterprises, wood-based industries and mining companies, and deliberation on development of synergies with Van Dhan Yojana focused on value addition to NTFPs

- Dr. Sudhir Kumar, DDG(Extension), ICFRE
- Dr. Rajib Kr. Borah, Director, ICFRE-RFRI
- Dr. Rajesh Sharma, ADG (BCC), ICFRE
- Dr. Charan Singh, Principal Scientist, ICAR-IISWC, Dehradun
- Dr. N.K. Upreti, Scientist-G, ICFRE-FRI
- Dr. Vineet Kumar, Scientist G, ICFRE-FRI
- Dr. N. Bala, Scientist G, ICFRE-FRI
- Dr. Geeta Joshi, ADG (Media & Extension), ICFRE
- Dr. P.K. Gupta, Scientist-G, ICFRE-FRI
- Dr. Jagdish Singh, Scientist G, ICFRE-HFRI
- Dr. Charan Singh, Scientist F, ICFRE-FRI
- Dr. Vinay Kant Misra, ADG (Edu & Recruitment Board), ICFRE
- Dr. Vishavjit Kumar, Scientist E, ICFRE
- Dr. Shilpa Gautam, Scientist E, ICFRE
- Ms. Ismita Nautiyal, Scientist E, ICFRE
- Dr. Krishna Giri, Scientist D, ICFRE
- Dr. Manish Kumar, Scientist B, ICFRE
- Sh. J.N. Gandhi, ITC Bhadrachalam House, Secunderabad
- Sh. Gajendra Rajput, Wood Technologist Association, Yamunanagar
- Sh. Ashok Sharma, Archidiply Industries Limited, Rudrapur

VENUE: ESIP MEETING HALL

Facilitator: Dr. Manoj Kumar  
Dubey, Head, Extension Division,  
ICFRE- IWST  
Rapporteur: Dr. Nepolean Bohra,  
Consultant, ESIP, ICFRE

#### Working Group 4: Forestry extension/ knowledge sharing for academic & training institutions, key ministries/ departments, S&T organisations, and deliberation on capacity constraints faced by ICFRE nurseries

- Dr. Renu Singh, Director, ICFRE-FRI
- Smt. Kanchan Devi, DDG (Education), ICFRE
- Sh. Anurag Bhardwaj, Director, DFE, Dehradun
- Dr. Sandeep Sharma, Director, ICFRE-HFRI, Shimla
- Sh. E. Venkat Reddy, Director, IFB, Hyderabad-Telangana
- Dr. H.S. Gilwal, Scientist- G & Dean FRI (Deemed to be University)
- Dr. Sumit Chakravorti, ADG (M&E), ICFRE
- Dr. Ruchi Badola, Dean, WHI
- Dr. Sangeta Gupta, Scientist-G, ICFRE-FRI
- Dr. Amit Pandey, Scientist-G, ICFRE-FRI
- Dr. A. N. Singh, ADG (EM), ICFRE
- Sh. Rajib Kr. Kalita, Scientist-F, ICFRE-RFRI
- Dr. Kiran Negi, Principal Scientist, HESCO, Dehradun
- Dr. Gautam Roy, Sr. Scientist & Head, IGKV, Raipur
- Dr. Rajiv Pandey, Scientist - E, ICFRE
- Smt. Bhawana Sharma, Scientist E, ICFRE-AFRI
- Dr. Sanjay Singh, Scientist E, ICFRE
- Dr. Kamal Pandey, Dy. Director, FSI, Dehradun
- Dr. K.C. Sengar, Head, GB Pant NHE-Garhwal Regional Centre
- Sh. Balwant Shahi, DFO, Bageshwar, Uttarakhand SFD
- Sh. Anil Kumar, DES (Agro forestry), KVK Yamunanagar
- Dr. D. Kurrey, Consultant, ESIP-ICFRE

VENUE: COE-SLM TRAINING HALL

Facilitator: Dr. Nanita Berry, Head,  
Extension Division, ICFRE-TFRI  
Rapporteur: Dr. Nivedita Thapliyal,  
Consultant, ESIP, ICFRE



#### Expectation from the Group Exercises and Discussion

- Each Working Group will conduct the group exercises and discussion on **Identification of issues and challenges, gaps and needs of forestry extension** with respect to the targeted stakeholders. (Timing: 11:00 AM to 01:00 PM)
- Each Working Group will conduct the group exercises and discussion for **Development of Suitable Strategies and Actions for strengthening the forestry extension in India**. (Timing: 02:00 to 03:30 PM)

Issues	Challenges	Gaps	Needs	Strategies	Actions

Display boards, working table, meta cards, flip charts, marker pens etc. are provided for group exercise to each working group for the group exercise and discussion.

#### Plenary Session: Synthesis and finalization of outcomes of the workshop

**Panellists of the Workshop**  
 Sh. A. S. Rawat, DG, ICFRE  
 Sh. Bharat Jyoti, Director, IGNFA  
 Sh. Jagdish Chander, PCCF& HoFF, Haryana  
 Dr. Anupam Joshi, Team Task Leader – ESIP, the World Bank  
 Sh. Siddharth, the World Bank

**Presentation on outcomes (highlighting the issues & challenges, gaps and needs, suitable strategies and action plan for strengthening of forestry extension) of the group exercise and discussion by:**

- Working Group 1: Forestry extension for SFDs (*Facilitator: Head, Extension Division, ICFRE-FRI*)
- Working Group 2: Forestry extension for farmers and tree growers, and deliberation on scope of extension w.r.t. amendments in seed rules etc. (*Facilitator: Head, Extension Division, ICFRE-IFGTB*)
- Working Group 3: Forestry extension for forest-based enterprises, wood-based industries and mining companies, and deliberation on development of synergies with Van Dhan Yojana focused on value addition to NTFPs (*Facilitator: Head, Extension Division, ICFRE- IWST*)
- Working Group 4: Forestry extension/ knowledge sharing for academic & training institutions, key ministries/ departments, S&T organisations, and deliberation on capacity constraints faced by ICFRE nurseries (*Facilitator: Head, Extension Division, ICFRE-TFRI*)

*Thank you for kind attention!*





## Committees Constituted for Organisation of the Workshop

### A. Organising Committee

1. Sh. A.S. Rawat, DG, ICFRE	Chairman
2. Sh. R.K. Dogra, DDG (Admin.), ICFRE	Member
3. Ms. Kanchan Devi, Director (IC) & PD, ESIP, ICFRE	Member
4. Dr. Sudhir Kumar, DDG (Extension), ICFRE	Member
5. Dr. Rajesh Sharma, ADG (BCC), ICFRE	Member
6. Dr. Shilpa Gautam, Project Coordinator, ESIP, ICFRE	Member
7. Dr. R.S. Rawat, Project Manager, ESIP, ICFRE	Member Secretary

### B. Reception Committee

1. Dr. Nivedita M. Thapliyal, Consultant, ESIP	Chairperson
2. Sh. Prince, Technical Assistant, (M& Extn.), ICFRE	Member
3. Sh. Abhishek Khanna, Technical Assistant, ICFRE	Member Secretary

### C. IT Facilities and Audio-Visual Arrangement

1. Sh. A.K. Sinha, Head, IT Div., ICFRE	Chairman
2. Sh. Jatender Singh, Scientist D, IT Div., ICFRE	Member
3. Sh. Sudhir Singh, Scientist-C, IT Div., ICFRE	Member Secretary

### D. Accommodation and Catering Arrangement

1. Dr. A. N. Singh, ADG (EM), ICFRE	Chairman
2. Dr. Vishavjit Kumar, Scientist-E, EM Division, ICFRE	Member
3. Sh. Chandra Sharma, Scientist 'C', EM Division, ICFRE	Member Secretary

### E. Travel Reimbursement/Claim

1. Sh. Sanjay Singh Pundir, Accounts Officer, ICFRE	Chairman
2. Sh. Suraj Pandey, Assistant, ICFRE	Member
3. Sh. Sanjay Pandey, Section Officer, ICFRE	Member
4. Sh. Anil Rawat, Cashier, ICFRE	Member Secretary

### F. Workshop Publicity and Outreach

1. Dr. Geeta Joshi, ADG (M & Extn.), ICFRE	Chairperson
2. Sh. Shankar Sharma, Assistant Director (Rajbhasha)	Member
3. Dr. Vishwajeet Sharma, STO (M& Extn.), ICFRE	Member Secretary

### G. Transport Committee

1. Dr. R. S. Rawat, Project Manager, ESIP	Chairperson
2. Dr. Arun Kumar, Consultant, ESIP	Member
3. Dr. Md. Shahid, Consultant, ESIP	Member Secretary

### H. Rapporteurs

1. Dr. Md. Shahid, Consultant, ESIP
2. Dr. Nivedita Mishra Thapliyal, Consultant, ESIP
3. Dr. Sunil Bhatt, Consultant, ESIP
4. Dr. Arun Kumar Thakur, Consultant, ESIP

### I. Workshop Secretariat and Procurement and Venue arrangement

1. Dr. R.S. Rawat, Project Manager, ESIP, ICFRE
2. Dr. Shilpa Gautam, Project Coordinator, ESIP
3. Smt. Seema Thakur, PS to DDG (Education), ICFRE
4. Sh. Umang Thapa, ESIP, ICFRE













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