



# FORESTRY CORRESPONDENT

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Publication of Forest Research Centre for  
Eco-Rehabilitation, Prayagraj

A REGIONAL CENTRE OF FRI , DEHRADUN UNDER ICFRE, MOEF & CC, GOVT. OF INDIA

## ICFRE Vision

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



Shri A. S. Rawat, IFS  
Director General ICFRE

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## LAC FOR LIVELIHOOD

It gives me immense pleasure and satisfaction to present the inaugural issue of e-magazine "Forestry Correspondent" to the readers. Researches should not be remain confined to the high end journals and laboratories. It defeats the basic purpose of scientific enquiry i.e. betterment of the society. Forestry is an applied science which has the potential not only to address prevalent climate change scenario but also enhancement of livelihood opportunities.

Lac, the scarlet resinous secretion of insect, *Kerria lacca* (Kerr) [Family- Lacciferidae (Kerriidae)], cultivated from ages in India is one of the most valued non-timber forest produce. There are around hundred plants species on which lac insets grow for large scale lac production. However, only about two dozen host plants are utilized for lac production and 90 % lac is produced on the three conventional lac host trees i.e. Ber (*Ziziphus mauritiana*), Palash (*Butea monosperma*) and Kusum (*Schleichera oleosa*). Till late 1950s cultivation of lac was widespread almost all over the country but the area under lac cultivation has shrunken considerably now. The situation warrants revival of lac cultivation where lac was earlier cultivated and its expansion to new areas.

Uttar Pradesh is still a minor lac cultivating area especially Sonebhadra (Doodhi Tehsil) and Prayagraj (Meja and Koraon Tehsils) where lac is produced on *A. nilotica*, *Butea monosperma*, *Z. mauritiana* and *Z. xuylocarpa*. FR CER Prayagraj has initiated efforts to revive and propagate lac culture through recording natural infestation of lac insect on a wide variety of host trees in eastern India and found *Callindra surinamensis* holds promise for large scale lac cultivation in eastern UP as it supports substantial populations of lac insect in great density indicative of excellent establishment and survival. Systematic introduction of lac culture on low gestation lac host *Flamingia semialata* has also been started. I earnestly make a call for promotion of lac cultivation to the farmers and foresters in the region exploring all possibilities.

Dr. Sanjay Singh  
Head, FR CER



## EDITORIAL

On behalf of the editorial committee, we would like to release the e- magazine “Forestry Correspondent” after considerable planning and brainstorming. We are proud to present you the first issue of featuring the scientific, academic and extension activities of Forest Research Centre for Eco-Rehabilitation along with some relevant input on forestry for the interest of wide range of readership.

The Forestry Correspondent shall act as a forum of information sharing and hopefully bring together all the stakeholders of forestry sector including researchers/ academicians /NGOs/forest department and many others.

We are committed to show care our research and extension endeavour in the field forestry based livelihood opportunities. We would love to hear your voice on this issue as well as suggestions for future issue. This is a collective effort of all FRCER family and we will do our best to make that happen.

**Alok Yadav and Anubha Srivastav**



combinations; nursery and plantation techniques for forest species most suitable to rural needs and ecology; reclamation packages for eroded areas, stress sites, saline/alkaline soils with low moisture retention, degraded forests, pasture and grazing land, mined areas and other wasteland.



## ABOUT THE CENTRE

Forest Research Centre for Eco-Rehabilitation (FRCER), Prayagraj was established in 1992 as an advanced Centre under the umbrella of ICFRE, Dehradun.

With the vision of “Enhancement of tree cover through development and promotion of site specific agroforestry and plantation models along with rehabilitation of stress sites and mined areas” FRCER aims to nurture and cultivate professional excellence in the field of social forestry and eco-rehabilitation in Eastern Uttar Pradesh, North Bihar and Vindhyan Region of Uttar Pradesh and Madhya Pradesh.

FRCER is a research and extension hub committed for enhancement of tree cover through development and promotion of site specific agro-forestry and plantation models along with rehabilitation of stress sites and mined areas in Uttar Pradesh.

In last 25 years it has come up with innovative technologies and technological packages in social, farm and agro-forestry *vis-a-vis* prevailing tree crop

Apart from need based research, the Centre is also entrusted to disseminate technological know-how to stakeholders such as state forest departments, farmers, artisans, forest produce based industrialists, environmentalists, etc.

The Centre is managed and run by highly qualified and specialized researchers, who critically analyze the R & D problems received from stakeholders and provide their innovative solutions.

Various national/ international funding agencies like World Bank, UNDP, NABARD, NITI Aayog, MoEF & CC, NOVOD Board, NTPC Ltd., NRAA, SFD Bihar, U.P. Council of Science & Technology, U.P. Council of Agricultural Research etc. have been supporting the R & D programme of the Centre.



## NATIONAL WORKSHOP FORESTRY INTERVENTIONS IN ECO-REHABILITATION

Forest Research Centre for Eco-Rehabilitation, Prayagraj in the collaboration of Botanical survey of India on 3 March 2020, organized a national workshop on “Forestry Interventions in Eco-Rehabilitation” at BSI auditorium, Prayagraj. The themes of the Workshop were current challenges and or key issues on degraded forest rehabilitation in terms of policy, institutional, ecological technical and social economic aspect; forest researches in ecological rehabilitation, climate change mitigation and adaptation and forest rehabilitation; policy and institutional aspects of rehabilitation.



Academics, scientists, teachers, students and research scholars from different universities, institutions of national repute, representatives of Non-Government Organizations, officials from forest department and other stakeholders actively participated in the day long deliberations of National Workshop.

Technical deliberations were initiated by the plenary lecture of Prof. Lalji Singh, Head College of Forestry IGKV, Raipur. He emphasized on the importance of productivity and carbon accumulation in tropical dry deciduous forest in eco-rehabilitation. The key note address was delivered by Dr. D.K. Chaudhari, Director, FIMI on environmental legislation and applicability for mining industry in India and rehabilitation of mining area. More than seventy five research papers were submitted by the Scientist and Scholars all over the Country.



Major recommendations of the workshop included – need for adaption of bottom up approach and top down planning for rehabilitation incorporating novel technological innovations and socio-cultural concerns; development and dissemination of site specific and resistant clones/varieties of locally suitable indigenous tree species.



## CONTRIBUTION TO FORESTRY

### PHYTO-REMEDIATION OF WATERLOGGED AREAS - NEW TECHNOLOGY

The introduction of canal irrigation has caused a rise in ground water table leading to water logging and secondary salinization. Presently, about one-third of the worlds irrigated area facing the threat of water logging. About 4981.43 sq. Km area in Uttar Pradesh is suffering from water logging resulting in reduced agricultural productivity.

A technology developed by FRCER to phyto-remediate such waterlogged area through Bio-drainage i.e. the vertical drainage of soil water through evapotranspiration by plantation. Bio-drainage means "pumping of excess soil water by deep-rooted plants using their bio-energy." The

developed technology involves the treatment of such water logged sites with Phosphate Solubilizing Bacteria (PSB) and Blue Green Algae to improve the soil conditions and decrease the pH followed by plantation of bio-drainage tree species like *Acacia nilotica*, *Terminalia arjuna*, *Syzygium cuminii*, *Eucalyptus* sp. and *Trewia nudiflora*.

It has been found effective in solving the problem of high water table of such sites and enhance the productivity, simultaneously provides valuable forest produce from planted tree species, which may be a source of extra income to farmers.



### GLIMPSES OF ONGOING RESEARCH ACTIVITIES

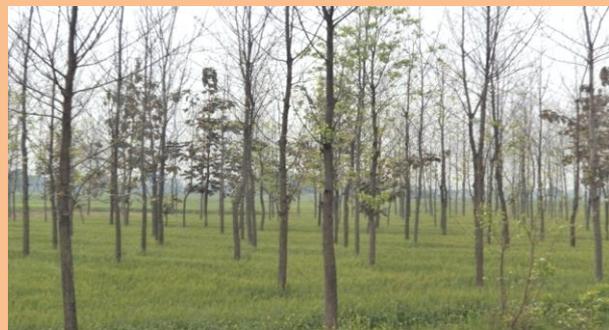
The Centre implanted more than 40 research projects since its inception to make noteworthy R & D contribution on various aspects in forestry are as:

- Establishment of SPA and SSPA of *Dalbergia sissoo* in Campierganj, Gorakhpur Forest Division and SSPA of *Acacia nilotica* and CSO of *D. sissoo* in Gonda and Mathura forest division.
- Reclamation of water logged sodic sites through mound plantation technology with help of different soil amendments and identified tree- *Terminalia arjuna*, *Acacia nilotica*, *Eucalyptus camaldulensis*, *Prosopis juliflora* and *Dalbergia sissoo*.
- Development of technological packages for rehabilitation of silica mining sites with *Pongamia pinnata*, *Albizia lebbek*, *Azadirachta indica*, *Madhuca longifolia* and *Pithecellobium dulce*.
- Identification of promising cyanobacterial species for bioremediation of Red mud (*Bauxite residue*).
- Standardization of nursery techniques of *Buchnanian lanzan* using seed pre-treatments.
- Standardization of seed germination protocol and seed source screening for *Stereospermum suaveolens*- a rare and neglected species of Eastern UP.
- Promoting linkages among tree growers and traders for efficient marketing of wood products in Eastern U.P.
- Development of a novel innovative technique for quick and economical germination of *Spondias pinnata* without any potting media.
- Documentation of floral and faunal diversity around Meja Thermal Power Plant of NTPC to identify threatened, nationally, regionally, or locally significant species and communities.





- Development of methodology for productivity assessment for *Butea monosperma* in degraded forests of Shankargarh, Allahabad.
- Designing of portable low cost, mini non-mist propagation chamber which can be a substitute to Forest Department/farmers for rooting of cuttings irrespective of season avoiding costly mist propagation set up.
- Preparation of herbal Gulal using *Curcuma longa* rhizome, *Beta vulgaris* roots, *Bixa Orellana* seeds and *Lawsonia inermis* leaves.
- Promotion of agro forestry in eastern part of UP, through preparation of database for timber market information system and its extension in six selected districts viz. Prayagraj, Sonbhadra, Raebareilly, Barabanki, Gorakhpur and Bahraich.
- Development of agro forestry models with Satawar (*Asparagus racemosus*), Kalmegh (*Andrographis paniculata*), Sarpagandha (*Rauwolfia serpentina*), Adrakh (*Zingiber officinale*) and Haldi (*Curcuma longa*) to utilize the land under tree orchards of Mango (*Mangifera indica*), Aonla (*Phyllanthus emblica*), Mahua (*Madhuca longifolia*) and Bamboo (*Bambusa vulgaris*) in Kaushambi district of Eastern UP.
- Demand -supply gap analysis of important tree species- (*Mangifera indica*), Neem (*Azadirachta indica*) Kathal (*Artocarpus heterophyllus*), Shisham (*Dalbergia sissoo*), and Sagaun (*Tectona grandis*) of Eastern UP was analysed in Gorakhpur, Maharajganj, Basti and Deoria districts.
- Channelized sale of commercial trees of Agro forestry viz. Eucalyptus, Poplar, Teak etc. between traders and growers in districts of Eastern UP.
- Identification of site specific promising clones of Eucalyptus for recommending in agroforestry in Eastern UP.
- Studies on the status of Agroforestry in Ballia and Varanasi with a view to promote Teak (*Tectona grandis*) and Aonla (*Phyllanthus emblica*) based Agroforestry in the region of Eastern UP.



**Clonal Eucalyptus based agroforestry**



**Fruiting of Aonla -(N7) in agroforestry**



**Gmelina arborea agroforestry in block plantation**



**Teak-mustard Agroforestry**



## WORKSHOPS/SEMINARS/RESEARCH AND CONSULTANCY MEETINGS

### REGIONAL RESEARCH CONFERENCE

The Regional Research Conference of ICFRE was organized on 3 June 2019 at Lucknow, Uttar Pradesh to promote the forestry research needs of north Indian states. Dr. Pawan Kumar, IFS, Principal Chief Conservator of Forest & HoFF, Uttar Pradesh was the chief guest of the conference. The conference was attended by Dr. Sunil Pandey, PCCF (Wildlife), Uttar Pradesh, Shri A.S. Rawat, Director, FRI, Dehradun, Senior Officers from the State Forest Departments of Uttar Pradesh, Uttarakhand, Punjab, Haryana, and Himachal Pradesh, Scientists/academicians from noted research and academic institutions, representatives of various Industries, Non-Governmental Organizations and progressive farmers. The conference was attended by more than 100 participants.



### PROF. RAMDEO MISRA MEMORIAL LECTURE SERIES

FR CER initiated “Prof. Ramdeo Misra Memorial Lecture Series” in 2020 as a tribute to Father of Indian Ecology Prof. Ramdeo Misra. It is an annual event in which eminent scholar in the arena of ecology and environment delivers the lecture in presence of scientists, academicians and students.

First lecture in the series was delivered by Prof. A.S. Raghuvanshi, Banaras Hindu University, Varanasi on National Science Day 28 February 2020 on the topic “Environment and Sustainable Development”. Prof. Raghuvanshi touched upon various environmental issues and strategies for sustainable development. It was followed by interaction with the audience.

Botanical Survey of India, Central Region, Prayagraj collaborated for the programme with FR CER. More than 100 participants attended the lecture.



## CONSULTATION MEETING WITH MEJA URJA NIGAM PVT. LTD. (MUNPL)

A Consultation Meeting was held on 27 November 2019 with CEO, Sh. Asim Kumar Samanta, Sh. Anurag Khare, DGM (Environment Management) and other senior officials of Meja Urja Nigam Pvt. Ltd. (MUNPL) (A Joint Venture of NTPC Ltd and UPRVUN) Meja, Prayagraj for imparting the consultancy services on Geo-tagging of plantation, development of green belt, eco-restoration of the degraded sites by FRCER in project mode.



## REJUVENATION OF YAMUNA RIVER THROUGH FORESTRY INTERVENTIONS

### STATE LEVEL CONSULTATION MEETING



Under “DPR Preparation on Rejuvenation of Yamuna River through Forestry Interventions” project, the Centre was assigned the works of data collection from Uttar Pradesh for DPR for Yamuna River.

Centre has organized two state level meetings for discussion with concerned Forest officer related to Yamuna River.

First State Level Consultation Meeting with Uttar Pradesh Forest and Climate Change Department was organized at Lucknow on 31<sup>st</sup> May 2019.

The second State Level Consultation Meeting was organized in online mode on 10<sup>th</sup> June 2020 in view of COVID pandemic.

### SENSITIZATION WORKSHOPS IN FOREST CIRCLES



Five workshops were organized by Centre in various Forest Circles of Uttar Pradesh viz. Chitrakoot Dham (3 October 2019), Prayagraj (4 October 2019), Agra (12 October 2019), Kanpur (16 October 2019) and Jhansi Bundelkhand (23 October 2019).

The objective of these workshop was to sensitize field level staff regarding data collection. Various formats were explained the queries of staff were resolved by FRCER Scientists. It helped in proper recording of interventions for Yamuna DPR preparation.



## IN-HOUSE SEMINARS

### DEALING MARKETING CONSTRAINTS IN AGROFORESTRY

In house seminar on “Dealing Marketing Constraints in Agroforestry” was organized on 5 December 2020. The key speaker Dr. Biswarop Mehra, Professor, SHUATS Prayagraj delivered the talk on “Importance of Agro-forestry in eastern Uttar Pradesh”.



Dr. Anubha Srivastava, Scientist and Coordinator of seminar presented her experiences on demand and supply of agroforestry species and strategies for solving marketing constraints in the successful way of adoption of agroforestry in eastern Uttar Pradesh.

### BIODIVERSITY CONSERVATION AND RESTORATION

In house seminar on “Biodiversity Conservation and Restoration” was organized on 24 January 2020. The Key speaker of the seminar was Dr. A. N. Shukla, Scientist, Botanical Survey of India, Central Region, Prayagraj who delivered the lecture on “Biodiversity conservation of a biosphere reserve and restoration”. Dr. Kumud Dubey, Scientist, E and Coordinator of seminar presented her experiences on biodiversity conservation and restoration and explained about scientific approach towards the restoration of the plant species and strategies for restoring a degraded ecosystems.



## NEW INITIATIVES

### CONSULTANCY PROJECTS

- Monitoring and evaluation of CAMPA Plantations of Bihar Forest Department, funded by SFD Bihar, (Principal Investigator: Dr. Sanjay Singh, Scientist- F & Head, FRCER).
- Detailed Project Report (DPR) preparation for “Rejuvenation of Yamuna River through Forestry Interventions” Sponsored by MoEF & CC, New Delhi (Nodal Officers: Dr. Sanjay Singh, Scientist-F & Head FRCER; Dr. Kumud Dubey, Scientist-E).

### ALL INDIA COORDINATED PROJECTS

- All India Coordinated Project on Bamboo (Principal Investigator: Shri Alok Yadav, Scientist-E; Dr. Sanjay Singh, Scientist-F & Head FRCER).
- All India Coordinated Project on Genetic Improvement of *Madhuca longifolia* (Principal Investigator: Dr. Kumud Dubey, Scientist-E).
- All India Coordinated Project on Enhancement of fodder availability and quality to reduce unsustainable grazing in the forest. (Principal Investigator: Dr. Anita Tomar, Scientist-E).
- All India Coordinated Project on Bio prospecting for industrial utilization of lesser known forest plants (Principal Investigator: Dr. Anita Tomar, Scientist-E).
- All India Coordinated Project on Domestication, Genetic Characterization, Improvement and Diversified Utilization of Poplars (Principal Investigator: Dr. Anita Tomar, Scientist-E).
- All India Coordinated Project on Genetic Improvement of Eucalyptus (Principal Investigator -Dr. Anubha Srivastava, Scientist-C).



### ICFRE PROJECTS

- Introduction of *Aquilaria malaccensis* (Agar) in the Terai Region of Uttar Pradesh (Principal Investigator: Shri Alok Yadav, Scientist-E).
- Reclamation of mining affected trans Yamuna region of Prayagraj district through integrated introduction of grass species, PGPR and selected tree species (Principal Investigator: Dr. Kumud Dubey, Scientist-E).
- High density plantation management for wood production and assessment of wood properties of coppiced materials (Principal Investigator: Dr. Anita Tomar, Scientist-E).
- All India Coordinated Project on genetic improvement of *Melia composita* wild (Principal Investigator: Dr. Kumud Dubey, Scientist-E).

## OUTREACH

### FORESTRY TECHNOLOGY DEMONSTRATION AND AWARENESS GENERATION AT MAGH MELA



A forestry technology demonstration and awareness generation camp was established in Magh Mela-2020 at Prayagraj from 20 January to 15 February 2020 to showcase and disseminate ICFRE technologies among the pilgrims. The camp was formally inaugurated by Honourable Justice Shri Rajesh Kumar, National Green Tribunal (Air Pollution Wing) on 21 January 2020. Various extension programmes were organized in the camp for the visitors of the Mela, students, farmers and other stakeholders.

Magh Mela, a one of the biggest gathering of people all over the India, provided an excellent opportunity



for exhibiting forestry research findings and technologies developed by ICFRE Institutes to different stakeholders.

An exhibition consisting of posters, Banners, Models on the medicinal plants, agroforestry, organic farming, Bamboo and wood products was made along with organization of regular extension trainings and workshops.

Camp had a vermicompost demonstration kiosk carrying all information about vermicompost and the

seedlings distribution kiosk for distribution of seedlings of appropriate tree species for agroforestry and farm forestry viz. Melia (*Melia azedarach*) Poplar (*Populus spp.*) Sagaun (*Tectona grandis*) Mahua (*Madhuca longifolia*) Eucalyptus (*Eucalyptus globulus*) etc.

Large number of seedlings and medicinal plants were distributed to the visitors.

In the more than month duration camp several special events focussed on promotion of forestry and environmental awareness generation were also organized:



- One-day Farmer Training Program on the subject of "Agro Forestry" on 24 January 2020 for 50 farmers.
- Training Programme on "Vermi composting and Organic farming was conducted on" 31 January 2020 for 45 farmers and visitors.

■ A programme for creating the awareness regarding environment and forest among the mela visitors through 'Poetry' was organized on 3 February 2020.

■ A program with the collaboration of Dabur India on "Important Medicinal plants and there uses" on 5 February 2020 attended by 75 participants.

■ One day Environment and Forest Awareness programme for students of Vasistha Vatsalya Public School (VVPS), Prayagraj was organized during the closing ceremony on 15 February 2020.

## GREEN SKILL DEVELOPMENT PROGRAMME

Certificate Course on “Bamboo Propagation and Management under Green Skill Development Programme (GSDP) sponsored by Ministry of Environment, Forest and Climate Change, Government of India was conducted from 12 February 2020 to 20 March 2020.



Series of lectures were conducted to sensitizes and develop a knowledge base regarding bamboo propagation and management among the trainees. The various aspects covered during the course were bamboo resources and distribution, macro and micro propagation techniques, clump management, bamboo based entrepreneurship, seasoning and preservation of bamboo, nursery techniques, geospatial tools in bamboo mapping, bamboo based agroforestry, integrated nutrient and pest management etc.

The participants were also taught about the basics of carbon sequestration, conservation of bamboo genetic resources, bio-fertilizer, vermin-composting, medicinal importance of bamboo and recent advancements in bamboo sector.

Different bamboo propagation methods such as culm cutting, branch cutting, and rhizome extraction from mother clumps were demonstrated to the trainees in field along with bamboo handicraft making. 20 participants from different districts of UP and Uttarakhand successfully completed 40 days Course.



## UMBRELLA SCHEME OF FORESTRY TRAINING BY MOEF & CC NEW DELHI



Under the Umbrella Scheme of Forestry Training of MoEF & CC a three days training programme (13-15 November 2019) on “Medicinal Plants Based Agroforestry Under Traditional Orchards” with the objective up-scaling livelihood options by cultivation of medicinal plants under traditional tree orchards in Eastern Uttar Pradesh was organised for thirty participants from different streams, NGO, Academicians, Forest, Students, Ph.D. scholars. The programme was attended by 30 participants.

Another programme was conducted on Organic Farming under from 18-20 February 2020. The programme was sponsored by MoEF & CC, to promote the organic farming amongst various stakeholders of the region. It was attended by 30 farmers.

## VOLUNTARY CERTIFICATION SCHEME FOR MEDICINAL PLANT PRODUCE

Centre organised training on ‘Marketing of Medicinal Plants in Uttar Pradesh’ for different group of stakeholders in Prayagraj on 25 February 2020 sponsored by Quality Council of India (QCI) Government of India on ground implementation of Voluntary Certification Scheme for Medicinal Plant Produce (VCSMP).

More than 50 farmers, academicians and NGO representatives participated in the programme.

Dr. Manish Pandey, Senior Executive chaired the programme.



## PRAKRITI: SCIENTIST STUDENT CONNECT INITIATIVE

A Scientist–student connect initiative was envisioned and accordingly Indian Council of Forestry research and Education entered into MoUs with Kendriya Vidyalaya Sangathan (KVS) and Navodaya Vidyalaya Sangathan (NVS) in 2018. The concept was implemented in the form of a programme named “Prakriti”.

The objectives of the programme are as:

- To promote awareness about forests and environment among the school children.
- To stimulate interest among the students of KVs/NVs in maintaining a balanced environment and for acquiring skills those reflect care and protection towards forests, environment and society.
- To inculcate a sense of desire and duty to be actively involved in protection of the forests and environment for the overall benefit of the society.
- To provide a platform to school children to learn practical skills towards judicious use of our resources.
- To mobilize a cadre of youth for raising a people’s movement committed to Preservation and Conservation of forests and environment.
- To make the youth of the country aware about environment, forests, society and services provided by them and to develop scientific temperament.

It’s an urge as an individual and collectively as communities to adopt the measures spelt out therein and voluntarily join the noble cause of preserving and protecting the environment. The famous statement that “We haven’t inherited the earth from ancestors, we have borrowed it from our successors”, and thus, are trustees of nature, not its masters. Passing on a better earth to our children would be our most precious gift to them.

Thirty two Prakriti programmes were conducted by FRCER Prayagraj in 2019-20 reaching out to more than 400 students promoting “Green Good Deeds’ the theme of nationwide campaign launched by MOEF&CC, New Delhi.



## EXPOSURE/ INVITATIONS/ PARTICIPATIONS

- Dr Sanjay Singh , Head FRCER delivered “Professor Neel Ratan Dhar Memorial Lecture” on the topic Scenario and prospects of forestry and environment research organised by Vigyan Parishad Prayagraj on 5 January 2020.
- Dr Anita Tomar, Scientist-E and Dr Anubha Srivastava Scientist-C, acted as Chief Guest and Special Guest in the Ganga Conservation Programme organized by Nehru Yuwa Kendra on the occasion of Rashtriya Yuwa Diwas ,12 January 2020.
- Dr Anita Tomar, Scientist-E was invited for Scientific Lecture on ‘Biodiversity Conservation’ at Bhavan’s Mehta Mahavidyalaya, Bharwari, Kaushambi College for Botany Association on 14 December 2020.
- Dr Anita Tomar, Scientist-E was engaged as a consultant for development of Eco –Park near Yamuna River in ECC College on 29 November 2019.
- Dr. Kumud Dubey Scientist-E was invited in Awareness Programme on 'Role of Sanitation, Waste Management and Organic Farming in Environment Protection" organized by Yash Krishi Evam Vigyan Kendra at Narayan Vatika on 15 March 2020.
- Dr. Kumud Dubey Scientist-E was invited in Agro forestry Workshop organized by Forest Department on 7<sup>th</sup> (Varanasi) and 10<sup>th</sup> June 2019 (Lucknow) and demonstrated the Agro forestry technology and application of Cyanobacteria, PSB and Bio-drainage technology in phyto-remediation of waterlogged sites.

## PLANTATION DRIVES

- FRCER, Prayagraj participated and rendered guidance for tree plantation activities proposed for July-August 2019 in Chandra Shekhar Azad Park (Company Bagh) as Forestry Experts. For this a Meetings was held on 4 April 2019, 28 May 2019 and 9 July 2019 with Garden Superintendent and other officials, members of Company Bagh Society, Forest Department Officials and a field visit conducted on 19 April 2019 to finalize the species for plantation and site plan. Participation in Plantation Programmes organized in Company Bagh on 13 July 2019, 1-2 August 2019 and 31 August 2019 with Honourable Justice Rajesh Kumar, NGT and City Mayor, Ms. Abhilasha Gupta Nandi.
- Tree plantation activities were carried out Baishnav Devi PG College, Tharvai, Prayagraj (05 July 2019), Jwaladevi Intermediate College, Civil Lines (29 July 2019), Kishorilal PG College, Prayagraj (9 August 2019), Ramyash PG College, Navabganj, Prayagraj (9 August 2019).
- Scientist of FRCER, participated in Van Mahotsav Programme organized by Prayagraj Forest Department on 6<sup>th</sup> (Phulpur) and 7 July 2019 (Shankargarh) in presence of Hon'ble Member of Parliament Phulpur Smt. Kesharidevi Patel and Hon'ble MP Prayagraj Dr. Rita Bahuguna Joshi.



## SCIENTIFIC INTERACTIONS /WEBINARS DURING COVID-19

### TIME FOR NATURE

A webinar on World Environment day 5<sup>th</sup> June 2020 was organised on the theme “Time for Nature”. Honorary speaker of this webinar was Dr. Kavita Shah from, Institute of Environmental Studies, Banaras Hindu University, Varanasi. She delivered invited lecture on this topic. The Webinar is ended with interacting session. More than 500 participants were registered in the webinar.



## ENVIRONMENT AND FOREST MANAGEMENT IN POST COVID PANDEMIC ERA

A webinar on the theme “Environment and Forest Management in Post Covid Pandemic Era” was organised on 19 June 2020. Inaugural address was delivered by Dr. G.V. Reddy, PCCF (HoFF) Rajasthan Forest Department. Invited theme lecture was delivered by Dr. Biswajeet Banerjee, Joint Secretary Department of Rural Development, GOI.

Dr. A.S. Raghubanshi, Director of IESD, BHU, Varanasi also delivered an invited lecture while Dr. Swati Tomar, Dept. of Chemistry, BIT, Sindri, Dhanbad delivered the ‘Young Innovator Talk’. More than 500 hundred participants registered and attended the webinar.

WEBINAR  
ON  
"ENVIRONMENT AND FOREST MANAGEMENT  
IN POST COVID PANDEMIC ERA"  
19<sup>TH</sup> JUNE, 2020  
TIME: 03:00 PM- 05:00 PM  
Join on Google meet :- <https://meet.google.com/owi-dudb-pxv>

Inaugural Address  
Dr. G.V. Reddy  
PCCF(HoFF),  
Rajasthan Forest Dept.,  
Jaipur, Rajasthan

Invited Theme Lecture  
Dr. Biswajeet Banerjee  
Joint Secretary (PPM),  
Dept. of Rural Development,  
MoRD, Govt. of India  
New Delhi

Invited Lecture  
Prof. A.S. Raghubanshi  
Director, IESD, BHU,  
Varanasi

Young Innovator Talk  
Dr. Swati Tomar  
Dept. of Chemistry, BIT, Sindri  
Dhanbad

ORGANIZED BY- FOREST RESEARCH CENTRE FOR ECO-REHABILITATION,  
PRAYAGRAJ  
(Indian Council of Forestry Research and Education, Dehradun)  
An Autonomous Council of Ministry of Environment, Forest and Climate Change  
Government of India, New Delhi



## MEDIA PRESENCE

### VISITS IN MEDIA- AIR TALKS/TV PROGRAMMES/ INTERVIEWS

- Dr. Kumud Dubey, Scientist-E, 106.4 FM Radio on Environment Day, 5 June 2019.
- Dr. Kumud Dubey, Scientist-E, Talk on “Agro forestry for Marginal Farmers” at All India Radio, Prayagraj on 16 July 2019.

- Dr Anita Tomar, Scientist-E, Talk on Important Medicinal Plants at All India Radio Prayagraj on 26 October 2020.
- Dr Anubha Srivastava, Scientist-C, Talk for awareness generation on Natural Resource Conservation and Sustainable Management at All India Radio Prayagraj on 7 February 2020.
- Dr Anubha Srivastava, Scientist-C, Talk on World Environment Day on 5 June 2020 at All India Radio, Obra and Prayagraj.

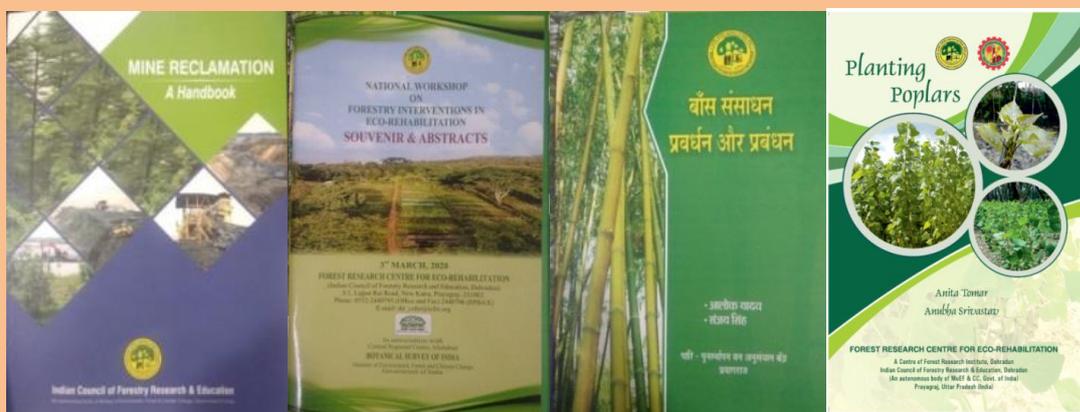
## RESEARCH PUBLICATIONS

- Kumud Dubey (2019). Restoration of Sand Stone Mining Area through Microbial Technology. LAP LAMBERT Academic Publishing, Germany (2019-02-06). ISBN-13:978-613-9-97076-6. pp 200.
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- A hand Book on Mine reclamation prepared by Dr. Sanjay Singh as NSMC, published by ICFRE.
- Alok Yadav and Sanjay Singh (2020). बाँस संसाधन: प्रवर्धन और प्रबंधन, published under GSDP training funded by MoEF & CC.
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## MISCELLANEOUS/ OTHER EVENTS

### RAJBHASHA ACTIVITIES

दिनांक 14.09.2020 को पारि-पुनर्स्थापन वन अनुसंधान केन्द्र, प्रयागराज द्वारा हिन्दी पखवाड़ा 14.09.2020 से 28.09.20 का आयोजन कोविड-19 के अन्तर्गत सुरक्षा मानक के साथ सरकार द्वारा जारी नियमों का पालन करते हुए किया गया। कार्यक्रम का उद्घाटन मुख्य अतिथि प्रो० डा० संतोष भदौरिया, हिन्दी विभागाध्यक्ष, इलाहाबाद विश्वविद्यालय द्वारा दीप प्रज्वलित करके किया गया। इस अवसर पर राजभाषा एवं विज्ञान व्याख्यानमाला का आरम्भ हुआ। व्याख्यानमाला के अन्तर्गत प्रतिवर्ष हिन्दी पखवाड़े के दौरान किसी प्रख्यात भाषाविद् द्वारा विज्ञान प्रसार में हिन्दी की भूमिका पर व्याख्यान दिया जाएगा। व्याख्यानमाला का प्रथम व्याख्यान देते हुए प्रो० भदौरिया ने हिन्दी के विषय समावेशी स्वाभाव तथा उदारता पर बल दिया। उन्होंने कहा हिन्दी यद्यपि अभी विज्ञान की भाषा बनने की प्रक्रिया में है किन्तु वैज्ञानिक शोध के भारतीय समाज में प्रसार हेतु सबसे सुयोग्य साधन है। कार्यक्रम के प्रथम दिवस में डा० भदौरिया तथा केन्द्र प्रमुख डा० संजय सिंह के साथ अन्य वरिष्ठ वैज्ञानिकों द्वारा केन्द्र से प्रकाशित पुस्तक बाँस: प्रवर्धन एवं प्रबंधन का विमोचन भी किया गया। दिनांक 28.09.2020 को हिन्दी पखवाड़े के समापन समारोह का उद्घाटन मुख्य अतिथि यश मालवीय, प्रसिद्ध काव्य साहित्यकार द्वारा दीप प्रज्वलित करके हुआ। यश मालवीय ने हिन्दी भाषा के उपयोग करने पर बल देने के साथ राजभाषा प्रशस्ति काव्य पाठ के अंतर्गत अपनी ख्यात रचनाओं से रूबरू कराया। डा० संजय सिंह ने केन्द्र द्वारा हिन्दी में विज्ञान प्रसार के प्रयासों की विस्तृत चर्चा की। केन्द्र की हिन्दी अधिकारी डा० अनुभा श्रीवास्तव द्वारा सभी अधिकारियों एवं कर्मचारियों को कार्यालय के कार्यों को

हिंदी में अधिकाधिक प्रयोग करने पर बल दिया गया। डा0 श्रीवास्तव द्वारा पखवाड़े के अंतर्गत आयोजित विभिन्न कार्यक्रमों यथा भाषण प्रतियोगिता, त्वरित लेखन, श्रुत लेखन तथा काव्य पाठन आदि कार्यक्रम की जानकारी दी गयी।



## VISIT OF DIGNITARIES



- Dr. Harsh Vardhan, Hon'ble Minister for Environment, Forest and Climate Change visited Exhibition and Extension Stall of Ministry at Kumbh 21 February 2019, Prayagraj. The forestry species displayed by ICFRE viz. bamboos, medicinal plants, agroforestry species and religious trees outside the stall were shown to the Hon'ble Minister. He inspected various technologies, products and extension literature developed by ICFRE Institutes and interacted with scientists of Forest Research Centre for Eco-rehabilitation, Prayagraj regarding displayed NWFPs, wood samples, bamboo products, seeds of forestry species and medicinal mushrooms. Hon'ble Minister emphasized the theme of exhibition – Green Good Deeds to create awareness for simple lifestyle habits which can be

easily adopted in day-to-day life to reduce the environmental hazards and global warming.

- Dr. S. C. Gairola IFS, Director General, ICFRE and Sri A. S. Rawat IFS, Director, FRI, Dehradun visited the Centre on 4 June 2019.
- Dr Sunesh Buxy, Deputy Inspector General, Minister for Environment, Forest and Climate Change made a visit to the centre on 13 November 2019.
- Prof Shiv Gopal Misra, Pradhan Mantri, Vigyan Parishad, Prayag visited the Centre on 28 September 2020.
- Dr D.K. Roychowdhury. Ex Director, Federation of Indian Mining Industries Federation visited the Centre on 2 March 2020.
- Professor Lalji Singh, Head, College of Forestry, Indira Gandhi Agriculture University, Raipur made a visit to the centre on 2 March 2020.



## COLLABORATIONS AND LINKAGES

- MoU has been signed between FR CER and Sam Higginbottom University of Agriculture and Technology, Prayagarj for joint ventures and research collaborations in the field of Forestry.
- Collaboration has been established with Krishi Vigyan Kendra Balia, Gorakhpur and Varanasi for awareness generation and promotion of various agro-forestry models and livelihood improvement of region
- Collaboration has been established with various educational institutions for promotion of plantation and agro-forestry models among the children of Prayagraj and Pratapgarh.
- MoU has been signed between FR CER and Nehru Gram Bharti University, Prayagraj for joint ventures and research collaborations in the field of Forestry.

## SNIPPETS FROM THE WORLD OF FORESTRY

### WORLD

#### FOREST DESTRUCTION WILL UNLEASH MORE PANDEMICS

Rampant deforestation, uncontrolled expansion of farming and the building of mines in remote regions – as well as the exploitation of wild animals as sources of food, traditional medicines and exotic pets – are creating a “perfect storm” for the spillover of diseases from wildlife to people. Almost a third of all emerging diseases have originated through the process of land use change, it is claimed. As a result, five or six new epidemics a year could soon affect Earth’s population. “There are now a whole raft of activities – illegal logging, clearing and mining – with associated international trades in bushmeat and exotic pets that have created this crisis,” According to Stuart Pimm, professor of conservation at Duke University. Widespread destruction of vegetation and wildlife that are hosts to countless species of viruses and bacteria, most unknown to science. Those microbes can then accidentally infect new hosts, such as humans and domestic livestock. An example of such events is provided by the HIV virus, which in the early 20th century spread from chimpanzees and gorillas – which were being slaughtered for bushmeat in West Africa – to men and women and which has since caused the death of more than 10 million people. Other examples include Ebola fever, which is passed on by bats to primates and humans; the swine flu epidemic of 2009 and the Covid-19 virus, which was originally passed to humans from bats. In a recent paper in Science by Pimm and others have proposed setting up a programme to monitor wildlife, reduce spillovers, end the wildlife meat trade and reduce deforestation.

#### INCREASE IN FOREST COVER AND CARBON STOCK

India State of Forest Report 2019 published by Forest Survey of India (FSI) that assesses the forest and tree cover, bamboo resources, carbon stock and forest fires has brought a sense of hope and satisfaction among forest managers and researchers. The report for the first time has assessed the qualitative nature of the forest cover, including listing its biodiversity and the type of plants and trees found. The total forest and tree cover of the country is 80.73 million hectare now. It is 24.56% of the total geographical area of the country. The forest and tree cover has increased by more than 130 million hectares in the last 4 years. In comparison with ISFR 2017, the increase in the forest cover has been

observed as 3,976 sq. km and that in tree cover is 1,212 sq. km. It is also heartening that the total carbon stock in country’s forest is estimated 7,124.6 million tonnes and there an increase of 42.6 million tonnes in the carbon stock of country as compared to the last assessment of 2017. It implies that India is on the right track to achieve its Paris Agreement commitment of 2.5 -3 billion carbon sinks.

### ICFRE

#### TREE PALH- IFGTB COIMBATORE

Tree PAL<sup>H</sup> is a bio-pesticide product which has been developed by Institute of Forest Genetics and Tree Breeding, Coimbatore as an alternative to chemical pesticides for the management of insect pests of forestry importance. Use of Hydnocarpic acid as bio-pesticide is first of its kind and combination with neem oil and essential oil of Lantana is a new approach. It is very effective against insect pests of teak, *Hyblea purea* and *Ailanthus-Eligma narcissus* and *Atteva fabricella*.

#### STUDIES ON HEMIS HIGH ALTITUDE NATIONAL PARK OF LADAKH –HFRI, SHIMLA

An important study by scientists from Himalayan Forest Research Institute Shimla revealed presence of 458 taxa belonging to 215 genera spread over 59 families of Gymnosperms and Angiosperms in Hemis High Altitude National Park of Ladakh. Family Asteraceae with 74 taxa belonging to 29 genera is the most dominant family of flowering plants. Considering the growth forms of the species revealed that the flora is predominantly herbaceous with herbs forming 92.36 % of the total flora, followed by 5.24 % shrubs and 2.40 % trees.

#### THE ADVANCED WOODWORKING TRAINING CENTRE (AWTC)- IWST, BANGALORE

AWTC is located at the Institute of Wood Science and Technology, Bangalore. It was started as the first Training Centre in India and its basic aim is to enhance the quality of Indian wood products manufacturing industries so as to attain global competitiveness by using the state of art machineries from Italy. It was a joint venture between Indian Government (IWST), Italian Government (Italian Trade Commission, ICE) and ACIMALL (Italian Woodworking Machines and Tools Manufacturers Association) from 2003 to 2011 and now runs by the IWST.

### HRD INFORMATION

#### PERSONALIA – APPOINTMENTS / TRANSFERS / PROMOTIONS

- Dr. Sanjay Singh, Scientist-F, IFP Ranchi appointed as Head, FRCER w.e.f. 11<sup>th</sup> September 2019.
- Shri Alok Yadav, Scientist D promoted to Scientist-E w.e.f. 01 January 2020.
- Dr. S D Shukla, Technical Officer promoted to Senior Technical Officer w.e.f. 01 July 2019.



