

HIMALAYAN FOREST RESEARCH INSTITUTE, SHIMLA

PROCEEDING OF XXIIIrd RESEARCH ADVISORY GROUP (RAG) MEETING OF HELD ON 10.10.2022

The XXIIIrd Research Advisory Meeting (RAG) of Himalayan Forest Research Institute (HFRI), Shimla was organised on 10 October, 2022 in hybrid mode (off-line/ on-line). **Dr. Sandeep Sharma**, Director (In-Charge) chaired the meeting. In the inaugural session, after the brief round of introduction, the chairman extended warm welcome to **Dr. Sumit Chakrabarti, ADG (RP)**, ICFRE and all the distinguished RAG members present physically and those who were connected virtually. After that, he highlighted the importance RAG meeting and said that suggestions from the expert members provide right shape to Research Proposals by making them scientifically worthwhile and more useful to the end users. In light of this, the chairman requested the RAG members to evaluate the new projects critically and put forth their valuable comments for making desirable changes/ modifications for further improvement and fine tuning of the new research proposals. Further, he told that six new project proposals under various themes are to be proposed before the RAG during this meeting. In addition to this, he also explained about evaluation criteria and informed that projects scoring 80 will be considered for further submission to Research Policy Committee (RPC) at the ICFRE.

Thereafter, **Dr. R K. Verma, Scientist–G** made a concise presentation about the Institute, focussing mainly on the mandate, organisation structure and current Research and Development (R&D) activities of HFRI. He also provided succinct information about salient achievements and technologies developed by the institute, various on-going Plan projects, All India coordinated Research Projects (AICRPs), externally aided projects (EAPs), PBR Consultancy and recently completed mega assignment i.e., Preparation of Detailed Project Report (DPR) for rejuvenation of the five rivers (Sutlej, Beas, Ravi, Chenab and Jhelum) of Indus basin through forestry interventions.

Subsequently, Director In-charge and Chairman of the RAG invited **Dr. Sumit Chakrabarti, ADG (RP)** for the opening remarks. In the beginning, he cordially welcomed all the members and said that ICFRE select the Research Projects on the basis of recommendations of RAG meetings held at institute level. In continuation, he added that RAG also serves the objective to avoid the duplicacy in research. He emphasised upon the meticulous review of the new proposals so as to meet the real requirements of applied research in forestry sector. He proposed the Project Investigators (PI) should be very particular about the objectives, research gaps, statistical design and budget proposed in the new research proposals. He told the PIs to mention the Annual Plan of Action for all the activities proposed under the projects and stick to it during the implementation of the projects. After the inaugural session, technical sessions for presentation of new research projects and On-going research projects were conducted.

Technical session-I (Presentation of new research proposals)

Project-1: “Productivity enhancement of Lantana infested lands through silvi-pastoral systems with the planting of ecologically adopted trees and perennial range species”

The technical session was started with the presentation of **Dr. Ranjeet Kumar, Scientist-E** on the project entitled “**Productivity enhancement of Lantana infested lands through silvi-pastoral systems with the planting of ecologically adopted trees and perennial range species**”. The project was formulated in collaboration with CSKHPKV Palampur. Dr. Kumar elaborated the invasion of *Lantana* in Himachal Pradesh and need of its management. He briefly explained the proposed, methodology to be followed and proposed action plan and extension activity. He also emphasized on the assessment of floristic diversity, regeneration status of *Lantana* and discussed application of herbicides/ bio-pesticides in the management of *Lantana*. He informed that the management of *Lantana* in silvi-pastoral systems will also enhance the livelihood options for the native peoples. During discussion, **Dr. S.D. Bhardwaj** (Ret. Dean College of Forestry, UHF, Nauni) was of opinion that major invasion of *Lantana* is in the forest areas and suggested to select the forest areas and involving the State Forest Department in executing the project. He also suggested to elaborate the methodology and statistical design proposed in the project. In response **Dr. Ranjeet Kumar** informed that institute is executing AICRP on *Lantana* in forest areas. **Dr. Sushil Kapta**, IFS (APCCF, Management Himachal Pradesh Forest Department, Shimla) endorsed the project and suggested to visit the forest areas during project implementation to see the operations of Forest Department in removal of *Lantana* under CAMPA scheme and to opt the successful methods. **Dr. R.S. Minhas** (Chairman, HIMORD) informed that some firms are developing bio-pesticides from the *Lantana* and this aspects may be included in the study. **Dr. C.L. Thakur** (Dean UHF, Nauni) discusses the reoccurrence problem of *Lantana* and informed that farmers generally do not allow *Lantana* to grow in their field. **Dr. T.N. Lakhnupal** (Professor Emeritus, HPU Shimla) was of opinion that 5 years period is less for eradication of *Lantana* and many organizations are working on this aspect. Thus duplication of work may be avoided and output orientated work should be done. **Dr. Yashpal Sharma** (Professor UHF, Nauni) suggested to include the information of natural herbicides in the project document which is mentioned in the objectives. He also suggested to be more focused on the utilization part like extraction of oil for dual benefits. **Dr. S. Chakrabarti** (ADG, Research and Planning) said that the budget is high and proposal can be submitted in the second phase CAMPA. The ADG further suggested to include indigenous grass and herb species for planting after *Lantana* removal. He discussed about the bio-pesticides used in controlling the invasion of *Lantana*. He further added about the allelopathic effect of *Eupatorium*, as it can overtake *Lantana* and suggested the use of alternate herbicides and to develop sustainable models.

Project-2: “Insect pests of Oaks of Jammu and Kashmir UT and their control”

Dr. Pawan Kumar, Scientist-E presented the project entitled “**Insect pests of Oaks of Jammu and Kashmir UT and their control**” and he highlighted incidences of insect-pest

outbreaks in the North-West Himalaya and the subsequent losses caused. He elaborated the objectives, methodology to be followed, proposed action plan and extension activity. He explained the use of DNA barcodes in insect taxonomy and emphasized on the application of (Integrated Pest Management (IPM)) for insect pest management. **Dr. R.S. Minhas** endorsed the project concept and suggested to include trap crop in the management of insect-pests. In response, Dr. Pawan Kumar informed that the majority of insect-pest are host specific and rarely shift to other food plants. **Dr. S.D. Bhardwaj** suggested to determine the percent infestation and also to find out the species causing maximum infestation. He also suggested to correlate the relationship of climate change with pest infestation. He also suggested about the comparative study on the nursery performance of the seeds collected from healthy and infected trees. Dr. Bhardwaj also suggested to elaborate the statistical design of study. **Dr. Deepak Pant** (Professor HPCU, Kangra) suggested to include the limitations of the earlier studies conducted on this aspect in Himachal Pradesh and Uttarakhand. **Dr. K.K. Pramanik** (Head and Principal Scientist, IARI, Shimla) enquired about the concentration of bio-pesticides to be used in pest management. In response, PI explained that they will initiate treatment with low concentration and increase the dose subsequently. **Sh. Dinesh Paul** (DCF, HFRI) insisted upon the organization of training programmes for the field functionaries of State Forest Department. **Dr. S. Chakrabarti** suggested to review the project associates and to mention the work done on concept of the project in Jammu and Kashmir, UT. He also suggested to refine the methodology, management strategy, action plan and to include appropriate statistical design.

Project-3: “Evaluate Green synthesized nanoparticles to develop eco-friendly management techniques against insect pests of Deodar nursery”

Dr. Pawan Kumar, Scientist-E also presented another new project entitled “Evaluate Green synthesized nanoparticles to develop eco-friendly management techniques against insect pests of Deodar nursery”. He elaborated the objectives, methodology to be followed, proposed action plan and extension activity. He explained the importance of nano particles in insect pest management. He highlighted the research being carried out in developing eco-friendly alternatives for insect pests management using green synthesized nanoparticles. **Dr. S.D. Bhardwaj** suggested to cite the work done by PI & Co-PI in the field of nanotechnology. He also suggested to include the site, replication, number of treatments and appropriate statistical design in the methodology. **Dr. Deepak Pant** suggested to modify the title and asked the reason for use of silver nanoparticles in this study. In response, PI elaborated that no work has been done on management of insect-pests of *Cedrus deodara* by using silver nanoparticles. **Prof. Lakhanpal** was also opined that silver is costly start and advised to consult experts on this aspect. **Dr. S. Chakrabarti** suggested to mention the study sites and nurseries, where the trials will be conducted. Overall discussion ended with positive note.

Project-4: “Evaluation of initial growth performance *Melia dubia* and *Neolamarckia cadamba* in Himachal Pradesh and Jammu and Kashmir UT”

Dr. Pravin Rawat, Scientist-B presented the project entitled “**Evaluation of initial growth performance *Melia dubia* and *Neolamarckia cadamba* in Himachal Pradesh and Jammu and Kashmir UT**”. He elaborated the objectives, methodology to be followed, proposed action plan and extension activity. PI also elaborated about the screening out of the best varieties of *M. dubia* and *N. cadamba* in Himachal Pradesh and Jammu and Kashmir UT. PI also explained about developing improved planting stock of indigenous tree species for future breeding and commercial plantation purpose. **Dr. Yashpal Sharma** suggested to keep a check on the initial growth performance of selected trees. He also suggested to consult the work of UHF Nauni on this aspect. **Dr. S.D. Bhardwaj** suggested to use fresh and viable seeds. He further suggested to define the spacing of plants in field trials. He was of the opinion that number of plants can be increased in the trials and high density plantation can be tried, if possible. **Dr. Sanjay Khajuria** (Chief Scientist, Sher-e-Kashmir University, Jammu) endorsed the project concept and was of view that outcome of project will boost the income of area. **Dr. Yashpal Sharma** suggested refining of methodology. **Dr. S. Chakrabarti** suggested to improve the gap area in the project document and also suggested to add brief justification and present status of these species in Jammu and Kashmir. He also suggested to drop the proposed manpower.

Project-5: “Population assessment and identification of superior genotype of *Quercus ilex* L. for improved fodder production and conservation in dry temperate region of Himachal Pradesh and Jammu & Kashmir UT”

Dr. Balkrishna Tiwari, Scientist-B presented the project entitled “**Population assessment and identification of superior genotype of *Quercus ilex* L. for improved fodder production and conservation in dry temperate region of Himachal Pradesh and Jammu & Kashmir UT**”. He elaborated the objectives, methodology to be followed, proposed action plan and extension activity. He further explained the assessment of genetic diversity using microsatellite markers and collection of morphometric data. **Dr. S.D. Bhardwaj** opined that the proposed budget is low as compared to the quantum of work. He suggested to increase the proposed budget and also suggested to limit the study area to Himachal Pradesh only. He further suggested to mention the number of study sites in document and proper fencing during project implementation to protect the seedlings/saplings from wild animals. **Dr. C.L. Thakur** suggested to increase the distance between the selected genotypes. **Dr. S. Chakrabarti** suggested to improve the review of literature covering the aspects proposed in the project and also advised to see the distribution map of the species in the selected area and also to select good populations *Q. ilex*, then proceed further with genetic study. He also suggested to improve the biochemical analysis part in the document. He also suggested to drop the proposed manpower.

Project-6: “Herbage production and carbon stock improvement of degraded grassland ecosystem with improved silvi-pastoral systems under different agro-climatic condition of Himachal Pradesh”

Sh. P. S. Negi, Scientist-D presented the collaborative project with CSK HPKV Palampur entitled “**Herbage production and carbon stock improvement of degraded grassland ecosystem with improved silvi-pastoral systems under different agro-climatic condition of Himachal Pradesh**”. He elaborated the objectives, methodology to be followed, proposed action plan and extension activity. The PI further threw light on various works done on silvi-pastoral systems of the region. He stresses upon the need of creating awareness among the masses for management of degraded grassland of forest ecosystem. **Dr. S.D. Bhardwaj** was of the opinion that the selection of tree/grass species will be site specific. He suggested to pin point the proposed grass and tree species with the selected study sites and also to elaborate same in methodology. He also suggested to revise the spacing and number of trees in the study plot. Dr. Bhardwaj also suggested to enhance the proposed budget and incorporation of suitable statistical model. **Dr. S. Chakrabarti** suggested to justify the role of CSK HPKV in the project. He also suggested to improve the methodology of the project and to mention the nursery and proposed sites.

Technical Session-II (On-going Research Projects Progress):

The second technical session of the RAG meeting was slated to present the progress of on-going research projects. As Dr. R. K. Verma, earlier in his presentation of institute presented the brief progress of all ongoing projects also so during this session, only one Research project required modification titled “**Insect pest of western Himalayan oaks and their control**” was presented by **Dr. Pawan Kumar, Scientist –E**, Forest Protection Division as it require **enhancement in the project period**.

In his presentation **Dr. Pawan Kumar, Principal Investigator (PI)** of this project explained that it was a collaborative project with FRI, Dehradun. He informed that the project was initially envisaged for a period of four years i.e. October, 2019 to October, 2023 with a total budgetary outlay of ₹ 9.26 lakhs. He further enlisted the various objectives under the project. The PI told that due to COVID-19 Pandemic and comprehensive restrictions imposed, various activities under the project could not be accomplished as per stipulated plan. Thereafter, he briefly discussed about the significant progress made under this project till date and told that field studies in various oaks inhabiting sites/areas in Shimla and Kullu districts have been completed and out of the various species of Insect Pests on Oaks, major species have been identified and segregated on the basis of taxonomical characters and their life history has also been studied. Apart from this, the PI informed that the preliminary data analysis work is also complete, but field studies to collect information on other minor species of insect pests and some lab work is still underway in this project, therefore he necessitated for **extension of at least six months i.e. w. e.f. October, 2023 to March, 2024 without any extra budgetary provision**.

Dr. S.D. Bharadwaj, Retd Professor and Ex-Dean College of Forestry, University of Horticulture and Forestry (UHF), Nauni raised the query that as per presentation made by PI, maximum work has been completed under the project and project period is upto October, 2023. So, he could not comprehend the basis of presenting the project for extension.

Dr. Pawan Kumar, Principal Investigator (PI) of the project answered that despite of the significant progress under the project, work related to few aspects is still remaining e.g. testing the efficacy of bio-control measures against the main insect-pest of oaks, rearing and culturing of these insect pests in the laboratory, and compilation of consolidated results, etc. The pending work is anticipated to be completed by March 2024. He asserted that technically extension under the project from October 2023 to March 2024 can only be requested during this meeting of RAG, as its recommendations are valid for the projects to be initiated March 2023 onwards and extension of previous projects upto March 2024.

Dr. RK Verma, Scientist –G also endorsed the statement of PI and said that request for extension for the project is required to be placed during the present RAG. Because the project is ending in October, 2023 and if extension is not requested, the PI has to submit the Project Completion Report (PCR) immediately after October, 2023.

Dr. Sumit Chakrabarti, ADG (RP) agreed that honourable members of the RAG raised valid query in connection with the extension of Project as most of the work has already been accomplished. Therefore, he suggested the Principal Investigator (PI) to prepare a summary statement of achievements and remaining/ pending activities under the project and then present the proposal for extension.

Concluding Session:

After the technical sessions for new projects and on-going projects were over, **Dr. Sandeep Sharma**, Director (In-charge) and Chairman invited **Prof. (Retd.) T. N. Lakhanpal** to conclude the meeting with his most valuable remarks.

Prof. (Retd.) Dr. T.N. Lakhanpal firstly congratulated Himalayan Forest research Institute (HFRI), Shimla for organizing **23rd Research Advisory Group (RAG)** Meeting successfully. He said that HFRI is conducting RAG meetings on the sequential basis and it is really good to discuss the new research proposals with the experts from different walks of life. He opined that most of the projects presented during the present RAG meeting are well organized and framed in the larger interest of the stakeholders and society. He congratulated scientists for their efforts and suggested them to incorporate the comments/inputs of the RAG members for improvement of the various research proposals. Lastly, he wished great success to HFRI in all its future research endeavors.

After the encouraging remarks by the **Prof. Emeritus T. N. Lakhanpal and other RAG members**, the chairman finally requested the **ADG (RP)**, to present his views/ suggestions in connection with different research proposals presented during the RAG meeting. **Dr. Sumit Chakrabarti, ADG (RP)** expressed regards to revered professors and thanked all members of RAG meeting. He said that honourable members of RAG reviewed the new projects proposals thoroughly and asked very pertinent and valid questions. He advised the Principal Investigators (PIs) to make suggested structural changes and modify in their project proposals as per the comments/inputs from expert members. He asked the PIs to incorporate all the recommendations of RAG members in respective projects before submitting them to RPC at ICFRE, H.Q.

Finally, **Dr. Jagdish Singh, Scientist-F & Head Extension Division** presented the formal vote of thanks in the end of the Meeting. He extended words of gratitude to **Dr. Sumit Charkarbarti, ADG (RP), ICFRE** for sparing his valuable time and to evaluate the new research proposals of HFRI. He also thanked **Dr. Sandeep Sharma, Director (In-Charge)** for putting painstaking efforts to organize the RAG meeting. He expressed sincere thanks to, **all RAG members** to evaluate every project very critically, pointing out the major limitations/lacunas and suggesting valuable comments for refinement. He also invited all RAG members for brief discussion after RAG meeting on DPRs (Detailed Project Reports) prepared by the institute with all out support from ICFRE Headquarter and MoEF&CC.

Some glimpses of RAG Meeting




