

PROCEEDINGS OF
20th RESEARCH ADVISORY GROUP MEETING
24 - 25th NOVEMBER, 2010



TROPICAL FOREST RESEARCH INSTITUTE
[Indian Council of Forestry Research and Education]

P.O. RFRC, Mandla Road, JABALPUR – 482 021 (M.P)

Dr. M.S. Negi, Director, TFRI, Jabalpur, accorded warm welcome to delegates and participants of the 20th RAG meeting, held on 24th and 25th November, 2010. He informed that the RAG comprises of representatives from ICFRE, Dehradun, State Forest Departments (SFDs), particularly from Madhya Pradesh, Chhattisgarh, Maharashtra, SFRI, Jawahar Lal Nehru Krishi Vishwa Vidhyalaya, Jabalpur, Senior Scientists (Retd.) of ICFRE and scientists/officers of the institute. Following RAG members were present –

1. Shri Ramesh K. Dave, Principal Chief Conservator of Forests, Madhya Pradesh State Forest Department, Bhopal, M.P.
2. Shri A.K. Joshi, Principal Chief Conservator of Forests, Maharashtra Forest Department, Nagpur (M.S.)
3. Dr. P.K. Shukla, Managing Director, M.P. State, Minor Forest Produce Cooperative Federation, Bhopal, M.P.
4. Shri A.D. Shejale, Principal Chief Conservator of Forests, (Research education & Training), Maharashtra State Forest Department, Pune (M.S.)
5. Shri Vijay Ambade, Regional Director (Central Zone) Regional Office, Forest Survey of India (MoEF), Nagpur (M.S.)
6. Dr. M.S. Negi, Director TFRI & Member Secretary, Tropical Forest Research Institute, Jabalpur.
7. Dr. V. Nath, Group Coordinator (Research), Tropical Forest Research Institute, Jabalpur.
8. Shri Krishna Chandra Yadav, Chief Conservator of Forests, Chhattisgarh Forest Department, Raipur (Chhattisgarh).
9. Shri U. Prakasam, Additional Director, State Forest Research Institute, Jabalpur (M.P.)
10. Dr. S.A. Ansari, Scientist-F, Tropical Forest Research Institute, Jabalpur.
11. Dr. R.K. Verma, Scientist-D, Tropical Forest Research Institute, Jabalpur.
12. Shri G. M. Durai, Dy. Conservator of Forests, Tropical Forest Research Institute, Jabalpur.
13. Dr. S.D. Upadhaya, Professor and Head, Department of Herbal Physiology, JNKVV, Adhartal, Jabalpur (M.P.)
14. Dr. Mohinder Nath Khare, Retd. Dean, Agriculture & Eminent Scientist, Plant Pathology, Adhartal, Jabalpur (M.P.)

The Director, TFRI presented different steps involved in the Research Project Cycle in the organization, starting from its conceptualization by a scientist to its approval and followed further by the monitoring and extension. He also informed the Hon'ble members of RAG that the institute is emphasizing more on dissemination and extension of technologies generated under the research projects to end-users through national/international publications, MOUs with State Forest

Departments, Forest Development Corporations, farmers and industries along with training modules for capacity building besides normal research activities.

To achieve effective extension of the techniques necessary extension models involving Self Help Groups (SHG) and Village Level Committees (VLC) are also being developed in the institute. At the end he added that the RAG is the highest and most important committee at institute level for scrutiny/improvements in the proposed and ongoing ICFRE research projects, therefore, hoped that the deliberations in RAG will help to improve the proposed research projects before their submission to the Research Project Committee (RPC) at ICFRE, Dehradun.

Subsequently, Dr. V. Nath, Group Coordinator (Research) made detailed presentation on the vision, mandate, thrust areas and themes of research for conceptualization of research project pertaining to the states such as Madhya Pradesh, Chhattisgarh and Maharashtra under the jurisdiction of this institute. He also presented organizational chart, scientific manpower, technical manpower, salient research findings of all ongoing and completed intra-mural/externally funded research projects of TFRI and its satellite centre, CFHRD, Chhindwara. He informed that the jurisdiction of the institute includes different agro-climatic zones, forest types with immense biological diversity and large tribal populations. He showed the list of collaborative research projects with SFDs/SFRI/State Biodiversity Boards of Madhya Pradesh and Chhattisgarh. Dr. Nath also focused on the extension activities, such as training, seminar and publications being undertaken and discussed the future plan of research of the institute.

Shri Ashish Rawat, Additional Director General (Research & Planning) from the ICFRE, Dehradun apprised that the benefit to the stakeholders is of prime importance to the ICFRE. He also informed that the ICFRE has announced its modified guidelines to conduct the RAG meeting to be followed by every Institute with the major emphasis on the research methodologies to be more scientific, and the cooperation and coordination with the stakeholders and the forest departments also to be given more importance. He also suggested all the Principal Investigators proposing Research Projects in the RAG to present their strong justification for any additional staff requirement in the project proposal. This will not only help this RAG to evaluate the additional staff requirements but also help higher ICFRE level Research Planning Committee (RPC) to examine it critically.

Shri Ramesh K. Dave, Principal Chief Conservator of Forests, Madhya Pradesh, Bhopal in his address said that he is aware of the appreciable researches being undertaken in TFRI, Jabalpur.

He said the process of project formulation passing through various expert bodies like RAG at institute level and RPC at ICFRE level, before their subsequent approvals, is satisfactory. He also said that the collaborative research efforts between TFRI and SFRI, SFDs, FDCs of states under jurisdiction is also appreciable. At the end he requested the RAG members to examine the proposed projects critically, which address the stakeholder's requirements within the ambit of ICFRE guidelines

Thereafter, the technical sessions initiated and the project-wise details of presentations and related discussion are as given below -

TECHNICAL SESSION - I (NEW PROJECT PROPOSALS)

Chairman – Shri Ramesh K. Dave, Principal Chief Conservator of Forests, M.P., Bhopal

The session started with presentations of new project proposals. In all, 16 new project proposals were presented by respective Principal Investigators (PI) from different divisions namely Genetics and Plant Propagation (2 projects), Forest Entomology (5 projects), Agroforestry (1 project), Biodiversity and Sustainable Forest Management (1 project), Non-Wood Forest Produce (4 projects), Forest Pathology (1 project), Ecology and Rehabilitation (1 project), and Centre for Forestry Research and Human Resource Development (CFHRD), Chhindwara (1 project).

PROJECT -1

Title of the Project : Studies on assessment of genetic diversity and structure of *Boswellia serrata* Roxb. populations through RAPD and ISSR molecular markers.

Principal Investigator: Dr. S. A. Ansari, Scientist-F
Genetics and Plant Propagation

Co-PI: 1. Dr. Pramod Kumar, Research Officer
2. Dr. Parvez Jalil, Scientist-D,
State Forest Research Institute, Jabalpur.

Associate: Mr. Mukesh Kumar Sonkar, RA-II

Duration: Three years

The PI of the project presented the new proposal before the house. Following queries were made by RAG members –

1. Dr. U. Prakasam, Additional Director, SFRI, Jabalpur while appreciating the proposal wanted to know about the RAPD and ISSR. PI explained the same.
2. Dr. S.K. Banerjee enquired about whether the effect of climate change on the targeted aspect will be covered. PI replied that the proposal is not related to the present project.
3. Dr. (Mrs.) Gopa Pandey, CCF (Planning), MPFD, Bhopal suggested the PI to include investigation on genotypes, prevalent in the area of study and the best genotype out of them. She also wanted the PI to clarify if the fertilization in seeds of this species is homozygous or heterozygous. She commented that based on the action plan presented by PI, it appears that this project is of basic research in this phase and the result may be utilized during his second phase for practical utilization. PI agreed with the comments and said that the results will be of practical utility after identification of genotype under this proposed study.
4. Shri G. Sai Prakash, CF & Silviculturist, Working Plan, Pune enquired about the use of project for benefit of Pulp factory, pulp production and its correlation. PI replied it will be useful in the later stage.
5. Shri Soni, CCF, SFRI, Jabalpur informed the house that natural regeneration of the *Boswellia serrata* is not a problem and also that it does not appear to be a genetical problem. He asked PI whether any information is available indicating the genetical nature regeneration of this species. PI responded that there is no such information available.
6. Shri Ashish Rawat, ADG, ICFRE, Dehradun enquired about the importance, genesis of the project, and inclusion of collaborators from SFDs. He also suggested PI to justify the requirement of additional staff in the project for presentation in RPC. He was concerned about the practical application of result. PI replied that the origin of the problem is based on the information available in working plan and that one of the collaborator is from SFRI, Jabalpur, who will help in selection of samples in close collaboration with SFDs.
7. Dr. M.N. Khare, JNKVV, Jabalpur asked PI whether the strategic investigation on other factors of regeneration problem like floral morphology and seed weight, etc. will also be considered under the project. PI replied that the aspects suggested by Hon'ble RAG member are under the reproductive biology field and purpose of this project is completely different.
8. Shri Rawat, was interested to know about the multiplication technique to be preferred (seeds or clonal). PI replied that aim of the present project is selection of good genotype.

9. Shri Rawat pointed out that complete picture of this study is possible only in presence of reproductive biologist. PI replied that specialist in reproductive biologist is not available in the institute.
10. Dr. P.K. Shukla, M.D., MFP Federation, Bhopal suggested that the project should focus on *in vitro* and *in vivo* multiplication of species to address the problem of lack of regeneration. PI replied the same.
11. Shri Rawat suggested that the project should be revised so as to provide a complete package by addressing various aspects playing role in the form of integrated approach.

Recommendation: The project was approved.

PROJECT – 2

Title of the Project: Biocontrol potential of native isolates of entomopathogenic nematodes for the management of insect pests of teak.

Principal Investigator: Dr. N. Kulkarni, Scientist-F
Forest Entomology

Co-PI: Dr. N. Roychoudhury, Scientist-F

Duration: Three years

The PI of the project presented the new proposal before the house and all the RAG member appreciated the project. Following queries were made by RAG members –

1. Shri A.S. Joshi was interested to know if the outcome of the project will be available to users for their practical use in the field to which the PI replied that the technology or package of practice will be extended after the completion of investigations.
2. Prof. M.N. Khare enquired that whether the other insect pests of teak will also be considered while carrying out the present investigation. The PI responded that the white grubs and termites are being investigated under different project funded by DBT, besides them observations on other insect pests may also be included in the present study.
3. Shri Ashish Rawat, ADG, ICFRE appreciated the concept and its presentation.

Recommendation: The project was approved.

PROJECT – 3

Title of the Project: Germplasm collection and *ex situ* conservation of *Pterocarpus marsupium* Roxb.

Principal Investigator: Dr. Yogeshwar Mishra, Scientist-D
Genetics and Plant Propagation

Co-PI: Dr. Fatima Shirin, Scientist-D

Duration: Four years

The PI presented the project, followed by the discussion as hereunder –

1. Shri A.K. Joshi, PCCF, Maharashtra, wanted to know whether the PI has surveyed the literature with regard to the threatened status of the *Pterocarpus marsupium*. At the same time, he informed that the species is available in plenty in Koka locality in Bhandara Forest Division, Bhandara in Maharashtra.
2. Shri R.G. Soni, CCF Research & Extension Circle, Jabalpur said that the nursery technique of the species is already available and germination of the seeds has also not been a problem.
3. Shri Dave, Chairman of the session said that since the germination of the species is not a problem and the nursery technique is also known the significance of the project is required to be reconsidered and the project may be modified by taking any other species.

Recommendations: The project was approved subject to the replacement of species *Pterocarpus marsupium* with *Boswellia serrata* and recasting the project accordingly.

PROJECT – 4

Title of the Project: Status of sal heartwood borer, *Hoplocerambyx spinicornis* Newman in and its management.

Principal Investigator: Dr. N. Roychoudhury, Scientist-F
Forest Entomology Division

Co-PI : Dr. N. Kulkarni, Scientist-F
Duration : Five years

The PI presented the project, followed by the discussion as hereunder –

1. Shri A.K. Joshi, PCCF, Maharashtra said that the project is significant for Madhya Pradesh and Chhattisgarh but also asked whether there will be considerable output of the project. PI replied that the project being proposed during non-epidemic period of the sal borer is expected to answer some important questions related to re-occurring epidemics and said that it may provide significant outputs with regard to its management. He also informed that various sal borer related committees have been recommended to continue such observations even during non-epidemic period and therefore the project is being proposed.
2. Prof. M.N. Khare was of the opinion that considering the recurrence of sal borer epidemics, the project is worth recommending.
3. Dr. P.K. Shukla, PCCF (MFP Federation), Bhopal suggested that while investigating the natural enemies of sal borers the associated host plants of the natural enemies should also be identified so that the precaution could be taken by the forest managers, not to remove these associated species during the normal silvicultural operations in the sal forest areas. The PI agreed to incorporate the suggestions.

Recommendations: The project was approved.

PROJECT – 5

Title of the Project: Physico-chemical characterization of particulate matters emitted from the sponge-iron factories and their effects on germinating seeds of important tree species at molecular level.

Principal Investigator: Dr. R.Sett, Scientist-D
Agroforestry Division

Co-PI:
1. Dr. S.A. Ansari, Scientist-F & Head
2. Dr. M. Kundu, Scientist-E

Duration: Three years

The PI presented the project, followed by the discussion as hereunder –

1. Shri A.K. Joshi, Chairman of the session, while appreciating the concept of the project, raised the question that it does not include prevention aspect of the effect of pollutants. He also wanted to know whether the output of the project will directly help us in negating the effect of pollutants and that whether the damage caused to the seeds can be expressed in terms of grading based on pollution data, since grading effect will directly help decision makers to decide on licensing regulations on such industries in Maharashtra. The PI responded that prevention of pollutant effects is not directly related to the concept of this project. He also emphasized that the damage caused to the seeds expressed in terms of grading based on pollution data will be assessed in the project.
2. Prof. Khare, wanted to know how SPM penetrates in to the germinating seeds? What is the distance/depth in the soil it affects? He also said whether foliage is also affected and if yes can the output of the project be helpful in suggesting to avoid developing nurseries in such areas. The PI responded that the related aspects will be taken up in the project but, specific questions like penetration of SPM in to the seeds may not be included in the project.
3. Dr. Gopa Pandey, CCF (Planning), Bhopal suggested that the PI should contact NEERI, Nagpur and BHU, Varanasi where similar kind of work has been undertaken in the past. She also suggested that the indicator species should be selected so as to get better results. The information on the project outcome may be added in the "Developing Green Belt" initiative by MoEF.

Recommendations: The project was approved.

PROJECT – 6

Title of the Project: Monitoring the impact of climate variables on plant diversity in Bhimashankar permanent preservation plot of Sub tropical hill forest of Maharashtra

Principal Investigator: Dr. P.K. Khatri, Scientist-C
Biodiversity and Sustainable Forest Management

Co-PI : Dr. V. Nath, Scientist-F & Head

Duration : Three years

The PI presented the project, followed by the discussion as hereunder –

1. Shri A.K. Joshi, Chairman of the session said that bibliography is not mentioned in your concept note. In Nagpur some work is being undertaken in NEERI, which should be consulted to avoid repetition or duplication of work. PI responded the detailed literature survey has already been made on this aspect.
2. Prof. M.N. Khare, said that the looking at the action plan proposed under the project the title may be modified as "Evaluation of the impact of climate variables on plant diversity in Bhimashankar permanent preservation plot of sub tropical hill forest of Maharashtra". However, it was decided by the RAG that the "Monitoring" word is appropriate, considering long term investigation.
3. Dr. (Mrs.) Gopa Pandey asked that since the project envisaged comparison of 10 years old data, whether the published data on the status of Biodiversity dating back to 1999 is available. Pi replied that the data is available in TFRI.
4. Dr. Banerjee also added that TFRI has already collected last 20 years data which can be used as base line for the present study. PI agreed to incorporate the suggestions.
5. Shri Ashish Rawat, ADG, ICFRE, raised doubts on how the comparison the data will be possible since the properly maintained preservation plots are rare to get. He also categorically said that a component of extension of the results may be added in the project. PI replied that the undisturbed area is available in the region of study, thus the observations are possible using the base line data for comparison.

Recommendations: The project was approved.

PROJECT-7

Title of the Project: Field evaluation of indigenous species of *Trichogramma* against teak skeletonizer *Eutectona machaeralis*.

Principal Investigator: Dr. Mohd. Yousuf, Scientist-F
Forest Entomology

Co-PI: 1. Dr. N. Roychoudhury, Scientist-F & Head
2. Shri Subhash Chandra, Scientist-B

Duration: Three years

The PI presented the project, followed by the discussion as hereunder –

1. Dr. (Mrs.) Gopa Pandey enquired about the possibility of multiplication of egg parasitoid in the field on some artificial diet. PI replied that it may not possible due to technical reasons.
2. Prof. M.N. Khare, said that the different parasitoid species being used under the project is not mentioned in the document. PI replied that presentation did not include species, however, they are already mentioned in the project document.
3. Shri A.K. Joshi, Chairman of the session was interested to know as to how the present proposal differs from the earlier project report quoted in the document as Yousuf (2005). PI replied that the earlier project included only exotic parasitoid species whereas the present proposal includes indigenous species.

Recommendations: The project was approved.

PROJECT -8

Title of the Project: Evaluation of non edible oil seeds for development of surfactants and their utilization in pest management.

Principal Investigator: Smt. Neelu Singh, Scientist-E
Non-Wood Forest Produce

Co-PI: 1. Dr. R.K. Verma, Scientist-E & Head
2. Dr. N. Kulkarni, Scientist-F

Duration: Three years

The PI presented the project, followed by the discussion as hereunder –

1. Shri A.K. Joshi, Chairman of the session enquired whether identification of new surfactants from the botanicals will be useful in forestry or agriculture to which PI replied that it will be useful for both the sectors.
2. Dr. (Mrs.) Gopa Pandey, wanted to know any phytotoxicity investigation of the isolated surfactants included in the proposal. PI replied that phytotoxicity tests are already included in the proposal.
3. Shi A.K. Joshi, chairman commented that the project has immense commercial potential, however, the presumption of phytotoxicity, as expressed by Mrs. Gopa Pandey, should be checked thoroughly.
4. Shri Ashish Rawat, ADG, ICFRE, wished to know the species which will be investigated. PI responded that *Jatropha curcas*, *Pongamia pinnata*, *Sapindus mukrossi*, *Schleiochera oleosa* will be investigated for development of surfactants.

Recommendations: The project was approved.

PROJECT-9

Title of the Project: Impact of defoliator, *Hyblaea puera* and skeletonizer, *Eutectona machaeralis* on volume increment of teak, *Tectona grandis*.

Principal Investigator: Dr. P.B. Meshram, Scientist-E
Forest Entomology

Co-PI: 1. Dr. N. Roychoudhury, Scientist-F & Head
2. Mr. Girish Chandra, Scientist-B

Duration: Five years

The PI presented the project, followed by the discussion as hereunder –

1. Shri A.K. Joshi, Chairman asked that why only Kundam Forest Division has been proposed as the study site, since the incidence of teak defoliator and the skeletonizer is very uncertain and may not appear in the selected site. He also wanted to know the strategy of PI in such situation ? PI responded that three more project divisions under MPFDC will be selected, based on incidence pattern.
2. Shri Ashish Rawat, ADG, ICFRE, suggested to include survey of the sites to identify potential infested areas for further detailed study, considering the uncertain incidence pattern of the insect pests. He also suggested to reduce the project period to three years. PI replied that the project requires minimum five years to complete the envisaged, targets which was also supported by the external referee.
3. Dr. K.C. Joshi, suggested to take up only one common insecticide in three different sites to compare the defoliation impact of the pests and not to compare the efficacy of the insecticide and biopesticide. He also said that spinosad bio-pesticides should not be taken in study and spraying to chemical insecticide at three sites with repeated spraying in 15 days interval should be carried out without deviation so as to get good results.
4. Dr. Shukla suggested that the PI need not wait for the mechanical thinning for the targeted experiments and may decide only on the basis of DBH and volume table. PI agreed to include the suggestion
5. Dr. S.A. Ansari, stressed that at least 10 replications should be taken in three sites for making the results statistically sound and accordingly site may be selected. PI agreed to include the suggestion.

Recommendations: The project was approved after incorporating the suggestions by the RAG.

PROJECT – 10

Title of the Project: Studies on chemo-profiling of some Dasmoola species (*Uraria picta*, *Solanum indicum* and *Solanum xanthocarpum*) in central India.

Principal Investigator: Shri Hari Om Saxena, Scientist-B
Non-Wood Forest Produce

Co-PI: Dr. A.K. Pandey, Scientist-F & Head

Duration: Three years

The PI presented the project, followed by the discussion as hereunder –

1. Shri A.K. Joshi, Chairman of the session asked whether the chemo-profiling of targeted species is not yet known. The same question was also supported by Mrs. Gopa Pandey. Shri A.K. Joshi also asked the usefulness of such chemistry specific investigation in forestry. Chairman suggested that the title may also be modified accordingly so as to clearly indicate its aims at evaluating variation in different agro-climatic zones. Dr. A.K. Pandey, Co-PI of the project responded that the present study aims at evaluating variation in different agro-climatic zones. He also said that the investigation is very useful in forestry as a value addition activity.
2. Shri Ashish Rawat, ADG, ICFRE asked that since the industries are interested in the products of Dasmoola species (*Uraria picta*, *Solanum indicum* and *Solanum xanthocarpum*), the better source should have already been known, considering its economic importance. In such case why the project is being proposed. Dr. A.K. Pandey, Co-PI of the project responded that the industries do not disclose their source for the products, not much information is known and therefore, the project has been proposed.
3. Dr. S.A. Ansari, wanted to know the specificity of the activity of compounds isolated from the targeted plant species. PI responded appropriately.
4. Shri Ashish Rawat, ADG, ICFRE said that a Project Assistant may be recommended in place of JRF, for which also justification may be prepared for presentation in RPC.

Recommendations: The project was approved after incorporating the suggestions of RAG.

PROJECT – 11

Title of the Project: Value addition of *Annona squamosa* (Sitaphal) and skill upgradation training to Tribal/ Rural population

Principal Investigator: Dr.Vishakha Kumbhare, Scientist-B
Centre for Forestry Research and Human Resource Development
(CFHRD), Chhindwara

Duration : Two years

The PI presented the project, followed by the discussion as hereunder –

1. Shri K.C. Yadav, CCF, Raipur suggested the PI to contact agencies involved in such industrially important work like D.S. Group in New Delhi to avoid duplication of work. PI responded that she is already in contact with such industries.
2. Shri Ashish Rawat, ADG, ICFRE wanted to know if there is any marketing component included in the project. He also suggested PI to incorporate the mode of channelization of marketable products and its promotion. PI responded that the possibility of marketing will be explored.
3. Dr (Mrs.) Gopa Pandey, informed the house that the custard apple is also being used by ice cream industries and therefore, they should be contacted to generate better ideas for its commercial utilization. PI agreed to the suggestion.
4. Shri A.K. Joshi, suggested that CSIR institute like CFTRI, Mysore must be consulted. PI informed that the literature of CFTRI, Mysore has already been consulted at the time of formulation of concept note.

Recommendations: The project was approved.

PROJECT – 12

Title of the Project: Suitability of forest litter of different species for production of vermicompost.

Principal Investigator: Dr. P.B. Meshram, Scientist-E
Forest Entomology

Duration: Three years

The PI presented the project, followed by the discussion as hereunder –

1. Shri A.K. Joshi, chairman commented that good amount of work in this respect has already been done everywhere and also in Maharashtra by using weeds and grasses. Whether collection of leaf litter from the forest floor as indicated by the PI is justified.
2. Dr. (Mrs.) Gopa Pandey said that removal of forest litter which is natural source of nutrients in forest floor is not at all suggestible.

Recommendations: The proposal is not approved in the form of research project, however the RAG suggested that TFRI can take it up as a long-term institutional activity.

PROJECT – 13

Title of the Project: Potential pathogens and insects responsible for the low seed production in teak seed orchards and their management.

Principal Investigator: Dr. V.S. Dadwal, Scientist-C
Forest Pathology

Co-PI: Dr. P. B. Meshram, Scientist-E

Duration: Three years

The PI presented the project, followed by the discussion as hereunder –

1. Shri A.K. Joshi, chairman said that the considerable information is known on pests, in general affecting seed production but information on the specific pathogen species involved should be generated in this project. PI replied that insect pests responsible for low seed production in teak are known but the role of pathogens has not been investigated in details, till date. PI agreed to incorporate the suggestions.

Recommendations: The project was approved.

PROJECT – 14

Title of the Project: Studies on natural dyes from *Aegle marmelos* (Bel) and *Woodfordia fruticosa* (Dhawai) for their utilization.

Principal Investigator: Shri Hari Om Saxena, Scientist-B
Non-wood Forest Produce

Co-PI: Dr. A.K. Pandey, Scientist-F & Head

Associate: Dr. S.C. Biswas, Scientist-B

Duration: Three years

The PI presented the project, followed by the discussion as hereunder –

1. Shri A.K. Joshi, chairman of the session asked about specific colour of the dyes from targeted species. PI responded that yellow colour dye will be extracted from *Aegle marmelos* and red colour will be obtained from *Woodfordia fruticosa*.
2. Shri Ashish Rawat, ADG, ICFRE, suggested PI to consult the research being undertaken in FRI, Dehradun so as to avoid its duplication and that the result from this project should reach to end users. PI responded that the researches in FRI have already been consulted and informed that the plant species used in earlier work were different from the present proposal. He also informed that the dye isolated in FRI has also reached to end users by patenting.

Recommendations: The project was approved.

PROJECT – 15

Title of the Project: Development of value added products from wild Jamun (*Syzygium cuminii*) for economic development of tribal/rural population.

Principal Investigator: Dr. S.C. Biswas, Scientist-B
Non-wood Forest Produce

Co-PI: Dr. Neelu Singh, Scientist-E

Duration: Three years

The PI presented the project, followed by the discussion as hereunder –

1. Shri Ashish Rawat, ADG, ICFRE, said that proposal has importance, provided a village level committee is associated with the project in due consultation with local forest officials. It will help in identifying marketable certified products. JRF may not be admissible, instead a Field Assistant may be recommended.

Recommendations: The project was approved with a Field Assistant in place of JRF.

PROJECT – 16

Title of the Project: Eco-rehabilitation of degraded limestone mined land through application of biotechnological package.

Principal Investigator: Dr. A.K. Bhowmik, Scientist-C
Ecology and Rehabilitation

Co-PI: Dr. V.S. Dadwal, Scientist-C

Associate: 1. Mr. R.B. Manjhi, RA-I
2. Miss. C. Lepandey, RA-I

Duration: Five years

The PI presented the project, followed by the discussion as hereunder –

1. Dr. Jamaluddin informed the RAG members that thesis is available in the institute library on the similar kind of work which may be consulted by PI to avoid duplication. Dr. Avinash Jain informed the house that the PI is aware of the earlier work done but the present study has been proposed in different study sites than the earlier work under reference.
2. Shri A.K. Joshi, chairman of the session wanted PI to clarify the origin of the project and that whether this problem has been raised by any of the stakeholders.
3. Dr. Banerjee said that this proposal is extension of work done earlier and since the suitability of the species is site specific, therefore, the study is important.
4. Shri Ashish Rawat, ADG, ICFRE said focus may be added on other biodiversity aspects.

Recommendations: The project was not approved.

TECHNICAL SESSION - II (ON-GOING INTRA-MURAL PROJECTS)

**Chairman – Dr. A. Shejale, IFS, Chief Conservator of Forests (Res., Edu. & Training),
Maharashtra Forest Department, Pune (M.S.)**

In technical session II, 15 ongoing (intra-mural) projects from different research divisions of TFRI, Jabalpur namely Agroforestry (1), Forest Pathology (3), Genetics and Plant Propagation (2), IT Cell (1), Non-wood Forest Produce (1), a centre at CFRHRD, Chhindwara (3), Forest Entomology (1), Forest Pathology (1), Agroforestry (1), and Silviculture and Joint Forest management (1) were presented by respective principal investigators of the projects.

Agroforestry Division

Project 1 - Evaluation of Productivity of maize in *Dalbergia sissoo* (Shisham) and *Zea mays* (maize) agroforestry system. [I.D. No. 133/TFRI-2008/Agro -1(15)]. Name of PI –Dr. Nanita Berry, Scientist-C.

PI of the project presented the progress of the work achieved during the period under review.

1. Prof. Khare, asked PI as to how long maize can be taken along with the *Dalbergia sissoo* in terms of plantation of the year. PI clarified the point satisfactorily.
2. The RAG members were satisfied with the progress of the project.

Forest Pathology Division

Project 2 – Studies on the dynamics of litter decomposition in sal forests of central India and its impact on nutrient status of soil. [I.D. No. 136/TFRI/2009/Path -1(15)]. Name of PI - Dr. K. K. Soni, Scientist – E.

PI of the project presented the progress of the work achieved during the period under review.

1. Prof. Khare, asked about the basic purpose of the project. He also wanted to know whether the litter was being collected from the forest floor i.e. *ex situ* or *in situ*. The carbon content shown in the result is also very high (more than 9). PI replied that the basic purpose of this project to develop beneficiary consortium for development of healthy seedling in sal forest. The litter was collected from forest floor and succession of involved fungi were studied in forest nursery. The basic carbon content at initial stage of litter is always high and gradually consumed by the litter decomposition fungi.
2. Dr. Upadhaya, suggested PI to include time series data on available consortia of litter decomposition fungi and their correlation with the abiotic factors. PI responded that the point is already being undertaken in the project.
3. The RAG members were satisfied with the progress of the project.

Project 3 - Studies on diseases of important medicinal plants and their bio-control. [I.D.No. 129/TFRI-2008/Patho -1(13)] Name of PI – Dr. V.S. Dadwal, Scientist-C.

PI of the project presented the progress of the work achieved during the period under review and requested one year extension of the project.

1. Prof. Khare, asked PI about the number of *in vivo* experiments carried out in field. PI informed that the field experiment has been carried out once and it will again be replicated for the confirmation of the results.
2. Shri Ashish Rawat, ADG, ICFRE suggested PI to include field experiment for field confirmation in the stakeholder's field during the period of extension. PI agreed to incorporate the suggestions.
3. The RAG members were satisfied with the progress of the project and recommended the extension of the project to another one year.

Project 4 - Studies on wood-decay and its control in stored tropical timber. [I.D.No. 130/TFRI-2008/Path -2(14)] Name of PI - Dr. C. K. Tiwari, Scientist – C.

PI of the project presented the progress of the work achieved during the period under.

1. Shri Ashish Rawat, ADG, ICFRE wanted to know the utilization of the project in the field. He also asked PI about the field trials to be conducted under the project. PI responded that the investigation is useful in timber depots and added that the field trials will be conducted during 2011-12 in forest depots of Madhya Pradesh and Chhattisgarh.
2. Prof. S.D. Upadhyaya, JNKVV, Jabalpur wanted to know whether four new fungi recorded under the project have been deposited in any National Bureau. PI informed that the specimen have been deposited in the herbarium of Tropical Forest Research Institute, Jabalpur.
3. The RAG members were satisfied with the progress of the project.

Genetics & Plant Propagation Division

Project 5 - Studies on endogenous auxin level and its relationship with adventitious rooting potential in *Dalbergia latifolia* Roxb. [I.D. No. 131/TFRI-2008/Gen -1(17)] Name of PI - Dr. Pramod Tiwari, Research Officer.

PI of the project presented the progress of the work achieved during the period under review and requested for extension two years project period.

1. Prof. S.D. Upadhyaya, JNKVV, Jabalpur appreciated the project and enquired about the range of concentration of IAA. He also wanted PI to justify the extension requested. PI replied the same.
2. Prof. Khare, enquired about the availability published information on difference in function of roots in normal and hormonally induced rooting. PI replied that there is no published information. Dr. S.A. Ansari, Co-PI of the project clarified these aspects in detail.
3. Chairman recommended for two years extension of project period.

I.T. Cell

Project 6 - Development of an information system for forest tree species associated insects and their management. [I.D.No. 132/TFRI-2008/IT Cell -1(1)] Name of PI – Dr. Sharad Tiwari, Scientist-E.

PI of the project presented the progress of the work achieved during the period under review and requested for extension one year project period to include information about pathogens of forestry species in the developing software.

1. Shri Ashish Rawat, ADG, ICFRE, while appreciating the developed software suggested to increase the font size of the letters. He expressed that in place of research project this kind of work on development of data base and software should be taken up as a continuous institutional activity and an ongoing process in the institute with some additional budget provision. He also suggested PI to compile and present the list of all such software available on the web sites so as to be able to develop a world class software/data base. Improvement in

the software to match with the world class software should be taken up in the proposed extended period.

2. Prof. S.D. Upadhyaya, JNKVV, Jabalpur said that since the pathogen are also being included in this, the title of software/data base should also be change accordingly. He suggested that the title could be modified as "Development of an Information System for Plant Protection of Forest Tree Species in Central India". The modified title was unanimously recommended by all RAG members.
3. Dr. A.D. Shejale, chairman of the session said that the extension of the project for further one year may be extended subject to the incorporation of suggestions given by RAG members to be carried out during the extension period.

CFHRD, Chhindwara

Project 7 -Studies on the harvesting time of some selected medicinal plants for their natural antioxidants constituents. [137/CFRHRD/2009-1(14)]. Name of PI – Dr. Vishakha Kumbhare, Scientist-B.

PI of the project presented the progress of the work achieved during the period under review and expressed difficulty in getting the raw material *Stevia rebaudiana*.

1. Shri Yadav, CCF (Research), Raipur suggested the PI to request DFO, Poama, Chhindwara to make available area for growing the required medicinal plant. Further, he also suggested that there is much potential of quality project on NWFP from comparatively lesser explored area of Tamia valley, Chhindwara.
2. The RAG members were satisfied with the progress of the project.

Project 8 - Genetic improvement of *Buchnanania lanzan* Spreng [Pr. ID No. 116/CFRHRD/2007-1(11)]. Name of PI – Shri Har Prasad, Dy.C.F.

PI of the project presented the progress of the work achieved during the period under review and requested the RAG members to allow him to close the project in view of the non-availability of expertise in CFHRD, Chhindwara.

1. Shri Ashish Rawat, ADG, ICFRE, said that the project may closed, as requested by PI, after compiling the works done till date against the expenditure incurred and the final report be submitted.

Project 9 - Genetic variation for in-vitro morphogenetic potential of *Dalbergia sissoo* Roxb. Clones and evaluation of their field performance. [I.D. No. 117/TFRI-2007/Gen -1(13)]. Name of PI - Dr.Yogeshwar Mishra, Scientist –D.

PI of the project presented the progress of the work achieved during the period under review.

1. Shri Yadav, CCF (Research), Raipur suggested the PI to collaborate with the research and extension wing of SFD, M.P. and Chhattisgarh for the field trials. PI responded that the field trials are already planned to be conducted, first in the institute and then in the stakeholders field. He also said that he has noted the suggestions of collaborating research and extension wing of SFDs for the field trials in M.P. and Chhattisgarh.
2. The RAG members were satisfied with the progress of the project.

Project 10 - Determination of polysachharides for the Development of bioproducts. [I.D. No. 138/TFRI/2009/NWFP -1(24)]. Name of PI – Smt. Neelu Singh, Scientist-E.

PI of the project presented the progress of the work achieved during the period under review.

1. Shri Ashish Rawat, ADG, ICFRE while appreciating the bio-film produce under the project asked PI about the production cost of the same and that the future plan for the extension of the technologies.
2. The RAG members were satisfied with the progress of the project.

Project 11 – Standardization of cultivation protocols for *Asparagus racemosus* (Satawar). [I.D. No. 119/CFRHRD/2007-2(12)]. Name of PI – Shri Sunesh Buxy, Dy.C.F.

PI of the project presented the progress of the work achieved during the period under review.

1. The RAG members were satisfied with the progress of the project.

Ongoing initiated projects from April, 2010 for modification

Fifteen projects are successfully being initiated from April, 2010. However, following four projects are presented before RAG 2010 for kind consideration of additional manpower requirement/modification.

Project 1 - Damage assessment of gall making insect species of eucalypts and its management by pesticides. [ID No. 153/TFRI/2010/Ento-3 (24)]. Name of PI - Dr. N. Roychoudhury, Scientist-F.

PI of the project requested modification in the sanctioned project period from two years to three years with approval of one Junior Research Fellow (JRF).

1. Shri Ashish Rawat, ADG, ICFRE, asked about the justification for project period and JRF. The PI responded with justification for the same. Shri Ashish Rawat suggested that to the point requirement may be prepared so as to strongly justify the JRF in the RPC.
2. Dr. A.D. Shejale, chairman of the session said that extension of the project from two to three years with sanction of one Junior Research Fellow (JRF) may be recommended for which detailed justification may be submitted by PI for presentation before the RPC.

Recommendation: The request for sanction of project period from two to three years and a JRF was approved.

Project 2 - Development of certification criteria and production of microbial inoculants for application in forest nurseries and plantations. [I.D.No.157/TFRI/2010/Patho-3 (18)]. Name of PI - Dr. R.K.Verma, Scientist – E.

PI of the project presented the progress of the work achieved during the period under review and requested for sanctioning one Junior Research Fellow (JRF).

1. Shri Yadav, CCF (Research), Raipur suggested PI to consult the researches being undertaken in CIMAP, Lucknow and Central Bio-fertilizer Unit, Ministry of Agriculture, Adhartal, Jabalpur to avoid duplication. PI responded that he already aware of the work being undertaken in CIMAP, Lucknow and the Central Bio-fertilizer Unit, Jabalpur and said that neither of these is working on certification criteria.

Recommendation: The request for JRF was approved.

Project 3 - Development of lac based agroforestry (Silvi-Agri-Lac) system. [I.D. No. 163/TFRI/2010/Agro- 2 (17)]. Name of PI - Dr. Nanita Berry, Scientist-C.

PI of the project presented the progress of the work achieved during the period under review and requested for sanctioning one Junior Research Fellow (JRF).

1. Shri Yadav, CCF (Research), Raipur suggested to include *Flemingia semialata*, as the species has been performing better for the production of lac. The PI responded that the species is already included in the study along with others.

Recommendation: The Field Assistant was approved in the project.

Project 4 - Germination ecophysiology of two important tropical forest tree species : *Schleichera oleosa* and *Pterocarpus marsupium*. [I.D. No. 160/TFRI/2010/Silvi- 2 (14)]. Name of PI – Dr. Maitreyee Kundu, Scientist-E.

PI of the project presented the progress of the work achieved during the period under review and requested for sanctioning one Junior Research Fellow (JRF).

1. Shri Ashish Rawat, ADG, ICFRE, based on discussions made between the RAG members and the PI said that Field Assistant may be recommended, for which detailed justification may be submitted by PI for presentation before the RPC.

Recommendation: The Field Assistant was approved in the project.

Chairman of the session Dr. Shejale appreciated the research projects being undertaken in the institute and said that transfer of technology from laboratory to land should be given more emphasis.

Concluding Session - Wrap up / comments from RAG members

The concluding session was chaired by Dr. M.S. Negi, Director, TFRI. The chairman of the session requested all honourable RAG members for their comments.

Shri G. Sai Prakash, CCF, Pune appreciated the project proposals and related deliberations in the RAG meeting and said that there is no new or ongoing project on socio-economic aspects in the institute. Dr. M.S. Negi, Director, TFRI informed that the institute is collaborating with IIFM, Bhopal and the problems related to socio-economic aspects will be taken up under this collaboration by IIFM, Bhopal. Dr. Upadhyaya, JNKVV, Jabalpur thanked the ICFRE and Director, TFRI for inviting to attend the meeting as a member and said that documentations of the transferable achievements must be made time to time by the institute for the benefit of stakeholders. Dr. Khare, JNKVV, Jabalpur appreciated the projects and also said that good supporting staff is very necessary for getting fruitful results out of the research projects. If the provisions permit to so, short period good skilled hand may be appointed from the within the project under contingencies in cases where JRF have not been given with necessary provisions made in the contingencies head. Inter disciplinary approach in some areas of research is very essential and should be given more emphasis while formulating the projects. The impact of climate change on productivity of forests and related problems and global warming should be under taken in priority. Dr. S.K. Banerjee said the main objectives of forestry research is to enhance the productivity not only from economical but also from environmental view point. He also stressed to carryout more works on problem related to bio-energy, climate change and global warming, so that dependency on thermal power for electricity can be reduced.

Vote of thanks

Dr. S.A. Ansari, Head, Genetics & Plant Propagation Division, on behalf of the Director, TFRI, Jabalpur proposed a vote of thanks. He expressed his deep sense of gratitude towards the honorable RAG members particularly the PCCF from M.P. and Maharashtra and Senior forest officials of respective states and SFRI, the subject experts and scientists from JNKVV, Jabalpur for sparing their valuable time and making it convenient to attend the meeting for directing the research endeavors of the Institute. He also gratefully acknowledged the participation Additional Director General, ICFRE for their guidance for smooth functioning of the RAG meeting. He also thanked senior scientists (Retd.) from ICFRE for their fruitful comments during the discussion. At the end he also thanked all the members of different organizing committee of the institute for their continuous efforts to make the RAG a grand success.