

MINUTES OF THE XX RAG MEETING

(6th – 7th January 2014)



ORGANIZED BY

FOREST RESEARCH INSTITUTE

DEHRADUN

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A meeting of XX RAG of the Forest Research Institute, Dehradun was held on 6th and 7th January, 2014 in the Board Room of the FRI. Dr. R.K. Luna, Additional PCCF, Punjab Forest Department chaired the meeting. The meeting was attended by the following members of the RAG-

Sl. No.	Name	Designation
1.	Dr. R.K. Luna	Additional PCCF, Punjab Forest Department
2.	Dr. P.P. Bhojvaid	Director, FRI
3.	Dr. G.S. Goraya	DDG (Research), ICFRE- Special Invitee
4.	Prof. S.P.Singh	Chair of Excellence, FRIDU- Special Invitee
5.	Shri S.K. Singh	CCF, Research, Uttarakhand Forest Department
6.	Shri Ajay Kadiyan	CF, Haryana Forest Department
7.	Dr. Jagdish Chander	CF (Research), Haryana Forest Department
8.	Dr. Vinod Kumar	Scientist-F, SERB, DST, New Delhi
9.	Dr. J.K. Bisht	Principal Scientist & Head, VPKAS, Almora
10.	Dr. Nirpendra Chauhan	Scientist, In-charge, Center for Aromatic Plants, Dehradun
11.	Shri Vijay Jardhari	Farmer and Convener, Beej Bachhao Andolan, Tehri Garhwal
12.	Shri. Mam Raj	Farmer and Pradhan VFC Thaska, Yamunanagar, Haryana
13.	Dr. Vimal Kothiyal	ADG (RP), ICFRE
14.	Dr. Subhash Nautiyal	Scientist-G, Botany Division
15.	Shri. Rajveer Singh	Head, Forest Informatics Division, FRI
16.	Dr. Manisha Thapliyal	Scientist-E, Silviculture Division, FRI
17.	Dr. S.P. Singh	Scientist-C, C & P Division, FRI
18.	Shri. S.R. Reddy	DCF, RSM Division, FRI
19.	Shri. Arun Singh Rawat	Group Coordinator (Research), FRI

The following scientists/officers from FRI were also present in the meeting-

Sl. No.	Name	Designation
1.	Dr. Sangeeta Gupta	Head, Botany Division
2.	Dr. A. K. Sharma	Head, NWFP Division
3.	Dr. P. K. Gupta	Head, C & P Division
4.	Dr. M. K. Gupta	Head, FSL&R Division
5.	Dr. Sadhna Tripathi	Head, Forest Products Division
6.	Dr. (Mrs.) Laxmi Rawat	Head, Forest Ecology & Environment
7.	Dr. Mohd. Yousuf	Head, Entomology Division
8.	Dr. V. K. Varshney	Head, Chemistry Division
9.	Shri. N. K. Upreti	Scientist –F, RCS/FPD
10.	Dr. Amit Pandey	Head, Pathology Division
11.	Dr. H.S. Ginwal	Head, G&TP Division
12.	Dr. Laxmi Rawat	Head, Ecology Division
13.	Dr. P.S. Rawat	Scientist-D, RCS
14.	Shri. V.K. Dhawan	Research Officer, Silviculture Division
15.	Dr. Sachin Gupta	Research Officer, Forest Products Division

Dr. P.P. Bhojvaid, Director, FRI, welcomed the members of RAG. He made a presentation regarding objectives of the RAG and presented the financial requirement of ongoing, pending and new projects for the year 2014-15. He also briefed the members about the agenda items of the meeting.

Dr. P. P. Bhojvaid also emphasized about the requirement of the Scientific manpower in the field of GIS, hydrology, Soil and Taxonomy (plant, insect and fungus). He also stressed upon the need of basic as well as applied research in forestry.

Total twenty eight new project proposals were discussed in detail on the first day of the meeting. The project wise recommendations are given in **Annexure-I**.

On the second day fourteen ongoing projects were discussed under rolling research plan. The recommendations of the committee regarding these projects are given in **Annexure-II**.

Dr. G. S. Goraya suggested to reassess the financial requirement of approved pending projects. Financial requirement of 5 pending projects approved in 13th RPC (2012) and 14 pending projects conditionally approved in 14th RPC (2013) were also discussed. The present requirement in pending projects is shown in **Annexure-III**.

The members of RAG participated actively in the discussion.

Dr. Jagdish Chander made a detail presentation on the problems being faced in natural and plantation forestry which requires research intervention of FRI. He also emphasized on more research on algae, lichens and ferns pertaining to ecosystem management. He also emphasized on problem of mortality of Chir pine in Morni hills and borer in Sal in Haryana.

Shri Vijay Jardhari addressed the meeting and requested that FRI should do more research work in forestry directly linked with livelihood of hill people.

The chairman, RAG concluded the meeting with the assurance that suggestions received from the members of RAG will be included in formulation and finalization of new projects for presenting before RPC. The scientists of the Institute will remain in the contact of forest department and other stakeholders for further improvement and support in implementing the projects.

The meeting ended with vote of thanks by Dr. P.P. Bhojvaid, Director, FRI, Dehradun.

**RECOMMENDATION OF 20th RAG IN RESPECT OF NEW
PROJECT PROPOSALS**

Thrust Area I. Managing forest and forest products for livelihood support and economic growth		
1.	Influence of age on wood anatomical properties and specific gravity of <i>Populus deltoides</i> Bartr. ex Marsh. Dr. P K Pande, Scientist-D, Botany Division	Not recommended
2.	Nodulation and nitrogen fixation study in the <i>Sesbania rostrata</i> Brem. in relation to fertility of the soil. Dr. S. P. Chaukiyal, Scientist-D, Botany Division	Resubmit the project by incorporating the comparison of Nitrogen fixation potential with other native species of <i>Sesbania</i> (<i>sesban, grandiflora</i>)
3.	Effect of different adhesives on the bending strength of finger jointed Eucalyptus sections. Dr. Kishan Kumar, Scientist-F, Forest Products Division	Recommended with following modifications- <ul style="list-style-type: none"> • Reduce Time to three years and cost accordingly. • Use <i>Eucalyptus</i> hybrid in place of <i>Eucalyptus tereticornis</i>
4.	Use of near infrared spectroscopy for rapid evaluation of physical and strength properties of <i>Melia composita</i> . Dr. Y.M. Dubey, Scientist-C, Forest Products Division	Recommended with following modifications- <ul style="list-style-type: none"> • Take up both the species of <i>Melia</i> (<i>azadirachta, composita</i>). • Duration of the project may be reduced to two years and the cost accordingly.
5.	Studies on vacuum kiln drying behaviour of <i>Dendrocalamus giganteus</i> . Shri. N K Upreti, Scientist-F, Forest Products Division	Recommended with following modifications- <ul style="list-style-type: none"> • At least four species to be studied. • The economics of seasoning

		<p>should also be studied.</p> <p>A bigger project may be submitted to National Bamboo Mission.</p>
6	<p>Study on the effect of preservative treatment on the strength properties of wood.</p> <p>Shri. Ajmal Samani, Scientist-D, Forest Products Division</p>	<p>Recommended with following modifications-</p> <ul style="list-style-type: none"> • Two species which have already been tested with ZiBOC to be taken along with two more species in the project • Title to be modified according to objective • Time duration to be reduced to two year. • Species to be mentioned.
7	<p>Impact of changing altitude on forest soils in terms of soil fertility management in hilly terrain forests of Uttarakhand Himalayas.</p> <p>Dr. B.M. Dimri, Scientist – C, FSLR Division</p>	<p>Reformulate the Project in consultation with Prof. S.P.Singh (Chair of Excellence, FRI university)</p>
8	<p>Integrated nutrient management package and practice for some important forest tree species at nursery level.</p> <p>Dr. Parul Bhatt Kotiyal, Scientist-C, FSLR Division</p>	<p>Not recommended</p>
9	<p>Assessment of wet end additives blends and their chemical derivatives in papermaking.</p> <p>Dr. P K Gupta, Scientist-E, C & P Division</p>	<p>Explore funding from Industries.</p>
10	<p>Assessment of <i>Areca catechu</i> husk as alternative raw material for papermaking. Dr. Vikas Rana, Scientist-D, C & P Division</p>	<p>Recommended with following modifications-</p> <ul style="list-style-type: none"> • Availability of raw material on sustained basis to be explored. • Reduce time period to two years. • Take FA in place of JRF

11	Seed Bank Dynamics in Sal forests of Doon Valley. Dr. Ombir Singh, Scientist –D, Silviculture Division	Project to be sent to Dr. S. P. Singh for his comments.
12	Enhancing seed germination by devising suitable pretreatments and developing propagation techniques of <i>Corylus jacquemontii</i> – an economically important species from Himalayan temperate forests. Dr. Manisha Thapliyal, Scientist E, Silviculture Division	Recommended with following modifications- <ul style="list-style-type: none">• Population of species to be surveyed.• Candidate plus tree to be identified.
13	Conservation oriented Mapping and Selection of Superior Quality Temperate Medicinal Plants Programme (Phase I). Dr. A. K. Sharma, Scientist- E, NWFP Division	A Mega project to be formulated including the works of the projects at Sl 13, 14, 15 & 16 for submission to NMPB. <ul style="list-style-type: none">• Instead of State, take District or unit to carry out the comprehensive study.• More species of Alpine vegetation to be included.• Authentic identification of species to be ensured in the study.• Availability of land for ex-situ conservation to be explored. Collect Germplasm and plant it at appropriate places.
14	Selection of Superior Quality Germplasm of <i>Oroxylum indicum</i> - an endangered species. Dr. B.P Tamta, Scientist-D, NWFP Division	Recommended with following modifications- <ul style="list-style-type: none">• Collect Germplasm from Northeast also.• Explore different age for potential of bioactive compounds.• Germplasm bank to be established.

		<ul style="list-style-type: none"> • Work done by Gujarat Forest Department may be referred.
15	Chemo-profiling of Selected Medicinal Plants conserved at NWFP Herbal Garden for assessing their quality. Dr. Pradeep Sharma, Research Officer NWFP Division	Not Recommended, it cannot be considered as research project.
16	Identification of superior bioactive populations of <i>Valeriana wallichii</i> in Garhwal Himalayas of Uttarakhand. Dr. Pushpa Borai Scientist-C	Not Recommended. The species to be taken up in the project at Sl. No. 13.
17	Chemical examination and value addition of edible mushrooms <i>Astraeus hygrometricus</i> , <i>Calocybe indica</i> . Dr. V K Varshney, Scientist-F	Recommended with following modifications- <ul style="list-style-type: none"> • Content of Vitamin D should also be analyzed. • Desired information regarding second species should also be incorporated in the project proposal.
Thrust Area II. Biodiversity conservation and ecological security		
18.	Identification of factors/indicators contributing to vulnerability of mountain ecosystems under changing climate scenario. Dr. Laxmi Rawat, Head Ecology & Environment Division	Recommended with following modifications- <ul style="list-style-type: none"> • Generate base line information in respect of an ecosystem which the PI has chosen. (litter and decomposition rate). • Identify climate factors • Chose least disturbed area for the study to get better results.
19.	Impact of bricks kiln industries on ecological consequences in Uttarakhand. Dr. Pramod Kumar, Scientist-C, Ecology & Environment Division	Not Recommended
20.	Impact assessment of forest fire on ecology and forest vegetation on the forests of Uttarakhand. Sh. V.K. Dhawan, Research Officer,	Recommended with following modifications- <ul style="list-style-type: none"> • Site selection should be proper.

	Silviculture Division	<ul style="list-style-type: none"> • Compare the fire affected and protected area (control) in terms of ecosystem function. • Valuation for the loss to be included. • Mention the location of control where the study will be conducted.
21.	Development and extension of <i>Trichoderma</i> spp. based formulation for disease biocontrol and plant growth promotion of eucalypts seedlings. Dr. Amit Pandey, Scientist F, Pathology Division	<ul style="list-style-type: none"> • Modify the project to include the <i>Trichoderma</i> spp. based formulations available in the market for testing on Eucalyptus in Northern States. • Physiological aspects of plant in relation to <i>Trichoderma</i> may be taken up. • Explore the funding from external agencies like DBT.
22.	Establishment of Red House for Conservation of Rare Endangered and Threatened Medicinal & Aromatic Plants. Dr. A. K. Sharma, Scientist-E	<ul style="list-style-type: none"> • Appropriate size and design of the proposed house to be decided. • Big project may be proposed for external funding.
Thrust Area III. Forests and Climate Change		
23.	Genetic Modeling of Bamboos for CO ₂ Sequestration: Mitigating Climate Change. Dr. M.S. Bhandari, Scientist-B, G & T P Division	Submit the project for funding to NBM
Thrust Area IV. Forest Genetic resource management and tree improvement		
24.	Establishment of advance generation seed orchard of eucalypts-Phase II. Ms. Parveen, Scientist- C, G & T P Division	Part of the project may be taken up under ongoing Punjab Project in the tree improvement component of G & T P Division.

25.	<p>Selection and genetic evaluation of <i>Ailanthus excelsa</i> germplasm in Northern India.</p> <p>Dr. Rama Kant, Scientist-B, G & T P Division</p>	<p>Recommended with following modifications-</p> <ul style="list-style-type: none"> • The vulnerability aspect of this species to borer may also be included in the objectives.
26.	<p>In vitro selection of salt stress tolerant genotypes of <i>Dalbergia sissoo</i> Roxb.</p> <p>Shri Rajendra Kumar Meena, Scientist B, G & T P Division</p>	<p>Recommended with following modifications-</p> <ul style="list-style-type: none"> • Reframe the project to include the provision for plantation also.
27.	<p>Development of Microsatellite and DNA Barcoding based methods for tracing timber origin for <i>Cedrus deodara</i>.</p> <p>Dr. Santan Barthwal, Scientist D, G & T P Division</p>	<p>Recommended</p>
28.	<p>New Forest Handicraft Extension counter at FRI</p> <p>Head, Extension Division, FRI</p>	<p>A brief presentation was made by the Director, FRI and suggestion emerged out from the deliberation are:</p> <ul style="list-style-type: none"> • Selected technologies developed by ICFRE/FRI may also be displayed at Prerna shop. • Head Extension and Forest Products Division to visit Badsan, Himachal Pradesh near Nahan to see the handicraft making by the artisans. • Training for artisans for revival of Bamboo basket making for the use of villagers to be incorporated. • Head Extension Division will submit a detail project proposal for onward submission to RPC.

ANNEXURE-II

RECOMMENDATION OF 20th RAG IN RESPECT OF PROJECT PROPOSALS UNDER ROLLING PLAN

SI No	Title of the project	PI, Division	Rolling plan	RAG's comments
1	Population Genetic Analysis of Himalayan Banj Oak (<i>Quercus leucotrichophora</i>) forests and its pertinence to Genetic Conservation	Dr. H.S. Ginwal, Scientist E, FRI	<p>The project was approved by the RPC with the budget outlay of Rs. 24.45 lakh. However in last three years only Rs. 8.92 lakh were released, which hampered the progress of the project. Also the project staff sanctioned under the project could not be appointed in previous years due to the budget scarcity.</p> <p>Hence, One year extension is required to the project i.e. up to March 2015 within the sanctioned budget outlay.</p>	Recommended
2	Refinement in vacuum timber dryer designed by FRI and its performance studies	Shri. N. K. Upreti, Scientist-F	<p>The project period is 2012-2014. Due to very late release of budget for Equipment (on 18th Feb 2013), no activity could be performed during 2012-13 except initiation of procurement of equipment in March 2013. Now the project is lagging behind by one year.</p> <p>Hence one year extension beyond March 2014 is required for completion of work within the sanctioned budget outlay.</p>	Recommended
3	Studies on thrips of forest and medicinal plants, problems	Dr. Neena Chauhan	To drop the objective no 4 – "Diseases mediated by thrips as vectors will be	Recommended

	caused by them and their management in Uttarakhand		identified". Out of the above mentioned vector thrips species, only three species <i>Frankliniella occidentalis</i> , <i>Thrips tabaci</i> and <i>Scirtothrips dorsalis</i> are collected and reported from Uttarakhand. these species are not showing any symptom of their serious threat of virus transmission forestry and medicinal plants. The tospoviruses associated with these genera are not reported from India so far. Experts of Viruses on the diseases of medicinal plants and forest tree species are not available in India to identify the virus.	
4	"Evaluation of <i>Santalum album</i> grown in plateau area of Uttar Pradesh adjoining Madhya Pradesh and Uttarakhand for yield, quality and composition of essential oil"	Dr. Rakesh Kumar, Scientist-C	During the stake holders meeting of 2010 at FRI Dehradun, State Forest Department of Uttar Pradesh suggested that the research may be carried out to determine the yield and composition of essential oil of sandal wood upcoming in the area of state adjoining Madhya Pradesh. Hence this project with the objective to assess <i>Santalum album</i> grown in UP state and Uttarakhand in respect of yield, quality and composition of essential oil, was submitted to RAG for consideration and after deliberation this project was approved by RAG and finally approved and sanctioned by RPC 2011. The required samples from Uttar Pradesh SFD have	Take the samples from Bilaspur (H.P.) in place of UP

			<p>not yet been provided, despite our several written request. During the six monthly review (October 2012-March 2013) Director, Forest Research Institute himself enquired about the samples from PCCF Uttar Pradesh. It was informed that no any harvestable <i>S. album</i> samples were available in Uttar Pradesh. The plants were too small to analyze. In view of above, it is proposed that title of the project "Evaluation of <i>Santalum album</i> grown in plateau area of Uttar Pradesh adjoining Madhya Pradesh and Uttarakhand for yield, quality and composition of essential oil" (FRI-549/Chem-39) may please be modified to "Evaluation of <i>Santalum album</i> grown in Uttarakhand for yield, quality and composition of essential oil" and accordingly objective of the project may also be modified.</p>	
5	Digitization of Herbarium (Dehradun Herbarium) of Forest Research Institute	Ms. Ranjana Negi	<p>Extension for Two years required and Budget Required 12,50,000/-</p> <p>Project has been temporarily ceased because of inability to complete the project in the prescribed period. Complete digitization of DD Herbarium is a massive work as the recorded number of specimens are over 0.3 million and subsequently the number of available</p>	To be discussed in a committee

			<p>species shall be more. Hence, the project couldn't be completed in the prescribed time period. With almost 55% completed work, project cannot be left in a midway, it shall be brought to a logical end and Therefore, It has necessitated the extension of the project for another two years.</p> <p>By end of the project, it is estimated that digitization of F.R.I. Herbarium shall be completed (Single specimen for each species). So far, out of 200 families up to 88 families (Asteraceae) were entered in to the software with complete details. Whereas, Scanning part is concerned only 15 % of work is left. Thus, minimum two years of extension is required for the completion of project.</p>	
6	<p>“Phytochemical studies on medicinally important <i>Diploknema butyracea</i> (Indian Butter Tree) seeds”</p>	Dr. Rashmi, Scientist-C	<p>Extension Required: One year from April, 2014.</p> <p>Budget Required: Additional budget requirement is nil.</p> <p>However, the balance amount of the project is proposed to be utilized in the extension period.</p> <p>JRF recruited in the extension period did not join the project.</p> <p>I am on maternity leave since July24, 2013 to January 20, 2014.</p>	Recommended
7	<p>'Enzyme aided alternative process for the extraction of oil from <i>Cymbopogon citratus</i> (lemon</p>	Dr. Rashmi, Scientist-C	<p>Extension Required: One year from April, 2014.</p> <p>Budget Required: Additional budget requirement is nil.</p> <p>However, the balance</p>	Recommended

	grass)'		<p>amount of the project is proposed to be utilized in the extension period.</p> <p>Due to non availability of GC-MS instrument in our division, outsource facility will be utilized.</p> <p>Assistance of the sanctioned manpower (PA) was not regularly available in the project. The PA was available for a period of six months only. I am on maternity leave since July24, 2013 to January 20, 2014.</p>	
8	Refining of process for detoxification of Jatropha seed oil	Dr. Vineet Kumar, Scientist-F	<p>Extension Required: One year from April, 2014. Budget Required: Additional budget requirement is nil. However, the balance amount of the project is proposed to be utilized in the extension period.</p> <p>one JRF was sanctioned for the entire duration of the project by RPC. However the JRF worked in the project just for 11 months till date. Non-availability of the manpower affected the desired output considerably as presented in the QPRs.</p> <p>Further, removal of phorbol from the <i>Jatropha curcas</i> seed oil needs to be tested using HPLC for its complete removal. The above work could not be done due to non-availability of the instrument to test the removal of phorbol (100%) in the division. In the present year all efforts are being made to procure</p>	Recommended Project Budget to be revised.

			HPLC. The work is to be done at an outside laboratory is not satisfactory when the research components are involved.	
9	Process refinement for extraction of quality fiber and optimal isolation of bioactive constituents from <i>Agave sisalana</i>	Dr. Y C Tripathi, Scientist-F	<p>Extension Required: One year from April, 2014.</p> <p>Budget Required: Additional budget requirement is nil. However, the balance amount of the project is proposed to be utilized in the extension period.</p> <p>The specified chemical and analytical works required sustained assistance of supporting manpower. However, the approved manpower (JRF) was appointed after a lapse of 15 month i.e. on 17th June, 2012 that largely hampered the laboratory analytical works.</p> <p>The release of funds during the years 2011-12, 2012-13 and 2013-14 have been delayed and not as per the annual budgetary requirement of the project.</p> <p>Due to much delayed assignment of supporting manpower and inadequate budgetary provisions during the project period, it has not been possible to complete the targeted activities as per the action plan.</p>	Recommended
10.	Phytochemical screening of selected wild edible plants for exploration of new sources of Luteolin	Dr. Y C Tripathi, Scientist-F	<p>Extension Required: One year from April, 2014.</p> <p>Budget Required: Additional budget requirement is nil. However, the balance amount of the project is</p>	Recommended

			<p>proposed to be utilized in the extension period.</p> <p>The specified chemical and analytical works required sustained assistance of supporting manpower. However, the approved manpower (JRF) was appointed after a lapse of about 18 months i.e. in September, 2012 that largely hampered the laboratory analytical works.</p> <p>The release of funds during the years 2011-12, 2012-13 and 2013-14 have been delayed and not as per the annual budgetary requirement of the project.</p>	
11.	Studies on performance of ZiBOC treated imported wood in different agro climatic conditions	Dr. Sadhna Tripathi Scientist-F	<p>FRI 482/FPD (WP)-76 was sanctioned from April 2009 to March 2014. Field data of 42 months has been collected. However, further experiment will be conducted for next two years to get the data of at least 5 years hence, extension with no cost increase for 2 year i.e March 2016 may kindly be considered.</p>	Recommended
12.	Chemical modification of wood for durability improvements	Shri. Ajmal Samani, Scientist-D	<p>Due to lack of funds allotment the project is behind the schedule. Extension Required: One year from April, 2014. Budget Required: Additional budget requirement is nil. However, the balance amount of the project is proposed to be utilized in the extension period. One year extension for project assistant (PA) is also required from the sanctioned budget.</p>	Recommended

13.	Development of molecular diagnostic kits for identification and early detection of nursery and plantation pathogens of Eucalyptus	Dr. Amit Pandey, Head, Pathology Division	<p>One year extension from April 2014 to March 2015 is required. Budget Required: Additional budget requirement is nil. However, the balance amount of the project is proposed to be utilized in the extension period.</p> <p>The total outlay of the project was Rs 12.53 lakhs, however, budget of only Rs 4.16 lakhs has been released till date resulting in shortfalls in achievement of targets.</p> <ol style="list-style-type: none"> 1. One Junior Research Fellow was sanctioned in this project but due to paucity of funds the JRF could not be appointed resulting in acute shortage of manpower which has seriously hampered the project's progress. 2. Four eucalyptus pathogens were identified in this project for designing species specific primers. Targets with respect to two pathogens viz. <i>Pestalotiopsis</i> sp and <i>Alternaria</i> sp. will be achieved by March 2014. However, work is remaining for the other two pathogens viz. <i>Phaeophleospora</i> sp and <i>Cryptosporiopsis</i> sp. Thus, the project is requested to be extended till March 2015. 	Recommended Part completion report to be submitted
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14.	Utilisation of <i>Pinus roxburghii</i> needles for value added products'	Dr. Vineet Kumar, Scientist-F, Chemistry Division	<p>Additional Budget required: 2.0 lakhs only for a JRF. Rest amount will be met from the budget sanctioned in the project.</p> <p>The project is thus aimed at utilisation of pine needles with the objective to prepare value added products as well as to save the forests from forest fires. The work will be accomplished by isolation of wax, determination of the constituents and their modification to prepare value added products. Interestingly the structure of the wax and secondary metabolites has not been studied in India in its native form till date and the modification to prepare value added products is also inadequate.</p> <p>To achieve the above objectives, the project involves extensive work on extraction, isolation, characterization and modification of the secondary metabolites to be isolated and characterized in the project. The JRF is very essentially required in the project to carry out the planned experiments continuously to achieve the project objectives.</p> <p>Since the PI is also involved in planning and</p>	Recommended

			<p>execution of other projects as well as guiding students for their Ph.D. degree and teaching postgraduate students, therefore, manpower is essentially required to carry out the experiments continuously. Hence, it is kindly requested to provide manpower as JRF to carry out all the activities according to the approved objectives of the project.</p>	
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Annexure- III

Pending Projects of FRI: Approved in 13th RPC (2012)

THRUST AREA I: MANAGING FORESTS & FOREST PRODUCTS FOR LIVELIHOOD SUPPORT AND ECONOMIC GROWTH				
Sl. No.	Name of the Project	Original Cost of the Project (in lakhs)	Revised Cost of the Project (in lakhs)	Required Budget for 2013-14 (in lakhs)
1.	Evaluation of some bio-pesticides for the management of termites in nurseries and plantations./ Dr. Shamila Kalia/	The PI has been transferred to ICFRE Hq. Hence the project is recommended to be dropped.		
2.	Management of fungal discolouration of Bamboo for handicrafts, furniture and other utility items to help artisans./ Dr. N. S. K. Harsh/	14.99	17.69	4.24
3.	Studies on finishing aspects of <i>Dendrocalamus strictus</i> ./ Dr. Kishan Kumar/	5.20	5.20 (No change)	2.60
4.	Chemical Interventions for utilization of Eucalyptus bark residues for wood conversion industry./ Dr. V.K. Varshney/	12.02	6.27	2.78
5.	Studies on chemoenzymatic treatment of Black liquor of recovery of reducing sugars./ Dr. P. K. Gupta/	The project is recommended to be dropped as the PI has got funding from DBT		
Total			29.16	9.62

The FRI has submitted justification to ICFRE regarding following projects **conditionally approved** in 14th RPC. The decision of the ICFRE is awaited. The revised cost will be communicated after receiving decision from ICFRE.

Pending Projects of FRI: Conditionally approved in 14th RPC (2013)

THRUST AREA I: MANAGING FORESTS & FOREST PRODUCTS FOR LIVELIHOOD SUPPORT AND ECONOMIC GROWTH				
Sl. No.	Name of the Project	Original Cost of the Project (in lakhs)	Revised Cost of the Project (in lakhs)	Required Budget for 2013-14 (in lakhs)
1.	Entomychological studies in Garhwal Himalaya for edible and medicinally important mushrooms./ P.I.: Dr. Ashwani Tapwal, Scientist-C/2013-2017 (4 years)	13.93		5.44
2.	Production of reducing sugars through pre-treatment lignocellulosic biomass for bioethanol./ P.I.: Dr. P.K. Gupta, Scientist-F/ 2013-2016 (3 years)	8.84		2.48
3.	Strength evaluation of structural bamboo./ P.I.: Shri. Rajesh Bhandari, Scientist-E/2013-2016 (3 years)	4.91		2.28
4.	Physical, mechanical properties and fiber morphology of some bamboo species. / P.I: Dr. Y. M. Dubey, Scientist-C/2013-2016 (3 years)	4.00		1.92
5.	Improvement and Innovation in Solar timber dryer design and trial with Thermal Energy Storage System (TESS)./ P.I: Shri Shailendera Kumar, RO/2013-2016 (3 years)	3.36		1.56
6.	Micro-propagation of plus clumps of <i>Bambusa nutans</i> and <i>Dendrocalamus hamiltonii</i> and establishment of multilocational trails./ P.I: Shri. J. M. S. Chauhan, Scientist-C/ 2013-2017 (4 years)	10.88		2.62
THRUST AREA II: BIODIVERSITY CONSERVATION AND ECOLOGICAL SECURITY				
1.	Qualification and conservation of <i>Indopiptadenia oudhensis</i> , <i>Ilexpseudo-odorata</i> , <i>trachycarpus takil</i> , <i>Cochlospermum religiosum</i> , <i>Turpenia cochinchinenisi</i> Rare/Endangered trees of	6.97		2.74

	Uttarakhand./ Dr. Ranjana Negi, Scientist-B/2013-2016 (3 years)			
2.	Propagation and conservation of vulnerable/threatened species of Uttarakhand./ Dr. Nav Bahar, Scientist-B/ 2013-2017 (4 years)	9.31		2.20
3.	Effect of heavy metals on morpho-biochemical traits and metal accumulation in some forest trees species./ Dr. Meena Bakshi/ 2013-2016 (3 years)	10.82		3.94
THRUST AREA III: FORESTS AND CLIMATE CHANGE				
1.	Seasonal characteristics and climate effect to black carbon aerosols over the urban areas of Uttarakhand./ Dr. A K Tripathi, Registrar and Scientist-F/ 2013-2016 (3 years)	20.64		2.49
THRUST AREA IV: FOREST GENETIC RESOURCE MANAGEMENT AND TREE IMPROVEMENT				
1.	Genetic diversity and adaptability through morphological and molecular markers in <i>Dalbergia sissoo</i> Roxb./ Dr. Ashok Kumar, Scientist E/ 2013-2016 (3 years)	24.86		11.54
2.	Clonal propagation of newly developed superior hybrids/genotypes of Eucalyptus and their development in the field./ Ms. Praveen, Scientist-C/ 2013-2016 (3 years)	18.78		5.26
3.	Field evaluation of recombinants emanating from F1 and F2 generations of <i>Corymbia</i> (Syn. <i>Eucalyptus</i>) hybrid <i>C. citrodora</i> Hook. x <i>C. torelliana</i> F.v. Muell for high productivity (follow up for high project)/ Dr. Ajay Thakur, Scientist-C/ 2013-2019 (6 years)	19.91		4.54
4.	Cytogenetic investigations of selected forest tree species./ Dr. Rama Kant, Scientist-B/ 2013-2016 (3 years)	22.71		7.57
Total		179.92		56.58

Pending Projects of CSFER, Allahabad: 14th RPC Approved (2013)

THRUST AREA I: MANAGING FORESTS & FOREST PRODUCTS FOR LIVELIHOOD SUPPORT AND ECONOMIC GROWTH				
Sl. No.	Name of the Project	Original Cost of the Project (in lakhs)	Revised Cost of the Project (in lakhs)	Required Budget for 2013-14 (in lakhs)
1.	Extension of Poplar Based Agro forestry in Eastern Uttar Pradesh./ P.I.: Shri M K Shukla, IFS, Director/2013-2018 (5 years)	52.84		16.06
2.	Development of site specific medicinal plant based agro-forestry models for exiting plantations of Guava and Anola in Eastern Uttar Pradesh and establishment of demonstration model./ P.I.: Dr. B.K. Pandey, Scientist-D/2013-2018 (5 years)	21.86		3.15
3.	Promotion of Eucalyptus based Agro forestry in Eastern U.P./ P.I.: Dr. Anubha Srivastava, Research Officer/2013-2018 (5 years)	17.48		4.36
4.	Promotion of Shisham based Agro-forestry in Eastern U.P./ P.I.: Dr. Anubha Srivastava, Research Officer/2013-2018 (5 years)	15.98		3.36
5.	Capacity building for Rehabilitation of lac cultivation and processing mechanism in Eastern Uttar Pradesh for rural development./ P.I.: Dr. B.K. Pandey, Scientist-D/2013-2018 (5 years)	23.50		4.59
6.	Promotion of Lesser Known beneficial species in Social Forestry Programmes/ Dr. Anita Tomar, Scientist-C/2013-2016 (3 years)	9.72		3.43
THRUST AREA IV: FOREST GENETIC RESOURCE MANAGEMENT AND TREE IMPROVEMENT				
1.	All India Coordinated Project for Genetic Improvement of <i>Melia Composita</i> Wild Nodal Institute FRI: CSFER, Allahabad will be the part of this AICP./ Dr. Kumud Dubey/ 2012-2022 (10 years)	-		4.00
Total		141.38		38.95