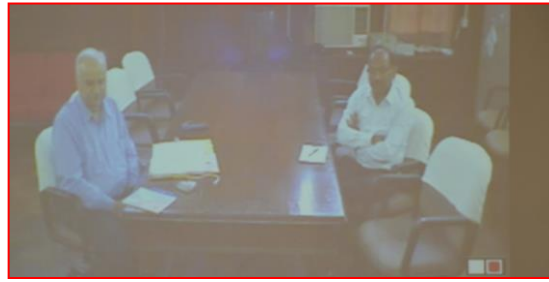


**PROCEEDINGS OF
XXth RESEARCH ADVISORY GROUP (RAG) MEETING
[24th October, 2019]**



हिमालयन वन अनुसंधान संस्थान
HIMALAYAN FOREST RESEARCH INSTITUTE
(भारतीय वानिकी अनुसंधान एवं शिक्षा परिषद)
(Indian Council of Forestry Research & Education)
(पर्यावरण एवं वन मंत्रालय, भारत सरकार की एक स्वायत्त परिषद)
(An Autonomous body under the Ministry of Environment & Forests, Government of India)
कॉनिफर कैम्पस, पंथाघाटी, शिमल-171013 (हिमाचल प्रदेश)
Conifer Campus, Panthaghati, SHIMLA-171 013 (Himachal Pradesh)

BACKGROUND

It is beyond any doubt that more than half of the country's geographical area is already affected with resource degradation of one kind or the other and accordingly, management of the natural resources on sustainable basis has become all the more important in working out the economies of developing countries while compared to the developed nations. In view of this, Forest Managers and the scientists as well are already in for a daunting task of managing and conserving the natural resources since, forest degradation is invariably also affecting the livelihood generation, poverty alleviation and environmental services as well.

In the above context, it is necessary not only to reduce further exploitation and degradation but also to actively restore and rehabilitate the degraded eco-systems with technologies that recognize the complexity of socio-economic and environmental factors and processes. Further, it has also been realized that there is a strong need to involve different stakeholders for management of natural resources through capacity building and institutional support and to integrate scientific techniques and modern research tools with the traditional knowledge/ wisdom so as to ensure implementation of the self sustainable development programmes. *Indian Council of Forestry Research & Education* (ICFRE) had finally decided to take the advice of various stakeholders and accordingly, decided to form a **Research Advisory Group (RAG)** at the Institute level so as to have the required input by involving related stakeholders for giving a direction to the *forestry research* against the projected programmes and themes of the Ministry of Environment, Forest and Climate Change and of the Council as well.

In view of the above, *Himalayan Forest Research Institute (HFRI), Shimla* is also striving hard, of-course, through directed input of the members of its Research Advisory Group (RAG), where related stakeholders are involved for giving a directed approach to the *forestry research* against the projected programmes and themes- for devising strategies for re-establishment of the natural ecosystems and approve the health status of the growing stock. Catalytic task of this Institute here becomes more onerous and urgent in helping the State Forest Departments towards management of these massive and open to all resources through *Research & Development*.

With this background, there is no doubt that even well managed ecosystems including forests are perpetually posing several environmental problems and accordingly, some strategies are essentially required to be in place for the management of natural ecosystems, those are in the process of retreat.

ROLE OF RESEARCH ADVISORY GROUP (RAG)

With a view to promote better coordination and to infuse utility oriented forestry research input and also to advise the Director of the Institute in the matter of formulating and planning of the various research activities so as to face the challenging needs of forestry research, **Research Advisory Group (RAG)** for the Institute has been formed as per the guidelines, where different stakeholders have been involved with a view to make use of the available resources more judiciously on the applied forestry research projects.

In view of the project prioritization methodology being followed by different regional Institutes of *Indian Council of Forestry Research & Education (ICFRE)*, the role of **Research Advisory Group (RAG)** gains significance, which mainly revolves around the **objective evaluation of the ongoing research projects and recommendations of the Annual Research Programmes** of the Institutes.

FUNCTIONS OF RESEARCH ADVISORY GROUP (RAG)

RAG advises the Director of the institute on the following important research related issues;

1. provide direction in *forestry research* of the Institute within overall framework of research priorities as set by *ICFRE*,
2. examine, vet and recommend *forestry research* proposals and programme of the Institute for the consideration of Research Policy Committee of *ICFRE*,
3. formulate and review five years research plan on rolling basis of the Institute,
4. carry out any other function related with *forestry research* assigned by the Institute from time to time,
5. decide shedding and divesting, non-viable programmes/ projects,
6. consider and advise on regional requirements,
7. ensure balance amongst research theme of the institute,
8. evolve a balance portfolio of research projects amongst various disciplines of the institute,
9. to utilize the expertise of all scientists i.e. works to be distributed in such a manner that productive potential of researcher may be utilized and
10. to review state-wise distribution of field work.

COMPOSITION OF RESEARCH ADVISORY GROUP (RAG)

On the recommendations of Director, Himalayan Forest Research Institute, Shimla, the following **Research Advisory Group (RAG)** for the Institute after involving different stakeholders has been approved by the Director General, *ICFRE*.

LIST OF MEMBERS OF RESEARCH ADVISORY GROUP (RAG)

S. No.	Name	Designation	Address
A. Chairman-Director of the Institute:			
1.	Dr. S.S. Samant	Director	Director, Himalayan Forest Research Institute Conifer Campus, Panthaghati, Shimla – 171 013 Phone: 0177-2626778 (O) 9816316318 (M) Email: dir_hfri@icfre.org
B. Head of the Research Wing of the Forest Departments of Concerned States or their Representatives:			
B-1. Himachal Pradesh:			
1.	Sh. Hari Singh Dogra, IFS	APCCF (Research)	Himachal Pradesh Forest Department Karnodi, Sunder Nagar, District Mandi (H.P.) Phone: 01907-264113 (O) 98057-84195 (M) Email: dograhs@gmail.com
2.	Sh. Pushpender Rana, IFS	CCF (Projects)	Chief Conservator of Forest (Projects) Himachal Pradesh Forest Department (HPFD) Talland, SHIMLA-171 001 (HP) Phone: 83685-37080 (M) Email: hpfd.itlab@gmail.com
B-2. Jammu & Kashmir:			
1.	Sh. O.P. Sharma, IFS	Director	The Director, State Forest Research Institute, SFRI Complex, Jaanipur, Jammu Phone: 0194-2465231, 2479621(O) Email: directorsfri123@gmail.com n.p.singh1959@gmail.com
2.	Sh. N.P. Singh, IFS	CCF (Projects)	Chief Conservator of Forest (Projects) Jammu & Kashmir forest Department (JKFD)

			Forest Complex, Sheikh Bagh, Near Lal Chowk, Srinagar, J&K Phone: 0194-2465231, 2479621(O) Email: n.p.singh1959@gmail.com
C.	ADG (Research Planning)/ DG ICFRE's Representative:		
1.	Dr. Vimal Kothiyal	ADG (RP)	ADG (RP) & Scientist-G ICFRE, Dehradun Phone: 0135-2753290 (O) 094129-88641(M) Email: adg_rp@icfre.org
D.	02 Senior Scientists of the Institute:		
1.	Dr. Sandeep Sharma	Scientist-G & Head	Silviculture and Forest Management Division HFRI, Conifer Campus, Panthaghati, Shimla - 171 013 Phone: 0177-2816103 (O) 94181-29759 (M) Email: sharmas@icfre.org
2.	Dr. R.K. Verma	Scientist-G & Head	Forest Ecology & Climate Change Division HFRI, Conifer Campus, Panthaghati, Shimla - 171 013 Phone: 0177-2816110 (O) 94181-89326 (M) Email: vermaraj@icfre.org
E.	01 Senior Forest Officer of the Institute:		
1.	Sh. Satya Prakash Negi, IFS	CF	Head, Extension Division HFRI, Conifer Campus, Panthaghati, Shimla - 171 013 Phone: 0177-2816102 (O) 88942- 22211 (M) Email: spnegi@icfre.org
F.	01 representative of the Universities Imparting Education in Forestry and Allied Subjects at the Level of Dean or Head of the Department:		
1.	Prof. Satish Bhardwaj,	Head	Head, Department of Environmental Sciences, College of Forestry, University of Horticulture and Forestry, Nauni, Solan - 173 230 (HP) Phone: 94181-44092 (M) Email: sbhardwajswm@rediffmail.com
G.	01 Representatives from a Funding Organization:		
1.	Prof. (Dr.) Tanuja Manoj Nesari	Chief Executive Officer	National Medicinal Plants Board, Ministry of AYUSH, Govt. of India, Room No. 309, 3rd Floor, B-Block, AYUSH Bhawan, GPO Complex, INA, New Delhi -110023

			Phone: 011-24651828; 24651827(O) Email: infor-nmpb@nic.in
H.	02 Representatives of Forest Based Industries:		
1.	Sh. Nand Lal Sharma	Proprietor	Nanda Herbals, Village Mansari, Post Office. Haripur, District Kullu (H.P.) Phone: 098160-57660 (M) Email: nandamedicinal@gmail.com
2.	Sh. Sudhir Sood,	Proprietor	Resin and Turpins, Kotla Nallah, Mid Hills, Lala Jagnath Sood Complex, Rajgarh Road, Solan-173210 (HP) Phone: 94180-23227 (M) Email: sudhirsood@midhills.in
I.	01 Eminent Forester Outside ICFRE:		
1.	Dr. D.C. Rana, HPAS	Member Secretary (EC)	Himachal Pradesh Council of Science, Technology and Environment (HIMCOSTE), 34, SDA Complex, Kasumpati SHIMLA - 171 009 Phone: 0177- 2626212 (O) 94181-84700 (M) Email: dc.rana04@nic.in
J.	01 Eminent Scientist Outside ICFRE:		
1.	Prof. (Retd.) T.D. Verma	Ex-Professor and Head	Shamati, Solan Distt. Solan - 173213 (HP) Phone: 94184-89742 (M) Email: t.d.verma16@gmail.com
K.	01 Representative of ICAR/CSIR/NMPB:		
1.	Dr. R.K. Sud	Sr. Principal Scientist	Division of Agrotechnology of Medicinal, Aromatic and Commercially Important Plants, Institute of Himalayan Bio-resource Technology (IHBT) P. Box No. 06, Palampur -176061 Distt. Kangra (HP) Phone: 94183-18965 (M) Email: rksud@ihbt.res.in
L.	01 Representative of Sister Research Organizations:		
1.	Dr. K.S. Kanwal,	Scientist-D	Scientist In-charge, GB Pant National Institute of Himalayan Environment & Sustainable Development, Kullu Unit MOHAL, Distt. Kullu (HP) Phone: 01902-225329 (O) 96502-00833 (M) Email: kskanwal03@gmail.com

M.	01 Representative of Progressive Farmer/Prominent NGO/JFM/Local Government/Grass Root Level Organization:		
1.	Sh. Subhash Chander	Progressive Farmer	S/o Sh. Sewa Ram Village Galhar, Tehsil Nagsani Distt. Kishtwar -182204 (J&K) Phone: 9622356662 (M) Email: nkc_galhar@rediffmail.com
N.	06 Subject Matter Experts from Outside ICFRE Institutes Covering the Subject Areas of the Institutes:		
1.	Dr. Dharam Pal Walia	Principal Scientist and Incharge	ICAR Regional Research Station, Tuti-Kandi Facility Shimla -171004 Phone: 98171-63305 (M) Email: dpwalia@rediffmail.com
2.	Dr. Rajan Bawa	Retired Professor	H.No. 354/12, Shakti Kunj Above Sainik Guest House SOLAN (HP)-173212 (Mob.No. 94180-03030) Email: rbawauhf@yahoo.co.in
3.	Prof. Anand Sagar	Head	Department of Biosciences Himachal Pradesh University Summer Hill, SHIMLA-171005 (Mob.No. 98168-07646) Email: as_bio@rediffmail.com
4.	Prof. Sushma Sharma	Scientist	Department of Biosciences Himachal Pradesh University, Summer Hill, SHIMLA-171005 (Mob. No. 98162-91637) Email: sushma_bio_sci@rediffmail.com
5.	Prof. Bhupendar Gupta	Scientist	Department of Silviculture and Agroforestry, College of Forestry, University of Horticulture and Forestry, Nauni, SOLAN-173230 (HP) (Mob. No. 94183-20280) Email: bhupenderg@ymail.com
6.	Dr. R.S. Rana	Principal Scientist	Centre for Geo-informatics Research and Training/ Department of Agronomy, CSK HPKV Palampur 176062 (HP) (Mob.No. 94181- 06167) Email: ranars66@gmail.com
R.	Member Secretary:		
1.	Dr. Rajesh Sharma	Scientist-G	Group Coordinator Research, Himalayan Forest Research Institute (HFRI), Conifer Campus, Panthaghati, Shimla - 171 013 Phone: 0177-2626801 (O) 94181-64067 (M) Email: groupco_hfri@icfre.org sharmar@icfre.org .

The following Hon'ble members of Research Advisory Group (RAG) were unable to attend the meeting due to their other official/ administrative assignments/ commitments coinciding with this date of meeting;

1. Sh. N.P. Singh, IFS, APCCF (Projects), J&K Forest Department and Director, State Forest Research Institute (SFRI), J&K
2. Prof. Anand Sagar, Head, Department of Biosciences, Himachal Pradesh University, Summer Hill, Shimla.
3. Dr. Rajan Bawa, Retired Professor, UHF, Nauni, Solan (HP)
4. Sh. Nand Lal Sharma, Proprieter, Nanda Herbal, Kullu (HP)- Member, Forest Based Industries
5. Prof. (Dr.) Tanuja Manoj Nesari, CEO, National Medicinal Plants Board, Ministry of AYUSH, Govt. of India, New Delhi.
6. Sh. Hari Singh Dogra, IFS, APCCF (Research) - Head of Research Wing, HPSFD
7. Sh. Pushpender Rana, IFS, CCF (Projects) - HPSFD
8. Sh. D.C. Rana, HPAS, Member Secretary, Himachal Pradesh Council of Science, Technology and Environment (HIMCOSTE), Shimla.

However, following representatives instead of nominated Members of RAG from Funding Agency (at S.No. 5), HPSFD (at S.No. 6 & 7), and HIMCOSTE (at S.No. 8) were present/ had shown their presence during the meeting;

1. Dr. Dushyant Kishore, Technical Officer, NMPB New Delhi
2. Ms. Sheetal Sharma, DFO, HPSFD, Shimla
3. Dr. Rajinder Thapa, Scientist Incharge, HIMCOSTE, Shimla

PROGRAMME OF THE RAG MEETING

Date: 24th October, 2019
Venue: Conference Hall, Himalayan Forest Research Institute
 Conifer Campus, Panthaghati, SHIMLA-171 013 (H.P.)

09.00 AM - 09.30AM	Reception & Registration of the RAG Members
INAUGURAL SESSION	
09.30 AM - 10.00 AM	Welcome Address: Dr. Rajesh Sharma, GCR, HFRI, Shimla
	Opening Remarks and Brief Presentation on HFRI Achievements and Outlay of the Meeting: Dr. S.S. Samant Director, HFRI, Shimla
INAUGURAL TEA : 10.00 AM to 10.20 AM	
SESSION I	
10.20 AM - 12.00 NOON	<p>Presentation of the New Multi-disciplinary Research Proposals proposed to be initiated from April, 2019 onwards by the Scientists of various research divisions of the institute, subject to their final approval by Research Policy Committee (RPC):</p> <ul style="list-style-type: none"> • Assessment, valuation and conservation of Forestry Systems for securing the livelihood in Shimla catchments of Ashwani Khad Watershed, Himachal Pradesh, North Western Himalaya Dr. Rajesh Sharma, Scientist-G • Assessment, ecological niche modelling and selection of shisham populations for disease resistance in Himachal Pradesh and Jammu & Kashmir Dr. Ashwani Tapwal, Scientist-E • Ecological Assessment, Valuation and Conservation Prioritization of Floristic Diversity in Nauti Khad Watershed, Himachal Pradesh in Relation to Climate Change Dr. Ranjeet Kumar, Scientist-E • Population assessment, ecological niche modelling and developing sustainable harvesting technique of <i>Pinus gerardiana</i> for conservation in Himachal Pradesh and Jammu & Kashmir Dr. Swarn Lata, Scientist-C • Assessment, Ecological Niche Modelling and Strengthening of Agroforestry Systems for Securing the Livelihoods of Inhabitants in Cold Desert Region of Himachal Pradesh and Ladakh Sh. Pitamber Singh Negi, Scientist-C
SESSION II	
12.00 NOON - 01.15PM	<p>Presentation of Research Activities/Highlights and Review of the Ongoing Research Projects being implemented by various research divisions and their extension/changes, if any:</p> <ul style="list-style-type: none"> • Division of Forest Ecology & Climate Change: (03-Plan) • Division of Forest Protection: (03-Plan) • Division of Genetics & Tree Improvement: (02-Plan) • Division of Silviculture and Forest Management: (03-Plan)
01.15 PM - 01.25 PM	Concluding remarks by RAG Members and Chairman
01.25PM - 01.30 PM	Vote of Thanks: Dr. Rajesh Sharma, GCR, HFRI, Shimla
LUNCH : 01.30 PM	

INAUGURAL SESSION

Himalayan Forest Research Institute (HFRI), Shimla organized **Research Advisory Group (RAG)** Meeting on **24th October 2019** in the Conference Hall of the Institute. Initiating the proceeding of the Meeting, **Dr. Rajesh Sharma, Scientist-G, Group Coordinator Research and Member Secretary, RAG** formally welcomed the Chairman, Hon'ble Members of the **Research Advisory Group (RAG)**, representative of worthy Director General, ICFRE, Dehradun, Dr. Vimal Kothiyal, Assistant Director General (Research Planning), ICFRE, Dehradun, who attended the meeting through Video Conferencing along with Dr. Shailendra Kumar from RP Division, ICFRE, Dehradun and Scientists, Officers and staff of HFRI **Research Advisory Group (RAG)**. Dr. Rajesh Sharma apprised the house that this is the **XXth Meeting of Research Advisory Group (RAG)** of this institute – which is an Apex Body of the Institute – and based on the already identified research programmes, this body recommends the new research proposals, prepared by the Scientists of the Institute, for their final approval by the **Research Policy Committee (RPC)** of **ICFRE**. He further added that this Meeting provides an opportunity not only to review the progress of ongoing projects, examination and prioritization of new research proposals but, also to take maximum benefits of the expertise of Hon'ble RAG Members on various research issues. He further apprised the Hon'ble Members and other participants about the composition/ formation, role and functions of the RAG in detail. He informed that RAG consists of renowned Scientists, Academicians, Forest Officers, Representatives of Forest Based Industries, Non-Governmental Organization and Progressive Farmers. Rather, we can say that the main stakeholders of the forestry research are involved in this innovative process.

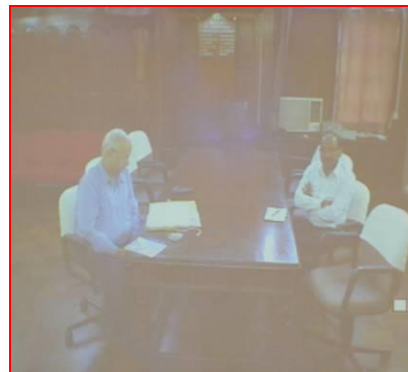


After this, the GCR apprised the Hon'ble Members and the participants about the Institute, its Vision, Mission and area of jurisdiction, past achievements, ongoing research activities and future plans through a well-conceived presentation. He further informed that besides the forestry research activities, extension is one of the major activities of this Institute through which we try to reach to the end users by providing Trainings, Organizing Exposure Visits, Kisan Goshti, Workshops, Seminars, etc. He further informed that the Institute also provides



consultancies in the field of forestry and environment. He informed that the Institute at present is involved in an important project entitled “Preparation of Detailed Project Report for rejuvenation of five major rivers (Beas, Chenab, Jhelum, Ravi & Sutlej) of Indus Rivers Basin through forestry interventions”.

Dr. Vimal Kothial, ADG (Research Planning), ICFRE, who joined the RAG Meeting through Video-Conferencing as a representative of ICFRE, Headquarters, also welcomed all the Hon’ble Members of RAG, Scientists, Officers and staff of HFRI on his own and on behalf of ICFRE in this important Meeting. He appreciated Dr. Rajesh Sharma, GCR, who has apprised the Hon’ble Members about the constitution, role and functions of RAG in detail. He requested all the Hon’ble Members of RAG to critically review the research projects and give their scores on merit. He further urged the Hon’ble Members to give their considered opinion and valuable suggestions for improvement of the projects so that quality research projects can be recommended as all are well aware that the research projects recommended by RAG will be presented before Research Policy Committee (RPC) of ICFRE for final approval.



After this important address of ADG (RP), ICFRE, Dehradun, Dr. Rajesh Sharma invited Dr. S.S. Samant, Director, HFRI and Chairman of RAG to formally welcome the Hon’ble Members of RAG for this Meeting and to share his views with the Hon’ble Members and participants.

Chairman of the RAG, **Dr. S.S. Samant, Director**, HFRI, set the tone for the Meeting of **XX RAG 2019** with his opening remarks. He extended warm welcome to all the RAG Members to this important Meeting. He made sincere appeal to all the RAG Members to evaluate the projects dispassionately and contribute wholeheartedly in the technical discussion and help in refining and finalization of the research projects. He informed that the research projects, which will be cleared by this RAG will be presented further before the RPC, which is an Apex Advisory Body at the Council Level to innovate, provide directions and decide investment for high quality forestry research. It also sets research priority to achieve leadership in forestry research. Therefore, he requested all the Hon’ble Members of RAG to evaluate the research projects critically, offer your valuable suggestions for improvement of the research projects. He also requested the Scientists of the HFRI to be focused in their presentation. He highly appreciated Dr. Rajesh Sharma, GCR for presenting the achievements of HFRI and detailed analysis of the ongoing research programme and the matters related to it.



SOME GLIMPSES OF THE RAG MEETING



AGENDA ITEM NO. -I

Presentations of the New Research Proposals, proposed to be initiated from APRIL, 2020 onwards by various Research Divisions subject to approval by the Research Policy Committee (RPC):

Starting with the Agenda Item No. I, **Group Coordinator Research** briefed about the new research proposals to be presented before RAG for seeking necessary comments/ recommendations for further submission to the **Directorate of Research (ADG-RP)** at *ICFRE*, Headquarters, Dehradun. He further informed the Hon'ble Members that this year the research divisions of this Institute are presenting **05 New Research Proposals**, those are merge well with the thrust areas and themes of the council. In addition, all these proposals are in accordance with the guidelines of *ICFRE*, Dehradun.

The Member Secretary further informed the Hon'ble Members that the Scientists, those who will present their research proposals will be invited as per the details below;

S. No.	Title of the New Project	Name of Coordinator (s)/ PIs	Thrust Area and Theme	Duration	Budget (Rs. in Lakhs)
1	2	3	4	5	6
(A) Forest Ecology & Climate Change:					
1.	Assessment, valuation and conservation of Forestry Systems for securing the livelihood in Shimla catchments of Ashwani Khad Watershed, Himachal Pradesh, North Western Himalaya	Coordinator (s): Dr. S.S. Samant Director & Dr. Rajesh Sharma, Scientist-G PIs: All Divisional Heads	Managing forests and forests products for livelihood support and economic growth Biodiversity conservation and ecological security <i>Participatory Forest Management</i> <i>Biodiversity conservation</i>	5 Years (April, 2020-March 2025)	73.88
2.	Ecological Assessment, Valuation and Conservation Prioritization of Floristic Diversity in Nauti Khad Watershed, Himachal Pradesh in Relation to Climate Change	PI: Dr. Ranjeet Kumar, Scientist-E	Biodiversity conservation and ecological security <i>Biodiversity conservation</i>	5 Years (April, 2020-March 2025)	48.81
(B) Forest Protection Division:					
3.	Assessment, ecological niche modelling and selection of shisham populations for disease resistance in Himachal Pradesh and Jammu & Kashmir	PI: Dr. Ashwani Tapwal, Scientist-E	Managing forests and forests products for livelihood support and economic growth Forest Genetic Resource Management and	5 Years (April, 2020-March 2025)	53.16

			Tree Improvement <i>Integrated pests and disease management</i> <i>Conservation of Forest Genetic Resources</i>		
(C) Silviculture & Forest Management:					
4.	Population assessment, ecological niche modelling and developing sustainable harvesting technique of <i>Pinus gerardiana</i> for conservation in Himachal Pradesh and Jammu & Kashmir	PIs: Dr. Swarn Lata, Scientist-C	Managing forests and forests products for livelihood support and economic growth <i>Silviculture</i>	5 Years (April, 2020- March 2025)	50.96
5.	Assessment, Ecological Niche Modelling and Strengthening of Agroforestry Systems for Securing the Livelihoods of Inhabitants in Cold Desert Region of Himachal Pradesh and Ladakh	PIs: Sh. Pitamber Singh Negi, Scientist-C	Managing forests and forest products for livelihood support and economic growth <i>Social Forestry, Agroforestry Farm Forestry</i>	5 Years (April, 2020- March 2025)	60.55

After presentation of each of the research proposals, lot of discussions was held and the suggestions/ comments given by the Hon'ble Members have been provided at the relevant places of the documents (Form-5: Tables: 5-8).



AGENDA ITEM NO.: II

Presentation of Research Activities/ Highlights and Review of the Ongoing Research Projects being implemented by various Research Divisions and their extension/changes, if any:

Once the presentations pertaining to **Agenda Items No. I** were over, the Member Secretary informed the august house that the detailed presentation of each of the ongoing research projects being implemented by the institute under PLAN will be made by the individual PIs. Subsequently, the scientists/ PIs of the respective ongoing research projects presented the research activities as carried out by them under these research projects (PLAN) as per the details below;

1]. RESEARCH PROJECTS UNDER PLAN BUDGET:

A]. DIVISION OF FOREST ECOLOGY & CLIMATE CHANGE:

1.	Ecological Studies in Alpine Pastures of District Shimla, Himachal Pradesh. Dr. R.K. Verma, Scientist-G
2.	Carbon sequestration potential of existing land use system in Lahaul Valley, Himachal Pradesh. Dr. R.K. Verma, Scientist-G
3.	Analyzing impact of control burning on plant diversity and soil properties in chir pine forests. Dr. Ranjeet Kumar, Scientist-E

B]. DIVISION OF FOREST PROTECTION:

4.	Studies on changing forest insect pest status of high altitudinal transitional zones and their management in Himachal Pradesh Dr. Subhash Chander, Scientist-D
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C]. DIVISION OF GENETICS & TREE IMPROVEMENT:

5.	Identification, Ecological Assessments for Selection & Screening of Superior and Insect-Pest Resistant Clones of Salix for their Cultivation, Production Trends and Conservation in the Cold Deserts of Himachal Pradesh and Jammu & Kashmir. Dr. Rajesh Sharma, Scientist-G
6.	Characterisation of the Hill Bamboo species (Ringal) of the North-Western Himalaya for their conservation and Genetic Improvement Dr. Rajesh Sharma, Scientist-G

D]. DIVISION OF SILVICULTURE & FOREST MANAGEMENT:

7.	Survey and evaluation of Silvipastoral systems in Himachal Pradesh and its role in sustaining community livelihood Dr. Swarn Lata, Scientist-C
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8.	Standardization of Agro-Techniques and Evaluation of Growth Parameters of <i>Juniperus polycarpus</i> C. Koch under Nursery and Field Conditions. Sh. Pitamber Singh Negi, Scientist-C
9.	Community dependency on Oak forests for fodder and comparative analysis of different Oak species of Himachal Himalayas for nutritive value and leaf biomass production. Dr. Sandeep Sharma, Scientist-G

All the Hon'ble Members of RAG were fully satisfied with the progress made by all the PIs under their respective research projects during the year.

Other related and relevant details of the Ongoing research projects under PLAN funded have been provided in the following pages in **Annexure-2 (Information Required on ICFRE Plan Projects for RPC-2020) – Form-1-Tables:1-4, Forms-2, 3 and 4.**





Information Required
on
ICFRE Plan Projects for
XX RPC 2020-21

Thrust area wise list of ongoing Research Projects and detailed budget for 2020-21:
Ongoing Projects

Table 1: Thrust area I-Managing Forests and Forests Products for livelihood support & economic growth

Thrust area wise list of ONGOING RESEARCH PROJECTS												
Thrust area I: Managing Forests and Forests Products for livelihood support & economic growth												
S. No.	Project title/PI/Duration (Start and end year)	Total approved budget outlay (Rs. in lakhs)	Cumulative expenditure till March 2019	Approx. expenditure during 2019-20	Details of budget required for 2020-21 (Rs. in lakhs)						Required / engaged Manpower (RA/ SRF/ JRF/ PA/ FA etc.)	Remarks: [Extension granted; modification in a) objectives; b) budget outlay
					Budget required for 2020-21 (Sum of 6 to 10)	Sub Head wise breakup for 2020-21						
						Consumables (M&S)	Research expenditure (FRE)	Travel And conveyance (Res)-TE	Capital (Scientific Equipments)	Fellowship		
1	2	3	4a	4b	5	6	7	8	9	10	11	12
I) Institute: Himalayan Forest Research Institute (HFRI), Shimla												
i.	Survey and evaluation of silvipastoral systems in Himachal Pradesh and its role in sustaining community livelihood. [HFRI-059/Th.-1/SFAF-FF-10(AGE-07)/PLAN/ 2016-21] PI: Dr. Swarn Lata, Scientist-C Duration: 05 years (2016-2021) Theme: <i>Social Forestry, Agro-forestry/Farm Forestry/Sustainable Forest Management</i>	25.02	6.783	3.074	3.574	0.05	0.05	1.40	--	2.074	JRF- 01	--

ii.	Standardization of agro-techniques and evaluation of growth parameters of <i>J. polycarpus</i> C. Koch under nursery and field conditions. [HFRI-065/Th.-01/S(A)-03(STI-21)/PLAN/ 2016-21] PI: Sh. P.S. Negi, Scientist-C Duration: 05 years (2016-2021) Theme: <i>Silviculture (A)</i>	19.48	9.33	4.12	6.41	0.25	1.50	1.20	1.60	1.86	PA - 01	--
iii.	Studies on changing forest insect pest status of high altitudinal transitional zones and their management in Himachal Pradesh. [HFRI-063/Th.-01/IPDM-18(FPT-14)/PLAN 2016-21] PI: Dr. Subhash Chander, Scientist-D Duration: 05 years (2016-2021) Theme: <i>Integrated Pest and Disease Management</i>	25.00	10.69	4.02	4.9	0.10	0.45	0.55	0.00	3.8	JRF- 01 PA - 01	--
iv.	Insect pests of Western Himalayan Oaks and their control PI: Sh. Subhash Chander, Scientist-D Duration: 04 years (2017-2021) Theme: <i>Integrated Pest and Disease Management</i>	9.26	-	1.74	2.97	0.10	0.30	0.50	0.00	2.07	JPF- 01	

v.	Studies on effect of AM inoculations on the active ingredient contents and biomass production in <i>Angelica glauca</i> Edgew. and <i>Valeriana jatamansi</i> Jones PI: Dr. Ashwani Tapwal, Scientist-E Duration: 05 years (2019-2024) Theme <i>NTFP Resource Development (A)</i>	26.33	-	5.50	7.02	0.5	1.5	1.0	0	4.02	JRF-01	
vi.	Community dependency on Oak forests for fodder and comparative analysis of different Oak species of Himachal Himalayas for nutritive value and leaf biomass production as influenced by lopping, aspect, altitude and crown architecture [HFRI-067/Th.:01/SF,AF, FF (10)/ (STI-22)/PLAN/2017-20] PI: Dr. Sandeep Sharma, Scientist-G Duration: 03 years (2017-2020) Theme: Social Forestry, Agro-forestry /Farm Forestry	28.94	15.70	7.56	--	--	--	--	--	--	JRF- 01 PA - 02	
The research project will end during March, 2020. Hence, no budget for the year 2020-21 required												
vii.	Analyzing impact of control burning on plant diversity and soil properties in chirpine forests. [HFRI-062/Th.-03/FFG-	11.00	6.40	4.51	--	--	--	--	--	--	JRF- 01	

04(E&BC-21)/PLAN 2016-20]												
PI: Dr. Ranjeet Kumar, Scientist-E												
Duration: 04 years (2016-2020)												
Theme: Forest Fire & Grazing(A)												
The research project will end during March, 2020. Hence, no budget for the year 2020-21 required												

Table 2: Thrust area II- Biodiversity conservation and ecological security

Thrust area wise list of ONGOING RESEARCH PROJECTS												
Thrust area II- Biodiversity conservation and ecological security												
S. No.	Project title/PI/Duration (Start and end year)	Total approved budget outlay (Rs. in lakhs)	Cumulative expenditure till March 2019	Approx. expenditure during 2019-20	Details of budget required for 2020-21 (Rs. in lakhs)						Required / engaged Manpower (RA/ SRF/ JRF/ PA/ FA etc.)	Remarks: [Extension granted; modification in a) objectives; b) budget outlay
					Budget required for 2020-21 (Sum of 6 to 10)	Sub Head wise breakup for 2020-21						
						Consumables (M&S)	Research expenditure (FRE)	Travel And conveyance (Res)-TE	Capital (Scientific Equipments)	Fellowship		
1	2	3	4a	4b	5	6	7	8	9	10	11	12
I) Institute: Himalayan Forest Research Institute (HFRI), Shimla												
viii.	Ecological studies in Alpine pastures of District Shimla, Himachal Pradesh. [HFRI-060/Th.-02/BC-10(E&BC-19)/PLAN/ 2016-20]. PI: Dr. RK Verma, Scientist-G Duration: 04 years (2016-2020) Theme: Biodiversity Conservation	9.25	6.83	5.14	--	--	--	--	--	--	PA - 01	--
The research project will end during March, 2020. Hence, no budget for the year 2020-21 required												

Table 3: Thrust area III- Forest and Climate Change

Thrust area wise list of ONGOING RESEARCH PROJECTS												
Thrust area III- Forest and Climate Change												
S. No.	Project title/PI/Duration (Start and end year)	Total approved budget outlay (Rs. in lakhs)	Cumulative expenditure till March 2019	Approx. expenditure during 2019-20	Details of budget required for 2020-21 (Rs. in lakhs)						Required / engaged Manpower (RA/ SRF/ JRF/ PA/ FA etc.)	Remarks: [Extension granted; modification in a) objectives; b) budget outlay
					Budget required for 2020-21 (Sum of 6 to 10)	Sub Head wise breakup for 2020-21						
						Consumables (M&S)	Research expenditure (FRE)	Travel And conveyance (Res)-TE	Capital (Scientific Equipments)	Fellowship		
1	2	3	4a	4b	5	6	7	8	9	10	11	12
I) Institute: Himalayan Forest Research Institute (HFRI), Shimla												
ix.	Carbon sequestration potential of existing land use system in Lahaul Valley, Himachal Pradesh. [HFRI-060/Th.-03/CCF-03(E&BC-20)/PLAN 2016-21] PI: Dr. R.K. Verma, Scientist-G Duration: 05 years (2016-2021) Theme: <i>Climate Change & Forests</i>	20.80	6.83	2.91	3.31	0.20	0.15	1.10	--	1.86	PA - 01	--

Table 4: Thrust area IV- Forest Genetic Resource Management and Tree Improvement

Thrust area wise list of ONGOING RESEARCH PROJECTS												
Thrust area IV- Forest Genetic Resource Management and Tree Improvement												
S. No.	Project title/PI/Duration (Start and end year)	Total approved budget outlay (Rs. in lakhs)	Cumulative expenditure till March 2019	Approx. expenditure during 2019-2020	Details of budget required for 2020-21 (Rs. in lakhs)						Required / engaged Manpower (RA/ SRF/ JRF/ PA/ FA etc.)	Remarks: [Extension granted; modification in a) objectives; b) budget outlay
					Budget required for 2020-21 (Sum of 6 to 10)	Sub Head wise breakup for 2020-21						
						Consumables (M&S)	Research expenditure (FRE)	Travel And conveyance (Res)-TE	Capital (Scientific Equipments)	Fellowship		
1	2	3	4a	4b	5	6	7	8	9	10	11	12
I) Institute: Himalayan Forest Research Institute (HFRI), Shimla												
x.	Characterization of the Hill Bamboo Species (Ringhal) of the North-Western Himalayas for their Conservation and Genetic Improvement A collaborative project in between HFRI, Shimla and FRI, Dehradun PI: Dr. Rajendra Meena, Scientist-D, FRI, Dehradun Co-PI: Dr. Rajesh Sharma, Scientist-G Duration: 03 years (2017-2020) Theme: Conservation of Forest Genetic Resources	Total Cost= 46.08 HFRI Component= 11.56	6.31	2.73	--	--	--	--	--	--	JPF- 01	--
The research project will end during March, 2020. Hence, no budget for the year 2020-21 required												

xi.	<p>Identification, Ecological Assessments for Selection & Screening of Superior and Insect-Pest Resistant Clones of Salix for their Cultivation, Production Trends and Conservation in the Cold Deserts of Himachal Pradesh and Jammu & Kashmir [HFRI-066/Th.:02&04/BC(10):CFGR(02)/ (E&BC-21)/PLAN/ 2017-24]</p> <p>Project Coordinator: Dr. Rajesh Sharma, Scientist-G & Head, GTI Division</p> <p>PIs: Dr. Rajesh Sharma, Scientist-G, Dr. Vaneet Jishtu, Scientist-D, Dr. Sandeep Sharma, Scientist-G, Dr. Ranjeet Kumar, Scientist-E, Sh. Subhash Chander, Scientist-D</p> <p>Duration: 07 years (2017-2024)</p> <p>Theme:</p> <ul style="list-style-type: none"> • <i>Biodiversity Conservation</i> • <i>Conservation of Forest Genetic Resources</i> 	54.88	16.64	14.35	13.95	1.80	2.30	2.20	--	7.65	JPF-01 PA-03	
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Thrust area wise Ongoing Projects with change request (Note: Projects reflected here may not be added in ongoing projects list to avoid duplicity)

S. No.	Title of the project/ PI/ Duration (Start and end year)	Change request with justification	RAG's comments	Total approved budget outlay (Rs. in lakhs)	Cumulative expenditure till March 2019	Approx. expenses during 2019-20	Balance available (Rs in lakhs)	Budget required for 2020-21 (Rs in lakhs)						Required / engaged Manpower (RA/SRF/ JRF/ PA/ FA etc.)	Remarks: [No of Extension granted; modification in a) objectives; b) budget outlay
								Budget required for 2020-21 (Sum of 7 to 10)	Consumables (M&S)	Research Expenditure (FRE)	Travel And Conveyance (Res)-TE	Capital (Scientific Equipments)	Fellowship		
1	2	3	4	5	4a	4b	4c	6	7	8	9	10	11	12	13
Thrust area I: Managing Forests and Forests Products for Livelihood Support & Economic Growth															
NA															
Thrust area II: Biodiversity Conservation and Ecological Security															
NA															
Thrust area III: Forest and Climate Change															
NA															
Thrust area IV: Forest Genetic Resource Management and Tree Improvement															
NA															

Thrust area wise summary of ongoing projects of ICFRE Institutes for 2020-21

Thrust Area Wise Abstract of Ongoing Research Project Proposals											
NAME OF THE INSTITUTE: Himalayan Forest Research Institute (HFRI), Shimla		Man Power Engaged									
THRUST AREA	No of Projects	RA	SRF	JPF	JRF	PA	FA	TA	Con.	DEO	Total
Thrust Area I	07	--	--	01	03	02	--	--	--	--	06
Thrust Area II	01	--	--	--	--	--	--	--	--	--	--
Thrust Area III	01	--	--	--	--	01	--	--	--	--	01
Thrust Area IV	02	--	--	--	02	04	--	--	--	--	06
Total Projects	11	--	--	01	05	07	--	--	--	--	13

RA: Research Associate, SRF: Senior Research Fellow, JPF: Junior Project Fellow, JRF: Junior Research Fellow, PA: Project Assistant, FA: Field Assistant, TA: Technical Assistant, Con: Consultant DEO: Data Entry Operator

**Note: Give number only. Figures should match with Form 1 (Tables 1-4).
This table will not include ongoing projects submitted for change request (Form 4)**

Thrust area wise summary of ongoing projects submitted for CHANGE REQUEST 2020-21

Thrust area wise abstract of ongoing research projects for change request											
NAME OF THE INSTITUTE		Man Power Engaged									
THRUST AREA	No of Projects	RA	SRF	JRF	PA	FA	TA	Con.	DEO	Total	
Thrust Area I		NIL									
Thrust Area II											
Thrust Area III											
Thrust Area IV											
Total Projects											

RA: Research Associate, SRF: Senior Research Fellow, JRF: Junior Research Fellow, PA: Project Assistant, FA: Field Assistant, TA: Technical Assistant, Con: Consultant DEO: Data Entry Operator

Note: Give number only. Figures should match with Form 2.

Thrust area wise new project proposals for 2020-21

I) Institute: HIMALAYAN FOREST RESEARCH INSTITUTE, SHIMLA

Table 5: Thrust area I-Managing Forests and Forests Products for livelihood support & economic growth

Project No. 1.	
Project title: Assessment, valuation and conservation of Forestry Systems for securing the livelihood in Shimla catchments of Ashwani Khad Watershed, Himachal Pradesh, North Western Himalaya	
ICFRE Thrust Area: <ul style="list-style-type: none"> • Managing Forests and Forests Products for livelihood support & economic growth • Biodiversity Conservation and Ecological Security 	ICFRE Theme: <ul style="list-style-type: none"> • <i>Participatory Forest Management</i> • <i>Biodiversity conservation</i>
Score on Technical criteria of Project Assessment (out of 100): 86.00	Index Score project (project prioritization score): 891.81
Name & Designation of the PI / Co-PI: PI: Dr. S.S. Samant, Director & Dr. Rajesh Sharma, Scientist-G Co-PI: Dr. Sandeep Sharma, Sci. G, SFM Division Dr. R.K. Verma, Sci. G, FECC Division Sh. S.P. Negi, CF, Extension Division Dr. Ashwani Tapwal, Sci-E, Forest Protection Division Name of Divisions: Multi-disciplinary project and involves the following research divisions: <ul style="list-style-type: none"> • Forest Ecology & Climate Change, • Silviculture & Forest Management, • Genetics & Tree Improvement, • Forest Protection and • Extension Division 	Budget outlay of the Project (Rs in lakhs): Rs. 73.88 lakhs Duration (start & end date): April, 2020-March, 2025 No. of years: 05 Years
Long term objectives of the project: 1. Conservation and enrichment of watershed/catchment areas	
Short term objectives of the project: 1. To assess the forestry systems in Shimla catchments of Ashwani Khad Watershed for diversity, regeneration pattern, conservation and socio-economic values (including extraction trends of fuel & fodder resources & Non Timber Forest Products) (NTFPs) and plant pathogens, pests and their host ranges in relation to anthropogenic and climate change scenarios 2. To assess the populations of ecologically and economically important species and develop their Ecological Niche Models 3. To assess the physico-chemical properties of the soil and correlate with different ecological parameters	

4. To select individuals/genotypes of Conifers and broad leaved species possessing distinct traits for conservation and future improvement programmes
5. To develop propagation protocols of ecologically and economically important species for mass multiplication and establish suitable silvicultural and conservation models along an altitudinal gradients with the help of Local Communities, Forest Department and Other Stakeholders
6. To enhance the knowledge base of local inhabitants, Forest Department and other stakeholders on conservation of forestry systems and suggest appropriate management plan

Summary of Comments of RAG:

Dr. Rajesh Sharma, Scientist-G, Genetics and Tree Improvement Division started his presentation on research project titled “**Assessment, valuation and conservation of Forestry Systems for securing the livelihood in Shimla catchments of Ashwani Khad Watershed, Himachal Pradesh, North Western Himalaya**” and threw light on problem statement, Review of literature, objectives, Research methods, Action plan, project cost, Predicted outcome and extension plans of the project proposed. During the presentation he told that Himalaya supports a large number of watersheds and catchments which provide provisioning, cultural, regulating and supporting services. Forestry systems existing in these catchments important for soil enrichment, water recharge and increased productivity of agricultural and horticultural crops etc. Due to anthropogenic activities, biological invasion and climate change forestry component of the watersheds are depleting and affecting ecosystem services and livelihood. In addition to this, past studies also predicted Himalayan ecosystems to be vulnerable. No such integrated studies carried out on watersheds, hence, it’s important to evaluate the ecosystems and management of Shimla catchment of Himachal Pradesh through forestry interventions. The main objective is Conservation and enrichment of Shimla catchments through forestry intervention which play important role in environmental stability and livelihood security.

Once, the PI finished his presentation, the following suggestions were made for the refinement of the proposal before submission to RPC.

- **Dr. T.D, Verma, Retd. Professor & Head University of Horticulture and Forestry, Nauni** queried about the major species of the area.
- **Dr. Bhupendar Gupta, Principal Scientist, University of Horticulture and Forestry, Nauni** enquired about the selection of area and livelihood security and suggested for using GIS data for study. He also suggested to concise the objectives. In response, **Dr. S.S. Samant, Director, HFRI** told that title of the project is specific only to Shimla catchment area and if budget allows GIS studies will be included.
- **Dr Rajinder Thapa**, suggested that the name of Shimla catchment need to be changed as name of the catchments are based on river or Khad name. For hydrological studies of catchment areas introduction of GIS study is important in this project and this activity can be completed in 2-3 months.
- **Dr. Satish Bhardwaj, Professor and Head, University of Horticulture and Forestry, Nauni** said for climatic study base line data is needed.
- **Dr. R.S. Rana, Principal Scientist, Center for Geo-informatics Research and Training CSK HPKV Palampur** suggested to put some geospatial data in this project and gave reference of ISRO data. He further said prioritization of species is important to know economic and conservation value and suggested using geospatial data for change detection in vegetation. In response, **Dr. S.S. Samant, Director, HFRI** said ISRO data will be used as secondary data.
- **Dr. Dharam Pal Walia, Principal Scientist, ICAR, Regional Research Station, Shimla** suggested to collect earlier baseline data to address livelihood issues.
- **Vimal Kothiyal, ADG, ICFRE** appreciated the project and also suggested to refine expected outcome of project.

Whether the project has been modified as per RAG comments (if yes, give details):

The Hon’ble member of RAG recommended project for its onward submission to RPC. Accordingly, Dr. Rajesh Sharma, GCR of the institute suggested the PI to include all suggestions given by the RAG members.

Benefits of the project for the society (Not more than 100 words):

Due to habitat degradation, biological invasion, infections by pests and diseases, forestry component of the watersheds are depleting. The proposed study will not only help in determining the status of the catchment areas but will also ensure the livelihood security of the human beings and livestock populations provided by the forestry systems.

Project No. 2.	
Project title: Assessment, ecological niche modelling and selection of shisham populations for disease resistance in Himachal Pradesh and Jammu & Kashmir	
ICFRE Thrust Area: <ul style="list-style-type: none"> ➤ Managing forests and forests products for livelihood support and economic growth ➤ Forest Genetic Resource Management and Tree Improvement 	ICFRE Theme: <ul style="list-style-type: none"> ➤ <i>Integrated pests and disease management</i> ➤ <i>Conservation of Forest Genetic Resources</i>
Score on Technical criteria of Project Assessment (out of 100): 86.29	Index Score project (project prioritization score): 890.29
Name & Designation of the PI / Co-PI: Dr. Ashwani Tapwal, Scientist- E (PI) Dr. Rajesh Sharma, Sci. G, GTI Division (Co-PI) Dr. Vaneet Jishtu, Sci. D, FECC Division (Co-PI) Sh. S.P. Negi, CF, Extension Division (Co-PI) Name of Divisions: Forest Protection Division	Budget outlay of the Project (Rs in lakhs): Rs. 53.16 lakhs Duration (start & end date): April, 2020-March, 2025 No. of years: 05 Years
Name and cost of equipment proposed :	Incubator shaker; Rs. 3.0 lakh
Long term objectives of the project: 1. To establish shisham plantations with disease resistant clones. Short term objectives of the project: 1. To assess the populations and develop ecological niche model of <i>Dalbergia sissoo</i> in Himachal Pradesh and Jammu & Kashmir, North Western Himalayas 2. To assess shisham populations for disease severity and identify the causal organisms. 3. To identify disease resistant genotypes among the populations and conduct multi-location trials of selected genotypes for disease resistance quality planting material against key pathogens. 4. To restore the degraded populations of <i>Dalbergia sissoo</i> . 5. To screen <i>Trichoderma</i> spp. for the management of key pathogens. 6. To suggest management options.	
Summary of Comments of RAG: Dr. Ashwani Tapwal, Scientist E, Forest Protection Division presented new research project titled “ Assessment, ecological niche modelling and selection of shisham populations for disease resistance in Himachal Pradesh and Jammu & Kashmir ” and threw light on problem statement, Review of literature, objectives, Research methods, Action plan, project cost, Predicted outcome and extension plans of the project proposed. During the presentation he said <i>D. sissoo</i> is a multipurpose tree and in some extent it reduces pressure on forests by fulfilling demand of forest products viz. paper and pulp, furniture, timber, fuel wood, etc. In recent decades, the changing climatic conditions have helped in proliferating this species in HP and J&K. Due to which the species is shifting towards North and North-West with altitude and variety of pathogens are infecting the population and degrading the timber quality. Systematic investigations on diseases infecting Shisham population and screening of disease resistant genotypes are also not attempted so far in the HP and J&K. Therefore, efforts are required for identification of suitable habitat, Key pathogens and resistant genotypes for developing suitable management strategy. The main objectives are assessment of population, ecological niche modelling and selection of Shisham populations for disease resistance for suggesting suitable management strategies. After the presentation discussion on the project started and queries were raised on various issues pertaining to project proposal. After lot of discussion, suggestions have been given by Director, HFRI, ADG, ICFRE and RAG members for refinement of the proposal before submission to RPC.	

<p>Dr. Dharam Pal Walia, Principal Scientist, ICAR, Regional Research Station, Shimla suggested for identification of areas having maximum resistance to disease for further multiplication.</p> <p>Dr.T.D. Verma, Retd. Professor & Head, University of Horticulture and Forestry, Nauni queried about the status of Shisham mortality in different states and disease resistant clones.</p> <p>Dr. Bhupendar Gupta, Principal Scientist, University of Horticulture and Forestry, Nauni suggested increasing the sample area in methodology and selected sites should be in forest not in farmers land. Dr. Satish Bhardwaj, Professor & Head, University of Horticulture and Forestry, Nauni added that representative site area should be more for better precision and appreciated the project and its methodology.</p> <p>Dr. K.S. Kanwal, Scientist, GB Pant National Institute of Himalayan Environment & Sustainable Development, Kullu suggested to include long term climatic study. In response Dr. S.S. Samant, Dr. HFRI said study already included and secondary data will be used for climatic study.</p> <p>Dr. R.S.Rana, Principal Scientist, CSK HPKV Palampur suggested consulting NDRI and ISRO data.</p> <p>Dr. Vimal Kothiyal, ADG, ICFRE said overlapping of project need to be checked. Project need to be integrated in AICP.</p>
<p>Whether the project has been modified as per RAG comments (if yes, give details): The Hon'ble member of RAG recommended project for its onward submission to RPC. Accordingly, Dr. Rajesh Sharma, GCR of the institute suggested the PI to include all suggestions given by the RAG members.</p>
<p>Benefits of the project for the society (Not more than 100 words): <i>Dalbergia sissoo</i> is one of the important commercial trees both for farmers and to the State Forest Department. It widely distributed in most of districts in Himachal Pradesh and Jammu Forest Division of J&K. The changing climatic conditions have helped in proliferating this species in HP and J&K in recent decades. Proper management of this species may become the one of major sources of timber. But, due to changing environmental conditions, variety of insect-pest and pathogens are infecting the shisham plantations of the state and resulting in the degradation of timber quality. Systematic investigations on diseases infecting shisham population and screening of its resistant genotypes are not attempted so far in the HP and J&K. The proposed study will identify the pathogen infecting shisham, disease severity and the disease resistant genotypes in different populations. The disease resistant genotypes will be available for stakeholders after the project period.</p>

Project No.3	
Project title: Assessment, Ecological Niche Modelling and Strengthening of Agroforestry Systems for Securing the Livelihoods of Inhabitants in Cold Desert Region of Himachal Pradesh and Ladakh	
ICFRE Thrust Area: Managing Forest and Forests Products for Livelihood Support and Economic Growth	ICFRE Theme: Social Forestry, Agro-forestry, Farm Forestry
Thrust Area of MoEF&CC (among 15 priority areas suggested)	Increase of tree cover of the country through the development of holistic models of agroforestry
Score on Technical criteria of Project Assessment (out of 100): 85.5	Index Score project (project prioritization score): 901.37
<p>Name & Designation of the PI / Co-PI: PI: Sh. P.S. Negi, Scientist-C</p> <p>Co-PIs: Dr. Sandeep Sharma, Scientist-G Sh. S. P. Negi, IFS, CF Sh. Jagdish Singh, Scientist-F Dr. Vaneet Jishtu, Scientist-D</p>	<p>Budget outlay of the Project (Rs in lakhs): Rs. 60.55 Lakhs Duration (start & end date): April, 2020 to March, 2025 No. of years: 5 Years</p>

Name of Division: Silviculture and Forest Management	
Name and cost of equipment proposed :	Poly House (1No.), Poly Huts (10No.) 6.00 Lakhs
<p>Long term objectives of the project:</p> <ol style="list-style-type: none"> 1. To strengthen and monitor the agroforestry systems in relation to climate change <p>Short term objectives of the project:</p> <ol style="list-style-type: none"> 1. To assess the agroforestry systems of cold desert region of Himachal Pradesh and Ladakh 2. To develop ecological niche model of the agroforestry systems of the regions 3. To identify highly preferred agroforestry species and develop propagation protocol of elected forestry species 4. To strengthen the existing agroforestry systems through introduction of preferred species including medicinal, aromatic and wild edible plants with the help of local inhabitants and forest departments 5. To disseminate the research findings among different stakeholders 6. To suggest management plan of the agroforestry systems in cold deserts 	
<p>Summary of Comments of RAG:</p> <p>Sh. P.S. Negi, Scientist C, Silviculture and Forest Management Division, started his presentation on research project titled “Assessment, Ecological Niche Modelling and Strengthening of Agroforestry Systems for Securing the Livelihoods of Inhabitants in Cold Desert Region of Himachal Pradesh and Ladakh” and threw light on problem statement, review of literature, objectives, research methods, action plan, project cost, predicted outcome and extension plans of the project. In his presentation he said Cold deserts are one of the important constituent of Himalayan mountain system. People are agrarian in nature and mainly dependent on agriculture, horticulture and animal husbandry for their livelihoods. Pure agriculture is not sufficient to sustain livelihood and other requirement viz. fuel wood, fodder and timber in cold desert areas. Lots of work has been carried out on different AFS prevailing in India and abroad. However, traditional AFS in cold desert areas are still not documented precisely. Hence adoption of agroforestry systems by farming communities and intervention through suitable agroforestry system is needed in this area which will not only play important role in diversification of agricultural practices but, it will also result in generation of additional income for local communities. Considering these facts in view, proposed project is formulated with main objectives are assessment, ecological niche modelling and strengthening of agroforestry systems in Cold desert areas to strengthen of existing agroforestry systems by developing propagation protocols of forestry species which will definitely play important role in improving productivity and livelihood of local communities of cold desert areas.</p> <p>After the presentation discussion on the project started and queries were raised on various issues pertaining to project proposal. After lot of discussions suggestions have been given by Director HFRI, ADG ICFRE and RAG members for refinement of the proposal before submission to RPC.</p> <p>Dr. Rajinder Thapa, Scientist queried about mapping of agroforestry systems and said point data of respective system will be sufficient for mapping.</p> <p>Dr. K.S. Kanwal, Scientist, GB Pant National Institute of Himalayan Environment & Sustainable Development, Kullu suggested including horticultural crops as these play important role in livelihood of local communities in cold deserts and he also suggested for collaboration with local institutions.</p> <p>Dr. Vimal Kothiyal, ADG, ICFRE suggested submitting the proposal to National Agroforestry mission before submitting to ICFRE for plan funding.</p>	
<p>Whether the project has been modified as per RAG comments (if yes, give details)</p> <p>The Hon’ble member of RAG recommended project for its onward submission to RPC. Accordingly, Dr. Rajesh Sharma, GCR of the institute suggested the PI to include all suggestions given by the RAG members.</p>	
<p>Benefits of the project for the society (Not more than 100 words): The demand for fuel wood, fodder, small timber has adversely affected the forest wealth of the country. The most of the forest ecosystem are fragile and reeling under acute form of degradation. The people living in the cold desert ecosystem are also facing acute shortage of fuel wood, fodder and timber for meeting their daily requirements. The vegetation in cold desert ecosystem is generally of shrubby form, hence, to meet the demand of local communities residing in cold desert areas, agroforestry will play significant role.</p>	

Project No.4	
Project title: Population assessment, ecological niche modelling and developing sustainable harvesting technique of <i>Pinus gerardiana</i> for conservation in Himachal Pradesh and Jammu & Kashmir	
ICFRE Thrust Area: Managing Forest and Forests Products for Livelihood Support and Economic Growth	ICFRE Theme: <i>Silviculture</i>
Thrust Area of MoEF&CC (among 15 priority areas suggested)	How to improve quality of forests
Score on Technical criteria of Project Assessment (out of 100): 85.23	Index Score project (project prioritization score): 903.05
Name & Designation of the PI / Co-PI: PI: Dr. Swaran Lata, Scientist-C Co-PIs: Dr. Sandeep Sharma, Scientist-G Sh. P.S. Negi, Scientist-C Sh. S.P.Negi, CF	Budget outlay of the Project (Rs in lakhs): 50.96 Lakhs Duration (start & end date): April, 2020 to March, 2025 No. of years: 5 Years
Name of Division: Silviculture and Forest Management	
Name and cost of equipment proposed :	GPS (2 no) & Multi-angular long reach pruners (2 no) 1.40 Lakhs
Long term objectives of the project: 1. To monitor the <i>Pinus gerardiana</i> population in relation to climate change	
Short term objectives of the project: 1. To assess the status and regeneration pattern of <i>Pinus gerardiana</i> in Himachal Pradesh and Jammu & Kashmir in relation to climate change 2. To develop ecological niche model of <i>Pinus gerardiana</i> for predicting the suitable habitats 3. To study the physico-chemical properties of the soil 4. To assess the extraction trend of cones of <i>Pinus gerardiana</i> 5. To suggest sustainable harvesting technique/method and management options of Chilgoza	
Summary of Comments of RAG: Dr. Swaran Lata , Scientist C, Silviculture and Forest Management Division, started her presentation on research project titled “ Population assessment, ecological niche modelling and developing sustainable harvesting technique of <i>Pinus gerardiana</i> for conservation in Himachal Pradesh and Jammu & Kashmir ” and threw light on problem statement, review of literature, objectives, research methods, action plan, project cost, predicted outcome and extension plans of the project. In her presentation she said <i>Pinus gerardiana</i> Wall. is ecologically and socio-economically important tree of dry temperate region of H.P. & J & K. Market value of Chilgoza is Rs. 700-1600/ kg and share of the financial income due to Chilgoza varies between 5% to 25% and for some household >25%. Besides socio-economic upliftment it is culturally important for the region and providing stability to loss and fragile strata of the region since ages. Natural population of this valuable conifer species is decreasing mainly because of over-exploitation and habitat degradation. Such severe anthropogenic pressure and lack of natural regeneration may result this to become extinct in the future and will adversely affect ecology and economy of the region. Considering these facts in view, proposed project is formulated with main objectives are assessment of status and regeneration pattern in relation to climate change, ecological niche modelling and developing sustainable harvesting technique which will definitely play important role in conservation and livelihood of tribal communities.	

<p>After the presentation, discussion on the project started and queries were raised on various issues pertaining to project proposal. After that suggestions have been given by Director HFRI, ADG ICFRE and RAG members for improvement of project proposal.</p> <p>Dr. T.D. Verma, Professor & Head University of Horticulture and Forestry, Nauni said cone borer <i>Dioryctria abietella</i> is also affecting populations of Chilgoza. In response, Dr. Swaran Lata said HFRI already conducted studies on taxonomy, biology and damage status of <i>Dioryctria abietella</i>.</p> <p>Dr. Bhupinder Gupta, Principal Scientist, University of Horticulture and Forestry, Nauni said regeneration studies on Chilgoza have been already conducted by Nauni University. In response Dr. Swaran Lata said University worked on few selected area of Kinnaur but proposed studied will be conducted in whole areas of Kinnaur, Chamba (H.P).and Kishtwar (J&K).</p>
<p>Whether the project has been modified as per RAG comments (if yes, give details) The Hon'ble member of RAG recommended project for its onward submission to RPC. Accordingly, Dr. Rajesh Sharma, GCR of the institute suggested the PI to include all suggestions given by the RAG members.</p>
<p>Benefits of the project for the society (Not more than 100 words): <i>Pinus gerardiana</i> is endemic pine of Western Himalaya and only conifer in India which provides edible kernels/ nuts. It is one of the most important cash crops of tribal communities because they have the right to collect the Chilgoza without paying any royalty to the forest department. In addition to its role in socio-economic upliftment it is important part of their traditional culture and maintaining stability of loss and fragile strata of the region since ages. Hence proposed study is very important for conservation and sustainable management of <i>Pinus gerardiana</i> and livelihood support and economic growth of tribal communities.</p>

Table 6: Thrust area II- Biodiversity conservation and ecological security

Project No. 5	
Project title: Ecological Assessment, Valuation and Conservation Prioritization of Floristic Diversity in Nauti Khad Watershed, Himachal Pradesh in Relation to Climate Change	
ICFRE Thrust Area: Biodiversity conservation and ecological security	ICFRE Theme: ➤ <i>Biodiversity conservation</i>
Score on Technical criteria of Project Assessment (out of 100): 85.52	Index Score project (project prioritization score): 889.88
<p>Name & Designation of the PI / Co-PI: PI: Dr. Ranjeet Kumar, Scientist-E Co-PI: Head Extension Division, Dr. R. K. Verma, Scientist-G, Dr. V. Jishtu, Scientist-D</p> <p>Name of Divisions:</p> <ul style="list-style-type: none"> • Division of Forest Ecology and Climate Change • Extension Division 	<p>Budget outlay of the Project (Rs in lakhs): Rs. 48.81 lakhs</p> <p>Duration (start & end date): April, 2020-March, 2025</p> <p>No. of years: 05 Years</p>
Name and cost of equipment proposed :	Camera and the cost is Rs. 1.30 lakhs

Long term objectives of the project:

1. To conserve floristic diversity for ensuring soil and water conservation of the watershed.

Short term objectives of the project:

1. To assess the floristic diversity for species composition, community patterns, regeneration of trees, socioeconomic and conservation values in relation to climate change
2. To study physico-chemical properties of soil
3. To assess the changes in land use and land cover using remote sensing and GIS tools
4. To prioritize potential communities, habitats and species and restore the degraded habitats and forests through forestry interventions
5. To suggest management options.

Summary of Comments of RAG:

Dr. Ranjeet Kumar, Scientist-E, Forest Ecology and Climate Change Division, started his presentation on research project titled “**Ecological Assessment, Valuation and Conservation Prioritization of Floristic Diversity in Nauti Khad Watershed, Himachal Pradesh in Relation to Climate Change**” and threw light on Importance of the project, Review of literature, objectives, Research methods, Action plan, project cost and predicted outcome of the project. In his presentation he said Nauti Khad watershed has unique plant diversity and spread over an area of about 191 km² in Shimla district of Himachal Pradesh. Approximately 125 village’s lies in catchment areas of Nauti Khad and it also supplies water to Shimla city. Very less database on ecological assessment of the watersheds are available which provides various services to communities residing on downstream of these areas and also supply water catchment area. Integrated research on proposed area have not been taken earlier on Nauti Khad Watershed and considering these, proposed project is formulated with main objectives are ecological assessment and conservation and prioritization of floristic diversity for securing livelihood of inhabitants in Nauti Khad watershed.

Once, the PI finished his presentation, the following suggestions were made for the refinement of the proposal before submission to RPC.

- **Dr. Dharam Pal Walia, Principal Scientist, ICAR, Regional Research Station, Shimla** suggested to include this project in Shimla water catchment project as Nauti Khad is in Shimla district. In response Dr. Ranjeet Kumar said vegetation of this catchment is entirely different from Shimla catchment. He also said objectives need to be merged. He also added that Government of India is promoting such type of projects to improve the watersheds.
- **Dr. Satish Bhardwaj, Professor & Head, University of Horticulture and Forestry, Nauni** said title need to be modified according to climate and other aspects.
- **Dr. Vimal Kothiyal, ADG, ICFRE** objectives overlapping and needs to be merged.

Whether the project has been modified as per RAG comments (if yes, give details):

The Hon’ble member of RAG recommended project for its onward submission to RPC. Accordingly, Dr. Rajesh sharma, GCR of the institute suggested the PI to include all suggestions given by the RAG members.

Benefits of the project for the society (Not more than 100 words):

Nauti Khad Watershed supply water to Shimla city. The data base on ecological assessments, valuation, conservation and prioritization of floristic diversity will be useful for sustainable utilization of natural resources. Restoration of degraded habitats through forestry interventions will be made. The findings will definitely give an insight into the conservation and monitoring into floristic diversity for insuring soil and water conservation, which is also indirectly linked to water security. Hence, a detailed knowledge on ecology of the area will help in managing the area properly by developing proper in situ conservation practices and thus biodiversity protection is possible.

Table 7: Thrust area III- Forest and Climate Change

Project No.	Nil
Project title	
ICFRE Thrust Area:	ICFRE Theme:
Score on Technical criteria of Project Assessment (out of 100):	Index Score project (project prioritization score)
Name & Designation of the PI/ Co-PI	Budget outlay of the Project (Rs in lakhs):
Name of Division:	Duration (start & end date):
	No. of years:
Long term objectives of the project:	
Short term objectives of the project:	
Summary of Comments of RAG:	
Whether the project has been modified as per RAG comments (if yes, give details)	
Benefits of the project for the society (Not more than 100 words):	

Table 8: Thrust area IV-Forest Genetic Resource Management and Tree Improvement

Project No.	Nil
Project title	
ICFRE Thrust Area:	ICFRE Theme:
Score on Technical criteria of Project Assessment (out of 100):	Index Score project (project prioritization score)
Name & Designation of the PI / Co-PI	Budget outlay of the Project (Rs in lakhs):
Name of Division:	Duration (start & end date):
	No. of years:
Long term objectives of the project:	
Short term objectives of the project:	
Summary of Comments of RAG:	
Whether the project has been modified as per RAG comments (if yes, give details)	
Benefits of the project for the society (Not more than 100 words):	

Thrust area wise summary of New Research Projects proposed by the ICFRE Institutes for 2020-21

NAME OF THE INSTITUTE: HIMALAYAN FOREST RESEARCH INSTITUTE		Man Power (give number only)									
THRUST AREA	No of Projects	RA	SRF	JRF	JPF	PA	FA	TA	Con.	DEO	Total
Managing Forests & Forest Products for Livelihood Support and Economic Growth	04	--	--	--	07	02	--	--	--	--	09
Biodiversity conservation & ecological security	01	--	--	01	--	01	--	--	--	--	02
Forests and Climate Change	--	--	--	--	--	--	--	--	--	--	--
Forest Genetic Resource Management & Tree Improvement	--	--	--	--	--	--	--	--	--	--	--
Total Projects	05	--	--	01	07	03	--	--	--	--	11
RA: Research Associate, SRF: Senior Research Fellow, JRF: Junior Research Fellow, PA: Project Assistant, FA: Field Assistant, TA: Technical Assistant, Con: Consultant DEO: Data Entry Operator, JPF/SPF: Junior/Senior Project Fellow											

Note: Give number only. Figures should match with Form 5 (Tables 5-8)

Form-7
(Tables 9-12)

Thrust area wise list of New Projects and Detailed budget for 2020-21

Table 9: Thrust area I-Managing Forests and Forests Products for livelihood support & economic growth

Thrust area wise list of NEW RESEARCH PROJECTS															
Thrust area I: Managing Forests and Forests Products for livelihood support & economic growth															
S. No.	Project title/PI/Duration (Start and end year)	Total cost (Rs. in Lakhs) (sum of 4 to 8)	Total cost of the Project (Rs. in Lakhs)						Details of budget required for 2020-2021 (Rs. in lakhs)					Required Manpower (RA/SRF/JRF/JPF/ PA/ FA etc.)	
			Consumables (M&S)	Sub-head wise breakup of total cost					Budget required for 2020-2021 (Sum of 10 to 14)	Sub-head wise breakup for 2020-2021					
				Research Expenditure (FRE)	Travel And Conveyance (Res)- TE	Capital (Scientific Equipments)	Other (Extension)	Fellowship		Consumables (M&S)	Research Expenditure (FRE)	Travel And Conveyance (Res)- TE	Capital (Scientific Equipments)		Fellowship
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
I) II) Institute: Himalayan Forest Research Institute, Shimla															
01	Assessment, valuation and conservation of Forestry Systems for securing the livelihood in Shimla catchments of Ashwani Khad Watershed, Himachal Pradesh, North Western Himalaya Coordinators: Dr. S.S. Samant Director & Dr. Rajesh Sharma, Scientist-G PI: All Heads of the Divisions Duration: 5 Years Start and end year: April, 2020-March, 2025	73.88	7.00	17.00	7.50	--	--	42.38	12.17	1.50	1.50	1.00	--	8.17	JPF-02 PA-02
02	Assessment, ecological niche modelling and selection of shisham populations for disease resistance in Himachal Pradesh	56.16	3.4	21.60	6.5	3.0	--	21.66	12.32	1.0	2.8	1.5	3.0	4.02	JPF/SPF -01

	and Jammu & Kashmir PI: Dr. Ashwani Tapwal, Scientist- E (PI) Duration: 5 Years Start and end year: April, 2020- March, 2025														
03	Assessment, Ecological Niche Modelling and Strengthening of Agroforestry Systems for Securing the Livelihoods of Inhabitants in Cold Desert Region of Himachal Pradesh and Ladakh PI: Sh. P.S. Negi, Scientist-C Duration: 5 Years Start and end year: April, 2020- March, 2025	60.55	2.20	15.00	12.60	6.00	4.00	20.75	14.7	0.30	2.00	2.25	6.00	4.15	JPF-02
04	Population assessment, ecological niche modelling and developing sustainable harvesting technique of <i>Pinus gerardiana</i> for conservation in Himachal Pradesh and Jammu & Kashmir PI: Dr. Swaran Lata, Scientist-C Duration: 5 Years Start and end year: April, 2020- March, 2025	50.96	3.3	8.5	10.00	1.40	5.50	22.26	8.34	0.30	0.50	2.00	1.40	4.14	JPF-02

Table 10: Thrust area II- Biodiversity conservation and ecological security

Thrust area wise list of NEW RESEARCH PROJECTS														
Thrust area II- Biodiversity conservation and ecological security														
S. No.	Project title/PI/Duration (Start and end year)	Total cost of the Project (Rs. in Lakhs)						Details of budget required for 2020-2021 (Rs. in lakhs)						Required Manpower (RA/SRF/ JRF/ PA/ FA etc.)
		Total cost (Rs. in Lakhs) (sum of 4 to 8)	Sub-head wise breakup of total cost					Budget required for 2020-21 (Sum of 10 to 14)	Sub-head wise breakup for 2020-2021					
			Consumables (M&S)	Research Expenditure (FRE)	Travel And Conveyance (Res)-TE	Capital (Scientific Equipments)	Fellowship		Consumables (M&S)	Research Expenditure (FRE)	Travel And Conveyance (Res)-TE	Capital (Scientific Equipments)	Fellowship	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
I) Institute: Himalayan Forest Research Institute, Shimla														
01	Ecological Assessment, Valuation and Conservation Prioritization of Floristic Diversity in Nauti Khad Watershed, Himachal Pradesh in Relation to Climate Change PI: Dr. Ranjeet Kumar, Scientist-E Duration: 5 Years (April,2020-March, 2025)	48.81	0.70	10.25	5.60	1.30	30.96	8.98	0.30	0.30	1.20	1.30	5.88	JRF-01 PA-01

Table 11: Thrust area III- Forest and Climate Change

Thrust area wise list of NEW RESEARCH PROJECTS														
Thrust area III- Forest and Climate Change														
S. No.	Project title/PI/Duration (Start and end year)	Total cost of the Project (Rs. in Lakhs)						Details of budget required for 2020-2021 (Rs. in lakhs)					Required Manpower (RA/SRF/ JRF/ PA/ FA etc.)	
		Total cost (Rs. in Lakhs) (sum of 4 to 8)	Sub-head wise breakup of total cost					Budget required for 2020-2021 (Sum of 10 to 14)	Sub-head wise breakup for 2020-2021					
			Consumables (M&S)	Research Expenditure (FRE)	Travel And Conveyance (Res)-TE	Capital (Scientific Equipments)	Fellowship		Consumables (M&S)	Research Expenditure (FRE)	Travel And Conveyance (Res)-TE	Capital (Scientific Equipments)		Fellowship
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
I) Institute:	NA													

Table 12: Thrust area IV- Forest Genetic Resource Management and Tree Improvement

Thrust area wise list of NEW RESEARCH PROJECTS														
Thrust area IV- Forest Genetic Resource Management and Tree Improvement														
S. No.	Project title/PI/Duration (Start and end year)	Total cost of the Project (Rs. in Lakhs)						Details of budget required for 2020-2021 (Rs. in lakhs)						Required Manpower (RA/SRF/ JRF/ PA/ FA etc.)
		Total cost (Rs. in Lakhs) (sum of 4 to 8)	Sub-head wise breakup of total cost					Budget required for 2020-2021 (Sum of 10 to 14)	Sub-head wise breakup for 2020-2021					
			Consumables (M&S)	Research Expenditure (FRE)	Travel And Conveyance (Res)-TE	Capital (Scientific Equipments)	Fellowship		Consumables (M&S)	Research Expenditure (FRE)	Travel And Conveyance (Res)-TE	Capital (Scientific Equipments)	Fellowship	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
I) Institute:	NA													

Form-8

Table: Tentative total budget requirements (Ongoing, Ongoing with Change Request and New Research Projects) for 2020-2021 of ICFRE Institutes (Rs in lakhs)

Institute: Himalayan Forest Research Institute, Shimla

Sl. No	Institutes	Consumables (M & S)	Research Expenditure (FRE)	Travel and conveyance (Res) - TE	Capital (Scientific Equipments)	Fellowship	Total (A)
		Requirements of research projects					
1	Ongoing Projects	3.00	6.25	7.95	1.60	23.334	42.134
2	Ongoing with CHANGE REQUEST	--	--	--	--	--	--
3	New Projects (For first year of the project)	3.4	7.1	7.95	11.7	26.36	56.51

Note: Total should match with Form No. 1(Tables 1-4), 2 and 7(Tables 9-12).

Table: Budget required for 2020-2021 for research activities other than research projects (Rs in lakhs)
Name of the Institute: Himalayan Forest Research Institute, Shimla (H.P.)

Sl. No	Proposed Activities	Consumables (M & S)	Research expenditure (FRE)		Travel and conveyance (Res) - TE	Capital (Scientific Equipments)		Maintenance of equipments used in research	RAG Meetings	Total
			General FRE	Engagement of unskilled / skilled worker (other than research projects)		Part of Approved research projects*	Not part of research projects			
1.	e.g. Maintenance of Nurseries	0.90*	--	--	--	--	--	--	--	0.90
2.	Maintenance of plantation, research plots	0.45* *	--	--	--	--	--	--	--	0.45
3.	Maintenance of scientific equipments, labs	--	--	--	--	--	--	06.00	--	06.00
4.	Maintenance of field station	--	--	12.96***	2.00** **	--	--	--	--	14.96
5.	Working Plan	--	--	--	--	--	--	--	--	--
6.	Seed bank	--	--	--	--	--	--	--	--	--
7.	Patent fees	--	--	--	--	--	--	--	--	--
8.	RAG Meeting	--	--	--	--	--	--	--	02.00	02.00
	Total	1.35	--	12.96	2.00	--	--	06.00	02.00	24.31

Note:

*Figure should match with requirement of research projects.

1. While giving the requirements, Institutes are requested to include their Research Centers also.
2. Justification: Provide proper detailed justification on separate sheet for the above budget requirement.
3. This table is for budget requirement for maintenance of nurseries/plantation/research plots, maintenance of scientific instruments, maintenance of laboratories, maintenance of field stations, laboratories, equipments, seed bank, patent fees and working plan etc.
4. Examples under proposed activities are given, may vary from Institute to Institute. The budget in this table will be discussed during RPC. Directors therefore are requested to come prepared.

Justification for the above budget requirement:

* Denotes the budget required for the purchase of nursery implements etc.

** Denotes the budget required for purchase of FYM etc.

*** Denotes the budget required for the engagement of labour for maintenance of Field research stations/nurseries.
(9 nos X 12 months X @12000/- per month= 12.96)

****Denotes the budget required for visits to Field research stations/nurseries regarding proper supervision.

CONCLUDING REMARKS

Dr. Rajesh Sharma, GCR informed that there is no proposal for any mid-term modifications in the approved projects that may be required during the implementation of the project.

At the end, Dr. S.S. Samant, Director, HFRI once again thanked the Hon'ble Members of RAG for making it possible to attend this important meeting despite the festive season.

Director, HFRI requested all the RAG Members to give their overview about the ongoing research projects and on the new research projects one by one.

Dr. Dushyant Kishor, representative of NMPB, New Delhi thanked the Director, HFRI for including him in the RAG of HFRI and said in fact it was a privilege and honour to being part of this group. He said that the research projects presented before the RAG were need based and well conceptualized with scientific input. He requested to incorporate the relevant suggestions put forth by the Hon'ble Members in the research proposals.

Shri Subhash Chander, Progressive Farmer, Kishtwar, Jammu thanked the Director, HFRI and his team for considering his area i.e., Kishtwar for implementation of some of the new research projects, which was ignored in the past by HFRI. He ensured full support and help to the team of HFRI during implementation of these research projects in the Valley.

Director, HFRI informed that he has recently had a meeting with the Principal Chief Conservator of Forests, Jammu & Kashmir and various issues of forestry research in the state of J & K were discussed in detail with him. He ensured that he will try to cover the entire state of Jammu & Kashmir in future, which in fact could not be taken care of due to one reason or another.

Speaking on the occasion, **Dr. Bhupinder Gupta, Professor (Retired)**, Dr. Y.S. Parmar University of Horticulture & Forestry, Nauni, Solan informed that he was also Members of various Committees of ICFRE and was actively involved in planning process at the ICFRE level in the past. It is honour that this time, he was nominated as a Member of RAG of HFRI and he also tried to contribute towards refinement of these research projects. He said that the concepts of the research projects are very good but, some part of methodology of these projects requires more elaborations as per the suggestions of the RAG Members. The Scientists should look how they can curtail the time and maximum data can be generated from their research projects.

Professor Sushma Sharma, Department of Bio-Science, Himachal Pradesh University, Shimla thanked the Director, HFRI for nominating her a Members of this important group. She congratulated the Scientists of HFRI for conceptualization of the research projects keeping in view the present day scenario. She suggested that

lots of objectives have been formed, therefore, she suggested to try to combine these objectives wherever feasible so that they can be achievable at the time of culmination of project. She added that the research proposals presented before the RAG were based on the requirements of the stakeholders.

Shri Sudhir Sood, Resin & Turpentine Factory, Solan, representative of Forest Based Industries thanked Director, HFRI for inviting him for this important Meeting. Being a representative of the Industries, he felt that this is a high time to associate the business community in the forestry and environmental related issues, however, at their own level they are working in the field but, it will be matter of proud to work with the intellectual people and scientific fraternity for the conservation of environment and conservation of forests.

Dr. Rajender Thapa, HIMCOSTE, Shimla said that he has a privilege of working with the Scientists of HFRI in the past also. He said that all the research projects presented by the Scientists of HFRI before the RAG were well conceptualized but suggested to incorporate the GIS and other similar means in the research projects to make them viable and useful for future generation. He assured every help in the field from his side, if required by HFRI in future.

Dr. K.S. Kanwal, Scientist-'D', G.B. Pant National Institute of Himalayan Environmental, Sustainable & Development, Himachal Regional Centre, Mohal-Kullu thanked the Director, HFRI for inviting him to attend this important Meeting of RAG. He congratulated the Scientists of HFRI for coming up with the well-conceived and meaningful research projects, which will ultimate the end users especially the Forest Department of Himachal Pradesh, Jammu, Kashmir & Ladakh and the other beneficiaries of the forests. Being a part of the scientific fraternity of the same field, he suggested to take-up collaborative research projects in future, if feasible.

Dr. Dharam Pal Walia, Principal Scientist and Incharge – ICAR, Shimla thanked the Director, HFRI and his team for coming up with the most relevant research projects. He added that the Scientists have tried to cover-up most of the aspects, which are required under their projects in a nice way and hoped that the findings of the research will be helpful to the forest managers in scientific management of forests and will also create livelihood options to the local people.

Dr. R.S. Rana, CSK HPKV, Palampur suggested that the objectives should be followed the activities, which are required to be taken up under the project. He further suggested that modern aspect of Environment Sustainable Plan (ESP) should be included in the research projects. He also suggested to include remote sensing, GIS and modern statistical techniques during implementation of the research projects.

Professor Satish Bhardwaj, UHF, Nauni, Solan congratulated the Director, HFRI and his team for the conceptualization of research projects on very important aspects of forestry. He said that the HFRI is working in very tough areas of Himachal Pradesh,

Jammu & Kashmir and Ladakh. He suggested that HFRI & UHF can collaborate with each other in some projects, where specialization is not available with HFRI.

Dr. T.D. Verma, Professor (Retd.), UHF, Nauni informed that he has experience of teaching with the pioneer institution in the field of forestry in India. He informed that he started working in this field in the year 1976. At that time, the then Prime Minister of India, Mrs. Indira Gandhi asked the then Director General, ICAR to start teaching forestry in the Agriculture University. It was her vision that studies in the field of forestry was started officially and it was since the country has achieved milestones in the field of forestry and environmental science. He added that he has also got opportunity to be part of various Committees of ICFRE, Dehradun in the past. He congratulated the Director, HFRI and his team that this Institute is working in the right direction and progressing day-by-day.

Shri S.P. Negi, IFS, CF & Head, Extension Division, HFRI, Shimla informed that he is feeling very proud that he is participating in this Meeting with some of his revered teachers as he was also a student of UHF, Nauni, Solan. Being Head, Extension Division, in HFRI, he is happy that he is involved in every project. He highly appreciated the efforts of Director, HFRI for involving all the Divisions. He informed the august house that HFRI has been declared as an Advanced Centre for taking up Cold Desert Afforestation & Pasture Establishment by the ICFRE Headquarters but, HFRI in the past was lacking in this field. He congratulated the Scientists of HFRI to take up the projects in Cold Desert Areas of Himachal Pradesh, Jammu & Kashmir and Ladakh and hoped that with the implementation of these projects, we will be able to do something on this important aspect.

The RAG, during the deliberations to evaluate the new projects, suggested a few modifications in some project proposals. While according 'in principle' approval to such project proposals, the RAG authorized the Director, HFRI- the Chairman of the Committee, to recommend these research projects after the PIs duly incorporate suggestions of the RAG in the project proposals.

At the end, Dr. S.S. Samant, Director, HFRI and Chairman of RAG once again thanked the Hon'ble Members of RAG for making it possible to attend this important Meeting despite the festive season and providing valuable inputs.

At the end of the Meeting, **Dr. S.S. Samant, Director, HFRI and Chairman** of the **Research Advisory Group** made his concluding remarks about the day's proceedings. He said that all the Hon'ble Members of RAG must be satisfied with the processes and progress made by the Scientists under various research projects being implemented by them. He also showed his satisfaction on the new research proposals proposed during the year. He thanked **all the Hon'ble Members of RAG** and the Scientists involved for the related arrangements for making this important Meeting of the Council in general and the HFRI in particular a great success. Besides, he also

thanked Hon'ble RAG Members for their contributions in one way or other during the Meeting. He was also quite appreciative of the Officers and Scientists for showing their keen interest in the activities of HFRI and shared his happiness after watching the enthusiasm he observed during the proceedings.

VOTE OF THANKS:

At the end, **Dr. Rajesh Sharma, Scientist-G, Group Coordinator Research and Member Secretary, RAG Meeting** proposed a Vote of Thanks to the Hon'ble Members of RAG and other distinguished participants for sharing their experience and providing best suggestions for fine tuning of the proposed research proposals. He added that the Scientists of this Institute will definitely be benefited from the fruitful interactions held during the day. He also thanked the Director, HFRI and the team of Research Coordination Division of the institute for making this event a grand success.