

## PREAMBLE BY THE CHAIRMAN

Dr. P.K. Mishra, Director, ICAR-IISWC, and Chairman of the Institute Research Committee (IRC) welcomed the Heads of Divisions, Heads of Research centres and Scientists to the IRC meeting of 2018. He welcomed the august gathering of scientists and emphasized upon to work hard with new ideas and technologies to focus on the Land Degradation and its Restoration. Highlighting the importance of IRC meeting, he expressed that the interaction with the farmers is essential to know their real profit through our technologies. Skill development of farmers should be done during capacity building programmes. Scientists should visit the fields of trained farmers to see whether the skill of farmers has actually been developed and how many of them are actually following the technology correctly.

He congratulated all scientists for making the Institute proud for the “Sardar Patel Best Institute Award” for the year 2016. He also expressed his happiness by getting “Swachhata Pakhwada Award” by the Institute during the year 2017 and hoped to maintain this standard at the Institute. He congratulated the Head of Koraput Centre for winning “Best Centre Award” for the year 2017 which has been started first time at the Institute for healthy completion amongst the centres. He also congratulated to Dr. P.P. Adhikary, Scientist (Soils) who got award for the best scientist. He proposed the new award for the best Principal Scientist/ Head/ Director also which may be decided from the next year.

At the outset, the Chairman presented a topic on “Paradigm Shift in Addressing Land Degradation and Restoration Issues in the Context of IPBES (Inter-governmental Platform on Biodiversity and Eco-system Services) –Conceptual Framework”. He emphasized to take-up ToT, TSP, Consultancy and MGMG Programmes in research mode to continue with the outputs for the government as the accountability is increasing. Scientists should apply for the Extra-mural projects of ICAR as we have done them earlier successfully. We should also try to bid for National and International projects as per the aspiration of Council. He also apprised the House to increase the revenue generation for the Institute as 30% of the expenditure has to be generated by the Institute. We should work together in this direction.

Concluding his address, the Chairman expressed his happiness and appreciated the scientists of the Institute for receiving awards and publishing good number of papers in reputed journals during the year 2017-18 but, there is also scope for betterment. We should prioritize our research and set goal as a team as everybody watching us starting from farmers to top level officials. He asked the new scientists to concentrate on innovative research programmes and focus upon the need of society while planning research projects. He hoped that the deliberation on various aspects of research during next six days in IRC-2018 would be productive with concrete suggestions. He urged upon all the scientists to contribute their best in the deliberations in this direction.

Finally, he advised all senior level officers to positively facilitate the young scientists to grow in their professional carrier.

## AGENDA &amp; PROGRAMME OF IRC MEETING, 2018

DATE (Day)	TIME	AGENDA & PROGRAMME
23.04.2018 (Monday)	2:30 pm	<b>Welcome and Opening Remarks</b> - Dr. P.K. Mishra, Director & Chairman, IRC
	3:00 pm	Recommendations of <b>RAC-2018</b> & Status of <b>New Proposals Agreed</b> - Dr. Gopal Kumar, Member Secretary, RAC
	3:15 pm	<b>Action Taken Report</b> on the Actions Assigned in the <b>IRC Meeting, 2017</b> - Dr. Harsh Mehta, Member Secretary, IRC
	<b>4:00 pm</b>	<b>Tea Break</b>
	4:15 pm	Presentation & Discussion on <b>“Proper Filling &amp; Maintaining RPP I, II, III and IV of Research Projects”</b> - Mr. S.K. Sinha, ACTO, PME Cell & Member Secretary, Evaluation Committee of RPPs.
	4:30 pm	Presentation of <b>Core Projects</b> by the <b>Leaders of Core Groups</b> 30 minutes will be given to each core project (20 minutes for presentation and 10 minutes for discussion and comments) - Sl.No. 7 (Erosion productivity) (P-1) : Dr. D. Mandal - Sl.No. 45 (Evaluation of hydrological) (P-3) : Dr. J.M.S. Tomar - Sl.No. 62 (Field evaluation of trenches) (P-4) : Dr. P.R. Bhatnagar - Sl.No. 71 (Assessing farmers knowledge) (P-6) : Dr. Bankey Bihari
24.04.2018 (Tuesday)	9:30 am	Presentation of <b>Externally Funded Projects</b> by the <b>Project Leaders</b> 25 minutes will be given to each project (20 minutes for presentation and 05 minutes for discussion and comments) - Sl. No. 4 (P-1) - Dr. N.K. Sharma - Sl. No. 6 (P-1) - Dr. P. Raja - Sl. No. 9 (P-1) - Dr. D. Mandal - Sl. No. 32 (P-2.2) - Dr. J.M.S. Tomar
	<b>11:15 am</b>	<b>Tea Break</b>
	11:30 am	Presentation of <b>Externally Funded Projects</b> by the <b>Project Leaders</b> - Sl. No. 33 (P-2.2) - Dr. Rajesh kaushal - Sl. No. 49 (P-3) - Dr. P.R. Ojasvi - Sl. No. 52 (P-3) - Dr. Ambrish Kumar - Sl. No. 61 (P-4) - Dr. R.K. Singh
	<b>1:00 pm</b>	<b>Lunch Break</b>
	2:00 pm	Presentation of <b>Externally Funded Projects</b> by the <b>Project Leaders</b> - Sl. No. 66 (P-5) - Dr. S.L. Patil - Sl. No. 70 (P-6) - Dr. Ramanjeet Singh - Sl. No. 73 (P-6) - Dr. Bankey Bihari - NICRA Project (P-1) - Er. Uday Mandal
	<b>3:45 pm</b>	<b>Tea Break</b>
	4:00 pm	Presentation of <b>Projects To be Concluded in 2017-18</b> by the <b>Project Leaders</b> 20 minutes will be given to each project (15 minutes for presentation and 05 minutes for discussion and comments) - Sl.No. 1 (P-1) - Dr. N.M. Alam - Sl.No. 2 (P-1) - Dr. P.R. Ojasvi - Sl.No. 5 (P-1) - Er. Uday Mandal - Sl.No. 17 (P-2.1) - Ms. M. Prabhavathi - Sl.No. 27 (P-2.2) - Dr. Rajesh Kaushal - Sl.No. 37 (P-2.2) - Dr. Ram Prasad - Sl.No. 38 (P-2.2) - Er. Monalisha Pramanik

<b>25.04.2018</b> <b>(Wednesday)</b>	9:30 am	<b>Presentation of Projects To be Concluded in 2017-18 by the Project Leaders</b> - Sl.No. 42 (P-2.2) - Dr. R. Ragupathy - Sl.No. 44 (P-3) - Dr. J. Jayaprakash - Sl.No. 47 (P-3) - Dr. V.K. Thilagam - Sl.No. 48 (P-3) - Dr. U.K. Maurya - Sl.No. 57 (P-3) - Dr. P.R. Bhatnagar
	<b>11:15 am</b>	<b>Tea Break</b>
	11:30 am	<b>Presentation of Projects To be Concluded in 2017-18 by the Project Leaders</b> - Sl.No. 59 (P-4) - Er. S.S. Shrimali - Sl.No. 64 (P-5) - Ms. Chayna Jana - Sl.No. 67 (P-5) - Mr. M.K. Meena - Sl.No. 68 (P-6) - Dr. D.V. Singh
	<b>1:00 pm</b>	<b>Lunch Break</b>
	2:00 pm	<b>Presentation of projects Approved in IRC Meeting, 2017 by the concerned Head of Divisions/ Research Centres</b> 10 minutes will be given to each project (05 minutes for presentation and 05 minutes for discussion and comments) - Sl.No. 13 & 14 (P-2.1) - Head, SS&A Division - Sl.No. 50 & 51 (P-3) - Head, H&E Division - Sl.No. 31 & 34 (P-2.2) - I/c Head, Plant Science Division - Sl.No. 15 & 16 (P-2.1) & 74 (P-6) - I/c Head, HRD&SS Division
	<b>3:45 pm</b>	<b>Tea Break</b>
	4:00 pm	<b>Presentation of projects Approved in IRC Meeting, 2017 by the concerned Head of Divisions/ Research Centres</b> - Sl.No. 36 (P-2.2) & 55 (P-3) - Head, Research Centre, Bellary - Sl.No. 21 (P-2.1) - Head, Research Centre, Koraput - Sl.No. 12 (P-1) & 58 (P-3) - Head, Research Centre, Vasad
<b>26.04.2018</b> <b>(Thursday)</b>	9:30 am	<b>Presentation of Observational Trials listed on Page No. 48 of IRC Proceedings, 2017</b> 25 minutes will be given to each project (20 minutes for presentation and 05 minutes for discussion and comments) - Sl.No. 1 (An evaluation-----in India) - Dr. M. Sankar - Sl.No. 2 (Soil erosion-----materials) - Dr. Lekh Chand - Sl.No. 3 (Improving-----bio-fertilizers) - Dr. A.K. Parandiyal - Sl.No. 4 (Investigation-----Yamuna ravine) - Dr. K.K. Sharma
	<b>11:15 am</b>	<b>Tea Break</b>
	11:30 am	<b>Presentation of Observational Trials listed on Page No. 48 of IRC Proceedings, 2017</b> - Sl.No. 5 (Performance-----vertisols) - Mr. A.S. Morade - Sl.No. 6 (Efficient-----system) - Dr. Sathia K. - Sl.No. 7 (Developing-----Odisha) - Dr. P. Jakhar - Sl.No. 8 (Effect-----Western Ghats) - Dr. K. Rajan
	<b>1:00 pm</b>	<b>Lunch Break</b>
	2:00 pm	<b>Presentation of New Project Proposals Agreed by RAC 2018 by the Project Leaders</b> 30 minutes will be given to each project (20 minutes for presentation and 10 minutes for discussion and comments) - Sl.No. 1, 2 & 3 (Carbon sequestration) - Dr. R.B. Meena - Dr. G.L. Meena - Dr. V.K. Thilagam - Sl.No. 4 (Effect of -----vertisols) - Dr. H. Biswas - Sl.No. 5 (Economic-----scenario) - Dr. Ravi Dupdal - Sl.No. 6 (Assessing-----holders) - Dr. P. Jakhar

	<b>4:00 pm</b>	<b>Tea Break</b>
	4:15 pm	<b>Presentation of New Project Proposals Agreed by RAC-2018</b> - Sl.No. 7 (Regionalization-----India) - Dr. J.P. Dash - Sl.No. 8 (Evaluation -----lands) - Mr. H.R. Meena - Sl.No. 9 (Valuation -----India) - Dr. V.C. Pande - Sl.No.10(Exploring-----unreached) - Dr. Madan Singh
<b>27.04.2018 (Friday)</b>	9:30 am	<b>Presentation of To be Continued Projects by the Project Leaders</b> 15 minutes will be given to each project (10 minutes for presentation and 05 minutes for discussion and comments) - Sl.No. 3 (P-1) - Dr. Rajeev Ranjan - Sl.No. 8 (P-1) - Dr. M. Sankar - Sl.No. 10 (P-1) - Er. Deepak Singh - Sl.No. 11 (P-1) - Dr. H. Gowda - Sl.No. 18 (P-2.1) - Ms. M. Prabhavathi - Sl.No. 19 (P-2.1) - Dr. Dev Narayan
	<b>11:00 am</b>	<b>Tea Break</b>
	11:15 am	<b>Presentation of To be Continued Projects by the Project Leaders</b> - Sl.No. 20 (P-2.1) - Dr. D.C. Sahoo - Sl.No. 22 (P-2.1) - Dr. Kuldeep Kumar - Sl.No. 23 (P-2.1) - Dr. I. Rashmi - Sl.No. 24 (P-2.1) - Dr. K. Kannan - Sl.No. 25 (P-2.2) - Dr. D.V. Singh - Sl.No. 26 (P-2.2) - Dr. Harsh Mehta - Sl.No. 28 (P-2.2) - Dr. Harsh Mehta
	<b>1:00 pm</b>	<b>Lunch Break</b>
	2:00 pm	<b>Presentation of To be Continued Projects by the Project Leaders</b> - Sl.No. 29 (P-2.2) - Dr. J. Jayaprakash - Sl.No. 30 (P-2.2) - Dr. Vibha Singhal - Sl.No. 35 (P-2.2) - Dr. H. Biswas - Sl.No. 39 (P-2.2) - Dr. Rajeev Ranjan - Sl.No. 40 (P-2.2) - Dr. M. Madhu - Sl.No. 41 (P-2.2) - Dr. S. Kala
	<b>3:30 pm</b>	<b>Tea Break</b>
	3:45 pm	<b>Presentation of To be Continued Projects by the Project Leaders</b> - Sl.No. 43 (P-2.2) - Dr. V. Kakade - Sl.No. 46 (P-3) - Dr. J.P. Dash - Sl.No. 53 (P-3) - Mr. A.K. Gupta - Sl.No. 54 (P-3) - Dr. Rama Pal - Sl.No. 56 (P-3) - Dr. G.L. Meena - Sl.No. 60 (P-4) - Dr. B.L. Mina
	<b>28.04.2018 (Saturday)</b>	9:30 am
<b>11:00 am</b>		<b>Tea Break</b>
11:15 am		<b>Presentation &amp; Discussion on TSP Running at Divisions &amp; Research Centres and Finalization of Plan Proposal for 2018-19</b> - Dr. Charan Singh, Principal Scientist & Co-ordinator of TSP

11:45 pm	<b>Presentation &amp; Discussion on ToT Running at Divisions &amp; Research Centres and Finalization of Plan Proposal for 2018-19</b> - Dr. Bankey Bihari, I/c Head, HRD & SS Division
12:15 pm	<b>Presentation &amp; Discussion on Training, Capacity Building, Mera Gaon Mera Gaurav &amp; Swachhhta Abhiyan at Headquarters &amp; Centres</b> - Dr. Bankey Bihari, I/c Head, HRD & SS Division & CAO, IISWC
12:45 pm	<b>Presentation &amp; Discussion on Preparation of RFD Plan &amp; RFD Activities for the Last Five Years (2012-13 to 2016-17)</b> - Dr. Pradeep Dogra, Principal Scientist & RFD Nodal Officer
<b>1:15 pm</b>	<b>Lunch Break</b>
2:15 pm	<b>Discussion on Publication of Institute Newsletter</b> - Dr. Pradeep Dogra, Principal Scientist
2:30 pm	<b>Presentation &amp; Discussion on the status of Hydrological Instruments at the Headquarters and Research Centres</b> - Dr. P.R. Ojasvi, Head, H&E Division
3:00 pm	<b>Presentation &amp; Discussion on Institute Resource Generation</b> - Mr. R.K. Singh, Sr. F.A.O., IISWC
<b>3:15 pm</b>	<b>Tea Break</b>
3:30 pm	<b>Presentation &amp; Discussion on Utilization of Mobile Based App in Addressing the Information for Stakeholders</b> - Dr. Madan Singh, Scientist (Ag. Extn.) & Representative of TCS
3:45 pm	<b>Presentation &amp; Discussion on “Sansthan Mein Rajbhasha Ki Pragati”</b> - Dr. Sangeeta Naithani Sharma, Rajbhasha Prabhari
4:00 pm	<b>Presentation on Foreign Visits</b> by the following scientists: - Dr. P.K. Mishra, Director - Dr. Ambrish Kumar, Principal Scientist (Engg.) - Dr. Rajesh Kaushal, Principal Scientist (Forestry) - Dr. M. Muruganandam, Sr. Scientist (Fisheries) - Dr. M. Sankar, Scientist (Soils)
4:15 pm	<b>Any other presentation with the permission of Chairman</b>
4:45 pm	<b>Plenary Session, Concluding Remarks and Recommendations</b> - <b>Chairman, IRC</b>
5:15 pm	<b>Vote of Thanks</b> - <b>Member Secretary, IRC</b>

(Note: Sl. No. of the projects is as per IRC meeting proceedings, 2017)

**IMPORTANT GUIDELINES FOR PRESENTATION:**

1. Projects concluded in the year (i.e. 2017-18) should be presented giving overall findings under the project till date and conclusions in terms of stated short term / long term objectives, clearly spelling out the findings and possibilities for upscaling, and defining domain area, mechanism and resources required. Precise write-up and recommendations (half page, one para) emerging out of the projects concluded in 2017-18 should be presented in last slide by the project leader and hard copy should be submitted to the PME Cell.
2. While presenting the progress of a project, the number of slides should be restricted to **10 only** including figures / photographs covering title, leader and associates, objectives, achievements and project expenditure (direct & indirect in one slide) during the year.
3. New project proposals must be based on extensive review, patent search and availability of resources in the Institute. It is mandatory for the PIs and Heads of the Research Centres & Divisions to ensure availability of all the resources required for new projects.
4. Any change in leader or associates should be presented before the House in a slide form at the end of presentation of the project for approval of the House.
5. **The IRC at the Research Centre/ Division level should be completed before coming to the IRC Meeting at the Headquarters and dates may be reported. The presentation of the projects must be well rehearsed, so that it may be completed smoothly within the stipulated time frame.** This may be brought to the notice of all scientists of the Research Centre/Division.
6. Programme Leader(s) will work as moderator(s) during presentation, discussion and preparing comments on the project, which is mandatory for each project. The mandatory comments for a project must be finalized with active participation and comments of Programme Leader and OIC (PME Cell) which will be approved by the Competent Authority during the IRC.

## RECOMMENDATIONS OF RAC-2018

1. The Institute should develop a methodology for quantification and valuation of intangible benefits accruing out of watershed development programmes in different agro-ecological regions of India by assigning appropriate weightage to different governing parameters.  
**(Action: Dr. V. C. Pande to develop collaborative project)**
2. The design of recharge filters developed by different organizations should be evaluated comparatively in terms of scope, suitability, efficiency, cost and limitations and procedure for design should be standardized for different agro-ecological zones.  
**(Action: Head, RC-Vasad for evaluation of different designs of Filters)**
3. Nutrient losses through water erosion should also be estimated by compiling and analyzing the experimental data on nutrient losses along with runoff and soil losses collected at Headquarters and Regional Centres of the Institute for the past 50/60 years and also using data from other organizations engaged in such studies to holistically assess production, monetary and nutrient losses due to water erosion in different states, zones and the country as a whole.  
**(Action: All the Heads of the Divisions/Centres to provide nutrient loss data to Dr. N. K. Sharma for further compilation)**
4. Assessment of extension of ravines (temporal trends) in different river systems needs to be undertaken employing remote sensing and GIS techniques and should be correlated with the governing factors including land use. The ravine dynamics should be linked up with reclamation data available under various ongoing schemes. There is a need of long term monitoring strategy for ravines extension and reclamation measures.  
**(Action: Dr. Gopal Kumar for assessing ravine dynamics of 1-2 ravine districts)**
5. A spatially explicit web based decision support system for watershed planning, execution and monitoring should be conceptualized and developed in a project mode and in a specified time frame. It is high time for the Institute to take up leadership in this endeavour, being the pioneering organization in the country to evolve the concept of watershed management, by compiling and analyzing the available research data of the past 50/60 years collected by different divisions and centers of the Institute.  
**(Action: Dr. P. R. Ojasvi, Head, Hydrology and Engineering Division, to initiate the work. All the Heads of the Divisions/ Centres to provide desired information to Dr. P.R. Ojasvi)**
6. Attempt should be made to bring projects having identical objectives and procedures under the umbrella of a core or network project in order to reduce the number of projects and save on time and cost due to limited funds availability.  
**(Action: OIC, PME Cell)**

**ACTION TAKEN ON  
“SALIENT RECOMMENDATIONS OF IRC MEETING – 2017”**

S.No.	Action Assigned	Action Taken Report
1.	Action is again assigned by the IRC-2017 to Dr. P.R. Ojasvi, Head, H&E Division for completing the printing process of the bulletin on runoff and erosion prediction models by December, 2017 positively. <b>(Action: Dr. P.R. Ojasvi)</b>	The bulletin is not yet printed. It is again assigned by the IRC-2018 to Dr. P.R. Ojasvi to complete the assignment by December, 2018 positively.
2.	Action is again assigned by the IRC-2017 that a bulletin / brochure on the concluded project entitled “Design and development of site specific artificial groundwater recharge filters” may be published by Dr. D.R. Sena, Pr. Scientist (Engg.) and Dr. Gopal Kumar, Sr. Scientist (Soils) by August 31, 2017 positively. <b>(Action: Dr. D.R. Sena and Dr. Gopal Kumar)</b>	Preparation of bulletin is under progress. It is again assigned by the IRC-2018 to Dr. Gopal Kumar to complete the assigned by August, 2018 positively.
3.	Action is again assigned by the IRC-2017 that a bulletin / brochure may be published on the results obtained from concluded projects entitled “Productivity enhancement in fruit and flower based two tier horticulture systems through integrated nutrient management and mulching” and “Enhancement of guava productivity through canopy management and mulching in rainfed bouldery riverbed lands” by Dr. A.C. Rathore, Pr. Scientist (Hort.) by August 31, 2017 positively. <b>(Action: Dr. A.C. Rathore)</b>	Brochures from the assigned two concluded projects are under process of printing in press.
4.	Action is again assigned by the IRC – 2017 that a technical bulletin may be published on the results obtained from the concluded project entitled “Enhancement in land productivity and livelihood security of small farmers of Nilgiris through multiple use of harvested water” by Dr. S. Manivannan, Pr. Scientist (Engg.) by Sept. 30, 2017 positively. <b>(Action: Dr. S. Manivannan)</b>	The soil analysis data is to be rechecked. Action is again assigned to Dr. S. Manivannan to publish the bulletin by August, 2018 positively.
5.	Action is again assigned by the IRC – 2017 that a policy paper may be brought out from the concluded project entitled “Prototype field study on application of potentially important Jute geo-textiles for hill slope stabilization” for Nilgiris area alongwith economic returns by Dr. S. Manivannan, Pr. Scientist (Engg.) by August 31, 2017 positively. <b>(Action: Dr. S. Manivannan)</b>	The draft policy paper has been submitted during April, 2018 which is under review at the Headquarters.
6.	Action is again assigned by the IRC – 2017 that a policy paper on “Present status of shifting cultivation in Odisha and to suggest action plan” may be prepared by Dr. M. Madhu, Head, Research Centre, Koraput by August 31, 2017 positively. <b>(Action: Dr. M. Madhu)</b>	The assignment has been completed and policy paper approved by the Competent Authority. Printing is under process.
7.	Action is again assigned by the IRC – 2017 that the document of 60 years research in Soil and Water Conservation may be published by the Head, Research Centres, Bellary, Kota, Udhagamandalam & H&E and HRD&SS Divisions on or before Sept. 30, 2017 and Research Centre, Agra by Dec. 31, 2017 positively. Similar document for 30 years of Research Centre, Datia and 25 years of Research Centre, Koraput may be published by August 31, 2017 positively. <b>(Action: Head, Research Centres, Agra, Bellary, Datia, Koraput, Kota, Udhagamandalam and Head of H&amp;E &amp; HRD&amp;SS Divisions)</b>	The assignment has been completed by the Head, Research Centre, Koraput and Head, HRD&SS Division. Action is again assigned to the Head, Research Centres, Agra, Bellary, Datia, Kota Udhagamandalam and Head, H&E Division to publish the document by August, 2018 positively.



S.No.	Action Assigned	Action Taken Report
8.	The complete module on user friendly DSS for planning of watershed development project need to be developed by Dr. P.R. Ojasvi, Head (H&E Division) from the support of Institute for use by the stakeholders to justify the time spent on such project and to arrive at logical conclusion. The action taken may be presented in the IRC meeting 2018. <b>(Action: Dr. P.R. Ojasvi)</b>	Different modules are being used for testing and refinements. All modules are being logically evaluated with regard to their functionality. DSS need to be developed by the PI for use by Stakeholders and action to be presented in the next IRC.
9.	The testing comparison of the field level sediment sampler may be done during monsoon season by Er. Deepak Singh, Scientist (Engg.) and the report may be submitted by September 30, 2017 positively. <b>(Action: Er. Deepak Singh)</b>	The assignment has been completed and report submitted.
10.	A policy paper on peach may be brought out from the project entitled “Peach based agri-horticulture landuse system for degraded Shiwaliks” by Dr. Ram Prasad, Pr. Scientist (Hort.) by December 31, 2017. <b>(Action: Dr. Ram Prasad)</b>	The policy paper is yet to be brought out. Action is again assigned to Dr. Ram Prasad to publish the policy paper by October, 2018 positively.
11.	A meeting may be organized by Dr. B.L. Dhyani, Sr. Scientist (Ag. Eco.) and Dr. Pradeep Dogra, Pr. Scientist (Ag. Eco.) during Nov., 2017 with all scientists of Headquarters and scientists of Economics discipline from Research Centres for discussion on “Intangible benefits of NRM interventions in different projects in different climatic regions and network project formulation”. The recommendations of above meeting may be utilized for formulation of core project on above issue for presentation in the next IRC meeting. <b>(Action: Dr. B.L. Dhyani, Dr. Pradeep Dogra and Scientists of Economics discipline from Research Centres)</b>	A meeting of scientists of Economics discipline from Research Centres and all scientists of Headquarters was held during January 20-21, 2018 at Dehradun. A proposal for a core project was formulated and submitted to the RAC-2018 which was agreed for presentation in the IRC-2018 and was approved by the IRC.
12.	A DSS for generating optimal IFS plan of a farmer may be worked out by Dr. Pradeep Dogra, Pr. Scientist (Ag. Eco.) and leader of concluded core project entitled “Multiple criteria decision for identifying suitable Integrated Farming Systems in different agro-ecological regions for optimizing resource conservation and productivity” with the help of Ms. Chayna Jana or a computer programmer. <b>(Action: Dr. Pradeep Dogra and Ms. Chayna Jana)</b>	Generation of an optimal IFS plan was listed, based on which flow diagram of the DSS has been prepared. The flow diagram needs to be refined. As per the flow diagram, an initial basic feasible solution matrix will be generated for which an example has been prepared. Action is again assigned to Dr. Pradeep Dogra to complete the assignment by October, 2018 positively.
13.	Preparation of Ravine Atlas of India including the scientific method for delineating the affected areas due to ravines may be completed by Dr. R.K. Singh, Head, Research Centre, Kota and Dr. G.L. Meena, Scientist (Soils) in association with Dr. Gopal Kumar, Sr. Scientist (Soils) by Dec. 31, 2017. <b>(Action: Dr. R.K. Singh, Dr. G.L. Meena and Dr. Gopal Kumar)</b>	Delineation works of Chambal, Yamuna and Mahi ravine areas have been completed. Action is again assigned by the IRC-2018 to complete the assignment for other remaining areas also by October, 2018 positively.

S.No.	Action Assigned	Action Taken Report
14.	A policy paper on Jhola land may be published by Dr. (Ms.) Ch. J.P. Dash by August 31, 2017 related to the concluded project entitled “Mapping and characterization of Jhola land areas in Koraput district”. The technologies developed from the above project may be transferred under TSP. RPP IV on the above project may be submitted. A bulletin on Jhola land may also be prepared. <b>(Action: Dr. (Ms.) Ch. J.P. Dash)</b>	The draft policy paper has been submitted which is under review at the Headquarters.
15.	The comparative cost estimate with other standard check dams constructed with standard construction materials may be worked out by Dr. P.R. Bhatnagar, Head, Research Centre, Vasad related to a concluded project entitled “Development of cost-effective plastic check dams for water harvesting in rainfed regions”. Patenting of plastic check dams may also be explored. <b>(Action: Dr. P.R. Bhatnagar)</b>	The cost comparison of replacing head wall with PP & HDPE has been worked out with respect to masonry and concrete dams. Rubber dams are entirely for other purposes (Flexible water storage) and have very high cost. Material for patenting plastic check dams is being prepared.
16.	The concluded project entitled “Creation of ICT network to disseminate knowledge about the soil and water conservation technologies to farmers in Himalayan region” may be continued as Transfer of Technology (ToT) for one year by Mr. Rajesh Bishnoi, Scientist (Ag. Extn.) to study the effectiveness of the project and collection of data for good statistical analysis. <b>(Action: Mr. Rajesh Bishnoi)</b>	The project was continued for one year as Transfer of Technology (ToT).
17.	The comparative analysis of different cover materials with tiles related to the concluded project entitled “Water budgeting of a ravine watershed pond for optimum crop planning under semi-arid region” may be completed by Dr. K.K. Sharma, Sr. Scientist (Engg.) by August 31, 2017 positively. Technologies may also be prepared on the above project. <b>(Action: Dr. K.K. Sharma)</b>	A Technical Bulletin entitled “Dugout farm pond – A potential rain water harvesting structure in ravines of Central India” has been published.
18.	The statistical analysis about trend in borewell depth related to the concluded project entitled “Socio-economic implication and vulnerability of farmers to ground water exploitation in hard rock region of the Deccan” may be done by Mr. Suresh Kumar, Scientist (Ag. Econ.) by August 31, 2017. A policy paper from the above project including techno-economical analysis may also be prepared. <b>(Action: Mr. Suresh Kumar)</b>	The assignment is yet to be completed. Action is again assigned by the IRC-2018 to Mr. Suresh Kumar and Dr. S.L. Patil, Head, Research Centre, Bellary to complete the assignment by October, 2018 positively.
19.	The DSS from the concluded project entitled “Decision Support System (DSS) for identifying best management practices in erosion risk area” need to be sent for copy right. The action taken will be presented in the next IRC meeting. <b>(Action: Dr. N.M. Alam)</b>	The related software is almost ready and will be sent for copy right.

S.No.	Action Assigned	Action Taken Report
20.	A new proposal entitled “Evaluation and improvement of water and nutrient use efficiency for potato based cropping sequence through efficient use of harvested rain water” may be conducted as demonstration at the Research Centre, Udhagamandalam by Dr. P. Raja, Dr. K. Kannan and Dr. K. Rajan and DSS may be developed with the existing information and presented in the next IRC meeting. <b>(Action: Dr. P. Raja, Dr. K. Kannan and Dr. K. Rajan)</b>	Drip irrigation system has been installed and potato is planted under various levels of irrigation and fertigation. Data is being collected.
21.	Digitization of data of research farm at the Headquarters and all Research Centres may be completed and reported accordingly to Er. S.S. Shrimali, Sr. Scientist (CAA) and Co-ordinator for compilation of data digitization by December 31, 2017 positively. <b>(Action : Er. S.S. Shrimali, OIC, Research Farm, Selakui and all Heads of Research Centres)</b>	Digitization of data has been completed at the research farm of Headquarters, Dehradun and Research Centre, Udhagamandalam. The process of digitization of data at other Research Centres is in progress.
22.	Seminar on foreign papers may be conducted every month at Headquarters and all Research Centres for sharing of new thinking in research. One scientist may be identified at all Research Centres for organizing seminar every month. At the Headquarters, a roaster may be prepared by Dr. Pradeep Dogra, Pr. Scientist (Ag. Econ.) for organizing seminar on monthly basis. <b>(Action: Dr. Pradeep Dogra &amp; all Heads / Scientists of Divisions / Research Centres)</b>	Scientists at all Research Centres have been identified for organizing seminar every month on foreign papers. At the Headquarters, a roaster for seminar has been prepared which has been approved by the Competent Authority.
23.	Status report of Gauging devices / Silt Monitoring Stations (SMS) working at Headquarters / Research Centres may be prepared by the Head, H&E Division by June 30, 2017. Further, the format may be discussed with the concerned scientists and published by Sept. 30, 2017 by Dr. P.R. Ojasvi, Head, H&E Division and co-ordinator of this assignment. <b>(Action: Dr. P.R. Ojasvi and all concerned Scientists)</b>	The desired publication has been prepared and is ready for printing.
24.	On-site monitoring and evaluation of running projects of remaining Research Centres and Divisions may be co-ordinated and completed by the PME Cell of Headquarters visiting the project sites at Research Centres and Divisions after finalizing the dates with the Head of Research Centres and Divisions. <b>(Action: OIC, PME Cell and Head of Research Centres / Divisions)</b>	On-site monitoring and evaluation of running projects of Research Centre, Vasad has been completed by the Evaluation Committee visiting on-spot by Dr. N.K. Sharma, Head, SS&A Division (Chairman), Dr. P.R. Bhatnagar, Head, Research Centre, Vasad (Member), Dr. D. Mandal, ICAR National Fellow (Member) and Mr. S.K. Sinha, ACTO, PME Cell (Member Secretary) during November, 2017. Evaluation of projects for remaining Research Centres and Divisions will be completed during current year after finalizing the dates with the Head of Research Centres and Divisions.

S.No.	Action Assigned	Action Taken Report
25.	<p>All RPPs of research projects should be filled-up, submitted and maintained as per ICAR guidelines on RPPs and the presentation made by Mr. S.K. Sinha, Assistant Chief Technical Officer, PME Cell on “Proper filling and maintaining RPP I, II, III &amp; IV of Research Projects”, discussed in the IRC meeting, 2017.</p> <p><b>(Action: Mr. S.K. Sinha and all Heads / Scientists of Divisions / Research Centres)</b></p>	<p>Almost all RPPs of research projects till the year 2016-17 have been submitted by the scientists however, several RPPs have not been filled up as per ICAR guidelines and presentation made in IRC-2017 on RPPs. Hence, a presentation on these aspects was again listed in the agenda items of IRC-2018 for proper filling and maintaining RPPs.</p>
26.	<p>The maximum total percent time spent by a scientist in approved running research projects should not be exceeded 80% and minimum 20% of his / her time should be kept spare for other scientific assignments of the Institute. Further, minimum 20% time as PI and 10% time as Co-PI should be devoted by a scientist in a research project.</p> <p><b>(Action: All Scientists/Heads of Research Centres / Divisions)</b></p>	<p>The action has been noted by the scientists and all scientists are planning their research activities accordingly for compliance of the recommendation.</p>
27.	<p>Paper / Abstract sending for publication / presentation should invariably be discussed in the monthly STMIM at the Research Centre / Headquarters in front of all scientists. The proceedings must be attached with the paper / abstract while submitting to the Director for approval through the Head.</p> <p><b>(Action: All Scientists/Heads of Research Centres / Divisions)</b></p>	<p>The action is being followed by all Scientists / Head of Research Centres and Divisions.</p>
28.	<p>An externally funded NICRA project entitled “Comprehensive assessment of climate change implications on watershed development component of PMKSY (WDC-PMKSY) approved during July, 2017 for three years (2017-18 to 2019-20) may be conducted by Dr. D.R. Sena, Pr. Scientist (Engg.) as PI at the Headquarters, Dehradun. Names of Dr. P.K. Mishra, Er. Uday Mandal, Dr. Gopal Kumar, Dr. Ramanjeet Singh, Dr. M. Sankar and Dr. Pradeep Dogra are included as Co-PIs of this project.</p> <p><b>(Action: Dr. D.R. Sena and all associated Co-PIs)</b></p>	<p>The externally funded NICRA project is being carried out by the concerned scientists at the Headquarters and achievement of the year 2017-18 was presented in the IRC-2018.</p>
29.	<p>While taking up new R&amp;D projects and upscaling the technologies, the scientist should focus on the location specific research, priorities on ongoing Government programmes, low cost and appropriate technology development, upscaling participatory research etc. The senior level scientists should act as mentor to the newly recruited scientists.</p> <p><b>(Action: All Scientists / Heads of Research Centre / Division)</b></p>	<p>The action has been noted by all Scientists / Head of Research Centres and Divisions and it is being followed.</p>

## SALIENT RECOMMENDATIONS OF IRC MEETING – 2018

1. Action is again assigned by the IRC-2018 to Dr. P.R. Ojasvi, Head, H&E Division for completing the printing process of the bulletin on runoff and erosion prediction models by December, 2018 positively. This is a long pending activity. **(Action: Dr. P.R. Ojasvi)**
2. Action is again assigned to Dr. P.R. Ojasvi, Head, H&E Division to develop the DSS which has also been stressed upon by the RAC. This is the most important output awaited from the project. **(Action: Dr. P.R. Ojasvi)**
3. Action is again assigned by the IRC-2018 that a bulletin on the concluded project entitled “Design and development of site specific artificial groundwater recharge filters” may be published by Dr. Gopal Kumar, Sr. Scientist (Soils) by August 31, 2018 positively. **(Action: Dr. Gopal Kumar)**
4. Action is again assigned by the IRC – 2018 that a technical bulletin may be published on the results obtained from the concluded project entitled “Enhancement in land productivity and livelihood security of small farmers of Nilgiris through multiple use of harvested water” by Dr. S. Manivannan, Pr. Scientist (Engg.) by August 31, 2018 positively. **(Action: Dr. S. Manivannan)**
5. Action is again assigned by the IRC – 2018 that the document of 60 years research in Soil and Water Conservation may be published by the Head, Research Centres, Agra, Bellary, Kota, Udhagamandalam & H&E Division on or before August 31, 2018 positively. Similar document for 30 years of Research Centre, Datia may also be published by August 31, 2018 positively. This is a long pending activity. **(Action: Head, Research Centres, Agra, Bellary, Datia, Kota, Udhagamandalam and Head of H&E Division)**
6. Action is again assigned by the IRC – 2018 that a policy paper on peach may be brought out from the project entitled “Peach based agri-horticulture landuse system for degraded Shiwaliks” by Dr. Ram Prasad, Pr. Scientist (Hort.) by October, 2018 positively. **(Action: Dr. Ram Prasad)**
7. Action is again assigned by the IRC – 2018 that a DSS for generating optimal IFS plan of a farmer may be worked out by Dr. Pradeep Dogra, Pr. Scientist (Ag. Eco.) and leader of concluded core project entitled “Multiple criteria decision for identifying suitable Integrated Farming Systems in different agro-ecological regions for optimizing resource conservation and productivity” by March, 2019 positively with the help of Computer Scientist of the Institute / Out sourcing. **(Action: Dr. Pradeep Dogra)**
8. Action is again assigned by the IRC – 2018 that the preparation of Ravine Atlas of India including the scientific method for delineating the affected areas due to ravines may be completed for other remaining areas also by Dr. R.K. Singh, Head, Research Centre, Kota, Dr. G.L. Meena, Scientist (Soils) and Dr. Gopal Kumar, Sr. Scientist (Soils) by October, 2018 positively. **(Action: Dr. R.K. Singh, Dr. G.L. Meena and Dr. Gopal Kumar)**
9. Action is again assigned by the IRC – 2018 that the statistical analysis about trend in borewell depth related to the concluded project entitled “Socio-economic implication and vulnerability of farmers to ground water exploitation in hard rock region of the Deccan” may be done by Mr. Suresh Kumar, Scientist (Ag. Econ.) and Dr. S.L. Patil, Head, Research Centre, Bellary by October, 2018 positively. A policy paper from the above project including techno-economical analysis may also be prepared. **(Action: Mr. Suresh Kumar and Dr. S.L. Patil)**

## SALIENT RECOMMENDATIONS OF IRC MEETING – 2018

10. A policy paper including economic analysis may be brought out from the concluded project entitled “Ensuing sustainable agricultural development and livelihood security in lower Shiwalik range of Uttarakhand” by Dr. Ramanjeet Singh, Scientist (Agro.) by December, 2018 positively.  
**(Action: Dr. Ramanjeet Singh)**
11. The economic analysis related to the concluded core project entitled “Evaluation of hydrological behaviour and production potential of recommended landuse system / practices under different agro-ecological regions of India” may be done by Dr. J.M.S. Tomar, Pr. Scientist (Forestry) and leaders at other Research Centres and should be included in the final report of the project. Final report (RPP III) of the project may be submitted objective-wise by June, 2018 positively.  
**(Action: Dr. J.M.S. Tomar and leaders of other Research Centres)**
12. An extension bulletin including package of practices and economic analysis may be prepared from the concluded project entitled “Evaluating the effect of organic amendments on resource conservation and productivity of rainfed semi-arid vertisols” by Ms. M. Prabhavathi, Scientist (Soils) by December, 2018 positively. The technologies developed from the above project may be transferred to the farmers under ToT. RPP IV on the above project may also be submitted.  
**(Action: Ms. M. Prabhavathi)**
13. The economic analysis related to the concluded project entitled “Evaluation of moisture conservation techniques for sustainable production of Tree Borne Oil Seeds (TBOS) in Bundelkhand” may be done by Er. Monalisha Pramanik, Scientist (Engg.) and Mr. M.K. Meena, scientist (Ag. Econ.) and reported accordingly in the final report (RPP III) of the project. The intangible benefits may also be taken in to the account. Growth parameter data may also be taken. Minimum data collection related to the above project may be continued.  
**(Action: Er. Monalisha Pramanik and Mr. M.K. Meena)**
14. Soil health data should be checked before submission of final report (RPP III) of the concluded project entitled “Effect of shade trees on productivity and soil health in rejuvenated tea plantations in Nilgiris” and reported accordingly by Dr. R. Ragupathy, Scientist (SS) (Forestry), Dr. K. Rajan, Pr. Scientist (Soils) and Head of Udhagamandalam Centre by July, 2018 positively.  
**(Action: Dr. R. Ragupathy, Dr. K. Rajan and Head of Udhagamandalam Centre)**
15. Final report (RPP III) of the concluded project entitled “Assessment of impact of extraction of RBM (River bed material) on physiography of stream flow courses of Himalayan foot hill streams” may be submitted by December, 2018 by Er. S.S. Shrimali, Sr. Scientist (CAA), as some more data to be collected from the monitoring agencies or to be estimated. Comparison of process done by Mining Department and this Institute may be reported in RPP III.  
**(Action: Er. S.S. Shrimali)**
16. The project entitled “Role of soil and water conservation technologies for climate resilient agriculture in Himalayan ecosystem - An action research” is concluded in 2017-18. Any further work related to this project will be done through TSP (Tribal Sub Plan) by Dr. D.V. Singh, Pr. Scientist (Soils).  
**(Action: Dr. D.V. Singh)**

## SALIENT RECOMMENDATIONS OF IRC MEETING – 2018

17. Commercialization of plants should be tried to explore with the National Horticulture Boards located at Research Centres and Headquarters, Dehradun by Horticulture/ Forestry Scientists working at Research Centres and Plant Science Division, Dehradun for revenue/ resource generation of the Institute. Dr. A.C. Rathore, Pr. Scientist (Horticulture) will coordinate this assignment at Headquarters and all Research Centres.  
**(Action: Dr. A.C. Rathore and Horticulture/ Forestry Scientists at Research Centres)**
18. A video film of 5-10 minutes related to each Research Centre may be prepared by the Head of concerned Research Centre by March, 2019 positively. Dr. Bankey Bihari, I/c Head, HRD&SS Division will coordinate this assignment. Further, video film of 2-3 minutes related to specific technology of the Research Centre may also be prepared for the benefit of trainees.  
**(Action: Dr. Bankey Bihari, Heads of all Research Centres and Dr. Pradeep Dogra)**
19. Policy briefs/ Policy papers on related areas may be prepared by the Head of concerned Research Centre by December, 2018 positively for sending to the Director General, ICAR, Politicians, Policy makers etc. for its ultimate use.  
**(Action: Heads of all Research Centres)**
20. On-site monitoring and evaluation of running projects of remaining Research Centres and Divisions may be co-ordinated and completed by the PME Cell of Headquarters visiting the project sites at Research Centres and Divisions after finalizing the dates with the Heads of Research Centres and Divisions.  
**(Action: OIC, PME Cell and Heads of Research Centres/ Divisions)**
21. All RPPs of research projects should be filled-up, submitted and maintained as per ICAR guidelines on RPPs and the presentation made by Mr. S.K. Sinha, Assistant Chief Technical Officer, PME Cell on “Proper Filling and Maintaining RPP I, II, III & IV of Research Projects” in the IRC meeting, 2018.  
**(Action: Mr. S.K. Sinha and all Heads/ Scientists of Research Centres/ Divisions)**
22. The maximum total percent time spent by a scientist in approved running research projects should not be exceeded 80% and minimum 20% of his / her time should be kept spare for other scientific assignments of the Institute. Further, minimum 20% time as PI and 10% time as Co-PI should be devoted by a scientist in a research project.  
**(Action: All Scientists/ Heads of Research Centres/ Divisions)**
23. New project proposals should essentially be submitted by those scientists whose projects are going to be concluded. It must be ensured by each scientist that how he/ she will be engaged in the coming years on research.  
**(Action: All Scientists of Research Centres/ Divisions)**
24. It is the responsibility of Co-PIs of concerned discipline to collect and report the relevant data of his/ her discipline to the PI of the project.  
**(Action: All Scientists)**
25. A monthly meeting should be organized by all leaders of running projects at Division / Research Centre level with all associated scientists to discuss the progress of projects and what actions have to be taken.  
**(Action: Leaders of all running projects)**

## **PROPER FILLING AND MAINTAINING RPP I, II, III & IV OF RESEARCH PROJECTS**

### **SALIENT POINTS FOR PROPER FILLING RPP I, II, III & IV**

1. RPP I in Annexure I, II & III (Page No. 24 to 28), RPP II in Annexure V (Page No. 30 to 31), RPP III in Annexure VI, VII, VIII & IX (Page No. 32 to 34 & 37 to 39) and RPP IV in page no. 35 to 36 may be submitted as documented in the ICAR Guidelines on RPPs.
2. All RPPs may be submitted only in **two** original copies. The one signed copy of RPP will be sent to the Head of Division/ Research Centre whose photo copy/ scanned copy may be provided to PI/ Co-PIs.
3. Proformae of all RPPs should be submitted duly signed by PI, all Co-PIs and Head of Research Centre/ Division. Scanned signatures of those Co-PIs may be obtained by the PI on RPPs who are not available in the Research Centre/ Division. All signatures on RPPs should be with date.
4. Title of project, year of start & completion, sequence of Co-PIs in the project etc. should be kept as per listing in the IRC Proceedings of relevant year. Any change may only be decided by the IRC in the House.
5. “NIL” may be written against those items which are not applicable or no output during the period and no item should be left blank in RPPs.
6. In Annexure V of RPP II, item No. 6, the activities and output details of all associated scientists of the project in the particular year should essentially be mentioned for justification of his/ her name in the project in that year. Further, % of activity envisaged of an objective should be kept same in RPP II as reported in RPP I for the particular year.
7. Specific comments on annual progress/ achievements, shortfall and constraints of the project may be given by the Head of Research Centre/ Division in item No. 13 of RPP II with rating of the project.
8. In RPP III, the final report of project in item No. 10 of Annexure VII may be prepared mentioning the “Material and methods used, Results and discussion, Objective-wise achievements and Conclusions”, as per guidelines of ICAR. These are also essential for evaluation of RPP III of concluded projects by the Evaluation Committee.
9. Timelines of execution of the project should be followed strictly. If extension sought over the approved project duration, the marks will be deducted by the Evaluation Committee during the evaluation of RPP III. Further, RPP I to be submitted again with the revised % of activities to be carried out in case of extension.
10. RPP IV may be submitted after the assignments given by the IRC. RPP IV may be submitted again if further efforts made for commercialization/ up-scaling of research output/ technology.
11. Project Based Budgeting proforma provided in the IRC–2017 to be submitted with all RPP I, II & III of the project.
12. RPP I of the project approved in the IRC may be submitted before the 31<sup>st</sup> July of that year. Further, all RPP II & III of last year may be submitted before the 30<sup>th</sup> June of current year.

**- S.K. Sinha**  
**Assistant Chief Technical Officer**  
**PME Cell, Dehradun**



## RESEARCH PROGRAMMES AND SUB-PROGRAMMES

### **P-1 WATER EROSION APPRAISAL IN DIFFERENT AGRO-ECOLOGICAL REGIONS**

**(Leader - Dr. P.R. Ojasvi)**

- 1.1 Inventory and database of erosion status using modern tools and procedures
- 1.2 Soil erosion process modeling and climate change studies
- 1.3 Soil carbon dynamics and erosion productivity studies

### **P-2 CONSERVATION MEASURES FOR SUSTAINABLE PRODUCTION SYSTEM**

- 2.1 Resource conservation measures for arable lands

**(Leader - Dr. N.K. Sharma)**

- 2.2 Resource conservation measures for non-arable lands

**(Leader - Dr. Harsh Mehta)**

### **P-3 WATERSHED HYDROLOGY FOR CONSERVATION PLANNING**

**(Leader - Dr. D.R. Sena)**

- 3.1 Hydrological behaviour of land uses and management practices
- 3.2 Water harvesting, groundwater recharge and management
- 3.3 Decision support systems (DSS)

### **P-4 REHABILITATION OF AREAS AFFECTED BY MASS EROSION**

**(Leader - Dr. Ambrish Kumar)**

- 4.1 Development and refinement of technologies for rehabilitation of ravines, landslides, mine spoils, riverbed mining, stream banks, torrents etc.

### **P-5 INTEGRATED WATERSHED MANAGEMENT FOR SOCIO-ECONOMIC GROWTH AND POLICY ADVOCACY**

**(Leader - Dr. Pradeep Dogra)**

- 5.1 Participatory watershed management and integrated farming system (IFS)
- 5.2 Common property resource management

### **P-6 HUMAN RESOURCE DEVELOPMENT AND TECHNOLOGY TRANSFER**

**(Leader - Dr. Bankey Bihari)**

- 6.1 Capacity development approaches and information and communication technology (ICT)
- 6.2 Participatory technology dissemination and adoption

## STATUS OF PROGRAMME WISE RUNNING PROJECTS AND IRC COMMENTS

### P-1 WATER EROSION APPRAISAL IN DIFFERENT AGRO-ECOLOGICAL REGIONS

#### 1.1 INVENTORY AND DATABASE OF EROSION STATUS USING MODERN TOOLS AND PROCEDURES

S. No.	Project Code No. (RPP No.)	Title of the Project	Leader and Associates	Centre/Division	Start	Completion	Location of Project	Remarks
1.	NRMAIISWCCIL 201500200088	Assessment of soil erosion fluxes of Uttarakhand.	P.R. Ojasvi	Hydrology & Engineering, Dehradun	2015-16	2018-19	Headquarters	To be concluded
Comments: Progress is very good. Project is extended for one year to fulfil the remaining objective. However, project should be completed by Dec., 2018. (Action: Dr. P.R. Ojasvi)								
2.	NRMAIISWCSP 201800100149	An evaluation of the potential to use the Fallout Radionuclide (FRN) Caesium – 137 ( <sup>137</sup> Cs) in national scale soil erosion assessment in India.	M. Sankar Deepak Singh Rajeev Ranjan D. Dinesh P.P. Adhikary V.K. Thilagam	Soil Science & Agronomy, Dehradun	2018-19	2021-22	Agricultural fields of Dehradun and Research Centres	To be continued <b>(International Collaborative Project with University of Exeter, United Kingdom) (New Project)</b>
3.	NRMAIISWCCIL 201500300089	Impact of land use land cover changes on soil erosion susceptibility in Bundelkhand region using Remote Sensing and GIS technique.	Rajeev Ranjan M. Pramanik R.S. Yadav	Datia	2015-16	2018-19	Bundelkhand region	To be concluded
Comments: Progress is very good.								
4.	NRMAIISWCCIL 201800200150	Regionalization of erosivity density and identification of hot-spot of erosion risk under different agro-ecological regions of India.	Ch. J.P. Dash S.S. Shrimali	Koraput	2018-19	2020-21	All the agro-ecological regions of India	To be continued <b>(New Project)</b>

**1.2 SOIL EROSION PROCESS MODELING AND CLIMATE CHANGE STUDIES**

S. No.	Project Code No. (RPP No.)	Title of the Project	Leader and Associates	Centre/Division	Start	Completion	Location of Project	Remarks
5.	NRMAIISWCCOL 201500400090	National Mission on Sustaining Himalayan Eco-system (NMSHE) - Task force on Himalayan agriculture for lower and middle Himalayan region.	N.K. Sharma P.R. Ojasvi Ambrish Kumar Pradeep Dogra Charan Singh D.R. Sena S.S. Shrimali Bankey Bihari M. Muruganandam Rajesh Kaushal Lekh Chand U.K. Maurya V.C. Pande (Vasad) A.C. Rathore J.M.S. Tomar Ramanjeet Singh Uday Mandal A.K. Gupta Trisha Roy Gopal Kumar Madan Singh	Soil Science & Agronomy, Dehradun	2015-16	2020-21	Lower-middle Himalayas	To be continued <b>(NMSHE Project)</b>
			Pankaj Panwar V.K. Bhatt S.L. Arya Sharmistha Pal Ram Prasad Pawan Sharma	Chandigarh				
<p>Comments: Progress is very good. Name of Dr. P.K. Mishra is deleted and Dr. N.K. Sharma will be the leader of project. Dr. Madan Singh will replace Mr. Rajesh Bishnoi and name of Dr. M. Muruganandam is included at Dehradun. Names of Dr. N.M. Alam and Ms. Chayna Jana are deleted. (Action: Dr. N.K. Sharma)</p>								

S. No.	Project Code No. (RPP No.)	Title of the Project	Leader and Associates	Centre/Division	Start	Completion	Location of Project	Remarks
6.	NRMAIISWCCO L201800300151	Comprehensive assessment of climate change implication on watershed development component of PMKSY (WDC-PMKSY).	D.R. Sena Uday Mandal Gopal Kumar Ramanjeet Singh M. Sankar Pradeep Dogra	Hydrology & Engineering, Dehradun	2017-18	2019-20	Headquarters, Dehradun	To be continued <b>(NICRA Project)</b> <b>(New Project)</b>
Comments: Progress is very good.								
7.	NRMAIISWCCIL 201800400152	Assessment of potential soil erosion of India using spatial science tools.	Uday Mandal D.R. Sena Gopal Kumar	Hydrology & Engineering, Dehradun	2018-19	2021-22	Headquarters, Dehradun	To be continued <b>(New Project)</b>
8.	NRMAIISWCCOL 201700100131	Study of atmospheric and soil carbon dioxide fluxes in temperate mountainous ecosystem of western ghats with reference to climate change impact assessment.	P. Raja K. Rajan K. Kannan O.P.S. Khola	Udhagamandalam	2017-18	2020-21	Research Farm and Nilgiri district	To be continued <b>(NRSC-ISRO, Hyderabad Funded)</b>
Comments: Progress is very good.								

### 1.3 SOIL CARBON DYNAMICS AND EROSION PRODUCTIVITY STUDIES

9.	NRMACSWCRTI CIL200800100014	Erosion productivity relationships for evaluating vulnerability and resiliency of soils under different agro-climatic regions of India.	D. Mandal Deepak Singh N.K. Sharma Pradeep Dogra	Soil Science & Agronomy, Dehradun	2008-09	2020-21	Research Farm of Headquarters and all Research Centres	To be continued <b>(Core Project)</b>
			S.K. Dubey K.K. Sharma R.K. Dubey	Agra	2009-10			
			H. Biswas S.L. Patil	Bellary	2009-10			
			Sharmistha Pal V.K. Bhatt	Chandigarh	2009-10			
			Dev Narayan S.P. Tiwari	Datia	2009-10			

S. No.	Project Code No. (RPP No.)	Title of the Project	Leader and Associates	Centre/Division	Start	Completion	Location of Project	Remarks
			P.P. Adhikary M. Madhu	Koraput	2009-10			
			R.K. Singh Kuldeep Kumar B.L. Mina	Kota	2009-10			
			K. Kannan P. Raja, V. Selvi	Udhagamandalam	2009-10			
<p>Comments: Progress is very good. Project is extended for three year till 2020-21 for getting the proper trend and data set of the study. Project is concluded at Vasad however, some of data and information may be continued to be collected as activity. Dr. K.K. Sharma will replace Dr. A.K. Singh as first associate at Agra. (Action: Dr. D. Mandal and leaders at all Research Centres)</p>								
10.	NRMACSWCRTI CIL201100400050	Assessment of soil organic carbon in transit under erosion processes: A source or sink for atmospheric CO <sub>2</sub> .	M. Sankar Lekh Chand D.R. Sena	Soil Science & Agronomy, Dehradun	2011-12	2023-24	Research Farm	To be continued
			CCPI: Suresh Kumar					
<p>Comments: Progress is very good. Project is extended for five years till 2023-24 to assess the impact of soil redistribution on CO<sub>2</sub> flux along slope transect under different tillage practice. Name of Dr. Suresh Kumar, Scientist-F, IIRS, Dehradun is included as CCPI. (Action: Dr. M. Sankar)</p>								
11.	NRMAIISWCCOL 201500700093	Environmental tracer based study on erosion induced loss of soil organic carbon and its impact on agronomic productivity and environmental quality.	D. Mandal	National Fellow Programme	2015-16	2019-20	Research Farm, Selakui and Doon Valley region	To be continued <b>(ICAR-National Fellow Project)</b>
<p>Comments: Progress is very good.</p>								
12.	NRMACSWCRTI CIL201400200082	Development and validation of a spatially explicit simulation framework to quantify runoff-erosion-carbon flux at watershed scale.	Deepak Singh A.C. Rathore Trisha Roy	Hydrology & Engineering, Dehradun	2014-15	2019-20	Research Farm	To be continued
<p>Comments: Progress is very good. Names of Ms. Chayna Jana and Dr. N.M. Alam are deleted. (Action: Er. Deepak Singh)</p>								

S. No.	Project Code No. (RPP No.)	Title of the Project	Leader and Associates	Centre/Division	Start	Completion	Location of Project	Remarks
13.	NRMAIISWCCIL 201600100115	Assessing the vegetation and SOC recovery potentials of abandoned / fallowed shifting cultivated sites in Central Eastern Ghats.	H. Gowda P. Jakhar Karma Beer	Koraput	2016-17	2018-19	Central Eastern Ghats (Malkangiri, Koraput, Raygada and Vishakhapatnam districts)	To be concluded
Comments: Progress is very good.								
14.	NRMAIISWCSIP 201700200132	Land use effect on soil carbon stock and soil quality in Mahi ravine ecosystem of semi-arid tropics.	D.Dinesh Gaurav Singh V. Kakade  CCPI: R.S. Singh Co-CCPI: P.C. Moharana Bagawati I. Tailor	Vasad	2017-18	2020-21	Mahi ravines in Gujarat	To be continued <b>(Collaborative project with NBSSLUP)</b>
Comments: Progress is very good. Name of Mr. Bagawati I. Tailor is included as Co-CCPI from NBSSLUP. (Action: Dr. D. Dinesh)								

## P-2 CONSERVATION MEASURES FOR SUSTAINABLE PRODUCTION SYSTEM

### 2.1 RESOURCE CONSERVATION MEASURES FOR ARABLE LANDS

15.	NRMAIISWCCIL 201700300133	Development of conservation agriculture practices for rainfed production systems in North-western Himalayan region.	N.K. Sharma Ramanjeet Singh Uday Mandal Trisha Roy A.K. Gupta	Soil Science & Agronomy, Dehradun	2017-18	2022-23	Research Farm	To be continued
Comments: Progress is very good.								

S. No.	Project Code No. (RPP No.)	Title of the Project	Leader and Associates	Centre/Division	Start	Completion	Location of Project	Remarks
16.	NRMAIISWCCIL 201700400134	Evaluation of conservation tillage based <i>Arundo donax</i> mats for resource conservation and enhancing cropping intensity on sloping crop lands.	Ramanjeet Singh N.K. Sharma Gopal Kumar	Soil Science & Agronomy, Dehradun	2017-18	2020-21	Research Farm	To be continued
Comments: Progress is excellent.								
17.	NRMAIISWCCIL 201700500135	Determining resource conservation potential of bio-degradable waste and their on-farm utilization to increase crop productivity and profitability.	Lekh Chand N.K. Sharma U.K. Maurya	HRD&SS, Dehradun	2017-18	2021-22	Research Farm	To be continued
Comments: Progress is very good.								
18.	NRMAIISWCCIL 201700600136	Utilization of different industrially derived waste along with <i>Arbuscular Mycorrhizal Fungi</i> (AMF) for sustainable soil management.	Trisha Roy Uday Mandal	HRD&SS, Dehradun	2017-18	2020-21	Research Farm	To be continued
Comments: Progress is very good.								
19.	NRMAIISWCCIL 201600200116	Effect of varying water regimes on Zn and N dynamics and rice productivity in saline vertisols.	M. Prabhavathi H. Biswas	Bellary	2016-17	2018-19	Research Farm	To be concluded
Comments: Progress is very good.								

S. No.	Project Code No. (RPP No.)	Title of the Project	Leader and Associates	Centre/Division	Start	Completion	Location of Project	Remarks
20.	NRMAIISWCCIL 201800500153	Efficient utilization of fruit / vegetable waste (FVW) for improving soil health and productivity of organic agri-oleri system.	Sathiya K. Ram Prasad V.K. Bhatt S.L. Arya	Chandigarh	2018-19	2022-23	Research Farm	To be continued <b>(New Project)</b>
Comments: Objectives may be modified. (Action: Dr. Sathiya K.)								
21.	NRMACSWCRTI CIL201000400040	<i>In situ</i> moisture conservation practices under aonla based agro-forestry system for sustainable production in red soils of Bundelkhand.	Dev Narayan R.S. Yadav	Datia	2010-11	2018-19	Research Farm	To be concluded
Comments: Progress is very good.								
22.	NRMAIISWCCIL 201500800094	Restoration of shifting cultivated lands for resource conservation and sustainable production in Eastern Ghats.	D.C. Sahoo P.P. Adhikary P. Jakhar Karma Beer	Koraput	2015-16	2022-23	Shifting cultivated area in Koraput district	To be continued
Comments: Progress is very good.								
23.	NRMAIISWCCIL 201700700137	<i>Jhola kundi</i> based vegetable farming with soil moisture conservation practices for increasing profitability of tribal farmers of Eastern Ghats High Land region.	Karma Beer Ch. J.P. Dash P. Jakhar	Koraput	2017-18	2019-20	Research Farm	To be continued
Comments: Progress is very good.								
24.	NRMAIISWCCIL 201800600154	Evaluation of catchment-storage-command area relationship for improving rainwater productivity under integrated production systems.	P. Jakhar D.C. Sahoo P.P. Adhikary Karma Beer	Koraput	2018-19	2022-23	Research Farm	To be continued <b>(New Project)</b>
Comments: Best use of water under different systems need to be done. (Action: Dr. P. Jakhar)								



S. No.	Project Code No. (RPP No.)	Title of the Project	Leader and Associates	Centre/Division	Start	Completion	Location of Project	Remarks
25.	NRMAIISWCCIL 201500900095	Conservation tillage systems for enhancing productivity and resource use efficiency under rainfed area of South-eastern Rajasthan.	Kuldeep Kumar B.L. Mina Shakir Ali Ashok Kumar	Kota	2015-16	2020-21	Research Farm	To be continued
Comments: Progress is very good. Treatments may be modified as suggested in the IRC meeting. (Action: Dr. Kuldeep Kumar)								
26.	NRMAIISWCCIL 201600300117	Resource conservation and productivity enhancement through organic and inorganic amendments in soyabean-mustard cropping systems.	I. Rashmi B.L. Mina Kuldeep Kumar Shakir Ali Ashok Kumar	Kota	2016-17	2020-21	Research Farm	To be continued
Comments: Progress is very good. Water and energy use efficiency may be estimated. Economics may be calculated every year. (Action: Dr. I. Rashmi)								
27.	NRMACSWCRTI CIL201400300083	Cover crops and reduced tillage for enhancing productivity and soil health in rainfed farming system in the hilly areas.	K. Kannan V.K. Thilagam O.P.S. Khola P. Raja	Udhagamandalam	2014-15	2018-19	Research Farm	To be concluded
Comments: Progress is very good.								

## 2.2 RESOURCE CONSERVATION MEASURES FOR NON-ARABLE LANDS

28.	NRMAIISWCCIL 201600400118	Improvisation of soil working techniques for enhancing tree establishment under rainfed conditions of North-Western Himalayas.	D.V. Singh D. M. Kadam Vibha Singhal	Soil Science & Agronomy, Dehradun	2016-17	2019-20	Pasauli, Dhanpau and Lakhwar villages, Dehradun district	To be continued
Comments: Progress is very good. As an extension of field experiment on horticulture tree, mango sapling may also be replanted at Dhoolkot, Selakui Farm of the Institute. Name of Dr. J. Jayaprakash is deleted. (Action: Dr. D.V. Singh)								

S. No.	Project Code No. (RPP No.)	Title of the Project	Leader and Associates	Centre/Division	Start	Completion	Location of Project	Remarks
29.	NRMACSWCRTI CIL200900500034	Evaluation of traditional minor millet based agro-forestry systems under recommended agri-silvi-cultural practices of North-Western Himalayas.	Harsh Mehta J.M.S. Tomar	Plant Science, Dehradun	2009-10	2018-19	Research Farm	To be concluded
Comments: Progress is very good.								
30.	NRMACSWCRTI CIL201200200071	Development and characterization of quality planting material of important MPT's for degraded lands of North-West Himalayas.	Harsh Mehta Rajesh Kaushal A.K. Gupta	Plant Science, Dehradun	2012-13	2019-20	Research Farm	To be continued
Comments: Progress is very good.								
31.	NRMAIISWCCIL 201501100097	Evaluation of <i>Bael</i> and Olive based agro-forestry system with soil amendments in Doon Valley.	A.C. Rathore D.V. Singh Harsh Mehta	Plant Science, Dehradun	2015-16	2024-25	Research Farm	To be continued
Comments: Progress is good. Name of Dr. J. Jayaprakash is deleted and Dr. A.C. Rathore will be the leader of project. (Action: Dr. A.C. Rathore)								
32.	NRMAIISWCCIL 201600500119	Soil fertility restoration and carbon sequestration potential of multipurpose trees for agro-forestry system in Himalayan foothills.	Vibha Singhal Charan Singh Trisha Roy	Plant Science, Dehradun	2016-17	2018-19	Dehradun district	To be concluded
Comments: Progress is very good.								
33.	NRMAIISWCCIL 201700800138	Evaluation of rooting media and rootstocks of major sub-tropical fruits spp. for raising quality planting materials on degraded lands.	A.C. Rathore Harsh Mehta M. Sankar D.M. Kadam Deepak Singh	Plant Science, Dehradun	2015-16	2019-20	Research Farm	To be continued <b>(Budget from HM, NEH)</b>
Comments: Progress is very good. Name of Dr. J. Jayaprakash is deleted. (Action: Dr. A.C. Rathore)								

S. No.	Project Code No. (RPP No.)	Title of the Project	Leader and Associates	Centre/Division	Start	Completion	Location of Project	Remarks
34.	NRMAIISWCCOL 201700900139	Promotion and expansion of Lemon grass ( <i>Cymbopogon flexuosus</i> ) cultivation as an alternative crop for livelihood security in SC and ST communities in Dehradun district.	J.M.S. Tomar Rajesh Kaushal A.K. Gupta Harsh Mehta	Plant Science, Dehradun	2016-17	2018-19	Jaunsar Hill Area, Uttarakhand	To be concluded <b>(DST Project)</b>
Comments: Progress is very good. Degraded area in Jaunsar having potential for lemon grass may be identified. Map of the area may be prepared with the help of Er. Uday Mandal. (Action: Dr. J.M.S. Tomar and Er. Uday Mandal)								
35.	NRMAIISWCCOL 201701000140	Upscaling research assessment of productivity, hydrological behaviour, resource conservation and intangible benefits of selected commercial bamboo species in Uttarakhand.	Rajesh Kaushal Ambrish Kumar D. Mandal Pradeep Dogra J.M.S. Tomar D.V. Singh Harsh Mehta A.K. Gupta	Plant Science, Dehradun	2016-17	2018-19	Mednipur and Dhoolkot, Dehradun	To be concluded <b>(INBAR China Project)</b>
Comments: Progress is very good. Infiltration aspect on the study site may be done. Name of Dr. N.M. Alam is deleted. (Action: Dr. Rajesh Kaushal)								
36.	NRMAIISWCCIL 201701100141	Assessment and improvement of nutritional quality of horticultural crops on sloping lands in North-west Himalayas.	D.M. Kadam M. Sankar D.V. Singh	Plant Science, Dehradun	2017-18	2022-23	Research Farm and Pasauli village, Vikasnagar	To be continued
Comments: Progress is very good.								
37.	NRMAIISWCCIL 201800700155	Improving out-planting success of various multipurpose tree species in Yamuna ravines using improved planting stock and bio-fertilizers.	A.K. Parandiyal R.B. Meena	Agra	2018-19	2020-21	Research Farm	To be continued <b>(New Project)</b>
Comments: Treatments may be modified as suggested in the IRC meeting. (Action: Dr. A.K. Parandiyal)								

S. No.	Project Code No. (RPP No.)	Title of the Project	Leader and Associates	Centre/Division	Start	Completion	Location of Project	Remarks
38.	NRMAIISWCCIL 201501200098	Phyto-rehabilitation of saline - sodic vertisols through <i>Prosopis juliflora</i> based silvipastoral system.	H. Biswas A.S. Morade	Bellary	2015-16	2019-20	Research Farm	To be continued
Comments: Progress is good.								
39.	NRMAIISWCCIL 201701200142	Regulated deficit irrigation and canopy architecture management for fig ( <i>Ficus carica L.</i> ) in semi-arid vertisols.	A.S. Morade M. Prabhavathi	Bellary	2017-18	2022-23	Research Farm	To be continued
Comments: Progress is very good. Economics may be worked out. (Action: Mr. A.S. Morade)								
40.	NRMAIISWCCIL 201501300099	Evaluation of promising fruit species with different moisture conservation practices in red soils of Bundelkhand region.	Rajeev Ranjan J. Jayaprakash M. Pramanik S.P. Tiwari	Datia	2015-16	2020-21	Research Farm	To be continued
Comments: Progress is very good.								
41.	NRMAIISWCCIL 201501400100	Evaluation of cover crops under cashew and mango plantation for improving soil health and productivity in Eastern Ghats High Land Region of Odisha.	M. Madhu D.C. Sahoo P.P. Adhikary H. Gowda	Koraput	2015-16	2020-21	Watershed in Semiliguda block, Koraput	To be continued
Comments: Progress is very good.								
42.	NRMAIISWCCIL 201600600120	Evaluation, characterization and development of elite genotypes of <i>Cassia auriculata</i> for cultivation in semi- arid regions.	S. Kala H.R. Meena I. Rashmi A.K. Singh	Kota	2016-17	2021-22	Research Farm	To be continued
Comments: Progress is very good. Name of Dr. A.K. Singh is included as third associate. (Action: Dr.(Ms.) S. Kala)								

S. No.	Project Code No. (RPP No.)	Title of the Project	Leader and Associates	Centre/Division	Start	Completion	Location of Project	Remarks
43.	NRMAIISWCCIL 201600700121	Resource utilization and productivity of Dragon fruit based horti-silviculture system under rainfed agro-ecosystems of Central Gujarat.	V. Kakade P.R. Bhatnagar D. Dinesh	Vasad	2016-17	2022-23	Research Farm	To be continued
Comments: Progress is very good.								

### P-3 WATERSHED HYDROLOGY FOR CONSERVATION PLANNING

#### 3.1 HYDROLOGICAL BEHAVIOUR OF LANDUSES AND MANAGEMENT PRACTICES

44.	NRMAIISWCCIL 201501500101	Hydrologic systems analysis across multiple spatial scales and its implications on hydrologic processes in sub-humid catchment of Eastern Ghat High Land Region of Odisha.	Ch. J.P. Dash P.P. Adhikary	Koraput	2015-16	2018-19	Watershed in Semiliguda block, Koraput	To be concluded
Comments: Progress is very good. Names of Dr. D.C. Sahoo and Dr. N.M. Alam are deleted.								(Action: Ch. J.P. Dash)

## 3.2 WATER HARVESTING, GROUNDWATER RECHARGE AND MANAGEMENT

S. No	Project Code No. (RPP No.)	Title of the Project	Leader and Associates	Centre/Division	Start	Completion	Location of Project	Remarks
45.	NRMAIISWCSI P201501700103	Development and rejuvenation of natural springs through soil and water conservation measures.	U.K. Maurya Ambrish Kumar _____ CCPI: S.K. Rai Co-CCPI: S.K. Bartarya	Soil Science & Agronomy, Dehradun	2015-16	2020-21	Mid Himalayas in Garhwal region	To be continued <b>(Collaborative project with Wadia Institute of Himalayan Geology (WIHG), Dehradun)</b>
Comments: Progress is very good. Probable area of geology, geomorphology and isotopes may be correlated. Implementation of soil and water conservation measures may be included in the study as an objective. Project is extended for three years till 2020-21. (Action: Dr. U.K. Maurya)								
46.	NRMAIISWCSOL 201501900105	Consortia Research Platform-Water Theme 1 Water Resources Augmentation/Conservation.	P.R. Ojasvi S.S. Shrimali Deepak Singh  K.K. Sharma R.B. Meena  B.S. Naik H. Biswas S.L. Patil  V.K. Bhatt Sharmistha Pal Pankaj Panwar  M. Pramanik Rajeev Ranjan  D.C. Sahoo Ch. J.P. Dash P. Jakhar  G.L. Meena R.K. Singh	Hydrology & Engineering, Dehradun  Agra  Bellary  Chandigarh  Datia  Koraput  Kota	2015-16	2019-20	Headquarters and Research Centres	To be continued <b>(Water Platform Project)</b>

S. No	Project Code No. (RPP No.)	Title of the Project	Leader and Associates	Centre/Division	Start	Completion	Location of Project	Remarks
			S. Manivannan V.K. Thilagam O.P.S. Khola	Udhagamandalam				
<p>Comments: Progress is very good. Project is extended for two years till 2019-20 as the project has been extended by the ICAR. However, project is deleted at Vasad Centre. Names of Dr. P.K. Mishra and Dr. A.K. Singh are deleted at Dehradun and Agra, respectively. Name of Er. Deepak Singh is included at Dehradun. (Action: Dr. P.R. Ojasvi and leaders at Research Centres)</p>								
47.	NRMAIISWCSIP 201701300143	Quantitative and qualitative assessment and management strategy for the sustainable development of the groundwater resources in Haridwar district.	Uday Mandal D.R. Sena CCPI: Anurag Khanna Co-CCPI: R. Bussa	Hydrology & Engineering, Dehradun	2017-18	2019-20	Haridwar district	To be continued <b>(Collaborative project with Central Ground Water Board (CGWB), Uttarakhand region)</b>
<p>Comments: Progress is very good. MoU regarding data availability and sharing of data may be signed with Central Ground Water Board. Names of Mr. Anurag Khanna and Mr. R. Bussa are included as CCPI and Co-CCPI, respectively from CGWB. (Action: Er. Uday Mandal)</p>								
48.	NRMAIISWCCIL 201701400144	Employing system approach on zero energy drip irrigation system in bench terrace farming for hill region.	Deepak Singh P.R. Ojasvi A.C. Rathore	Hydrology & Engineering, Dehradun	2017-18	2020-21	Research Farm & Udpalta village, Uttarakhand	To be continued
<p>Comments: Progress is very good.</p>								
49.	NRMAIISWCCOL 201502000106	Efficient groundwater management for enhancing adaptive capacity to climate change in sugarcane based farming systems in Muzaffarnagar district, U.P.	Ambrish Kumar U.K. Maurya	HRD&SS, Dehradun	2015-16	2018-19	Selected sites in Muzaffarnagar district, UP	To be concluded <b>(NMSA-MoA Project)</b>
<p>Comments: Progress is very good. Project is extended for one year till 2018-19 as the project has been extended by the funding agency. (Action: Dr. Ambrish Kumar)</p>								

S. No	Project Code No. (RPP No.)	Title of the Project	Leader and Associates	Centre/Division	Start	Completion	Location of Project	Remarks
50.	NRMAIISWCCIL 201501800104	Water quality assessment and its impact on adjacent soil and vegetation in riparian areas of Hindon and Kali rivers.	A.K. Gupta Ambrish Kumar U.K. Maurya	Plant Science, Dehradun	2015-16	2019-20	Hindon & Kali rivers' basins in Saharanpur, Muzaffarnagar, Meerut etc. distts.	To be continued
Comments: Progress is very good.								
51.	NRMAIISWCCIL 201502100107	Study on pollution status of Yamuna river and its impact on soil and crop health in Western U.P.	Rama Pal S.K. Dubey R.K. Dubey	Agra	2015-16	2019-20	Yamuna river belt	To be continued
Comments: Progress is very good. MoU may be signed with CSSRI, Karnal for heavy metal analysis. Hydrology may be studied using AGNPS model with the help of Dr.(Ms.) V.K. Thilagam. Name of Dr. A.K. Singh is deleted. (Action: Dr. (Ms.) Rama Pal and Dr.(Ms.) V.K. Thilagam)								
52.	NRMAIISWCCIL 201701500145	Evaluation of direct recharge filter for revival of defunct and low yielding borewell vis-a-vis augmentation of ground water table in semi-arid region of Karnataka.	B.S. Naik S.L. Patil	Bellary	2017-18	2020-21	Molakalmur, Chitradurga district, Karnataka	To be continued
Comments: Progress is very good. Model implemented near a borewell by Karnataka Ground Water Board may be studied as per RAC recommendation. (Action: Dr. B.S. Naik)								
53.	NRMACSWCRTI CIL201001000046	Estimation of water budget components for predominant land uses of south-eastern Rajasthan for conservation planning.	G.L. Meena R.K. Singh H.R. Meena	Kota	2010-11	2018-19	Research Farm	To be concluded
Comments: Progress is good. Water balance / budgeting of the system may be worked out and presented in the next IRC meeting. (Action: Dr. G.L. Meena)								



S. No	Project Code No. (RPP No.)	Title of the Project	Leader and Associates	Centre/Division	Start	Completion	Location of Project	Remarks
54.	NRMAIISWCCIL 201502200108	Strategies for rainwater harvesting and its multiple uses in rainfed agriculture in Central Gujarat	P.R. Bhatnagar D. Dinesh V.C. Pande V. Kakade	Vasad	2015-16	2019-20	Research Farm and farmers fields in adopted watersheds	To be continued
Comments: Progress is very good. Project is extended for two years till 2019-20 for implementation of project in the field. Dr. D. Dinesh will replace Dr. O.P. Meena as first associate. (Action: Dr. P.R. Bhatnagar)								
55.	NRMAIISWCCIL 201701600146	Field evaluation of ground water recharge filters developed by ICAR-IISWC, Vasad.	Gaurav Singh V.C. Pande	Vasad	2017-18	2019-20	Different watersheds adopted by Vasad Centre	To be continued
Comments: Progress is very good. Names of Dr. P.R. Bhatnagar and Dr. O.P. Meena are deleted. (Action: Er. Gaurav Singh)								
56.	NRMAIISWCCIL 201800800156	Design and evaluation of HDPE sheet embedded gabion check dams for water harvesting in North West Himalayas.	Amrish Kumar Rajesh Kaushal Gopal Kumar	HRD&SS, Dehradun	2018-19	2022-23	TSP area of Dehradun district	To be continued (New Project)
Comments: Treatments may be modified as suggested in the IRC meeting. (Action: Dr. Amrish Kumar)								

#### P-4 REHABILITATION OF AREAS AFFECTED BY MASS EROSION

##### 4.1 DEVELOPMENT AND REFINEMENT OF TECHNOLOGIES FOR REHABILITATION OF RAVINES, LANDSLIDES, MINE SPOILS, RIVERBED MINING, STREAM BANKS, TORRENTS ETC.

57.	NRMAIISWCCIL 201502300109	Ecological restoration of stone mine spoil area in south-eastern Rajasthan.	B.L. Mina S. Kala, H.R. Meena Shakir Ali Ashok Kumar	Kota	2015-16	2024-25	Mine spoil sites in Kota district	To be continued
Comments: Progress is very good.								

S. No	Project Code No. (RPP No.)	Title of the Project	Leader and Associates	Centre/Division	Start	Completion	Location of Project	Remarks
58.	NRMAIISWCCOL 201600900123	Field evaluation of refinement of ravine reclamation technology in a model ravine area development project at Lohli-Bagli village in district Bundi (Rajasthan).	R. K. Singh H.R. Meena Shakir Ali Ashok Kumar B.L. Mina Kuldeep Kumar S. Kala G.L. Meena I. Rashmi	Kota	2016-17	2020-21	Bundi district, Rajasthan	To be continued <b>(Govt. of Rajasthan funded)</b>
Comments: Progress is very good.								
59.	NRMACSWCRTI CIL201102200068	Field evaluation of design of trenches under different agro-climatic regions.	P.R. Bhatnagar D. Dinesh	Vasad	2011-12	2018-19	Research Farm	To be concluded <b>(Core Project)</b>
			A.K. Parandiyal K.K. Sharma R.B. Meena	Agra			Research Farm	
			V.K. Bhatt Pankaj Panwar	Chandigarh			Research Farm	
			M. Pramanik S.P. Tiwari	Datia			Research Farm	
			D.C. Sahoo H. Gowda P.P. Adhikary	Koraput			Research Farm	
			Shakir Ali S. Kala	Kota			Dhoti Watershed	
			S. Manivanan K. Kannan K. Rajan	Udhagamandalam			Research Farm	
			Comments: Progress is good. Uniformity analysis may be done as per the recommendation of RAC. Dr. K.K. Sharma will replace Dr. A.K. Singh as first associate at Agra. Name of Dr. V.C. Pande is deleted at Vasad. (Action: Dr. P.R. Bhatnagar and leaders at other Centres)					

S. No	Project Code No. (RPP No.)	Title of the Project	Leader and Associates	Centre/Division	Start	Completion	Location of Project	Remarks
60.	NRMACSWCRTI CIL200801000023	Enhancing productivity of ravine lands by plantation of <i>A. sapota</i> with intercropping systems.	V. Kakade Gaurav Singh V.C. Pande D. Dinesh	Vasad	2008-09	2022-23	Research Farm	To be continued
Comments: Progress is very good.								

## P-5 INTEGRATED WATERSHED MANAGEMENT FOR SOCIO-ECONOMIC GROWTH AND POLICY ADVOCACY

### 5.1 PARTICIPATORY WATERSHED MANAGEMENT AND INTEGRATED FARMING SYSTEM (IFS)

61.	NRMAIISWCCIL 201502400110	Evaluation of criteria and techniques for classification of fisheries - sensitive watersheds for conservation and production management.	M. Muruganandam A.K. Gupta	Hydrology & Engineering, Dehradun	2015-16	2018-19	Garhwal Himalayas	To be concluded
Comments: Progress is very good. Project is extended for one year till 2018-19 for collecting more data for analysis. Name of Dr. M. Muruganandam is added as leader of the project and name of Ms. Chayna Jana is deleted. (Action: Dr. M. Muruganandam)								
62.	NRMAIISWCCIL 201601000124	Socio-economic analysis of farming/livelihood systems of farmers across different land categories in Yamuna ravine area.	D.C. Meena A.K. Parandiyal	Agra	2016-17	2019-20	Ravine areas in U.P.	To be continued
Comments: Progress is very good.								
63.	NRMAIISWCCOL 201601100125	Refining methodologies for data validation, planning, monitoring and evaluation of watersheds.	S.L. Patil H. Biswas B.S. Naik A.S. Morade M. Prabhavathi Ravi Dupdal	Bellary	2016-17	2018-19	Research Centre, Bellary, Karnataka	To be concluded <b>(Sujala – III Project)</b>

S. No	Project Code No. (RPP No.)	Title of the Project	Leader and Associates	Centre/Division	Start	Completion	Location of Project	Remarks
			P.R. Ojasvi Pradeep Dogra S.S. Shrimali					
Comments: Progress is very good. Name of Dr. Ravi Dupdal is included as fifth associate.								(Action: Dr. S.L. Patil)
64.	NRMAIISWCCIL 201800900157	Economic impact assessment of water harvesting structure-Farm Pond in the semi-arid regions of Karnataka.	Ravi Dupdal S.L. Patil B.S. Naik A.S. Morade	Bellary	2018-19	2022-23	Northern dry zone of Karnataka – Bellary and Vijayapur districts	To be continued <b>(New Project)</b>
Comments: An objective regarding optimum use of water in different scenario may be included.								(Action: Dr. Ravi Dupdal)
65.	NRMAIISWCCIL 201801000158	Valuation of ecosystem services from natural resource conservation and management interventions in different agro-ecological regions in India.	V. C. Pande P.R. Bhatnagar Gaurav Singh V. Kakade	Vasad	2018-19	2020-21	Developed watersheds / NRM intervention sites at Headquarters and Research Centres	To be continued <b>(Core Project)</b> <b>(New Project)</b>
			D.C. Meena S.K. Dubey K.K. Sharma A.K. Parandiyal R.K. Dubey R.B. Meena Rama Pal	Agra				
			Ravi Dupdal B.S. Naik A.S. Morade M. Prabhavathi	Bellary				

S. No.	Project Code No. (RPP No.)	Title of the Project	Leader and Associates	Centre/Division	Start	Completion	Location of Project	Remarks
			S.L. Arya V.K. Bhatt Ram Prasad Pankaj Panwar Sharmistha Pal Sathiya K.	Chandigarh				
			M.K. Meena R.S. Yadav Rajeev Ranjan M. Pramanik	Datia				
			Pradeep Dogra D. Mandal D.R. Sena Rajesh Kaushal Ramanjeet Singh	PME Cell, Dehradun				
			M. Madhu H. Gowda	Koraput				
			Ashok Kumar R.K. Singh A.K. Singh Kuldeep Kumar S. Kala G.L. Meena	Kota				
			O.P.S. Khola S. Manivannan V.K. Thilagam	Udhagamandalam				

**P-6 HUMAN RESOURCE DEVELOPMENT AND TECHNOLOGY TRANSFER****1.1 CAPACITY DEVELOPMENT APPROACHES AND INFORMATION AND COMMUNICATION TECHNOLOGY (ICT)**

S. No.	Project Code No. (RPP No.)	Title of the Project	Leader and Associates	Centre/Division	Start	Completion	Location of Project	Remarks
66.	NRMAIISWCCIL 201502600112	Developing ICT based e-learning tools for conservation measures and watershed management.	S.S. Shrimali Rajesh Kaushal Bankey Bihari	Hydrology & Engineering, Dehradun	2015-16	2018-19	Different agro-ecological regions of India	To be concluded
Comments: Progress is very good. Content of all disciplines may be uploaded at the earliest and should be validated by the regular trainees. Content of agronomy discipline may be provided by Dr. N.K. Sharma. Name of Ms. Chayna Jana is deleted and Er. S.S. Shrimali will be the leader of project. Name of Dr. N.M. Alam is deleted. (Action: Er. S.S. Shrimali and Dr. N.K. Sharma)								
67.	NRMAIISWCCIL 201801100159	Exploring the potential of mKRISHI to disseminate the knowledge about soil and water conservation technologies to the stakeholders: An innovative approach to reach the unreached.	Madan Singh D.C. Meena A.S. Morade Sharmistha Pal M.K. Meena Ch. J.P. Dash Kuldeep Kumar V.K. Thilagam D. Dinesh	HRD&SS, Dehradun	2018-19	2022-23	Dehradun and eight Research Centres	To be continued <b>(New Project)</b>
Comments: Activity chart of the project may be formulated. (Action: Dr. Madan Singh)								

**6.2 PARTICIPATORY TECHNOLOGY DISSEMINATION AND ADOPTION**

68.	NRMAIISWCCIL 201601400128	Assessing farmers knowledge, vulnerability and adapting capacity of soil and water conservation technologies under changing climatic scenario.	Bankey Bihari Madan Singh Indu Rawat	HRD&SS, Dehradun	2016-17	2018-19	Dehradun district	To be concluded <b>(Core Project)</b>
			D.C. Meena R.K. Dubey Rama Pal	Agra			Agra	

S. No	Project Code No. (RPP No.)	Title of the Project	Leader and Associates	Centre/Division	Start	Completion	Location of Project	Remarks
			S.L. Patil B.S. Naik A.S. Morade Ravi Dupdal	Bellary			Bellary	
			S.L. Arya Sharmistha Pal Sathiya K.	Chandigarh			Chandigarh	
			M.K. Meena Rajeev Ranjan R.S. Yadav	Datia			Datia	
			P. Jakhar M.K. Meena	Koraput			Koraput	
			Ashok Kumar H.R. Meena I. Rashmi	Kota			Kota	
			P. Sundarambal K. Kannan P. Raja O.P.S. Khola	Udhagamandalam			Udhagamandalam	
			V.C. Pande	Vasad			Vasad	
<p>Comments: Progress is very good. NRM activities should be continued and may be given due importance. Dr. Madan Singh will replace Mr. Rajesh Bishnoi as first associate at Dehradun. Name of Dr. Ravi Dupdal is included as third associate at Bellary. Name of Dr. O.P. Meena is deleted at Vasad. (Action: Dr. Bankey Bihari and Leaders at Research Centres)</p>								
69.	NRMAIISWCCIL 201601600130	Assessment of sustainability factors for soil and water conservation projects.	Madan Singh Indu Rawat Bankey Bihari	HRD&SS, Dehradun	2016-17	2018-19	Dehradun & Tehri Garhwal districts	To be concluded
<p>Comments: Progress is very good. Project should be completed in December, 2018. Dr. Madan Singh will replace Mr. Rajesh Bishnoi as leader of project and name of Dr. N.M. Alam is deleted. (Action: Dr. Madan Singh)</p>								

S. No.	Project Code No. (RPP No.)	Title of the Project	Leader and Associates	Centre/Division	Start	Completion	Location of Project	Remarks
70.	NRMAIISWCCO L201701700147	Farmer participatory technology application for sustainable resource management and livelihood security in North-west Himalayas.	Bankey Bihari S.S. Shrimali Lekh Chand M. Muruganandam U.K. Maurya Madan Singh D.M. Kadam Trisha Roy	HRD&SS, Dehradun	2016-17	2019-20	Raipur Block, Dehradun	To be continued <b>(KVK Scheme of ICAR)</b>
Comments: Progress is very good. Project is extended for two years till 2019-20 as it has been extended by the ICAR. A profroma may be developed for estimating the cost of cultivation to be filled by farmers. Name of Dr. M. Muruganandam is included as third associate. Dr. Madan Singh will replace Mr. Rajesh Bishnoi. (Action: Dr. Bankey Bihari)								
71.	NRMAIISWCCIL 201701800148	Role of women in conservation and management of natural water resources for domestic and irrigation uses.	Indu Rawat Madan Singh Vibha Singhal Trisha Roy	HRD&SS, Dehradun	2017-18	2019-20	Mid-Himalayas of Uttarakhand	To be continued
Comments: Progress is very good. Project may be conducted in ToT and MGMG villages. Dr. Madan Singh will replace Mr. Rajesh Bishnoi as first associate. (Action: Dr.(Ms.) Indu Rawat)								
72.	NRMAIISWCCIL 201601500129	Determination of heterogeneity in agro-forestry practices and acceptability alongwith altitude gradient in Western Himalayas.	Charan Singh Vibha Singhal Bankey Bihari	Plant Science, Dehradun	2016-17	2018-19	Dehradun district	To be concluded
Comments: Progress is very good. Economics may be worked out. (Action: Dr. Charan Singh)								
73.	NRMAIISWCCIL 201502700113	Documentation and validation of ITKs in soil and water conservation practiced by tribal farmers of Tamil Nadu.	P. Sundarambal P. Raja K. Kannan V. Selvi	Udhagamandalam	2015-16	2018-19	Tribal districts of Tamil Nadu	To be concluded
Comments: Progress is very good. A core project may be developed including all Research Centres and Headquarters of the Institute on above project and submitted to the next RAC meeting. Name of Dr. R. Ragupathy is deleted. (Action: Dr.(Ms.) P. Sundarambal)								



**PROJECTS CONCLUDED DURING THE YEAR 2017-18**

S. No.	Prog. No.	Project Code No. (RPP No.)	Title of the Project	Leader and Associates	Centre/Division	Year of Start	Location of Project
1.	1.1	NRMAIISWCCIL 201500100087	Development of intensity-duration-frequency curves using rainfall data for different agro-ecological regions of India.	N.M. Alam P.K. Mishra D.R. Sena Chayna Jana	Soil Science & Agronomy, Dehradun	2015-16	Different agro-ecological regions of India
Comments: Progress is very good.							
2.	1.2	NRMAIISWCCIL 201500600092	Application of integrated spatial science tools for prediction of soil erosion map under changing climate scenario for the Uttarakhand state.	Uday Mandal Chayna Jana D.R.Sena	Hydrology & Engineering, Dehradun	2015-16	Headquarters
Comments: Progress is excellent.							
3.	2.1	NRMACSWCRTCIL 201300200076	Evaluating the effect of organic amendments on resource conservation and productivity of rainfed semi-arid vertisols.	M. Prabhavathi S.L. Patil	Bellary	2013-14	Research Farm
Comment: Progress is very good.							
4.	2.2	NRMACSWCRTCIL 201101200058	Efficacy of different soil and water conservation measures on bamboo productivity and resource conservation in Himalayan foothills.	Rajesh Kaushal Ambrish Kumar J.M.S. Tomar D.V. Singh	Plant Science, Dehradun	2011-12	Near Mednipur Forest Nursery
Comments: Progress is very good.							
5.	2.2	NRMACSWCRTCIL 200800700020	Peach based agri-horticulture land use system for degraded Shiwaliks.	Ram Prasad Sharmistha Pal S.L. Arya	Chandigarh	2008-09	Research Farm
Comments: Progress is very good.							
6.	2.2	NRMACSWCRTCIL 201000700043	Evaluation of moisture conservation techniques for sustainable production of Tree Borne Oil Seeds (TBOS) in Bundelkhand.	Monalisha Pramanik R.S. Yadav M.K. Meena	Datia	2010-11	Research Farm
Comments: Progress is very good.							

## PROJECTS CONCLUDED DURING THE YEAR 2017-18

S. No.	Prog. No.	Project Code No. (RPP No.)	Title of the Project	Leader and Associates	Centre/Division	Year of Start	Location of Project
7.	2.2	NRMACSWCRTICIL 201101700063	Effect of shade trees on productivity and soil health in rejuvenated tea plantations in Nilgiris.	R. Ragupathy K. Rajan	Udhagamandalam	2011-12	Research Farm
Comments: Progress is good.							
8.	3.1	NRMACSWCRTICIL 200400100002	Hydrological evaluation of recommended forest grasses in Himalayan foothills.	J. Jayaprakash Ambrish Kumar	Plant Science, Dehradun	2004-05	Research Farm
Comments: Progress is good.							
9.	3.1	NRMACSWCRTICI L201101800064	Evaluation of hydrological behaviour and production potential of recommended landuse system / practices under different agro-ecological regions of India.	J.M.S. Tomar A.C. Rathore	Plant Science, Dehradun	2011-12	Pasauli, Vikas Nagar
				K.K. Sharma S.K. Dubey A.K. Parandiyal	Agra		Garhi Udairaj, Fatehabad
				V.K. Bhatt Pankaj Panwar Ram Prasad	Chandigarh		Janoli Village, Panchkula
				Shakir Ali S. Kala B.L. Mina H.R. Meena	Kota		Dhoti Watershed
Comments: Progress is good.							
10.	3.1	NRMAIISWCCIL 201501600102	Modelling the nutrient movement in agricultural watersheds and their impact on surface water resources of Nilgiris.	V.K.Thilagam S. Manivannan K. Rajan O.P.S. Khola	Udhagamandalam	2015-16	The Nilgiris
Comments: Progress is very good.							

## PROJECTS CONCLUDED DURING THE YEAR 2017-18

S. No.	Prog. No.	Project Code No. (RPP No.)	Title of the Project	Leader and Associates	Centre/Division	Year of Start	Location of Project
11.	4.1	NRMACSWCRTICIL 201400600086	Assessment of impact of extraction of RBM (River bed material) on physiography of stream flow courses of Himalayan foot hill streams.	S.S. Shrimali D. Mandal	Hydrology & Engineering, Dehradun	2014-15	Rivers of Uttarakhand
Comments: Progress is very good.							
12.	5.1	NRMAIISWCCIL 201502500111	Socio-economic analysis of tribal farming system in different topo-sequence in Koraput District, Odisha.	M.K. Meena P.P. Adhikary M. Madhu	Koraput	2015-16	Koraput district
Comments: Progress is very good.							
13.	6.1	NRMACSWCRTISIP 201300500079	Role of soil and water conservation technologies for climate resilient agriculture in Himalayan ecosystem - An action research.	D.V. Singh Charan Singh Ramanjeet Singh D.M. Kadam Deepak Singh	Soil Science & Agronomy Dehradun	2013-14	Hattal and Sainj villages, Uttarakhand
Comments: Progress is very good.							
14.	6.2	NRMAIISWC SOP 201502800114	Ensuing sustainable agricultural development and livelihood security in lower Shiwalik range of Uttarakhand. <b>(DST Funded)</b>	Ramanjeet Singh D.M. Kadam	Soil Science & Agronomy, Dehradun Lead Centre: IARI, New Delhi	2015-16	Haridwar district, Uttarakhand
Comments: Progress is very good.							

## NEW PROJECTS APPROVED DURING IRC MEETING – 2018

S.No.	Prog. No.	Project Code No. (RPP No.)	Title of the Project	Centre/Division
1.	1.1	NRMAIISWCSIP 201800100149	An evaluation of the potential to use the Fallout Radionuclide (FRN) Caesium – 137 ( <sup>137</sup> Cs) in national scale soil erosion assessment in India.	Soil Science & Agronomy, Dehradun
2.	1.1	NRMAIISWCCIL 201800200150	Regionalization of erosivity density and identification of hot-spot of erosion risk under different agro-ecological regions of India.	Koraput
3.	1.2	NRMAIISWCCOL 201800300151	Comprehensive assessment of climate change implication on watershed development component of PMKSY (WDC-PMKSY).	Hydrology & Engineering, Dehradun
4.	1.2	NRMAIISWCCIL 201800400152	Assessment of potential soil erosion of India using spatial science tools.	Hydrology & Engineering, Dehradun
5.	2.1	NRMAIISWCCIL 201800500153	Efficient utilization of fruit / vegetable waste (FVW) for improving soil health and productivity of organic agri-oleri system.	Chandigarh
6.	2.1	NRMAIISWCCIL 201800600154	Evaluation of catchment-storage-command area relationship for improving rainwater productivity under integrated production systems.	Koraput
7.	2.2	NRMAIISWCCIL 201800700155	Improving out-planting success of various multipurpose tree species in Yamuna ravines using improved planting stock and bio-fertilizers.	Agra
8.	3.1	NRMAIISWCCIL 201800800156	Design and evaluation of HDPE sheet embedded gabion check dams for water harvesting in North West Himalayas.	HRD&SS, Dehradun
9.	5.1	NRMAIISWCCIL 201800900157	Economic impact assessment of water harvesting structure-Farm Pond in the semi-arid regions of Karnataka.	Bellary
10.	5.1	NRMAIISWCCIL 201801000158	Valuation of ecosystem services from natural resource conservation and management interventions in different agro-ecological regions in India.	Vasad/ Agra/ Bellary/ Chandigarh/ Datia/ PME Cell, Dehradun/ Koraput/ Kota/ Udhagamandalam
11.	6.1	NRMAIISWCCIL 201801100159	Exploring the potential of mKRISHI to disseminate the knowledge about soil and water conservation technologies to the stakeholders: An innovative approach to reach the unreached.	HRD&SS, Dehradun

### STATUS OF NUMBER OF PROJECTS

No. of projects in 2017-18	Projects concluded in 2017-18	New projects added in 2018-19	Total no. of projects in 2018-19
<b>A</b>	<b>B</b>	<b>C</b>	<b>D = A-B+C</b>
76	14	11	73

### TOTAL NUMBER OF PROJECTS IN DIFFERENT RESEARCH PROGRAMMES

Research Programmes	P-1	P-2	P-3	P-4	P-5	P-6	Total
Total No. of Projects	14	29	13	04	05	08	73

### OBSERVATIONAL TRIALS APPROVED FOR 2018-19

S.No.	Title of the Project	Leader & Associates	Centre/Division
1.	Soil erosion and runoff studies in system crop intensification of different crops with different mulching materials.	Lekh Chand D.V. Singh	HRD&SS Division
Comments: The project may be carried out as an Observational Trial for one more year in 2018-19 to stabilize runoff plots and setup all facilities for smooth initiation as a project. It may be conducted at 8% slope only. (Action: Dr. Lekh Chand)			
2.	Evaluation of agri-horticulture land use systems for degraded eco-system of South-eastern Rajasthan	H.R. Meena G.L. Meena Kuldeep Kumar Shakir Ali Ashok Kumar	Kota
Comments: The project may be concluded as an Observational Trial for one year in 2018-19 with moisture conservation measures. (Action: Dr. H.R. Meena)			
3	Carbon sequestration potential of prevailing and recommended land uses in degraded ecosystems in different agro-ecological regions of India.	Gopal Kumar	Dehradun
		R.B. Meena	Agra
		H. Biswas	Bellary
		Sharmishtha Pal	Chandigarh
		Rajeev Ranjan	Datia
		G.L. Meena	Kota
		V.K. Thilagam	Udhagamandalam
Comments: Three projects on carbon sequestration were submitted to the RAC- 2018 from the Research Centres, Agra, Kota and Udhagamandalam which were agreed by the RAC with comments. As per the decision of the IRC- 2018, a workshop on above project was held at the Headquarters, Dehradun during June 5-6, 2018. Now, it is decided that the project may be carried out as an Observation Trial for one year in 2018-19 and the core project may be formulated and presented in the next IRC meeting. (Action: Dr. Gopal Kumar and Leaders at other Research Centres)			

## NEW PROJECT PROPOSALS SUBMITTED FOR CONSIDERATION IN THE RAC/ IRC MEETINGS – 2018

## NEW PROJECT PROPOSALS AGREED BY THE RAC

Sl. No.	Prog. No.	Title of the Project	Leader & Associates	Duration	Location of Project	Remarks of the RAC	Remarks of the IRC
<b>RESEARCH CENTRE, AGRA / KOTA / UDHAGAMANDALAM</b>							
1.	1.1	Assessing soil quality and soil carbon sequestration potential under different land use systems in reclaimed Yamuna ravines of semi-arid region.	R.B. Meena A.K. Parandiyal D.C. Meena S.K.Dubey	2018-19 to 2022-23	Research Farm, Agra	<b>Agreed with comments</b> <ul style="list-style-type: none"> <li>A core project (involving all centers) on evaluation of carbon stock and sequestration potential of recommended /dominant land use and management of the region including land configurations (terracing) practiced for different time period (5 years, 10 years, 20 years) may be formulated.</li> <li>For ravine, three categories as shallow, medium and deep may be studied under recommended land use. Carbon stock, temporal dynamics and sequestration potential of recommended land use under these 3 categories practiced over 5, 10 and 20 years or more should be estimated.</li> </ul>	<b>Approved</b> as an <b>Observational Trial</b> for one year for formulating a Core Project.
2.	1.3	Assessment of carbon stock, carbon sequestration potential, rainfall use efficiency and nutrient budget under different land use systems in degraded Chambal ravines.	G.L. Meena Shakir Ali H.R. Meena	2018-19 to 2022-23	Chambal ravines of Kota and Bundi districts		
3.	2.1	Effect of bench terraces with different crop sequences on carbon sequestration potential of high altitude arable lands.	V. K. Thilagam S. Manivannan K. Kannan	2018-19 to 2022-23	Research Farm, Udhagamandalam		
<b>RESEARCH CENTRE, BELLARY</b>							
4.	2.1	Effect of surface land management on soil erosion and crop productivity under rainfed vertisols.	H. Biswas S.L. Patil B.S. Naik A.S. Morade	2018-19 to 2027-28	Research Farm, Bellary	<b>Agreed with Comments</b> <ul style="list-style-type: none"> <li>Project design should be statistically sound.</li> <li>Project duration should be &lt; 5 years as it is crop based experiment.</li> <li>Data on biomass generated, residue incorporated and soil profile moisture dynamics must be recorded.</li> <li>Standard package of practices recommended or dominantly practiced should be followed.</li> <li>Data should be collected on all aspect to work out economics.</li> <li>Number of projects must be restricted to (2 as PI +2 as Co-PI).</li> </ul>	<b>Not Presented</b> hence, <b>Not Approved.</b>

## NEW PROJECT PROPOSALS AGREED BY THE RAC

Sl. No.	Prog. No.	Title of the Project	Leader & Associates	Duration	Location of Project	Remarks of the RAC	Remarks of the IRC
5.	5.1	Economic impact assessment of water harvesting structure-farm pond in semi-arid tropics under climate change scenario.	Ravi Dupdal S. L. Patil B. S. Naik	2018-19 to 2022-23	Northern dry zone of Karnataka-Bellary and Vijayapur districts	<b>Agreed with comments</b> The size of pond under the Krishi Bhagya Scheme may be fixed but catchment (field size) of different pond may vary. It was suggested to study 15-20 ponds for <ul style="list-style-type: none"> <li>• Water collected and availability in pond throughout the year.</li> <li>• How efficiently water is being utilized?</li> <li>• How multiple farming systems changed due to pond water use?</li> <li>• How economic condition changed due to pond?</li> <li>• How efficiently water can be utilized?</li> <li>• Modified title “Economic impact assessment of water harvesting structure-farm pond in semi-arid tropics”.</li> </ul>	<b>Approved</b>
<b>RESEARCH CENTRE, KORAPUT</b>							
6.	2.1	Assessing rainwater productivity and ecosystem services under integrated production systems of small farm holders.	Praveen Jakhar D.C. Sahoo P.P. Adhikary Karma Beer	2018-19 to 2024-25	Research Farm, Koraput	<b>Agreed with comments and queries</b> <ul style="list-style-type: none"> <li>• <b>Suggested title</b> ‘Assessing rainwater productivity under different farming system’.</li> <li>• Whether plot is already constructed or new plots have to be constructed?</li> <li>• Whether natural landscape is suitable for runoff collection at one point?</li> <li>• Whether catchment of the 6 proposed production systems are clearly (naturally) defined?</li> <li>• Treatments should be well defined and water productivity of different systems need to be worked out.</li> <li>• In case of new plots, calibration for 2-3 years is must before actual intervention.</li> </ul>	<b>Approved</b>

## NEW PROJECT PROPOSALS AGREED BY THE RAC

Sl. No	Prog. No.	Title of the Project	Leader & Associates	Duration	Location of Project	Remarks of the RAC	Remarks of the IRC
7.	2.2	Regionalization of erosivity density and identification of hot spots of erosion risk under different agro-ecological regions of India.	Ch. J. P. Dash	2018-19 to 2020-21	Whole India covering all the agro-ecological regions	<b>Agreed as Observational Trial for 1 year</b> <ul style="list-style-type: none"> <li>• Computation of erosivity density and identification of hot spots should be initially done for Odisha.</li> <li>• Relation between erosivity density and erosion may be worked out for Odisha.</li> </ul>	<b>Approved</b>
<b>RESEARCH CENTRE, KOTA</b>							
8.	2.1	Evaluation of guava based agri-horticulture land use systems for resource conservation and enhancing profitability in degraded lands.	H.R. Meena G.L. Meena Kuldeep Kumar Shakir Ali Ashok Kumar	2018-19 to 2025-26	Research Farm, Kota	<b>Agreed as Observational Trial for 2 years with comments</b> <ul style="list-style-type: none"> <li>• Change of horticultural crop may be considered as guava attracts insects, pests, birds and wild animals which may damage crops as well.</li> <li>• Cost and time of construction of runoff and soil loss setup may be worked out.</li> <li>• In case of construction of new plots calibration of plots for a minimum of 2 years is must before start of intervention.</li> <li>• Plot dimension (24m x 12m) should be altered to accommodate at least three rows of fruit trees.</li> <li>• Number of crops should be reduced and spices may be tried.</li> <li>• Take sole crop as control for all agri- horti combination and check the statistical soundness of the project.</li> </ul>	<b>Approved as an Observational Trial</b> for one year.
<b>RESEARCH CENTRE, VASAD</b>							
9.	5.1	Valuation of ecosystem services from Integrated Watershed Management / NRM interventions in different agro-ecological regions of India.	V.C. Pande Pradeep Dogra S L Arya Ashok Kumar D C Meena M K Meena	2018-19 to 2020-21	Developed watersheds / NRM intervention sites at HQ & R.C.	<b>Agreed with comments</b> <ul style="list-style-type: none"> <li>• Bench mark data availability should be necessary criteria for selection of watershed to be studied. (Watershed developed by research organizations may have bench mark data).</li> </ul>	<b>Approved</b>



## NEW PROJECT PROPOSALS AGREED BY THE RAC

Sl. No	Prog. No.	Title of the Project	Leader & Associates	Duration	Location of Project	Remarks of the RAC	Remarks of the IRC
<b>HUMAN RESOURCE DEVELOPMENT AND SOCIAL SCIENCE DIVISION, DEHRADUN</b>							
10.	6.1	Exploring the potential of mKRISHI <sup>(R)</sup> to disseminate the knowledge about soil and water conservation technologies to the stakeholders: An innovative approach to reach the unreached.	Madan Singh D. C. Meena A. S. Morade Sharmistha Pal M. K. Meena Ch. J. P. Dash Kuldeep Kumar V. K. Thilagam D. Dinesh	2018-19 to 2019-20	Dehradun and eight Research Centres	<b>Agreed with comments</b> <ul style="list-style-type: none"> <li>• Proper inventory of technologies on different soil and water conservation measures for all categories of farmers in different regions must be prepared.</li> <li>• Inventory of communicable information (static as well as dynamic) information should be prepared.</li> <li>• A road map should be prepared for release of compiled information.</li> </ul>	<b>Approved</b>

## NEW PROJECT PROPOSALS NOT AGREED BY THE RAC

Sl. No.	Prog. No.	Title of the project	Leader and Associates	Duration	Remarks of the RAC
1.	6.1	Feasibility study of fog water harvesting in India.	D. R. Sena Gopal Kumar Uday Mandal Ramanjeet Singh N.M. Alam	2018-19 to 2020-21	<b>Not Agreed</b> It was suggested to submit the project for ICAR-National Fund for Basic and Strategic Research
2.	6.1	Impact assessment of soil minerals on dynamics of crop roots and productivity with and without SMC measures under different agro-ecological conditions.	U. K. Maurya	2018-19 to 2020-21	<b>Not agreed</b> <ul style="list-style-type: none"> <li>• Project is not well conceived and seems not fall in mandate of the Institute.</li> <li>• Restructure the project for next year to fit into mandate of the Institute.</li> <li>• Collect literature and data to justify.</li> </ul>
<b>Work load of scientists: 2 projects as PI and 2 as Co-PI will be adhered while approving new projects.</b>					

**DIVISION/CENTRE-WISE NUMBER OF RUNNING PROJECTS****A. S. NO. OF PROJECTS AT DIFFERENT LOCATIONS**

S. No.	DIVISION / CENTRE	S. NO. OF RUNNING PROJECTS	TOTAL
1.	Dehradun		
	➤ Soil Science & Agronomy	2, 5, 9, 10, 15, 16, 28, 45	<b>08</b>
	➤ Hydrology & Engineering	1, 6, 7, 12, 46, 47, 48, 61, 66	<b>09</b>
	➤ Plant Science	29, 30, 31, 32, 33, 34, 35, 36, 50, 72	<b>10</b>
	➤ HRD&SS	17, 18, 49, 56, 67, 68, 69, 70, 71	<b>09</b>
	➤ PME Cell	65	<b>01</b>
	➤ National Fellow Programme	11	<b>01</b>
2.	Agra	9, 37, 46, 51, 59, 62, 65, 68	<b>08</b>
3.	Bellary	9, 19, 38, 39, 46, 52, 63, 64, 65, 68	<b>10</b>
4.	Chandigarh	5, 9, 20, 46, 59, 65, 68	<b>07</b>
5.	Datia	3, 9, 21, 40, 46, 59, 65, 68	<b>08</b>
6.	Koraput	4, 9, 13, 22, 23, 24, 41, 44, 46, 59, 65, 68	<b>12</b>
7.	Kota	9, 25, 26, 42, 46, 53, 57, 58, 59, 65, 68	<b>11</b>
8.	Udhagamandalam	8, 9, 27, 46, 59, 65, 68, 73	<b>08</b>
9.	Vasad	14, 43, 54, 55, 59, 60, 65, 68	<b>08</b>
		<b>TOTAL</b>	<b>110</b>

**B. PROGRAMME-WISE NUMBER OF PROJECTS AT DIFFERENT LOCATIONS**

S. No.	DIVISION / CENTRE	P-1	P-2	P-3	P-4	P-5	P-6	TOTAL
1.	<b>Dehradun</b>							
	➤ Soil Science & Agronomy	4	3	1	-	-	-	<b>08</b>
	➤ Hydrology & Engineering	4	-	3	-	1	1	<b>09</b>
	➤ Plant Science	-	8	1	-	-	1	<b>10</b>
	➤ HRD&SS	-	2	2	-	-	5	<b>09</b>
	➤ PME Cell	-	-	-	-	1	-	<b>01</b>
	➤ National Fellow Programme	1	-	-	-	-	-	<b>01</b>
2.	Agra	1	1	2	1	2	1	<b>08</b>
3.	Bellary	1	3	2	-	3	1	<b>10</b>
4.	Chandigarh	2	1	1	1	1	1	<b>07</b>
5.	Datia	2	2	1	1	1	1	<b>08</b>
6.	Koraput	3	4	2	1	1	1	<b>12</b>
7.	Kota	1	3	2	3	1	1	<b>11</b>
8.	Udhagamandalam	2	1	1	1	1	2	<b>08</b>
9.	Vasad	1	1	2	2	1	1	<b>08</b>
	<b>TOTAL</b>	<b>22</b>	<b>29</b>	<b>20</b>	<b>10</b>	<b>13</b>	<b>16</b>	<b>110</b>

## NUMBER OF PROJECTS WITH INDIVIDUAL SCIENTIST

The number of projects with each individual scientist of the Institute, after the IRC Meeting of 2018 is as follows:

S. No.	Name	Designation	Leader	Associate	Total	S. No. of projects to be concluded
<b>Soil Science and Agronomy Division</b>						
1.	Dr. N.K. Sharma	Head of Division	2(5,15)	3(9,16,17)	5	-
2.	Dr. D.V.Singh	Pr. Scientist (Soils)	1(28)	3(31,35,36)	4	35
3.	Dr. D. Mandal	ICAR-National Fellow	2(9,11)	2(35,65)	4	35
4.	Dr. U.K. Maurya	Sr. Scientist (Soils)	1(45)	5(5,17,49,50,70)	6	49
5.	Dr. Gopal Kumar	Sr. Scientist (Soils)	-	5(5,6,7,16,56)	5	-
6.	Dr. M. Shankar	Scientist (Soils)	2(2,10)	3(6,33,36)	5	-
7.	Dr.Ramanjeet Singh	Scientist (Agro.)	1(16)	4(5,6,15,65)	5	-
<b>Hydrology and Engineering Division</b>						
8.	Dr. P.R. Ojasvi	Head of Division	2(1,46)	3(5,48,63)	5	1,63
9.	Dr. D.R. Sena	Pr. Scientist (Engg.)	1(6)	5(5,7,10,47,65)	6	-
10.	Er. S.S. Shrimali	Sr. Scientist (Com.App.)	1(66)	5(4,5,46,63,70)	6	63,66
11.	Dr. M. Muruganandam	Sr. Scientist (Fisheries)	1(61)	2(5,70)	3	61
12.	Er. S. Patra	Scientist (SS) (Engg.)	----- On Foreign Deputation-----			
13.	Er. Uday Mandal	Scientist (Engg.)	2(7,47)	4(5,6,15,18)	6	-
14.	Er. Deepak Singh	Scientist (Engg.)	2(12,48)	4(2,9,33,46)	6	-
<b>Plant Science Division</b>						
15.	Dr. Harsh Mehta	I/c Head of Division & OIC, PME Cell	2(29,30)	4(31,33,34,35)	6	29,34,35
16.	Dr.Charan Singh	Pr. Scientist (Forestry)	1(72)	2(5,32)	3	32,72
17.	Dr. J.M.S. Tomar	Pr. Scientist (Forestry)	1(34)	3(5,29,35)	4	29,34,35
18.	Dr. A.C. Rathore	Pr. Scientist (Hort.)	2(31,33)	3(5,12,48)	5	-
19.	Dr. Rajesh Kaushal	Pr. Scientist (Forestry)	1(35)	6(5,30,34,56,65,66)	7	34,35,66
20.	Dr.(Ms.)Vibha Singhal	Sr. Scientist(Agro-For.)	1(32)	3(28,71,72)	4	32,72
21.	Mr. A.K. Gupta	Scientist (Envt. Sc.)	1(50)	6(5,15,30,34,35,61)	7	34,35,61
22.	Mr. D.M. Kadam	Scientist (Hort.)	1(36)	3(28,33,70)	4	-
<b>Human Resource Development and Social Science Division</b>						
23.	Dr.Bankey Bihari	I/c Head of Division	2(68,70)	4(5,66,69,72)	6	66,68,69,72
24.	Dr.Ambrish Kumar	Pr. Scientist (Engg.)	2(49,56)	4(5,35,45,50)	5	35,49
25.	Dr.Lekh Chand	Sr. Scientist (Agro.)	1(17)	3(5,10,70)	4	-
26.	Dr.(Ms) Indu Rawat	Scientist(Home Management/FRM)	1(71)	2(68,69)	3	68,69
27.	Mr. Rajesh Bishnoi	Scientist (Agril. Extn.)	----- On Study Leave-----			
28.	Dr.(Ms.) Trisha Roy	Scientist (Soils)	1(18)	6(5,12,15,32,70,71)	7	32
29.	Dr. Madan Singh	Scientist (Agril. Extn.)	2(67,69)	4(5,68,70,71)	6	68,69
<b>Prioritization, Monitoring and Evaluation Cell</b>						
30.	Dr. Pradeep Dogra	Pr. Scientist (Ag. Eco.)	1(65)	5(5,6,9,35,63)	6	35,63

### NUMBER OF PROJECTS WITH INDIVIDUAL SCIENTIST

S. No.	Name	Designation	Leader	Associate	Total	S. No. of projects to be concluded
<b>Research Centre, Agra</b>						
31.	Dr. S.K. Dubey	Head of Centre	1(9)	2(51,65)	3	-
32.	Dr. A.K. Parandiyal	Pr. Scientist (Forestry)	2(37,59)	2(62,65)	4	59
33.	Dr. K.K. Sharma	Pr. Scientist (Engg.)	1(46)	3(9,59,65)	4	59
34.	Dr. R.K. Dubey	Sr. Scientist (Agro.)	-	4(9,51,65,68)	4	68
35.	Dr. R.B. Meena	Scientist (Soils)	-	4(37,46,59,65)	4	59
36.	Dr. D.C. Meena	Scientist (Ag. Eco.)	3(62,65,68)	1(67)	4	68
37.	Dr.(Ms.) Rama Pal	Scientist (Envt.Sc.)	1(51)	2(65,68)	3	68
<b>Research Centre, Bellary</b>						
38.	Dr. S.L. Patil	Head of Centre	2(63,68)	4(9,46,52,64)	6	63,68
39.	Dr. H. Biswas	Pr. Scientist (Soils)	2(9,38)	3(19,46,63)	5	19,63
40.	Dr. B.S. Naik	Sr. Scientist (Engg.)	2(46,52)	4(63,64,65,68)	6	63,68
41.	Mr. M.N. Ramesha	Scientist (Forestry)	-----On Study Leave-----			
42.	Ms. M. Prabhavathi	Scientist (Soils)	1(19)	3(39,63,65)	4	19,63
43.	Mr. Suresh Kumar	Scientist (Ag. Eco.)	-----On Study Leave-----			
44.	Mr. A.S. Morade	Scientist (Hort.)	1(39)	6(38,63,64,65,67,68)	7	63,68
45.	Dr. Ravi Dupdal	Scientist (Ag. Eco.)	2(64,65)	2(63,68)	4	63,68
<b>Research Centre, Chandigarh</b>						
46.	Dr.(Ms.) Pawan Sharma	I/c Head of Centre	-	1(5)	1	-
47.	Dr. (Ms.) S.L. Arya	Pr. Scientist (Ag. Eco.)	2(65,68)	2(5,20)	4	68
48.	Dr. V.K. Bhatt	Pr. Scientist (Engg.)	2(46,59)	4(5,9,20,65)	6	59
49.	Dr. Ram Prasad	Pr. Scientist (Hort.)	-	3(5,20,65)	3	-
50.	Dr. Pankaj Panwar	Pr. Scientist (Forestry)	1(5)	3(46,59,65)	4	59
51.	Dr.(Ms.)Sharmistha Pal	Scientist (SS) (Soils)	1(9)	5(5,46,65,67,68)	6	68
52.	Dr.(Ms.) Sathiya K.	Scientist (Agro.)	1(20)	2(65,68)	3	68
<b>Research Centre Datia</b>						
53.	Dr. R.S. Yadav	Head of Centre	-	4(3,21,65,68)	4	3,21,68
54.	Dr. S.P. Tiwari	Pr. Scientist (Soils)	-	3(9,40,59)	3	59
55.	Dr. Dev Narayan	Pr. Scientist (Agro.)	2(9,21)	-	2	21
56.	Dr. J. Jayaprakash	Sr. Scientist (Forestry)	-	1(40)	1	-
57.	Dr. Rajeev Ranjan	Scientist (Soils)	2(3,40)	4(2,46,65,68)	6	3,68
58.	Er.(Ms.) M. Pramanik	Scientist (Engg.)	2(46,59)	3(3,40,65)	5	3,59
59.	Mr. M.K. Meena	Scientist (Ag.Eco.)	2(65,68)	2(67,68)	4	68
<b>Research Centre, Koraput</b>						
60.	Dr. M. Madhu	Head of Centre	2(41,65)	1(9)	3	-
61.	Dr. D.C. Sahoo	Pr. Scientist (Engg.)	3(22,46,59)	2(24,41)	5	59
62.	Dr. H. Gowda	Sr. Scientist (Forestry)	1(13)	3(41,59,65)	4	13,59
63.	Dr. P. Jakhar	Sr. Scientist (Agro.)	2(24,68)	4(13,22,23,46)	6	13,68
64.	Dr. P.P. Adhikary	Scientist (Soils)	1(9)	6(2,22,24,41,44,59)	7	44,59
65.	Dr.(Ms.) Ch. J.P. Dash	Scientist (Engg.)	2(4,44)	3(23,46,67)	5	44
66.	Dr. Karma Beer	Scientist (Hort.)	1(23)	3(13,22,24)	4	13

## NUMBER OF PROJECTS WITH INDIVIDUAL SCIENTIST

S. No.	Name	Designation	Leader	Associate	Total	S. No. of projects to be concluded
<b>Research Centre, Kota</b>						
67.	Dr. R.K. Singh	Head of Centre	2(9,58)	3(46,53,65)	5	53
68.	Dr. Ashok Kumar	Pr. Scientist (Ag.Eco.)	2(65,68)	4(25,26,57,58)	6	68
69.	Dr. Shakir Ali	Pr. Scientist (Engg.)	1(59)	4(25,26,57,58)	5	59
70.	Dr. A.K. Singh	Pr. Scientist (Engg.)	-	2(42,65)	2	-
71.	Dr. B.L. Mina	Pr. Scientist (Soils)	1(57)	4(9,25,26,58)	5	-
72.	Dr. H.R. Meena	Sr. Scientist (Hort.)	-	5(42,53,57,58,68)	5	53,68
73.	Dr. G.L. Meena	Scientist (Soils)	2(46,53)	2(58,65)	4	53
74.	Dr. Kuldeep Kumar	Scientist (Agro.)	1(25)	5(9,26,58,65,67)	6	-
75.	Dr. (Ms.) S. Kala	Scientist (Forestry)	1(42)	4(57,58,59,65)	5	59
76.	Dr. (Ms.) I. Rashmi	Scientist (Soils)	1(26)	3(42,58,68)	4	68
<b>Research Centre, Udhagamandalam</b>						
77.	Dr. O.P.S. Khola	Head of Centre	1(65)	4(8,27,46,68)	5	27,68
78.	Dr. K. Kannan	Pr. Scientist (Agro.)	2(9,27)	4(8,59,68,73)	6	27,59,68,73
79.	Dr. S. Manivannan	Pr. Scientist (Engg.)	2(46,59)	1(65)	3	59
80.	Dr.(Ms) P.Sundarambal	Pr. Scientist (Ag. Extn.)	2(68,73)	-	2	68,73
81.	Dr. K. Rajan	Pr. Scientist (Soils)	-	2(8,59)	2	59
82.	Dr. P. Raja	Pr. Scientist (Soils)	1(8)	4(9,27,68,73)	5	27,68,73
83.	Er. (Ms) V. Selvi	Scientist (SS) (Engg.)	-	2(9,73)	2	73
84.	Dr.(Ms) V.K. Thilagam	Scientist (Soils)	-	5(2,27,46,65,67)	5	27
<b>Research Centre, Vasad</b>						
85.	Dr. P.R. Bhatnagar	Head of the Centre	2(54,59)	2(43,65)	4	59
86.	Dr. V.C. Pande	Pr. Scientist (Ag.Eco.)	2(65,68)	4(5,54,55,60)	6	59,68
87.	Dr. D. Dinesh	Scientist (Soils)	1(14)	6(2,43,54,59,60,67)	7	59
88.	Dr. V. Kakade	Scientist (Hort.)	2(43,60)	3(14,54,65)	5	-
89.	Er. Gaurav Singh	Scientist (Engg.)	1(55)	3(14,60,65)	4	-

(Figures in parenthesis are serial numbers of running projects listed in these proceedings).

## LIST OF PARTICIPANTS

S.No.	Name	Designation	Participation in IRC as
1.	Dr. P.K. Mishra	Director	Chairman
<b>HEADQUARTERS, DEHRADUN</b>			
2.	Dr. N.K. Sharma	Head (SS&A Division)	Member & PI: P-2.1
3.	Dr. P.R. Ojasvi	Head (H&E Division)	Member & PI: P-1
4.	Dr. Harsh Mehta	OIC (PME Cell) & I/c Head (Plant Science Division)	Member Secretary, IRC & PI: P-2.2
5.	Dr. Bankey Bihari	I/c Head (HRD&SS Division)	Member & PI: P-6
6.	Dr. Charan Singh	Principal Scientist (Forestry)	
7.	Dr. Pradeep Dogra	Principal Scientist (Ag. Eco.)	PI: P-5
8.	Dr. Ambrish Kumar	Principal Scientist (Engg.)	PI: P-4
9.	Dr. D.V. Singh	Principal Scientist (Soils)	
10.	Dr. J.M.S. Tomar	Principal Scientist (Forestry)	
11.	Dr. D. Mandal	ICAR-National Fellow	
12.	Dr. A.C. Rathore	Principal Scientist (Hort.)	
13.	Dr. Rajesh Kaushal	Principal Scientist (Forestry)	
14.	Er. S.S. Shrimali	Senior Scientist (CAA)	
15.	Dr. U.K. Maurya	Senior Scientist (Soils)	
16.	Dr. (Ms.) Vibha Singhal	Senior Scientist (Agro Forestry)	
17.	Dr. Lekh Chand	Senior Scientist (Agro.)	
18.	Dr. Gopal Kumar	Senior Scientist (Soils)	Member Secretary, RAC
19.	Dr. M. Muruganandam	Senior Scientist (Fisheries)	
20.	Dr. M. Sankar	Scientist (Soils)	
21.	Dr. Ramanjeet Singh	Scientist (Agro.)	
22.	Er. Uday Mandal	Scientist (Engg.)	
23.	Mr. D.M. Kadam	Scientist (Hort.)	
24.	Dr. (Ms.) Indu Rawat	Scientist (Home Management)	
25.	Dr. (Ms.) Trisha Roy	Scientist (Soils)	
26.	Er. Deepak Singh	Scientist (Engg.)	
27.	Dr. Madan Singh	Scientist (Agri. Extn.)	
28.	Dr. (Mrs.) Sangeeta N. Sharma	Chief Technical Officer	Rapporteur
29.	Mr. S.K. Sinha	Asstt. Chief Technical Officer	Rapporteur
<b>RESEARCH CENTRE, AGRA</b>			
30.	Dr. S.K. Dubey	Head of the Centre	Member
31.	Dr. A.K. Parandiyal	Principal Scientist (Forestry)	
32.	Dr. K.K. Sharma	Principal Scientist (Engg.)	
33.	Dr. R.B. Meena	Scientist (Soils)	
34.	Dr. D.C. Meena	Scientist (Ag. Eco.)	
35.	Dr. (Ms.) Rama Pal	Scientist (Env. Science)	
<b>RESEARCH CENTRE, BELLARY</b>			
36.	Dr. S.L. Patil	Head of the Centre	Member
37.	Dr. H. Biswas	Principal Scientist (Soils)	
38.	Dr. B.S. Naik	Senior Scientist (Engg.)	
39.	Mr. A.S. Morade	Scientist (Hort.)	
40.	Dr. Ravi Dupdal	Scientist (Ag. Eco.)	

## LIST OF PARTICIPANTS

S.No.	Name	Designation	Participation in IRC as
<b>RESEARCH CENTRE, CHANDIGARH</b>			
41.	Dr. (Ms.) Pawan Sharma	I/c Head of the Centre	Member
42.	Dr. (Ms.) Swarn Lata Arya	Principal Scientist (Ag. Eco.)	
43.	Dr. V.K. Bhatt	Principal Scientist (Engg.)	
44.	Dr. Ram Prasad	Principal Scientist (Hort.)	
45.	Dr. Pankaj Panwar	Principal Scientist (Forestry)	
<b>RESEARCH CENTRE, DATIA</b>			
46.	Dr. R.S. Yadav	Head of the Centre	Member
47.	Dr. S.P. Tiwari	Principal Scientist (Soils)	
48.	Dr. Rajeev Ranjan	Scientist (Soils)	
49.	Er.(Ms.) M. Pramarik	Scientist (Engg.)	
50.	Mr. M.K. Meena	Scientist (Ag. Eco.)	
<b>RESEARCH CENTRE, KORAPUT</b>			
51.	Dr. M. Madhu	Head of the Centre	Member
52.	Dr. D.C. Sahoo	Principal Scientist (Engg.)	
53.	Dr. H. Gowda	Senior Scientist (Forestry)	
54.	Dr. P. Jakhar	Senior Scientist (Agro.)	
55.	Dr. P.P. Adhikary	Scientist (Soils)	
<b>RESEARCH CENTRE, KOTA</b>			
56.	Dr. R.K. Singh	Head of the Centre	Member
57.	Dr. Ashok Kumar	Principal Scientist (Ag. Econ.)	
58.	Dr. B.L. Mina	Principal Scientist (Soils)	
59.	Dr. H.R. Meena	Senior Scientist (Hort.)	
60.	Dr. G.L. Meena	Scientist (Soils)	
61.	Dr. Kuldeep Kumar	Scientist (Agronomy)	
62.	Dr. (Ms.) S. Kala	Scientist (Forestry)	
63.	Dr. I. Rashmi	Scientist (Soils)	
<b>RESEARCH CENTRE, UDHAGAMANDALAM</b>			
64.	Dr. O.P.S. Khola	Head of the Centre	Member
65.	Dr. S. Manivannan	Principal Scientist (Engg.)	
66.	Dr. P. Sundarambal	Principal Scientist (Ag. Extn.)	
67.	Dr. K. Rajan	Principal Scientist (Soils)	
68.	Dr. P. Raja	Principal Scientist (Soils)	
69.	Dr. R. Ragupathy	Scientist (SS) (Forestry)	
70.	Dr.(Ms.) V.K. Thilagam	Scientist (Soils)	
<b>RESEARCH CENTRE, VASAD</b>			
71.	Dr. P.R. Bhatnagar	Head of the Centre	Member
72.	Dr. V.C. Pande	Principal Scientist (Ag. Eco.)	
73.	Dr. V. Kakade	Scientist (Hort.)	
74.	Er. Gaurav Singh	Scientist (Engg.)	
75.	Mr. O.P. Meena	Scientist (Soils)	