

PREAMBLE BY THE CHAIRMAN

Dr. V.N. Sharda, Director, CSWCRTI and Chairman, Institute Research Committee (IRC), welcomed the Heads of Research Centres and Divisions, and Scientists to the IRC Meeting of 2010. He apprised the house that as per directives of the ICAR, henceforth, the IRC meeting shall be held during first half of the calendar year after the *rabi* season.

The Chairman informed the house that since importance of natural resource management (NRM) is now being strongly recognized for sustainable development, therefore Dr. S. Ayyappan, Secretary (DARE) and Director General (ICAR) desires NRM to be highlighted across various forums. The Director General (DG) appreciated the work done by the Institute during his visit to Research Centre, Koraput for inauguration of the Office cum Laboratory Building and Residential Complex on 21st November, 2010, but much more is expected from the Institute in research and extension activities in view of its increasing role at national level. For making NRM the focal point, the DG firstly suggested calling a meeting of 100-125 officers trained in the recent past at the Institute and now occupying key positions in state development departments to discuss how the scientific know-how and technologies generated by the Institute can be effectively disseminated through their departments with active support of NGOs and local communities for sustainable development and better utilization of our natural resources. This will strengthen our linkage with the state departments and field functionaries. Secondly, the DG suggested upgradation of the status of the Institute to a Deemed University, since it already has well established national network, infrastructure facilities and faculty. The DG desired that a proposal for this may be submitted to the Council by the Institute at the earliest.

The good tradition of winning awards/recognitions by Institute scientists continued during this year also. The Chairman himself was awarded the prestigious fellowship of Indian National Academy of Engineers (2010) in recognition of his outstanding contribution in the field of Agricultural Engineering. Dr. K.S. Dadhwal, Head, SS&A Division was awarded the prestigious Fellowship of the Indian Society of Soil Science (2009) for his outstanding work on 'Characterization and Rehabilitation of Degraded Mine Spoil Areas in Outer Himalayas'. Dr. S.K. Dubey, Head, Research Centre, Agra received *Krishi Shodh Vigyan Puruskar* (2008-09) from Nagar Rajbhasha Karyanvan Samiti, Agra under Deptt. of Rajbhasha, Ministry of Home Affairs, New Delhi. Dr. Sharmishtha Pal, Scientist (Soils) was awarded ICAR's Jawaharlal Nehru Award for Outstanding Post Graduate Agricultural Research (2009) in the field of Soil Science, Natural Resource Management and Agronomy. Dr. S. Manivannan, Senior Scientist (SWC Engg) bagged the Vasanthrao Naik Award in Research Applications in Dryland Agriculture (2008) for his significant contribution in the field for development, evaluation and transfer of *in situ* soil and water conservation, bio-engineering measures and micro scale water harvesting structures for sustainable production of cashew in Goa and Kokan region. Dr. B. Krishna Rao was conferred upon with Young Scientist Award of National Academy of Agricultural Sciences (NAAS) for his significant contributions in the field of Agricultural Engineering and Technology during the 9th Agricultural Science Congress. Institute won the 2nd prize for best stall in the group of ICAR/GoI during All India Farmer's Fair (North Zone) and Agro-Industrial Exhibition at Sardar Vallabhbhai Patel University of Agriculture & Technology, Meerut held at University Campus from March 10-12, 2010. The Chairman and the house congratulated the awardees for their excellent achievements. The Chairman wished that the scientists of the Institute may win many more awards in future and bring laurels to the Institute through their hard work by submitting well prepared applications on time.

Thereafter, the Chairman apprised the house of the major activities / events of the Institute during the year 2010. The XXI Meeting of ICAR Regional Committee No. I was organized during June 10-11, 2010 at SKUAST, Jammu under the Chairmanship of Secretary (DARE) and Director General (ICAR) with Director, CSWCRTI as the Member Secretary of the meeting. The meeting was organized to deliberate on different issues related to agriculture, horticulture, livestock etc. in the region, covering the states of J&K, HP & UK. Dr. C.D. Mayee, Chairman, ASRB, New Delhi visited the Institute during August 23-25, 2010. He visited the Research Farm, Selakui, Sainji Watershed Project at Mussoorie, and Minespoil Rehabilitation Project at Sahastradhara. An interaction meeting with the scientists of the Institute at Headquarters was also held and he appreciated the work done by the Institute during his visit to the Institutes' museum. He also inaugurated the branch of State Bank of India at Institute Headquarters. Research Centre, Vasad conducted a two days workshop during September 3-4, 2010 to discuss objective-wise achievements of the core project on Ground Water Recharge.

The RAC meeting was held during September 28-30, 2010 at the Institute Headquarters and all ongoing projects were presented by the concerned PIs. RAC approved 13 new project proposals and two Observation Trials out of 20 project proposals submitted for consideration. A workshop on the core project 'Erosion Prediction Models' was held during October 4-5, 2010 at Institute Headquarters to assess the progress of the project and discuss specific recommendations for different models, which emerged during their trials. Under a Work Plan between ICAR and ASARECA countries, a delegation of 14 members visited the Institute on 16th November, 2010 and discussed issues related to Watershed Development under Indian situation. They also visited the Institute's farm, IVLP site at Kalimati village and Institute's Museum. The Institute also celebrated the International Year of Biodiversity (2010) by organizing one day Seminar at the Headquarters and 8 Research Centres of the Institute.

The Chairman stated that there is lot of scope for improvement in research publications, though publication of research papers by Institute scientists has picked up. Now that NAAS rating of journals is well known, a scientist should try for publication of his/her paper possibly in the highest rated journal. Moreover, rating of Indian Journal of Soil Conservation (IJSC) has increased to 4.6. Therefore, every scientist should publish at least 2 papers in a year, preferably one in an International journal and one in a National journal, including IJSC. From every project, papers should be submitted by concerned scientists for publication at the earliest, otherwise responsibility be affixed as the valuable data has been collected in the projects at a huge cost. A project monitoring and evaluation (PME) exercise has already been initiated by our Institute as per directives of the ICAR for thorough technical, physical and financial scrutiny of individual research project. PME exercise of Research Centre, Kota has been completed and all other Research Centres and Divisions should keep their PME proforma ready. Also, mid-term review of quality of performance of scientific and research management positions may be initiated by the ASRB based on score attributes. The Chairman informed the house that the Institute has been chosen as a centre for conducting 'On-line' ARS exam. In NRM section for selection through ARS Exam, two new disciplines i.e. Agro-Forestry and Environmental Science have been added under the list of disciplines.

An Indo-US workshop on Emerging Issues in Water Management for Sustainable Agriculture in South Asia region was organized by the Research Centre Udhagamandalam in collaboration with Michigan State University (MSU) and International Water Management Institute (IWMI) during December 10-12, 2009. More than 30 water management specialists attended this workshop representing ICAR research institutes, SAUs, NGOs, Private sector, and international organizations. Two books emanating from the deliberations of the workshop are being published, including a book to be written by IWMI. An Indo-Canadian workshop was successfully organized during January 7-8, 2011 at Chandigarh to deliberate on various issues concerning water integrity, safety, security and supply. About 50 delegates from Canada, USA and India participated. As per recommendation of the workshop, a collaborative project between Indian and Canadian partners, including NGOs, will be submitted for international funding to address the burning issues related to water quantity and quality.

New technical indicators to evaluate watershed development programmes in India were presented in a National Workshop organized by National Research Centre for Agricultural Economics and Policy Research (NCAP) and National Rainfed Area Authority (NRAA) on August 6, 2010 at New Delhi. These indicators must be tested and evaluated by all the Research Centres in all the 9 model watersheds being developed by the Institute. These indicators alongwith the indicators evolved earlier by the Institute shall become part of the Watershed Development Guidelines of the Govt. of India. A lot of data would be generated through use of the indicators to carry out impact analysis of watershed management programmes. The scientists of the Institute shall also be participating in the International Symposium being organized during January 17-19, 2011 by Indian Society of Agriculture Engineering at Nagpur. A prestigious bilateral project with Bhabha Atomic Research Centre, funded by International Atomic Energy Agency (IAEA), Vienna is being taken up by the Institute Headquarters to predict soil erosion from runoff streams directly by using isotopes.

The Chairman concluded his address by informing the house that as per directives of the Council, a comprehensive database of achievements and other research related information is to be submitted to the concerned Subject Matter Division (SMD) of ICAR. The database will be used by the SMD for generating reports, when ever required, for submission to the Ministry etc. and will not ask institutes/NRCs/PDs for the required information. Therefore, the major achievements of all research projects and activities may be periodically furnished by the Divisions/Centres to RCM Unit for onward transmission to the Council in time.

RECOMMENDATIONS OF RAC – 2010

1. The RAC observed that the website of the Institute needs to be updated with the recent information/technologies developed in the area of Natural Resource Management employing concept of Integrated Watershed Development. RAC recommended that website of the Institute needs to be updated with the latest technologies and made users' friendly in a cascading manner with proper linkage to the ICAR portal.
2. The RAC appreciated that the Atlas entitled "Priority Classes for Erosion Control in different States of India" published by the Institute is immensely useful for planning and execution of Soil and Water Conservation Programmes in different Agro-Climatic Regions (ACRs) of the country. RAC recommended that a bulletin on the same subject may be prepared and made available to all policy makers/planners/officers involved in planning and execution of watersheds development programmes in different ACRs of the country.
3. The RAC recommended that technologies for conserving the natural resources including drainage line treatment (spurs, etc.) should be evaluated under field conditions after thorough testing in the laboratory/experimental farms.
4. The RAC apprised of the works carried out by the Institute on assessment and impact analysis with regards to capacity building programmes. The RAC recommended that the performance indicators used for assessing the impact of capacity building programmes should be quantified and then evaluated for each watershed selected under different ACRs of the country.
5. The RAC reiterated its earlier recommendation that projects should be designed on long term basis to analyze the integrated effects of various treatments on physical, chemical and biological properties of the soils alongwith moisture retention capacity of the soil at various critical stages of the plant growth.
6. The RAC emphasized that social scientists of the Institute should conduct studies aiming at analysis of constraints and adoption pattern of conservation technologies developed by the Institute and implemented in various watershed development programmes under externally funded schemes/projects in different ACRs of the country, which have already been concluded.
7. The RAC stressed that Indigenous Technical Knowledge (ITKs) with regards to soil and water conservation which are popular in different ACRs of the country should be compiled, validated, refined and published.
8. Probability distribution and time series analysis of 100 years' rainfall data of Dehradun (if available) should be carried out and correlated with climate change in order to observe any discerning trends in rainfall pattern over long periods of time.
9. The RAC recommended that the Programme Implementers (PI) should be fully acquainted with planning and execution of various projects and aware of each and every activity of the projects being carried out under their respective programmes. If needed, the PIs may periodically visit the field experimental sites to acquaint themselves with the progress of the projects in their respective areas and extend necessary suggestions.

SALIENT RECOMMENDATIONS OF IRC MEETING – 2010

1. In most of the 9 model watersheds being operated under the MMA (NWDPR) scheme the physical and financial achievements under the different components are not upto the mark. Therefore, all activities under watershed development programme should be expedited and ` 40, 17.5, 9, 6.6, 15, 8 and 8 lakhs may be utilized by Research Centres, Agra, Chandigarh, Koraput, Kota, Udhamandalam, Vasad and Headquarters Dehradun by 31st March, 2011, respectively. However, the budget utilization in respect of Research Centre, Datia was lowest among all Research Centres. Out of ` 48 lakhs only ` 3.6 lakhs have been utilized. It is far from satisfactory. Hence, Research Centre Datia should make vigorous efforts and ensure utilization of ` 15 lakhs more till 31st March, 2011. The progress of Research Centre, Bellary is also tardy. Serious efforts are required to catch up the activities as per schedule and utilize ` 7 lakhs by 31st March, 2011.

(Action: PIs of Ashti/Jalalpur/Ramasagara/Kajiana/Jigna/Lachhaputra Ghati/Dhoti/ Ayalur/ Vejalpur-Rampura watersheds)

2. A list of equipments purchased during the last 5 years along with details of their cost, manufacturers, functional status etc. may be prepared by Heads of Research Centres and Divisions and submitted to Head, H&E Division who is nominated as Nodal Officer to compile the list. Also, all the Heads of Research Centres / Divisions must ensure that all equipments procured under Research Projects are in working order for subsequent use. A separate log-book for each equipment must be maintained regularly.

(Action: All Heads of Research Centres and Divisions and Head, H&E Division)

3. Calibration and validation of all data set for all models pertaining to the core project on development and validation of models should be completed. A workshop may be conducted in April, 2011 for presentation of results by all Centres. A comparative picture of the models tested should also be presented in the workshop. Entire results of the complete project should be presented in the next IRC meeting.

(Action: Dr. P.R. Ojasvi and leaders at other Centres of the core project)

4. For analysis of microbial activity and carbon dioxide emission, centralized purchase of chemicals i.e. Tri-phenyl Formazone (TPF) and Tri-phenyl Tetrazolium Chloride (TPTC) for all eight Research Centres may be done by Central Laboratory, Headquarters, Dehradun and the firm may be asked to supply the material directly to Research Centres. Data of remaining seven parameters of all ongoing projects must be submitted by all Research Centres / Divisions to Dr.(Ms.) Sharmistha Pal by Dec. 31, 2010 for computation of Soil Threat Index. This assignment must be completed before December, 2011.

(Dr.(Ms.) Sharmistha Pal, Dr. D. Mandal and all scientists / Heads of Research Centres / Divisions)

5. The Monthly Cabinet Reports should be prepared in bullet form highlighting the Salient Achievements in a quantifiable manner for onward transmission to the Council. Alongwith it, monthly highlights of research projects with photographs / tables etc. for publication in ICAR News / ICAR Reporter and DARE Report may be submitted regularly by all the Research Centres / Divisions.

(Action: All Heads of Research Centres and Divisions)

6. Complete Annual Report of the Research Centres and Divisions must be submitted positively by February 28, 2011. Additional information pertaining to participation in workshops, training, publication etc. beyond February 28, 2011 may be submitted latest by March 31, 2011 as the compiled Annual Report of the Institute is to be put on the website by April 30, 2011 positively.

(Action: All Heads of Research Centres and Divisions)

7. Dr. G.P. Juyal, Head, H&E Division should contact the concerned authorities at Indian Institute of Remote Sensing for obtaining the necessary information / data of not only Ashti Watershed but of all other watersheds being developed under the MMA (NWDPR) Scheme and the progress in the matter may be reported by 30th April, 2011.

(Action: Dr. G.P. Juyal, Head, H&E Division)

8. Data of all the ongoing and completed projects may be entered into Project Information and Management System (PIMS) of ICAR, as per the directives of the Council. Data of ongoing projects should be entered by 31st December, 2010. Soft copy / scanned copies of all completed / concluded projects since the beginning of the Centre / Divisions may be sent to RCM Unit, Dehradun by E-mail by 31st March, 2011 for uploading the same on the PIMS (ICAR) website.

(Action: All Scientists and Heads of Research Centres and Divisions and OIC, RCM Unit)

9. A team consisting of Dr. G.P. Juyal, Dr. R.P. Yadav and Dr. D.V. Singh is constituted to workout the criteria for landslide prone area and to workout cumulative index for defining vulnerability of landslide areas. The report may be prepared and submitted by April 15, 2011 positively.

(Action: Dr. G.P. Juyal, Dr. R.P. Yadav and Dr. D.V. Singh)

10. A team consisting of Dr. P.R. Ojasvi, Dr. D. Mandal, Dr. N.M. Alam, Dr. M. Madhu and Dr. Charan Singh is constituted under the leadership of Dr. P.R. Ojasvi to formulate a new project on DSS for watershed planning. The team may procure already available softwares on watershed planning for basic information. The new project should be submitted by April 20, 2011 and presented in the next IRC meeting.

(Action: Dr. P.R. Ojasvi, Dr. D. Mandal, Dr. N.M. Alam, Dr. M. Madhu and Dr. Charan Singh)

11. A status paper may be prepared by Dr. G.L. Bagdi, Sr. Scientist (Agril. Extn.) on soil and water conservation technologies with respect to water harvesting structures, categorizing the different kinds of ITKs, and submitted by May 31, 2011.

(Action: Dr. G.L. Bagdi)

12. Er. R.N. Adhikari should visit Headquarters, Dehradun in the first week of January, 2011 and discuss with Dr. G.P. Juyal to formulate a new project based on hydraulic flume for presentation in the next IRC meeting.

(Action: Er. R.N. Adhikari and Dr. G.P. Juyal)

13. A trend analysis of meteorological data of Research Farm, Selakui may be done by Dr. N.M. Alam, Scientist (Agril. Stat.). A status paper on this aspect may be prepared by Feb. 28, 2011 and presented in a local seminar at Headquarters, Dehradun which will be replicated by other Research Centres.

(Action : Dr. N.M. Alam, Scientist (Agril. Stat.))

14. The DG (ICAR) has desired that a meeting of about 100-125 officers of the state departments that have undergone regular training course at our Institute and are presently holding key positions may be organized by 30th June, 2011 to discuss and develop a consensus regarding propagation of the theme of natural resource management (NRM) in general and our Institute's mandate in particular. The meeting may also be attended by the DG (ICAR) along with members of SLNA.

(Action : Head, HRD&SS Division)

15. Submission of Action Taken Report for the actions assigned in the Salient Recommendations and related projects in the IRC meetings proceedings is the responsibility of the persons concerned and should not wait for reminder letter from the Director or RCM Unit. A meeting must be held by the Heads of Research Centres/Divisions after receipt of proceedings of IRC meeting and Action Taken Report should be submitted within one month to the Director indicating what actions have been taken or will be taken in a time bound manner.

(Action : All Head of Research Centres and Divisions)

16. Each scientist must ensure to publish at least two research papers every year in reputed journals having high score as per NAAS ratings, with preferably one in International Journal. Publications should be made within five years after completion of a project. Head of Research Centres/Divisions should promote this culture and ensure quality publications in future.

(Action: All Scientists / Heads of Research Centres and Divisions)

17. Interaction meeting among leader and associates of the projects must be held regularly to discuss and share the knowledge and experiences and plan future course of work. Project sites should be visited by the multi-disciplinary team of scientists so that each scientist is well aware of the work being carried out under the project in other disciplines also.

(Action: All Scientists / Heads of Research Centres and Divisions)

18. Extension scientists should be vigilant and should keep a track of the development / changes occurring in the nearby villages i.e. changes in cropping pattern, landuse, farmers' preferences etc. The technologies developed by the Institute should be demonstrated in 5-6 villages adjacent to Research Farm of the Headquarters / Research Centres to improve visibility of the Institute activities in the field. They should also convince the state government agencies to replicate the technologies developed by the Institute at other locations in the state.

(Action: Agricultural Extension Scientists at Headquarters and all Research Centres)

19. All PIs of new projects should keep a track of financial aspects of the research projects in tune with PME (Project Monitoring & Evaluation) for Project Based Budgeting and Zero Based Budgeting in future.

(Action: All PIs of new research projects)

20. Scientists who do not have research projects as per norms fixed by the IRC must submit the requisite number of new projects proposals before April 15, 2011, positively for consideration by RAC/IRC.

(Action: All Scientists / Heads of Research Centres / Divisions)

21. Predominant farmers' practices should be clearly defined in terms of fertilizers, seed rate and intercultural practices etc. while reporting the observations / results of the project.

(Action: All concerned scientists of Research Centres and Divisions)

**ACTION TAKEN ON
“SALIENT RECOMMENDATIONS OF IRC MEETING – 2009”**

Sl. No.	Action Assigned	Action Taken Report
1.	Recommendations regarding MMA (NWDPRA) watersheds activities are as under :	
a.	<p>Ashti watershed, Dehradun</p> <ul style="list-style-type: none"> • The PI has committed to utilize the un-utilized budget of 2008-09 and 2009-10 by March, 2010 after completing all the codal formalities. (Action: PI, Ashti watershed) 	Action has been taken by the PI, Ashti watershed.
b.	<p>Jalalpur watershed, Agra</p> <ul style="list-style-type: none"> • The left over activities of 2008-09 should be completed by the PI and his team along with all activities of 2009-10 by March, 2010, excluding activities pertaining to agro-forestry. • The PI is advised to make all efforts to complete the activities as per the DPR in future. (Action: PI, Jalalpur watershed) 	The left over activities of 2008-09 and majority of all activities of 2009-10 have been completed by March, 2010. The work is under progress as per DPR.
c.	<p>Ramasagara watershed, Bellary</p> <ul style="list-style-type: none"> • Dr. A. Raizada, Head, Research Centre, Bellary would be associated in the project. • Registration of the Watershed Society of Ramasagara Watershed would be done by 10th December, 2009. • All activities under the Work Phase would be completed by 20th March, 2010. • A total of ` 13 lakhs would be utilized by the Research Centre by March, 2010. (Action: PI, Ramasagara watershed) 	Registration of society was completed by the 1 st week of Dec., 09. Bank accounts were opened on 8.1.10. A total of ` 7.52 lakhs was utilized by 31 st March, 2010. All entry point activities were completed by 20 th March, 2010. However, bunding was completed only in 2 ha and a masonry check dam was completed. Most of these activities are in progress in 2010-11, in which targets are being achieved for both 2009-10 and 2010-11.
d.	<p>Kajiana watershed, Chandigarh</p> <ul style="list-style-type: none"> • Under work phase out of remaining ` 12 lakhs, ` 9.5 lakhs should be utilized in Work Phase and the remaining ` 2.5 lakhs on Livelihood Support System / Production System and Micro-enterprises. (Action: PI, Kajiana watershed) 	During the financial year 2009-10, ` 9.05 lakhs have been spent on watershed works and ` 2.82 lakhs on livelihood support system/production system and micro enterprises in Kajiyana watershed to accomplish the planned activities.
e.	<p>Jigna watershed, Datia</p> <ul style="list-style-type: none"> • The Watershed Committee could not be constituted till November, 2009, which has been highly disappointing and viewed very seriously by the house. • Works i.e. construction of water harvesting structure, percolation check dam, repair of existing stop dam, construction of check dam and farm pond should be completed by March, 2010 so that the funds of ` 9.25 may be utilized 	Watershed Committee (WC) constituted. Severe conflicts among villagers and panchayat election process in the state caused delay. Strengthening of existing pond (` 1.05 lakhs) and repair of existing stop dam (` 0.37 lakhs) have been completed. Construction of contour trenching (` 0.66 lakhs), construction of percolation stop dam

	under NWDPRA scheme. (Action: PI, Jigna watershed)	(` 1.24 lakhs) and construction of gully plugs (` 0.73 lakhs) are in progress.
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f.	<p>Lachhaputra Ghati watershed, Koraput</p> <ul style="list-style-type: none"> The budget (₹ 1.17 lakhs) under the head Preparatory Phase – Capacity Building should be utilized by February, 2010. Unutilized budget of ₹ 11.5 lakhs under Work Phase activities (farm pond, renovation of WHS, check dams, gully control structure, dugout pond) Livelihood Support System, Production System and Micro enterprises etc. should be utilized by March, 2010. <p>(Action: PI, Lachhaputra Ghati watershed)</p>	<p>All the activities have been carried out successfully and funds have been utilized under the available budget.</p>
g.	<p>Dhoti watershed, Kota</p> <ul style="list-style-type: none"> The unutilized budget (₹ 1.16 lakh) should be utilized by March, 2010 for Preparatory Phase activities, viz; Entry Point Activity (repair of village temple) and Capacity Building Activity (training programme for user groups). Under Work Phase activities, estimate for pond and anicut should be revised for constructing 3 small ponds instead of a single large pond. The proposal may be submitted to the Headquarters after completing the codal formalities immediately so that work may be completed by March, 2010. <p>(Action: PI, Dhoti watershed)</p>	<p>All the activities have been carried out by the PI, Dhoti watershed.</p>
h.	<p>Ayalur watershed, Udhagamandalam</p> <ul style="list-style-type: none"> PI and Head have committed that Preparatory Phase budget would be fully utilized by March, 2010. Out of total allocation of ₹ 30.76 lakhs for Preparatory Phase and Work Phase only ₹ 6 lakhs were utilized. Head and PI assured that additional amount of ₹ 15 lakhs shall be utilized by March, 2010. The remaining amount ₹ 9.76 lakhs) as spill over of 2009-10 shall be spent during 2010-11. <p>(Action: PI, Ayalur watershed)</p>	<p>As per commitment, an amount of ₹ 16.4 lakhs was utilized by March, 2010. The remaining works for ₹ 10 lakhs is under progress. Balance work earmarked to the Research Centre shall be completed by the end of 2010-11.</p>
i.	<p>Vejalpur-Rampura watershed, Vasad</p> <ul style="list-style-type: none"> Preparatory Phase Activities (EPA and Capacity Building) should be completed by March, 2010 so that remaining budget under Preparatory Phase is fully utilized. Commitment of utilization of ₹ 7.5 lakhs by March, 2010 for Work Phase activities (peripheral bund, trenches, earthen gully plug, water harvesting check dam, recharge filter and for goat rearing unit etc.) has been given by the Head of the Research Centre. In this respect codal formalities should be completed by Dec. 2009 and request for drawl of advance may be sent 	<p>Most of the preparatory phase activities have been completed. 80% of the work phase activities have been completed.</p>

	immediately. (Action: PI, Vejalpur-Rampura watershed)	
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2.	<p>Dr. G.P. Juyal, Head, H&E Division is nominated as Nodal Officer for collaboration with Indian Institute of Remote Sensing (IIRS) to implement and evaluate nine model watersheds through RS/GIS technique operating at Headquarters and all Research Centres after developing suitable methodology for Ashti watershed. (Action: Dr. G.P. Juyal / Er. S.S. Shrimali and PIs of model watersheds at Research Centres)</p>	<p>The methodology for planning of micro-watershed through application of RS/GIS techniques using original satellite data in case of Ashti watershed has been completed in collaboration with IIRS, Dehradun.</p>
3.	<p>Half page note for each season of FPRAP demonstration and one para note for each technology of each season in prescribed format should be submitted by all Research Centres and Divisions. (Action: PIs/all Heads of Research Centres / Divisions)</p>	<p>Report pertaining to FPARP demonstration is submitted by the Heads of Research Centres / Divisions after repeated reminders and telephonic discussions.</p>
4.	<p>A script of FPARP demonstrations, general activities and salient achievements of Research Centres / Divisions may be prepared by each Centre and Division by Jan. 31, 2010 for making a documentary film. Head, HRD&SS Division is nominated as Nodal Officer to co-ordinate and complete the assignment. (Action: All Heads of Research Centres/Divisions and Head, HRD&SS Division)</p>	<p>Documentary film on Institute and Research Centres is being developed and would be completed by March 31, 2011.</p>
5.	<p>Dr. D.R. Sena, Sr. Scientist (Engg.) should analyze the structure-wise recharge data for the core project on "Ground Water Recharge". Dr. D.R. Sena and Dr. R.S. Kurothe should check the status of submission of required data and find the gaps and inform accordingly all Co-PIs by Dec. 15, 2009. All Co-PIs of this core project working at Research Centres Chandigarh, Datia, Kota, Koraput, Bellary and Udhagamandalam should visit Vasad Centre for completing the analysis and interpretation of entire data in the second fortnight of Jan., 2010. A final workshop may be organized in April, 2010 for presentation of all analysis / results related to this core project. (Action: Dr. D.R. Sena, Dr. R.S. Kurothe and Co-PIs of Ground Water Recharge core project at Chandigarh, Datia, Kota, Koraput, Bellary and Udhagamandalam)</p>	<p>The data related to Ground Water Recharge core project were analyzed and the final workshop was organized on Sept. 3-4, 2010 at the Research Centre, Vasad.</p>
6.	<p>Procedure for computation of soil threat index may be standardized by Dr.(Ms.) Sharmistha Pal and communicated to all Heads of the Research Centres and Divisions by Jan. 31, 2010. Techniques for collecting data on emission of CO₂ and microbial activity may be provided by Dr. O.P. Chaturvedi and on aggregate stability by Dr. Sharmistha Pal to all Heads of the Research Centres / Divisions by 31st January, 2010. Data of all nine parameters may be collected by all Research Centres and Divisions in the ongoing projects and soil threat index may be computed and submitted to Dr. Sharmistha Pal for presentation in next IRC meeting. (Action: Dr. Sharmistha Pal, Dr. O.P. Chaturvedi and all Scientists/Heads of Research Centres/Divisions)</p>	<p>Procedure for computation of soil threat index was communicated by Dr. Sharmistha Pal and emission of CO₂ and microbial activity were provided by Dr. O.P. Chaturvedi to all Heads of Research Centres / Divisions. Computation of analysis on soil threat index was discussed and presented by Dr. Sharmistha Pal during IRC Meeting.</p>

7.	<p>Monthly Progress Reports (MPRs), which are being submitted by H&E Division and Research Centres, Koraput, Vasad, Datia and Bellary are not up to the mark. The reporting should be well planned and submitted in a quantifiable manner with economics. Dr. G.P. Juyal, Dr. K.P. Gore, Dr. R.S. Kurothe, Dr. S.P. Tiwari and Dr. A. Raizada should check it properly before it is submitted to the competent authority. (Action: Dr. G.P. Juyal, Dr. K.P. Gore, Dr. R.S. Kurothe, Dr. S.P. Tiwari and Dr. A. Raizada)</p>	<p>Dr. A. Raizada has not submitted any MPRs during the year. Dr. G.P. Juyal and Dr. S.P. Tiwari have submitted only one and four months, respectively. Dr. K.P. Gore and Dr. R.S. Kurothe have submitted the MPRs every month, however, quality of MPRs needs to be improved.</p>
8.	<p>The need for bringing quality publications out of the ongoing and concluded projects is essential for scientists particularly for Principal Scientists and Senior Scientists. Each scientist must endeavour to publish at least two research papers in reputed journals having high score as per NAAS ratings, every year with preferably one as international papers. Head of Research Centres / Divisions should promote this culture and ensure quality publications in future, which is an important indicator for the performance of individual scientists or the Institute as a whole as per AAR proforma. (Action: All Scientists/Heads of Research Centres and Divisions)</p>	<p>Efforts are being made by all Heads of Research Centres/Divisions to promote the culture of quality publications in the peer reviewed journals out of the ongoing and concluded research projects. It has been again reiterated in the IRC Meeting -2010 also.</p>
9.	<p>A core project on trenching may be formulated by Dr. R.S. Kurothe by Dec., 2009 on degraded lands with respect to different landuse systems including horticulture, agriculture and silvipastoral systems. (Action: Dr. R.S. Kurothe, Head, Research Centre, Vasad)</p>	<p>New project was submitted by Dr. R.S. Kurothe and agreed by the RAC and IRC to be carried out under different agro-climatic regions.</p>
10.	<p>Heads of Research Centres/Divisions should be fully acquainted with methodology and progress of each and every ongoing project of the concerned Research Centre / Division for smooth running of the projects and providing guidance to the concerned project leaders. (Action: All Heads of Research Centres / Divisions)</p>	<p>Recommendation of IRC is being followed by all Heads of Research Centres/Divisions for smooth conduct of the projects.</p>

RESEARCH PROGRAMMES AND SUB-PROGRAMMES

P-1 WATER EROSION APPRAISAL IN DIFFERENT AGRO-ECOLOGICAL REGIONS (P.I. – Dr. K.S. Dadhwal)

- 1.1 Inventory and database of erosion status using modern tools and procedures
- 1.2 On-site and off-site effects of erosion
- 1.3 Soil erosion processes and models

P-2 CONSERVATION MEASURES FOR SUSTAINABLE PRODUCTION SYSTEMS (P.I. – Dr. N.K. Sharma)

- 2.1 Resource conservation measures for arable lands
- 2.2 Resource conservation measures for non-arable lands

P-3 HYDROLOGICAL BEHAVIOUR OF WATERSHEDS FOR CONSERVATION PLANNING (P.I. – Er. C. Prakash)

- 3.1 Rainfall, runoff, vegetation, soil characteristics and management practices
- 3.2 Effect of conservation measures and landuse on ground water recharge
- 3.3 Water harvesting

P-4 REHABILITATION OF AREAS AFFECTED BY MASS EROSION (P.I. – Er. K.P. Tripathi)

- 4.1 Refinement of technologies for torrent training, landslide control and minespoils rehabilitation

P-5 PARTICIPATORY INTEGRATED WATERSHED MANAGEMENT (P.I. – Dr. O.P. Chaturvedi)

- 5.1 Methodologies for development of watersheds and decision support systems for interventions
- 5.2 Landuse planning
- 5.3 Impact on production, environment and bio-diversity
- 5.4 Farming system approach.
- 5.5 Watershed technologies (Strategic research)

P-6 SOCIO-ECONOMIC ANALYSIS AND POLICY DEVELOPMENT FOR WATERSHED MANAGEMENT (P.I. – Dr. Pradeep Dogra)

- 6.1 Resource economics
- 6.2 Institute village linkage programme for technology assessment and refinement
- 6.3 Common property resource management

P-7 HUMAN RESOURCE DEVELOPMENT AND TECHNOLOGY TRANSFER (P.I. – Dr. B.L. Dhyani)

- 7.1 Training methodology, need assessment, gender neutrality and evaluation
- 7.2 Organizational infrastructure & motivational parameters
- 7.3 Participatory approaches, dissemination of technology and adoption

STATUS OF PROGRAMME WISE ON-GOING PROJECTS

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.	Title of the Project	Leader and Associates	Centre/Division	Start	Completion	Remarks
1.	Landuse analysis by using remote sensing and GIS for resource conservation in shifting cultivated eastern ghats region of Orissa.	D. Barman H. Gowda P. Jakhar B.S. Naik	Koraput	2010	2012	To be continued
Comments: Scope to increase net sown area should be worked out on scientific basis by observing trend of past 30-40 years of the district / state data and it should be matched with the remote sensing data. Composite picture of landuse transformation into other areas such as industry, urbanization etc. may be presented. (Action: Dr. D. Barman)						
2.	Delineation and characterization of Mahi ravines using remote sensing and GIS in terms of resource potential planning.	Gopal Kumar D.R. Sena V.C. Pande A.K. Vishwakarma	Vasad	2009	2012	To be continued

1.2 ON-SITE AND OFF-SITE EFFECTS OF EROSION

3.	Effectiveness of vegetative filter strips in preventing soil and nutrient losses.	B.K. Rao A.K. Vishwakarma V.C. Pande	Vasad	2010	2014	To be continued
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1.3 SOIL EROSION PROCESSES AND MODELS

S. No.	Title of the Project	Leader and Associates	Centre/Division	Start	Completion	Remarks
4.	Erosion-productivity relationships for evaluating vulnerability and resiliency of soils under different agro-climatic regions of India.	D. Mandal S. Patra N.K. Sharma P. Dogra	HRD&SS, Dehradun	2008	2014	To be continued (Core Project)
		S.K. Dubey A.K. Singh R.K. Dubey	Agra	2009		
		M. Prabhavathi S.L. Patil R.N. Adhikari	Bellary	2009		
		R.P. Yadav Pratap Singh A.K. Tiwari	Chandigarh	2009		
		H. Biswas Dev Narayan D.C. Sahoo	Datia	2009		
		D. Barman P. Jakhar B.S. Naik	Koraput	2009		
		R.K. Singh B.K. Sethy	Kota	2009		
		D.V. Singh V.Selvi K. Kannan	Udhagamandalam	2009		
		Gopal Kumar R.S. Kurothe A.K. Vishwakarma	Vasad	2009		
<p>Comments: Ms. M. Prabhavathi will replace Dr. S.K.N. Math as leader at Bellary Centre. Name of Dr. D.C. Sahoo is included as second associate at Datia Centre. Name of Dr. S.N. Prasad is deleted at Kota Centre. Minimum data set required for the project, methodologies, management practices etc. should be sent by the PI to all the Co-PIs at Research Centres so that uniform pattern of data collection could be followed at all locations.</p> <p style="text-align: right;">(Action: Dr. D. Mandal and leaders at all Research Centres)</p>						
5.	Development of scalogram model based on soil parameters, landuse and topographic characteristics for estimation of sediment yield from small watersheds.	Sharmistha Pal V.K. Bhatt A.K. Tiwari	Chandigarh	2010	2011	To be concluded

P-2 CONSERVATION MEASURES FOR SUSTAINABLE PRODUCTION SYSTEMS

2.1 RESOURCE CONSERVATION MEASURES FOR ARABLE LANDS

S. No.	Title of the Project	Leader and Associates	Centre/Division	Start	Completion	Remarks
6.	Yield maximization and resource conservation through organic input management.	B.N. Ghosh N.K. Sharma Pradeep Dogra	Soil Science & Agronomy, Dehradun	2007	2014	To be continued
Comments: Slope of the study must be maintained at 2%.						(Action: Dr. B.N. Ghosh)
7.	Evaluation of organic farming vis-à-vis inorganic farming for resource conservation and sustained productivity under prominent cropping system.	K.S. Dadhwal N.K. Sharma S. Patra	Soil Science & Agronomy, Dehradun	2008	2015	To be continued
8.	Impact of maize based intercropping on resource conservation and productivity.	N.K. Sharma D. Mandal Ambrish Kumar	Soil Science & Agronomy, Dehradun	2008	2013	To be continued
9.	Integrated rain water management for enhancing rain water productivity in maize based cropping system.	M. Madhu Ambrish Kumar D. Mandal	HRD&SS, Dehradun	2010	2013	To be continued
10.	Evaluating productivity potential of <i>bhimal (Grewia optiva)</i> along with field crops.	Harsh Mehta K.S. Dadhwal	Plant Science, Dehradun	2005	2015	To be continued
Comments: Data of soil moisture should be collected and analyzed for its impact on growth.						(Action: Dr. Harsh Mehta)
11.	Productivity enhancement in fruit and flower based two tier horticulture systems through integrated nutrient management and mulching.	A.C. Rathore B.N. Ghosh	Plant Science, Dehradun	2008	2015	To be continued
12.	Yield maximization and resource conservation through integrated nutrient management and tillage combinations in the ravines of the Yamuna river.	P.K. Panda A.K. Singh S.K. Dubey	Agra	2011	2014	To be continued (New Project)
Comments: Recommendations that emerged out in the earlier tillage projects conducted at the Centre may be taken as treatment in place of zero tillage. INM with gypsum and without gypsum, organic manure and inorganic fertilizers may be taken as treatments. The treatments may be modified and RPF I may be submitted accordingly. Percentage area of the region to benefit from the study may be spelt out. Review of literature on work done on gram in the region must be undertaken.						(Action: Dr. P.K. Panda)
13.	Resource conservation and sustainable crop production using bio-fertilizers and organics in degraded Shiwaliks.	Pawan Sharma Pratap Singh Ram Prasad S.L. Arya	Chandigarh	2007	2011	To be concluded

S. No.	Title of the Project	Leader and Associates	Centre/Division	Start	Completion	Remarks
14.	Conservation tillage for resource management and higher production from Shiwaliks.	R.P. Yadav Pratap Singh Pawan Sharma	Chandigarh	2009	2015	To be continued
Comments: Another treatment (T ₆ - Conservation tillage + 25 N) may be included in the study.						(Action: Dr. R.P. Yadav)
15.	<i>In situ</i> moisture conservation practices under aonla based agro-forestry system for sustainable production in red soils of Bundelkhand.	Dev Narayan H. Biswas	Datia	2010	2018	To be continued
16.	Developing three tier strip farming system for sloppy uplands: A measure to cope up with monsoon vagaries and resource conservation in Bundelkhand region.	S.P. Tiwari Dev Narayan D.C. Sahoo	Datia	2011	2014	To be continued (New Project)
Comments: The project may be conducted in NWDPRWA watershed. In place of strip-cropping, inter-cropping may be taken. Dr. Om Prakash, Sr. Scientist (Agril. Extn.) should ensure the farmers' participation as per approved plan.						(Action: Dr S.P. Tiwari and Dr. Om Prakash)
17.	Evaluating the different crop combinations for strip cropping in terms of soil, nutrient losses and their productivity in uplands of Eastern Ghats.	P. Jakhar B.S.Naik D. Barman	Koraput	2009	2013	To be continued
Comments: Name of Dr. K.P. Gore is deleted. Project is extended for two years till 2013. Ratio of treatments may be kept as 6:4, 8:4, 10:4 and 12:4.						(Action: Mr. P. Jakhar)
18.	Resource conservation by alley cropping in shifting cultivated degraded lands of Eastern Ghats.	H. Gowda P. Jakhar D. Barman	Koraput	2009	2013	To be continued
Comments: Name of Dr. K.P. Gore is deleted.						
19.	Impact assessment of soil and water conservation measures and land use changes on sustainability of soil health under watershed development projects.	R.K. Singh H.R. Meena	Kota	2011	2014	To be continued (New Project)
20.	Techniques for establishment of tea on terrace riser in the Nilgiris.	O.P.S. Khola D.V. Singh V. Selvi	Udhagamandalam	2008	2012	To be continued
21.	Improvisation of terraces of farmers' fields in the Nilgiris.	K. Kannan	Udhagamandalam	2008	2011	To be concluded
Comments: Project is extended for one year till 2011 due to crop failure.						(Action: Dr. K. Kannan)
22.	Optimum tillage and organic manuring practices for crop production and resource conservation in the Nilgiris.	O.P.S. Khola K. Kannan	Udhagamandalam	2008	2011	To be concluded

2.2 RESOURCE CONSERVATION MEASURES FOR NON-ARABLE LANDS

S. No.	Title of the Project	Leader and Associates	Centre/Division	Start	Completion	Remarks
23.	Fuelwood and fodder production from densified plantations on old riverbed land.	J. Jayaprakash Charan Singh B.N. Ghosh	Plant Science, Dehradun	1997	2012	To be continued
Comments: Leader of the project informed that the objectives of the project are mostly achieved. Hence, the project may be concluded in 2012 instead of 2016. (Action: Dr. J. Jayaprakash)						
24.	Evaluating the performance and developing techniques for enhancing growth and seed yield of <i>Jatropha curcas</i> in degraded lands of sub-humid Himalayas.	J. Jayaprakash D. Mandal	Plant Science Dehradun	2006	2015	To be continued
25.	Enhancement of guava productivity through canopy management and mulching in rainfed bouldery riverbed lands.	A.C. Rathore B.N. Ghosh	Plant Science, Dehradun	2008	2015	To be continued
26.	Evaluation of traditional minor millet based agro-forestry systems under recommended agri-silvicultural practices of North-Western Himalayas.	Harsh Mehta J.M.S. Tomar D. Mandal	Plant Science, Dehradun	2009	2018	To be continued
27.	Effect of degradation on conservation and production attributes of Sal forests in Uttarakhand.	O.P. Chaturvedi M. Shankar J. Jayaprakash J.M.S. Tomar Charan Singh	Plant Science, Dehradun	2010	2015	To be continued
Comments: Mr. M. Shankar will replace Dr. K.K. Choudhary as first associate. (Action: Dr. O.P. Chaturvedi)						
28.	Peach based agri-horticulture land use system for degraded Shiwaliks.	Ram Prasad Pratap Singh R.P. Yadav S.L. Arya	Chandigarh	2008	2015	To be continued
29.	Developing SALT (Sloping Agricultural Land Technology) for resource conservation and economic upliftment in Shiwaliks.	Pankaj Panwar Ram Prasad V.K. Bhatt Pratap Singh Sharmistha Pal	Chandigarh	2010	2015	To be continued

S. No.	Title of the Project	Leader and Associates	Centre/Division	Start	Completion	Remarks
30.	Resource budgeting in agro-forestry for livelihood security by modifying WANuLCAS model under Indian condition.	Pankaj Panwar Sharmistha Pal V.K. Bhatt Ram Prasad	Chandigarh	2011	2016	To be continued (New Project)
Comments: Project may be conducted only at Chandigarh Centre and Dehradun may not be a part of this study. Instead of crops, grasses may be taken. Multislot devices with appropriate number of slots may be taken in place of Ramser samplers. (Action: Dr. Pankaj Panwar)						
31.	Evaluation of moisture conservation techniques for sustainable production of Tree Borne Oil Seeds (TBOS) in Bundelkhand.	M.N. Ramesha P.P. Adhikary	Datia	2010	2017	To be continued
32.	Bio-engineering measures for resource conservation and management in red sloppy lateritic soils of Orissa.	B.S. Naik P. Jakhar H. Gowda D. Barman	Koraput	2008	2011	To be concluded
Comments: Name of Dr. D. Barman is included as third associate of the project. (Action: Er. B.S. Naik)						
33.	Performance evaluation of different oil yielding grasses in shifting cultivated degraded lands of Orissa.	H. Gowda D. Barman	Koraput	2011	2014	To be continued (New Project)
Comments: Harvesting may be done only on 100%. (Action: Mr. H. Gowda)						
34.	Evaluation of different under utilized fruit species with varying inter-space managements in Chambal ravines.	H.R. Meena A.K. Parandiyal Ashok Kumar	Kota	2006	2015	To be continued
Comments: Revised RPF I may be submitted for changing V- shaped micro-catchment to half moon shaped. Name of Dr. R.K. Singh is deleted. (Action: Mr. H.R. Meena)						
35.	Evaluation of promising oilseed tree species under silvi-pastoral system for rehabilitation of Chambal ravines.	A.K. Parandiyal Ashok Kumar	Kota	2008	2015	To be continued
Comments: Benefit-cost analysis may be worked out yearly. Name of Dr. R.K. Singh is deleted. (Action: Dr. A.K. Parandiyal)						
36.	Evaluation of carbon sequestration potential of different tree based production systems in Chambal ravines.	A.K. Parandiyal R.K. Singh	Kota	2011	2015	To be continued (New Project)
Comments: Sites for the project should be identified on freshly reclaimed ravine lands. Already available equations for assessing below ground biomass may be used. Works of Dr. A.K. Parandiyal and Dr. R.K. Singh should be clearly defined. (Action: Dr. A.K. Parandiyal and Dr. R.K. Singh)						

S. No.	Title of the Project	Leader and Associates	Centre/Division	Start	Completion	Remarks
37.	Enhancing productivity of non-arable ravine lands by plantation of <i>A. sapota</i> with intercropping systems.	A.K. Vishwakarma B.K. Rao Gopal Kumar V.C. Pande	Vasad	2008	2022	To be continued
38.	Field evaluation of design of trenches under different agro-climatic regions	R.S. Kurothe V.C. Pande D.R. Sena Gopal Kumar	Vasad	2011	2015	To be continued (Core Project) (New Project)
		S. Kala R.K. Dubey A.K. Singh S.K. Dubey	Agra			
		A. Raizada R.N. Adhikari M. Prabhavathi	Bellary			
		A.K. Tiwari Pankaj Panwar V.K. Bhatt Sharmistha Pal	Chandigarh			
		D.C. Sahoo P.P. Adhikary M.N. Ramesha S.P. Tiwari	Datia			
		B.S. Naik D. Barman H. Gowda	Koraput			
		B.K. Sethy Shakir Ali Ashok Kumar	Kota			
		S. Manivanan K. Kannan	Udhagamandalam			

Comments: Since the study is on degraded lands, the project may be conducted only in silvipastoral system. Landuse system predominant in the area may be taken. Intensity of trenching may be adopted as 30%, 60% and 80% while 0% and 100% may be skipped. (Action: Dr. R.S. Kurothe and leaders at other Research Centres)

P-3 HYDROLOGICAL BEHAVIOUR OF WATERSHEDS FOR CONSERVATION PLANNING**3.1 RAINFALL, RUNOFF, VEGETATION, SOIL CHARACTERISTICS AND MANAGEMENT PRACTICES**

S. No.	Title of the Project	Leader and Associates	Centre/Division	Start	Completion	Remarks
39.	Assessment of impact of climate change on hydrology and crop production in the selected watersheds.	K.P. Tripathi D.R. Sena S. Patra Gopal Kumar A.K. Vishwakarma	Hydrology & Engineering, Dehradun	2007	2011	To be concluded (NPCC Funded)
<p>Comments: A format may be devised by Dec. 10, 2010 by Er. K.P. Tripathi for analyzing rainfall data and correlating it with production data. A sample data set may be analyzed by Jan. 15, 2011 and sent to all Research Centres and Divisions by Er. K.P. Tripathi. Er. K.P. Tripathi may hold discussion with all Heads of Research Centres / Divisions for clarifying the doubt regarding data to be collected with respect to climate change.</p> <p style="text-align: right;">(Action: Er. K.P. Tripathi and Heads of all Research Centres / Divisions)</p>						
40.	Hydrological evaluation of recommended forest trees in Himalayan foothills.	O.P. Chaturvedi Ambrish Kumar Charan Singh B.N. Ghosh	Plant Science, Dehradun	2004	2018	To be continued
<p>Comments: Objectives which pertain to hydrological behaviour should only be kept in the project. Associates other than the approved project team should be removed from the project.</p> <p style="text-align: right;">(Action: Dr. O.P. Chaturvedi)</p>						
41.	Evaluation of hydrological behaviour and production potential of recommended landuse system / practices under different agro-ecological regions of India.	J.M.S. Tomar S. Patra, A.C. Rathore N.K. Sharma B.N. Ghosh M. Muruganandam S.K. Dubey R.K. Dubey A.K. Singh, S. Kala A. Raizada R.N. Adhikari S.L. Patil M. Prabhavati V.K. Bhatt Pratap Singh Ram Prasad Sharmistha Pal Pankaj Panwar A.K. Tiwari	Plant Science, Dehradun Agra Bellary Chandigarh	2011	2015	To be continued (Core Project) (New Project)

S. No.	Title of the Project	Leader and Associates	Centre/Division	Start	Completion	Remarks
		S.P. Tiwari D.C. Sahoo M.N. Ramesha P.P. Adhikary Dev Narayan	Datia			
		B.S. Naik, H. Gowda P. Jakhar, D. Barman	Koraput			
		Shakir Ali A.K. Parandiyal R.K. Singh, H.R. Meena	Kota			
		V. Selvi, D.V. Singh K. Kannan	Udhagamandalam			
		R.S. Kurothe B.K. Rao A.K. Vishwakarma Gopal Kumar	Vasad			
<p>Comments: RPF I as per landuse system, plan, site etc. should be submitted by leaders of all Research Centres to Dr. J.M.S. Tomar, Core leader by Dec. 31, 2010, who after scrutinizing them will submit the RPFs. (Action: Dr. J.M.S. Tomar and leaders at all Research Centres)</p>						
42.	Hydrological response to micro-catchments under different land uses with vegetation manipulation.	V.K. Bhatt, A.K. Tiwari Pankaj Panwar	Chandigarh	2005	2012	To be continued
<p>Comments: Thinning of trees alongwith cleaning of shrubs should be done in treatment plots to induce optimum runoff. Intensity of thinning may be decided after consultation with forest department. (Action: Dr. V.K. Bhatt)</p>						
43.	Analysis of climatic data for evolving drought indices towards planning sustainable cropping systems in Bundelkhand.	P.P. Adhikary M.N. Ramesha	Datia	2010	2014	To be continued
44.	Hydrological implication of sequential alternation of land use covers in a ravinous catchment.	R.S. Kurothe D.R. Sena, V.C. Pande Gopal Kumar A.K. Vishwakarma	Vasad	2004	2012	To be continued
45.	Hydrologic and economic evaluation of Bamboo plantations in gullied lands under major ravines of India.	B.K. Rao Gopal Kumar V.C. Pande	Vasad	2008	2011	To be concluded (National Bamboo Mission)

S. No.	Title of the Project	Leader and Associates	Centre/Division	Start	Completion	Remarks
		A.K. Singh S.K. Dubey S. Kala	Agra			
		A.K. Parandiyal Shakir Ali	Kota			
Comments: Name of Ms. S. Kala is included as second associate at Agra Centre. Correlation between nine rainfall events may be developed for all treatments. Silt deposition may be calculated in volume by cut and fill method. (Action : Dr. B.K. Rao / Dr. A.K. Singh / Dr. A.K. Parandiyal)						

3.2 EFFECT OF CONSERVATION MEASURES AND LANDUSE ON GROUND WATER RECHARGE

46.	Design and development of site specific artificial groundwater recharge filters.	Gopal Kumar D.R. Sena	Vasad	2009	2012	To be continued
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3.3 WATER HARVESTING

47.	Integration of low cost water harvesting and micro irrigation for resource conservation and sustainable vegetable production in terraced lands in North Western Himalayas.	S. Patra G.P. Juyal A.C. Rathore	Hydrology & Engineering, Dehradun	2010	2012	To be continued
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Comments: Scientists failed to convince the farmers to adopt the technologies which is scientifically and logically correct and which was to be initiated in *Kharif*, 2010. (Action: Er. S. Patra)

48.	Estimation of water budget components for predominant land uses of south-eastern Rajasthan for conservation planning.	B.K. Sethy R.K. Singh H.R. Meena	Kota	2010	2015	To be continued
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P-4 REHABILITATION OF AREAS AFFECTED BY MASS EROSION

4.1 REFINEMENT OF TECHNOLOGIES FOR TORRENT TRAINING, LANDSLIDE CONTROL AND MINESPOILS REHABILITATION

49.	To study the performance of special types of spurs through laboratory studies (in hydraulic flume).	G.P. Juyal S. Patra	Hydrology & Engineering, Dehradun	2009	2011	To be concluded
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Comments: The study may be modified to different combinations of slopes and discharge rates. The slope of the flume bed should be variable within the maximum range and not less than 1 percent for any combination of treatments. (Action: Dr. G.P. Juyal)

S. No.	Title of the Project	Leader and Associates	Centre/Division	Start	Completion	Remarks
50.	Cost effective conservation measures for management of medium and deep ravinous lands	B.K. Sethy A.K. Parandiyal Shakir Ali Ashok Kumar R.K. Singh	Kota	2004	2012	To be continued
51.	Productive utilization of ravines through introduction of horticulture and improved planting materials.	A.K. Parandiyal B.K. Sethy H.R. Meena	Kota	2005	2013	To be continued
Comments: Name of Dr. R.K. Singh is deleted. Project is extended for three years till 2013 to collect biomass production data in a systematic manner and assessing the biomass production by utilizing available equations. Economics of the system may be worked out. Changes in soil characteristics and ground flora should be studied. (Action: Dr. A.K. Parandiyal)						

P-5 PARTICIPATORY INTEGRATED WATERSHED MANAGEMENT

5.1 METHODOLOGIES FOR DEVELOPMENT OF WATERSHEDS AND DECISION SUPPORT SYSTEMS FOR INTERVENTIONS

52.	Resource conservation and management in Netrenahalli watershed, Chitradurga district, Karnataka.	R.N. Adhikari S.L. Patil A. Raizada M. Prabhavathi	Bellary	2008	2011	To be concluded TDET (MoRD)
Comments : Name of Dr. S.K.N. Math is deleted and Ms. M. Prabhavathi is associated as third associate. Data may be collected as to how many times the surplus flow and rain storms occurs. PI of the project and Head of Centre must ensure maximum fund utilization during the year as the project is to be concluded in March, 2012. (Action: Er. R.N. Adhikari/Dr. A. Raizada)						

5.4 FARMING SYSTEM APPROACH

53.	Evaluation of fish based Integrated Farming Systems in foothills and mid-hills of Himalayas.	M. Muruganandam C. Prakash	Hydrology & Engineering, Dehradun	2009	2011	To be concluded
Comments: Leader of the project should contact the watershed directorate etc. for mass scale adoption of Sainji IFS model. (Action: Mr.M.Muruganadam)						
54.	Enhancement of livelihood security through sustainable farming systems and related farm enterprises in North-West Himalayas.	B.L. Dhyani Ambrish Kumar D. Mandal	HRD&SS, Dehradun	2007	2011	To be concluded (NAIP Project)

S. No.	Title of the Project	Leader and Associates	Centre/Division	Start	Completion	Remarks
55.	Multiple criteria decision for identifying suitable Integrated Farming Systems in different agro-ecological regions for optimizing resource conservation and productivity.	Pradeep Dogra N.K. Sharma A.C. Rathore M. Muruganandam, S. Patra	RCM Unit, Dehradun	2009	2013	To be continued (Core Project)
		P.K. Panda A.K. Singh R.B. Meena	Agra			
		S.L. Patil R.N. Adhikari, M. Prabhavathi	Bellary			
		S.L. Arya Pratap Singh Sharmistha Pal Ram Prasad	Chandigarh			
		Dev Narayan P.P. Adhikary M.N. Ramesha	Datia			
		P. Jakhar B.S. Naik D. Barman	Koraput			
		Ashok Kumar H.R. Meena B.K. Sethy	Kota			
		K. Kannan D.V. Singh V. Selvi	Udhagamandalam			
		V.C. Pande Gopal Kumar A.K. Vishwakarma	Vasad			

Comments: Mr. R.B. Meena will replace Ms. M. Prabhavathi at Agra Centre and name of Ms. M. Prabhavathi is included as second associate at Bellary Centre. Names of Dr. S.K.N. Math and Dr. S.N. Prasad are deleted at Bellary and Kota Centre, respectively. Out of 18 IFS plans, 11 plans should be generated by March, 2011 and implemented during *Kharif*, 2011 and remaining 7 plans should be generated by Oct., 2011 and all 18 plans must be executed from *Rabi*, 2011. Plan formulated should be adopted *in-toto* by the IFS farmers, irrespective of changes in market prices and other external forces, and data with respect to these changes should be collected from the control (similar) farmer's fields. A workshop may be organized in April, 2011 to review the progress of the project.

(Action: Dr. Pradeep Dogra and leaders of all Centres)

5.5 WATERSHED TECHNOLOGIES (STRATEGIC RESEARCH)

S. No.	Title of the Project	Leader and Associates	Centre/Division	Start	Completion	Remarks
56.	Development of model watershed Iduhatti in the Nilgiris.	D.V. Singh V. Selvi P. Sundarambal R. Ragupathy K. Kannan	Udhagamandalam	2008	2011	To be concluded (HADP Funded)

P-6 SOCIO-ECONOMIC ANALYSIS AND POLICY DEVELOPMENT FOR WATERSHED MANAGEMENT**6.1 RESOURCE ECONOMICS**

57.	Relative performance of watershed development projects under different institutional structures in semi-arid Karnataka and Andhra Pradesh.	S.L. Patil	Bellary	2008	2011	To be concluded
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Comments: Project is extended for one year till 2011 so that the data may be analyzed by Dr. B. Mondal (presently on study leave) who initiated the project for arriving a logical conclusion. (Action: Dr. S.L. Patil and Dr. B. Mondal)

6.2 INSTITUTE VILLAGE LINKAGE PROGRAMME FOR TECHNOLOGY ASSESSMENT AND REFINEMENT

58.	Participatory dissemination and assessment of land and water management technologies for livelihood security in rainfed areas of north-western Himalayas under TDET scheme, Dept. of Land Resources, Ministry of Rural Development.	B.L. Dhyani Ambrish Kumar Charan Singh Bankey Bihari M. Muruganandam D. Mandal M. Madhu	HRD&SS, Dehradun	2007	2011	To be concluded TDET (MoRD)
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Comments: Project is extended for one year till 2011 for impact monitoring and evaluation. (Action: Dr. B.L. Dhyani)

6.3 COMMON PROPERTY RESOURCE MANAGEMENT

S. No.	Title of the Project	Leader and Associates	Centre/Division	Start	Completion	Remarks
59.	Evaluation of institutional arrangements and impact of community based water storage structures in different agro-climatic zones of India	Bankey Bihari, B.L. Dhyani, C. Prakash	RCM Unit, Dehradun	2008	2011	To be concluded (Core Project)
		R.N. Adhikari	Bellary			
		S.L. Arya, V.K. Bhatt	Chandigarh			
		Om Prakash	Datia			
		Ashok Kuma,Shakir Ali	Kota			
		P. Sundaramba	Udhagamandalam			
		V.C. Pande,G.L. Bagdi D.R. Sena	Vasad			
Comments: Name of Dr. D.C. Sahoo is deleted at Udhagamandalam Centre. Selection of structures should be completed immediately and data collection must be speeded up. (Action: Dr. Pradeep Dogra and leaders at Research Centres)						

P-7 HUMAN RESOURCE DEVELOPMENT AND TECHNOLOGY TRANSFER

7.1 TRAINING METHODOLOGY, NEED ASSESSMENT, GENDER NEUTRALITY AND EVALUATION

60.	Capacity building programmes for watershed management in India: Assessment and impact analysis.	Bankey Bihari B.L. Dhyani,P. Dogra	HRD & SS, Dehradun	2008	2011	To be concluded (Core Project)
		A. Raizada	Bellary			
		S.L. Arya	Chandigarh			
		Om Prakash	Datia			
		Ashok Kumar	Kota			
		P. Sundarambal	Udhagamandalam			
		G.L. Bagdi, V.C. Pande	Vasad			
Comments: Dr. A. Raizada will replace Dr. S.K.N. Math at Bellary Centre. Cumulative index from properly weighed parameters may be developed to compare the watersheds developed by trained and un-trained officers in terms of impact of training for each attribute. (Action: Dr. Bankey Bihari)						

NOTE :

- Although the presentation mode this year was category wise, yet the listing has been done on the basis of identified programmes as done in previous years.
- The year of start and completion in respect of all the projects will be according to the relevant financial years.
- Projects without any soil conservation aspects do not fit into the mandate of the Institute. Hence, observations to justify the study may be recorded.
- Timely funding should be assured well in advance for those projects which are being externally funded.
- All RPFs i.e. RPF I for new projects approved in IRC-2010, RPF II (2010-11) for on-going projects and RPF III for the projects concluded in 2010 should be submitted by March 31, 2011 positively.

PROJECTS CONCLUDED IN 2010

S. No.	Programme No.	S. No. of IRC Meeting Proc. 2009	Title of the Project	Centre/Division
1.	1.3	4	Development and validation of runoff and erosion prediction models in different agro-ecological regions.	H&E, Dehradun, Chandigarh, Kota, Vasad
2.	1.3	7	Modified soil erodibility K factor for the soil in the Bundelkhand region, India.	Datia
Comments: Field data may be collected and used in the evolved equation and then compared with the reported values to test the validity of the evolved equation. Sensitivity analysis may also be done. RUSLE model equation may be checked for more parameters. (Action: Dr. P.P. Adhikary)				
3.	2.1	16	Intercropping and tillage practices for sustainable production under rainfed condition in Bundelkhand.	Datia
Comments: On the basis of recommendations of project, the technologies should be spread to the farmers, state agencies etc. About 5-6 villages around the Research Farm should be selected and technologies may be demonstrated to spread these in the adjoining areas. (Action: Dr. Dev Narayan)				
4.	2.1	18	Conserving resources and augmenting livelihood of small holders through multi-tier cropping systems in tribal dominant Eastern Ghats of Orissa.	Koraput
5.	2.1	21	Green manuring for resource conservation, soil health and productivity in fallow mustard cropping sequence.	Kota
6.	2.1	25	Integrated management of soil health for sustainable production in the Nilgiris.	Udhagamandalam
7.	2.2	26	Evaluation of the agro-forestry systems for marginal lands in Doon valley.	HRD&SS, Dehradun
Comments: Trees should be maintained and data recording on growth parameters should be continued. (Action: Dr. Charan Singh)				
8.	2.2	32	Evaluation of fruit species vis-à-vis conservation techniques for salt affected black soils of semi-arid tropic regions.	Bellary
Comments: As the project was not implemented and maintained as per approved plan hence, the project is closed in the year 2010. (Action: Dr. A. Raizada)				
9.	2.2	33	Study on effect of <i>in situ</i> moisture conservation measures on runoff, soil loss and yield of maize crop.	Chandigarh
10.	2.2	40	Effectiveness of different bio-engineering measures in new tea plantation in the Nilgiris.	Udhagamandalam
Comments: Production aspect is missing in the results. Economics of the system may be worked out with conservation aspects. Intensity and volume of trenches per ha may be worked out. Two papers out of the study should be submitted for publication by Dec., 2010. (Action: Dr. D.C. Sahoo)				
11.	3.1	42	Hydrological behaviour of small watersheds and sustainability of production systems.	H&E, Division, Dehradun
Comments: Project should be maintained as a demonstration site. Data of 2009-10 should be analyzed and presented in the next IRC meeting. NDVI to be calculated for the watershed as a whole. Good publications should be brought out. (Action: Er. C. Prakash)				

S. No.	Programme No.	S. No. of IRC Meeting Proc. 2009	Title of the Project	Centre/Division
12.	3.1	43	Testing of hydrological instruments.	H&E Division, Dehradun
Comments: A detailed report of all tested instruments may be prepared and sent to all Research Centres / Divisions. Provision for procurement of instruments may be made in SFC memo of XII plan. Laboratory of equipments should be maintained for demonstration. (Action: Er. K.P. Tripathi)				
13.	3.1	49	Design development and testing of simple and low cost continuous mechanical sediment yield sampler.	Vasad
Comments: Instruments should be made operational in next three months and presented in the next IRC meeting. (Action: Dr. D.R. Sena)				
14.	3.3	53	Hydrological evaluation of CBT in Himalayan foothills.	HRD&SS, Dehradun
Comments: Leader should propose a new project with similar set up but with new crop combinations and treatments in the next IRC meeting. (Action: Dr. Ambrish Kumar)				
15.	4.1	58	Landslide characterization and management plan for the Nilgiris.	Udhagamandalam
Comments: Collection of rainfall data may be continued with the available funds. Economics may be worked out for the damage occurring due to landslides covering all aspects e.g. loss of resources, time etc. (Action: Dr. D.V. Singh)				

NEW PROJECTS APPROVED IN IRC MEETING – 2010

S. No.	Prog. No.	S.No. of this proceedings	Title of the Project	Centre/Division
1.	2.1	12	Yield maximization and resource conservation through integrated nutrient management and tillage combinations in the ravines of the Yamuna river.	Agra
2.	2.1	16	Developing three tier strip farming system for sloppy uplands : A measure to cope up with monsoon vagaries and resource conservation in Bundelkhand region.	Datia
3.	2.1	19	Impact assessment of soil and water conservation measures and land use changes on sustainability of soil health under watershed development projects.	Kota
4.	2.2	30	Resource budgeting in agro-forestry for livelihood security by modifying WANuLCAS model under Indian condition.	Chandigarh
5.	2.2	33	Performance evaluation of different oil yielding grasses in shifting cultivated degraded lands of Orissa.	Koraput
6.	2.2	36	Evaluation of carbon sequestration potential of different tree based production systems in Chambal ravines.	Kota
7.	2.2	38	Field evaluation of design of trenches under different agro-climatic regions	Vasad, Agra, Bellary, Chandigarh, Datia, Koraput, Kota, Udhgamandalam
8.	3.1	41	Evaluation of hydrological behaviour and production potential of recommended landuse system / practices under different agro-ecological regions of India.	Pl. Science Division, D.Dun, Agra, Bellary, Chandigarh, Datia, Koraput, Kota, Udhgamandalam, Vasad

OBSERVATIONAL TRIAL APPROVED FOR 2011

S.No.	Title of project	Leader and Associate	Centre/Division
1.	Decision support system (DSS) for identifying best management practices in erosion risk area.	N.M. Alam D. Mandal Chayna Jana	RCM Unit, Dehradun
Comments: Necessary data may be collected and software may be developed for identifying best management practices based on tolerance limit and presented in the next IRC meeting. (Action: Dr. N.M. Alam)			

DIVISION/CENTRE-WISE NUMBER OF ON-GOING PROJECTS**TOTAL NUMBER OF PROJECTS (DIVISION/CENTRE-WISE)**

S. No.	DIVISION/CENTRE	SL. NO. OF ON-GOING PROJECTS	TOTAL
1.	Dehradun		
	• Soil Science & Agronomy	6,7,8	03
	• Hydrology & Engineering	39,47,49,53	04
	• HRD & SS	4,9,54,58,60	05
	• Plant Science	10,11,23,24,25,26,27,40,41	09
	• RCM Unit	55,59	02
2.	Agra	4,12,38,41,45,55	06
3.	Bellary	4,38,41,52,55,57,59,60	08
4.	Chandigarh	4,5,13,14,28,29,30,38,41,42,55,59,60	13
5.	Datia	4,15,16,31,38,41,43,55,59,60	10
6.	Koraput	1,4,17,18,32,33,38,41,55	09
7.	Kota	4,19,34,35,36,38,41,45,48,50,51,55,59,60	14
8.	Udhagamandalam	4,20,21,22,38,41,55,56,59,60	10
9.	Vasad	2,3,4,37,38,41,44,45,46,55,59,60	12
	Grand Total		105

PROGRAMME-WISE NUMBER OF PROJECTS

S. No.	DIVISION/CENTRE	P-1	P-2	P-3	P-4	P-5	P-6	P-7	Total
1.	Dehradun								
	◆ Soil Science & Agronomy	-	3	-	-	-	-	-	03
	◆ Hydrology & Engineering	-	-	2	1	1	-	-	04
	◆ HRD & SS	1	1	-	-	1	1	1	05
	◆ Plant Science	-	7	2	-	-	-	-	09
	◆ RCM Unit	-	-	-	-	1	1	-	02
2.	Agra	1	2	2	-	1	-	-	06
3.	Bellary	1	1	1	-	2	2	1	08
4.	Chandigarh	2	6	2	-	1	1	1	13
5.	Datia	1	4	2	-	1	1	1	10
6.	Koraput	2	5	1	-	1	-	-	09
7.	Kota	1	5	3	2	1	1	1	14
8.	Udhagamandalam	1	4	1	-	2	1	1	10
9.	Vasad	3	2	4	-	1	1	1	12
	Grand Total	13	40	20	03	13	09	07	105

NUMBER OF PROJECTS WITH INDIVIDUAL SCIENTIST

In the Staff Research Council Meeting of 1995, certain norms regarding **MAXIMUM** number of projects that any scientist of CSWCRTI may hold, were decided as mentioned below:

A. Leadership in one project with association in other four projects (1+4)

or

B. Leadership in two projects with association in other two projects (2+2)

or

C. Leadership in three projects without association in any other project (3+0)

In the Staff Research Council Meeting of 2000, certain norms regarding **MINIMUM** number of projects that any scientist of CSWCRTI may hold, were decided as mentioned below:

A. Leadership in one project with association in other one project (1+1)

or

B. Association in two projects (0+2).

The number of projects with each individual scientist of the Institute, after the IRC Meeting of 2010 is as follows:

S. No.	Name	Designation	Leader	Associate	Total	S. No. of projects to be concluded
Soil Science and Agronomy Division						
1.	Dr. K.S. Dadhwal	Head of Division	1(7)	1(10)	2	-
2.	Dr. N.K. Sharma	Pr. Scientist (Agro.)	1(8)	5(4,6,7,41,55)	6	-
3.	Dr. B.N. Ghosh	Sr. Scientist (Soils)	1(6)	5(11,23,25,40,41)	6	-
4.	Mr. M. Shankar	Scientist (Soils)	-	1(27)	1	-
Hydrology and Engineering Division						
5.	Dr. G.P. Juyal	Head of Division	1(49)	1(47)	2	49
6.	Er. K.P. Tripathi	Pr. Scientist (Engg.)	1(39)	-	1	39
7.	Dr. P.R. Ojasvi	Pr. Scientist (Engg.)	-	-	-	-
8.	Er. S.S. Shrimali	Sr. Scientist (Com.App.)	-	-	-	-
9.	Mr. M. Muruganandam	Scientist (SS) (Fisheries)	1(53)	3(41,55,58)	4	53,58
10.	Er. S. Patra	Scientist (Engg.)	1(47)	6(4,7,39,41,49,55)	7	39,49
11.	Ms. Chayna Jana	Scientist (Ag. Stat.)	-	-	-	-
Human Resource Development and Social Science Division						
12.	Dr. B.L. Dhyani	Head of Division	2(54,58)	2(59,60)	4	54,58,59,60
13.	Dr. M. Madhu	Sr. Scientist (Agro.)	1(9)	1(58)	2	58
14.	Dr. Charan Singh	Sr. Scientist (Forestry)	-	4(23,27,40,58)	4	58
15.	Dr. Bankey Bihari	Sr. Scientist (Ag. Extn.)	1(60)	2(58,59)	3	58,59,60
16.	Dr. Ambrish Kumar	Sr. Scientist (Engg.)	-	5(8,9,40,54,58)	5	54,58
17.	Dr. D. Mandal	Sr. Scientist (Soils)	1(4)	6(8,9,24,26,54,58)	7	54,58

(Figures in parenthesis are serial number of on-going projects listed in these proceedings).

S. No.	Name	Designation	Leader	Associate	Total	S. No. of projects to be concluded
Plant Science Division						
18.	Dr. O.P. Chaturvedi	Head of Division	2(27,40)	-	2	-
19.	Dr. Harsh Mehta	Pr. Scientist (Pl. Breed.)	2(10,26)	-	2	-
20.	Dr. J.M.S. Tomar	Sr. Scientist (Forestry)	1(41)	2(26,27)	3	-
21.	Dr. A.C. Rathore	Scientist (SS) (Hort.)	2(11,25)	3(41,47,55)	5	-
22.	Dr. J. Jayaprakash	Scientist (Forestry)	2(23,24)	1(27)	3	-
Research Coordination & Management Unit						
23.	Er. C. Prakash	Pr. Scientist (Engg.)	-	2(53,59)	2	53,59
24.	Dr. Pradeep Dogra	Sr. Scientist (Ag. Eco.)	2(55,59)	3(4,6,60)	5	59,60
25.	Dr. N.M. Alam	Scientist (Ag. Stat.)	-	-	-	-
Research Centre, Agra						
26.	Dr. S.K. Dubey	Head of Centre	2(4,41)	3(12,38,45)	5	45
27.	Dr. P.K. Panda	Sr. Scientist (Agro.)	2(12,55)	-	2	-
28.	Dr. A.K. Singh	Sr. Scientist (Engg.)	1(45)	5(4,12,38,41,55)	6	45
29.	Mr. R.K. Dubey	Scientist (SS) (Agro.)	-	3(4,38,41)	3	-
30.	Er. S.K. Srivastava	Scientist (Engg.)	-	-	-	-
31.	Dr. (Ms.) S. Kala	Scientist (Forestry)	1(38)	2(41,45)	3	45
32.	Mr. R.B. Meena	Scientist (Soils)	-	1(55)	1	-
Research Centre, Bellary						
33.	Dr. A. Raizada	Head of Centre	3(38,41,60)	1(52)	4	52,60
34.	Er. R.N. Adhikari	Pr. Scientist (Engg.)	2(52,59)	4(4,38,41,55)	6	52,59
35.	Dr. S.L. Patil	Sr. Scientist (Agro.)	2(55,57)	3(4,41,52)	5	52,57
36.	Ms. M. Prabhavathi	Scientist (Soils)	1(4)	4(38,41,52,55)	5	52
Research Centre, Chandigarh						
37.	Dr. A.K. Tiwari	Head of Centre	1(38)	4(4,5,41,42)	5	5
38.	Dr.(Ms.) Pawan Sharma	Pr. Scientist (Soil Micro-bio)	1(13)	1(14)	2	13
39.	Dr. Pratap Singh	Pr. Scientist (Agro.)	-	7(4,13,14,28,29,41,55)	7	13
40.	Dr. R.P. Yadav	Pr. Scientist (Soils)	2(4,14)	1(28)	3	-
41.	Dr. (Ms.) S.L. Arya	Pr. Scientist (Ag. Eco.)	3(55,59,60)	2(13,28)	5	13,59,60
42.	Dr. V.K. Bhatt	Sr. Scientist (Engg.)	2(41,42)	5(5,29,30,38,59)	7	5,59
43.	Dr. Ram Prasad	Sr. Scientist (Hort.)	1(28)	5(13,29,30,41,55)	6	13
44.	Dr. Pankaj Panwar	Sr. Scientist (Forestry)	2(29,30)	3(38,41,42)	5	-
45.	Dr.(Ms.)Sharmistha Pal	Scientist (Soils)	1(5)	5(29,30,38,41,55)	6	5
Research Centre Datia						
46.	Dr. S.P. Tiwari	Head of Centre	2(16,41)	1(38)	3	-
47.	Dr. Dev Narayan	Sr. Scientist (Agro.)	2(15,55)	3(4,16,41)	5	-
48.	Dr. Om Prakash	Sr. Scientist (Ag. Extn.)	2(59,60)	-	2	59,60
49.	Dr. D.C. Sahoo	Scientist (Engg.)	1(38)	3(4,16,41)	4	-
50.	Dr. H. Biswas	Scientist (Soils)	1(4)	1(15)	2	-
51.	Dr. P.P. Adhikary	Scientist (Soils)	1(43)	4(31,38,41,55)	5	-
52.	Dr. M.N. Ramesha	Scientist (Forestry)	1(31)	4(38,41,43,55)	5	-

(Figures in parenthesis are serial number of on-going projects listed in these proceedings).

S. No.	Name	Designation	Leader	Associate	Total	S. No. of projects to be concluded
Research Centre, Koraput						
53.	Er. B.S. Naik	Scientist (Engg.)	3(32,38,41)	4(1,4,17,55)	7	32
54.	Mr. H. Gowda	Scientist (Forestry)	2(18,33)	4(1,32,38,41)	6	32
55.	Mr. P. Jakhar	Scientist (Agro.)	2(17,55)	5(1,4,18,32,41)	7	32
56.	Dr. D. Barman	Scientist (Soils)	2(1,4)	7(17,18,32,33,38,41,55)	9	32
Research Centre, Kota						
57.	Dr. R.K. Singh	Head of Centre	2(4,19)	4(36,41,48,50)	6	-
58.	Dr. A.K. Parandiyal	Sr. Scientist (Forestry)	4(35,36,45,51)	3(34,41,50)	7	45
59.	Dr. Ashok Kumar	Sr. Scientist (Ag. Eco.)	3(55,59,60)	4(34,35,38,50)	7	59,60
60.	Er. Shakir Ali	Scientist (SG) (Engg.)	1(41)	4(38,45,50,59)	5	45,59
61.	Er. B.K. Sethy	Scientist (SS) (Engg.)	3(38,48,50)	3(4,51,55)	6	-
62.	Mr. H.R. Meena	Scientist (Hort.)	1(34)	5(19,41,48,51,55)	6	-
Research Centre, Udhagamandalam						
63.	Dr. O.P.S. Khola	Head of Centre	2(20,22)	-	2	22
64.	Dr. D.V. Singh	Sr. Scientist (Soil Fer.)	2(4,56)	3(20,41,55)	5	56
65.	Dr.(Ms.) P.Sundarambal	Sr. Scientist (Ag. Extn.)	2(59,60)	1(56)	3	56,59,60
66.	Dr. K. Kannan	Sr. Scientist (Agro.)	2(21,55)	5(4,22,38,41,56)	7	21,22,56
67.	Dr. S. Manivannan	Sr. Scientist (Engg.)	1(38)	-	1	-
68.	Mr. R. Ragupathy	Scientist (SS) (Forestry)	-	1(56)	1	56
69.	Er. (Ms.) V. Selvi	Scientist (SS) (Engg.)	1(41)	4(4,20,55,56)	5	56
Research Centre, Vasad						
70.	Dr. R.S. Kurothe	Head of the Centre	3(38,41,44)	1(4)	4	-
71.	Dr. G.L. Bagdi	Sr. Scientist (Ag. Extn.)	1(60)	1(59)	2	59,60
72.	Mr. V.C. Pande	Scientist (SG) (Ag.Eco.)	2(55,59)	8(2,3,37,38,41,44,45,60)	10	45,59,60
73.	Dr. D.R. Sena	Sr. Scientist (Engg.)	-	6(2,38,39,44,46,59)	6	39,59
74.	Dr. A.K. Vishwakarma	Sr. Scientist (Agro.)	1(37)	7(2,3,4,39,41,44,55)	8	39
75.	Dr. B.K. Rao	Sr. Scientist (Engg.)	2(3,45)	2(37,41)	4	45
76.	Dr. Gopal Kumar	Scientist (Soil)	3(2,4,46)	6(37,38,39,44,45,55)	9	39,45

(Figures in parenthesis are serial number of on-going projects listed in these proceedings).

LIST OF PARTICIPANTS

1.	Dr. V.N. Sharda	Director	Chairman
CSWCRTI, DEHRADUN			
2.	Dr. K.S. Dadhwal	Head (SS&A Division)	Member
3.	Dr. G.P. Juyal	Head (H&E Division)	Member
4.	Dr. B.L. Dhyani	Head (HRD&SS Division)	Member
5.	Dr. O.P. Chaturvedi	Head (Plant Science Division)	Member
6.	Er. K.P. Tripathi	Principal Scientist (Engg.)	
7.	Er. C. Prakash	Principal Scientist (Engg.) & OIC (RCM Unit)	Member Secretary
8.	Dr. N.K. Sharma	Principal Scientist (Agro.)	
9.	Dr. P.R. Ojasvi	Principal Scientist (Engg.)	
10.	Dr. Harsh Mehta	Principal Scientist (Plant Breeding)	
11.	Dr. M. Madhu	Senior Scientist (Agro.)	
12.	Dr. Charan Singh	Senior Scientist (Forestry)	
13.	Dr. Bankey Bihari	Senior Scientist (Ag. Extn.)	
14.	Dr. Pradeep Dogra	Senior Scientist (Ag. Eco.)	Rapporteur
15.	Dr. B.N. Ghosh	Senior Scientist (Soils)	
16.	Dr. Ambrish Kumar	Senior Scientist (Engg.)	
17.	Dr. D. Mandal	Senior Scientist (Soils)	
18.	Dr. J.M.S. Tomar	Senior Scientist (Forestry)	
19.	Mr. M. Muruganandam	Scientist (SS) (Fisheries)	
20.	Dr. A.C. Rathore	Scientist (SS) (Hort.)	
21.	Dr. J. Jayaprakash	Scientist (Forestry)	
22.	Er. S. Patra	Scientist (Engg.)	
23.	Dr. N.M. Alam	Scientist (Ag. Stat.)	
24.	Ms. Chayna Jana	Scientist (Ag. Stat.)	
25.	Dr.(Ms.)Sangeeta N.Sharma	Technical Officer (T-9)	Rapporteur
26.	Mr. Nirmal Kumar	Technical Officer (T-7-8)	Rapporteur
27.	Mr. S.K. Sinha	Technical Officer (T-5)	Rapporteur
RESEARCH CENTRE, AGRA			
28.	Dr. S.K. Dubey	Head of the Centre	Member
29.	Dr. P.K. Panda	Senior Scientist (Agro.)	
30.	Dr. A.K. Singh	Senior Scientist (Engg.)	
31.	Er. S.K. Srivastava	Scientist (Engg.)	
32.	Ms. M. Prabhavathi	Scientist (Soils)	
33.	Dr. (Ms.) S. Kala	Scientist (Forestry)	
RESEARCH CENTRE, BELLARY			
34.	Dr. A. Raizada	Head of the Centre	Member
35.	Dr. S.L. Patil	Principal Scientist (Agro.)	
RESEARCH CENTRE, CHANDIGARH			
36.	Dr. A.K. Tiwari	Head of the Centre	Member
37.	Dr. (Ms.) Pawan Sharma	Principal Scientist (Soils)	
38.	Dr. R.P. Yadav	Principal Scientist (Soils)	
39.	Dr. V.K. Bhatt	Senior Scientist (Engg.)	
40.	Dr. Pankaj Panwar	Senior Scientist (Forestry)	
41.	Dr.(Ms.) Sharmistha Pal	Scientist (Soils)	

RESEARCH CENTRE, DATIA			
42.	Dr. S.P. Tiwari	Head of the Centre	Member
43.	Dr. Dev Narayan	Senior Scientist (Agro.)	
44.	Dr. Om Prakash	Senior Scientist (Agril. Extension)	
45.	Dr. H. Biswas	Scientist (Soils)	
46.	Dr. D.C. Sahoo	Scientist (Engg.)	
47.	Dr. P.P. Adhikary	Scientist (Soils)	
RESEARCH CENTRE, KORAPUT			
48.	Er. B.S. Naik	Scientist (Engg.)	
49.	Mr. P. Jakhar	Scientist (Agro.)	
50.	Dr. D. Barman	Scientist (Soils)	
RESEARCH CENTRE, KOTA			
51.	Dr. S.N. Prasad	Head of the Centre	Member
52.	Dr. R.K. Singh	Principal Scientist (Soils)	
53.	Dr. Ashok Kumar	Senior Scientist (Ag. Eco.)	
RESEARCH CENTRE, UDHAGAMANDALAM			
54.	Dr. O.P.S. Khola	Head of the Centre	Member
55.	Dr. D.V. Singh	Senior Scientist (Soils)	
56.	Dr. K. Kannan	Senior Scientist (Agro.)	
57.	Dr. S. Manivannan	Senior Scientist (Engg.)	
58.	Er.(Ms.) V. Selvi	Scientist (SS) (Engg.)	
RESEARCH CENTRE, VASAD			
59.	Dr. R.S. Kurothe	Head of the Centre	Member
60.	Dr. G.L. Bagdi	Senior Scientist (Ag. Extn.)	
61.	Dr. D.R. Sena	Senior Scientist (Engg.)	
62.	Dr. A.K. Vishwakarma	Senior Scientist (Agro.)	
63.	Dr. B. K. Rao	Senior Scientist (Engg.)	