# REMARKS OF THE CHAIRMAN

The Director, CSWCRTI, Dehradun and Chairman, Staff Research Council Meeting welcomed all the Heads of Centres/Division, Members of SRC and the participants.

The Chairman apprised the House of the visit of the Hon'ble Union Minister of Agriculture, Consumer Affairs, Food and Public Distribution (GoI), Shri Sharad Pawarji on July 26, 2004 to the Institute. It was first ever visit of any Union Agriculture Minister to our Institute and first visit of the Hon'ble Minister to any of the ICAR Institutes after holding the office of Cabinet Minister of Agriculture. While addressing the Institute scientists, the Hon'ble Minister emphasized on developing suitable and sustainable strategies to effectively cope up with the natural calamities like droughts and floods.

The Chairman also informed about the successful organization of the National Conference on "Resource Conserving Technologies for Social Upliftment" at New Delhi during Dec. 7$^{th}$–9$^{th}$, 2004, which was appreciated by the Director General (ICAR), New Delhi and all distinguished delegates. The Chairman congratulated the six medal winners from CSWCRTI, Dehradun at ICAR Zonal Sports Meet recently held at Karnal (Haryana).

The Chairman informed the House that in the Director's Conference held during 14-16, July 2004, the Director General emphasized on restructuring and functioning of ICAR Institutes in the light of changing global scenario and make it more competitive. New projects should be formulated and conducted keeping in view the end users. The Chairman appraised the salient recommendations of the Conference to the House, which are as follows:

- Resource Generation**:** A target of Rs. 56.75 crores has been set for 2004-2005 for the ICAR. Accordingly the target for CSWCRTI has been revised from Rs. 50 lakhs to Rs. 110 lakhs. Hence possibilities to meet this target need to be explored. The Ministry of Finance (GoI) has agreed to provide an amount equal to the resource generated on matching grant basis as an additional grant over and above the Non-Plan budget. To promote resource generation, an award called "Outstanding Institute for Resource Generation and Developing Linkages" has been instituted by ICAR to be given on annual basis to an Institute generating maximum resources. Each Institute shall develop a perspective plan for resource generation during the next five years. This plan will be reviewed every year on a rolling pattern basis so that it is always ahead for the next five years. Institutes are to make extra efforts to publicize and organize international training programmes for enhancing revenue generation.

- Commercialization and Popularization of Technologies: On this issue, a cell has been constituted at ICAR, under the supervision of DDG (Fisheries). A total of 120 commercializable technologies have been identified. The Institute has submitted two such technologies to the ICAR. Further, these technologies need to be propagated to the potential customers. In this direction, the Institute has made some headway with the Government of Uttaranchal.

- Farming Systems Approach: This approach was approved for transfer of technology for sustainable agriculture by developing 10 farming system models at farmers' field integrating different interventions including natural resource management components. These models are to be funded out of AP Cess Fund and will be under overall supervision of DDG (NRM) and will be initiated by January 2005. An allocation of about Rs. 4 crores is likely to be made available to CSWCRTI. Under this scheme 9 watersheds are to be selected at the 9 locations of the Institute for demonstrating all the transferable technologies following farming system approach.

- Institutional Management and Setup for IPRs: It has been decided that each Institute should have a system of development and promotion of Intellectual Property Rights (IPRs). Nodal Officers have been identified at the Institutes for the IPR Cells; they should be exhorted to gear up the process of protecting inventions. It was desired that each ICAR Institute must take stock of all the technologies generated and likely to be generated by them. Subsequently the technologies should be categorized as (1) Technologies that are patentable, (2) Technologies that can be commercialized, and (3) Technologies whose patenting as well as commercialization is absolutely necessary.

- Revision of the Institution's "Perspective Plan: Vision 2000": The Perspective Plans of the Institutes need to be revised in view of the following issues:

    - Enhancement of efficiency, effectiveness and relevance.
    - Excellence in basic and strategic research.
    - Impact of technologies on cost and quality equations to attain and sustain advantages over other competitors.
    - Competence of research and educational capabilities, and infrastructure to match dimensions of the problems and people's aspirations in order to minimize the stress and maximize the output.
    - Derivation of mileage in the fast changing liberalized and globalized world.
    - Development, retention and sustenance of first-rate human resource on a changing time scale so that human capital continues to be productive and cost effective.
    - Capitalization on complementarities and harnessing of synergies in forging partnership.

The Institutes' Perspective Plan has been revised in the light of above issues and submitted to the Council for approval.

The Chairman emphasized that the new research programmes must take into account the emerging issues resulting out from WTO regime, economic liberalization, IPR and market driven farming systems to ensure efficient utilization of natural resources as per Institute's mandate. Time frame should be defined to achieve the desired objectives by evolving effective monitoring mechanism.

# RECOMMENDATIONS OF THE RESEARCH ADVISORY COMMITTEE (RAC) HELD ON NOVEMBER 17 to 18, 2004

1. The RAC while reviewing the recommendation of the previous RAC for the years 2001-2003 observed that CSWCRTI, Dehradun, a pioneering National Institute in watershed development planning is the right Institution to undertake studies on watershed development planning i.e. methodology for delineation of watersheds of the required size and scale for the country. The Institute has rightly proceeded in initiating the procedure for watershed delineation and planning by making full use of available information with the concerned states of the country. However, the Institute alone cannot accomplish this massive task.

The concept of Operational Agricultural Watershed (OAW) with an area of about 500 ha is well appreciated. However, in many geographical situations, it may be necessary to consider larger areas within a given geographical unit and identify the OAWs in each such unit. The Central Soil & Water Conservation Research & Training Institute should initially develop detailed procedure and plans for delineation of OAW map of required scale in collaboration with concerned Institutions of the country and then develop procedure for effective implementation of watershed development programmes in selected OAWs as model watersheds in representative agro-ecological regions of the country. Guidelines for delineation of the watersheds at OAW level and larger areas within a geographical region need well defined criteria conforming to international standards. The involvement of the scientists of the regional centres of CSWCRTI, Dehradun may be necessary in this endeavor. In this connection, the watershed atlas of India published by the All India Soil and Land Use Survey Organization, New Delhi, which is an effort in macro-watershed delineation, is a useful reference. The guidelines for sub-dividing larger areas into OAW units could be adopted with necessary refinements for developing micro-watershed maps. However, the procedure may require refinements taking into account the currently available information.

After the proper delineation of the watersheds, the superimposition of the various other available maps like revenue map, forest map, soil map, land use map, ground water maps, and Iso-hydraulic conductivity map, may be explored wherever available. The collection of secondary data in its exhaustive and complete form is essential. The ancillary data so collected may be critically reviewed with respect to the data required for planning of a watershed in relation to resource conservation and sustainable agricultural production systems which may suit the socio-economic conditions of a given agro-ecological region. The gaps so identified need to be analyzed and procedure to fill the gaps have to be evolved and demonstrated in the model watersheds. Information available from the model watersheds already developed by the Institute and by other agencies will be of great help in achieving this objective. While developing the procedure for planning of a watershed, the focus on participatory approaches, gender equity, emphasis on weaker sections, transparency and other such indicators have to be ensured in the implementation of the watershed programmes.

Based on the research in the subject of watershed delineation and watershed development planning being carried out in the country, the Institute has initiated a number of important studies. However, the effort needs further strengthening for which the following **recommendations are made**:

1.1 The Institute should identify a core group of scientists of the Institute to initiate intensive studies on evolving the methodology for delineation of Operational Agricultural Watersheds (OAWs) of about 500 ha and availability of maps of such delineated watersheds on a scale of 1:5,000 for developing model plan for watershed development projects.

1.2 The institute may initiate the action for collaboration with competent and committed scientists and technicians working on the subject in other organization of Govt. of India/State Govt/ICAR. MoU with Institutions like Survey of India (SOI), National Remote Sensing Agency (NRSA), National Bureau of Soil Survey and Land use Planning (NBSS&LUP), All India Soil & Land use Survey Organization (AISLUS), India Meteorological Department (IMD) and other major Institutions identified by the Institute may be signed. Due recognition may be given for the contributions made by the Institutions.

1.3 The RAC shall review the outcome of the proposed activity in its meeting next year, especially in relation to the models developed to meet the requirements of representative agro-climatic, agro-ecological and geological regions of India, including those prevailing at the Headquarters and the regional research centres of CSWCRTI. The action may be initiated as early as possible, keeping in view the fact that massive watershed development projects are already under way in the country involving huge financial outlays.

2. The RAC observed that a number of useful projects, which were operating with the financial assistance of NATP, shall be terminating in Dec., 2004. Some of the studies among the terminating projects are required to be continued to derive logical conclusions. Some of the newly proposed studies are also coinciding with the terminating projects. It is recommended that these projects may be continued as Institute projects with a minimum of additional funds.

3. Shri Vibhag Kaushik, non-official member and a progressive farmer, suggested that members who are not well acquainted with the work of the different regional centers of the Institute may be given an opportunity to visit selected regional centers to see the problems of the area. The RAC observed that it is a useful suggestion, which is to be followed up.

4. The RAC suggests that the experiment wise presentation could be dispensed with and only major highlights supported by graphs, diagrams/charts, photographs, could be presented with suitable and clear visual aids.

5. The committee was happy to be apprised of the results of the current research obtained in the seven identified programme areas of the Institute. The available information so generated need to be suitably incorporated in developmental planning at the National level with special reference to watershed management. The Institute should take proper initiative to get this valuable information incorporated in developmental plan of the country.

6. The Committee during reviewing of the newly proposed projects by the scientists expressed the view that some of the projects will generate useful information in the subject area, while many require considerable improvement and a few were repetitive in nature and hence cannot be recommended.

The new project proposals should be containing (not exceeding one page) write up mentioning the Title, Workers, Programme area, Duration with year of start and year of concluding, Place of work, Funding agency, Objectives, Technical programme (treatments) and possible solutions to be provided after the study for field applications.

7. New projects may be developed keeping in view the following important objectives:

- Inventory, database and characterization with respect to erosion hazards for different agro-ecological regions of the country.
- Application of remote sensing and GIS techniques for planning of micro watersheds.
- Productivity - erosion – soil parameter relationship.
- Area specific soil tolerance limits and development of land quality indices.
- Studies on both on-site and off-site effects of erosion on productivity.
- Development and refinement of process based runoff and erosion models with field/lab study of component processes for runoff and soil erosion simulation and comparison with RUSLE and other suitable models including simple tools/methods.
- Preparation of soil conservation map and workable soil conservation units for different states.
- Conservation technologies for natural resource conservation and erosion-crop - productivity relationships.
- Organic farming: soil health, production and conservation.
- Vegetation manipulation in the watershed to regulate water yield in the reservoirs.
- Monitoring the hydrological impact of watershed programmes in the upper reaches on the flow regimes in the downstream reaches.
- Strategies for ground water recharge and its quantification and management.
- Refinement/development of bio - engineering package of practices with guidelines and specifications for rehabilitation of landslides, mine spoiled areas, torrents, road side erosion and river bank affected slopes in different geo-hydrological and agro-ecological regions of the country on different scales and development of nomographs for the field workers.
- To evolve procedure and methodology for delineation and characterization of watersheds.
- Development of conservation based farming systems to meet the requirements of different agro-climatic and topographical situations.
- Development of multi objective decision techniques in SWC&WSM programme.
- Quantification and valuation of intangible benefits from SWC&WSM programme.
- Constraints analysis for adoption of conservation technologies and effective tools/methodology for transfer of technology.
- Development of indices for community participation in watershed management programmes.
- Crop specific specifications for bench terracing to be evolved for Himalayan region.
- Role of traditional crops like rain fed rice, *ragi*, kinnow, *kulthi etc*. in relation to soil conservation should be worked out.

# SALIENT RECOMMENDATIONS OF SRC MEETING – 2004

1. Annual Report 2004-05 must be submitted by all the Heads positively by the end of Feb., 2005. As in previous years, Research Centre, Bellary may submit the Annual Report latest by 31st March, 2005.

**(Action: All Heads & OIC, Publication Cell)**

2. The submission of six months Target and Progress of Individual Scientists may be ensured by all the Heads by 25th June and 25th December, 2005 and in the subsequent years.

**(Action: All Heads, Scientists, T.O. - Information)**

3. The monthly Targets and Progress of the Centres/Divisions as a whole should be submitted in quantifiable forms (areas, numbers etc.) in brief so as to reach the Institute H.Q. by the last day of the month positively, so that the consolidated information is sent to ICAR for kind perusal of Director General in time.

**(Action: All Heads, RCM Unit & T.O. - Information)**

4. The Monthly Progress Report in the prescribed format (eight panels) to all the Centres/Divisions has to reach the Institute Hqrs. by 10th of each month. The Institute has to send the compiled information for cabinet reporting to ICAR by 15th of every month. The information in this report should invariably include the salient research highlights in abstract form.

**(Action: All Heads & RCM Unit)**

5. As initiated in the year 2003, quarterly review of on-going research projects at each Research Centre should be held in the month of April, July and October and the proceedings is to be sent to the Director for his kind perusal.

**(Action: All Heads of Centres)**

6. The document on "50 years Research Achievements in Soil and Water Conservation" is yet to attain a uniform shape in respect of all the Centres/Divisions in spite of three revisions made so far. A checklist has been formulated to make the documents uniform. This checklist must be submitted by all the Heads after reviewing their latest version of the document positively by 31st Jan., 2005. The final document as per the checklist and discussion in the meetings must be submitted by 28th Feb., 2005 for review and approval of the competent authority.

**(Action: All Heads & RCM Unit)**

7. Some progress has been made in respect of the "National Atlas on Watershed Programme in the Country". However, still there are many gaps and shortcomings, which need to be rectified in the light of the presentation made by Head, H&E Division on 15 Dec., 2004. The revised material (hard copy along with CD) must be submitted by 28th Feb., 2005 after taking into account all the lacunae and the gaps.

**(Action: All Heads & Head, H&E Division)**

8. In accordance with the directives of ICAR, a Prioritization, Monitoring & Evaluation Unit (PME Unit) has to be created to review the progress of research projects periodically. It has been decided that all the Programme Implementers (PI) of the seven programmes of the Institute will constitute this unit. The Officer-in-charge, RCM Unit shall coordinate this activity as Chairman of PME Unit with the assistance of PIs and Member Secretary, RAC.

**(Action: All Programme Implementers & Member Secretary, RAC)**

9. The ICAR has given lot of emphasis on finding ways and means for resource generation. All out efforts should be made by all the centers/divisions to take up more consultancies and training programmes in addition to the enhancement of revenue generation through production of seeds, planting material, bio-fuels, fodder and high value-low volume crops/fruits. All the Heads will develop perspective plan for resource generation for the next five years for their respective divisions/centers and send it by 31st January, 2005.

**(Action: All Heads)**

10. The submission of all RPFs, pending as well as new, must be submitted by 28th Feb., 2005 positively. The Principal Director of Audits, Scientific Departments, AGCR, Govt. of India, New Delhi has viewed the non-submission of backlog of pending RPFs seriously. To facilitate the RPFs submission, the prescribed format of RPF I, RPF II & RPF III are being appended with these proceedings.

**(Action: All Heads, Scientists and RCM Unit)**

11. In addition to the routine RPFs, the computerized information on RPFs in the prescribed format (MS-ACCESS) has to be submitted by all the Heads by 30th June every year.

**(Action: All Heads, Scientists and RCM Unit)**

12. All the papers (Research/Technical/Symposia etc.), which are sent for Director's approval, must be thoroughly discussed among the scientists of Centres/Divisions and should invariably be accompanied by the duly filled up prescribed proforma recommended by the respective Heads. This proforma has been modified and appended with these proceedings for submission along with papers in future for approval of the Director. The submission of papers directly to the Journals or for presentation without approval of the competent authority shall be viewed seriously.

**(Action: All Heads, Scientists and RCM Unit)**

13. The Heads of Centres/Divisions must ensure that whenever any scientist is relieved due to transfer, quitting or retirement, all the data including RPFs should be taken over prior to his relieving. For any lapse on this account or missing of the data of the concluded projects after departure of a scientist shall be the sole responsibility of the Heads of Divisions / Centres. The data related to the concluded projects must be compiled and computerized regularly and progress achieved so far in this regard may be intimated by 31st Jan., 2005 to the Director.

**(Action: All Heads and Scientists)**

14. It was decided that the new project proposals in future should be prepared in abstract form not exceeding one page for the perusal of RAC. This may comprise of title, associates, objectives, methodology (in brief), treatments and observations.

**(Action: All Heads, Scientists and Member Secretary, RAC)**

15. It may be ensured that the assignments/works assigned to an individual scientist or a group of scientists or to a particular centre/division are attended and completed within the assigned time frame and inaction or delayed action shall be viewed seriously by the competent authority.

**(Action: All Heads and Scientists)**

16. Head, HRD&SS Division may ensure that the response of the state representatives for revising the contents of syllabus for the regular courses and the future training programmes is obtained by 31st Jan., 2005 and subsequently a meeting will be fixed. Head of HRD&SS Division may further ensure that the standardization of format for data collection and evaluation in respect of intangible benefits of soil and water conservation technologies is submitted by 31st Jan., 2005 by the Sr. Scientist (Economics) of the Division.

**(Action: Head, HRD&SS Division & Dr. B.L. Dhyani)**

# ACTION TAKEN ON RECOMMENDATIONS OF SRC MEETING – 2003

| Sl. No. | Action Assigned | Action Taken |
|---|---|---|
| 1. | **50 Years Research in Soil and Water Conservation:**<br><br>Revised document on "50 Years Research Achievement in Soil and Water Conservation" as per the new format given during SRC meeting 2003 should be submitted by all Heads latest by 31st March, 2004. | The revised document was reviewed in the light of the discussion held and check list has been provided during the SRC Meeting, for submitting the check list again by 31st Jan., 2005 and final document by Feb. 28, 2005. |
| 2. | "National Atlas on Watershed Programme in the Country" should be submitted by all Heads latest by 29th February, 2004 and district wise data should be given. | The checklist was presented by the Head, H&E Division for submitting the modified draft by all the Heads of Divisions/Centres by 28th Feb., 2005 |
| 3. | Dr. A.S. Mishra, I/c Head, HRD&SS Division, Dehradun may hold a meeting with state representatives for discussing about syllabus, duration of regular courses and future programmes for soil and water conservation regular training programmes by 30th April, 2004 . | Some information has been received and the reminders to the remaining states representatives have been sent to provide the information by 31st Jan., 2005. Subsequently, the date of meeting will be fixed by the Head, HRD&SS Division in consultation with the Director. |
| 4. | Pending component of intangible benefits should be worked out by Dr. B.L. Dhyani, Sr. Scientist, Dehradun and the format for evaluation and calculation of intangible benefits from any watershed to be submitted by 31st January, 2004. | The format has been partly developed and standardization of the format will be completed by 31st Jan., 2005 by the Sr. Scientist (Economics) of HRD&SS Division positively. |
| 5. | Data of runoff, soil loss, infiltration etc. generated in the concluded project entitled "Studies on the rates of annual water and sediment yield from denuded Shiwaliks to the reservoirs and ponds" should be analyzed by Dr. A.K. Tiwari, Principal Scientist, Chandigarh. The same should be presented in the next quarterly SRC meeting at the Centre and report to be submitted to the Director. | Action has been taken and report has been submitted. |
| 6. | Dr. R.C. Yadav, Dr. N. Loganandam, Dr. Y. Agnihotri, Dr. Om Prakash, Mr. P.R. Chaudhary, Dr. S.V. Singh, Dr. P. Sundarambal and Mr. Bankey Bihari will modify the already provided schedule of Dr. G.L. Bagdi and send back to Dr. G.L. Bagdi by the end of February, 2004. Dr. G.L. Bagdi will submit the modified schedule to the Director by 15th April, 2004. | Action has been taken and bulletin is being printed at Research Centre, Vasad. |
| 7. | Although the project entitled "Successional trends in ravine enclosures and line transect" has been completed, the observations on this study may be taken and reported by the Head of Research Centres and concerned scientists at Agra, Kota and Vasad centres. | The observations in this study are in progress under the guidance of the Head, Research Centre, Agra. |

# 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. O.P.S. Khola)

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. S.K. Dhyani)

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. B.L. Dhyani)

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 TRANSER (P.I. – Dr. A.S. Mishra)

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

| Sl. No. | Title of the Project | Leader and Associates | Centre/Division | Start | Completion | Remarks |
|---|---|---|---|---|---|---|
| 1. | Assessment, monitoring and mapping of erosion hazards and developing a database for conservation planning. | K.S. Dadhwal<br>S.C. Mohan<br>S.S. Shrimali<br>S.K. Dhyani | Soil Science & Agronomy, Dehradun | 2000 | 2005 | To be concluded |
| Comments: Project is again extended by one year till 2005. The assessment of erosion hazards and the preparation of relevant maps to be completed during the extended period. (Action: Dr. K.S. Dadhwal) | | | | | | |
| 2. | Reflectance libraries for development of soil sensors for periodic assessment of soil resources. | S.C. Mohan | Soil Science & Agronomy, Dehradun | 1999 | 2005 | To be concluded |
| Comments: Project is again extended by one year as Institute project till 2005 subject to availability of the specialized instruments to be made available by NBSSLUP, Nagpur. (Action: Mr. S.C. Mohan) | | | | | | |
| 3. | Surface hydrologic response estimation using GIS. | S.S. Shrimali | Hydrology & Engineering, Dehradun | 2002 | 2007 | To be continued |

### 1.3: SOIL EROSION PROCESSES AND MODELS

| | | | | | | |
|---|---|---|---|---|---|---|
| 4. | Study of rill and inter-rill erosion processes. | P.R. Ojasvi<br>V.N. Sharda | Hydrology & Engineering, Dehradun | 2002 | 2006 | To be continued |

| Sl. No. | Title of the Project | Leader and Associates | Centre/Division | Start | Completion | Remarks |
|---|---|---|---|---|---|---|
| 5. | Development and validation of runoff and erosion prediction models in different agro-ecological regions. | V.N. Sharda<br>P.R. Ojasvi | Hydrology & Engineering, Dehradun | 2003 | 2007 | To be continued<br>**(Core Project)** |
| | | A.K. Tiwari | Chandigarh | | | |
| | | V.S. Katiyar | Datia | | | |
| | | Shakir Ali | Kota | | | |
| | | R.S. Kurothe | Vasad | | | |
| Comments:<br>• The compliance of last year SRC Meeting is yet to be done which required C value to be developed for multiple landuses for each of its components taking into consideration the values developed for individual landuse (monoculture) and subsequently a weighted value is to be worked out. (Action: Dr. A.K. Tiwari)<br>• Too much of mathematical presentation need to avoided and the presentation should be understandable to the majority of participants. (Action: Dr. V.S. Katiyar) | | | | | | |
| 6. | Assessing crop cover influence on runoff and soil loss for red soils of Bundelkhand. | Brij Lal<br>Dev Narain<br>V.S. Katiyar | Datia | 2002 | 2006 | To be continued |
| Comments: Best management practice to be worked out at each location to give cohesive picture of findings. (Action: Dr. Brij Lal) | | | | | | |

| Sl. No. | Title of the Project | Leader and Associates | Centre/Division | Start | Completion | Remarks |
|---|---|---|---|---|---|---|
| 7. | Soil loss tolerance limits for agro-ecological regions of India. | D. Mandal<br>K.P. Tripathi | Soil Science & Agronomy, Dehradun | 2005 | 2009 | To be continued<br>**(Core Project)**<br>**New Project** |
| | | Pramod Jha<br>R.C. Yadav | Agra | | | |
| | | S.K.N. Math<br>A.K. Singh | Bellary | | | |
| | | P. Bhattacharya<br>V.K. Bhatt | Chandigarh | | | |
| | | Brij Lal<br>M.L. Gaur | Datia | | | |
| | | N.K. Paikaray<br>S. Sudhishri | Koraput | | | |
| | | R.K. Singh<br>B.K. Sethy | Kota | | | |
| | | D.V. Singh<br>V. Selvi | Udhagamandalam | | | |
| | | S.P. Tiwari<br>D.R. Sena | Vasad | | | |
| Comments: Factors governing soil productivity *vis-à-vis* erosion are to be identified. Workshop on this project to be held at Research Centre, Kota prior to March, 2005. Detailed note to be sent on e-mail to all concerned. (Action: Dr. D. Mandal) | | | | | | |

## P-2: CONSERVATION MEASURES FOR SUSTAINABLE PRODUCTION SYSTEMS

### 2.1: RESOURCE CONSERVATION MEASURES FOR ARABLE LANDS

| 8. | **Tillage and surface cover management for resource conservation and productivity** | | | | | |
|---|---|---|---|---|---|---|
| (a) | Soil surface management for erosion control. | Ratan Singh<br>S.S. Shrimali<br>N.K. Sharma | Soil Science & Agronomy, Dehradun | 1998 | 2005 | To be concluded |

| Sl. No. | Title of the Project | Leader and Associates | Centre/Division | Start | Completion | Remarks |
|---|---|---|---|---|---|---|
| (b) | Tillage practices for erosion control and crop productivity. | H.C. Nitant<br>Om Prakash | Agra | 1998 | 2005 | To be concluded |
| Comments: Root biomass may be recorded instead of the depth of roots only. (Action: Dr. H.C. Nitant) | | | | | | |
| **9.** | **Biological and mechanical measures for resource conservation and crop productivity** | | | | | |
| (a) | Evaluation of mechanical and vegetative measures on field size runoff plots. | M.L. Gaur<br>Brij Lal | Datia | 2002 | 2006 | To be continued |
| (b) | Development of suitable land and crop management practices for the Nilgiris. | P. Murlidharan<br>D.C. Sahoo<br>M. Madhu<br>P. Sundarambal | Udhagamandalam | 2002 | 2006 | To be continued |
| (c) | Vegetative measures for conservation and production on reclaimed land of Mahi ravines. | H.B. Singh<br>R.S. Kurothe<br>S.P. Tiwari<br>V.C. Pande | Vasad | 2003 | 2006 | To be continued |
| **10.** | **Integrated nutrient management for rehabilitation and productivity** | | | | | |
| (a) | Studies on capacity building of land resources for sustainable productivity in ravine watersheds. | R.C. Agnihotri<br>R.C. Yadav<br>Om Prakash | Agra | 2004 | 2005 | To be concluded |
| (b) | Integrated nutrient supply system for rainfed semi-arid tropics. | S.L. Patil | Bellary | 2000 | 2010 | To be continued |
| (c) | Bio-fertilizer for integrated nutrient management for rehabilitation of eroded Shiwaliks. | Pawan Sharma<br>Pratap Singh<br>Ram Prasad | Chandigarh | 2000 | 2005 | To be concluded |
| Comments: Project is extended till 2005 for recording observations on fertility build up. (Action: Dr. (Ms.) Pawan Sharma) | | | | | | |

| Sl. No. | Title of the Project | Leader and Associates | Centre/Division | Start | Completion | Remarks |
|---|---|---|---|---|---|---|
| (d) | Effect of landuse manipulation and moisture conservation practices on nutrient dynamics in soil and productivity. | S.P. Tiwari<br>H.B. Singh<br>V.C. Pande | Vasad | 2003 | 2006 | To be continued |
| (e) | Effect of integrated nutrient management on soil properties under aonla based agri-horti system. | H. Biswas<br>Brij Lal<br>Dev Narain | Datia | 2005 | 2009 | To be continued<br>**New Project** |
| Comments: Green gram + mustard cropping system may be adopted. FYM to be used after three years and more number of aonla plants may be put. (Action: Dr. H. Biswas) | | | | | | |
| **11.** | **Cropping systems for resource conservation** | | | | | |
| (a) | Impact of organic matter build up on resource conservation under different crops on 2% slope. | B.N. Ghosh<br>O.P.S. Khola<br>K.S. Dadhwal | Soil Science & Agronomy, Dehradun | 2003 | 2006 | To be continued |
| Comments: The title has been modified as suggested by the SRC. | | | | | | |
| (b) | Utilization of rainfall through in-situ moisture conservation by growing cotton in deep alluvial soil region. | Om Prakash<br>R.C. Yadav | Agra | 2004 | 2006 | To be continued |
| (c) | Evaluation of inter-cropping system for delayed on set of monsoon in south-eastern Rajasthan. | S.N. Prasad<br>R.K. Singh<br>Ashok Kumar | Kota | 2003 | 2006 | To be continued |
| (d) | Evaluation of conservation measures with prominent cropping systems for medium black soils. | R.K. Singh<br>S.N. Prasad<br>Ashok Kumar<br>B.K. Sethy | Kota | 2003 | 2007 | To be continued |
| (e) | Bi-cropping of *Stylosanthesis hamata* in maize-wheat rotation for their impact on resource conservation, soil health and productivity. | O.P.S. Khola<br>D. Mandal<br>B.S. Naik | Soil Science & Agronomy, Dehradun | 2005 | 2010 | To be continued<br>**New Project** |
| Comments: The treatments listed at Sl. No. 5 & 8 to be deleted and six existing plots at 4% slope (excluding bench terraced plot) to be used in this study. On the request of project leader, name of Er. B.S. Naik has been included in the project. The species of grass may be discussed with IGFRI before finalization. Earthwork to make uniform monoclinal slopes be carried out and completed before onset of monsoon. (Action: Dr. O.P.S. Khola) | | | | | | |

| Sl. No. | Title of the Project | Leader and Associates | Centre/Division | Start | Completion | Remarks |
|---|---|---|---|---|---|---|
| (f) | Conserving resources and augmenting livelihood of small holders through multi-tier cropping systems in tribal dominant Eastern Ghats of Orissa. | Anchal Dass<br>S. Sudhishri<br>P.R. Chaudhary<br>N.K. Paikaray | Koraput | 2005 | 2008 | To be continued<br>**New Project** |
| Comments: One "No tree" treatment to be included in fruit tree. Ginger may be added and *ragi* + pigeonpea may be included. The tree spacing should be 6m x 6m. (Action: Mr. Anchal Dass) | | | | | | |
| **12.** | **Agroforestry systems for arable lands** | | | | | |
| (a) | In-vitro micro propagation of elite provenances of Bhimal (*Grewia optiva)* | Harsh Mehta<br>S.K. Dhyani | Plant Science, Dehradun | 2004 | 2006 | To be continued<br>**(DBT Funded)** |
| (b) | Aonla based agro-forestry system for moisture conservation and soil productivity in degraded ravine lands. | K.P. Mohapatra<br>H.C. Nitant<br>Om Prakash | Agra | 2001 | 2006 | To be continued |
| Comments: Name of Dr. K.P. Mohapatra is included as the leader of this project. (Action: Dr. K.P. Mohapatra) | | | | | | |
| (c) | Compatibility of raising rhizomatic crops with aonla in Shiwalik foothill region. | Pratap Singh<br>Ram Prasad<br>Y. Agnihotri<br>Pratap Bhattacharya | Chandigarh | 2002 | 2005 | To be concluded |
| (d) | Crop diversification through agro-forestry for productivity and sustainability on reclaimed land of Mahi ravines. | H.B. Singh<br>S.P. Tiwari<br>V.C. Pande | Vasad | 2003 | 2006 | To be continued |
| (e) | Evaluating productivity potential of Bhimal (*Grewia optiva*) along with field crops. | P.C. Tyagi<br>Harsh Mehta<br>K.S. Dadhwal | Soil Science & Agronomy, Dehradun | 2005 | 2015 | To be continued<br>**New Project** |
| Comments: Fresh plantation to be done, no block planting to be carried out. Hence, only plant-to-plant distance on field risers is to be carried out. Although farmers adopt 100% lopping, yet we may go for 100% and 75% lopping. Study to be carried out in various locations in different altitudes. (Action: Dr. P.C. Tyagi) | | | | | | |
| 13. | Management strategies for improving *rabi* sorghum productivity. | S.K.N. Math<br>S.L. Patil | Bellary | 2000 | 2005 | To be concluded |
| Comments: Project is extended till the year 2005 as Institute project in respect of only one experiment under this project for completion of the objective. (Action: Dr. S.K.N. Math) | | | | | | |

## 2.2: RESOURCE CONSERVATION MEASURES FOR NON-ARABLE LANDS

| Sl. No. | Title of the Project | Leader and Associates | Centre/Division | Start | Completion | Remarks |
|---|---|---|---|---|---|---|
| **14.** | **Agroforestry systems for non-arable lands** | | | | | |
| (a) | Fuelwood and fodder production from densified plantations on old riverbed land. | A. Raizada<br>Charan Singh<br>B.N. Ghosh | Plant Science, Dehradun | 1997 | 2016 | To be continued |
| Comments: The reasons for non-compliance of the comments of last SRC meeting regarding replacing *Bauhinia purpurea* by Subabul to be given. (Action: Dr. A. Raizada) | | | | | | |
| (b) | Evaluation of the agro-forestry systems for marginal lands in Doon valley. | S.K. Dhyani<br>N.K. Sharma<br>Ratan Singh<br>Pradeep Dogra | Plant Science, Dehradun | 2001 | 2010 | To be continued |
| (c) | Economic fortification of existing forest and horti land use system through medicinal and aromatic species. | K.P. Mohapatra<br>Pramod Jha | Agra | 2005 | 2009 | To be continued<br>**New Project** |
| Comments: A complete background status of the study to be included and the medicinal plants coming up under natural conditions need to be studied. (Action: Dr. K.P. Mohapatra) | | | | | | |
| (d) | Studies on afforested Shola species and swamps in the Nilgiris. | R. Ragupathy<br>M. Madhu<br>P. Murlidharan | Udhagamandalam | 2005 | 2008 | To be continued<br>**(HADP Funded)**<br>**New Project** |
| Comments: The funding by HADP should be assured and enhanced through supplementary budgets. Entire area comprising of different slope groups under Shola to be covered. Sample size should be selected cautiously. All the species coming up in Shola in the entire reach need to be studied. (Action: Dr. R. Ragupathy) | | | | | | |
| **15.** | **Agri-horticultural systems** | | | | | |
| (a) | Evaluation of mango and litchi based agri-horti systems on degraded lands in Doon Valley. | A.C. Rathore<br>N.K. Sharma | Plant Science, Dehradun | 1995 | 2005 | To be concluded |
| Comments: The intercrop of *toria* may be replaced by turmeric and colocasia and the best combination may be identified. (Action: Dr. A.C. Rathore) | | | | | | |
| (b) | Evaluation of comparative performance of Aonla based agri-horti systems at 2% slope in Doon Valley. | R.K. Dubey<br>K.S. Dadhwal<br>A.C. Rathore | Soil Science & Agronomy, Dehradun | 2002 | 2012 | To be continued |
| Comments: The data regarding organic carbon and nitrogen need to be rechecked and discussed among the associates. (Action: Mr. R.K. Dubey) | | | | | | |

| Sl. No. | Title of the Project | Leader and Associates | Centre/Division | Start | Completion | Remarks |
|---|---|---|---|---|---|---|
| (c) | Evaluation of fruit species vis-à-vis conservation techniques for salt affected black soils of semi-arid tropic regions. | D. Ramajayam<br>R.N. Adhikari<br>S.K.N. Math<br>B. Mondal | Bellary | 2005 | 2015 | To be continued<br>**New Project** |
| Comments: The treatments and observations should be reduced as suggested by SRC. (Action: Mr. D. Ramajayam) | | | | | | |
| **16.** | **Silvi-pastoral systems** | | | | | |
| (a) | Silvipastoral systems under various management practices for degraded lands. | Charan Singh<br>A. Raizada | Plant Science, Dehradun | 1996 | 2012 | To be continued |
| Comments: A Technical Officer from Central Soil Lab. may assist in analysis of soil samples. (Action: Dr. Charan Singh / OIC, Central Soils Lab.) | | | | | | |
| (b) | Silvipastoral approach to improve productivity of native pastures for livestock production in the hills. | O.P.S. Khola | Soil Science & Agronomy, Dehradun | 1999 | 2005 | To be concluded |
| Comments: Project is again extended for one year as Institute project till 2005 and the data of runoff reported for 2004 may be rechecked. (Action: Dr. O.P.S. Khola) | | | | | | |

## P-3: HYDROLOGICAL BEHAVIOUR OF WATERSHEDS FOR CONSERVATION PLANNING

### 3.1: RAINFALL, RUNOFF, VEGETATION, SOIL CHARACTERISTICS AND MANAGEMENT PRACTICES

| | | | | | | |
|---|---|---|---|---|---|---|
| 17. | Hydrological behaviour of small watersheds and sustainability of production systems. | V.N. Sharda<br>C. Prakash<br>A. Raizada<br>N.K. Sharma | Hydrology & Engineering, Dehradun | 1999 | 2005 | To be concluded |
| Comments: Project is extended for one year as Institute project till 2005 for the present. | | | | | | |
| 18. | Stochastic analysis of rainfall and runoff data for planning conservation measures. | P.K. Das<br>A.K. Khullar | Hydrology & Engineering, Dehradun | 2004 | 2006 | To be continued |

| Sl. No. | Title of the Project | Leader and Associates | Centre/Division | Start | Completion | Remarks |
|---|---|---|---|---|---|---|
| 19. | Hydrological evaluation of recommended forest trees in western Himalayas. | S.K. Dhyani<br>B.S. Naik<br>Charan Singh<br>B.N. Ghosh | Plant Science, Dehradun | 2004 | 2018 | To be continued |
| Comments: The title of the project to be revised by replacing the words "Western Himalayas" by other suitable words. (Action: Dr. S.K. Dhyani) | | | | | | |
| 20. | Soil conservation measures in red arable soils. | M.L. Gaur<br>Dev Narain<br>Brij Lal | Datia | 2001 | 2005 | To be concluded |
| Comments: The compliance of last SRC Meeting regarding replacement of vetiver by heteropogen may be reported. Name of Dr. Brij Lal is included as second associate. (Action: Dr. M.L. Gaur) | | | | | | |
| 21. | Studies on hydrological behaviour and management of Jhola lands in Eastern Ghat Highland Zone of Orissa | R.K. Panda<br>U.S. Patnaik<br>Anchal Dass<br>P.R. Chaudhary | Koraput | 2004 | 2007 | To be continued |
| 22. | Hydrological implication of sequential alternation of land use covers in a ravinous catchment. | R.S. Kurothe<br>D.R. Sena<br>V.C. Pande<br>S.P. Tiwari<br>H.B. Singh | Vasad | 2004 | 2012 | To be continued |
| 23. | Impact of climate change on soil and water conservation under National Network Project on impacts, adaptation and vulnerability of Indian agricultural to climate changes. | K.P. Tripathi<br>V.N. Sharda<br>S.S. Shrimali<br>P.K. Das<br>N.K. Sharma | Hydrology & Engineering, Dehradun | 2005 | 2007 | To be continued<br>**(NNPCC of ICAR Funded)**<br>**New Project** |
| 24. | Testing of hydrological instruments. | K.P. Tripathi | Hydrology & Engineering, Dehradun | 2005 | 2007 | To be continued<br>**New Project** |
| Comments: Testing of instruments may be carried out under field conditions and efforts be made to procure the instruments free of cost for this purpose from the manufactures / suppliers. (Action: Er. K.P. Tripathi) | | | | | | |

| Sl. No. | Title of the Project | Leader and Associates | Centre/Division | Start | Completion | Remarks |
|---|---|---|---|---|---|---|
| 25. | Hydrological response to micro-catchments under different land uses with vegetation manipulation. | V.K. Bhatt<br>P. Bhattacharya<br>A.K. Tiwari<br>Pawan Sharma | Chandigarh | 2005 | 2012 | To be continued<br>**New Project** |
| Comments: All the five watersheds should be gauged keeping one as control forever. Calibration to the taken up from the year 2005 for two years. The remaining three watersheds should be put under trenching as per specifications of the Institute. Thinning may be carried out after two years at the rate not exceeding 20% w.e.f. 2007 for five years. Lantana to be uprooted. (Action: Dr. V.K. Bhatt) | | | | | | |
| 26. | Design development and testing of simple and low cost continuous mechanical sediment yield sample. | D.R. Sena<br>R.S. Kurothe<br>S.P. Tiwari | Vasad | 2005 | 2006 | To be continued<br>**New Project** |
| Comments: The number of sampler units be increased to five. (Action: Dr. D.R. Sena) | | | | | | |

### 3.2 : EFFECT OF CONSERVATION MEASURES AND LANDUSE ON GROUND WATER RECHARGE

| Sl. No. | Title of the Project | Leader and Associates | Centre/Division | Start | Completion | Remarks |
|---|---|---|---|---|---|---|
| 27. | Effect of conservation structures on ground water recharge. | D.R. Sena<br>R.S. Kurothe<br>S.P. Tiwari<br>V.C. Pande | Vasad | 2001 | 2006 | To be continued<br>**(Core Project)** |
| | | V.K. Bhatt<br>A.K. Tiwari<br>R.P. Yadav<br>R.K. Aggarwal | Chandigarh | | | |
| | | V.S. Katiyar<br>M.L. Gaur<br>H. Biswas | Datia | | | |
| | | Shakir Ali<br>R.K. Singh<br>B.K. Sethy | Kota | | | |
| | | S. Sudhishri<br>R.K. Panda<br>N.K. Paikaray | Koraput | 2004 | | |
| | | R.N. Adhikari<br>A.K. Singh<br>S.K.N. Math | Bellary | 2004 | | |
| | | V. Selvi<br>D.V. Singh | Udhagamandalam | 2004 | | |
| Comments: This core study has been started at Koraput, Bellary and Udhagamandalam centers from the year 2004. Uniformity in observations, identification of shortcomings and gaps to be ensured with optimum number of piezometers. (Action: Project Leaders at all the locations) | | | | | | |

### 3.3: WATER HARVESTING

| Sl. No. | Title of the Project | Leader and Associates | Centre/Division | Start | Completion | Remarks |
|---|---|---|---|---|---|---|
| 28. | Rainwater management on watershed (micro) basis in sub-montane region. | R.P. Yadav<br>Pratap Singh<br>Ram Prasad<br>A.K. Tiwari | Chandigarh | 2000 | 2005 | To be concluded |
| Comments: Project is again extended as Institute project till 2005 only for Mansa Devi site. Names of Dr. R.K. Aggarwal, Dr. (Ms.) S.L. Arya and Dr. Pratap Bhattacharya have been deleted from this project. (Action: Dr. R.P. Yadav) | | | | | | |
| 29. | Effect of interventions on small watershed hydrology. | M.L. Gaur<br>Brij Lal<br>Dev Narain | Datia | 2001 | 2006 | To be continued |
| Comments: The compliance of last years SRC meetings regarding working out the correlations for ten years data of different watersheds keeping one watershed undisturbed has still not been carried out and is viewed seriously by the chairman. (Action: Dr. M.L. Gaur) | | | | | | |
| 30. | Water harvesting and recycling for sustainable production in red arable soils in Bundelkhand. | Dev Narain<br>V.S. Katiyar<br>H. Biswas | Datia | 2002 | 2005 | To be concluded |
| 31. | Effective utilization of waterways for conservation and production. | B.P. Joshi<br>B.N. Ghosh<br>Harsh Mehta<br>Charan Singh | Hydrology & Engineering, Dehradun | 2003 | 2006 | To be continued |

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

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

| Sl. No. | Title of the Project | Leader and Associates | Centre/Division | Start | Completion | Remarks |
|---|---|---|---|---|---|---|
| 32. | Development of cost – effective technology for treatment of choes (rainy season torrents). | A.K. Tiwari<br>R.K. Aggarwal<br>S.L. Arya,<br>Ram Prasad<br>Pawan Sharma | Chandigarh | 2001 | 2005 | To be concluded |
| | | G.P. Juyal<br>Bankey Bihari<br>B.N. Ghosh,<br>A.C. Rathore | Hydrology & Engineering, Dehradun | | | |
| Comments: Project is extended for one year as Institute project till 2005. | | | | | | |
| 33. | Evaluation of efficacy of full-scale models of stone jetty along river Yamuna. | R.C. Yadav | Agra | 2003 | 2005 | To be concluded |
| Comments: Project is extended for one year till 2005. | | | | | | |
| 34. | Cost effective conservation measures for management of medium and deep ravinous lands | B.K. Sethy<br>A.K. Parandiyal<br>Shakir Ali<br>Ashok Kumar<br>J. Somasundaram | Kota | 2004 | 2012 | To be continued |
| Comments: Name of Dr. A.K. Parandiyal is included as first associate. | | | | | | |
| 35. | To find specifications for cost-effective design of spurs with regard to their shape, geometry and apron by carrying out laboratory studies (in hydraulic flume) | B.S. Naik<br>G.P. Juyal | Hydrology & Engineering, Dehradun | 2005 | 2007 | To be continued<br>**New Project** |
| Comments: Observations to be taken in the field for validation of results. (Action: Er. B.S. Naik) | | | | | | |

| Sl. No. | Title of the Project | Leader and Associates | Centre/Division | Start | Completion | Remarks |
|---|---|---|---|---|---|---|
| 36. | Productive utilization of ravines through introduction of horticulture and improved planting materials. | A.K. Parandiyal<br>J. Somasundaram<br>B.K. Sethy<br>H.R. Meena | Kota | 2005 | 2010 | To be continued<br>**New Project** |
| 37. | Genesis, characterization and management of land slides in the Nilgiris. | D.V. Singh<br>V. Selvi<br>D.C. Sahoo | Udhagamandalam | 2005 | 2007 | To be continued<br>**(HADP Funded)**<br>**New Project** |
| Comments: The funding by HADP should be assured before starting the project. More attention should be given on rehabilitation measures. Some sample sites should be taken for different landslides. Bioengineering measures should invariably be used. (Action: Dr. D.V. Singh) | | | | | | |

## P-5: PARTICIPATORY INTEGRATED WATERSHED MANAGEMENT

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

| | | | | | | |
|---|---|---|---|---|---|---|
| 38. | Methodologies for development and analysis of watersheds and decision support systems for interventions. | B.L. Dhyani<br>A. Raizada<br>Pradeep Dogra | H.R.D. & SS, Dehradun | 1999 | 2005 | To be concluded |
| Comments: Project is again extended for one year as Institute project till 2005. | | | | | | |
| 39. | Development of regional scale watershed plans and methodologies for identification of critical areas for prioritized land treatment in the watersheds. | S. Sudhishri<br>Anchal Dass<br>U.S. Patnaik<br>N.K. Paikaray | Koraput | 2000 | 2005 | To be concluded |
| Comments: Project is extended for one year as Institute project till 2005. | | | | | | |

### 5.3: IMPACT ON PRODUCTION, ENVIRONMENT AND BIODIVERSITY

| Sl. No. | Title of the Project | Leader and Associates | Centre/Division | Start | Completion | Remarks |
|---|---|---|---|---|---|---|
| 40. | Integrated land and rainwater management for sustainable production in Shiwalik foothills in Mandhala village, Distt. Solan (H.P.). | A.K. Tiwari<br>Pratap Singh<br>R.K. Aggarwal<br>Y. Agnihotri<br>Pawan Sharma<br>Ram Prasad<br>Pratap Bhattacharya | Chandigarh | 2003 | 2006 | To be continued<br>**TDET (MoRD)** |

### 5.4 FARMING SYSTEM APPROACH

| | | | | | | |
|---|---|---|---|---|---|---|
| 41. | Development and evaluation of integrated farming system in middle Himalayas | M. Muruganandam<br>V.N. Sharda<br>C. Prakash<br>S.K. Verma | Hydrology & Engineering, Dehradun | 2001 | 2005 | To be concluded |
| Comments: Project is extended for one year till 2005 for standardization of feed material and seepage control. (Action: Mr. M. Muruganandam) | | | | | | |

### 5.5 : WATERSHED TECHNOLOGIES (STRATEGIC RESEARCH)

| | | | | | | |
|---|---|---|---|---|---|---|
| 42. | Watershed Technology (Mission Mode). | K.P. Tripathi<br>S.K. Dhyani<br>Pradeep Dogra | Hydrology & Engineering, Dehradun | 1999 | 2005 | To be concluded |
| | | V. Selvi<br>M. Madhu<br>D.V. Singh,<br>P. Sundarambal,<br>Subhash Chand | Udhagamandalam | | | |
| Comments: Project is extended for one year as Institute project till 2005. | | | | | | |

## P-6: SOCIO-ECONOMIC ANALYSIS AND POLICY DEVELOPMENT FOR WATERSHED MANAGEMENT

### 6.1: RESOURCE ECONOMICS

| Sl. No. | Title of the Project | Leader and Associates | Centre/Division | Start | Completion | Remarks |
|---|---|---|---|---|---|---|
| 43. | Impact of soil and water conservation measures on productivity and socio-economic conditions of Kuberpur ravine watershed. | Bhanwar Singh<br>R.C. Yadav<br>Om Prakash | Agra | 2002 | 2005 | To be concluded |
| Comments: Project is extended for one year till 2005 for completing the remaining objective of this project. (Action: Mr. Bhanwar Singh) | | | | | | |
| 44. | Effect of watershed development programme on employment generation in semi-arid regions. | B. Mondal<br>N. Loganandhan | Bellary | 2005 | 2007 | To be continued<br>**New Project** |
| Comments: All the activities of employment generation even for landless farmers to be included. A cohesive picture with holistic approach should immerge. The number of farmers should not be restricted to 25, it should be proportionate and may go up to 50. (Action: Dr. B. Mondal) | | | | | | |

### 6.2 : INSTITUTE VILLAGE LINKAGE PROGRAMME FOR TECHNOLOGY ASSESSMENT AND REFINEMENT

| | | | | | | |
|---|---|---|---|---|---|---|
| 45. | Institute Village Linkage Programme. (Technology Assessment and Refinement). | A.S. Mishra<br>S.C. Mohan,<br>D.S. Tomar<br>B.L. Dhyani<br>S.K. Verma | H.R.D. & SS, Dehradun | 1999 | 2005 | To be concluded |
| Comments: Project is extended for one year as Institute project till 2005 at changed location in Vikas Nagar block. (Action: Dr. A.S. Mishra) | | | | | | |

### 6.3 : COMMON PROPERTY RESOURCE MANAGEMENT

| | | | | | | |
|---|---|---|---|---|---|---|
| 46. | Study on pastoral migratory graziers in relation to watershed projects in Shiwalik foothill villages in Haryana. | S.L. Arya<br>Y. Agnihotri | Chandigarh | 2004 | 2007 | To be continued |

## P-7 HUMAN RESOURCE DEVELOPMENT AND TECHNOLOGY TRANSER

### 7.1 TRAINING METHODOLOGY, NEED ASSESSMENT, GENDER NEUTRALITY AND EVALUATION

| Sl. No. | Title of the Project | Leader and Associates | Centre/Division | Start | Completion | Remarks |
|---|---|---|---|---|---|---|
| 47. | An action research project of informal training programme on soil and water conservation for ravine reclamation for farmers of Mahi ravine area. | G.L. Bagdi<br>R.S. Kurothe<br>H.B. Singh<br>V.C. Pande | Vasad | 2002 | 2006 | To be continued |
| 48. | Study on capacity building of field functionaries for watershed development and management. | A.S. Mishra<br>Bankey Bihari | HRD & SS, Dehradun | 2005 | 2006 | To be continued<br>**New Project** |

### 7.3 PARTICIPATORY APPROACHES, DESSEMINATION OF TECHNOLOGY AND ADOPTION

| | | | | | | |
|---|---|---|---|---|---|---|
| 49. | Participatory and integrated assessment of natural resources and evaluation of alternate sustainable land management options for tribal dominant watersheds. | U.S. Patnaik<br>P.R. Chaudhary<br>S. Sudhishri<br>Anchal Dass<br>N.K. Paikaray | Koraput | 2000 | 2005 | To be concluded |
| Comments: Project is extended for one year as Institute project till 2005. | | | | | | |
| 50. | Extension methodology for transfer of soil and water conservation technologies for watershed management. | G.L. Bagdi | Vasad | 2004 | 2006 | To be continued |

| Sl. No. | Title of the Project | Leader and Associates | Centre/Division | Start | Completion | Remarks |
|---|---|---|---|---|---|---|
| 51. | Constraints analysis and methodology for transfer of technologies in watershed management programmes. | Bankey Bihari<br>A.S. Mishra | HRD & SS, Dehradun | 2005 | 2007 | To be continued<br>**(Core Project)**<br>**New Proejct** |
| | | N. Loganandhan | Bellary | | | |
| | | Om Prakash | Datia | | | |
| | | S.V. Singh | Kota | | | |
| | | P. Sundarambal | Udhagamandalam | | | |
| | | G.L. Bagdi | Vasad | | | |
| Comments: The proforma developed by Dr. G.L. Bagdi may be adopted with location wise modifications. (Action: Dr. Bankey Bihari) | | | | | | |

**Note :**

- **The year of start and completion in respect of all the projects will be according to the relevant financial years.**
- **All the projects requiring extension are extended initially for one year subject to review in the subsequent SRC Meeting.**
- **Those NATP projects, which are being continued as Institute projects will not employ any SRF in the respective project.**
- **Integrated Nutrient Management project without any soil conservation aspects do not fit in the mandate of the Institute. Hence, observations to justify the study may be recorded and reported.**
- **Funding should be assured for those projects which are to be externally / A.P. Cess fund supported.**

# OBSERVATIONAL TRIAL APPROVED FOR 2005

| Sl. No. | Title of the project | Leader and associate | Centre/Division | Remarks |
|---|---|---|---|---|
| 1. | Effect of soil amendments on surface cracks in black soils of South-eastern Rajasthan. | J. Somasundaram<br>S.N. Prasad<br>Ashok Kumar | Kota | The study may be taken up for one year and the results to be presented in the next SRC meeting. |

# PROJECTS CONCLUDED IN 2004

| Sl. No. | Programme No. | Sl. No. of SRC Meeting Proc. 2003 | Title of the Project | Centre/Division |
|---|---|---|---|---|
| 1. | 1.2 | 4 | Soil erosion under prominent medicinal and aromatic plants in Nilgiris. | Udhagamandalam |
| Comments : Calculation to be checked and equivalent yield to be calculated to work out economics. (Action : Dr. D.V. Singh) | | | | |
| 2. | 2.1 | 11(a) | Evaluation of some suitable minor millets for production and conservation of resources. | Plant Science, Dehradun |
| 3. | 2.1 | 12(b) | Study on runoff and soil loss behaviour of different land configurations. | Agra |
| Comments : Compliance of the remarks of SRC Meeting 2003 on rechecking the runoff and soil loss data may be reported. (Action : Er. S.K. Srivastava) | | | | |
| 4. | 2.1 | 12(d) | Provenances evaluation study in *Grewia optiva.* | Soil Science & Agronomy, Dehradun |
| Comments : The final conclusion about the recommended provenances to be reported. (Action ; Dr. P.C. Tyagi) | | | | |
| 5. | 2.1 | 13 | Evaluation and improvement of indigenous methods of moisture conservation and run-off management. | Agra |
| | | | | Kota |
| Comments : A bulletin on "Indigenous methods on moisture conservation and runoff management" may be published by Agra Centre by 30th June, 2005 on the pattern of Kota Centre. (Action : Dr. R.C. Yadav) | | | | |
| 6. | 3.1 | 20 | Water balance studies of tea (*Thea sinensis*) crop (lysimetric studies). | Udhagamandalam |
| 7. | 3.3 | 29 | Hydrological evaluation of recommended conservation measures on mildly sloping lands. | Hydrology & Engineering, Dehradun |
| 8. | 5.2 | 36 | Landuse planning for management of agricultural resources. | Soil Science & Agronomy, Dehradun |
| | | | | Bellary |
| | | | | Udhagamandalam |
| 9. | 5.4 | 38 | Improvement of productivity of migratory buffalo herds. | Soil Science & Agronomy, Dehradun |
| 10. | 6.1 | 42 | Market and policy incentives for soil and water conservation : A study in Mahi ravine of Gujarat. | Vasad |
| 11. | 6.3 | 44 | Impact analysis of joint forest management on sharing and management of common property resources in Shiwalik foothill region. | Chandigarh |
| 12. | 7.3 | 47 | Impact assessment and communication behaviour of farmers of already managed watershed and adjoining areas of Bundelkhand region. | Datia |
| 13. | 7.3 | 48 | Assessment of diffusion of Institute Village Linkage Programme (IVLP) interventions. | HRD & SS, Dehradun |

# NEW PROPOSALS AND RECOMMENDATIONS OF RAC AND SRC

| Sr. No. | Details of the proposals | RAC/'S View | Decision of SRC |
|---|---|---|---|
| 1. | Evaluation of some traditional cereals and pulses for soil conservation and production. Observation trial.<br>(Harsh Mehta, P.C. Tyagi & S.K. Dhyani)<br>Dehradun | The proposed study is repetitive in nature and does not come under the priority of the mandate of the Institute hence **not recommended**. | **Not approved** |
| 2. | Evaluating productivity potential of Bhimal (*Grewia optiva*) under lopping with field crops as an intercrop.<br>(P.C. Tyagi, Harsh Mehta & K.S. Dadhwal)<br>Dehradun | **Recommended** with 100% lopping, to be studied at different altitude and with different spacing of the Bhimal. | **Approved**<br>Comments of RAC & SRC to be included. |
| 3. | Evaluation of trenching density for improving retention of surface runoff and establishment of vegetation in degraded lands of India.<br>(A. Raizada *et al*.)<br>To be externally funded from AP Cess Fund of ICAR.<br>Dehradun | **Recommended** with the remarks that available literature may be critically reviewed before deciding the treatments. | To be presented and discussed in local meeting. |
| 4. | Evaluation of different locally accessible nutrient inputs combinations for resource conservation and to optimize crop production.<br>(N.K. Sharma & D. Mandal)<br>Dehradun | The proposed study is repetitive in nature and does not come under the priority of the mandate of the Institute hence **not recommended**. | **Not approved** |
| 5. | Crop diversification studies for resource conservation and production.<br>(D.S. Tomar, K.S. Dadhwal, B.P. Joshi & A.K. Khullar)<br>Dehradun | SRC may critically examine. | **Not approved** |

| | | | |
|---|---|---|---|
| 6. | Soil loss tolerant limits for different agro-ecological regions of India.<br>(D. Mandal *et. al* )<br>Dehradun and its Research Centres | **Recommended** | **Approved** with the following investigators:<br>D. Mandal & K.P. Tripathi (Dehradun)<br>Pramod Jha & R.C. Yadav (Agra),<br>S.K.N. Math & A.K. Singh (Bellary)<br>P. Bhattacharya & V.K. Bhatt (Chandigarh)<br>Brij Lal & M.L. Gaur (Datia)<br>N.K. Paikaray & S. Sudhishri (Koraput)<br>R.K. Singh & B.K. Sethy (Kota)<br>D.V. Singh & V. Selvi (Ooty)<br>S.P. Tiwari & D.R. Sena (Vasad)<br>Comments of SRC to be taken into account. |
| 7. | To find specifications for cost effective design of spurs with regard to their shape, geometry and apron by carrying out laboratory studies (in hydraulic flume).<br>(G.P. Juyal & B.S. Naik)<br>Dehradun | **Recommended** | **Approved**<br>Names of investigators will be as follows :<br>B.S. Naik & G.P. Juyal<br>Comments of SRC to be taken into consideration. |
| 8. | Management technology for a torrent affected watershed.<br>(G.P. Juyal, B.N. Ghosh, Bankey Bihari & A.C. Rathore).<br>To be externally funded from AP Cess Fund of ICAR.<br>Dehradun | **Recommended** as externally funded project | To be presented and discussed in local meeting. |
| 9. | Impact of climate change on soil and water conservation under National Network Project on Impacts, adaptation and vulnerability of Indian Agriculture to climatic changes.<br>(K.P. Tripathi, V.N. Sharda, S.S. Shrimali, P.K. Das & N.K. Sharma). Already sanctioned under NPCC of ICAR.<br>Dehradun | **Recommended** as externally funded project | This Project has already been sanctioned by ICAR and the action has been initiated. Hence deemed **approved**. |
| 10. | Natural Resource Management and Run off and Soil Loss Monitoring from Mountainous Watershed In Mid Himalayas for Strategic Planning.<br>(K.P. Tripathi, S.K. Dhyani, Harsh Mehta, P. Dogra & S.K. Verma). To be externally funded from AP Cess Fund of ICAR.<br>Dehradun | **Recommended** as externally funded project | To be presented and discussed in local meeting. |
| 11. | Testing of Hydrological Instruments.<br>(K.P. Tripathi)<br>Dehradun | **Recommended** | **Approved**<br>Comments of SRC to be included. |

| | | | |
|---|---|---|---|
| 12. | Transfer of resource conservation technologies on watershed basis – core project.<br>(Bankey Bihari. A.S. Mishra, G.L. Bagdi, P. Sundarambal, Om Prakash, S.V. Singh & N. Loganandhan)<br>Dehradun & Research Centres. | May be modified as a core project with study of watershed technology management and not of resource conservation technology. | **Approved**<br>The title may be modified as "Constraint analysis methodologies for transfer of technology in watershed management programmes" (Core Project). Other suggestions of RAC & SRC may be incorporated. |
| 13. | *Stylosanthesis hamata* bi-cropping in maize-wheat rotation for their impact on resource conservation, soil health and productivity.<br>(O.P.S. Khola & D. Mondal)<br>Dehradun | SRC may critically examine. | **Approved**<br>Comments of SRC to be taken into account. |
| 14. | Participatory field level evaluation of decision support system prototype for economic security and environmental management.<br>(B.L. Dhyani, Pradeep Dogra, A. Raizada & D. Mondal)<br>Dehradun | **Recommended** | To be presented and discussed in local meeting. |
| 15. | Development of suitable animal production system in Antisar Watershed (Vasad).<br>(S.K. Verma, G.L. Bagdi & V.C. Pande)<br>Dehradun / Vasad | Study may be taken up if the Institute is equipped with suitable facilities on livestock management. | **Not approved** |
| 16. | Evolving organic farming systems for sustainable crop production and improvement in soil health of eroded Shiwalik region.<br>(Pawan Sharma, Pratap Singh, Ram Prasad & R.K. Aggarwal)<br>Chandigarh | The title does not tally with the proposed treatments. The proposed study is repetitive in nature and does not come under the priority of the mandate of the Institute hence **not recommended**. | **Not approved** |
| 17. | Diagnostic analysis of soil physical of prevalent land uses in Shiwalik foothills in relation to soil and water conservation measures.<br>(Pratap Bhattacharya, R.P. Yadav, A.K. Tiwari, Ram Prasad & Y. Agnihotri) Chandigarh | The study may be clubbed with the study proposed at Sr.No.6 | **Not approved**<br>It has been clubbed with the study proposed at Sr. No.6. |

| | | | |
|---|---|---|---|
| 18. | Hydrological response to micro-catchments under different land uses with vegetation manipulation.<br>(V.K. Bhatt, P. Bhattacharya, A.K. Tiwari, Pawan Sharma, Y. Agnihotri & R.K. Aggarwal)<br>Chandigarh | SRC may critically examine. The study may be taken up on paired watershed basis only. | **Approved**<br>Comments of RAC & SRC to be incorporated. Names of Y. Agnihotri and R.K. Aggarwal to be deleted. |
| 19. | Labour absorption in crop and livestock enterprises: A study on employment effect of watershed development programme in semi-arid tropical India.<br>(B. Mondal & N. Loganandhan)<br>Bellary | **Recommended** | **Approved**<br>Title to be modified as "Effect of watershed development programmes on employment generation in semi-arid regions". Comments to be included as suggested by SRC. |
| 20. | Effect of moisture conservation practices and integrated nutrient management on *rabi* sorghum productivity<br>(S.K. N. Math & B. Mondal)<br>Bellary | The proposed study is repetitive in nature and does not come under the priority of the mandate of the Institute hence **not recommended**. | **Not approved** |
| 21. | Effect of vegetative barriers on runoff, soil erosion and nutrient losses in vertisols of semi-arid tropics.<br>(S.K.N. Math, R.N. Adhikari & D. Ramajayam)<br>Bellary | The proposed study is repetitive in nature and does not come under the priority of the mandate of the Institute hence **not recommended**. | **Not approved** |
| 22. | Evaluation of fruit species **(and)** vis-à-vis conservation techniques for Salt affected black soils of semi-arid tropics Regions.<br>(D. Ramajayam, R.N. Adhikari, S.K.N. Math & B. Mondal)<br>Bellary | Recommended **"and"** should be replaced by vis-à-vis | **Approved**<br>Comments of SRC to be incorporated. |
| 23. | Studies on soil erosion and water balance using tilting hydraulic flume in black and red soils of semi-arid regions of South India.<br>(R.N. Adhikari, A.K. Singh & S.K.N. Math)<br>Bellary | **Recommended** | **Not approved** |

| | | | |
|---|---|---|---|
| 24. | Evaluation of site specific Shola species in newly afforested areas for large scale afforestation programme in the Nilgiris, Tamilnadu. (R. Ragupathy, M. Madhu & P. Muralidharan) To be externally funded from HADP, Nilgiris. Udhagamandalam | **Recommended** as externally funded project. | **Approved** Comments of RAC & SRC to be incorporated. |
| 25. | Study of swamps in the Nilgiris for resource conservation. (M. Madhu, D.C. Sahoo, P. Muralidharan, Subhash Chand & R. Ragupathy). To be externally funded from HADP, Nilgiris. Udhagamandalam | **Recommended** as externally funded project. | **Not approved** as separate project. It may be clubbed with Sr. No. 24. |
| 26. | Genesis, characterization and management of land slides in the Nilgiris. (D.V. Singh, V. Selvi & D.C. Sahoo). To be externally funded from HADP, Nilgiris. Udhagamandalam | **Recommended** as externally funded project. | **Approved** Comments of RAC and SRC may be taken into account. |
| 27. | Role/involvement of women in natural resource management in Nilgiris. (P. Sundarambal & Subhash Chand) Udhagamandalam | May be clubbed with the proposed core study at Sr.No. 12 | **Not approved** |
| 28. | Hydrological behaviour of tea plantation in the Nilgiris **on watershed** scale. (D.C. Sahoo, P. Muralidharan, M. Madhu & R. Ragupathy) Udhagamandalam | **Recommended** if the study is on watershed scale. | **Not approved** |
| 29. | Design, development and testing of simple and low-cost continuous mechanical sediment yield sampler. (D.R. Sena, R.S. Kurothe & S.P. Tiwari) Vasad. | **Recommended** | **Approved** |
| 30. | Moisture conservation measures for establishment of tree species in semi-arid deep alluvial soil. (K.P. Mohapatra, R.C. Yadav & Pramod Jha) Agra. | SRC may critically review. | **Not approved** |
| 31. | Evaluation of effect of farming system based nutrient management practices on runoff and soil loss, aggregate stability and nutrient dynamics. (Pramod Jha, R.C. Yadav, K.P. Mohapatra & Om Prakash) Agra. | **Not recommended.** It is suggested that the Institute may have a core project on integrated farming system. | **Not approved** |

| | | | |
|---|---|---|---|
| 32. | Economic fortification of existing forest and horti land use system **(species diversification in the ground flora) through** medicinal aromatic species.<br>(K.P. Mohapatra, R.C. Yadav & Pramod Jha)<br>Agra | **Recommended** with the suggestion that the study may be conducted on medicinal and aromatic vegetation only. | **Approved**<br>Name of Dr. R.C. Yadav to be deleted. Changes as suggested by RAC & SRC may be included. |
| 33. | Status and participatory management of water harvesting structures in Bundelkhand region.<br>(Om Prakash & V.S. Katiyar)<br>Datia. | **Not recommended** | **Not approved** |
| 34. | Constraints faced by line Departments in transfer of resource conservation technology in Bundelkhand region.<br>(Om Prakash &V.S. Katiyar) Datia. | **Not recommended** | **Not approved** |
| 35. | Effect of **(organics)** INM on soil **(properties under)** and aonla based agri-horti. **(System in red soils of Bundelkhand)** system productivity.<br>(H. Biswas, Brij Lal & Dev Narayan)<br>Datia. | **Recommended** with the major modification.<br>Title needs to be suitably modified. | **Approved**<br>Comments of RAC & SRC to be included. |
| 36. | Intercropping in soybean in red and black soils of Bundelkhand under rainfed conditions.<br>(Dev Narayan & Brij Lal)<br>Datia. | **Recommended.**<br>May be integrated with the proposed study at Sr. No. 37 | **Not approved** |
| 37. | Tillage practices for sustainable production of soybean in red soils of Bundelkhand.<br>(Dev Narayan, V.S. Katiyar & Brij Lal) Datia. | May be integrated with the proposed study at Sr.No. 36 | **Not approved** |
| 38. | To study the diffusion of soil conservation technology in Bada Kheda Watershed and adjoining areas.<br>(S.V. Singh & Ashok Kumar) Kota | May be clubbed with core study proposed at Sr. No. 12. | **Not approved**<br>Clubbed with core study proposed at Sr. No. 12 |
| 39. | Status and socio-economic analysis of common property resources in South-eastern Rajasthan.<br>(Ashok Kumar, S.N. Prasad & S.V. Singh)<br>Kota | **Not recommended** | **Not approved** |
| 40. | Evaluation of suitable landuse and management practices for restoring soil quality in ravine rugged eco-system.<br>(J. Somasundaram, B.K. Sethy, Ashok Kumar & H.R. Meena)<br>Kota | **Not recommended** in the present form needs major modifications.<br>May be combined with study proposed at No.41. | **Not approved**<br>Clubbed with Sr. No. 41 |

| | | | |
|---|---|---|---|
| 41. | Productive utilization of ravines through introduction of horticulture and improved planting material.<br>(A.K. Parandiyal, H.R. Meena, B.K. Sethy & J. Somasundaram)<br>Kota | May be combined with study proposed at No. 40. | **Approved.** Investigators will be: A.K. Parandiyal, J. Somasundaram, B.K. Sethy & H.R. Meena |
| 42. | Effect of soil amendments on surface cracks in black soils of south-eastern Rajasthan.<br>(J. Somasundaram, S.N. Prasad, & Ashok Kumar)<br>Kota | **Recommended** as observational trial. | **Approved** as observational trial for one year. |
| 43. | Conserving resources and augmenting livelihood of small holders through multi-tier farming systems in tribal dominant Eastern Ghats of Orissa**.**<br>(Anchal Dass, S. Sudhishri, P.R. Chaudhary & N.K. Paikaray**)**<br>Koraput. | **Recommended** | **Approved**<br>Comments of SRC to be included. |

# PROGRAMME-WISE LIST OF PROJECTS

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

### 1.1: Inventory and database of erosion status using modern tools and procedures

| Sl. No. of SRC Proc., 2004 | Sl No. of SRC Proc., 2003 | Centre/Division |
|---|---|---|
| 1 | 1 | Soil Sci. & Agronomy, Dehradun |
| 2 | 2 | Soil Sci. & Agronomy, Dehradun |
| 3 | 3 | Hydrology & Engg., Dehradun |

**TOTAL = 3**

### 1.2: On-site and off-site effects of erosion

| Sl. No. of SRC Proc., 2004 | Sl No. of SRC Proc., 2003 | Centre/Division |
|---|---|---|
| NIL | NIL | NIL |

**TOTAL = NIL**

### 1.3: Soil erosion processes and models

| Sl. No. of SRC Proc., 2004 | Sl No. of SRC Proc., 2003 | Centre/Division |
|---|---|---|
| 4 | 6 | Hydrology & Engg., Dehradun |
| 5 | 7 | Hydrology & Engg., Dehradun /Chandigarh/Datia/Kota/Vasad |
| 6 | 5 | Datia |
| 7 | New | Soil Sci. & Agronomy, Dehradun /Agra/Bellary/Chandigarh/Datia/Kora-put/Kota/Udhagamandalam/Vasad |

**TOTAL = 4**

## P-2: CONSERVATION MEASURES FOR SUSTAINABLE PRODUCTION SYSTEMS

### 2.1: Resource conservation measures for arable lands

| Sl. No. of SRC Proc., 2004 | Sl No. of SRC Proc., 2003 | Centre/Division |
|---|---|---|
| 8(a) | 8(b) | Soil Sci. & Agronomy, Dehradun |
| 8(b) | 8(a) | Agra |
| 9(a) | 9(a) | Datia |
| 9(b) | 9(b) | Udhagamandalam |
| 9(c) | 9(c) | Vasad |
| 10(a) | 10(d) | Agra |
| 10(b) | 10(a) | Bellary |
| 10(c) | 10(b) | Chandigarh |
| 10(d) | 10(c) | Vasad |
| 10(e) | New | Datia |
| 11(a) | 11(b) | Soil Sci. & Agronomy, Dehradun |
| 11(b) | 11(e) | Agra |
| 11(c) | 11(c) | Kota |
| 11(d) | 11(d) | Kota |
| 11(e) | New | Soil Sci. & Agronomy, Dehradun |
| 11(f) | New | Koraput |

| | | |
|---|---|---|
| 12(a) | 12(f) | Plant Science, Dehradun |
| 12(b) | 12(a) | Agra |
| 12(c) | 12(c) | Chandigarh |
| 12(d) | 12(e) | Vasad |
| 12(e) | New | Soil Sci. & Agronomy, Dehradun |
| 13 | 14 | Bellary |

**TOTAL = 22**

**2.2: Resource conservation measures for non-arable lands**

| Sl. No. of SRC Proc., 2004 | Sl No. of SRC Proc., 2003 | Centre/Division |
|---|---|---|
| 14(a) | 15(a) | Plant Science, Dehradun |
| 14(b) | 15(b) | Plant Science, Dehradun |
| 14(c) | New | Agra |
| 14(d) | New | Udhagamandalam |
| 15(a) | 16(a) | Plant Science, Dehradun |
| 15(b) | 16(b) | Soil Sci. & Agronomy, Dehradun |
| 15(c) | New | Bellary |
| 16(a) | 17(a) | Plant Science, Dehradun |
| 16(b) | 17(b) | Soil Sci. & Agronomy, Dehradun |

**TOTAL = 9**

## P-3: HYDROLOGICAL BEHAVIOUR OF WATERSHEDS FOR CONSERVATION PLANNING

**3.1: Rainfall, runoff, vegetation, soil characteristics and management practices**

| Sl. No. of SRC Proc., 2004 | Sl No. of SRC Proc., 2003 | Centre/Division |
|---|---|---|
| 17 | 19 | Hydrology & Engg., Dehradun |
| 18 | 22 | Hydrology & Engg., Dehradun |
| 19 | 21 | Plant Science, Dehradun |
| 20 | 18 | Datia |
| 21 | 23 | Koraput |
| 22 | 24 | Vasad |
| 23 | New | Hydrology & Engg., Dehradun |
| 24 | New | Hydrology & Engg., Dehradun |
| 25 | New | Chandigarh |
| 26 | New | Vasad |

**TOTAL = 10**

**3.2: Effect of conservation measures and landuse on ground water recharge**

| Sl. No. of SRC Proc., 2004 | Sl No. of SRC Proc., 2003 | Centre/Division |
|---|---|---|
| 27 | 25 | Vasad/Chandigarh/Datia/Kota/Koraput /Bellary/Udhagamandalam |

**TOTAL = l**

**3.3: Water harvesting**

| Sl. No. of SRC Proc., 2004 | Sl No. of SRC Proc., 2003 | Centre/Division |
|---|---|---|
| 28 | 26 | Chandigarh |
| 29 | 27 | Datia |
| 30 | 28 | Datia |
| 31 | 30 | Hydrology & Engg., Dehradun |

**TOTAL = 4**

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

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

| Sl. No. of SRC Proc., 2004 | Sl No. of SRC Proc., 2003 | Centre/Division |
|---|---|---|
| 32 | 31 | Chandigarh / Hydrology & Engg., Dehradun |
| 33 | 32 | Agra |
| 34 | 33 | Kota |
| 35 | New | Hydrology & Engg., Dehradun |
| 36 | New | Kota |
| 37 | New | Udhagamandalam |

**TOTAL = 6**

## P-5: PARTICIPATORY INTEGRATED WATERSHED MANAGEMENT

### 5.1: Methodologies for development of watersheds and decision support systems for interventions

| Sl. No. of SRC Proc., 2004 | Sl No. of SRC Proc., 2003 | Centre/Division |
|---|---|---|
| 38 | 34 | HRD & SS, Dehradun |
| 39 | 35 | Koraput |

**TOTAL = 2**

### 5.2: Landuse Planning

| Sl. No. of SRC Proc., 2004 | Sl No. of SRC Proc., 2003 | Centre/Division |
|---|---|---|
| NIL | NIL | NIL |

**TOTAL = NIL**

### 5.3: Impact on Production, environment and biodiversity

| Sl. No. of SRC Proc., 2004 | Sl No. of SRC Proc., 2003 | Centre/Division |
|---|---|---|
| 40 | 37 | Chandigarh |

**TOTAL = 1**

### 5.4: Farming system approach

| Sl. No. of SRC Proc., 2004 | Sl No. of SRC Proc., 2003 | Centre/Division |
|---|---|---|
| 41 | 39 | Hydrology & Engg., Dehradun |

**TOTAL = 1**

### 5.5: Watershed technologies (Strategic research)

| Sl. No. of SRC Proc., 2004 | Sl No. of SRC Proc., 2003 | Centre/Division |
|---|---|---|
| 42 | 40 | Hydrology & Engg., Dehradun/ Udhagamandalam |

**TOTAL = 1**

## P-6 : SOCIO-ECONOMIC ANALYSIS AND POLICY DEVELOPMENT FOR WATERSHED MANAGEMENT

### 6.1: Resource economics

| Sl. No. of SRC Proc., 2004 | Sl No. of SRC Proc., 2003 | Centre/Division |
|---|---|---|
| 43 | 41 | Agra |
| 44 | New | Bellary |

**TOTAL =2**

### 6.2: Institute Village Linkage Programme for Technology assessment and refinement

| Sl. No. of SRC Proc., 2004 | Sl No. of SRC Proc., 2003 | Centre/Division |
|---|---|---|
| 45 | 43 | HRD & SS, Dehradun |

**TOTAL = 1**

### 6.3: Common property resource management

| Sl. No. of SRC Proc., 2004 | Sl No. of SRC Proc., 2003 | Centre/Division |
|---|---|---|
| 46 | 45 | Chandigarh |

**TOTAL = 1**

## P-7: HUMAN RESOURCE DEVELOPMENT AND TECHNOLOGY TRANSFER

### 7.1: Training methodology, need assessment, gender neutrality and evaluation

| Sl. No. of SRC Proc., 2004 | Sl No. of SRC Proc., 2003 | Centre/Division |
|---|---|---|
| 47 | 46 | Vasad |
| 48 | New | HRD & SS, Dehradun |

**TOTAL = 2**

### 7.2: Organizational infrastructure and motivational parameters

| Sl. No. of SRC Proc., 2004 | Sl No. of SRC Proc., 2003 | Centre/Division |
|---|---|---|
| Nil | Nil | Nil |

**TOTAL = Nil**

### 7.3: Participatory approaches for dissemination of technology and adoption

| Sl. No. of SRC Proc., 2004 | Sl No. of SRC Proc., 2003 | Centre/Division |
|---|---|---|
| 49 | 49 | Koraput |
| 50 | 50 | Vasad |
| 51 | New | HRD & SS/Bellary/Datia/Kota/ Udhagamandalam/Vasad |

**TOTAL = 3**

**GRAND TOTAL = 73**

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# CENTRE/DIVISION-WISE NUMBER OF ON-GOING PROJECTS

## TOTAL NUMBER OF PROJECTS (CENTRE/DIVISION-WISE)

| S. No. | CENTRE/DIVISION | SL. NO. OF ON-GOING PROJECTS | TOTAL |
|---|---|---|---|
| 1. | Dehradun | | |
| | • Soil Science & Agronomy | 1,2,7,8(a), 11(a), 11(e), 12(e), 15(b) & 16(b) | **9** |
| | • Plant Science | 12(a), 14(a), 14(b), 15(a), 16(a) & 19 | **6** |
| | • Hydrology & Engineering | 3,4,5,17,18,23,24,31,32,35,41 & 42 | **12** |
| | • HRD & SS | 38,45,48 & 51 | **4** |
| 2. | Agra | 7,8(b), 10(a), 11(b), 12(b), 14(c), 33 & 43 | **8** |
| 3. | Bellary | 7,10(b), 13,15(c), 27,44 & 51 | **7** |
| 4. | Chandigarh | 5,7,10(c), 12(c), 25,27,28,32,40 & 46 | **10** |
| 5. | Datia | 5,6,7,9(a), 10(e), 20,27,29,30 & 51 | **10** |
| 6. | Koraput | 7,11(f), 21,27,39 & 49 | **6** |
| 7. | Kota | 5,7,11(c), 11(d), 27,34,36 & 51 | **8** |
| 8. | Udhagamandalam | 7,9(b), 14(d), 27,37,42 & 51 | **7** |
| 9. | Vasad | 5,7,9(c), 10(d), 12(d), 22,26,27,47,50 & 51 | **11** |
| | **Grand Total** | | **98** |

## CENTRE/DIVISION-WISE PROJECTS

| Sl. No. | CENTRE/ DIVISION | PROGRAMME-WISE NUMBER | | | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|
| | | P-1 | P-2 | P-3 | P-4 | P-5 | P-6 | P-7 | |
| 1. | Dehradun | | | | | | | | |
| | ♦ Soil Science & Agronomy | 3 | 6 | - | - | - | - | - | **9** |
| | ♦ Plant Science | - | 5 | 1 | - | - | - | - | **6** |
| | ♦ Hydrology & Engineering | 3 | - | 5 | 2 | 2 | - | - | **12** |
| | ♦ HRD & SS | - | - | - | - | 1 | 1 | 2 | **4** |
| 2. | Agra | 1 | 5 | - | 1 | - | 1 | - | **8** |
| 3. | Bellary | 1 | 3 | 1 | - | - | 1 | 1 | **7** |
| 4. | Chandigarh | 2 | 2 | 3 | 1 | 1 | 1 | - | **10** |
| 5. | Datia | 3 | 2 | 4 | - | - | - | 1 | **10** |
| 6. | Koraput | 1 | 1 | 2 | - | 1 | - | 1 | **6** |
| 7. | Kota | 2 | 2 | 1 | 2 | - | - | 1 | **8** |
| 8. | Udhagamandalam | 1 | 2 | 1 | 1 | 1 | - | 1 | **7** |
| 9. | Vasad | 2 | 3 | 3 | - | - | - | 3 | **11** |
| | **Total** | **19** | **31** | **21** | **7** | **6** | **4** | **10** | **98** |

# 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 projects 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 projects (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 SRC Meeting of 2004 is as follows:

| Name | Designation | Leader | Associate | Total |
|---|---|---|---|---|
| Dr. V.N. Sharda | Director | 2 | 3 | 5 |
| **Soil Science and Agronomy Division** | | | | |
| Dr. K.S. Dadhwal | Head of Division | 1 | 3 | 4 |
| Dr. P.C. Tyagi | Principal Scientist (Plant Breeding) | 1 | - | 1 |
| Mr. S.C. Mohan | Principal Scientist (Soil Fertility) | 1 | 2 | 3 |
| Dr. Ratan Singh | Principal Scientist (Soils) | 1 | 1 | 2 |
| Dr. O.P.S. Khola | Senior Scientist (Agronomy) | 2 | 1 | 3 |
| Dr. N.K. Sharma | Senior Scientist (Agronomy) | -- | 5 | 5 |
| Dr. B.N. Ghosh | Senior Scientist (Soils) | 1 | 4 | 5 |
| Mr. R.K. Dubey | Scientist (SS) (Agronomy) | 1 | -- | 1 |
| Dr. S.K. Verma | Scientist (SS) (Animal Nutrition) | -- | 2 | 2 |
| Dr. D. Mandal | Scientist (Soils) | 1 | 1 | 2 |
| **Plant Science Division** | | | | |
| Dr. S.K. Dhyani | Head of Division | 2 | 3 | 5 |
| Dr. A. Raizada | Senior Scientist (Forestry) | 1 | 3 | 4 |
| Dr. Harsh Mehta | Senior Scientist (Plant Breeding) | 1 | 2 | 3 |
| Dr. Charan Singh | Scientist (SG) (Forestry) | 1 | 3 | 4 |
| Dr. A.C. Rathore | Scientist (Horticulture) | 1 | 2 | 3 |
| Dr. J. Jayaprakash | Scientist (Forestry) | -- | -- | NIL |

| Name | Designation | Leader | Associate | Total |
|---|---|---|---|---|
| **Hydrology and Engineering Division** | | | | |
| Dr. G.P. Juyal | I/c. Head of Division | 1 | 1 | 2 |
| Er. K.P. Tripathi | Principal Scientist (Engineering) | 3 | 1 | 4 |
| Dr. P.R. Ojasvi | Senior Scientist (Engineering) | 1 | 1 | 2 |
| Er. S.S. Shrimali | Senior Scientist (Computer Application) | 1 | 3 | 4 |
| Dr. P.K. Das | Senior Scientist (Agril. Stat.) | 1 | 1 | 2 |
| Mr. M. Muruganandam | Scientist (SS) (Fisheries) | 1 | -- | 1 |
| Er. B.S. Naik | Scientist (Engineering) | 1 | 2 | 3 |
| **Human Resource Development and Social Science Division** | | | | |
| Dr. A.S. Mishra | I/c Head of Division | 2 | 1 | 3 |
| Er. C. Prakash | Principal Scientist (Engineering) | -- | 2 | 2 |
| Mr. D.S. Tomar | Senior Scientist (Agronomy) | -- | 1 | 1 |
| Dr. B.L. Dhyani | Senior Scientist (Agril. Econ.) | 1 | 1 | 2 |
| Dr. Bankey Bihari | Scientist (SS) (Agril. Extn.) | 1 | 2 | 3 |
| **Research Coordination & Management Unit** | | | | |
| Er. B.P. Joshi | Principal Scientist (Engineering) | 1 | -- | 1 |
| Mr. A.K. Khullar | Scientist (SG) (Agril. Stat.) | -- | 1 | 1 |
| Dr. Pradeep Dogra | Senior Scientist (Agril. Econ.) | -- | 3 | 3 |
| **Research Centre, Agra** | | | | |
| Dr. R.C. Yadav | Head of Centre | 1 | 4 | 5 |
| Dr. H.C. Nitant | Principal Scientist (Soils) | 1 | 1 | 2 |
| Dr. Om Prakash | Principal Scientist (Agronomy) | 1 | 4 | 5 |
| Dr. R.C. Agnihotri | Principal Scientist (Soils) | 1 | -- | 1 |
| Mr. Bhanwar Singh | Scientist (SS) (Agril. Econ.) | 1 | -- | 1 |
| Er S.K. Srivastava | Scientist (Engineering) | -- | -- | NIL |
| Dr. K.P. Mohapatra | Scientist (Forestry) | 2 | -- | 2 |
| Dr. Pramod Jha | Scientist (Soils) | 1 | 1 | 2 |
| **Research Centre, Bellary** | | | | |
| Er. R.N. Adhikari | I/c Head of Centre | 1 | 1 | 2 |
| Dr. S.K.N. Math | Principal Scientist (Soils) | 2 | 2 | 4 |
| Dr. S.L. Patil | Senior Scientist (Agronomy) | 1 | 1 | 2 |
| Er. A.K. Singh | Scientist (Engineering) | -- | 2 | 2 |
| Dr. B. Mondal | Scientist (Agril. Econ.) | 1 | 1 | 2 |
| Dr. N. Loganandhan | Scientist (Agril. Extension) | 1 | 1 | 2 |
| Mr. D. Ramajayam | Scientist (Horticulture) | 1 | -- | 1 |

| Name | Designation | Leader | Associate | Total |
|---|---|---|---|---|
| **Research Centre, Chandigarh** | | | | |
| Dr. R.K. Aggarwal | Head of Centre | -- | 3 | 3 |
| Dr. Y.K. Agnihotri | Principal Scientist (Agril. Stat.) | -- | 3 | 3 |
| Dr. A.K. Tiwari | Principal Scientist (Engineering) | 3 | 3 | 6 |
| Dr. (Ms.) Pawan Sharma | Principal Scientist (Soil Micro-bio.) | 1 | 3 | 4 |
| Dr. Pratap Singh | Principal Scientist (Agronomy) | 1 | 3 | 4 |
| Dr. R.P. Yadav | Senior Scientist (Soils) | 1 | 1 | 2 |
| Dr. (Ms.) S.L. Arya | Senior Scientist (Agril. Econ.) | 1 | 1 | 2 |
| Dr. V.K. Bhatt | Senior Scientist (Engineering) | 2 | 1 | 3 |
| Dr. Ram Prasad | Scientist (SS) (Horticulture) | -- | 5 | 5 |
| Dr. Pratap Bhattacharya | Scientist (Soil Physics) | 1 | 3 | 4 |
| **Research Centre Datia** | | | | |
| Dr. V.S. Katiyar | Head of Centre | 2 | 2 | 4 |
| Dr. Dev Narayan | Senior Scientist (Agronomy) | 1 | 4 | 5 |
| Dr. M.L. Gaur | Senior Scientist (Engineering) | 3 | 2 | 5 |
| Dr. Om Prakash | Senior Scientist (Agril. Extn.) | 1 | -- | 1 |
| Dr. Brij Lal | Scientist (SS) (Soil Fertility) | 2 | 4 | 6 |
| Dr. H. Biswas | Scientist (Soils) | 1 | 2 | 3 |
| **Research Centre, Koraput** | | | | |
| Dr. U.S. Patnaik | Head of Centre | 1 | 2 | 3 |
| Dr. K.C. Dubey | Senior Scientist (Horticulture) | -- | -- | NIL |
| Dr. R.K. Panda | Senior Scientist (Engineering) | 1 | 1 | 2 |
| Mr. P.R. Chaudhary | Scientist (SS) (Forestry) | -- | 3 | 3 |
| Er.(Ms) S. Sudhishri | Scientist (Engineering) | 2 | 3 | 5 |
| Mr. Anchal Dass | Scientist (Agronomy) | 1 | 3 | 4 |
| Dr. N.K. Paikaray | Scientist (Soil Science) | 1 | 4 | 5 |
| **Research Centre, Kota** | | | | |
| Dr. S.N. Prasad | I/C. Head of Centre | 1 | 1 | 2 |
| Dr. R.K. Singh | Senior Scientist (Soil Fertility) | 2 | 2 | 4 |
| Dr. S.V. Singh | Senior Scientist (Agril. Extn.) | 1 | -- | 1 |
| Mr. A.K. Parandiyal | Scientist (SG) (Forestry) | 1 | 1 | 2 |
| Dr. Ashok Kumar | Senior Scientist (Agril. Econ.) | -- | 3 | 3 |
| Er. Shakir Ali | Scientist (SS) (Engineering) | 2 | 1 | 3 |
| Er. B.K. Sethy | Scientist (Engineering) | 1 | 4 | 5 |
| Dr. J. Somasundaram | Scientist (Soils) | -- | 2 | 2 |
| Mr. H.R. Meena | Scientist (Horticulture) | -- | 1 | 1 |

| Name | Designation | Leader | Associate | Total |
|---|---|---|---|---|
| **Research Centre, Udhagamandalam** | | | | |
| Dr. M. Madhu | I/c Head of Centre | -- | 3 | 3 |
| Mr. R. Ragupathy | Scientist (SS) (Forestry) | 1 | -- | 1 |
| Dr. D.V. Singh | Scientist (SS) (Soil Fertility) | 2 | 2 | 4 |
| Dr. Subhash Chand | Scientist (SS) (Agril. Econ.) | -- | 1 | 1 |
| Er. (Ms.) V. Selvi | Scientist (SS) (Engineering) | 2 | 2 | 4 |
| Dr.(Ms.) P. Sundarambal | Scientist (SS) (Agril. Extn.) | 1 | 2 | 3 |
| Dr. P. Murlidharan | Scientist (SS) (Soils) | 1 | 1 | 2 |
| Er. D.C. Sahoo | Scientist (Engineering) | -- | 2 | 2 |
| **Research Centre, Vasad** | | | | |
| Dr. R.S. Kurothe | Head of Centre | 2 | 4 | 6 |
| Dr. H.B. Singh | Principal Scientist (Agronomy) | 2 | 3 | 5 |
| Dr. S.P. Tiwari | Senior Scientist (Soil Fertility) | 2 | 5 | 7 |
| Dr. G.L. Bagdi | Senior Scientist (Agril. Extn.) | 3 | -- | 3 |
| Mr. V.C. Pande | Scientist (SG) (Agril. Econ.) | -- | 6 | 6 |
| Dr. D.R. Sena | Scientist (SS) (Engineering) | 2 | 2 | 4 |

# LIST OF PARTICIPANTS

| | | | |
|---|---|---|---|
| 1. | Dr. V.N. Sharda | Director | Chairman |
| **CSWCRTI, DEHRADUN** | | | |
| 2. | Dr. K.S. Dadhwal | Head (SS&A Division) & PI – P1 | Member |
| 3. | Dr. S.K. Dhyani | Head (Pl. Sc. Division) & PI – P5 | Member |
| 4. | Dr. A.S. Mishra | I/c Head (HRD & SS Division) & PI – P7 | Member |
| 5. | Dr. G.P. Juyal | I/c Head (Hydrology & Engineering Division) | Member |
| 6. | Er. K.P. Tripathi | Principal Scientist (Engg.) & PI – P4 | Member |
| 7. | Er. B.P. Joshi | Principal Scientist (Engg.) & OIC (RCM Unit) | Member Secretary |
| 8. | Mr. S.C. Mohan | Principal Scientist (Soils) | |
| 9. | Er. C. Prakash | Principal Scientist (Engg.) & PI – P3 | Member |
| 10. | Mr. D.S. Tomar | Senior Scientist (Agronomy) | |
| 11. | Dr. B.L. Dhyani | Senior Scientist (Ag. Economics) & PI – P6 | Member |
| 12. | Dr. A. Raizada | Senior Scientist (Forestry) | |
| 13. | Dr. O.P.S. Khola | Senior Scientist (Agronomy) & PI – P2 | Member |
| 14. | Dr. Harsh Mehta | Senior Scientist (Plant Breeding) | |
| 15. | Dr. P.R. Ojasvi | Senior Scientist (Engg.) | |
| 16. | Mr. A.K. Khullar | Scientist (SG) (Agril. Stat.) | Rapporteur |
| 17. | Er. S.S. Shrimali | Senior Scientist (CAA) | |
| 18. | Dr. Charan Singh | Scientist (SG) (Forestry) | |
| 19. | Dr. B.N. Ghosh | Senior Scientist (Soils) | |
| 20. | Dr. P.K. Das | Senior Scientist (Agril. Stat.) | |
| 21. | Dr. Pradeep Dogra | Senior Scientist (Agril. Econ.) | Rapporteur |
| 22. | Mr. R.K. Dubey | Scientist (SS) (Agronomy) | |
| 23. | Mr. M. Muruganandam | Scientist (SS) (Fisheries) | |
| 24. | Dr. S.K. Verma | Scientist (SS) (Animal Nutrition) | |
| 25. | Dr. Bankey Bihari | Scientist (SS) (Agril. Extn.) | |
| 26. | Dr. A.C. Rathore | Scientist (Horticulture) | |
| 27. | Dr. D. Mandal | Scientist (Soils) | |
| 28. | Er. B.S. Naik | Scientist (Engg.) | |
| 29. | Mr. S.K. Sinha | Sr. Technical Assistant (T-4) | Rapporteur |
| **RESEARCH CENTRE, AGRA** | | | |
| 30. | Dr. R.C. Yadav | Head of the Centre | Member |
| 31. | Dr. H.C. Nitant | Principal Scientist (Soils) | |
| 32. | Dr. Om Prakash | Principal Scientist (Agronomy) | |
| 33. | Mr. Bhanwar Singh | Scientist (SS) (Agril. Eco.) | |
| 34. | Dr. K.P. Mohapatra | Scientist (Forestry) | |
| 35. | Dr. Pramod Jha | Scientist (Soils) | |
| **RESEARCH CENTRE, BELLARY** | | | |
| 36. | Er. R.K. Adhikari | I/c Head of the Centre | Member |
| 37. | Dr. S.K.N. Math | Principal Scientist (Soils) | |
| 38. | Dr. B. Mondal | Scientist (Agril. Econ.) | |
| 39. | Dr. N. Loganandhan | Scientist (Agril. Extn.) | |
| 40. | Mr. D. Ramajayam | Scientist (Horticulture) | |

| | | | |
|---|---|---|---|
| **RESEARCH CENTRE, CHANDIGARH** | | | |
| 41. | Dr. R.K. Aggarwal | Head of the Centre | Member |
| 42. | Dr. A.K. Tiwari | Principal Scientist (Engg.) | |
| 43. | Dr. Pratap Singh | Principal Scientist (Agronomy) | |
| 44. | Dr. (Ms.) Pawan Sharma | Principal Scientist (Soil Micro-bio.) | |
| 45. | Dr. R.P. Yadav | Senior Scientist (Soils) | |
| 46. | Dr. V.K. Bhatt | Senior Scientist (Engg.) | |
| **RESEARCH CENTRE, DATIA** | | | |
| 47. | Dr. V.S. Katiyar | Head of the Centre | Member |
| 48. | Dr. Dev Narain | Senior Scientist (Agronomy) | |
| 49. | Dr. Om Prakash | Senior Scientist (Agril. Extn.) | |
| 50. | Dr. Brij Lal | Scientist (SS) (Soils) | |
| 51. | Dr. H. Biswas | Scientist (Soils) | |
| **RESEARCH CENTRE, KORAPUT** | | | |
| 52. | Dr. U.S. Patnaik | Head of the Centre | Member |
| 53. | Ms. S. Sudhishri | Scientist (Engg.) | |
| 54. | Mr. Anchal Dass | Scientist (Agronomy) | |
| **RESEARCH CENTRE, KOTA** | | | |
| 55. | Dr. S.N. Prasad | I/c Head of the Centre | Member |
| 56. | Dr. R.K. Singh | Senior Scientist (Soil Fertility) | |
| 57. | Dr. Ashok Kumar | Senior Scientist (Agril. Eco.) | |
| 58. | Dr. S.V. Singh | Senior Scientist (Agril. Extn.) | |
| 59. | Er. B.K. Sethy | Scientist (Engg.) | |
| 60. | Dr. J. Somasundaram | Scientist (Soils) | |
| **RESEARCH CENTRE, UDHAGAMANDALAM** | | | |
| 61. | Dr. M. Madhu | I/c Head of the Centre | Member |
| 62. | Mr. R. Ragupathy | Scientist (SS) (Forestry) | |
| 63. | Er. V. Selvi | Scientist (SS) (Engg.) | |
| 64. | Dr.(Ms) P. Sundarambal | Scientist (SS) (Agril. Extn.) | |
| 65. | Dr. P. Muralidharan | Scientist (SS) (Soils) | |
| 66. | Er. D.C. Sahoo | Scientist (Engineering) | |
| **RESEARCH CENTRE, VASAD** | | | |
| 67. | Dr. R.S. Kurothe | Head of the Centre | Member |
| 68. | Dr. H.B. Singh | Principal Scientist (Agril. Extn.) | |
| 69. | Mr. V.C. Pande | Scientist (SG) (Agril. Eco.) | |