

REMARKS OF THE CHAIRMAN

Dr. V.N. Sharda, Acting Director, CSWCRTI, Dehradun and Chairman, Staff Research Council Meeting welcomed all the members and participants. Scientists who joined the Institute recently were introduced to the house. The Chairman informed the house about the Best Annual Report Award and the Trophy for 1998-99 bestowed to the Institute. The citation and the trophy were displayed in the house. He urged that this tradition should be maintained in future and properly edited and concise Annual Report on project basis should be submitted for the current year by 28 February, 2001 positively. As per ICAR guidelines, the Institute Annual Report should not exceed two hundred pages.

Two publications from CSWCRTI, Research Centre, Udthagamandalam and one from Chandigarh Centre were displayed in the house and were highly appreciated by the participants.

The Chairman informed the house that an International Training Course for 15 participants from 'SAARC' countries is proposed to be held during, 2001 for 2 weeks duration.

It was emphasized by the Chairman that a reorientation of projects should be taken up on priority to fit into the themes of Natural Resources Management Division, ICAR. It was envisaged that a paradigm shift in terms of R&D efforts from production oriented to production cum environmental issues covering degradation and contamination of resources to ensure sustainability. New issues and themes such as soil water contamination, pollution, ground water recharge, bio-diversity, biotechnology, climatic changes, water logging/salinisation should be given due priority.

The Chairman informed the house that as per new National Agriculture Policy household food security should be emphasized to counter the uneven growth in agricultural production. He brought to the notice of the house the salient features of the policy to achieve agricultural growth rate of 4% per annum in the next two decades.

The Research Advisory Committee (RAC) Meeting was held under the Chairmanship of Padam Shri Dr. J.S.P. Yadav at CSWCRTI, Dehradun on 28-29, November 2000. The Chairman informed the house that the RAC recommendations have been communicated to ICAR for approval. He requested the Heads of Divisions/Centres to send their feedback on the recommendations by 30th April, 2001 positively. As desired by the RAC, in future the Heads of Research Centres may also be invited for participation in the RAC meetings.

The Chairman appreciated the effort made by all the Heads, PI's and scientists for meaningful deliberations and thanked all the participants.

STATUS OF PROJECT-WISE ON-GOING EXPERIMENTS

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 Experiment	Leader and Associates	Centre/Division	Start	Completion	Remarks
1.	Assessment, monitoring and mapping of erosion hazards and developing a data base for conservation planning.	S.C. Mohan Ratan Singh S.S. Shrimali S.K. Dhyani	Soil Science & Agronomy, Dehradun	2000	2003	To be continued
Comments: Dr. S.K. Dhyani will replace Dr. Ram Babu as an associate.						

1.2 : ON-SITE AND OFF-SITE EFFECTS OF EROSION

2.	Impact of landuse pattern on runoff quality vis-à-vis fish production.	M.Muruganandam K.P.Tripathi S.C. Mohan	Hydrology & Engineering, Dehradun	2000	2003	To be continued
Comment: A pH meter may be used at the site instead of litmus paper for pH data. (Action: Mr. M.Muruganandam)						
3.	Soil erosion for prominent medicinal and aromatic plants in Nilgiris.	D.V. Singh A.K. Sikka M. Madhu Subhash Chand	Udhagamandalam	1997	2002	To be continued
Comments: Previous data may be used for the purpose of comparing changes in runoff and soil loss. Assessment of medicinal value of plants needs to be done. (Action: Dr. D.V. Singh)						
4.	Evaluation of soil and water conservation measures in Sardar Sarovar catchment in Gujarat state.	Virendra Kumar R.S. Kutothe, S.P. Tiwari H.B. Singh, G.L. Khatik V.C. Pandey	Vasad	1994	2005	This experiment was discontinued in 1999. The SRC has revived it on the proposal of Head, Research Centre, Vasad.

1.3: SOIL EROSION PROCESSES AND MODELS

Sl. No.	Title of the Experiment	Leader and Associates	Centre/Division	Start	Completion	Remarks
5.	Development and validation of process based runoff and soil erosion simulation models.	V.N. Sharda C.P. Arora	H.R.D. & S.S., Dehradun	1991	2002	To be continued
Comments: Experiment is further extended till 2002. Er. C.P. Arora will now replace Dr. M.L. Gaur as an associate.						
6.	Soil erosion studies using simulated rainfall in black soils.	R. Saraswathy R.N. Adhikari	Bellary	2001	2003	To be continued (New Experiment)
Comments: Thorough review of work on this aspect is desired. (Action: Ms. R. Saraswathy)						

P-2: CONSERVATION MEASURES FOR SUSTAINABLE PRODUCTION SYSTEMS

2.1: RESOURCE CONSERVATION MEASURES FOR ARABLE LANDS

7.	Tillage and surface cover management for resource conservation and productivity					
(a)	Tillage practices for erosion control and crop productivity.	H.C. Nitant Om Prakash	Agra	1997	2005	To be continued
Comments: Name of Mr. S.K. Srivastava is deleted.						
(b)	To study the effect of residue management on resource conservation, soil erosion and crop production in vertisols of semi arid tropics.	S.K.N. Math R.N. Adhikari S.L. Patil	Bellary	1995	2001	To be concluded
(c)	Tillage and surface cover management.	Dev Narain A.K. Tiwari Brij Lal	Datia	1996	2005	To be continued

Sl. No.	Title of the Experiment	Leader and Associates	Centre/Division	Start	Completion	Remarks
(d)	Soil surface management for erosion control.	Ratan Singh S.S. Shrimali P. Murlidharan N.K. Sharma	Soil Science & Agronomy, Dehradun	1995	2004	To be continued
Comments: Adopt minimum tillage as defined in experiments already undertaken. (Action: Dr. Ratan Singh)						
(e)	Studies on effect of crop residue management and tillage practices on soil moisture conservation, soil properties and yield of sorghum.	R.K. Singh S.N. Prasad K.D. Singh	Kota	1993	2001	To be concluded
Comments: Experiment to be concluded in 2001. Changes in soil physical properties may be studied. (Action: Dr. R.K. Singh)						
8.	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 A.K. Sharma Brij Lal	Datia	1996	2005	To be continued
Comments: Dr. M.L. Gaur will replace Er. V.K. Bhatt as the leader and Dr. Brij Lal will replace Er. A.K. Tiwari as second associate. Caliberate for one more year and use only five treatments as suggested. (Action: Dr. M.L. Gaur)						
(b)	Evaluation of mechanical and vegetative measures on 8 per cent slopping runoff plots.	P.R. Ojasvi O.P.S. Khola Pradeep Dogra	Hydrology & Engineering, Dehradun	1995	2001	To be concluded
(c)	Evaluation of different conservation practices on steep lands in Eastern Ghats Highland Zone.	Susama Sudhishri P.R. Chaudhary Anchal Das	Koraput	1994	2002	To be continued
Comments: Data for the year 2000 may be re-examined for very low runoff and soil loss. (Action: Ms. Susama Sudhishri)						

Sl. No.	Title of the Experiment	Leader and Associates	Centre/Division	Start	Completion	Remarks
(d)	Effect of vegetative barriers on erosion losses and yield of rainfed sorghum and soybean.	S.N. Prasad R.K. Singh Shakir Ali A.K. Parandiyal	Kota	1997	2002	To be continued
Comments: Water use, yield and runoff data may be re-examined alongwith previous two years data.				(Action: Dr. S.N. Prasad)		
9.	Integrated nutrient management for rehabilitation and productivity					
(a)	Integrated nutrient supply system for rainfed semi-arid tropics.	S.L. Patil	Bellary	2000	2010	To be continued
(b)	Bio-fertilizer for integrated nutrient management for rehabilitation of eroded Shiwaliks.	Pawan Sharma Pratap Singh Ram Prasad	Chandigarh	2000	2004	To be continued
(c)	Green manuring, mulching and Nitrogen fertilization for optimizing productivity in maize-wheat cropping system.	A.R.Sharma S.K.Dhyani Ratan Singh D.S. Tomar	Soil Science & Agronomy, Dehradun	2000	2002	To be continued
10.	Cropping systems for resource conservation					
(a)	Inter-cropping studies in rainfed maize-wheat cropping system on slopping land in Doon valley.	D.S. Tomar, A.R.Sharma Ratan Singh B.P.Joshi A.K.Khullar	H.R.D. & S.S., Dehradun	2000	2003	To be continued
(b)	Evaluation of some suitable minor millets for production and conservation of resources.	Harsh Mehta P.C. Tyagi	Plant Science, Dehradun	2000	2004	To be continued

Sl. No.	Title of the Experiment	Leader and Associates	Centre/Division	Start	Completion	Remarks
11.	Agroforestry systems for arable lands					
(a)	Effect of supplemental irrigation and mulching on growth, yield and quality behaviour of Kinnow Mandarin in Doon valley.	Hira Lal	Plant Science, Dehradun	1995	2005	To be continued
Comments: Name of Dr. Y.K. Arora is deleted.						
(b)	Provincances evaluation study in <i>Grewia optiva</i> .	P.C. Tyagi Harsh Mehta V.P.S. Tomar	Soil Science & Agronomy, Dehradun	1995	2003	To be continued
Comments: Treatments of 75% lopping may be included for exploring fodder availability and the quality of the fodder may be tested. (Action: Dr. P.C. Tyagi)						
(c)	Studies on tree crop association with <i>Acacia nilotica</i> , <i>Azadirachta indica</i> and <i>Albizia lebbek</i> .	A.K. Parandiyal K.D. Singh Arjun Prasad	Kota	1993	2003	To be continued
12.	Aonla based agro-forestry system for moisture conservation and soil productivity in degraded ravine lands.	Dinesh Kumar H.C. Nitant Om Prakash	Agra	2001	2006	To be continued (New Experiment)
Comments: Extensive review and survey in the area is desired. The number of treatment may be reduced to five with five replications. Control in the form of sole aonla crop may be one of the treatments. Cost to be worked out and the number of aonla plants be increased. (Action: Dr. Dinesh Kumar)						
13.	Evaluation of different field crops under rainfed agri-horticulture system for resource conservation.	Arjun Prasad A.K. Parandiyal K.D. Singh	Kota	2001	2003	To be continued (New Experiment)

2.2: RESOURCE CONSERVATION MEASURES FOR NON-ARABLE LANDS

Sl. No.	Title of the Experiment	Leader and Associates	Centre/Division	Start	Completion	Remarks
14.	Agroforestry systems for non-arable lands					
(a)	Production potential of several leguminous and non-leguminous tree species under different management practices.	K. Ilango M.S.R. Rao	Bellary	1994	2009	To be continued
Comments: Name of Mr. K. Ilango is included as the leader.						
(b)	Planning optimal strategies for agroforestry systems in hills.	B.L. Dhyani Pradeep Dogra, A. Raizada	H.R.D. & S.S., Dehradun	1996	2001	To be concluded
Comments: Experiment is further extended till 2001. Name of Dr. Ram Babu is deleted and Dr. A. Raizada is included as second associate.						
(c)	Fuelwood and fodder production from densified plantations on old riverbed land.	Anurag Raizada Charan Singh P. Murlidharan	Plant Science, Dehradun	1997	2016	To be continued
Comments: Name of Dr. P. Murlidharan is included as second associate. <i>Grevia optiva</i> may be lopped by 75% as per recommendations. (Action: Dr. Anurag Raizada)						
(d)	Evaluation of the agro-forestry systems for marginal lands in Doon valley.	S.K. Dhyani, Hira Lal, A.R.Sharma, Ratan Singh, Pradeep Dogra	Plant Science, Dehradun	2000	2010	To be continued
Comments: Names of Dr. Ratan Singh and Dr. P.Dogra are included as third and fourth associates. Experiment layout should be such that comparison between agriculture, horticulture and forestry components is properly expressed. (Action: Dr. S.K. Dhyani)						
15.	Agri-horticultural systems					
(a)	Management practices for agri-horticulture system in reclaimed ravines.	Om Prakash Dinesh Kumar, H.C. Nitant	Agra	1990	2001	To be concluded
Comments: Name of Dr. H.C. Nitant is included as second associate.						

Sl. No.	Title of the Experiment	Leader and Associates	Centre/Division	Start	Completion	Remarks
(b)	Studies on profile modification for growing <i>aonla</i> in degraded Yamuna ravines.	R.C. Agnihotri Dinesh Kumar	Agra	2000	2001	To be continued
(c)	Land configuration for agri-horticultural system for degraded lands.	Pratap Singh Ram Prasad R.P. Yadav	Chandigarh	1996	2001	To be concluded
(d)	Evaluation of mango, litchi and peach based agri-horti systems on degraded lands in Doon Valley.	Hira Lal N.K. Sharma D.S. Tomar	Plant Science, Dehradun	1995	2005	To be continued
Comments: Experiments No. 30, 31 and 32 of SRC Meeting proceedings, 1999 have been clubbed as one project. Cluster bean may be replaced by Okra. (Action: Dr. Hira Lal)						
(e)	Land and cover management in tea plantation.	M. Madhu, V. Selvi R. Ragupathy, D.V. Singh	Udhagamandalam	1995	2005	To be continued
16.	Horti-pastoral systems					
(a)	Development of horti-pastoral land use system for degraded lands.	Ram Prasad R.K. Aggarwal, Y. Agnihotri S.P. Mittal, R.P. Yadav	Chandigarh	1995	2003	To be continued
Comments: Name of Dr. J.S. Samra is deleted.						
17.	Silvi-pastoral systems					
(a)	Studies on composite multi-layered vegetation system developed to optimize productivity of eroded Shiwaliks.	S.P. Mittal R.P. Yadav Pawan Sharma	Chandigarh	1986	2005	To be continued
Comments: Name of Dr. (Ms.) Pawan Sharma is included as second associate.						
(b)	Silvipastoral systems under various management practices for degraded lands.	Charan Singh Anurag Raizada	Plant Science, Dehradun	1996	2012	To be continued
Comments: Name of Ms. R. Saraswathy is deleted.						

P-3: HYDROLOGICAL BEHAVIOUR OF WATERSHEDS FOR CONSERVATION PLANNING

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

Sl. No.	Title of the Experiment	Leader and Associates	Centre/Division	Start	Completion	Remarks
18.	Hydrological behaviour of untreated gully watershed.	R.C. Yadav	Agra	1993	2001	To be concluded
Comments: Extended upto the year 2001. Name of Dr. L.S. Bhushan is deleted.						
19.	Studies on the rates of annual water and sediment yield from denuded Shiwaliks to the reservoirs and ponds.	R.C. Bansal R.K. Aggarwal	Chandigarh	1963	2002	To be continued
Comments: Experiment will be concluded in 2002 instead of 2005. Identify the factors other than <i>lantana Camera</i> contributing for the changes in runoff and soil loss. (Action: Er. R.C. Bansal)						
20.	Comparative study of the compatibility of <i>Cenchrus ciliaris</i> with <i>Acacia tortilis</i> and <i>Acacia senegal</i> under silvi-pastoral system in Chambal ravines and their impact on hydrological behaviour of the watershed.	A.K. Parandiyal Shakir Ali Ashok Kumar	Kota	1993	2003	To be continued
Comments: Growth data of <i>Acacia senegal</i> and of runoff and soil loss may be published in the Annual Report. (Action: Mr. A.K. Parandiyal)						
21.	Water balance studies of tea (<i>Thea sinensis</i>) crop (lysimetric studies).	A.K. Sikka, V. Selvi M. Madhu	Udhagamandalam	1996	2005	To be continued
22.	Production potential of <i>Cenchrus ciliaris</i> and <i>Dendrocalamus strictus</i> system in degraded Mahi ravines and its effect on hydrology and sedimentation.	R.S. Kurothe	Vasad	1990	2002	To be continued

Sl. No.	Title of the Experiment	Leader and Associates	Centre/Division	Start	Completion	Remarks
23.	Soil conservation measures in red arable soils and water harvesting and recycling possibilities therein.	A.K. Tiwari Dev Narain Brij Lal	Datia	2001	2005	To be continued (New experiment)
Comments: The modifications suggested are to be incorporated. (Action: Dr. A.K. Tiwari)						

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

24.	Effect of conservation structures on ground water recharge.	D.R. Sena R.S. Kurothe Virendra Kumar S.P. Tiwari	Vasad	2001	2006	To be continued (New experiment)
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3.3: WATER HARVESTING

25.	Hydrological evaluation of recommended conservation measures on mildly sloping land.	V.N. Sharda S.S. Shrimali O.P.S. Khola	H.R.D. & S.S., Dehradun	1995	2002	To be continued
26.	Effect of intervention on small watershed hydrology.	A.K. Tiwari A.K. Sharma M.L. Gaur Brij Lal	Datia	2001	2006	To be continued (New experiment)
Comments: Outside area (W ₄) is to be excluded. Calibration curves to be developed prior to imposition of treatments. (Action: Dr. A.K. Tiwari)						

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 Experiment	Leader and Associates	Centre/Division	Start	Completion	Remarks
27.	Effectiveness study of the torrent training structures in outer Himalayas and Shiwalik foot hills of Doon valley.	G.P.Juyal, K.P. Tripathi	Hydrology & Engineering, Dehradun	2000	2003	To be continued

P-5: PARTICIPATORY INTEGRATED WATERSHED MANAGEMENT

5.3: IMPACT OF PRODUCTION, ENVIRONMENT AND BIODIVERSITY

28.	Successional trend in ravine enclosures and line transect.	B. Balaji, H.C. Nitant	Agra	1962	2005	To be continued
Comments: Name of Mr. B. Balaji is included as the leader and Dr. H.C. Nitant as an associate.						
29.	Resource conservation through watershed management in Shiwalik foothills of Punjab. (Relmajra Project).	Y. Agnihotri, R.K. Aggarwal, S.P. Mittal, R.C. Bansal, R.P. Yadav, Ram Prasad	Chandigarh	1993	2002	To be continued
Comments: Name of Dr. J.S. Samra is deleted.						

5.4 FARMING SYSTEM APPROACH

30.	Participatory assessment and refinement of traditional ragi cropping.	Anchal Das, Pramod Kumar Susama Sudhishri	Koraput	2000	2002	To be continued
Comments: Mr. Anchal Das will replace Dr. R.K. Dubey as the leader. Spacing of <i>ragi</i> : black gram should be 4:1 and above and treatments need to be revised. (Action: Mr. Anchal Das)						

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

6.1: RESOURCE ECONOMICS

Sl. No.	Title of the Experiment	Leader and Associates	Centre/Division	Start	Completion	Remarks
31.	Socio-economic implications and participatory appraisal of watershed in Agra.	Bhanwar Singh R.C. Yadav, Om Prakash	Agra	1996	2001	To be concluded
Comments: Extended till the year 2001.						
32.	Economic analysis of watershed management programmes in south-eastern Rajasthan.	Ashok Kumar S.N. Prasad R.K.Singh, K.D.Singh	Kota	2000	2002	To be continued
33.	Economic evaluation and people's participation in watershed projects in Coimbatore and Nilgiri districts.	Subhash Chand P.Sundarambal, M.Madhu D.V.Singh, A.K.Sikka	Udhagamandalam	2000	2002	To be continued

P-7 HUMAN RESOURCE DEVELOPMENT AND TECHNOLOGY TRANSFER

7.1 TRAINING METHODOLOGY, NEED ASSESSMENT, GENDER NEUTRALITY AND EVALUATION

34.	Study of soil and water conservation training programme for Human Resource Development.	A.S.Mishra Bankey Bihari V.N. Sharda	H.R.D. & S.S., Dehradun	2000	2002	To be continued
Comments: Name of Dr Lakhan Singh is deleted and Dr. A.S. Mishra will be the leader. Mr Bankey Bihari is included as first associate.						

7.3 PARTICIPATORY APPROACHES, DESSEMINATION OF TECHNOLOGY AND ADOPTION

35.	Assessment of diffusion of Institute Village Linkage Programme (IVLP) interventions.	Bankey Bihari S.K. Verma	H.R.D. & S.S., Dehradun	2000	2002	To be continued
Comments: Names of Dr. Lakhan Singh and Dr. A.S. Mishra are deleted. Mr. Bankey Bihari will be the leader and Mr. S.K. Verma the associate.						
36.	Study of adoption behaviour of the farmers for various technologies in integrated watershed management programme in south-eastern Rajasthan.	S.V. Singh, Ashok Kumar, K.D. Singh	Kota	2000	2002	To be continued

TECHNOLOGY DEVELOPMENT EXTENSION & TRAINING (Under IWDP)

Sl. No.	Title of the Experiment	Leader and Associates	Centre/Division	Start	Completion	Remarks
37.	Assessment of various indices of environmental rehabilitation in response to wasteland development (Aganpur-Bhagwasi watershed).	V.S.Katiyar, R.K.Agarwal,S.P.Mittal P.Sharma, R.P.Yadav, S.L.Arya, Pratap Singh, Ram Prasad	Chandigarh	1996	2001-02	To be continued under Institute project No. 5.3
38.	An economic evaluation of Kokriguda Watershed Project, Koraput (Orissa).	Pramod Kumar, P.R.Chaudhary,U.S.Patnaik	Koraput	1997	2001-02	To be continued under Institute project No. 5.3
39.	Development and evaluation of conservation measures for rehabilitation of wastelands on a sustainable basis in Western Ghats. (Salaiyur Watershed)	A.K.Sikka, M.Madhu, V.Selvi, P.Sundaramabal, R.Ragupathy, Subhash Chand, D.V.Singh	Udhagamandalam	1997	2001-02	To be continued under Institute project No. 5.3
40.	Impact of participatory watershed management on resource conservation, hydrology, bio-diversity and production. (Antisar Watershed).	S.P.Tiwari, Virendera Kumar, R.S.Kurothe, H.B.Singh, V.C.Pandey, G.L.Khatik, D.R.Sena	Vasad	1997	2001-02	To be continued under Institute project No. 5.3
Comments: Experiment listed at Sl.No. 78 of the SRC Meeting Proceedings, 1999 is clubbed with this project.						
41.	Research and development model under TDET. (Bajni Watershed)	A.K.Sharma, A.K.Tiwari, R.K.Tiwari, V.K.Bhatt, Om Prakash	Datia	1997	2001-02	To be continued under Institute project No. 5.3
Comments: Calibrations of the two watersheds should be done using unit hydrograph technique. (Action: Dr. A.K. Sharma)						
42.	Evaluation of management techniques in ravineous watersheds. (Badakhera Watershed)	K.D.Singh, S.N.Prasad, Shakir Ali, Arjun Prasad, R.K.Singh, S.V.Singh, A.K.Parandiyal, Ashok Kumar	Kota	1997	2001-02	To be continued under Institute project No. 5.3

NATIONAL AGRICULTURAL TECHNOLOGY PROJECT (NATP) OF HILL AND MOUNTAIN AGRO-ECO SYSTEM

Sl. No.	Title of the Experiment	Leader and Associates	Centre/Division	Start	Completion	Remarks
43.	Aquaculture management in cold water- Evaluation of Mahseer fishery potential and its farming feasibility for conservation in the Himalayan region.	Associate: M.Muruganandam	Hydrology & Engineering, Dehradun	1999	2002-03	To be continued under Institute project No. 1.2
44.	Silvipastoral approach to improve productivity of native pastures for live-stock production in the hills.	C.C.P.I.: A.K.Srivastava	H.R.D. & S.S., Dehradun	1999	2002-03	To be continued under Institute project No. 2.2
Comments: Objectives of the study should be well defined and manual sampling should be done instead of using the multi-slot devisor. (Action: Dr. A.K. Srivastava)						
45.	Hydrological behaviour of small watersheds and sustainability of production systems.	PI: V.N. Sharda Co-PI: C. Prakash Associates: A.Raizada N.K.Sharma	H.R.D. & S.S., Dehradun	1999	2002-03	To be continued under Institute project No. 3.1
Comments: Name of Dr. M.L. Gaur is deleted.						
46.	Methodologies for development and analysis of watersheds and decision support systems for interventions.	PI: B.L. Dhyani Co-PI: A. Raizada Associate: Pradeep Dogra	H.R.D. & S.S., Dehradun	1999	2002-03	To be continued under Institute project No. 5.1
		CCPI: Y.Agnihotri	Chandigarh			
Comments: Name of Dr. Ram Babu is deleted. Dr. B.L. Dhyani will be PI and Dr. A. Raizada will be Co-PI of this project at Dehradun.						

Sl. No.	Title of the Experiment	Leader and Associates	Centre/Division	Start	Completion	Remarks
47.	Watershed Technology (Mission Mode).	PI: K.P. Tripathi Co-PI: S.K. Dhyani Associates: P.R. Ojasvi, O.P.S.Khola, Pradeep Dogra	Hydrology & Engineering, Dehradun	1999	2002-03	To be continued under Institute project No. 5.5
		CCPI: A.K. Sikka Associates: V.Selvi, M.Madhu D.V. Singh, P. Sundarambal, Subhash Chand	Udhagamandalam			
Comments: Name of Dr. J.S. Samra is deleted as leader. Dr. A.K. Sikka will be CCPI and Ms. V. Selvi, Dr. M. Madhu, Dr. D.V. Singh, Dr. (Ms.) P. Sundarambal and Dr. Subhash Chand will be associates with this project at Udhagamandalam Centre.						
48.	Landuse planning for management of agricultural resources.	PI: Ratan Singh Co-PI: A.R. Sharma Associates: S.K. Dhyani, B.L. Dhyani, P. Murlidharan	Soil Science & Agronomy, Dehradun	2001	2002-03	To be continued under Institute project No.5.5
49.	Institute Village Linkage Programme. (Technology Assessment and Refinement – for Hill and Mountain Agro-Eco-System).	Leader: A.S.Mishra Associates: S.C.Mohan, D.S.Tomar, B.L.Dhyani, S.K.Verma	H.R.D. & S.S., Dehradun	1999	2002-03	To be continued under Institute project No. 6.2
Comments: Status of production prior to installation of water resource development system needs to be recorded for the purpose of comparison. (Action: Dr. A.S. Mishra)						

NOTE: In NATP Projects takenup in the new watersheds, observations may be recorded on off-site effects in conjunction with on-site effects. The new projects will be listed at P 1.2.

NATP OF OTHER AGRO-ECO SYSTEMS

Sl. No.	Title of the experiment	Leader & Associates	Centre / Division	Start	Completion	Remarks
50.	Reflectance libraries for development of soil sensors for periodic assessment of soil resources.	CCPI: S.C. Mohan	Soil Science & Agronomy, Dehradun	1999	2002-03	To be continued under Institute Project No.1.1
51.	Evaluation and improvement of indigenous methods of moisture conservation and run-off management.	CCPI: R.C. Yadav Associates: Om Prakash H.C. Nitant Bhanwar Singh	Agra	2000	2002-03	To be continued under Institute Project No.2.1
		CCPI: Shakir ali Associates: K.D. Singh S.N. Prasad Ashok Kumar	Kota			
52.	Management strategies for improving <i>rabi</i> sorghum productivity.	CCPI: M.S.R. Rao Associates: S.K.N. Math S.L. Patil R.Saraswathy	Bellary	2000	2003	To be continued under Institute Project No.2.1
53.	Development and evaluation of soil and water conservation measures and landuse systems for sustainable crop production in western ghats of coastal region.	PI: A.K. Sikka Co-PI: M. Madhu Associates: V. Selvi D.V. Singh Subhash Chand	Udhagamandalam	2000	2003-04	To be continued under Institute Project No.2.1

Sl. No.	Title of the experiment	Leader & Associates	Centre / Division	Start	Completion	Remarks
54.	Developing live fencing systems for soil and water conservation, crop diversification and sustaining productivity in rainfed regions.	CCPI: S.K.N.Math Associates: S.L. Patil, M.S.R.Rao R.N. Adhikari	Bellary	2000	2003	To be continued under Institute Project No.2.2
		CCPI: P.R. Choudhary Associates: Anchal Das U.S. Patnaik Pramod Kumar	Koraput			
55.	Rainwater management on watershed (micro) basis in sub-mountain region.	PI: R.P. Yadav Co-PI: R.K. Aggarwal Associates: Pratap Singh Ram Prasad	Chandigarh	2000	2003	To be continued under Institute Project No.3.3
56.	Development of regional scale watershed plans and methodologies for identification of critical areas for prioritized land treatment in the watersheds.	CCPI: S. Sudhishiri Associates: U.S. Patnaik Pramod Kumar Anchal Das	Koraput	2000	2003	To be continued under Institute Project No.5.1
57.	Impact of watershed management of sustainability of land productivity and socio-economic status.	CCPI: Om Prakash	Datia	2000	2002	To be continued under Institute Project No.6.3
58.	Participatory and integrated assessment of natural resources and evaluation of alternate sustainable land management options for tribal dominant watersheds.	PI: U.S. Patnaik Co-PI: P.R. Chaudhary Associates: Pramod Kumar Susama Sudhishiri Anchal Das N. K. Pakiraya	Koraput	2000	2004	To be continued under Institute Project No.7.3

EXPERIMENTS CONCLUDED IN 2000

Sl. No.	Project No.	Sl.No. of SRC Proc. 1999	Title of Experiment	Centre/Division
1.	1.1	1	Refinement of the Iso-erodent map of India and development of intensity-duration-return period equations for various stations.	Eco. & P.P., Dehradun
Comments: Maps may be developed for different recurrence intervals and due care should be taken to ensure proper alignment of iso-erodent lines when the different state maps will be clubbed together. (Action: Dr. B.L. Dhyani)				
2.	1.2	3	Soil degradation and seasonal productivity of different promising crops in the high altitude of Nilgiris	Udhagamandalam
3.	2.1	7	Efficacy of vegetative barriers in controlling erosion losses on 3% slope.	Agra
4.	2.1	16	Studies on tillage practices for resource conservation and crop productivity.	Hydrology & Engineering, Dehradun
5.	2.1	18	Hydrological characterization of commonly identified vegetation species for vegetative barrier.	Hydrology & Engineering, Dehradun
6.	2.1	19	Biological and mechanical measures for erosion control and crop production on 4 per cent slope.	Soil Science & Agronomy, Dehradun
7.	2.2	26	Comparative effectiveness of different grass species in reducing runoff and soil loss.	Bellary
8.	2.2	29	Effect of canopy management on productivity of silvipastoral systems in bouldary land.	Plant Science, Dehradun
9.	3.1	39	Studies on the hydrological behaviour of small watershed under different land uses.	Datia
10.	3.1	41	Hydrological response characterization of watersheds and appraisal of water harvesting system in Nilgiris.	Udhagamandalam
11.	5.3	46	Conserving plant biodiversity through integrated watershed management. (Core Project)	Dehradun & Research Centres
Comments: Dr. (Ms.) Pawan Sharma may take-up observational trial on bio-diversity. (Action: Dr. (Ms.) Pawan Sharma)				
12.	6.1	48	Evaluation of watershed approach for sustainable development and management of natural resources and participatory process in Shiwalik foot-hills in Haryana.	Chandigarh
13.	7.3	49	Resource management through participatory approach.	Datia
14.	7.3	50	Participatory approach on technology transfer of soil and water conservation on watershed basis.	Udhagamandalam
15.	2.2	58	Improvement in productivity of migratory buffaloes, sheep and goats. (NATP)	Eco. & P.P., Dehradun
16.	1.2	64	Runoff, soil loss and nutrient loss under different conservation measures on red soils of Bundelkhand.	Datia
17.	5.4	74	Development of sustainable animal-agricultural system for the farmers of Garhwal Himalayas.	Soil Science & Agronomy, Dehradun
Comments: Reframe as per Institute mandate and propose in the next SRC Meeting. (Action: Mr. S.K. Verma)				
18.	--	--	Diagnostic survey and zonation of Eastern Ghats for natural resource conservation and management. (NATP)	Udhagamandalam

SUMMARY OF IMPORTANT RECOMMENDATIONS OF RAC - 2000

1. The results of different components of a project should be presented together to provide a total view of the progress made in the project.
2. Since resource conservation is the main focus of the Institute's mandate, data on resource conservation should be given priority, while formulating and implementing the projects.
3. Soil health monitoring should form an important part of the observations in all the studies having a bearing on soil degradation so as to ensure sustainability of the production system.
4. In the project relating to land degradation a holistic approach should be followed and all related data including site features (land slope, rainfall, soil depth), relevant soil physical and chemical properties, crop canopy, root growth, soil moisture in addition to soil loss, runoff, crop yields etc. be collected.
5. In the projects wherein the on-site effects of erosion are studied, relevant data on the off-site effects should also be collected unless there are some valid reasons for not doing so.
6. Any project, which has been in operation for 4-5 years, should be critically reviewed during next SRC meeting and be concluded, if that is unlikely to generate any further useful data.
7. In case of some scientists the research work load is much less than the norms developed by the Institute. This situation may be discussed during the next SRC meeting and discrepancies rectified suitably.
8. The methodology adopted for computing the annual soil loss in the country should be properly spelt out and documented.
9. A follow-up monitoring procedure may be adopted to know as to what extent the state departments are making use of the information sent to them with the iso-erodent maps.
10. Some appropriate formal mechanism may be developed at the Institute to ensure that all data and records of the research projects are available whenever any project leader leaves the Institute consequent to transfer/superannuation etc.
11. The Heads of different regional research centres should be invited as special invitees to participate in RAC meetings. Their participation will help in better understanding of the local problems and in formulation of more sound research programmes.
12. The traditional practices of soil and water conservation followed in the country should be documented.

SALIENT RECOMMENDATIONS OF SRC – 2000

1. The SRC unanimously decided that the minimum research load for individual scientists will be as follows:
 - a) Leadership in one experiment with association in other one experiment (1+1)
OR
 - b) Association in two experiments (0+2).
2. As per RAC recommendations, it was decided that henceforth the Institute shall have seven programmes, earlier identified on projects having sub-programmes with different projects which were earlier identified as sub-projects and experiments, respectively. The projects (experiments) having similar theme may be clubbed to form Core Projects.
3. Timely submission of updated Research Project Files (RPFs) has been emphasized by ICAR. Hence all pending RPFs may be submitted at the earliest.
4. In addition to the traditional records of RPFs (RPF I, RPF II and RPF III), the council has devised a computerized format in MS Access software for computerization of information regarding experiments being conducted at various ICAR Institutes. The computerized format in MS Access Software has been provided to all Centres/Divisions alongwith guidelines. The desired information of all the ongoing projects may be sent on floppies to the Institute at the earliest.
5. Any new project proposal for approval by the SRC should be submitted one month in advance of the SRC meeting after thorough discussion in the Division/Centre. The progress of work may also be submitted to the respective PI's at the Institute at least one month in advance by the project leaders for compilation and presentation during the SRC meeting.
6. All concerned scientists working in NATP projects of agro-eco system other than Hill & Mountain agro-eco-system should submit a copy of their project proposal to the Institute by 31st January, 2001 positively.
7. It should be ensured that seminars are invariably held prior to submitting any publication for approval. The proceedings of the seminar should be enclosed with the paper. The scientists returning from short term / long term trainings in India or abroad may also present a seminar on the salient features of the training.
8. Baseline survey schedule should be standardized for the Institute. For this the baseline survey schedule being used by the Centres may be submitted to Dr. B.L. Dhyani by 15 February, 2001. Dr. Dhyani will standardize the schedule and send a copy to each Centre by 15 March, 2001. The Centres can use this schedule after minor modifications as per objectives and local conditions.
9. A core project on ground water recharge has been approved for the Centres where IWDP watersheds have been selected. The project proposals may be formulated on the lines as approved for the Vasad centre and submitted for approval of the Director with minor modifications wherever required.
10. Dr. (Mrs.) Himanshu Borai, visiting Social Scientist from HNB Garhwal University, Srinagar who presented her project entitled "Diagnostic Survey on Women's Role in Watershed Management" was advised to include CSWCRTI watersheds namely Fakot, and those under Research Centre, Chandigarh in her study.

ACTION TAKEN ON RECOMMENDATIONS OF SRC – 1999

Sr. No.	Action Point	Action Taken
1.	All PIs of TDET (IWDP) and NATP funded programmes should indicate the project and sub- project, so that these projects are integrated as Institute projects.	All TDET (IWDP) and NATP funded programmes have been integrated as Institute projects.
2.	Dr. U.S. Patnaik, Head of Koraput Centre will take up the work of obtaining soil data from Dr. Sarkar, Calcutta needed for Project P-1 at the earliest.	Soil data was obtained from Dr. Sarkar and was utilized for Project P-1.
3.	Dr. L.S. Bhushan, Head of Agra Centre will provide guidelines for canopy analysis to all the centres/PI's.	Action awaited from Head, Research Centre, Agra.
4.	Dr Ram Babu, P.I. of P-6 will prepare a note on intangible benefit calculations which may be communicated to all economists of the Institute as early as possible.	Dr. B.L. Dhyani to prepare a note on intangible benefit calculations and submit to all economists of the Institute by June 30, 2000.
5.	Dr. A.K. Sikka, Head of Udhagamandalam Centre will work for starting a network for conducting research on soil erosion in coastal belt under NATP.	Research Centre, Udhgamandalam has started a NATP funded project on soil erosion in coastal belt.
6.	Dr. Ram Babu, Head, Division of Economics & Project Planning should provide fresh figures for annual rate of total soil loss occurring in the country along with methodology of how it is calculated.	Dr. Ram Babu (Retired, Head, E&PP Division) presented methodology for calculation of annual rate of total soil loss occurring in the country.
7.	Er. S.S. Shrimali will prepare a list of parameters to be observed in vegetative barrier studies and circulate to the concerned scientists working on this aspect.	Er. S.S. Shrimali prepared a list of parameters to be observed in vegetative barrier studies and circulated to the concerned scientists.

PROJECT-WISE LIST OF EXPERIMENTS

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., 2000	Sl No. of SRC Proc., 99	Centre/Division
1	2	Soil Sci. & Agronomy, Dehra Dun
50	--	Soil Sci. & Agronomy, Dehra Dun

TOTAL = 2

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

Sl. No. of SRC Proc., 2000	Sl No. of SRC Proc., 99	Centre/Division
2	65	Hydrology & Engg., Dehra Dun
3	4	Udhagamandalam
4	Revived	Vasad
43	57	Hydrology & Engg., Dehra Dun

TOTAL = 4

1.3: Soil erosion processes and models

Sl. No. of SRC Proc., 2000	Sl No. of SRC Proc., 99	Centre/Division
5	5	HRD & SS, Dehra Dun
6	New	Bellary

TOTAL = 2

P-2: CONSERVATION MEASURES FOR SUSTAINABLE PRODUCTION SYSTEMS

2.1: Resource conservation measures for arable lands

Sl. No. of SRC Proc., 2000	Sl No. of SRC Proc., 99	Centre/Division
7 (a)	8	Agra
7(b)	9	Bellary
7(c)	13	Datia
7(d)	15	Soil Sci. & Agronomy, Dehra Dun
7(e)	23	Kota
8(a)	12	Datia
8(b)	17	Hydrology & Engg., Dehra Dun
8(c)	21	Koraput
8(d)	24	Kota
9(a)	66	Bellary
9(b)	67	Chandigarh
9(c)	68	Soil Sci. & Agronomy, Dehra Dun
10(a)	69	HRD & SS, Dehra Dun
10(b)	70	Plant Science, Dehra Dun
11(a)	14	Plant Science, Dehra Dun
11(b)	35	Soil Sci. & Agronomy, Dehra Dun
11(c)	22	Kota
12	New	Agra
13	New	Kota
51	--	Agra / Kota
52	--	Bellary
53	--	Udhagamandalam

TOTAL = 22

2.2: Resource conservation measures for non-arable lands

Sl. No. of SRC Proc., 2000	Sl No. of SRC Proc., 99	Centre/Division
14(a)	27	Bellary
14(b)	20	HRD & SS, Dehra Dun
14(c)	34	Plant Science, Dehra Dun
14(d)	72	Plant Science, Dehra Dun
15(a)	6	Agra
15(b)	71	Agra
15(c)	11	Chandigarh
15(d)	30,31,32(Clubbed)	Plant Science, Dehra Dun
15(e)	36	Udhagamandalam
16(a)	10	Chandigarh
17(a)	28	Chandigarh
17(b)	33	Plant Science, Dehra Dun
44	59	HRD & SS, Dehra Dun
54	--	Bellary / Koraput

TOTAL = 14**P-3: HYDROLOGICAL BEHAVIOUR OF WATERSHEDS FOR CONSERVATION PLANNING****3.1: Rainfall, runoff, vegetation, soil characteristics and management practices**

Sl. No. of SRC Proc., 2000	Sl No. of SRC Proc., 99	Centre/Division
18	37	Agra
19	38	Chandigarh
20	40	Kota
21	42	Udhagamandalam
22	43	Vasad
23	New	Datia
45	60	HRD & SS, Dehra Dun

TOTAL = 7**3.2: Effect of conservation measures and landuse on ground water recharge**

Sl. No. of SRC Proc., 2000	Sl No. of SRC Proc., 99	Centre/Division
24	New	Vasad

TOTAL = 1**3.3: Water harvesting**

Sl. No. of SRC Proc., 2000	Sl No. of SRC Proc., 99	Centre/Division
25	44	HRD & SS, Dehra Dun
26	New	Datia
55	--	Chandigarh

TOTAL = 3**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., 2000	Sl No. of SRC Proc., 99	Centre/Division
27	73	Hydrology & Engg., Dehra Dun

TOTAL = 1

P-5: PARTICIPATORY INTEGRATED WATERSHED MANAGEMENT

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

Sl. No. of SRC Proc., 2000	Sl No. of SRC Proc., 99	Centre/Division
46	61	HRD & SS, Dehra Dun/Chandigarh
56	--	Koraput

TOTAL = 2

5.2: Landuse Planning

Sl. No. of SRC Proc., 2000	Sl No. of SRC Proc., 99	Centre/Division
Nil	Nil	Nil

TOTAL = Nil

5.3: Impact on Production, environment and biodiversity

Sl. No. of SRC Proc., 2000	Sl No. of SRC Proc., 99	Centre/Division
28	25	Agra
29	45	Chandigarh
37	51	Chandigarh
38	52	Koraput
39	53	Udhagamandalam
40	54 & 78(Clubbed)	Vasad
41	55	Datia
42	56	Kota

TOTAL = 8

5.4: Farming system approach

Sl. No. of SRC Proc., 2000	Sl No. of SRC Proc., 99	Centre/Division
30	75	Koraput

TOTAL = 1

5.5: Watershed technologies (Strategic research)

Sl. No. of SRC Proc., 2000	Sl No. of SRC Proc., 99	Centre/Division
47	62	H&E / Udhagamandalam
48	--	Soil Science Agronomy, Dehra Dun

TOTAL = 2

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

6.1: Resource economics

Sl. No. of SRC Proc., 2000	Sl No. of SRC Proc., 99	Centre/Division
31	47	Agra
32	76	Kota
33	77	Udhagamandalam

TOTAL = 3

6.2: Institute Village Linkage Programme for Technology assessment and refinement

Sl. No. of SRC Proc., 2000	Sl No. of SRC Proc., 99	Centre/Division
49	63	HRD & SS, Dehraun

TOTAL = 1

6.3: Common property resource management

Sl. No. of SRC Proc., 2000	Sl No. of SRC Proc., 99	Remarks
57	--	Datia

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., 2000	Sl No. of SRC Proc., 99	Centre/Division
34	79	HRD & SS, Dehra Dun

TOTAL = 1**7.2: Organizational infrastructure and motivational parameters**

Sl. No. of SRC Proc., 2000	Sl No. of SRC Proc., 99	Centre/Division
Nil	Nil	Nil

TOTAL = Nil**7.3: Participatory approaches for dissemination of technology and adoption**

Sl. No. of SRC Proc., 2000	Sl No. of SRC Proc., 99	Centre/Division
35	80	HRD & SS, Dehra Dun
36	81	Kota
58	--	Koraput

TOTAL = 3

CENTRE/DIVISION-WISE NUMBER OF ON-GOING EXPERIMENTS

S. No.	CENTRE/DIVISION	SL. NO. OF ON-GOING EXPERIMENTS	TOTAL
1.	Agra	7(a),12,15(a), 15(b),18,28,31 & 51	8
2.	Bellary	6,7(b),9(a),14(a),52 & 54	6
3.	Chandigarh	9(b),15(c),16(a),17(a),19,29,37,46 & 55	9
4.	Datia	7(c),8(a),23,26,41 & 57	6
5.	Dehra Dun		
	* Plant Science	10(b),11(a),14(c),14(d),15(d) & 17(b)	6
	* Soil Science & Agronomy	1,7(d),9(c),11(b),48 & 50	6
	* Hydrology & Engineering.	2,8(b),27,43 & 47	5
	* HRD & SS	5,10(a),14(b),25,34,35,44,45,46 & 49	10
6.	Koraput	8(c),30,38,54,56 & 58	6
7.	Kota	7(e),8(d),11(c),13,20,32,36,42 & 51	9
8.	Udhagamandalam	3,15(e),21,33,39,47 & 53	7
9.	Vasad	4,22,24 & 40	4
	GRAND TOTAL		82

RESEARCH PROGRAMMES AND SUB-PROGRAMMES

P-1 WATER EROSION APPRAISAL IN DIFFERENT AGRO-ECOLOGICAL REGIONS (P.I. – Mr. S.C. Mohan)

- 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. A.R. Sharma)

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

P-3 HYDROLOGICAL BEHAVIOUR OF WATERSHEDS FOR CONSERVATION PLANNING (P.I. – Dr. V.N. Sharda)

- 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 TRANSFER (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

NUMBER OF EXPERIMENTS WITH INDIVIDUAL SCIENTISTS

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

- A. Leadership in one experiment with association in other four experiments (1+4)**
or
B. Leadership in two experiments with association in other two experiments (2+2)
or
C. Leadership in three experiments without association in any other experiment (3+0)

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

- A. Leadership in one experiment with association in other one experiment (1+1)**
or
B. Association in two experiments (0+2).

The number of experiments with each individual scientist of the Institute, after the SRC Meeting of 2000 is as follows:

Name	Designation	Leader	Asso- ciate	Total	Other Duties
Dr. V.N. Sharda	Actg. Director	3	1	4	AED (H&M), Head (HRD&SS)
Plant Science Division					
Dr. S.K. Dhyani	Sr. Scientist (Eco. Botany)	1	4	5	I/c Head, Trg. Prog., Consultancy
Dr. Anurag Raizada	Sr. Scientist (Forestry)	1	4	5	Trg. Prog. Campus Maint.
Dr. Harsh Mehta	Sr. Scientist (Plant Breeding)	1	1	2	
Dr. Hira Lal	Sr. Scientist (Horticulture)	2	1	3	
Mr. Charan Singh	Scientist (SS) (Forestry)	1	1	2	Trg. Prog.
Mr. Avinash Chandra	Scientist (Horticulture)	--	--	NIL	
Soil Science and Agronomy Division					
Dr. P.C. Tyagi	Sr. Scientist (Plant Breeding)	1	1	2	I/c Head
Mr. S.C. Mohan	Sr. Scientist (Soil Fertility)	2	2	4	Trg. Prog., CPC, Consultancy
Dr. V.P.S. Tomar	Sr. Scientist (Forestry)	--	1	1	
Dr. Ratan Singh	Sr. Scientist (Soils)	2	4	6	Trg. Prog.
Dr. O.P.S. Khola	Sr. Scientist (Agronomy)	--	3	3	
Dr. A.R. Sharma	Sr. Scientist (Agronomy)	1	3	4	
Dr. N.K. Sharma	Sr. Scientist (Agronomy)	--	3	3	Trg. Prog.
Mr. R.K. Dubey	Scientist (Agronomy)	--	--	NIL	OIC (Farm)
Mr. S.K. Verma	Scientist (Animal Nutrition)	--	2	2	
Dr. P. Murlidharan	Scientist (Soil Pedology)	--	3	3	Trg. Prog.
Hydrology and Engineering Division					
Mr. K.P. Tripathi	Pr.Scientist (Engineering)	1	2	3	I/c Head, Trg. Prog., Consultancy

Name	Designation	Leader	Associate	Total	Others Duties
Mr. G.P. Juyal	Sr. Scientist (Engineering)	1	--	1	Trg. Prog.
Dr. P.R. Ojasvi	Sr. Scientist (Engineering)	1	1	2	Trg. Prog., I/c Maint.
Mr. S.S. Shrimali	Sr. Scientist (C&A)	--	3	3	Trg. Prog., I/c ARIS Store Purchase
Mr. P.K. Goel (O.S.L.)	Scientist (Engineering)	--	--	NIL	
Mr. M. Muruganandam	Scientist (Fisheries)	2	--	2	
Research Coordination & Management Unit					
Mr. B.P. Joshi	Sr. Scientist (Engineering)	--	1	1	I/c RCMU, Chairman (CPC), Trg. Prog.
Mr. A.K. Khullar	Scientist (SS) (Agril. Stat.)	--	1	1	RCMU, IWDP
Dr. Pradeep Dogra	Scientist (SS) (Agril. Eco.)	--	5	5	RCMU
Human Resource Development Division					
Dr. A.S. Mishra	Prin. Scientist (Agril. Extn.)	2	--	2	Trg. Prog.
Dr. A.K. Srivastava	Sr. Scientist (Agronomy)	1	-	1	Trg. Prog.
Mr. D.S. Tomar	Sr. Scientist (Agronomy)	1	3	4	F.A.O., Trg. Prog.
Mr. C. Prakash	Sr. Scientist (Engineering)	--	2	2	Trg. Prog., Purchases
Dr. B.L. Dhyani	Scientist (SS) (Agril. Eco.)	2	2	4	Trg. Prog., CPC, Consultancy
Mr. Bankey Bihari	Scientist (Agril. Eco.)	1	1	2	Warden/ Guest House
Research Centre, Agra					
Dr. H.C. Nitant	Prin. Scientist (Soils)	1	4	5	I/c Head
Dr. Om Prakash	Sr. Scientist (Agronomy)	1	4	5	
Dr. R.C. Yadav	Sr. Scientist (Engineering)	2	1	3	
Dr. R.C. Agnihotri	Sr. Scientist (Soils)	1	--	1	
Mr. Bhanwar Singh	Scientist (SS) (Agril. Eco.)	1	1	2	
Mr. S.K. Srivastava	Scientist (Engineering)	--	--	NIL	
Dr. Dinesh Kumar	Scientist (Horticulture)	1	2	3	
Mr. B. Balaji	Scientist (Forestry)	1	--	1	
Research Centre, Bellary					
Dr. M.S. Rama Mohan Rao	Head of the Centre	1	2	3	Consultancy
Dr. S.K.N. Math	Sr. Scientist (Soils)	2	1	3	Trg. Prog., Consult
Mr. R.N. Adhikari	Sr. Scientist (Engineering)	--	3	3	Trg. Prog. Consult.
Mr. S.L. Patil	Scientist (Agronomy)	1	3	4	Trg. Prog. Consult.
Ms. R. Saraswathy	Scientist (Soil Pedology)	1	1	2	Trg. Prog.
Mr. K. Ilango	Scientist (Forestry)	1	--	1	Trg. Prog.
Research Centre, Chandigarh					
Dr. R.K. Aggarwal	Head of the Centre	--	5	5	
Mr. S.P. Mittal	Prin. Scientist (Agronomy)	1	3	4	
Mr. R.C. Bansal	Sr. Scientist (Engineering)	1	1	2	
Dr. Y.K. Agnihotri	Sr. Scientist (Agril. Stat.)	2	1	3	
Dr. V.S. Katiyar	Sr. Scientist (Engineering)	1	--	1	
Dr. (Mrs.) Pawan Sharma	Sr. Scientist (Soil Micro-bio.)	1	2	3	
Dr. R.P. Yadav	Sr. Scientist (Soils)	1	5	6	
Dr. Pratap Singh	Sr. Scientist (Agronomy)	1	3	4	
Dr. (Mrs.) S.L. Arya	Scientist (SS) (Agril. Eco.)	--	1	1	
Dr. Ram Prasad	Scientist (Horticulture)	1	5	6	

Name	Designation	Leader	Associate	Total	Other Duties
Research Centre Datia					
Dr. A.K. Sharma	Head of the Centre	1	2	3	
Dr. A.K. Tiwari	Sr. Scientist (Engineering)	2	2	4	
Dr. Dev Narain	Sr. Scientist (Agronomy)	1	1	2	
Dr. R.K. Tiwari	Scientist (SS) (Horticulture)	--	1	1	
Mr. V.K. Bhatt	Scientist (SS) (Engineering)	--	1	1	
Dr. Om Prakash	Scientist (SS) (Agril. Extn.)	1	1	2	
Dr. M.L. Gaur	Scientist (SS) (Engineering)	1	1	2	
Dr. Brij Lal	Scientist (Soil Fertility)	--	4	4	
Research Centre, Koraput					
Dr. U.S. Patnaik	Head of the Centre	1	3	4	
Dr. K.C. Dubey(Transferred)	Sr. Scientist (Horticulture)	--	--	NIL	
Mr. P.R. Chaudhary	Scientist (SS) (Forestry)	1	3	4	
Mr. Anchal Dass	Scientist (Agronomy)	1	4	5	
Ms. Susama Sudhishri	Scientist (Engineering)	2	2	4	
Mr. Pramod Kumar	Scientist (Agril. Eco.)	1	4	5	
Dr. N.K. Pakiraya	Scientist (Soil Science)	--	1	1	
Research Centre, Kota					
Dr. K.D. Singh	Head of the Centre	1	6	7	
Dr. S.N. Prasad	Sr. Scientist (Agronomy)	1	4	5	Trg. Prog.
Dr. Arjun Prasad	Sr. Scientist (Agronomy)	1	2	3	Trg. Prog.
Dr. R.K. Singh	Sr. Scientist (Soil Fertility)	1	3	4	Trg. Prog.
Dr. S.V. Singh	Scientist (SS) (Agril. Extn.)	1	1	2	
Mr. A.K. Parandiyal	Scientist (SS) (Forestry)	2	3	5	Trg. Prog.
Mr. A.K. Singh (Trans.)	Scientist (Engineering)	--	--	NIL	
Dr. Ashok Kumar	Scientist (SS) (Agril. Eco.)	1	4	5	
Mr. Shakir Ali	Scientist (Engineering)	1	3	4	Trg. Prog.
Research Centre, Udhagamandalam					
Dr. A.K. Sikka	Head of the Centre	4	2	6	Consulancy
Mr. R. Ragupathy	Scientist(SS) (Forestry)	--	2	2	Trg. Prog.
Dr. M. Madhu	Scientist (SS) (Agronomy)	1	6	7	Trg. Prog., Consulancy
Dr. D.V. Singh	Scientist (Soil Fertility)	1	5	6	Trg. Prog., Consulancy
Dr. Subhash Chand	Scientist (Agril. Eco.)	1	4	5	Consulancy
Ms. V. Selvi	Scientist (Engineering)	--	5	5	Trg. Prog., Consulancy
Dr.(Mrs.) P.Sundarambal	Scientist (Agril. Exnt.)	--	3	3	Consulancy
Research Centre, Vasad					
Dr. Virendra Kumar	Head of the Centre	1	2	3	
Dr. R.S. Kurothe	Sr. Scientist (Engineering)	1	3	4	
Dr. H.B. Singh	Sr. Scientist (Agronomy)	--	2	2	
Dr. S.P. Tiwari	Sr. Scientist (Soil Fertility)	1	2	3	
Mr. G.L. Khatik	Scientist (Agril. Extn.)	--	2	2	
Mr. V.C. Pandey	Scientist (Agril. Eco.)	--	2	2	
Mr. D.R. Sena	Scientist (Engineering)	1	1	2	

LIST OF PARTICIPANTS

1.	Dr. V.N. Sharda	Actg. Director	Chairman
CSWCRTI, DEHRADUN			
2.	Er. K.P. Tripathi	I/c Head (H&E Division) & PI (P-4)	Member
3.	Dr. A.S. Mishra	Pr. Scientist (Agril. Extn.) & PI (P-7)	Member
4.	Dr. P.C. Tyagi	I/c Head (SS&A Division)	Member
5.	Er. B.P. Joshi	Sr. Scientist (Engineering)	Member Secretary
6.	Mr. S.C. Mohan	Sr. Scientist (Soils) & PI (P-1)	Member
7.	Dr. V.P.S. Tomar	Sr. Scientist (Forestry)	
8.	Er. G.P. Juyal	Sr. Scientist (Engineering)	
9.	Dr. A.K. Srivastava	Sr. Scientist (Agronomy)	
10.	Mr. D.S. Tomar	Sr. Scientist (Agronomy)	
11.	Mr. C. Prakash	Sr. Scientist (Engineering)	
12.	Dr. Ratan Singh	Sr. Scientist (Soils)	
13.	Dr. A. Raizada	Sr. Scientist (Forestry)	
14.	Dr. O.P.S. Khola	Sr. Scientist (Agronomy)	
15.	Dr. A.R. Sharma	Sr. Scientist (Agronomy) & PI (P-2)	Member
16.	Dr. Harsh Mehta	Sr. Scientist (Plant Breeding)	
17.	Dr. P.R. Ojasvi	Sr. Scientist (Engineering)	
18.	Er. S.S. Shrimali	Sr. Scientist (Computer Application)	
19.	Dr. Hira Lal	Sr. Scientist (Horticulture)	
20.	Mr. A.K. Khullar	Scientist (SS) (Agril. Stat.)	Rapporteur
21.	Dr. B.L. Dhyani	Scientist (SS) (Agril. Eco.) & PI (P-6)	Member
22.	Dr. Pradeep Dogra	Scientist (SS) (Agril. Eco.)	Rapporteur
23.	Mr. M. Muruganandam	Scientist (Fisheries)	
24.	Mr. S.K. Verma	Scientist (Animal Nutrition)	
25.	Mr. Bankey Bihari	Scientist (Agril.Extn.)	
26.	Dr. R.K. Dubey	Scientist (Agronomy)	
27.	Dr. (Mrs.) Sangeeta N. Sharma	Technical Officer (T-7)	
28.	Dr. Himanshu Bourai	Reader, H.N.B. Garhwal University	
29.	Mr. S.K. Sinha	Sr. Technical Assistant (T-4)	Rapporteur
RESEARCH CENTRE, AGRA			
30.	Dr. H.C. Nitant	I/c Head of the Centre	Member
31.	Dr. R.C. Yadav	Sr. Scientist (Engineering)	
32.	Dr. Om Prakash	Sr. Scientist (Agronomy)	
33.	Dr. Dinesh Kumar	Scientist (SS) (Horticulture)	
34.	Mr. B. Balaji	Scientist (Forestry)	
RESEARCH CENTRE, BELLARY			
35.	Dr. M.S. Rama Mohan Rao	Head of the Centre	Member
36.	Ms. R. Raraswatny	Scientist (Soils)	

RESEARCH CENTRE, CHANDIGARH			
37.	Dr. R.K. Aggarwal	Head of the Centre	Member
38.	Mr. S.P. Mittal	Pr. Scientist (Agronomy)	
39.	Er. R.C. Bansal	Sr. Scientist (Engineering)	
40.	Dr. V.S. Katiyar	Sr. Scientist (Engineering)	
41.	Dr. R.P. Yadav	Sr. Scientist (Soils)	
42.	Dr. (Ms.) Pawan Sharma	Sr. Scientist (Soil Micro-bio)	
43.	Dr. Pratap Singh	Sr. Scientist (Agronomy)	
44.	Dr. Ram Prasad	Scientist (Horticulture)	
RESEARCH CENTRE, DATIA			
45.	Dr. A.K. Tiwari	Sr. Scientist (Engineering)	
46.	Dr. Dev Narain	Sr. Scientist (Agronomy)	
47.	Dr. Om Prakash	Scientist (SS) (Agril. Extn.)	
48.	Dr. M.L. Gaur	Scientist (SS) (Engineering)	
RESEARCH CENTRE, KORAPUT			
49.	Mr. P.R. Chaudhary	Scientist (Forestry)	
50.	Mr. Anchal Dass	Scientist (Agronomy)	
RESEARCH CENTRE, KOTA			
51.	Dr. K.D. Singh	Head of the Centre	Member
52.	Dr. Arjun Prasad	Sr. Scientist (Agronomy)	
53.	Dr. R.K. Singh	Sr. Scientist (Soil Fertility)	
54.	Dr. S.V. Singh	Scientist (Agril. Extn.)	
55.	Mr. A.K. Parandiyal	Scientist (Forestry)	
RESEARCH CENTRE, UDHAGAMANDALAM			
56.	Dr. A.K. Sikka	Head of the Centre	Member
57.	Dr. M. Madhu	Scientist (SS) (Agronomy)	
58.	Dr. D.V. Singh	Scientist (Soils)	
59.	Dr. Subhash Chand	Scientist (Agril. Eco.)	
RESEARCH CENTRE, VASAD			
60.	Dr. Virendra Kumar	Head of the Centre	Member
61.	Dr. R.S. Kurothe	Sr. Scientist (Engineering)	
62.	Dr. H.B. Singh	Sr. Scientist (Agronomy)	
63.	Dr. S.P. Tiwari	Sr. Scientist (Soil Fertility)	
64.	Mr. V.C. Pandey	Scientist (Agril. Eco.)	
65..	Mr. D.R. Sena	Scientist (Engineering)	