

Proceedings of IRC Meeting (6-8 and 16 June, 2012)



Indian Institute of Soil Science

Nabibagh, Berasia Road, Bhopal – 462 038 (M.P.)

GUIDANCE AND DIRECTIONS

Dr. A. Subba Rao,

Director and Chairman, IRC

Dr. A.K. Biswas

Principal Scientist & Head and Member Secretary, IRC

COMPILATION AND EDITING

Dr. Brij Lal Lakaria

Principal Scientist and I/c PME Cell

SECRETARIAL ASSISTANCE AND COMPUTER PROCESSING

Smt. Geeta Yadav, Personal Secretary

Smt. Yojna Meshram, Personal Assistant

REMARKS OF THE CHAIRMAN

At the outset Dr. A. Subba Rao, Director, IISS, Bhopal welcomed all the members of the august house. The Chairman highlighted the recent advances in soil research in the beginning. Notably among them were research on role of cyanobacteria in soil biology, use of nanoscience and nanotechnology for nutrient use efficiency and environmental clean-up, biodiversity and metagenomics, climate change and carbon sequestration etc. However, he emphasized the need to develop and adopt ample safety measures while handling nano particles. The Chairman cited many examples of scientists who have developed good laboratories. He informed that Director General, ICAR is committed to improve the state of laboratories in ICAR institutes in similar lines. He also talked about, Shri Vyas, advisor to PM in Planning Affairs, who has also stressed on improvement of resource quality and resource base for food production. The Chairman further pointed out that being a National Institute, the ICAR has more expectations from the IISS for developing the state-of-art laboratories and research agenda. Hence we have to extrapolate our knowledge to offer the solutions. There is demand from us in all the relevant fields. The Director also suggested to do research with more sincerity and document the research data like other Institutions especially ICRISAT. He also reminded the words of DG to the members of the house, who insisted that the division should not and need not concentrate on more than 2-3 issues. The project has to be holistic and not in a piecemeal. All the divisions and PCs taken together may concentrate into 12-15 major areas of soil research. He also suggested to Head of Divisions to conduct meeting frequently to assess the progress. It was again reminded that the papers are to be presented before institute scientists before final presentation in any conference/symposia. After attending the conference, he urged to submit a detailed report so that it becomes clear what has been discussed in the symposia/seminars/conferences.

He also requested to show sincerity with respect to assignments given to an individual scientist or a group of scientists, and complete the same in time. Any assignment in the interest of Institute should have first priority. At the end the Director also requested to have rational work load in terms of number of projects, but each scientist should have at least one research project as PI. Thereafter, the Member-Secretary, Dr. A.K. Biswas thanked the Director for bestowing upon him with the responsibility of Member Secretary, IRC. He assured to deliver his best in this regard. With the introductory remarks the IRC proceeded with the presentation of individual projects programme wise.

RESEARCH PROGRAMMES

Programme I: Nutrient Management and Fertility Improvement

Programme II: Management of Soil Physical components

Programme III: Soil Qualities for sustainable productivity

Programme IV : Minimizing Environmental Pollution

STATUS OF PROGRAMME WISE ON-ONGOING PROJECTS

Programme I: Nutrient Management and Fertility Improvement

A. Institute Project (Approved on-going projects)

Sl. No.	Title of the project	Leader and Associates	Unit/Division	Start	Completion	Remarks
1	Long-term Evaluation of Integrated Plant Nutrient Supply Modules for sustainable productivity in Vertisol.	Muneshwar Singh K. Sammi Reddy A.K. Biswas A. B. Singh R. S. Chaudhary	LTFE	April 2002	Long term	To be continued
Comment: The Name of Mr. B.P. Meena is added and Dr. K. Sammi Reddy is deleted. Dr. A.K. Biswas is operational PI						
2	Transformation and phyto-availability of zinc and boron in selected bench mark acid soils amended with lime and farmyard manure.	Sanjib Kumar Behera A. K. Shukla	PCM	June 2008	May 2012	Concluded
3	Soil carbon saturation and stabilization in some soils in India.	Pramod Jha Brij Lal Lakaria Ritesh Saha S. R. Mohanty A. K. Biswas Muneshwar Singh	Soil Chemistry and Fertility	March 2010	February 2014	To be continued
4	Study on nanoporous zeolites for soil and crop management.	K. Ramesh I. Rashmi K.S. Reddy	Soil Chemistry and Fertility	March 2010	March 2013	To be continued
Comment: The Name of Dr. K.Sammi Reddy is deleted. If possible compare the data obtained with a standard zeolite. (Action: Dr. K. Ramesh)						
5	Efficacy of soil sampling strategies for describing spatial variability of soil attributes.	Neenu S S. Srivastava B. N. Mandal	Soil Chemistry and Fertility	August 2010	July 2012	To be continued
Comment: The Names of Dr. Y. Muralidharudu is deleted and Mr. Hiromoy Das is included as 4 th associate. Yield mapping and requisite sampling once again to be undertaken. (Action: Ms. Neenu S.)						
6	Participatory integrated nutrient management for improving the productivity and quality of soils of Nagaland.	Brij Lal Lakaria N. K. Lenka R. H. Wanjari A. K. Biswas	Soil Chemistry and Fertility	May 2010	April 2013	To be continued
Comment: The Name of Dr. A.K. Biswas is deleted						

7	Studies on soil resilience in relation to soil organic matter in selected soils.	N. K. Lenka, Sangeeta Lenka Brij Lal Lakaria A. Mandal A. K. Biswas A. Subba Rao	Soil Physics	July 2010	July 2015	To be continued
Comment: The names of Dr. A.K. Biswas and Dr. A. Subba Rao are deleted						
8	Changing climatic factors' influence on the nutrient acquisition, utilization and recovery by soybean and wheat/gram germplasm lines/ genotypes on black soils of central India.	Neenu S. J. Somasundaram S. Ramana K. Ramesh I. Rashmi	Soil Chemistry and Fertility	June 2010	June 2013	To be continued
Comment: Nutrient uptake data to be checked (Action: Ms. Neenu, S.)						
9	Biofortification of grain sorghum and finger millet varieties with zinc through agronomic measures.	Ajay A. K. Shukla M. Vassanda Coumar J. K. Saha S. Kundu S. K. Behera	Environmental Soil Science	July 2010	2013	To be continued
Comment: The Names of Dr. S. Kundu, Dr. S.K. Behera and Dr. Vassanda Coumar are deleted. Data on zinc uptake and efficiency may be examined. (Action: Dr. Ajay)						
10	Development of phosphorus saturation indices for selected Indian soils.	I. Rashmi Neenu S K. S. Reddy A. K. Biswas A. Subba Rao	Soil Chemistry and Fertility	April 2011	April 2014	To be continued
Comment: The Names of Dr. K.S. Reddy, Dr. A.K. Biswas and Dr. A. Subba Rao are deleted.						
11	Biochar on soil properties and crop performance	Brij Lal Lakaria Pramod Jha A.K. Biswas K.M. Hati Jyoti Thakur Vassanda Coumar A. K. Dubey S. Gangil	Soil Chemistry and Fertility	January, 2012	January, 2017	To be continued
B. Externally Funded Projects						
12	Nano-technology for Enhanced Utilization of Native-Phosphorus by Plants and Higher Moisture Retention in Arid Soils (NAIP Project)	Tapan Adhikari A. K. Biswas S. Kundu	Environmental Soil Science	July 2008	June 2013	To be continued

	(Extended up to June 2013).					
13	Understanding the mechanism of variation in status of a few nutritionally important micronutrients in some important food crops and the mechanism of micronutrient enrichment in plant parts. (NAIP)	A. K. Shukla S. K. Behera Muneshwar Singh Tapan Adhikari	MSN	Feb., 2009	December 2012	To be continued
	Comment: The name of Dr. S.K. Behera is deleted.					
14	GPS and GIS based model soil fertility maps for selected districts for precise fertilizer recommendations to the farmers of India.	A. Subba Rao Pradip Dey (Executive PI) A. K. Shukla Muneshwar Singh R. H. Wanjari	STCR	June 2009	June 2012	To be continued
	Comment: The Name of Dr. Sanjay Srivastava and Mr. Hiranmoy Das are included and Dr. Y. Muralidaradu is deleted. Project extended up to 31/12/2012. (Action: Dr. Pradip Dey)					

Programme II: Management of Soil Physical components

15	Study on long-term tillage management with differential nitrogen on soybean-wheat cropping system in Vertisols.	K.M. Hati R.K. Singh	Soil Physics	June 1999	July, 2012	To be continued
	Comment: Project will be concluded after analyzing and processing of data by December, 2012. (Action: Dr. K.M. Hati)					
16	Tillage and manure interactive effects on soil aggregate dynamics, soil organic carbon accumulation and by pass flow in vertisols	Sangeeta Lenka M. C. Manna Brij Lal Lakaria K. M. Hati R. K. Singh R. C. Singh	Soil Physics	June 2008	June 2014	To be continued
	Comment: The Name Dr. K.M. Hati is deleted. Treatment wise data should be presented. (Action: Dr. Sangeeta Lenka)					
17	Tillage effects on weed dynamics in soybean-wheat system on Vertisol	R. H. Wanjari R. K. Singh	Soil Physics	June 2009	July 2012	To be concluded
18	Detection of water and nitrogen stress and prediction of yield of soybean and maize using hyper-spectral reflectance and vegetation indices.	K. M. Hati R. K. Singh	Soil Physics	June 2009	June 2012	To be continued
	Comment: Project extended till June, 2013. (Action: Dr. K.M. Hati)					
19	Participatory assessment of qualitative parameters for categorizing different degrees of soil quality to enhance the soil health and productivity.	R. S. Chaudhary J. Somasundaram Brij Lal Lakaria Santosh R. Mohanty A. B. Singh B.	Soil Physics	March 2010	August 2013	To be continued
20	Evaluating conservation tillage on various sequences/	J. Somasundaram	Soil Physics	March	June 2016	To be

	rotations for stabilizing crops productivity under erratic climatic conditions in black soils of Central India.	R. S. Chaudhary Neenu, S. Ajay		2010		continued
21	Impact of crop covers on soil and nutrient losses through runoff in Vertisol.	R. K.Singh R. S. Chaudhary J. Somasundaram I. Rashmi	Soil Physics	June 2010	May 2014	To be continued
Comment: Name of Dr. R.S. Chaudhary is deleted						
22	Characterizing rooting behaviours, soil water patterns and nutrient uptake of soybean – chickpea under different tillage and water regimes in Vertisols.	N. K. Sinha M. Mohanty K. M. Hati Ritesh Saha J. Somasundaram I. Rashmi K.M. Hati	Soil Physics	2011	2014	To be continued
Comment: Names of Dr. K.M. Hati and Dr. J. Somasundaram are deleted						
23	Assessing impacts of climate change on different cropping systems in Central India and evaluating adaptation studies through crop simulation models	M. Mohanty K.M. Hati N.K. Sinha Sangeeta Lenka Pramod Jha S. Neenu R. S. Choudhary A. Subba Rao	Soil Physics	June 2011	May 2016	To be continued
Comment: Name of R. Elanchezian is included as 8 th associate						
24	Soil Resilience and its Indicators under Some Major Soil Orders of India.	Ritesh Saha K.M. Hati Pramod Jha M. Mohanty M. Vassanda Coumar R.S. Chaudhary A. Subba Rao	Soil Physics	March 2011	February 2013	To be continued
Comment: Names of Dr. Vassanda Coumar and Dr. A. Subba Rao are deleted						
<u>B. Externally Funded Projects</u>						
25	Evaluating Conservation Agriculture for Stabilizing Crop Productivity and Carbon Sequestration by Resilient Cropping Systems/Sequences under aberrant Climatic Conditions in Black Soils of Central India.	J. Somasundaram R. S. Chaudhary M. Vassanda Coumar K. M. Hati A. Subba Rao Pramod Jha K. Ramesh, Ajay	Soil Physics	2010-2011	2013-2014	To be continued

Programme III : Soil Qualités for Sustainable Productivity

26	Quality assessment of crops under different nutrient management system in long term experiment	A.B. Singh Muneshwar Singh A. K. Tripathi A. Subba Rao	Soil Biology	May 2008	May 2013	To be continued
Comment: Names of Dr. A. Subba Rao and Dr. Muneshwar Singh are deleted.						
27	On farm production and evaluation of vermicompost and enriched compost	A.K. Tripathi M.C. Manna A.B. Singh	Soil Biology	January 2009	June 2012	Concluded
Comment: Technology Assessment and Transfer Unit (TATU) may take up new project for technology transfer. (Action: Dr. A.K. Tripathi and Dr. A.B. Singh)						
28	Structural and functional diversity of microbes in soil and rhizosphere	Santosh R. Mohanty M.C. Manna Muneshwar Singh	Soil Biology	January 2010	January 2014	To be continued
Comment: Apart from methanogenesis work there is need to concentrate on diversity work .						
29	Consequences of transgenic cotton on soil microbial diversity	Asit Mandal J.K. Thakur Asha Sahu M.C. Manna A. Subba Rao	Soil Biology	March 2011	February 2014	To be continued
Comment: Name of Dr. A. Subba Rao is deleted						
30	Actinomycetes diversity in Daccan plateau, hot, arid region and semi arid eco-sub-region (AER 3 and 6) and evaluation of their PGPR activity.	Radha T.K. D.L.N. Rao	Soil Biology	August 2010	August 2013	To be continued
31	Developing technique for acceleration of decomposition process using thermophilic organisms	Asha Sahu J.K. Thakur Vinod Kumar Bhargav (CIAE) H.L. Kushwaha (CIAE) A. Mandal M.C. Manna A. Subba Rao	Soil Biology	Sept 2011	Aug 2014	To be continued
Comment: Name of Dr. A. Subba Rao is deleted						

32	Chemical and Microbiological Evaluation of Biodynamic and Organic Preparations.	J. K. Thakur Asha Sahu Asit Mandal A. B. Singh Udai B. Singh, (Mau)	Soil Biology	June 2011,	June 2013	To be continued
	B. Externally Funded Projects					
33	Improving yields and nutrient uptake of selected crops through microbial inoculants in Vertisols of Central India.	D.L.N. Rao M.C. Manna	AINP BF	2006	2011	Concluded
34	Soil organic carbon dynamics and climatic changes and crop adaptation strategies (NAIP).	M.C. Manna S. Ramana K. Sammi Reddy A.K. Tripathi Muneshwar Singh	Soil Biology	May 2008	September, 2012	To be continued
	Comment: Names of Dr. Muneshwar Singh and Dr. K. Sammi Reddy are deleted.					
35	Network Project on Organic Farming	A. B. Singh K. Ramesh Brij Lal Lakaria S. Ramana J.K. Thakur	Soil Biology	July 2004	July 2012	To be continued
36	Metagenomic characterization and spatio-temporal changes in the prevalence of microbes involved in nutrient cycling in the rhizosphere of bioenergy crops	S.R. Mohanty Asit Mandal K. Bharti	Soil Biology	November 2011	November 2014	To be continued
37	Greenhouse gas (GHG) emission from composting systems and characterization of GHG regulating microbes	K. Bharti, J.K. Saha, S.R. Mohanty, K.C. Sinogi	Soil Biology Division	2012	2016	To be continued (New Project)
	Comment: Both standard heap and pit methods to be used to compare composting systems.					(Action: K. Bharti)

Programme IV : Minimizing Environmental Pollution

38	Developing database on extent of soil and water contamination in India	J. K. Saha Tapan Adhikari S. Ramana A.K. Biswas S. Srivastava S. Kundu M.L. Dotaniya	Environmental Soil Science	April 2008	March 2012	Concluded
39	Phyto-extraction of Cr by some floriculture plants.	S. Ramana A.K. Biswas Ajay	Soil Biology	June 2008	2014	To be continued
40	Non point sources of phosphorus loading to upper lake, Bhopal.	M. Vassanda Coumar M. L. Dotaniya J. Somasundaram J.K. Saha K.S. Reddy S. Kundu	ESS	April 2011	March 2014	To be continued
Comment: Names of Dr. S. Kundu and Dr. K.S. Reddy are deleted and Mr. Vasudev Meena is included as 3 rd associate.						
41	Soil quality assessment for enhancing crop productivity in some tribal districts of Madhya Pradesh	Rajendiran S. M. L. Dotaniya M. Vassanda Coumar N. K. Sinha S. Srivastava A. K. Tripathi S. Kundu	ESS	July 2011	June 2015	To be continued
42	Interaction among tannery effluents constituents on heavy metals uptake by spinach.	M. L. Dotaniya J. K. Saha Rajendiran S M. Vassanda Coumar S. Kundu	ESS	January 2012	December 2016	To be continued
B. Externally Funded Project						
43	Assessment of quality and resilience of soils in diverse agro-ecosystems (NAIP).	S. Kundu A. Subba Rao Muneshwar Singh J.K. Saha A.K. Biswas A.K. Tripathi K. Sammi Reddy R.H. Wanjari	ESS	July 2008	June 2012	Concluded

		K.M. Hati Tapan Adhikari M. Vassanda Coumar				
44	Impact assessment of continuous fertilization on heavy metals and microbial diversity in soils under long term fertilizer experiment.	Tapan Adhikari R.H. Wanjari A.K. Biswas Muneshwar Singh S. Kundu A. Subba Rao	ESS	October 2009	October 2012	To be continued
	Comment: Some samples should be reanalyzed for heavy metal content to establish the fact of food contamination or otherwise (Action: Dr. Tapan Adhikari)					
45	Quantifying Green house gases (GHGs) emissions in soybean-wheat systems of M.P.	Sangeeta Lenka N.K. Lenka S. R. Mohanty S. Kundu A. Subba Rao	Soil Physics	June 2011	June 2014	To be continued

New Projects

37	Greenhouse gas (GHG) emission from composting systems and characterization of GHG regulating micropes	K. Bharti, J.K. Saha, S.R. Mohanty, K.C. Sinogi	Soil Biology Division	2012	2016	To be continued
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Projects Concluded (6 nos.)

S.No.	Project	PI			
2	Transformation and phyto-availability of zinc and boron in selected bench mark acid soils amended with lime and farmyard manure.	Sanjib Kumar Behera, A. K. Shukla	MSN	June 2008	May 2012
17	Tillage effects on weed dynamics in soybean-wheat system on Vertisol	R. H. Wanjari, R. K. Singh	Soil Physics	June 2009	July 2012
27	On farm production and evaluation of vermicompost and enriched compost	A.K. Tripathi, M.C. Manna , A.B. Singh	Soil Biology	January 2009	June 2012
33	Improving yields and nutrient uptake of selected crops through microbial inoculants in Vertisols of Central India.	D.L.N. Rao, M.C. Manna,	AINP BF	2006	2011
38	Developing database on extent of soil and water contamination in India	J. K. Saha, Tapan adhikari , S. Ramana, A.K. Biswas , S. Srivastava , S. Kundu , M. L. Dotaniya	Environment al Soil Science	April 2008	March 2012

43	Assessment of quality and resilience of soils in diverse agro-ecosystems (NAIP).	S. Kundu , A. Subba Rao Muneshwar Singh , J.K. Saha , A.K. Biswas , A.K. Tripathi, K. Sammi Reddy , R.H. Wanjari, K.M. Hati, Tapan Adhikari , M. Vassanda Coumar	ESS	July 2008	March 2012
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Contractual Projects

1	Evaluation of Allwin wonder and allwin top for their effects on maize productivity and soil fertility. (Sponsored by Sree Ramcides Chemicals P. Ltd.)	K. Ramesh A. K. Biswas S. Ramana	Soil Chemistry and Fertility	April 2009	April 2012	Concluded
2	Efficiency of Bio-release micronutrient fertilizer Zinc (Micromac) on yield and zinc nutrition of different crops in India	A. K. Shukla, S. K. Behera, R. H. Wanjari , B.L. Sharma	PC M	August 2010	July 2011	Concluded

Criteria for number of projects with individual scientist

In the Institute Research Council Meeting of 2012, certain norms regarding maximum number of projects that any scientists of IISS may be associated at any point of time were decided as mentioned below:

- A. Principal investigator (PI) in one projects and Co-PI in other four projects: (1+4)
- B. Principal investigator in two projects and Co-PI in other two projects: (2+2)
- C. Principal investigator in three projects without association in any other projects: (3+0)
- D. Only Co-PI in projects: (0+5)

In the Institute Research Council Meeting, norms regarding Minimum number of projects that any scientist of IISS may hold, are mentioned below:

- A. Principal investigator in one project without association in other one project: (1+0)
- B. Only Co-PI in two projects: (0+2)

Note: 3-6 months overlap may be allowed between termination of a project and starting of a new project and hence in some cases 6 projects may be allowed for a brief period. The decision of the Chairman in all matters shall be final and binding.

Salient Remarks of the Chairman

In his concluding remarks, the Chairman expressed happiness over the fact that some new ideas have come up from the meeting and presentations were good. Over a period of last 2-3 years the institute has acquired a critical mass in respect of scientific strength, research issues taken up, scientific development and knowledge developed. There is an urgent need to carry it to the masses and to the farmers. The world around us is using our data and knowledge, it is high time we translate our results into well knit packages and technologies and disseminate to the needy. He stressed the need to make provisions in EFC for strengthening the soil laboratories and create facilities for specific purposes such as nanotechnology, genomics, carbon sequestration, soil quality and resilience, etc. All must put first priority on compiling the EFC memo of the institute and incorporate the well planned projects in the EFC memo as per guidelines given by ICAR. He also expressed concerns over variations in estimating some parameters from experiment to experiments. Hence, there is need to adopt good protocol so as to avoid variation in values with similar inputs. He suggested to all the scientists that their research achievements should corroborate with the half yearly targets.

Project concluded in IRC meeting June, 2012

Sl. No.	Programme No.	Sl. No. in IRC Proceeding	Title of the Project	Division/Co-coordinating Unit
1.	Programme I	2	Transformation and phyto-availability of zinc and boron in selected bench mark acid soils amended with lime and farmyard manure.	AICRP MSN
2.	Programme II	17	Tillage effects on weed dynamics in soybean-wheat system on Vertisol	Soil Physics
3.	Programme III	27	On farm production and evaluation of vermicompost and enriched compost	Soil Biology
		33	Improving yields and nutrient uptake of selected crops through microbial inoculants in Vertisols of Central India.	AINP BF
4.	Programme IV	38	Developing database on extent of soil and water contamination in India	Environmental Soil Science
		43	Assessment of quality and resilience of soils in diverse agro-ecosystems (NAIP).	Environmental Soil Science

Division wise/Co-coordinating Unit wise number of Projects

Sl. No.	AICRP/ Division	Sl. No. of Project	Total
1.	AICRP on LTFE	1	1
2.	AICRP on STCR	14,	1
3.	AICRP on MSN	13	1
4.	AINP on Biofertilizers	-	-
5.	Soil Chemistry and Fertility	3, 4, 5, 6, 7, 8, 10, 11,	8
6.	Soil Physics	15, 16, 18, 19, 20, 21, 22, 23, 24, 25, 45	11
7.	Soil Biology	26, 28, 39, 30, 31, 32, 34, 35, 36, 37	10
8.	Environmental Soil Science	9, 12, 39, 40, 41, 42, 44, 45,	8

Division-wise no. of externally funded projects

Sl. No.	Centre/Co-coordinating Unit	Sl. No. of Project	Total
1	Soil Chemistry and Fertility	-	-
2	Soil Physics	25, 45	2
3	Soil Biology	34, 35, 36	3
4	Environmental Soil Science	12, 43, 44	3
5	AICRP LTFE	-	-
6	AICRP STCR	14	1
7	AICRP MSN	13	1
8	AINP BF	-	-

Number of new projects approved in IRC meeting of June, 2012

Sl. No.	Division/Co-coordinating Unit	Sl. No.	Total
1	AICRP LTFE	-	-
2	AICRP STCR	-	-
3	AICRP MSN	-	-
4	AINP BF	-	-
5	Soil Chemistry and Fertility	-	-
6	Soil Physics	-	-
7	Soil Biology	37	1
8	Environmental Soil Science	-	-

PROJECT (SERIAL NUMBERS) WITH INDIVIDUAL SCIENTIST

S. No.	Name of Scientist	Designation	Sl. of projects	
			PI	Co-PI
1	Dr. A. Subba Rao	Director	14	23, 25, 44, 45
AICRP on LTFE				
1	Dr. Muneshwar Singh*	Project Co-coordinator	1	3, 13, 14, 28, 44
2	Dr. R.H.Wanjari	Senior Scientist		6, 14, 44
AICRP on STCR				
1	Dr. Pradip Dey**	Project Co-ordinator	14	-
2	Dr. Abhishek Rathore***	Scientist (SS)	-	-
3	Dr. Hiranmoy Das	Scientist	-	5, 14
AICRP on MSN				
1	Dr. A.K. Shukla	Project Co-ordinator	13	9, 14
AINP on BF				
1	Dr. D.L.N. Rao	Project Co-ordinator	-	30
2	Ms.T.K. Radha	Scientist	30	-
Soil Chemistry and Fertility				
1	Dr. A.K.Biswas**	Head of Division and Prin. Scientist	1	3, 11, 12, 39, 44
3	Dr. Brij Lal Lakaria*	Principal Scientist	6, 11	3, 7, 16, 35
4	Dr. R. Elanchezian	Principal Scientist	-	23
5	Dr. Sanjay Srivastava	Senior Scientist	-	5, 14, 41
6	Dr. N.K. Lenka	Senior Scientist	7	6, 45
7	Dr. K.Ramesh	Senior Scientist	4	8, 25, 35
8	Dr. Pramod Jha	Senior Scientist	3	11, 23, 24, 25
9	Ms. I.Rashmi	Scientist	10	4, 8, 21, 22
10	Ms. Neenu S	Scientist	5, 8	10, 20, 23
11	Dr. J.S.V. Tenshia***	Scientist		
12	Sh. B.P. Meena	Scientist	-	1
Soil Physics Division				
1	Dr. R.S. Chaudhary*	Head of Division and Prin. Scientist	19,	1, 20, 23, 24, 25
2	Dr. Kuntal M. Hati*	Senior Scientist	15, 18	11, 23, 24, 25
3	Sh. M.Mohanty	Scientist	23,	22, 24,
4	Dr. J. Somasundaram*	Senior Scientist	20, 25,	8, 19, 21, 40
5	Dr.(Mrs.) Sangeeta Lenka	Scientist	16, 45	7, 23
6	Dr. Ritesh Saha	Senior Scientist	24	3, 22
7	Dr. R.K.Singh	Scientist Senior Scale	21	15, 16, 18
8	Dr. N.K. Sinha	Scientist	22,	23, 41

Soil Biology

1	Dr. M.C. Manna	Head of Division and Prin. Scientist	34	16, 28, 29, 31
2	Dr. A.K. Tripathi	Principal Scientist	-	26, 34, 41
3	Dr. A.B. Singh	Principal Scientist	26, 35	1, 19, 32
4	Dr. S. Ramana	Senior Scientist	39	8, 34, 35
5	Dr. S.R.Mohanty	Senior Scientist	28, 36	3, 19, 37
6	Dr. Kollah Bharti	Senior Scientist	37	36
7	Dr. Asit Mandal	Scientist	29	7, 31, 32, 36
8	Dr. Asha Sahu	Scientist	31	29, 32
9	Dr. Jyoti Kumar Thakur	Scientist	32	11, 29, 31, 35
10	Dr. K.C. Shinogi	Scientist	-	37

**Environmental Soil
Science**

1	Dr. S. Kundu	Head of Division and Prin. Scientist	-	12, 41, 42, 44, 45
2	Dr. Ajay	Principal Scientist	9	20, 25, 39
3	Dr. J.K. Saha	Principal Scientist	-	9, 37, 40, 42
4	Dr. Tapan Adhikari	Principal Scientist	12, 44	13
5	Dr. Vasanda Coumar	Scientist	40	11, 25, 41, 42
6	Dr. M.L. Dotaniya	Scientist	42	40, 41
7	Dr. S. Rajendiran	Scientist	41	42
8	Mr. Vasudev Meena	Scientist	-	40

**Scientists from other
institutes**

1	Dr. B. Mandal	Scientist, IASRI, New Delhi	-	5
2	Dr. R.C. Singh	Principal Scientist, CIAE, Bhopal	-	16
3	Dr. A.K. Dubey	Principal Scientist, CIAE, Bhopal	-	11
4	Dr. S. Gangil	Principal Scientist, CIAE, Bhopal	-	11
5	Dr. Vinod Bhargav	Senior Scientist, CIAE, Bhopal	-	31
6	H.L. Kushwaha (CIAE)	Senior Scientist, CIAE, Bhopal	-	31
7	Udai B. Singh	Mau	-	32

* One project is about to complete shortly, ** Operational/Executive PI, *** On deputation/Leave.

NUMBER OF PROJECTS WITH INDIVIDUAL SCIENTIST

S. No.	Name of Scientist	Designation	No. of projects		Total
			PI	Co-PI	
1	Dr. A. Subba Rao	Director	1	4	5
AICRP on LTFE					
1	Dr. Muneshwar Singh*	Project Co-ordinator	1	5	6
2	Dr. R.H.Wanjari	Senior Scientist	-	3	3
AICRP on STCR					
1	Dr. Pradip Dey**	Project Co-ordinator	1	-	1
2	Dr. Abhishek Rathore***	Scientist Senior Scale	-	-	-
3	Dr. Hiranmoy Das	Scientist	-	2	2
AICRP on MSN					
1	Dr. A.K. Shukla	Project Co-ordinator	1	2	3
AINP on BF					
1	Dr. D.L.N. Rao	Project Co-ordinator	-	1	1
2	Ms.T.K. Radha	Scientist	1	-	1
Soil Chemistry and Fertility					
1	Dr. A.K.Biswas*,**	Principal Scientist & Head	1	5	6
2	Dr. Brij Lal Lakaria*	Principal Scientist	2	4	6
3	Dr. Elanchezian	Principal Scientist	-	1	1
4	Dr. Sanjay Srivastava	Senior Scientist	-	3	3
5	Dr. N.K. Lenka	Senior Scientist	1	2	3
6	Dr. K.Ramesh	Senior Scientist	1	3	4
7	Dr. Pramod Jha	Senior Scientist	1	4	5
8	Ms. I.Rashmi	Scientist	1	4	5
9	Ms. Neenu S	Scientist	2	3	5
10	Dr. J.S.V. Tenshia***	Scientist	-	-	-
11	Sh. B.P. Meena	Scientist	-	1	1
Soil Physics Division					
1	Dr. R.S. Chaudhary*	Principal Scientist & Head	1	5	6
2	Dr. Kuntal M. Hati*	Senior Scientist	2	4	6
3	Sh. M.Mohanty	Scientist	1	2	3
4	Dr. J. Somasundaram*	Senior Scientist	2	4	6
5	Dr. Sangeeta Lenka	Scientist	2	2	4
6	Dr. Ritesh Saha	Senior Scientist	1	2	3
7	Dr. R.K.Singh	Scientist Senior Scale	1	3	4
8	Dr. N.K. Sinha	Scientist	1	2	3
Soil Biology					
1	Dr. M.C. Manna	Principal Scientist & Head	1	4	5
2	Dr. A.K. Tripathi	Principal Scientist	-	3	3
3	Dr. A.B. Singh	Principal Scientist	2	3	5
4	Dr. S. Ramana	Senior Scientist	1	3	4
5	Dr. S.R.Mohanty	Senior Scientist	2	3	5

6	Dr. Kollah Bharati	Senior Scientist	1	1	2
7	Dr. Asit Mandal	Scientist	1	4	5
8	Dr. Asha Sahu	Scientist	1	2	3
9	Dr. Jyoti Kumar Thakur	Scientist	1	4	5
10	Dr. K.C. Shinogi	Scientist	-	1	1
Environmental Soil Science					
1	Dr. S. Kundu*	Principal Scientist & Head	-	5	5
2	Dr. Ajay	Principal Scientist	1	3	4
3	Dr. J.K. Saha	Principal Scientist	-	4	4
4	Dr. Tapan Adhikari	Principal Scientist	2	1	3
5	Dr. Vasanda Coumar	Scientist	1	4	5
6	Dr. M.L. Dotaniya	Scientist	1	2	3
7	Dr. S. Rajendiran	Scientist	1	1	2
8.	Mr. Vasudev Meena	Scientist	-	1	1
Scientists from other institutes					
1	Dr. B.N. Mandal	Scientist, IASRI, New Delhi	-	1	1
2	Dr. R.C. Singh	Principal Scientist, CIAE, Bhopal	-	1	1
3	Dr. A.K. Dubey	Principal Scientist, CIAE, Bhopal	-	1	1
4	Dr. S. Gangil	Principal Scientist, CIAE, Bhopal	-	1	1
5	Dr. Vinod Bhargav	Senior Scientist, CIAE, Bhopal	-	1	1
6.	Dr. H.L. Kushwaha (CIAE)	Senior Scientist, CIAE, Bhopal	-	1	1
7.	Dr. Udai B. Singh	Sr. Scientist, NBIAM, Mau	-	1	1

* one project is about to complete shortly, ** Operational/Executive PI, *** On deputation/Leave.

LIST OF PARTICIPANTS

S.No.	Name of Scientist	Designation
1	Dr. A. Subba Rao	Director
2	Dr. A.K. Biswas	Member Secretary, IRC
	AICRP on LTFE	
3	Dr. Muneshwar Singh	Project Co-ordinator
4	Dr. R.H. Wanjari	Senior Scientist
	AICRP on STCR	
5	Dr. Pradip Dey	Project Co-ordinator
6	Dr. Hiranmoy Das	Scientist, Senior Scale
7	AICRP on MSN	
8	Dr. A.K.Shukla	Project Co-ordinator
	AINP on BF	
9	Dr. D.L.N. Rao	Project Co-ordinator
10	Ms.T.K. Radha	Scientist
	Soil Chemistry and Fertility	
11	Dr. Brij Lal Lakaria	Principal Scientist
12	Dr. R. Elanchezian	Principal Scientist
13	Dr. Sanjay Srivastava	Senior Scientist
14	Dr. N.K. Lenka	Senior Scientist
15	Dr. K.Ramesh	Senior Scientist
16	Dr. Pramod Jha	Senior Scientist
17	Ms. I.Rashmi	Scientist
18	Ms. Neenu S	Scientist
19	Bharat Prakash Meena	Scientist
	Soil Physics	
20	Dr. R.S. Chaudhary	Head of Division and Principal Scientist
21	Dr. Kuntal M. Hati	Senior Scientist
22	Dr. J. Somasundaram	Senior Scientist
23	Dr. Ritesh Saha	Senior Scientist
24	Sh. M. Mohanty	Scientist Senior Scale
25	Dr. R.K.Singh	Scientist Senior Scale
26	Dr.(Mrs.) Sangeeta Lenka	Scientist
27	Dr. N.K. Sinha	Scientist
	Soil Biology	
28	Dr. M.C. Manna	Head of Division and Principal Scientist
29	Dr. A.K. Tripathi	Principal Scientist
30	Dr. A.B. Singh	Principal Scientist
31	Dr. S. Ramana	Senior Scientist
32	Dr. S.R.Mohanty	Senior Scientist
33	Dr. Kollah Bharti	Senior Scientist
34	Dr. Asit Mandal	Scientist
35	Ms. Asha Sahu	Scientist
36	Dr. Jyoti Kumar Thakur	Scientist
37	Dr. K.C. Shinogi	Scientist
	Environmental Soil Science	
38	Dr. S. Kundu	Head of Division and Principal Scientist
39	Dr. Ajay	Principal Scientist
40	Dr. J.K. Saha	Principal Scientist
41	Dr. Tapan Adhikari	Principal Scientist
42	Dr. Vasanda Coumar	Scientist
43	Dr. M.L. Dotaniya	Scientist
44	Dr. S. Rajendiran	Scientist
45	Vasudev Meena	Scientist