

Proceedings of IRC Meeting
(22nd - 23th February, 2017)



ICAR-Indian Institute of Soil Science

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

GUIDANCE AND DIRECTIONS

Dr. ASHOK K. PATRA,
Director and Chairman, IRC

Dr. A.K. BISWAS
Principal Scientist & Head and Member Secretary, IRC

COMPILATION AND EDITING

Dr. R. Elanchezhian
Principal Scientist and I/c PME Cell

SECRETARIAL ASSISTANCE AND COMPUTER PROCESSING

Shri Sanjay Kumar Kori
Steno Grade -III

INTRODUCTORY REMARKS OF THE CHAIRMAN, IRC

The IRC meeting was held during 22-23 February 2017 in the committee room of the institute. The member Secretary IRC welcomed the Chairman and other members of IRC and briefed about the purpose and agenda of the meeting. I/c PME Cell presented an account of the completed and new projects in the institute and the modalities for presentation. The Director and Chairman of the IRC also welcomed all the members of IRC present over there. He took this opportunity to congratulate the award winning scientists. He again stressed that all scientists must submit quality research proposals. The following concluded projects, contractual and new projects were presented.

Institute in-house and external funded projects (RPP-III)

Sl. No.	Title of Project	PI and Co-PI	Division/ Unit	Period		RPP Status	Remarks
1	Soil quality assessment for enhancing crop productivity in some tribal districts of Madhya Pradesh (TSP)	Rajendiran S., M. L. Dotaniya, M. Vassanda Coumar, N. K. Sinha, Sanjay Srivastava, A. K. Tripathi, S. Kundu	ESS	July 2011	June 2016	RPP-III to be submitted	<p>Concluded</p> <ul style="list-style-type: none"> Water management can be taken as offshoot experiment from this project Technology extended to KVK/state dept. officials Need to integrate productivity with soil parameters Project output is appreciated; bulletin/ papers to be compiled Outcome: Product-three fertility maps generated and Process-New methodology developed for soil quality index
2	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, Neenu S., R. S. Chaudhary, R. Elanchezian	Soil Physics	June 2011	May 2016	RPP-III to be submitted	PI is on tour. He will present RPP-III in next IRC
3	Greenhouse gas (GHG) emission from composting systems and characterization of GHG regulating microbes	K. Bharati, J.K. Saha, S.R. Mohanty and Shinogi K C	Soil Biology	June 2012	June 2016	RPP-III to be submitted	<p>Concluded</p> <ul style="list-style-type: none"> Amount of CH₄ emission from FYM and Flux of CH₄ to be computed. Decrease in fertilizer quality with N₂O emission need to be taken care of. Duration of flux reading with cumulative emission need to be recorded Output: Best combination identified soil+PM+CH₄ Microbe responsible for odor free compost need to be registered
4	Developing technique for acceleration of decomposition process using thermophilic organisms	Asha Sahu, U. B. Singh (NBAIM), J.K. Thakur, V. K. Bhargav (CIAE), H.L. Kushwaha (CIAE), Asit Mandal, M.C. Manna	Soil Biology	September 2011	December 2015	RPP-III submitted	<p>Concluded</p> <ul style="list-style-type: none"> Mass balance/loss to be calculated in the protocol to assess the advantage Method demonstrations Process patent to be applied
5	Impact of Long Term Use of Sewage Water Irrigation on Soil and Crop Quality in	M.L. Dotaniya, Vasudev Meena (On study leave),	ESS	August 2013	July 2016	RPP-III to be submitted	PI is on tour till 3 March 2017. He will present RPP-III in next IRC

	Bhopal region of Madhya Pradesh	Vassanda Coumar, Rajendiran S Asha Sahu, S. Kundu					
6	Studies on soil resilience in relation to soil organic matter in selected soils.	N. K. Lenka, Sangeeta Lenka, Brij Lal Lakaria, Asit Mandal	SC&F	July 2010	July 2015	RPP-II 2014-15 and RPP-III to be submitted	PI is on tour. He will present RPP-III in next IRC
7	Weed Management for major cropping systems under conservation agriculture in Vertisols	A.K. Vishwakarma, R.S. Chaudhary, N.K. Sinha, B.P. Meena, K. Bharati, Scientist from DWR, Jabalpur	Soil Physics	June 2014	May 2017	RPP-III of weed management project to be submitted Report for 2015-16 to be submitted	Concluded & merged with CA project and data to be presented in RPP-III of CA project <ul style="list-style-type: none"> Weed management to be used
8	Evaluating Conservation tillage on various cropping sequences/rotations for stabilizing crops productivity under erratic Climatic Conditions in Black Soils of Central India.	J. Somasundaram, R. S. Chaudhary, Ajay, S. Neenu Jha, K. Ramesh, Ajay	Soil Physics	March 2010	June 2016	RPP-III to be presented	RPP-III to be presented in next IRC
9	Integrated assessment of some IISS Technologies in enhancing Agro-Ecosystems productivity and livelihood sustainability	Shinogi K.C., Sanjay Srivastava, A.B. Singh, D.L.N. Rao, Radha T.K, B.P. Meena N.K. Sinha, Hiranmoy Das (On study leave)	SC&F	January 2013	July 2016	RPP-II (2015-16) RPP-III to be presented	Concluded <ul style="list-style-type: none"> The performance of technologies need to be assessed Soil health status after intervention need to be analyzed

Contractual Projects

10	Evaluation of urease inhibitor product (limus) for nutrient use efficiency in cereal crops (BASF Pvt. Ltd.,)	Brij Lal Lakaria, Pramod Jha, B.P. Meena, A.K. Biswas	SC&F	July 2014	June 2016	Report to be submitted	Concluded
11	Upgradation of Mridaparikshak mini lab (Nagarjuna Agro Chemicals Pvt. Ltd., Hyderabad)	S Srivastava, P. Jha, I, Rashmi, A.K. Biswas, P. Dey, M. Vassanda Coumar, Abhay Shirale, A.K. Patra	SC&F	Dec. 2015	April 2016	Report to be submitted	Concluded
12	Evaluation of efficacy of sulphur and zinc containing	A.K. Shukla, A.K. Biswas, S. Srivastava,	MSN	April 2015	June 2017	Report to be submitted	Not presented Report to be submitted

	complex fertilizers for maximizing yield through balanced nutrition of different crops in India (Zuari Agro Chemicals Ltd)	Pankaj K. Tiwari, B.P. Meena					
13	Evaluation of efficacy of zinc metalosate and boron metalosate foliar supplements for maximizing yield through balanced nutrition of important crops grown in India (Indofil Ind. Limited)	A.K. Shukla, A.K. Biswas, Pankaj K. Tiwari, B.P. Meena	MSN	June 2015	June 2017	Report to be submitted	Not presented
14	Response of crop to applied Potassium in Vertisols of India. (Sponsored project by PRII, Gurgoan)	Muneshwar Singh, R.H. Wanjari, B.L. Lakaria, Abhay Shirale	PC (LTFE)	June 2016	May 2017	Report to be submitted	Not presented
15	The "Aquasorb" project Effect of aquasorb on water and nutrient use efficiency & crop productivity of soybean & tomato in selected soils of India (Funded by SNF India Pvt. Ltd. Vishakhapatnam)	R.S. Chaudhary, R.K. Singh, K.M. Hati, B.P. Meena, A.K. Biswas, M. Mohanty and A.K. Patra	Soil Physics	13 July 2016	June 2018	Project to be presented	Dr. Sonalika Sahoo to be associated with the project

RPP-I

New Projects

16	India-UK nitrogen Fixation Centre ((IUNFC)	S.R. Mohanty, D.L.N. Rao	BNF	June 2016	June 2019	Project to be presented	Project to be continued
17	Ensuring food security, sustainability and soil health through resource conservation based farmer FIRST approach in central India	A.K. Vishwakarma, R.K. Singh, A.B. Singh, B.L. Lakaria, R.H. Wanjari, K. Bharati, Asha Sahu, Shinogi K.C. and Abhay O. Shirale	Soil Physics	2016	2018	Project to be presented	<ul style="list-style-type: none"> Brainstorming of project team with HoDs/PCs to identify problems & technology to be demonstrated Quantified deliverables need to be given
18	Management of Municipal Solid Waste (MSW) contaminated landfill area of Bhanpur, Bhopal	Ajay, Tapan Adhiakari, K. Bharati, Asit Mandal and J.K. Saha	ESS	April 2017	March 2020	Project to be presented	<ul style="list-style-type: none"> Project to be revised in view of the comments of IRC (Title to be changed, Objective to be reframed) Success indicator to be incorporated Soil physicist to be included Water supply to be ensured by BMC for the project work.

Concluding Remarks of the Chairman

The Director in the end congratulated all the speakers for best presentations. He emphasized on project to be conducted in program mode and thereby reducing the number of projects. The information emanated from Soil quality assessment for enhancing crop productivity in some tribal districts of Madhya Pradesh (TSP) and Developing technique for acceleration of decomposition process using thermophilic organisms may be compiled and bulletin to be made by respective project team. He also highlighted the importance of timely submission of RPPs for proper project monitoring. He has stressed upon the subsequent line of work to be carried out from the concluded projects. He has urged all scientists to route all publications through PME Cell for proper compilation and record. He has requested all the PIs of contract research project to include cost of water resources. He has urged all the scientists of the institute to be prepared for celebration of Foundation Day in a befitting manner.

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	-	-
3.	AICRP on MSN	9	1
4.	AINP on Biofertilizers	22,16	2
5.	Soil Chemistry and Fertility	2,3, 5, 7, 8, 13,14,17	8
6.	Soil Physics	10,15,18,31,17	5
7.	Soil Biology	11,21,23,24,28,32,35	7
8.	Environnemental Soil Science	12(a, b),25,26,27,29,30,33,34,16	10
9.	ITMU	-	-
10	CRP on CA	16 a,b,c&d	1

**contractual projects are not included*

Division-wise no. of Externally Funded Projects

Sl. No.	Centre/Co-coordinating Unit	Sl. No. of Project	Total
1.	AICRP LTFE	-	-
2.	AICRP STCR	-	-
3.	AICRP MSN	-	-
4.	AINP BF	22,16	2
5.	Soil Chemistry and Fertility	13,14,17	3
6.	Soil Physics	18,31,17	3
7.	Soil Biology	21,23,24,32	4
8.	Environmental Soil Science	30,18	2
9.	CRP on CA	16	1

Division-wise no. of Contractual Projects

Sl. No.	Division/Co-coordinating Unit	Sl. No.	Total
1	AICRP LTFE	40	1
2	AICRP STCR	-	-
3	AICRP MSN	37,38	2
4	AINP BF	-	-
5	Soil Chemistry and Fertility	-	-
6	Soil Physics	-	-
7	Soil Biology	-	-
8	Environmental Soil Science	-	-

New Projects Approved

Sl. No.	Division/Co-coordinating Unit	Sl. No.	Total
1	AICRP LTFE	-	-
2	AICRP STCR	-	-
3	AICRP MSN	-	-
4	AINP BF	16	1
5	Soil Chemistry and Fertility	-	-
6	Soil Physics	17	1
7	Soil Biology	35	1
8	Environmental Soil Science	18,33,34,18	3
9	ITMU	-	-

Project (serial numbers) with individual scientist

S. No.	Name of Scientist	Designation	Sl. Of projects	
			PI	Co-PI
1	Dr. A.K. Patra	Director	-	10, 12 (a, b), 13, 23, 31, 32
AICRP on LTFE				
1	Dr. Muneshwar Singh	Project Co-coordinator	1,40	10,13,18,32
2	Dr. R. H. Wanjari	Senior Scientist	-	13, 16 (a), 40,17
AICRP on STCR				
1	Dr. Pradip Dey	Project Co-ordinator	-	10,17,31
2	Dr. N.S. Bhogal	Pr. Scientist	-	30
3	Dr. Abhishek Rathore*	Scientist (SS)	-	-
4	Dr. Hiranmoy Das*	Scientist	-	27
AICRP on MSN				
1	Dr. A.K. Shukla	Project Co-ordinator	37,38	5,9,12(b),13,17
2.	Mr. Pankaj K. Tiwari*	Scientist	9	37,38
AINP on BF				
1	Dr. S.R. Mohanty	I/c Project Co-ordinator	32,16	21,22
Soil Chemistry and Fertility				
1	Dr. A. K. Biswas	Head of Division & Pr. Scientist	16 (LCPC)	1, 3,5,13,37,38
2	Dr. Sanjay Srivastava	Principal Scientist	7, 16c	-
3	Dr. Brij Lal Lakaria	Principal Scientist	3	2,11,13,16(d),40,17
4	Dr. R. Elanchezhian	Principal Scientist	5	8,9, 14,15,17
5	Dr. N.K. Lenka	Principal Scientist	2,13,17	-
6	Dr. K. Ramesh	Principal Scientist	-	5,7,8,11,12(b),16(b)
7	Dr. Pramod Jha	Senior Scientist	16d	3,8,10,15,18
8	Dr. B.P. Meena	Scientist	8	1,9,13, 16(b),37,38
9	Dr. Abhay Shirale	Scientist	-	13,14,16(b),40,17
10	Dr. Gurav Priya Pandurang	Scientist	-	-
Soil Physics Division				
1	Dr. R.S. Chaudhary	Head of Division and Prin. Scientist	16 (Deputy LCPC)	1,10,15,18,31
2	Dr. Kuntal M. Hati	Principal Scientist	10,16	3,15,31
3	Dr. R.K. Singh	Principal Scientist	-	16(a),31,17
4	Dr. J. Somasundaram	Senior Scientist	16b	18
5	Dr. A.K. Vishwakarma	Senior Scientist	17	-
6.	Dr. M. Mohanty	Scientist	15,18,31	10
7	Dr. N.K. Sinha	Scientist	-	10,12(a),13,15,16(c),18,31
Soil Biology				
1	Dr. M.C. Manna	Head of Division and Prin. Scientist	23	24
2	Dr. A.K. Tripathi	Principal Scientist	-	7,16(a),23,28,
3	Dr. A.B. Singh	Principal Scientist	11	1, 13,17
4	Dr. S. Ramana	Principal Scientist	28	11,16(b)
5	Dr. S.R. Mohanty	Senior Scientist	32,16	21,22
6	Dr. K. Bharati	Senior Scientist	21	16(d),22,28,32,17,18

7	Dr. Asit Mandal	Scientist	-	2,23,24,18
8	Dr. Asha Sahu	Scientist	-	23,26,28,17
9	Dr. J.K. Thakur	Scientist	-	3,10,11,16(d),17
10	Dr. S. Bhattacharjya	Scientist	35	16(b),23,29
Environmental Soil Science				
1	Dr. J.K. Saha	Head of Division and Prin. Scientist	30	12(b),25,27,29,18
2.	Dr. S. Kundu	Principal Scientist	-	5,12(a,b),13,25,26,27
3.	Dr. Ajay	Principal Scientist	34	12(a),29
4	Dr. Tapan Adhikari	Principal Scientist	12(a,b)	5,29,18,
5	Dr. M. Vassanda Coumar	Scientist	29	3,10,25,26,30
6	Dr.(Mrs.) Sangeeta Lenka	Scientist Sr. Scale	33	2,15,17,18
7	Dr. M.L. Dotaniya	Scientist	25,26	27,29,30
8	Dr. Rajendiran S.	Scientist	27	13,25,26,29,30
9	Mr. Vasudev Meena*	Scientist	-	26
Institute Technology management Unit (ITMU)				
1.	Dr. Shinogi K C	Scientist	-	17
Scientists from other Institutes				
1.	KV Ramana Rao	Principal Scientist, CIAE, Bhopal	-	16c
2.	Dr. A.K. Dubey	Principal Scientist, CIAE, Bhopal	-	3
3.	Dr. S. Gangil	Principal Scientist, CIAE, Bhopal	-	3
4.	Neera Singh	IARI	-	21
5.	K. Raju Kumar	NIHSAD, Bhopal	-	5
6.	C.D. Singh, Navkanta Bhat, K.S. Subramanium and Bajendra	CIAE, Bhopal		12(a)
7.	Dr. D.LN. Rao**	Emirates scientist	-	16

*On deputation/Leave.

**Emirates Scientist, ICAR-IISS, Bhopal

NUMBER OF PROJECTS WITH INDIVIDUAL SCIENTIST

S. No.	Name of Scientist	Designation	No. of projects		Total
			PI	Co-PI	
1	Dr. A.K. Patra	Director	-	10, 12 (a, b),13,23, 31,32	7
AICRP on LTFE					
1	Dr. Muneshwar Singh	Project Co-coordinator	1,40	10,13,18,32	6
2	Dr. R.H. Wanjari	Senior Scientist	-	13, 16 (a), 40,17	4
AICRP on STCR					
1	Dr. Pradip Dey	Project Co-ordinator	-	10,17,31	3
2	Dr. N.S. Bhogal	Pr. Scientist	-	30	1
3	Mr. Hiranmoy Das*	Scientist	-	27	1
AICRP on MSN					
1	Dr. A.K. Shukla	Project Co-ordinator	37,38	5,9,12(b),13,17	7
2	Mr. Pankaj Tiwari*	Scientist	9	37,38	3
AINP on BF					
1	Dr. S.R. Mohanty	I/c Project Co-ordinator	32,16	21,22	4
Soil Chemistry and Fertility					
1	Dr. A.K. Biswas	Head of Division & Pri. Scientist	16 (LCPC)	1, 3,5,13, 37,38	7
2	Dr. Sanjay Srivastava	Principal Scientist	7, 16c	-	2
3	Dr. Brij Lal Lakaria	Principal Scientist	3	2,11,13,16(d),40,17	7
4	Dr. R. Elanchezhian	Principal Scientist	5	8,9, 14,15,17	6
5	Dr. N.K. Lenka	Senior Scientist	2,13,17	-	3
6	Dr. K. Ramesh	Principal Scientist	-	5,7,8,11,12(b),16(b)	6
7	Dr. Pramod Jha	Senior Scientist	16d	3,8,10,15, 18	6
8	Dr. B.P. Meena	Scientist	8	1,9,13, 16(b),37,38	7
9	Mr. Abhay Sirale	Scientist	-	13,14,16(b),40,17	5
10	Dr. Gurav Priya Pandurang	Scientist	-	-	-
Soil Physics					
1	Dr. R.S. Chaudhary	Head of Division and Prin. Scientist	16 (Deputy LCPC)	1,10,15,18,31	6
2	Dr. Kuntal M. Hati	Principal Scientist	10,16	3,15,31	5
3	Dr. R.K. Singh	Principal Scientist	-	16(a),31,17	3
4	Dr. J. Somasundaram	Senior Scientist	16b	18	2
5	Dr. A.K. Vishwakarma	Senior Scientist	16a,17	-	2
6	Dr. M. Mohanty	Scientist	15,18,31	10	4
7	Dr. N.K. Sinha	Scientist	-	4,10,12(a),13, 15,16(c),18,31	8
Soil Biology					
1	Dr. M.C. Manna	Head of Division and Prin. Scientist	23	24	2
2	Dr. A.K. Tripathi	Principal Scientist	-	6,7,16(a),23,28,	5
3	Dr. A.B. Singh	Principal Scientist	11	1, 13,17	4
4	Dr. S. Ramana	Principal Scientist	28	11,16(b)	3
5	Dr. S.R. Mohanty	Senior Scientist	32,16	21,22	4
6	Dr. K. Bharati	Senior Scientist	21	16(d),22,28,32,17,18	7
7	Dr. Asit Mandal	Scientist	-	2,20,23,24,18	5
8	Dr. Asha Sahu	Scientist	-	23,26,28,17	4
9	Dr. Jyoti Kumar Thakur	Scientist	-	3,10,11,16(d),17	5

10	Dr. S. Bhattacharya	Scientist	35	16(b),23,29	4
Environmental Soil Science					
1	Dr. J.K. Saha	Head of Division and Prin. Scientist	30	12(b),25,27,29,18	6
2	Dr. S. Kundu	Principal Scientist	-	5,12(a,b), 13,25,26,27	7
3	Dr. Ajay	Principal Scientist	34,18	12(a),29	4
4	Dr. Tapan Adhikari	Principal Scientist	12(a,b)	5,29,18	5
5	Dr. M. Vassanda Coumar	Scientist	29	3,10,25,26,30	6
6	Dr.(Mrs.) Sangeeta Lenka	Scientist	33	2,15,17,18	5
7	Dr. M.L. Dotaniya	Scientist	25,26	27,29,30	5
8	Dr. S. Rajendiran	Scientist	27	13,25,26,29,30	6
9	Mr. Vasudev Meena*	Scientist	-	26	1
10	Dr. Sonalika Sahoo	Scientist	-	-	-
Institute Technology Management Unit (ITMU)					
1.	Dr. Shinogi K C	Scientist	-	17	1

Scientists from other Institutes involved in research projects					
1.	Dr. K.V. Ramana Rao	Principal Scientist, CIAE, Bhopal	-	16c	1
2.	Dr. A.K. Dubey	Principal Scientist, CIAE, Bhopal	-	3	1
3.	Dr. S. Gangil	Principal Scientist, CIAE, Bhopal	-	3	1
4.	Neera Singh	IARI, New Delhi	-	21	1
5.	K. Raju Kumar	NIHSAD, Bhopal	-	5	1
6.	C.D. Singh, Navkanta Bhat, K.S. Subramanium and Bajendra	-	-	12(a)	1
7.	Dr. DLN Rao**	Emirates Scientist	-	16	1

* On deputation/Leave.

** Emirates Scientist of ICAR-IISS, Bhopal

LIST OF PARTICIPANTS

S. No.	Name of Scientist	Designation
1.	Dr. A. K. Patra	Director & Chairman, IRC
2.	Dr. Muneshwar Singh	Project Co-ordinator, LTFE
3.	Dr. A.K. Shukla	Project Co-ordinator, MSN
4.	Dr. Pradip Dey	Project Co-ordinator, STCR
5.	Dr. R.S. Chaudhary	Head of Division and Principal Scientist
6.	Dr. A.K. Biswas	HOD & Member Secretary, IRC
7.	Dr. M.C. Manna	Head of Division and Principal Scientist
8.	Dr. J.K. Saha	Head of Division and Principal Scientist
9.	Dr. S. Kundu	Principal Scientist
10.	Dr. A.B. Singh	Principal Scientist
11.	Dr. Ajay	Principal Scientist
12.	Dr. A.K. Tripathi	Principal Scientist
13.	Dr. Sanjay Srivastava	Principal Scientist
14.	Dr. Brij Lal Lakaria	Principal Scientist
15.	Dr. Kuntal M. Hati	Principal Scientist
16.	Dr. R. Elanchezian	Principal Scientist
17.	Dr. S. Ramana	Principal Scientist
18.	Dr. K. Ramesh	Principal Scientist
19.	Dr. R.K. Singh	Principal Scientist
20.	Dr. R.H. Wanjari	Senior Scientist
21.	Dr. A.K. Vishwakarma	Senior Scientist
22.	Dr. J. Somasundaram	Senior Scientist
23.	Dr. S.R. Mohanty	Senior Scientist
24.	Dr. Pramod Jha	Senior Scientist
25.	Dr. K. Bharati	Senior Scientist
26.	Dr. M.V. Coumar	Scientist
27.	Dr. N.K. Sinha	Scientist
28.	Dr. Asit Mandal	Scientist
29.	Dr. Asha Sahu	Scientist
30.	Dr. Rajendiran S.	Scientist
31.	Dr. Jyoti Kumar Thakur	Scientist
32.	Dr. Shinogi K C	Scientist
33.	Dr. Bharat Prakash Meena	Scientist
34.	Dr. Sudeshana Bhattacharjya	Scientist
35.	Dr. Sonalika Sahoo	Scientist
36.	Dr. Gurav Priya Pandurang	Scientist

Brief Achievements

Institute in-house projects (RPP-III)

Sl. No.	Achievements
1	<p>Soil quality assessment for enhancing crop productivity in some tribal districts of Madhya Pradesh (TSP)</p> <p>Soil fertility maps for tribal dominated Jhabua, Alirajpur and Dhar districts of Madhya Pradesh were prepared. A methodology was developed to work out the soil quality index (SQI) using 15 parameters (physical, chemical and biological indicators) with uniform weight-age and scoring value. The proposed methodology appears to be very simple and can be easily adopted by soil testing laboratories.</p> <p>Frontline demonstration trials during <i>kharif</i> and <i>rabi</i> seasons 2014-2016 in farmers' fields of Alirajpur, Jhabua and Dhar districts were conducted for soybean-wheat and maize-wheat cropping systems (Total Nos. 40; soybean-12; maize-8; wheat-20) to disseminate importance of soil testing and the institute technologies like IPNS and STCR (more than 200 farmers benefitted).</p> <p>Three one-day extensive training cum awareness programmes to the tribal farmers of Jhabua, Alirajpur and Dhar districts of Madhya Pradesh were organized on "Sustainable Soil Health and Integrated Nutrient Management for Better Crop Productivity" on 8th October, 2015 at KVK, Jhabua, 9th October, 2015 at DDA office, Alirajpur and 13th October, 2015 at KVK, Dhar (more than 500 farmers benefitted).</p> <p>Exposure visit cum Training programme to the farmers of Alirajpur, Jhabua and Dhar districts, Madhya Pradesh was organized in ICAR- Indian Institute of Soil Science, Bhopal during 03-05 December, 2015 (nearly 60 farmers participated).</p> <p>Soil health cards (more than 100 cards) were distributed to the farmers of Jhabua, Alirajpur and Dhar districts. Fertilizers (Urea, SSP, MOP and ZnSO₄ worth more than rupees three lakhs) were distributed to about 600 farmers in these three districts</p> <p>Dr. Rajendiran S., received Fellowship for Young Scientist Training 2016 from MPCOST, Bhopal for the oral paper on "Assessment of Soil Health Status of Tribal Dominated Alirajpur and Jhabua districts of Madhya Pradesh" presented in the 31st M.P. Young Scientist Congress held during 28-29 February, 2016.</p>
2	<p>Assessing impacts of climate change on different cropping systems in Central India and evaluating adaptation studies through crop simulation models</p> <p>PI is on tour. He will present RPP-III in next IRC</p>
3	<p>Greenhouse gas (GHG) emission from composting systems and characterization of GHG regulating microbes</p>
4	<p>Developing technique for acceleration of decomposition process using thermophilic organisms</p> <p>A new technology called "Rapo-compost Technology" has been developed by ICAR-IISS that has considerably reduced the time required for composting from 4 months to 45 days. This technology is especially suitable for recycling of kitchen waste and vegetable wastes. The institute has developed this technology in collaboration with ICAR-CIAE, Bhopal and ICAR-NBAIM, Mau. Lignocellulolytic thermophilic organisms used for accelerating the decomposition, were isolated, screened and identified by ICAR-IISS. A rotating drum type reactor of size 1.25m diameter and 1.5 m length, with a capacity of 100 kg, is designed and fabricated by ICAR-CIAE.</p> <p>Biodegradable wastes were collected from the city and segregated followed by mixing the segregated waste with fresh cowdung and consortium of microbes containing 105 viable fungal cell and 108 viable bacterial and actinomycetes cell. Throughout the composting period, 60% of moisture content has been maintained. Periodic turning was done to provide aeration. The samples are collected at equal intervals during decomposition and analysed for physico-chemical and biological properties. After 30 days of decomposition, the colour of the compost was dark brown, with no foul odour. C:N ratio came down to 14:1, CEC reached 94 cmol(p+)/kg, lignin/cellulose ratio increased to 2.4% and water soluble carbon reached upto 0.5%. The technology has been demonstrated to farmers and trainees of winter school. It has received accolades from Natural Resource Management (NRM) division of ICAR and has been identified as a key component for the recycling of biodegradable wastes and could be very useful in pursuing the "Swachh Bharat Abhiyan" of the Government.</p>
5	<p>Impact of Long Term Use of Sewage Water Irrigation on Soil and Crop Quality in Bhopal region of Madhya Pradesh</p> <p>PI is on tour till 3 March, 2017. He will present RPP-III in next IRC</p>
6	<p>Studies on soil resilience in relation to soil organic matter in selected soils.</p> <p>PI is on tour. He will present RPP-III in next IRC</p>
7	<p>Weed Management for major cropping systems under conservation agriculture in Vertisols</p> <p>The project has been implemented as per the approved technical programme for major cropping systems (Soybean and maize based). Unique herbicidal combinations were tested for their efficacy as well as impact</p>

	on crop growth and development aspect along with impact on soil health. Most of the proposed work has been accomplished. Now the project is a part of fine tuning component of CRP on CA the remaining work will be accomplished under the flagship of CRP on CA.
8	Evaluating Conservation tillage on various cropping sequences/rotations for stabilizing crops productivity under erratic Climatic Conditions in Black Soils of Central India. PI is on tour. He will present RPP-III in next IRC
9	Integrated assessment of some IISS Technologies in enhancing Agro-Ecosystems productivity and livelihood sustainability The Farmers' field demonstration-cum-evaluation of some of the promising technologies developed by IISS viz., Integrated Plant Nutrient Supply (IPNS-I) System, Soil Test based Fertilizer Recommendation (STCR), Phospho-sulpho-nitro Compost as a replacement of FYM in IPNS-I (IPNS-II), and Biofertilizers (used in both IPNS treatments) was carried out for a period of three years under the soybean-wheat cropping system at Mengra Kalan Village of Bhopal district. Nine farmers' fields were selected for the demonstration-cum-evaluation of the selected technologies. Method demonstrations were conducted in each crop season to reinforce the farmers' learning regarding the soil sampling, compost preparation and use of biofertilizers. The calculations for yield productivity for the selected farmers' fields for the IPNS-I treatments ranged 5.67 q/ha (waterlogged field) to 13.73 q/ha for the soybean crop and 34.21 q/ha to 43.58 q/ha for the wheat crop; for the IPNS-II treatments the yield productivity ranged between 6.20 q/ha (waterlogged field) and 15.43 q/ha for the soybean crop and 34.18 q/ha to 46.70 q/ha for the wheat crop; for the STCR treatments the yield productivity ranged between 6.03 q/ha (waterlogged field) and 14.67 q/ha for the soybean crop and 35.54 q/ha to 45.74 q/ha for the wheat crop; for the Farmers' practice treatments the yield productivity ranged between 4.50 q/ha (waterlogged field) and 10.57 q/ha for the soybean crop and 30.00 q/ha to 40.87 q/ha for the wheat crop. The maximum and minimum income productivity (Rs. /ha) values were 68324.67 and 44538.00 for IPNS-I, 87182.67 and 50796.00 for IPNS-II, 78828.33 and 41346.33 for STCR, and 58377.67 and 27188.33 for Farmers practice. Higher Income productivity was achieved with IPNS-II technology in 7 cases and for the STCR technology in 2 cases. In the selected agro-ecosystem, the major constraints identified were availability of farmyard manure (IPNS-I), availability of raw materials for making phospho-sulpho-nitro compost (IPNS-II), and soil testing facility and technical know-how for the calculation of fertilizer doses for farming (STCR).

Contractual Projects

10	Evaluation of urease inhibitor product (limus) for nutrient use efficiency in cereal crops (BASF Pvt. Ltd.,)
11	Upgradation of Mridaparikhshak mini lab (Nagarjuna Agro Chemicals Pvt. Ltd., Hyderabad)
12	Evaluation of efficacy of sulphur and zinc containing complex fertilizers for maximizing yield through balanced nutrition of different crops in India (Zuari Agro Chemicals Ltd)
13	Evaluation of efficacy of zinc metalosate and boron metalosate foliar supplements for maximizing yield through balanced nutrition of important crops grown in India (Indofil Ind. Limited)
14	Response of crop to applied Potassium in Vertisols of India. (Sponsored project by PRII, Gurgoan) <ul style="list-style-type: none"> From the results of long term fertilizer experiment at different locations, it was learnt that crops responded to applied K in Vertisols after few years in spite having available K status more than the yardstick of 280 kg ha⁻¹. To validate the finding field experiment at farmer's fields were conducted to study the response of different crops to applied K at 5 locations in Vertisols. The results obtained revealed that soybean grown at Bhopal and Jabalpur did not response to applied K. The absence of response of soybean to K seems to be due to less biological yield. However, rice has responded to applied K at some farmer's field. The response of rice to applied K is dependent on available status of K in soil and also yield level. When yields are larger than crop responded even in soil having higher available K. It is surprised to note that rice has responded at higher dose of K.
15	The "Aquasorb" project Effect of aquasorb on water and nutrient use efficiency & crop productivity of soybean & tomato in selected soils of India (Funded by SNF India Pvt. Ltd. Vishakhapatnam) <ul style="list-style-type: none"> The project is sponsored by SNF (INDIA) Vishakhapatnam for a duration of two years from July, 2016 to June 2018 with a cost of 22.55 lakhs. Under this contractual project, the application of Aquasorb product (poly acrylamide, PAA hydrogel) will be tested at IISS Bhopal to evaluate its effect on water retention and release, nutrient retention and release, water and nutrient use efficiency and crop productivity of soybean and tomato in selected soils of India with objectives namely i) Effect of Aquasorb on water absorption, water retention and release in selected soil types at different suction levels; ii) nutrient absorption and release, and ; iii) water and nutrient use efficiency in different soils and soil properties and crop productivity. The field and pot experiments will be conducted during kharif and rabi season. In one experiment, there will

	<p>be four treatments (0, 20, 30 and 40 kg/ha aquasorb) in soybean and four treatments of aquasorb (0, root coating, root coating + 25 g aquasorb gel/plant and root coating + 50 g aquasorb gel/plant) with three levels of irrigation in tomato crop. In another field experiment, there will be twelve treatments with combination of three levels of aquasorb rate viz 0, 20 and 40 kg/ha aquasorb with four levels of NPK (0, 50, 100 and 150% of RDF) in soybean crop in kharif season and twelve treatments with combination of three levels of aquasorb (0, root coating and root coating + 50 g aquasorb gel/plant) and four levels of NPK (0, 50, 100 and 150% of RDF) in tomato crop in rabi season. During the experiment, the observations on crop growth, soil moisture, crop yield and others parameters will be undertaken.</p>
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RPP-I

New Projects

16	India-UK nitrogen Fixation Centre ((IUNFC)
17	Ensuring food security, sustainability and soil health through resource conservation based farmer FIRST approach in central India
18	Management of Municipal Solid Waste (MSW) contaminated landfill area of Bhanpur, Bhopal