



RAC, Management Committee and IRC

Research Advisory Committee (RAC)

The composition of Research Advisory Committee (RAC) of the ICAR-Indian Agricultural Statistics Research Institute (IASRI) constituted for a period of three years w.e.f. June 12, 2013 is as follows:

1. Dr. Bimal K Roy, Chairman
Professor, Indian Statistical Institute,
203 Barrackpore Trunk Road,
Kolkata-700108 (West Bengal)
2. Dr. Rajeeva Karandikar, Member
Director, Chennai Mathematical
Institute, H 1, SIPCOT IT Park, Siruseri,
Kelambakkam – 603103 (Tamil Nadu)
3. Dr. Saumyadipta Pyne, Member
Professor, Public Health Foundation
of India, Indian Institute of Public
Health (IIPH), Plot No.1, ANV Arcade,
Amar Cooperative Society, Kavuri Hills,
Madhapur, Hyderabad – 500033.
4. Dr. Bal BPS Goel, Member
Ex- Director, ICAR-IASRI, B-77,
Naraina Vihar, New Delhi-110028
5. Dr. SD Sharma, Member
Former Vice-Chancellor,
Dev Sanskriti Vishwavidyalaya,
Haridwar and Former Director, IASRI,
D-15/02, SF (Second Floor),
Presidency Floor, ARDEE City,
Sector 52, Gurgaon - 122 011.
(Haryana)
6. Shri GC Manna, Member
Deputy Director General (ESD),
Central Statistical Office,
MOS& PI, Sardar Patel Bhawan,
Sansad Marg, New Delhi - 110001
7. Dr. UC Sud, Member
Director, ICAR-IASRI,
Library Avenue, New Delhi-110 012
8. Assistant Director General (Engg.) Member
Indian Council of Agricultural Research
Krishi Anusandhan Bhavan - II, Pusa,
New Delhi – 110 012
9. Dr. Seema Jaggi, Member-Secretary
Principal Scientist and
Officiating Head of Division
(Design of Experiments),
ICAR-IASRI, Library Avenue, Pusa,
New Delhi-110 012

The 17th meeting of the Research Advisory Committee (RAC) of ICAR-IASRI was organized on March 15, 2016 under the Chairmanship of Professor Bimal K. Roy, Indian Statistical Institute, Kolkata. The meeting was attended by Prof. Saumyadipta Pyne, Professor, Public Health Foundation of India, Indian Institute of Public Health (IIPH), Hyderabad; Dr. SD Sharma, Former Director, ICAR-IASRI, New Delhi and Former Vice-Chancellor, Dev Sanskriti Vishwavidyalaya, Haridwar; Dr. Bal BPS Goel, Former Director, ICAR-IASRI, New Delhi; Shri GC Manna, Deputy Director General (NAD), Central Statistical Office, MOS& PI, New Delhi; Dr. Kanchan K. Singh, ADG, Engineering Division, ICAR, New Delhi; Dr. UC Sud, Director, ICAR-IASRI, as members of RAC of the Institute and Dr. Seema Jaggi, Principal Scientist and Officiating Head of Division (Design of Experiments), ICAR-IASRI, New Delhi as Member Secretary RAC. Dr. VK Gupta, National Professor, ICAR; Dr. Prajneshu, Former Head, Statistical Genetics, ICAR-IASRI; Dr. Rajender Parsad, Shri SD Wahi, Dr. AK Gupta, Principal Scientists, ICAR-IASRI; and Dr. Ajit, Principal Scientist and PME Incharge, ICAR-IASRI;

Dr. KK Tyagi, Consultant, ICAR-IASRI and all Heads of Divisions, All Professors of ICAR-IASRI also attended the meeting as special invitees.

Dr. UC Sud welcomed the Chairman and other members and made the introductory remarks and briefed about the major achievements of the Institute including ranking of ICAR-IASRI among the top ten Institutes of the ICAR based on the number and quality of publications. The institute has one National Professor Scheme and one National Fellow Scheme of ICAR running in the Institute. The institute is maintaining a strong Data Centre and has initiated the efforts in developing ICAR Research Data Repository for Knowledge Management named as KRISHI-Knowledge Based Resources Information Systems Hub for Innovations in Agriculture. This initiative of ICAR-IASRI has been given place in the list of New Year's ICAR achievements by the Director General, ICAR. Scientists of the institute have brought laurels to the institute. Dr. Seema Jaggi has received the prestigious INSA Teachers Award 2015 and Dr. Arpan Bhowmik received the Dr. G.R. Seth Memorial Young Scientist Award from ISAS. The important publications of the Institute i.e. Annual Report 2014-15, Vision 2050, Databook 2015, Sankhyiki Vimarsh 2015 and 4 Newsletters were brought out during the year. Dr. Sud also informed the house that Dr. Tauqueer Ahmad has recently joined as Head of Division of Sample Surveys and Dr. Hukum Chandra was appointed as National Fellow of ICAR.

Dr. Ajit, Incharge, PME presented the broad research programmes, significant research achievements, future research programmes and other related activities of the Institute during the period January 01, 2015 to February 29, 2016. He presented the 86 research projects in which scientists of the Institute were involved during the period, out of which 08 were collaborative, 35 externally funded, 4 consultancy project, 1 National Professor Scheme of ICAR and 1 National Fellow Scheme of ICAR. He apprised the members regarding 15 completed research projects and 34 new projects undertaken during the period. The institute published its Annual Report: 2014-15, Agriculture Research Data Book 2015, Quarterly News Letters, Vision 2050 and Sankhyiki Vimarsh. 97 research papers were published in national/ international refereed journals. A number of popular articles, project reports, book, book chapters, training/e-manuals/e-resources, workshop document were also published. 05 databases were also developed. The scientists of the institute have participated in different conferences/ workshops

and total 137 papers have been presented in these conferences.

The Institute has received 2 copyright from the Registrar, office of Copyrights, New Delhi for Web Generation of Experimental Designs Balanced for Indirect Effects of Treatments (granted on 15/07/2015, registration no-SW-8370/20135) and Pilot Study on Cost of Production of Coconut in Kerala (granted on 15/07/2015, registration no-L62123/2015). Also, Applied to the Registrar, Office of Copyrights, New Delhi for 7 copyrights for 4 Software on Pilot Study to Develop an Alternative Methodology for Estimation of Area and Production of Horticultural Crops, Sample Survey Resources Server, Web Generation of Factorial Experiments with Minimum Level Changes in Run Sequences (webFMC) and Web Generation of Polycross Designs (webPD) and 3 publications on Significance of Experimental Designs in Agricultural Research, Study to Investigate the Causes of Variation between Official and Trade Estimates of Cotton Production, Study to Develop an Alternative Methodology for Estimation of Cotton Production. It was informed that a sum of Rs. 85,44,814 was generated as revenue through sale of software packages, organizing customized trainings and consultancy projects in 2015.

Dr. Ajit highlighted the awards and recognitions won by the scientists of the Institute. One scientist received the INSA TEACHERS AWARD 2015 in the Meeting of the Academy held during December 28-30, 2015 at Indian Institute of Science, Education and Research (IISER), Bhopal, One Scientist was awarded Professor P.V. Sukhatme Gold Medal Award for outstanding contribution in the field of Agricultural Statistics during 68th Annual Conference of the Indian Society of Agricultural Statistics organized at ICAR-IASRI, New Delhi from January 29-31, 2015 and National Award in Statistics 2014-15 from the Ministry of Statistics and Programme Implementation, Government of India, on June 29, 2015, at Vigyan Bhawan, New Delhi. One scientist has been elected as Fellow of National Academy of Agricultural Sciences and Society of Genetics and Plant Breeding, one scientist received Dr. GR Seth Memorial Young Scientist Award in 69th Annual Conference of Indian Society of Agricultural Statistics (ISAS) at University of Kota, Kota, Rajasthan during December 14-16, 2015, one scientist received Active participation Award Women Member 2014-15 from Computer Society of India, Delhi Chapter in recognition of significant contribution to the CSI Chapter activities on 05 December 2015, one

scientist was awarded Gold Medal with Certificate of Academic Excellence in Graduation Ceremony, on 05 September, 2015 for having First Rank in First Batch as ICAR nominated and sponsored candidate in Post Graduate Diploma in Technology Management in Agriculture (PGDTMA), a joint course of ICAR-NAARM and Central University Hyderabad, two scientists received Young Scientist Award of the Society for Application of Statistics in Agriculture and Allied Sciences (SASAA) on March 03, 2016 at National Seminar on Recent Advances in Statistical Tools for Agriculture and Allied Sciences organized by Society for Application of Statistics in Agricultural and Allied Sciences (SASAA) in collaboration with Department of Agricultural Statistics, Bidhan Chandra Krishi Viswavidyalaya (BCKV), Mohanpur and Indian Institute of Science Education and Research (IISER), Kolkata during March 03-05, 2016. One Scientist received Individual Award as Distinguished Scientist Award in recognition of her meritorious and outstanding scientific contribution in the field of Bioinformatics, one scientist received Individual Award as Young Scientist Award in recognition of his outstanding scientific contribution in the field of Bioinformatics and jointly received Team Award as 3rd Prize for the research paper entitled "In silico gene prediction and their promoter analysis for the genes related to biotic stress in tomato (*Solanum lycopersicum*)" authored by Tandon, G, Jaiswal, S, Iquebal, MA, Singh, S, Rai, A and Kumar, D by the Society for Bioinformatics and Biological Sciences, Allahabad in the National Conference on Bioinformatics Panorama in Agriculture and Health (NCBPAH 2015) at SHIATS, Allahabad organized during October 05-06, 2015. In addition to this many scientists received best paper awards, recognitions and appreciation letters for their contribution at various conferences, symposia etc. Three scientists have served as FAO consultants.

Dr. Seema Jaggi, Incharge, Training Administration Cell presented the details of the training and teaching activities of ICAR-IASRI. It was informed that during the period two convocations i.e. 53rd and 54th Convocation of Post Graduate School ICAR-IARI were held on 20th February 2015 and 05th February 2016. In 53rd convocation, 5 Ph.D. (Agricultural Statistics), 6 M.Sc. (Agricultural Statistics), 2 M.Sc. (Computer Application) and 5 M.Sc. (Bioinformatics) students received degrees. Further, in 54th convocation, 3 Ph.D. (Agricultural Statistics), 8 M.Sc. (Agricultural Statistics), 8 M.Sc. (Computer Application) and 5 M.Sc. (Bioinformatics) students received degrees. Three students, One M.Sc. (Agricultural Statistics), one M.Sc. (Computer

Application) and one M.Sc. (Bioinformatics) received the Nehru Memorial Gold Medal of ICAR-IASRI. One student was awarded for Best M.Sc. (Agricultural Statistics) Thesis 2015 by Society for Application of Statistics in Agriculture and Allied Sciences (SASAA), Department of Agricultural Statistics, Bidhan Chandra Krishi Viswavidyalaya, Mohanpur, Nadia, West Bengal on the topic Construction of Latin Hypercube Designs. The students are also actively participating in extra-curricular activities, like All India Inter Agricultural Universities Youth Festival.

It was also informed that some of the students are getting DST Inspire and UGC Fellowships. It was also informed that during the year, 672 researchers have been trained through various training programmes. A Senior Certificate Course in Agricultural Statistics and Computing was also conducted.

Dr. VK Gupta, ICAR National Professor apprised the RAC about the research activities of the National Professor Scheme. Dr. Gupta informed that a book entitled "*Statistical Analysis of Agricultural Experiments*" (VK Gupta, Rajender Parsad, Lal Mohan Bhar and Baidya Nath Mandal) has been published. The book has 12 Chapters, 4 Annexures and a bibliography and runs into 400 pages. Two more important publications brought out are (i) monograph entitled "*Weighting and Calibration in Sample Survey Estimation*" (VK Gupta, UC Sud and Chandra Bhanu Chauhan), and (ii) "*Significance of Experimental Designs in Agricultural Research*" (VK Gupta, Rajender Parsad and Baidya Nath Mandal).

An interesting article on "*History of Statistics on Timeline*" (VK Gupta, Baidya Nath Mandal and Rajender Parsad) has been written and hosted at Sample Survey Resources Server (<http://sample.iasri.res.in/ssrs/>). The web resource has also been populated with a bibliography on "*Non-response in Survey Sampling*", which contains 484 references. The web resource has also been populated with a mobile (Android) App called "*Mobile Assisted Personal Interview (MAPI)*." MAPI has been developed to collect the data for crop area, yield, production and other demographic and social information of the area under consideration. The questionnaires are developed in ICAR-IASRI as per the requirement of the project. For other customized surveys the developed software can be modified based on the request of the user. For access to the collected data, MS Excel file can be generated directly from the software and can be accessed from the phone memory or can be uploaded to any kind of cloud storage (i.e. drop box, google drive, etc.). For security, data users have to register themselves with

the software before using it. The registration can be done using a valid email id. This feature maintains the confidentiality of the data. Further, to verify the actual data collection event, a provision has been made in the questionnaire to record the GPS location and snapshot of the field where the survey is actually done. Likewise, there are many features in this software which improve the quality of the data.

Dr. Gupta also informed that he would retire in the afternoon of 16 March 2016 after attaining the age of 65 years. So it would not be out of place to summarize the achievements made during the last 10 years (April 2006 till March 2016), the duration of the National Professor Scheme, in a tabular form. The same are given below:

Research papers published in refereed journals	58
Books published	02
Monographs published	05
Book chapters published	07
Reviews of books / monographs appeared	03
Technical / popular articles published	06
Workshop proceedings	01
Projects handled other than the project of the national professor scheme	14
Special issues of journals brought out as guest editor / chair editor	10
Copyrights obtained	03
Web portals developed and strengthened for dissemination	02
Other websites developed and strengthened	02
Awards ~ Sankhyiki Bhushan title from Indian Society of Agricultural Statistics	
Elected member of the International Statistical Institute, Netherlands	
Elected fellow of the National Academy of Agricultural Sciences and Indian Society of Agricultural Statistics	
Editor, National Academy of Agricultural Sciences	
Chair editor, Journal of the Indian Society of Agricultural Statistics (2009 – 2015)	
President, Society of Statistics, Computer and Applications	
President, governing body, Institute of Applied Statistics and Development Studies	

The members appreciated the efforts made and were satisfied with the co-ordination between ICAR National Professor Research Unit and the Institute.

Dr. UC Sud apprised the RAC about the research activities of the National Fellow Scheme entitled 'Robust and Efficient Small Area Estimation Methods for Agricultural and Socio-economic Surveys and Their Application in Indo-Gangetic Plain', in absence

of Dr. Hukum Chandra as he was on official visit to Indonesia in connection with FAO Consultancy project. The summary of presentation is as follows:

There is a growing need for current and reliable count data at small domain or small area level. The empirical predictor under a generalized linear mixed model (GLMM) is often used for small area estimation of such data. However, GLMM assumes that the fixed effect parameters are spatially invariant and do not account for the presence of spatial nonstationarity in the data. The geographically weighted regression concept has been considered to extend the area level version of GLMM to take into account spatial nonstationary and then to use it in small area estimation. In particular, the empirical predictor for small areas under a spatial nonstationary version area level GLMM (NSEP) is proposed. Two approaches have been developed for estimating mean squared error for the NSEP, an analytical MSE and a parametric bootstrap approach. A parametric bootstrap approach based diagnostic procedure for presence of spatial nonstationarity in the count data is also developed. The empirical results based on simulation studies show that the proposed NSEP provides efficient estimates for small areas as compared to existing methods when spatial nonstationarity is present in the data. Developed MSE estimators provide satisfactory performance. In particular, analytical MSE estimator has smaller bias but bootstrap MSE estimator is slightly more stable. Proposed small area estimation method is also applied to obtain reliable estimates of proportion of poor households at district level in the State of Uttar Pradesh by using survey data from the Household Consumer Expenditure (HCE) Survey 2011-12 of National Sample Survey Office (NSSO) 68th round and the Population Census 2011. Subsequently, a poverty map for State of Uttar Pradesh is produced which provides an important information for analysis of spatial distribution of poverty in the state.

Thereafter all the Heads of the Divisions presented the research achievements of their respective Divisions.

During the presentations, there were academic, healthy and constructive discussions and interactions on the research, teaching and training activities of the Institute. All the members unanimously complimented the Director and Heads of Divisions for an excellent research output, teaching and training activities of the Institute and for doing an excellent work for NARES. They also expressed that the Institute is progressing very well and must continue to play an important role in NARES.

After discussions, the following action points emerged:

1. The scientists of the institute have developed a number of databases, tools, systems and online resources. The impact or usage over time of these publicly available tools and databases may be evaluated.
2. Some studies could be taken up by ICAR-IASRI regarding development of survey methodologies for improving official statistics and obtaining estimates at districts level, which could be highly beneficial in research data analysis.
3. The institute must initiate research programmes to study the ground water contamination affecting the agriculture productivity.
4. Research opportunities may be explored in Big Data approaches for agricultural surveillance and real-time analytics projects with the possible help of DST Big Data Initiative and the National Supercomputing Mission.
5. Interaction opportunities may be explored with national/ international labs working on cutting-edge areas such as Climate Change, Genome Editing and Metagenomics.
6. A number of inputs are going into the soil. Studies may be taken up for evaluating soil health based on secondary data.
7. The institute must work in an inter-disciplinary approach. Collaborative inter-disciplinary studies may be initiated with other institutes in India and elsewhere specializing in diverse upcoming fields of study. Division of Statistical Genetics may take collaborative studies with institutes like National Institute of Biomedicine Engineering.
8. The online services and web resources developed on design of experiments, sample surveys, bioinformatics and experts systems may be strengthened.
9. Vacant scientific positions at ICAR-IASRI should be filled on priority basis and for this the concerned authorities may be approached.

Institute Management Committee (IMC)

The Director of the Institute, who is In-charge of the overall management of the Institute, is assisted in the discharge of his functions by the Institute Management Committee (IMC) constituted by the Council. IMC provides a broad-based platform for decision making process by periodically examining

the progress of the Institute activities and by recommending suitable remedial measures for bottlenecks, if any. IMC was reconstituted for a period of three years *w.e.f.* August 27, 2013 vide office order no. 7(1)/2013-Admn.II dated 17.09.2013 with the following members:

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| 1. Dr. UC Sud | Chairman (Ex-Officio) | |
| Director, ICAR-IASRI, Pusa,
New Delhi-110 012 | | |
| 2. Joint Director (Research) | Member | |
| ICAR-IARI, Pusa,
New Delhi-110 012 | | |
| 3. Director of Agriculture | Member | |
| Government of Delhi, ITO,
New Delhi-110001 | | |
| 4. Dr. (Smt.) Ravinder Kaur | Member | |
| Director (A), ICAR-IARI and
Project Director,
Water Technology Centre,
ICAR-IARI, Pusa, New Delhi -110 012 | | |
| 5. Dr. Suresh Pal | Member | |
| Head, Division of Agricultural
Economics, ICAR-IARI, Pusa,
New Delhi -110 012 | | |
| 6. Dr. Niranjana Prasad | Member | |
| Head, Division of Processing and
Product Development,
ICAR-IINRG, Ranchi | | |
| 7. Dr. C.R. Mehta | Member | |
| Project Coordinator,
ICAR-AICRP on FIM,
ICAR-CIAE, Bhopal | | |
| 8. Finance & Accounts Officer | Member | |
| ICAR-IARI, Pusa,
New Delhi-110 012 | | |
| 9. Head of Office | Member Secretary | |
| ICAR-IASRI, (Ex-Officio)
Pusa, New Delhi-110 012 | | |

64th meeting of IMC was organized at ICAR-IASRI on August 01, 2015. At the outset, Dr. UC Sud, Director, ICAR-IASRI, New Delhi and the Chairman of the Management Committee welcomed all the distinguished members and special invitees present in the meeting. Dr. Ajit, In charge PME Cell made presentation on research and other related activities of the institute. He also presented the achievements of completed as well as ongoing research projects of the institute. Dr. Seema Jaggi, Officiating Head (DE) and Incharge, Training Administration Cell made presentation on Teaching and Training Activities of the Institute. Further, procurement of equipment for the financial Year 2015-16 of XII plan (Equipment) and Budget estimate for the year 2015-16 and

Actual Expenditure incurred up to March 31, 2015 in respect of Plan/ Non-Plan of the Institute and reconstitution of the Institute Grievance Committee were presented before the committee.

Institute Research Committee (IRC)

The Institute Research Committee (IRC) is an important forum to guide the scientists in the formulation of new research projects and to review the progress of on-going research projects periodically. It also monitors the follow up action on the recommendations of the Quinquennial Review Team (QRT), Research Advisory Committee (RAC) in respect of technical programmes of the Institute. Director, ICAR-IASRI is the Chairman and In-charge (PME Cell) is the Member Secretary of the IRC. During the entire year, 33 new research projects were approved and progress of 106 on-going research projects was reviewed and 16 research projects were declared complete and 01 project was declared as closed.

Two meetings (83rd and 84th) of the IRC were held during September 21-22, 2015 and April 05-06, 2016 respectively.

- In the 83rd meeting, 24 new research projects (08 Institute funded, 01 in collaboration with other Institutes and 15 outside funded) were approved and progress of 44 on-going research projects (22 Institute funded, 05 in collaboration with other Institutes and 17 outside funded) were discussed and 06 research projects were declared as complete.
- In the 84th meeting, 09 new research projects (04 Institute funded, 03 outside funded and 02 Extramural funded) were approved and progress of 62 on-going research projects (26 Institute funded, 05 in collaboration with other Institute and 31 outside funded) was reviewed and 10 research projects were declared as complete and 01 project was declared as closed.