



**Collaborative Workshop on  
Good Practices in Extension Research and Evaluation  
29 November - 2 December 2016  
ICAR-National Academy of Agricultural Research Management, Hyderabad (India)**



*ICAR-NAARM, in collaboration with the Centre for Research on Innovation and Science Policy (CRISP), Agricultural Extension in South Asia (AESAs), ICAR-Central Tuber Crops Research Institute (CTCRI) and National Institute of Agricultural Extension Management (MANAGE), organised this workshop to create a cadre of professional extension researchers who can carry out impact-oriented quality research in extension. Channppagouda Biradar and Suresh Verma who participated in this workshop share*

*their experiences here.*

**CONTEXT**

Concerns on quality and relevance of extension research and its contribution to extension practice and policy are being raised at several fora in India currently. Though extension research has greatly evolved by integrating scientific research methods and tools from other social sciences, the methodological evolution and resultant practices have not been manifested in the quality of research output and outcomes (<http://www.aesa-gfras.net/researchinextension.php>). Extension research has often failed to create the desired impact due to use of inappropriate methods, lack of policy relevance, and poor quality of publications. Many of these weaknesses have also affected the professional credibility of extension scientists.



Re-orienting extension research is the need of the hour. It calls for a coordinated approach by integrating state-of-the-art methods from other relevant sciences in order to improve the utility and visibility of extension research outcomes. This workshop, jointly organized by NAARM (National Academy of Agriculture Research Management), AESA (Agricultural Extension in South Asia), CRISP Centre for Research on Innovation and Science Policy), ICAR-CTCRI (Central Tuber Crops Research Institute), and MANAGE (National Institute of Agricultural Extension Management) served as a platform for young extension researchers to learn about the latest advances in social science research and evaluation so as to engage in impact-oriented quality research.

## PROGRAMME

### INAUGURAL SESSION

The brief inaugural programme started with a welcome address by Dr Bharat Sontakki (ICAR-NAARM). In his introductory remarks, Dr Rasheed Sulaiman V (AESA/CRISP) spoke on the rationale for organizing this training workshop and how the partners and topics were identified.



Mrs. V Usha Rani, IAS (Director General, MANAGE), in her inaugural address emphasized the need for quality research in agricultural extension and urged extension scientists to come up with game changing concepts to strengthen extension delivery. Dr Kalpana Sastry (Director, NAARM), called upon the participants to make best use of this workshop and expressed her interest in mainstreaming this kind of training as part of NAARM's regular training programme based on the experience deriving from this training. The programme ended with a vote of thanks by Dr P Sethuraman Sivakumar (ICAR-CTCRI). This was followed by a self-introduction from participants and resource persons.

### TECHNICAL SESSIONS IN WORKSHOP

The workshop comprised of 11 technical sessions and a group assignment for preparing four concept notes based on the learning resulting from the different sessions.

#### Session 1: Good Extension Research

This session had three presentations.

The session started with a card exercise on expectations of participants, followed by a brief presentation by Dr Rasheed Sulaiman on 'Good practices in Extension Research – Current status'. He highlighted the need for good practices in extension research against the backdrop of increasing quality concerns. He pointed out the lack of quality research in extension and noted that whatever little research is being done is mostly coming from MSc /PhD research which has limited policy relevance. The AESA blogs on this theme has pointed out several weaknesses in extension research which includes a general decline in scientific rigor, lack of a transparent peer review process, stagnation in theory development, and poor quality of publications. Due to these reasons, our current research has low or limited relevance to improving extension practice, designing new programmes or developing/influencing policies. He also explained how this workshop is trying to enhance capacities of young researchers to engage in quality research. Thus, Dr Rasheed's presentation set the context for the workshop.

Dr Bharat Sontakki explained in detail the objectives of the workshop and how the different sessions are organized. Over the next 3-5 years, NAARM intends to create more 'master-researcher-trainers' by organizing similar workshops, he said. At the end of the presentation he divided the participants into four groups to prepare concept notes on specific themes by applying the learning acquired from this workshop.



Dr P Sethuraman Sivakumar's presentation on 'Extension research questions, designs, methods and tools' focused on the basics of social science research and how innovative research problems and suitable research designs are selected. In the subsequent presentation on 'Methods of identifying the concepts, constructs and variables for extension research', he stressed that theory is the foundation for the success of any discipline. Therefore, tackling extension field problems guided by theory will not only solve the problem, but also provide useful insights into the process. He further explained the difference between domain, concept, construct, and variables with examples of social science relevance.

## Session 2: Thematic Analysis

In this session Dr P Sethuraman Sivakumar introduced the new concept of thematic analysis and how it can be conducted step wise. A practical exercise in thematic analysis was given to participants for item analysis and to identify the different themes, sub-themes, and constructs. This was followed by a group exercise on identifying items.

## Session 3: Sampling

This session started with a card exercise on current practices in sampling design. This was followed by a presentation on 'Sampling methods and sample size estimation for extension research' by Dr A Dhandapani (ICAR-NAARM). He discussed sample size, various sampling procedures and their suitability under different circumstances. He further mentioned related concepts, such as variance, control group, and errors in testing hypothesis. This presentation was followed by a group exercise to prepare

a sampling design for a study on 'Measuring adoption rate of SRI method of paddy cultivation'. This led to a presentation by the groups and a discussion on the merits and demerits of the suggested sampling designs.

#### Session 4: Good Practices in Data Collection

Dr P Venkatesan (ICAR-NAARM) conducted a card exercise to list out the existing practices and issues in data collection. This was followed by an explanation of various data collection tools by Dr A Dhandapani along with the many ways to overcome the standard problems in data collection.

Dr P Sethuraman Sivakumar's presentation on 'Human subject research - ethical practices in data collection' dealt with his experience in the USA while getting the approval of the Institutional Review Board (IRB) responsible for ensuring research compliance with the university's ethical standards. He also presented the role and structure of the Institutional Ethics Committee (IEC) and guidelines followed in India. He elaborated on how ethical issues are a big concern in social science research and publications currently and how it is going to be even more important in the days to come.

#### Session 5: Recent Advances in Data Collection

This session had three speakers dealing with three aspects, namely, Focus Group Discussion (FGD), Case Study Research, and Online Data Collection. Dr Dhandapani in his presentation on 'Focus Group Discussion' discussed the appropriate size of the group, roles of facilitators, and type of data collected by this method. Further, he elaborated on how to compile the data during FGDs and ways of quantifying as well as interpreting it.

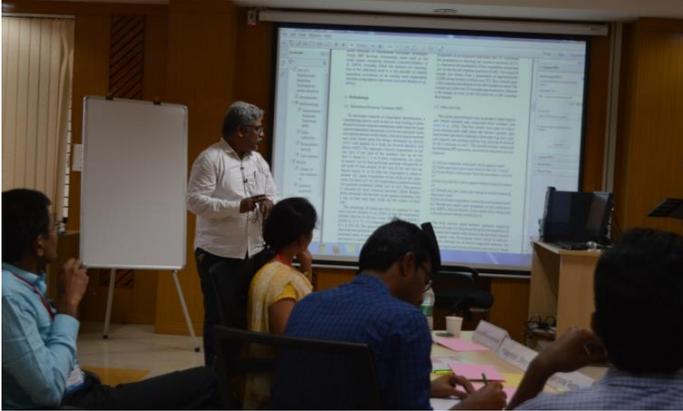


Mr Subhash SP (ICAR-NAARM) made a presentation on case study research and described its scientific benefits and explained how a case study can be used as an important approach in generating scientific knowledge. He highlighted the various sources of data used and steps followed in case study research.

Dr R Saravanan (MANAGE) briefed the participants on online data collection methods along with its scope, importance, and applications in social sciences. He also shared his experience of using online Google forms for data collection and informed the participants about the various online platforms used for data collection and analysis. Further, he threw light on various national and international web platforms where latest statistics are available.



## Session 6: Data Preparation, Analysis, Interpretation and Inference



The first presentation in this session by Dr A Dhandapani on 'Statistical designs in data analysis – descriptive to inferential statistics' discussed application of different statistical techniques, such as correlation, regression, t-test, chi-square, ANOVA, etc., with examples and interpretation of results by following these techniques.

Prof. IS Rao (Professor Jayashankar Telangana State Agricultural University) continued the session with his presentation on 'Data interpretation and inference'. He explained with examples how proper data interpretation

helps in drawing practical inference. He opined that discussion plays a very important role in extension research, and the researcher can draw good inferences only when he involves himself at each stage of research, namely problem identification, literature review and data collection.

Dr P Sethuraman Sivakumar continued the session with his practical demonstration on data preparation in SPSS. He showed how data is entered in SPSS, how missing items are generated, how normality of the data is tested, and how data should be prepared for analysis in SPSS.



## Session 7: Measuring Adoption



This session started with a card exercise on existing approaches used in measuring adoption and this was followed by a quick discussion among the participants. Dr N Sivaramane (ICAR-NAARM) conducted this session wherein he discussed methods of modeling adoption of agricultural technologies. He also gave insights into the usage of different regression models, such as tobit, logit and multinomial logit models in measuring the extent of influence of different factors influencing adoption. He also demonstrated the steps needed to carry out these statistical tests in SPSS with template data.

## Session 8: Monitoring, Evaluation & Impact Assessment

Dr N Sivaramane in his presentation on 'Advanced methods of analyzing the impact of agricultural technologies' outlined the basic conceptual difference between output, outcome, and impact. He discussed various steps,

methods, techniques and approaches to be followed for impact analysis. He gave insight into the different indicators used to measure socio-economic impact, institutional impact, and environmental impact.

Dr PVK Sasidhar (IGNOU) continued the session with a presentation on 'Programme evaluation concepts, designs and methods'. He briefed the participants on types, scope and importance of evaluation in development studies, and how to differentiate between appraisal, monitoring, evaluation and impact assessment. He examined his evaluation study on contract broiler farming using 'Benett's evaluation hierarchy' by sharing the evaluation proposal and report. He emphasized that evaluation studies need to be done more thoroughly by giving enough quality time at each stage – development of objectives, instrument, data collection, processing, and report writing. He argued that evaluation is not a fault-finding exercise as many perceive, it is a part of the development process which needs to be carried out for bringing better policies and to design better programmes.



Dr Surya Rathore (ICAR-NAARM) continued the session with her brief presentation on 'Impact assessment models'. She discussed various impact assessment indicators in extension programmes and elaborated the procedure.

### Session 9: Psychometrics

Dr P Sethuraman discussed structural equation modeling in this session. He explained scale construction in two parts. In the first part, he focused on item generation through thematic analysis, content adequacy assessment, questionnaire administration and factor analysis. He demonstrated factor analysis steps by using SPSS with his research data. He showed the difference between exploratory factor analysis (EFA) and principal component analysis (PCA). In the second part of his presentation he elaborated on 'structural equation modeling' through Confirmatory Factor Analysis by using the AMOS interface step-wise with practical demonstration.

### Session 10: Good Practices in Publishing Extension Research

This session started with a card exercise on issues in publication in order to understand the participants' experiences in publishing research outputs. Lack of awareness about social science journals, poor rating of extension journals by NAAS, long processing time taken by journal editors, and poor response from reviewers were some of the major issues pointed out by the participants.

Dr Rasheed in his presentation 'Beyond research papers', explained how different journals review papers and some of the common problems with extension research papers that he has been reviewing as a member of the

editorial team of JAEE (Journal of Agricultural Education and Extension). He also presented the list of journals compiled by AESA, where extension research could be published (<http://www.aesa-gfras.net/Resources/file/Where%20we%20can%20publish%20extension%20research%20-%20Final%20Note.pdf>).

Later he discussed several other options beyond journal articles to publish research outputs. These include policy papers, policy briefs, working papers, blogs and research reports, etc., and he gave several examples of extension research findings published in these different formats.

Dr P Sethuraman Sivakumar continued the session with his presentation on 'Research papers writing'. He discussed the process of research paper peer review, steps followed at the editorial desk, and how researchers should respond to reviewers' comments. He cautioned the participants not to quote too many own works and avoid retaliating to reviewers' comments.

### Session 11: Way Forward

This session was dedicated to preparation and presentation of research plans on themes given to each group on Day 1. The coordinators of each group presented concept notes on different topics related to their allotted themes.

S No.	Theme	Title of the Concept Note
1	Psychometry	Development of a model to predict adoption of environment-friendly practices of paddy farmers
2	Learning management	Augmenting ICT intervention to engineer learning behavior on climate change adaptation: action research
3	Diffusion research	Diffusion of soil health-based nutrient management under national mission on sustainable agriculture
4	Organisation and management	Performance assessment of Krishi Vigyan Kendras

Resource persons and participants critically analyzed each part of every concept note and suggested improvements.



## CLOSING SESSION

Dr Rasheed while addressing the guests at the closing session mentioned that the workshop was able to meet most of the participants' expectations with regard to new tools and techniques in extension research as well as on publishing papers. He, however, noted that a few aspects, such as current research trends and researchable areas could not be covered due to paucity of time. On behalf of the organizing team, he assured the workshop about carrying forward the experiences from this event by bringing out a Manual on Good Practices in extension research, and by networking with participants through an e-mail group.



In her closing remarks Dr Kalpana Sastry (Director, NAARM) appreciated the partnership of four organizations in organizing this workshop and the diversity of participants representing PhD schools, university faculty, and young scientists at the workshop. She assured the house about organizing more such workshops by NAARM for enhancing capacities in undertaking quality extension research. A few participants shared their experience and the session ended with a vote of thanks by Dr Bharat Sontakki.

## WHAT WE LEARNT

We were among the few participants handpicked by the organizers given our interest and aptitude in extension research. It offered good exposure as well as a great learning opportunity for us and we gained insights on several aspects of advanced research methods, data collection tools and statistical techniques. Topics, such as focus group design, case study research, online data collection and modeling, and so on gave new insights. Other subjects, such as evaluation, data interpretation and inference, and publishing extension research outputs have given us new confidence for undertaking policy relevant research. All the young participants, especially the PhD scholars, benefited greatly from this workshop, which will help them to design and implement their research work in innovative ways using the good practices learnt at this workshop.

## OUR IMPRESSIONS

We liked the way the organizers selected different topics and conducted the sessions. The sessions were very lively and almost every session had card exercises and space for interactions after the brief presentations. Interestingly, the limited number of participants and the presence of all resource persons in the training hall during the duration of the entire workshop facilitated a lot of discussions. Moreover, the presentation on 'Delphi Technique' by Dr Prakash Kumar (KVAFSU, Bidar) and 'Application of agent modeling' by Mr Subhas SP (NAARM) were useful for extending the participants' understanding of these techniques.



Personally, we feel this workshop was very intense and would have been more effective if conducted in two stages (four days each) with 3-4 months' gap. A two-phase approach may be considered in future with the first phase putting more emphasis on problem identification, research methodology and data collection; and the second phase emphasizing data interpretation, recommendations, report writing and publications (for the same group of participants). This type of workshop will definitely motivate young researchers to apply the latest advances in research methods, and we hope such workshops will be organized in future too.

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