ICAR-Indian Agricultural Statistics Research Institute
Library Avenue, Pusa, New Delhi-110 012

PROCEEDINGS OF 4ᵗʰ NATIONAL WORKSHOP OF
OFFICER INCHARGE, DATA MANAGEMENT

December 10-11, 2019

Fourth National Workshop of Officer Incharge, Data Management was held during December 10-11, 2019 at NASC Complex, New Delhi. The purpose of this workshop was to review the progress made and discuss the way forward for implementation of ICAR Research Data Repository for Knowledge Management.

Following 7 technical sessions on 1. IPR Guidelines; Open Data Platforms and Cross Learning; 2. Videos on Data Management and Soft Skills; 3. Unit Level Data Repository; 4. ICAR Geo-Portal and Cross Learning from Other Applications; 5. Data Analytics; 6. Publication Repository, Data Inventory and Inter-portal Harvester; Technology Repository; Observational Repository; 7. Open house discussion (Institutional Publication Repository; Data Inventory Repository; Technology Repository; Video/Audio Gallery/ICAR Mobile Apps; ICAR Geo-Portal and Spatial Meta Data) were organized. The detailed programme of the Workshop is given in the Annexure-I. The workshop was attended by ICAR Officials, Steering Committee Members, Directors from Delhi based Institutes, Nodal Officers/ Officer Incharge, Data Management for Research Data Repository from 79 Institutes and the Implementation team members. The list of institutions, which are not represented in the meeting is given in Annexure-II.

During the workshop, the following workflow based applications were launched: (i) ICAR IPR Repository; (ii) Information system for AICRP on Pearl Millet; (iii) Information system for AICRP on Castor, Safflower and Sunflower and (iv) ICAR Technologies: A Mobile App by Secretary, DARE and Director General, ICAR.

Appreciation certificates were also given to the Institutes which have certified uploading of all publications and/or technologies for last 6 years (April 2013 onwards). List of such Institutions are given in the ANNEXURE-III. The Institutes which were given certificates for completing one repository in 2018 were considered only if they have completed the other repository.

Inaugural Session
The workshop was inaugurated by Dr. Trilochan Mohapatra, Secretary DARE and Director General, ICAR. Dr. Mohapatra appreciated the progress made so far and congratulated the KRISHI team for their good work. He also appreciated that the framework for most of the repositories has been developed and urged upon that these frameworks need to be further strengthened for comprehensive, requirement of SMDs and to go along with technology changes in Computer Sciences. He asked that all the Institutes to populate these repositories in the earliest timeframe so that these can be analyzed and used for decision making. In this regard, he also asked that the progress of the Portal should be reviewed by the DDGs every six months with primary responsibility of the ADGs to monitor the progress of the implementation in the Institutes of respective SMDs. He also asked that the Action Taken Report on the points emerged and targets be presented in the next workshop for effective monitoring of the progress of the project. He also emphasized that (i) the data in the information systems developed for AICRPs should flow automatically; (ii) comparative analysis of publications of ICAR with CGIAR organizations should be performed. He suggested that the acronym KRISHI (Knowledge based Resources Information Systems Hub for Innovations in Agriculture) may be revisited and discuss on a wider platform whether it can be renamed as Agricultural Knowledge Resources and Information System Hub for Innovation (aKRISHI). The platform may be moved to big data platform if not already done so. The role of 6 partner institutions may be reviewed critically

whether it is required to have all Partner Institutes or not. A comprehensive planning is required for Data Structure, Data Analytics, Infrastructure requirements and Capacity building.

Dr. J.K. Jena, Deputy Director General (Animal & Fisheries Sciences), ICAR emphasized on the importance of data and its management. He also stated that the authenticity of the data is crucial. Dr. K. Alagusundaram, Deputy Director General (Agricultural Engineering & Natural Resource Management), ICAR stressed that the research work being carried out by the public funds should be made available in open access. He also remarked that the linking of data holds great importance for the researchers. He urged the scientists and researchers of the Council to wisely upload their data for enabling the other researchers to get benefit from their data. Dr. R.C. Agrawal, Deputy Director General (Agricultural Education), ICAR stressed upon the sustainability and real time updating of the database.

Dr. Suresh Kumar Chaudhari, ADG (Soil & Water Management), ICAR urged that the repositories in the Krishi Portal be populated by the scientists of the Institute. He urged the Institutes to prepare a framework for uploading their research data in the portal. He also stressed that the wise exploration and utilization of data is the key to success. Dr. Anil Rai, ADG (ICT), ICAR urged upon the scientists to deposit their research data to the Krishi Portal. Briefing about the objective of the Krishi Portal, Dr. Tauqueer Ahmad, Director, ICAR-IASRI emphasized on harnessing of the agricultural data. Dr. Rajender Parsad, Principal Scientist, ICAR-IASRI briefed about the achievements of the Krishi Portal. He also emphasized on strengthening the frameworks for sharing the data wisely.

After detailed presentations and discussions during the Technical sessions, following actionable points emerged.

1. For easy accessibility of the publications, data, video, audio, mobile apps for the users, a comprehensive dashboard for the Portal may be developed. For monitoring and usage, SMD wise, Institute wise and User dashboards should be prepared. Individual scientist dashboard should reflect a summary of publications, technologies and uploads in other repositories.

(Action: KRISHI Team)

2. To ensure the smooth and timely implementation of ICAR Research Data management guidelines, it is suggested that a column in APAR proforma may be included and it may be linked with Career Advancement Scheme. This may further be discussed in Steering Committee before coming to a final decision.

(Action: Steering Committee)

3. The acronym KRISHI (Knowledge based Resources Information Systems Hub for Innovations in Agriculture) may be revisited and discussed on a wider platform whether it can be renamed as Agricultural Knowledge Resources and Information System Hub for Innovation (aKRISHI). After having wider discussions, the Steering Committee may give its final recommendation.

(Action: Steering Committee)

4. All Institutes must populate these repositories by past data by June 2020 and real time data from June 2020 onwards, so as the meaningful analysis can be done and used for decision making. While populating the repositories, quality and accuracy of the data must be ensured. The details of data available with the Institutes must be made available in Data Inventory Repository. Data generated through all projects funded from ICAR sources may also be uploaded in this portal. Some reputed journals, require that the data should be uploaded in web access. All such data be uploaded in Data Inventory Repository to the possible extent. The office order for inclusion of Data handed over to Institute in NOC proforma may strictly be adhered to. All publications, technologies etc. reported in Annual Report must be given with KRISHI URI. The progress of the Portal should be reviewed by the respective SMDs /steering committee every six months to monitor the progress of the implementation in the Institutes.

(Action: All Institutes Officer Incharge Data Management, Steering Committee and Respective SMDs)

5. Action Taken Report on the points emerged in this workshop and targets fixed be presented in the next workshop for effective monitoring of the progress of the project.

6. ICAR Video Gallery, Audio Gallery and Mobile Apps gallery may be further strengthened to have the multi-word easy search and a new interface so that it is available to stakeholders specially farmers through Web.

(Action: KRISHI Team)

7. A comparative analysis of publications of ICAR with CGIAR organizations and leading International Agricultural Research and Development Organizations be carried out with in next 6 months.

(Action: KRISHI Team)

8. The frameworks developed need to be further strengthened for comprehensiveness, as per requirements of SMDs and to go along with technology changes in Computer Sciences. A comprehensive planning is required for Data Analytics, Infrastructure requirements and Capacity building.

(Action: KRISHI Team)

9. Role, responsibility and requirement of the partner Institutes other than ICAR-IASRI, New Delhi may be reviewed and steering committee may give a final recommendation in this regard.

(Action: Steering Committee)

10. CMS based websites for all AICRPs and network projects be prepared in a phase-wise manner. All AICRPs should provide the relevant information for the development of the websites. These websites should be hosted on KRISHI Portal. Coordinating units of the respective AICRPs should regularly update the websites. As in development of the information system of AICRPs, coordinating unit has to play active role for customisation followed by implementation. It was decided that the basic framework of information system of 12-15 AICRPs may be developed before March 2020. All AICRPs and Network Projects should have unit-level data with complete layout with Coordinating Unit. All AICRPs and Network projects should have workflow based Information Systems for unit level data repository. Data in these information systems should flow automatically in real time.

(Action: All AICRPs)

11. The provisions and infrastructure of long time availability of data may be planned and the applications should be available in High availability cluster mode. A prototype for big data platform for the data in Research Data Repositories may be developed and analysis workflows may be initiated. The infrastructure requirements and technical support required may be provided by ICAR Data Centre.

(Action: ICAR Data Centre Team and KRISHI Team)

12. Like other central repositories on KRISHI Portal, a mechanism need to be developed for online submission of spatial data on different parameters, to store and link it with thematic maps and applications. The already developed portals by the Institutes to share their data/services in a synchronizing mode. The spatial analytics may also be carried out to give different guidelines/decision making. Gaps in spatial data sets availability may also be identified. The mechanism of synchronizations of different portals (spatial and non-spatial) and repositories developed in ICAR Institutes may be developed.

(Action: ICAR-IARI, ICAR-NBSS&LUP, ICAR-NAARM, ICAR-IASRI, ICAR-CMFRI, KRISHIKOSH and concerned Institutes)

13. The possibility of developing a Research Information Management of ICAR using IRINS of INFLIBNET centre may be explored.

(Action: ICAR-IASRI, ICAR-NAARM and Inflibnet Centre)

14. There is a need to integrate KRISHI Portal and OGD platform (https://data.gov.in). More and more data sets may be identified for uploading on Open Government Data Platform through Web Services.

(Action: All ICAR Institutes)

15. Efforts should be made to bring data from Directorate of Economics and Statistivcs (DES), DAC&FW with value addition in KRISHI Portal for integration with research data. MOUs may be signed for sharing the data among the Departments. This may also be linked on Big Data Platform. As far as possible, mechanism for auto updates of data and visualization should be developed.

    (Action: KRISHI Team, Steering Committee and DAC&FW)

16. Sensitisation programmes / training programmes on importance of Research Data management may be conducted in all regions.

    (Action: Officer Incharge Data Management of All Institutes and KRISHI Team)

INDIAN COUNCIL OF AGRICULTURAL RESEARCH

Fourth National Workshop of Officer Incharge, Data Management
(ICAR Research Data Repository for Knowledge Management)
KRISHI: http://krishi.icar.gov.in

December 10-11,2019
Venue: AP Shinde Symposium Hall, NASC Complex, New Delhi

December 10, 2019 (Tuesday)		
0915-1000	**Registration**	
1000-1130	**Inaugural Function**	
	ICAR Song	
1000-1005	Welcome Address	Dr. Tauqueer Ahmad
1005-1020	Presentation on KRISHI Portal	Dr. Rajender Parsad
1020-1025	Remarks	Dr. Anil Rai
1025-1030	Remarks	Dr. S.K. Chaudhari
1030-1040	Remarks	Dr. R.C. Agarwal
1040-1045	Remarks	Dr. J.K. Jena
1045-1055	About ICAR Research Data Repository for Knowledge Management Initiative	Dr. K. Alagusundaram
1055-1100	Release/Launch of Applications Developed & Awarding Appreciation Certificates	
1100-1125	Inaugural Address	Dr. Trilochan Mohapatra
1125-1130	Vote of Thanks	Dr. A. Dhandapani
1130-1135	Group Photo	
1135-1150	**Tea**	
1150-1315	**Technical Session I** : **IPR Guidelines; Open Data Platforms and Cross Learning** Chairman : Dr. K. Alagusundaram, DDG(Agricultural Engineering & NRM) Co-Chairman : Dr. S.K. Chaudhari & Dr. P.S. Pandey Rapporteur : Dr. Mukesh Kumar & Dr J. Jayasankar	
1150-1210	Open Data Platform - Government of India	Dr. Alka Mishra
1210-1230	ICAR IPR Guidelines	Dr. Sanjeev Saxena
1230-1250	Shodhganga: Inflibnet	Dr. Manoj Kumar
1250-1315	Discussion	All Participants
1315-1400	**Lunch**	
1400-1445	**Technical Session II** : **Videos on Data Management and Soft Skills** Chairman : Dr. Sanjeev Saxena Co-Chairman : Dr. Tauqueer Ahmad Rapporteur : Dr. Anshu Bharadwaj & Dr. Anil Kumar	
1400-1415	Why Research Data Management?: Live Demo	
1415-1445	Videos on Data Management and Soft Skills	
1445-1545	**Technical Session III** : **Unit Level Data Repository** Chairman : Dr. S.K. Chaudhari Co-Chairman : Dr. R.K. Singh Rapporteur : Dr. Susheel Sarkar & Dr. Sukanta Dash	
1445-1505	AICRP Automation System including experiences from Sorghum and Maize	Dr. A. Dhandapani
1505-1520	Research Data Management for Genetic Gain	Dr. Abhishek Rathore/Dr. Susheel Sarkar
1520-1530	Experiential Learning: Information System for AICRP on Pearlmillet	Dr. C. Tara Satyavathi/ Dr. Sukanta Dash

1530-1540	Experiential Learning: Information System for AICRP on Castor, Safflower, Sunflower	Dr. C. Sarada/ Dr. Sukanta Dash
1540-1550	AICRPs on FIM and PHET	Dr. Arpan Bhowmik
1550-1600	Way Forward	All Participants
1600-1615	**Tea**	
1615-1745	**Technical Session IV** : **ICAR Geo-Portal and Cross Learning from Other Applications** Chairman : Dr. P. Pravin Rapporteur : Dr. Anshu Bharadwaj & Dr. Joydeep Mukherjee	
1615-1645	Data Management Portal of ISRO	Dr.V.M. Chowdary
1645-1705	Development of Geo-spatial Database, Metadata for KRISHI Geo-portal and Synchronization of Various Portal With ICAR Geo-Portal	Dr. G.P. Obi Reddy
1705-1725	ICAR Geo-Portal along with Applications for Location Specific Recommendations, Satellite Monitored India Crop Residue Burn Events	Dr. Vinay Kumar Sehgal
1725-1745	Data Formats and Geo-reference Data Availability	All Participants
December 11, 2019 (Wednesday)		
0945-1100	**Technical Session V** : **Unit Level Data Repository and Data Analytics** Chairman : Dr. A.K. Singh, DDG(Agricultural Extension) Co-Chairman : Dr. T. Janakiram & Dr. V.P. Chahal Rapporteur : Dr. Anil Kumar & Dr. Arpan Bhowmik	
0945-0955	Observational Data Repository	CRIDA Hyderabad/ Dr. Rajender Parsad
0955-1025	Data Analytics	Dr. Rama Hariharan
1025-1040	E-Pest Surveillance: Challenges in Data Management	Dr. S. Vennila
1040-1055	Plant Phenomics: Data Challenges	Dr. C. Vishwanathan
1055-1110	Discussion of Unit Level Data on Selected AICRPs/ Institutes and format for Unit level data/ Presentation by participants	All Participants
1110-1130	**Tea**	
1130-1315	**Technical Session VI** : **Publication Repository, Data Inventory and Inter-portal Harvester; Technology Repository; Observational Repository** Chairman : Dr. G. Venkateswarlu Rapporteur : Dr. Amrender Kumar & Dr. N.S. Raju	
1130-1145	Publication Repository, Data Inventory and Inter-portal Harvester – Introduction and Demonstration	Dr. Rajender Parsad
1145-1200	Technology Repository and Mobile App: Demonstration	Dr. Mukesh Kumar
1200-1245	Demonstration and Trouble Shooting	KRISHI Team
1245-1315	Discussion on the above and Action Plan	All Participants
1315-1400	**Lunch**	
1400-1500	**Valedictory/Plenary Session** Chairman : Dr. K. Alagusundaram Co-Chairman : Dr. R.C. Agarwal & Dr. S.K. Chaudhari Rapporteur : Dr. A. Dhandapani, Dr. Vinay Sehgal & Dr. G.P. Obi Reddy	
1400-1430	Implementation Issues – General Discussion	All Participants
1430 -1445	Recommendations and Action Points finalization	All Participants
1445 -1500	Valedictory Address	Dr. K. Alagusundaram
1500-1515	**Tea**	

ANNEXURE-II: List of Institutes which could not participate

S#	Organization
1.	ICAR-Indian Veterinary Research Institute, Izatnagar
2.	ICAR-Central Avian Research Institute, Izatnagar
3.	ICAR-Central Institute of Sub Tropical Horticulture, Lucknow
4.	ICAR-Central Institute of Temperate Horticulture, Srinagar
5.	ICAR-Central Institute on Post harvest Engineering and Technology, Ludhiana
6.	ICAR-Central Sheep and Wool Research Institute, Avikanagar, Rajasthan
7.	ICAR- Indian Institute of Soil and Water Conservation, Dehradun
8.	ICAR- Central Coastal Agricultural Research Institute, Ela, Old Goa, Goa
9.	ICAR-Indian Institute of Natural Resins and Gums, Ranchi
10.	ICAR-Indian Institute of Spices Research, Calicut
11.	ICAR-National Institute of Research on Jute & Allied Fibre Technology, Kolkata
12.	ICAR-Central Institute for Research on Cattle, Meerut, Uttar Pradesh
13.	ICAR-National Institute of High Security Animal Diseases, Bhopal
14.	ICAR- Indian Institute of Wheat and Barley Research, Karnal
15.	ICAR-Indian Institute of Rice Research, Hyderabad
16.	ICAR-Central Citrus Research Institute, Nagpur
17.	ICAR-National Research Centre for Pomegranate, Solapur
18.	ICAR-National Research Centre on Orchids, Pakyong, Sikkim
19.	ICAR-National Research Centre on Yak, West Kemang
20.	ICAR-National Bureau of Agriculturally Important Micro-organisms, Mau, UP
21.	ICAR-National Bureau of Agricultural Insect Resource, Bangalore
22.	ICAR-Directorate of Groundnut Research, Junagarh
23.	ICAR-Directorate of Rapeseed & Mustard Research, Bharatpur
24.	ICAR-Directorate of Mushroom Research, Solan
25.	ICAR-Directorate on Onion and Garlic Research, Pune
26.	ICAR-Directorate of Floricultural Research, Pune, Maharashtra
27.	ICAR-Directorate of Weed Research, Jabalpur
28.	ICAR-Project Directorate on Foot & Mouth Disease, Mukteshwar
29.	Agricultural Technology Application Research Institute, Jabalpur

ANNEXURE-III: Certificate of Appreciation to Institutes

S#	Name of the Institute
Publication:	
1	ICAR-ATARI, Jodhpur
2	ICAR-ATARI, Ludhiana
3	ICAR-Indian Institute of Spices Research, Calicut
4	ICAR-Central Institute of Fisheries Technology, Cochin
Technology	
5	ICAR-Directorate of Poultry Research, Hyderabad
6	ICAR-Central Plantation Crops Research Institute, Kasargod
7	ICAR-National Research Centre on Mithun, Nagaland
8	ICAR-Central Coastal Agricultural Research Institute, Goa
Both Publication and Technology	
9	ICAR-Central Institute for Women in Agriculture, Bhubaneswar
10	ICAR-Central Institute of Brackiswater Aquaculture, Chennai
11	ICAR-Central Tobacco Research Institute, Rajahmundry
12	ICAR-National Institute of Veterinary Epidemiology and Disease Informatics, Bengaluru
13	ICAR-Indian Institute of Maize Research, Ludhiana

14	ICAR-National Research Centre on Pig, Guwahati
15	ICAR-Indian Institute of Oilseeds Research, Hyderabad
16	ICAR-Central Potato Research Institute, Shimla
17	ICAR-Central Arid Zone Research Institute, Jodhpur