

**ICAR-Indian Agricultural Statistics Research Institute
Library Avenue, PUSA, New Delhi-110012**

**PROCEEDINGS OF SECOND WORKSHOP OF OFFICER-INCHARGE, DATA
MANAGEMENT**

The Second Workshop of Nodal Officers/ Officer Incharge, Data Management of ICAR Research Data Repository for Knowledge Management initiative organized at NASC Complex, New Delhi during January 24-25, 2017 to review the progress made and discuss the way forward for implementation of ICAR Research Data Repository for Knowledge Management. The detailed programme of the Workshop is given in the Annexure-I. 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 emphasized the importance of the quality of data being generated in the system and desired it should be of high standards and wherever required, quality data acquisition guidelines may be prepared especially for the younger generation. He also stressed on the need of infrastructure and capacity building at Institute level for proper data management. He emphasized on the requirement of disaster recovery arrangements so as to minimize risk of loss of data. The workshop was attended by ICAR Officials, Steering Committee Members, Directors from Delhi based Institutes, Nodal Officers/ Officer Incharge, Data Management for Research Data Management from 76 Institutes and the Implementation team members. The list of organizations from which the Nodal officers could not participate in the meeting is given in Annexure-II. After detailed presentations and discussions, following actionable points emerged.

Data Management, Administrative and Financial Issues

1. The quality of data being generated in the system should be of high standards and wherever required, quality data acquisition guidelines may be prepared especially for the benefit of younger generation. A brief description of data collection and recording guidelines is available in Chapter 2, Item No. 2.4 of ICAR Guidelines for Internal Evaluation and Forwarding Research papers to Scientific Journals and Data Management in ICAR Institutes. A high level committee may be constituted for preparing detailed quality research data acquisition guidelines.
2. For proper data management, appropriate infrastructure and capacity building need to be made available at Institute level. Adequate disaster recovery arrangements should be in place to minimize risk of loss of data. Disaster Recovery solution of KRISHI may be taken up along with the Disaster Recovery Solution of ICAR Data Centre. The advantages/disadvantages for creating a new infrastructure/rental basis from NIC may be prepared by ICAR Data Centre Team. Earlier proposals to establish Disaster recovery solutions at ICAR-NAARM, Hyderabad or ICAR-NBAII, Bengaluru may also be looked into.
3. Meta data should have auxiliary data specifically the information on conditions prevalent during the experimentation.
4. Institutes should keep enough provisions for funds for data entry in Recurring Contingencies while preparing the budget for next three years.
5. ICAR Research Data Repository is at the phase I of implementation, therefore, to further progress on research data management, this activity should be continued in the form of a Network Mode Project in the following years and provision of funds may be kept for this activity under the appropriate budget heads. If the approvals for its continuation with appropriate budgetary provisions are received before March 31, 2017, it would be helpful in maintaining the continuity.

6. More rigorous efforts should be made to ensure that the data generated from research, educational and other activities must be available with the Institutional Repositories/Central Repositories. As far as possible, all data generated to be geo-referenced.
7. Implement the Council's office order F.N. GAC-21-4/2016-CDN dated May 10, 2016 regarding "No Dues Proforma" to be issued on superannuation or transfer of scientists/technical officers that should include the information regarding the data available with the person and to whom it has been handed over (next PI/Nodal Officer/PME Cell).
8. Data on every experiment should be submitted to Institutional repositories/Central repositories including the experiments which have failed in database as excel file, Document, pdf or any other format.
9. Institutes may classify the data as open access (available to all); registered /restricted access (require registration); paid access; shared within ICAR and/or other; Government agencies, high value and low value categories, etc.
10. Sensitisation programmes / training programmes on importance of Research Data management may be conducted in all regions.
11. Appropriate funds may be allocated for capacity building of team members particularly on data standards, interoperability and ontology based data management.

ICAR Institutional Publication and Data Inventory

12. All publications should be uploaded in ICAR Publication Repository, preferably in searchable format. In case of publications wherein the copyright has been transferred to third party, metadata along with URL/DOI of the publications should be uploaded. Pre-print version of such publication, wherever feasible can be uploaded. In case of any clarifications, one may refer back to ICAR Open Access Policy available at <http://www.icar.org.in/en/node/6609>. URL from MY KRISHI may be made compulsory for all Institutional Publications and Career Advancement Proformae.
13. Publications of last 5 years should be uploaded in ICAR Institutional Publication and Data Inventory Repository on priority. Wherever available past publications should also be uploaded.
14. Data Inventory Repository aims at creating Metadata Inventory through information related to data availability at Institute level. The meta data details/data uploading may be taken up from ongoing/recently completed projects followed by past projects. This would in turn help in unit level data repositories.
15. ICAR Publication and Data Inventory Repository for all ICAR Institutes to be taken up by KRISHI Team and KRISHIKOSH team will coordinate with SAUs by putting major emphasis on theses/dissertations as is presently being done by them. It was also decided that a mirror image of KRISHIKOSH may also be kept at ICAR-Data Centre.
16. Efforts should be made for developing solutions for Sync/exporting the data in different Open Access Publication Repositories for ICAR Institutes.
17. A draft License for Publication and Data Inventory Repository and similar other data sources prepared using the terms of use from data.gov.in was presented. It was decided that it may be sent for suggestions/approvals from Agrinnovate India and ADG (IPTM & PME).
18. For using the data original source must be acknowledged. Due credit to institutes/researchers of data generators; Legal framework needs to be developed for dealing with any violations.

Online Resources

19. It is mandatory to provide links of online resources (databases, information systems, e-advisory etc.) available in ICAR Institutions/ATARIs on KRISHI Portal. This would be helpful in showcasing the ICT initiatives of ICAR institutes through a single Portal. Nodal Officers/ Officer Incharge Data

Management should provide the URLs along with brief details about the initiatives in this regard taken by respective Institute from time to time.

20. The website and online documents/resources available online must be updated regularly by all the Institutes. Nodal officers should prepare a list of Databases/Information systems available with the Institutes. All efforts should be made to keep these resources updated.
21. A link of KRISHI Portal <http://krishi.icar.gov.in> may be provided at each Institute website.

Technology Repository

22. Details of Technologies developed by the Institute may be kept ready in digital or print format as per the format available on KRISHI Portal for uploading in Technology Repository. All Institutes were requested to send their suggestions on Draft Format for ICAR Technology Repository within 15 days.
23. Validated technologies can also be submitted by Incharges' of ITMU.

Unit Level Data Repository

24. All AICRP and Network Projects should have unit level data with complete layout with Coordinating Unit.
25. A general framework of experimental data repository may be created for AICRP/Network projects on priority. The others features such as randomization layouts, analysis of AICRP experiments etc. may be taken up later.

ICAR-Geo-Portal

26. All spatial data/thematic layers may be shared for making them available on ICAR Geo-Portal. Following maps/spatial layers may also be taken up from the respective organizations in required format for uploading on ICAR Geo-Portal:
 - ICAR-NBSS&LUP, Nagpur: Indian Soils: (i) Soil Database (1:500 K) (ii) Soil Order; (iii) Red and laterite Soils; (iv) Black Soils; (v) Acid Soils; (vi) Hilly Soils; (vii) Coastal Soils; (viii) Alluvial Soils; (ix) Desert Soils; (x) Land Degradation; (xi) Bioclimatic Map of India;
 - ICAR-IIWM, Bhubaneswar: Water Resource maps (Surface and Groundwater);
 - ICAR-CMFRI, Kochi: Marine Fish Resources;
 - ICAR-IISS, Bhopal: (i) Fertility Maps (Macro Nutrients); (ii) GIS & GPS Based Soil Fertility Maps For Precise Fertilizer Recommendations For The Farmers of The Country; (iii) Soil Fertility Maps (Micronutrients): Nutrient Index based Maps (iv) Micronutrient deficiencies in different states.
 - ICAR-IIFSR, Modipuram: Cropping Systems maps;
 - ICAR-DCFR, Bhimtal: Cold Water resources maps;
 - ICAR-NBAGR, Karnal: Animal Genetic Resources maps;
 - ICAR-NCIPM, New Delhi: Pest Monitoring maps;
 - ICAR-CIFRI, Barrackpore: Water Bodies & Water Quality for Fisheries maps
 - ICAR-NIANP, Bengaluru: Spatial layers on data on mineral feeding to animals
 - ICAR-CSWRI, Avikanagar; ICAR-NRC on Mithun; ICAR-NRC on Camel; ICAR-NRC on Yak: Migratory tracks on animal flocks
 - AICRP on FIM and AICRP on PHT: Spatial layers pertaining to farm mechanization, post-harvest losses

Observational Data Repository

27. The efforts on developing workflows and exporting the weather parameter data available with AICRP-AM at ICAR-CRIDA, Hyderabad may be expedited to ICAR Data Centre by creating suitable workflows. The possibility of appending the weather database from other research stations may also be explored.
28. Application on Master Code Tables may be prepared so that they can be used across different e-initiatives of ICAR

INDIAN COUNCIL OF AGRICULTURAL RESEARCH

**Second Workshop of Nodal Officers/Officer InCharge, Data Management of
ICAR Research Data Repository for Knowledge Management
(KRISHI: <http://krishi.icar.gov.in>)**

January 24-25, 2017

January 24, 2017(Tuesday): AP Shinde Symposium Hall, NASC Complex, New Delhi		
0900-0930	Registration	
0930-1045	Inaugural Function	
	ICAR Song	
0930-0935	Welcome Address	Dr. A.K. Choubey
0935-0950	Presentation on KRISHI	Dr. Rajender Parsad
0950-0955	Remarks	Dr. K.K. Singh
0955-1000	Remarks	Dr. S.K. Chaudhari
1000-1015	About ICAR Research Data Repository for Knowledge Management Initiative	Dr. K. Alagusundaram
1015-1040	Inaugural Address	Dr. Trilochan Mohapatra
1040-1045	Vote of Thanks	Dr. Seema Jaggi
1045-1115	Tea	
1115-1215	Technical Session I : Data Inventory Repository	
	Chairman	: Dr. K. Alagusundaram
	Co-Chairman	: Dr. Sudhir Raizada
	Rapporteur	: Dr. Susheel Sarkar and Dr. Arpan Bhowmik
1115-1145	Data Inventory Repository – Introduction and Demonstration	Dr. Rajender Parsad/ Dr. A. Dhandapani
1145-1215	Discussion on Data Inventory Repository and Action Plan	All Participants
1215-1315	Technical Session II : Publication Repository and Interportal Harvester	
	Chairman	: Dr. Rameshwar Singh
	Rapporteur	: Dr. J. Jayasankar, Dr. Anil Kumar and Dr. Amrender Kumar
1215-1245	Publication Repository – Introduction and Demonstration	Dr. Rajender Parsad
1245-1315	Discussion on Publication Repository and Action Plan	All Participants
1315-1415	Working Lunch	
1415-1530	Technical Session III : ICAR Geo-Portal	
	Chairman	: Dr. S.K. Singh
	Rapporteur	: Dr. Anshu Bharadwaj and Dr. Joydeep Mukherjee

1415-1435	Development of Geo-spatial Database and Metadata for KRISHI Geo-portal	Dr. G.P. Obi Reddy
1435-1500	ICAR Geo-Portal	Dr. Vinay Sehgal
1500-1530	Data Formats and Geo-reference data availability	All Participants
1530-1630	Technical Session IV : Technology Repository Chairman : Dr. B.S. Prakash Co-Chairman : Dr. V.P. Chahal Rapporteur : Dr. Davinder Dhingra and Dr. Mitali Ghosh Roy	
1530-1600	Online Module for Technology Repository	Dr. A. Dhandapani/ Dr. Mukesh Kumar
1600-1630	Discussion on Technology Repository and Action Plan	All Participants
1630-1700	Tea	
1700-1830	Technical Session V : Unit Level Data Repository Chairman : Dr. T. Janakiram and Dr. B.S. Prakash Rapporteur : Dr. P.P. Biswas and Dr. Adlul Islam	
1700-1730	AICRP Automation System	Dr. A. Dhandapani
1730-1745	AICRP on Long Term Fertilizer Experiments	Dr. Susheel Sarkar
1745-1800	AICRP on FIM	Dr. Arpan Bhowmik
1800-1830	Discussion of Unit Level Data on 10 Selected AICRPs/Institutes and format for Unit level data/ Presentation by participants	All Participants
1830-1900	Technical Session VI : Workflows and IT Infrastructure Chairman : Dr. G. Venkateswarlu Co-Charirman : Dr. A.K. Choubey Rapporteur : Dr. Anshu Bharadwaj and Dr. Niranjana Singh	
1830-1900	Workflows for Central Data Repository, Single Sign on through Unified Communication System and accessibility with ICAR Data Centre	Dr. A.K. Choubey/ Dr. Mukesh Kumar
1900-2000	Technical Session VII : Valedictory/Plenary Session Chairman : Dr. K. Alagusundaram Rapporteur : Dr. A. Dhandapani, Dr. Vinay Sehgal and Dr. G.P. Obi Reddy	
1900-1930	Implementation Issues – General Discussion	All Participants
1930-2000	Recommendations and Action Points finalization	
January 25, 2017(Wednesday): ICAR-IASRI, New Delhi on January 25, 2017		
1000-1500	Hands on Training on - Institutional Publication Repository - Data Inventory Repository - ICAR Geo-Portal	KRISHI Team

ANNEXURE-II

Nodal Officers/Representatives from Following Institutes could not participate in Second Nodal officers Workshop held on January 24-25, 2017

1. ICAR-IARI, New Delhi
2. ICAR-CARI, Izatnagar
3. ICAR-CIRG, Makhdoom
4. ICAR-CISH, Lucknow
5. ICAR-CITH, Srinagar
6. ICAR-CPCRI, Kasargod
7. ICAR-CRIDA, Hyderabad
8. ICAR-CSWRI, Avikanagar
9. ICAR-IISWC, Dehradun
10. ICAR-CTRI, Rajahmundry
11. ICAR-CTCRI, Trivandrum
12. ICAR-RC NEHR, Umiam
13. ICAR-IGFRI, Jhansi
14. ICAR-IIAB, Ranchi
15. ICAR-IISS, Bhopal
16. ICAR-Indian Institute of Spices Research, Calicut
17. ICAR-Indian institute of Sugarcane Research, Lucknow
18. ICAR-IIVR, Varanasi
19. ICAR-NIHSAD, Bhopal
20. ICAR-IIWBR, Karnal
21. ICAR-NRC on Grapes, Pune
22. ICAR-NRC on Pomegranate, Sholapur
23. ICAR-NRC-Camel, Bikaner
24. ICAR-NRC on Pig, Guwahati
25. ICAR-NRC on Meat, Hyderabad
26. ICAR-NRC on Yak
27. ICAR-Directorate on Groundnut Research, Junagarh
28. ICAR- Directorate of Soybean Research, Indore
29. ICAR-DOGR, Pune
30. ICAR-DCR, Puttur
31. ICAR-DMAPR, Anand
32. ICAR-PDFMD, Mukteswar