Report on the
Forum on Open Data and Open Science in Agriculture

Jacaranda Hotel, Nairobi, Kenya
Monday, 15th June 2015

Introduction

Easy availability and open access to agriculture data and science has great potential to contribute to developing innovative solutions to address food insecurity, and combat hunger and poverty in Sub-Saharan Africa (SSA). However, much of the agriculture and related data generated in most SSA countries are not visible and available for access and re-use to meaningfully contribute to impact on food security in the region. This is due to several reasons and challenges both at institutional and national levels.

To articulate some of the challenges to open data and open science in Kenya and to propose possible strategies, on 15th June 2015, the Kenya Agricultural and Livestock Research Organization (KALRO), in partnership with the Food and Agriculture Organization of the United Nations (FAO), and with the support of International Council for Science: Committee on Data for Science and Technology (CODATA) and the International Livestock Research Institute (ILRI), organized a half-day Forum on Open Data and Open Science in Agriculture at the Jacaranda Hotel in Nairobi.

Goal of the Forum

The main goal of the Forum was to bring together stakeholders in agriculture to share knowledge and propose strategies on improving the visibility and accessibility to agricultural data and science in Kenya.

The Approach

The forum was composed of two panel sessions (Annex 1– Programme) followed by discussions in the plenary session.

Participants

Forty-four participants (Annex 2–Participants) took part in the Forum. These came from various organizations in Kenya including universities, research institutes/organizations, the Government ministries, innovation hubs, Non-Governmental Organizations (NGOs), journal publishers, science academies, and United Nations agencies.

Presentations

The panelists made the following presentations [1]

- Network of African Science Academies (NASAC) – Ms Jackie Olang, Programmes Director, NASAC, Nairobi, Kenya

- Open Data and Big Data and Capacity Building Initiative - Dr Simon Hodson, Executive Director, CODATA, Paris, France

- African Journal of Food, Agriculture, Nutrition and Development (AJFAND) – Ms Mary Njeri Karanu, Assistant Editor, AJFAND, Nairobi, Kenya

- Open Data and Open Science in Agriculture: Experiences and Opinions - Prof Abukutsa Mary O. Onyango - Department of Horticulture, Jomo Kenyatta University of Agriculture and Technology (JKUAT), Nairobi, Kenya

- JKUAT Support for Open Data - Prof Muliaro Wafula PhD, Director ICT Centre of Excellence and Open Data (iCEOD), JKUAT, Nairobi, Kenya

- Open Data and Open Science in Agriculture: Management - Dr. Lusike Wasilwa, Acting Head, Crops Systems, KALRO, Nairobi, Kenya

- Building E-Infrastructures or Cyberinfrastructures in Kenya – Prof Meoli Kashorda, Executive Director, KENET and Professor of Information Systems, USIU

- Open Access Initiatives and Challenges in Kenyan Universities – Ms. Jacinta Were - Consultant: Information Management & Capacity Building, Kenya

Group picture of participants on open data and open agriculture forum

[1] All presentations are linked to copies available on the SlideShare platform

Key Outcomes from Presentations and Discussions

1. There is huge value and benefits to be unlocked through open data and open science and case studies/evidence are now available on how open data and open science is advancing agriculture.

2. Open data and open science require an enabling environment framework that includes appropriate government policies, and data archiving policies and strategies of research institutions and research funders.

3. Existing reward systems for researchers/scientists that focus on publishing in high impact journals and job promotion is not supportive of open data and open science, and needs to be revised. The system should also reward the efforts made in fostering collaborative multi-disciplinary research work, communicating the relevance and usefulness of the research that addresses local problems to the policy makers in governments and the beneficiaries, etc. as opposed to focusing only on publishing in high impact journals and job promotion.

4. Other major issues hindering the adoption of open data and open science in Kenya include: lack of understanding of open data, open science and open access among key stakeholders; wide spread concerns with plagiarism of open resources; absence or unclear Intellectual Property Rights policies resulting in reluctance to provide access to open data and in some cases "over protection" of data; and the absence of policies and strategies for data preservation/archiving (to guarantee continued access to data) in most institutions.

5. IPR should protect the ideas and information drawn from the data and not necessarily the data itself. Data has multiple uses and can be re-used and can be beneficial to other projects and initiatives.

6. Young scientists should be actively engaged to drive the mindset shift and foster collaborative research, open data and open science.

7.Several initiatives in support of open data and open science are under way in Kenya. These include the development an e-infrastructure in place that could support open data and open science, including archiving of data within Kenya by the Kenya Education Network (KENET); development of Open Access institutional repositories, especially in universities (i.e. University of Nairobi , JKUAT , etc.); establishment of the ICT Centre of Excellence and Open Data (iCEOD) at JKUAT; and establishment of the Kenya Agriculture Information Network (KAINet) which supports setting up of digital repositories in agriculture organizations.

8.Strategies are needed to enhance the open data and open science environment in Kenya. These should include:

a.Sensitize researchers/lecturers on what open access is, benefits of open access and Creative Commons Licensing of content.

b.Encourage institutions that are yet to establish their institutional repositories to do so, and use tools that conform to international standards, allowing for metadata to be harvested.

c.Make use of the researchers/lecturers that have already adopted open access, open data and open science as advocates and champions for the initiatives.

d.Adopt suitable existing metrics to track/monitor the visibility and impact of the data/content being made available by the institutions to high light the impact and benefits of open data/open science.

e.Recognize and reward other mechanism or channels, i.e. pamphlets targeting farmers, etc., of communicating science other than only through publishing in journals and conferences. Basically looking at the usefulness (quality) of the research and impact of published research.

[2] http://erepository.uonbi.ac.ke
[3] http://ir.jkuat.ac.ke

f. Consider opening access to libraries, especially university libraries, to the public that need access to the resources.

g. Funding and equipping national libraries, national archives, and public libraries to serve as access points to open data and open science for the public.

Key Recommendations and Actions

1. Consolidate the Forum on Open Data and Open Science in Agriculture to continue the consultations and maintain the momentum that had been initiated at the Nairobi Forum [ACTION: KAINet Secretariat].

2. Advocate for enabling policy framework for open data and open science at both national and institutional level, and reward systems that encourage researchers to undertake collaborative multi-disciplinary research work, adopt open data and open science [ACTION: KAINet Secretariat, Member Institutions, the Forum]

3. Encourage institutions to put in place strategies to digitize content that is still available in print format and implement information workflows to capture and archive data and other digital information resources [ACTION: KAINet Secretariat, Member Institutions, the Forum].

4. Advocate for and lobby policy and decision makers for increased investment to create research infrastructure that will support open data and open science initiatives [ACTION: KAINet Secretariat, Member Institutions, the Forum].

5. Sensitize various stakeholders in agriculture research on Creative Commons licensing as one of the approaches to achieve open data and open science [ACTION: KAINet Secretariat, Member Institutions, the Forum].

Panel Discussions and interaction at the forum

6. Expand KAINet membership beyond the current four organizations [ACTION: KAINet Secretariat].

7. Focus open data and open science initiatives on impacting positively on the livelihoods of farmers and rural communities [ACTION: KAINet Member Institutions and the Forum].

8. Capacity build/train scientists, policies makers on open data policy, data management and analytics technologies for open data, need for digital preservation and the merits of open data [ACTION: KAINet Member Institutions and the Forum].

9. Undertake open data readiness assessment of institutions and all targeted bodies [ACTION: The Forum].

10. Commission case study research on the value and impact of open data on development including agriculture, innovation, governance, accountability etc. [ACTION: KAINet].

Cross-section of participants

6 July 2015

Annex 1: Programme

Forum on Open Data and Open Science in Agriculture
Jacaranda Hotel, Nairobi, Kenya
15th – 18th June 2015

Monday, 15th June 2015

Time	Activity	Moderator
08:15 – 08:45	Arrival and Registration of Participants	
08:45 – 09:00	Opening session	Boniface Akuku [KALRO, Nairobi – Kenya]
09:00 – 10:45	Panel 1- Open Data and Open Science	
	• Prof. Muliaro Wafula - ICT Centre of Excellence and Open Data (iCEOD)), KENYA • Ms. Jackie Olang - Programmes Director, Network of African Science Academies (NASAC), KENYA •Dr. Simon Hodson - Executive Director, International Council for Science : Committee on Data for Science and Technology, FRANCE •Prof Meoli Kashorda - Executive Director, Kenya Education Network (KENET), KENYA	Justin Chisenga [FAO, Accra – Ghana]
10:45 – 11:15	Tea/Coffee Break	
	Panel 2: Open Data and Open Science in Agriculture • Prof. Abukutsa Mary O.Onyango- Jomo Kenyatta University of Agriculture and Technology, KENYA • Ms. Jacinta Were – Consultant - Information Management & Capacity Building, KENYA • Ms. Mary Njeri Karanu - Assistant Editor, African Journal of Food, Agriculture, Nutrition and Development (AJFAND), KENYA • Dr. Lusike Wasilwa - Acting, Head Crops Systems, Kenya Agricultural & Livestock Research Organization, KENYA	Imma Subirats [FAO, Rome-Italy]
13:00 – 13:30	Conclusions and Closing	Boniface Akuku [KALRO, Nairobi – Kenya]
13:30	End of Day 1 Sessions & Lunch	

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PARTICIPANTS' LIST

S/N	Names	Address	Contact Email
	PANELISTS		
1	Dr. Simon Hodson - Executive Director	International Council for Science : Committee on Data for Science and Technology, 5 rue Auguste Vacquerie, 75016 Paris, France	execdir@codata.org
2	Prof Meoli Kashorda - Executive Director,	University of Nairobi, Jomo Kenyatta Memorial Library, P.O. Box 30244 - 00100, Nairobi, Kenya	mkashorda@kenet.or.ke
3	Jackie Olang - Programmes Director,	Network of African Science Academies (NASAC), P. O. Box 201-00502, Nairobi, Kenya	jolang@nasaconline.org
4	Prof. Abukutsa Mary O. Onyango	Department of Horticulture, Jomo Kenyatta University of Agriculture and Technology, P.O. Box 62000, 00200-Nairobi, Kenya	abukutsa.mary@gmail.com
5	Mary Njeri Karanu - Assistant Editor	African Journal of Food, Agriculture, Nutrition and Development (AJFAND), Nairobi, Kenya	knjeri2003@gmail.com
6	Prof. Muliaro Wafula	ICT Centre of Excellence and Open Data (iCEOD)), Nairobi, Kenya	muliaro@icsit.jkuat.ac.ke
7	Dr. Lusike Wasilwa – Acting Head: Crops Systems	Kenya Agricultural & Livestock Research Organization, Nairobi, Kenya	Lusike.wasilwa@kalro.org
8	Jacinta Were – Consultant: Information Management & Capacity Building	Nairobi, Kenya	jo_were@yahoo.com
	AJFAND		
9	Hon. Prof. Ruth K. Oniang'o, PhD - Editor-in-Chief,	African Journal of Food, Agriculture, Nutrition and Development (AJFAND), P.O. Box 29086 – 00625 Nairobi, Kenya	oniango@iconnect.co.ke

		FAO	
10	Imma Subirats – Information Management Officer	Office of Partnerships, Advocacy and Capacity Development, Food and Agriculture Organization of the United Nations, Viale delle Terme di Caracalla, 00153 Rome, Italy	Imma.Subirats@fao.org
11	Justin Chisenga – Knowledge and Information Management Officer	Regional Office for Africa, Food and Agriculture Organization of the United Nations, P.O. Box GP 1628, Accra, Ghana	Justin.Chisenga@fao.org
12	David Dion – Information and knowledge Management Office	Food and Agriculture Organization of the United Nations, Somalia Office, P.O. Box 30470 – 00100, Nairobi, Kenya	David.Dion@fao.org
13	Stephen Waswa – Database Management Officer	Food and Agriculture Organization of the United Nations, Somalia Office, P.O. Box 30470 – 00100, Nairobi, Kenya	Stephen.Waswa@fao.org
14	Evelyne Karanja – Information Officer	Food and Agriculture Organization of the United Nations, Somalia Office, P.O. Box 30470 – 00100, Nairobi, Kenya	Evelyne.Karanja@fao.org
15	Kenneth Muturi	Food and Agriculture Organization of the United Nations, Somalia Office, P.O. Box 30470 – 00100, Nairobi, Kenya	Kenneth.Muturi@fao.org
		UNIVERSIRY OF NAIROBI	
16	Rosemary Otando – Systems Librarian	University of Nairobi, P.O Box 30197-00100, **Nairobi, Kenya**	rosemary.otando@uonbi.ac.ke
17	Harun Mugo - Librarian	University of Nairobi, P.O Box 30197-00100, **Nairobi, Kenya**	hmugo@uonbi.ac.ke
		KALRO	
18	Dr. Felister Makini – Deputy Director General, Crops	Kenya Agricultural and Livestock Research Organization, P.O Box 57811,00200, Nairobi, Kenya	Felister.makini@kalro.org
19	Boniface Akuku – Manager, Information and Communication Technology	Kenya Agricultural and Livestock Research Organization, P.O Box 57811,00200, Nairobi, Kenya	Boniface.akuku@kalro.org
20	Richard Kedemi -	Kenya Agricultural and Livestock Research Organization, P.O Box 57811,00200, Nairobi, Kenya	Richard.kedemi@kalro.org

21	Samson Kamunya, PhD – Centre Director,	KALRO Tea Research Institute, P.O Box KALRO, Off Kericho-Nakuru Road,P.O Box 820 – 20200, Kericho, Kenya	Samson.kamunya@yahoo.com
22	Victor Langat – ICT Officer	KALRO Tea Research Institute, P.O Box KALRO, Off Kericho-Nakuru Road,P.O Box 820 – 20200 Kericho, Kenya	Victor.Langat@kalro.or
21	Joan Kamau – ICT Officer	KALRO, Coffee Research Institute,P.O Box 4-00232, Ruiru, Kenya	Joan.Kamau@kalro.org
22	Lilian Atieno – ICT Officer	KALRO, Sugar Research Institute,Kisumu-Miwani Road, P.O Box 44 – 40100,Kisumu, Kenya	atieno0074@gmail.com
23	Patrick Maina – Head Librarian	Kenya Agricultural and Livestock Research Organization, P.O Box 57811,00200, Nairobi, Kenya	Patrick.maina@kalro.org
23	Pauline Mburu - Librarian	Kenya Agricultural and Livestock Research Organization, P.O Box 57811,00200, Nairobi, Kenya	Pauline.mburu@kalro.org
24	Henry Wanyama – ICT officer	Kenya Agricultural and Livestock Research Organization, P.O Box 57811,00200, Nairobi, Kenya	Henry.wanyama@kalro.org
25	Grace Gitau - Librarian	Kenya Agricultural and Livestock Research Organization, P.O Box 57811,00200, Nairobi, Kenya	Grace.Gitau@kalro.org
26	Antony Biegon – System Librarian	Kenya Agricultural and Livestock Research Organization, P.O Box 57811,00200, Nairobi, Kenya	Antony.biegon@kalro.org
27	Geoffrey Kamau -	Kenya Agricultural and Livestock Research Organization, P.O Box 57811,00200, Nairobi, Kenya	Geoffrey.kamau@kalro.org
28	Margaret Makalo	Kenya Agricultural and Livestock Research Organization, P.O Box 57811,00200, Nairobi, Kenya	Margaret.Makalo@kalro.org

29	Irene Kimani	Kenya Agricultural and Livestock Research Organization, P.O Box 57811,00200, Nairobi, Kenya	Irene.Kimani@kalro.org
30	Elizabeth Simwa – Administrative Secretary	Kenya Agricultural and Livestock Research Organization, P.O Box 57811, 00200, Nairobi, Kenya	Elizabeth.simwa@kalro.org
KEFRI			
31	Paul Tuwei – Head, Knowledge Management	Kenya Forestry Research Institute, P.O Box 20421, Nairobi, Kenya	ptuwei@yahoo.com
32	Sheila Mbiru - Head Knowledge Management	Kenya Forestry Research Institute, Karura, **P. O. Box** 64636 - 00620, Mobil Plaza, Nairobi, Kenya	sheilambiru@gmail.com
33	Fanuel Oyabi - Librarian	Kenya Forestry Research Institute, P.O Box 20421, Nairobi, Kenya	foaybi@kefri.org
34	Joseph Koech – Head, Librarian	Kenya Forestry Research Institute, P.O Box 20421, Nairobi, Kenya	jgkoech@yahoo.com jgkoeach@gmail.com
35	Stephen Gitonga - Documentalist	Kenya Forestry Research Institute, P.O Box 20421, Nairobi, Kenya	sgitonga@kefri.org
MINISTRY OF AGRICULTURE			
36	Grace Agili - Director	Ministry of Agriculture, Agricultural Information Resource Centre, P.O Box 66730-00800, Nairobi Kenya	graceagili@yahoo.com graceagili@gmail.com
JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY (JKUAT)			
36	Prof. Mabel Imbuga – Vice Chancellor	Jomo Kenyatta University of Agriculture and Technology, P.O Box 62000-00200 Nairobi	vc@jkuat.ac.ke
37	Dr. Roselyne Mang'era – University Librarian	Jomo Kenyatta University of Agriculture and Technology, P.O Box 62000-00200 Nairobi	rmangira@jkuat.ac.ke rtmangira@gmail.com
38	Richard Omolo Madigo	Jomo Kenyatta University of Agriculture and Technology Libary, P.O Box 62000-00200 Nairobi	omolor@library.jkuat,ca.ke

ILRI			
39	Alan Orth - Linux Systems Administrator	International Livestock Research Institute (ILRI) Kenya, P.O. Box 30709 - 00100 Nairobi, Kenya	a.orth@cgiar.org
NGOs			
40	Joseph Lwannia - National Coordinator	Rural AgriData, P O Box 205 - 50410, Busia, Kenya	lwannia.joseph@yahoo.com
41	Angela Okune - Co-Coordinator	Open and Collaborative Science in Development Network - iHub, Nairobi, Kenya	angela@ihub.co.ke
42	Paul Mwangia - Coordinator	Rural Urban Community	Sshj_laikipia@yahoo.com
43	Francis Kevengo Keya – Coodinator	ELI (Emerging Leadership Initiatives), Nairobi, Kenya	fkevogo@gmail.com
44	Simon Gicaci Macharia – Executive Director	Mkoko-Teni Development Organization, P.O. Box 2244 – 10100 Nairobi, Kenya. (Mobile: 0721205166)	Mado.organization@gamil.com