



Kenya Agriculture and Livestock Research Organisation

Open Data and its relevance in agricultural research: the case of ASAL APRP

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Outline

- 1. Open Data Concept**
- 2. Open Data**
- 3. Importance of Open Data in Agricultural Research**
- 4. Open Data for ASAL-APRP**
- 5. Methodology**
- 6. Sensitization workshop**
- 7. Outcomes of sensitization workshop**
- 8. Global and national levels concerns**
- 9. Action plan for implementing Open data research in ASAL-APRP**
- 10. Results and Discussion**
- 11. Recommendations and Conclusion**
- 12. Acknowledgement**



Open Data Concept

The concept of open Data first emerged in the scientific community with the establishment of the World Data Centres (WDC) in 1957.

The objective of the WDCs was to:

To minimize the risk of data loss and

To maximize data accessibility.



What is Open Data?

Information and data that is:

- Publically available
- Fully discoverable
- Timely and useable

Open Data Principles

- Openness, flexibility and transparency
- Legal conformity and protection of Intellectual Property Rights
- Formal responsibility and professionalism
- Interoperability, quality and security
- Efficiency, accountability, and sustainability

(Nairobi Data Principles, 2014), (The Royal Society, 2012).



Importance of Open Data in Agricultural Research

Open data has the ability to:

- Strengthen research management systems
- link agricultural scientific information and knowledge to developers
- Enable new sciences such as:
 - data visualization and
 - business analytics for sustainable development



Open Data for ASAL-APRP

This initiative started mid last year (2016)

Main objective was to:

- Promote the use of open data in ASAL-APRP
- Develop open data policies and strategies
- Explore the technical considerations and
- Document the experiences in implementing Open Data concept.



Methodology

A review of literature was conducted on; The role and Benefits of Open Data in agricultural sector and,

A framework to conduct Open Data was developed,

Main themes;

- (1) Sensitization of ASAL-APRP managers, scientists and partners on open data
- (2) Data mining, business analytics and visualization
- (3) Application Programming Interfaces (APIs) and Mobile development
- (4) Commercialization of data and innovations in Agricultural research



Sensitization Workshop

54 ASAL-APRP Managers, Scientist and Partners were sensitized on Open Data

Topics covered included:

- Concepts, principles, data management and best practices
- Knowledge management, role of ICTs
- Information repackaging

Main objective was to:

- Establish the underlying reasons, opinions, and motivations of participants to adopt or not adopt open data concepts.



Outcomes of Sensitization Workshop

Participants at the workshop were willing to participate in open data. However,

The major threat to adoption was:

1. Plagiarism and
2. Perceived abuse of open data

Way forward

Participants were willing to adopt open data if guided by institutional and national policies, with condition that data repositories are managed and owned by the ASAL-APRP or KALRO (Workshop proceedings not published, 2016).



Global and national levels concerns

- Most research data should be open
- Data from publicly funded projects should be open

To address the above concerns

ASAL-APRP research data collected was:

- Published and made available for use and reuse
- Controlled access through the ASAL Knowledge Hub was maintained
- An action plan was developed to implement Open Data Research



Action plan for implementing Open Data research

Engage with the Open data community within the ASAL-APRP

- Evaluate each project and identify Open Data activities
- Document the historical growth, future strategies of each project
- Identify data gaps, challenges in data management and propose solutions

Conduct Open Data strategies for each project:

- Data mining activities and develop business analytics
- Develop relevant APIs and mobile solutions

Make research data more discoverable:

- Develop policies and strategies



Results and discussions

3 ASAL APRP centres; Naivasha, Katumani and Kiboko were evaluated between October and December 2016

Out of the 26 ASAL-APRP activities 3 were evaluated, data collected for each and documented;

- (1) Poultry improvement at Naivasha,
- (2) Dryland seeds at Katumani and
- (3) Range pastures improvement at Kiboko.

Over 30 datasets on these three activities were collected and published on the ASAL Knowledge Hub, (<https://asalkhub.kalro.org>)



Results and discussions cont.

Open data was viewed to enable better access to accurate, timely information for individuals, smallholder farmers, businesses, researchers and policy-makers alike.

Major challenges were related to; data management, licensing, interoperability and exploitation of the growing ASAL research data.

There were no policies to govern practices and ethics around closed, shared and open data.

As part of innovation as a strategy three mobile technologies were developed; KALRO Chicken, Dryland crops and Range pasture seed.



Recommendations

There is need for:

Advocacy for Open Data research in KALRO

Rewarding mechanism put in place that is sustainable and acceptable to all stakeholders

A deliberate strategy to change the mindset of data custodians to;

- 1. Participate in data management**
- 2. Embrace the principles of open data**
- 3. Mitigate tradition and culture to keeping data private**

Conclusion

The benefits of open data are largely accrued to those with the resources to access data and the capacities to analyse it.



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END

Thank You For Listening

God Bless You Always

