Understanding the EO needs of Agriculture and Water Management Institutions across the African Continent

Michael Wellington

Digital Earth Africa (Geoscience Australia)
Information for Agriculture, Food & Water Security

- **Digital Earth Africa**, Association for Strengthening Agricultural Research in Southern Africa (ASARECA), and Centre for Coordination of Agricultural Research and Development for Southern Africa (CCARDESA), supported by the Australian Centre for International Agricultural Research (ACIAR) working to:

  - support consultations to understand the **needs, opportunities** and **gaps** for using Earth observations (EO)-based services;
  
  - develop a **Roadmap** for Digital Earth Africa (DE Africa) to **deliver services** tailored to these needs to improve productivity and build resilience.
Consultations

- Initial consultation and ‘deep dive’ workshops conducted in:
  - Botswana
  - Ethiopia
  - Kenya
  - Rwanda
  - South Africa
  - Uganda
Findings

- There is a genuine interest in connecting to farmers, but it will need to be through intermediaries in many cases.

- There is unmet demand for training and capacity development among NGOs and service organizations.

- Products need give accessible and relevant agricultural information: e.g. crop type maps, yield estimates, water use requirements.
Pathways to impact

Digital Earth Africa

Outlines
- Decision support and data processing
  - Crop-type maps, yield forecasts
- Decision visualisation, interpretable dashboards
  - Soil moisture status, NDVI
- Decision processes and policy implementation
  - Insurance, land use planning

Extending agencies

Universities
NGOs
Gov't Depts
Digital Earth Africa
Private Sector
Extension Agencies
Ministries
Digital Earth Africa
Gov't Depts
Digital Earth Africa
Extension Agencies
NGOs
Identified opportunities

- Technical products and services
  - Irrigated area mapping
  - Climate & crop production dashboard
  - Early warning systems – pests & diseases

- Capacity development products and services
  - Support for software developers
  - Short video series on data interaction
# Identified opportunities

<table>
<thead>
<tr>
<th>Products and Services</th>
<th>Description</th>
<th>Connecting to smallholder farmers</th>
<th>Potential Partners</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>DE Africa for Developers</td>
<td>Opportunities were identified to leverage EO data in private service provision and connecting to app developers.</td>
<td>Engage interested parties, such as software and app developers, from the private sector and seek strategic engagement with extension agencies to ensure end-user needs are being considered.</td>
<td>Private sector</td>
<td>Inactive: ideated but not yet formally planned.</td>
</tr>
</tbody>
</table>
Next steps

1. Identify relevant user groups to participate in development of a broadly defined product/service.
   - Stakeholders: Farmers’ orgs, private sector, ag depts/ministries, NGOs, and extension services

2. Define the decision point, scope the product/service (define the bounds).
   - Stakeholders: Relevant user groups and DE Africa

3. Identify and implement a relevant use case (e.g., site/region) based on user group interests.
   - Stakeholders: Relevant user groups and DE Africa

4. Provide training for implementing the use case, seek feedback from user groups.
   - Stakeholders: Relevant user groups and DE Africa

5. Revise product/service based on feedback, scale to other locations.
   - Stakeholders: Relevant user groups and DE Africa

6. Communicate product/service to broader audience, seek feedback and revise as necessary.
   - Stakeholders: Relevant user groups, ag depts/ministries, private sector, NGOs, extension services, and DE Africa
Partners and Affiliations

Australian Government
Australian Centre for International Agricultural Research

ACIAR
aciar.gov.au

Geoscience Australia

Australian Government
Department of Foreign Affairs and Trade

ASARECA
Transforming Agriculture for Improved Livelihoods

CCARDESA
Centre for Coordination of Agricultural Research and Development for Southern Africa

THE LEONA M. AND HARRY B.
HELMESLEY CHARITABLE TRUST

science & innovation
Department Science and Innovation
REPUBLIC OF SOUTH AFRICA

Digital Earth
AFRICA

GEO GROUP ON
EARTH OBSERVATIONS