



Digital Earth
AFRICA

Quarterly Progress Report

January - March 2023

Contents

- 01.** Highlights
- 02.** Governance
- 03.** Annual Plan: Strategic Priorities
- 04.** 2023 Outcomes and Activities
- 05.** Sustainment
- 06.** Diversity and Inclusion
- 07.** Platform and Data
- 08.** Services, Datasets and Analysis Tools
- 09.** Capacity Development
- 10.** Events and Engagements
- 11.** Growing User Community
- 12.** Latest Use Cases and User Stories
- 13.** Projects with Implementing Partners
- 14.** Africa-Australia Engagement
- 15.** Communications Impact



About Digital Earth Africa

Our vision

DE Africa will provide a routine, reliable and operational service, using Earth observations to deliver decision-ready products enabling policy makers, scientists, the private sector and civil society to address social, environmental and economic changes on the continent and develop an ecosystem for innovation across sectors.

Our mission

DE Africa will process openly accessible and freely available data to produce decision-ready products. Working closely with the AfriGEO community, DE Africa will be responsive to the information needs, challenges and priorities of the African continent. DE Africa will leverage and build on existing capacity to enable the use of Earth observations to address key challenges across the continent.

About this report

This Quarterly Progress Report provides a snapshot of DE Africa Phase II progress made between January and March 2023, as aligned with DE Africa's 2023 Annual Work Plan.



Open and Free Data

- Interoperability
- Privacy and Integrity



Operational Service

- Continental-scale
- Sustainable
- Domain expertise



Accountability and transparency

- Responsive to African priorities
- Agile, nimble and actions oriented



Diversity and inclusion

- Multi-sector perspectives
- Span data communities
- Foster collaboration

The governance of DE Africa is guided by several key principles

Program Goals



Livelihood strengthening

EO data will support more informed decision making at government, sectoral and other levels, contributing to direct and indirect benefits for individuals and communities.



Economic development and job creation

Through access to data for commercial products and services development, DE Africa will support new business development and employment opportunities.



Digital transformation is advanced

Through industry uptake and innovations, DE Africa will help to fuel the ongoing evolution of the digital economy in Africa.



Development activities are more effective

Support enhanced understanding of development challenges and solutions, and in so doing, strengthen collective impact and ability to assess progress towards national priorities, African Union's Agenda 2063 and the UN SDGs

January - March 2023 Highlights

Governance successes

- Governing Board 6 hosted in January.
- 2023 Annual Plan, Strategy and 2022 Annual Report Endorsed
- TAC 14 hosted in February

Sustainment

- Funding approved for Phase III of Digital Earth Africa 2023-2026, with thanks to the Helmsley Charitable Trust.



Science

- NDVI Mean and Anomalies Continental service released
- WoFS 2022 annual product processed and Quality Checked
- ESA Worldcover 2021 LULC added and Quality Checked
- Wetland workflow first draft complete
- New notebook to load iSDA (soil data for Africa)

Capacity Development

- Three new online courses.
- YouthMapper Technical challenge: 4 projects continuing until May 2023.
- ACIAR project: Ethiopia, Botswana, South Africa, Rwanda and Uganda
- State University of Zanzibar: curriculum under development.

Diversity and Inclusion

- Technical challenge winners announced with YouthMappers and African Women in GIS.
- Engagement with Commonwealth as part of the Dissemination of the Braille Digital Infrastructure Divide

Platform and Data

- Indexing of ISDA soil data enabled
- Updates to monitoring tools.
- Prod and dev databases synced
- Created coastlines STAC metadata.

Partnerships

- Implementing Partner Workshop was held with all IP's in Ghana February
- UNECA agreed to feature DE Africa in communications
- DE Africa to support GEO at NAP Expo

Governance



The African Leadership team was proud to fully take on the governance of the program by hosting the Governing Board Meeting 6 and Technical Advisory Committee Meeting 14.

The Governing Board Meeting 6 was held on January 17th and chaired by Minister Ingabire, key decisions were made approving the [2022 Annual Report](#) and [2023 Annual Plan](#), as well as the approval of a Kenya Satellite Office.

In February, TAC-14 was successfully held, with the Digital Earth Africa team presenting program highlights for 2022 and the approved 2023 work plan and targets. The committee made important decisions regarding its terms of reference review process and received valuable feedback from the Governing Board.

During the quarter, independent evaluators from Strategies Development Group engaged with the DE Africa team and stakeholders to assess performance from 2019 to present against the Monitoring, Evaluation, and Learning framework. The final results will be submitted to our funding partners and shared by July 2023.

The next Governing Board meeting is scheduled for June 6th, while the next Technical Advisory Committee meeting is set for 13th of June 2023.

Digital Earth Africa – Jan - March 2023



2023 Annual Plan - Strategic Priorities

The Governing Board approved the following Strategic Priorities for the year:

- **Embed in Africa:** The DE Africa team and Implementing Partners will embed DE Africa products and services to support regional activities across Africa. The DE Africa team shall create a roadmap for country engagements that will ensure consistent support for countries.
- **Ensure our sustainability:** We shall strengthen the roles of the Technical Advisory Committee and Governing Board to ensure sustainable governance in the future. We maintain our commitment to delivering on the strategic goals of our funding partners.
- **Empower Climate Action:** We aim to empower climate action by developing in-country knowledge and skills. We will ensure decision-ready products are well placed to enable policymakers, scientists, the private sector and civil society to better address issues of climate adaptation, mitigation and reporting.
- **Enhance Community Engagement:** We need to understand our users, and their needs and provide excellent support that increases use of the platform. We must continue to capture the impact our users have and increase the visibility of the champions of the platform.

2023 Outcomes and Activities



The Governing Board approved the following outcomes and activities for the year:

Sustainment

- 1.1. Strong and effective ***governance and program operations***
- 1.2. Efficient and effective pan-African ***program delivery***
- 1.3. Supportive stakeholders and enabling ***partnerships***
- 1.4. Sustainable business model developed and ***future funding*** secured
- 1.5. World leading ***technical capability***, responsive to African priorities

Uptake and impact

- 1.1. African ***government/ country level*** engagement and support
- 1.2. DE Africa services customised to meet diverse in-country ***user needs***
- 1.3. Effective ***capacity building*** targeting diverse cross-sector user groups
- 1.4. Rapid continental wide growth in DE Africa services ***uptake and usage***
- 1.5. Diverse, cross-sector ***use cases and impact studies***, demonstrating DE Africa's social, environmental and economic value

Sustainment

The Leona M. and Harry B Helmsley Charitable Trust has confirmed its commitment to support Phase III from 2023 to 2026, ensuring that Digital Earth Africa can continue to develop and expand its capabilities. The team is appreciative of the support and commitment from the Helmsley Charitable Trust to extend its financial support.

With this commitment, Digital Earth Africa has reached out to its other partners for their ongoing support in beyond 2023. We look forward to reporting on new commitments in the coming months, from Amazon Web Services and Esri.

Furthermore, DE Africa has submitted proposals to Australian DFAT and International Institute of Tropical Agriculture (IITA) and is also part of a consortium submission to the European Commission. If successful, these projects will support additional funding for DE Africa's operations, which will enable the program to continue delivering valuable services and impact across the African continent.



Diversity and inclusion

During this quarter the work of the Diversity and Inclusion Working Group has continued to promote diversity, equity, and inclusion across DE Africa's operations.

Significant achievements during the past quarter included the successful support of African Women in GIS, resulting in two winners from South Africa and Nigeria in the technical challenge.

Additionally, the YouthMappers Technical Challenge saw four groups from universities from Malawi, Sierra Leone, Tanzania and Uganda being selected. This challenge provided an opportunity for young and talented individuals to showcase their skills and creativity in using Earth observation.

These Technical Challenges show DE Africa is creating a platform for all interested individuals to participate, regardless of their background or level of experience.

At the end of the quarter, DE Africa presented at the Dissemination of the Braille Digital Infrastructure Divide which discussed how to expand infrastructure using various parameters including access, affordability and performance. Furthermore, it assesses the gender digital divide in relation to digital infrastructure for sustainable and inclusive development.



The announcement of the Youth Mappers Technical Challenge winners



Platform and Data

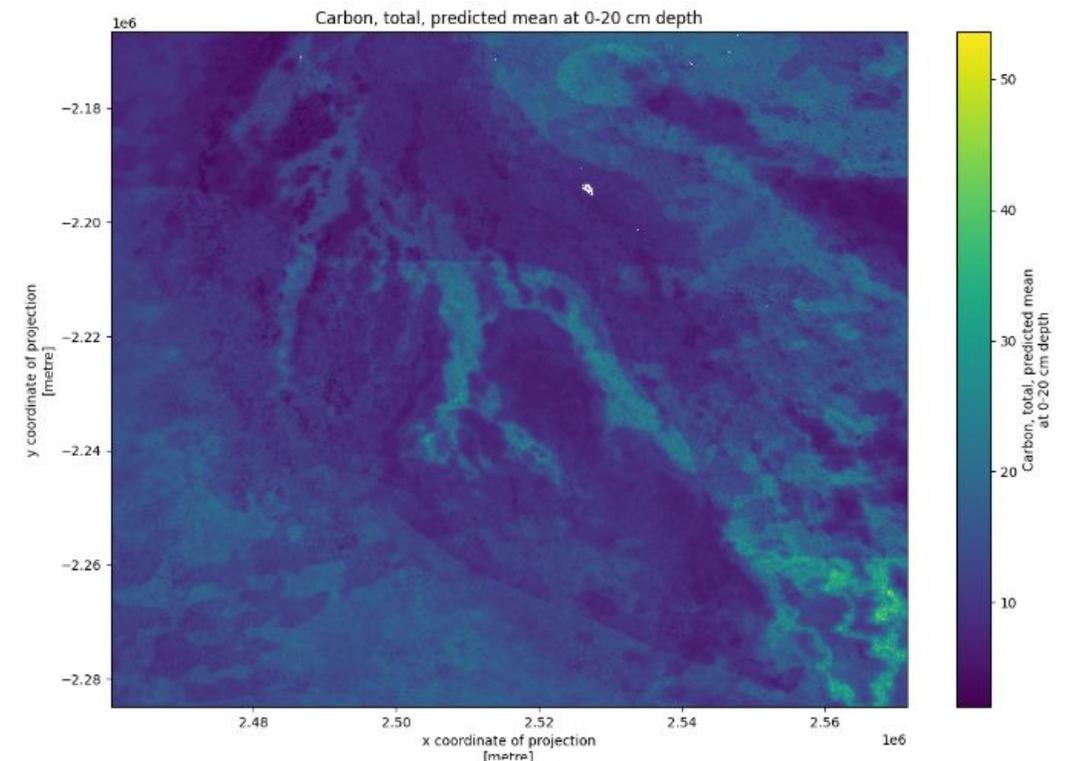
Digital Earth Africa has been working on a range of ongoing activities this quarter with Kartoza and Sinergise providing important contributions to the platform's ongoing development.

The team completed several upgrades and improvements with the Explorer and OWS platforms both upgraded. Other completed activities included generating an annual GeoMAD for S2, and supporting the generation of provisional rolling S2 GeoMAD product.

The team also made important contributions to the management of data pipelines, with STAC Metadata for Coastlines V4 and ESA World Cover 2021 both completed. The team resolved issues with the S2 Gap Report and displaying IO Land Use/Land Cover on OWS/Maps.

Through the support of Amazon Web Services' Open Data Initiative Digital Earth Africa now houses 3.5 PB of data.

During this quarter, the Platform team and its partners completed work reflecting its ongoing commitment to providing cutting-edge geospatial data and support to its users.



The Digital Earth Africa platform allows user to now load, inspect and analyse soil data

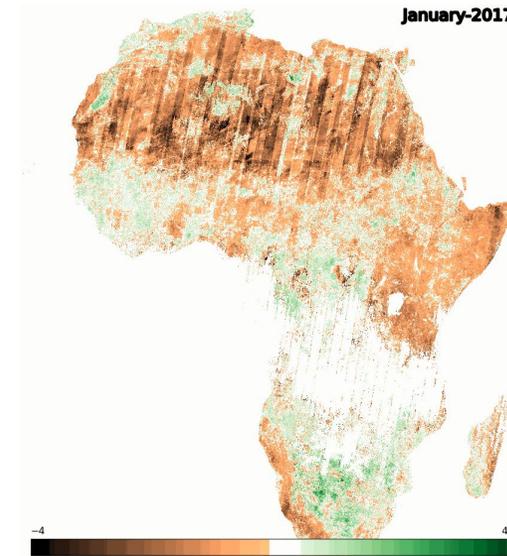
Services, datasets and analysis tools

In this quarter, the Science Team worked on various updates and continued developments of continental services and analysis tools. Some of the work by the team included::

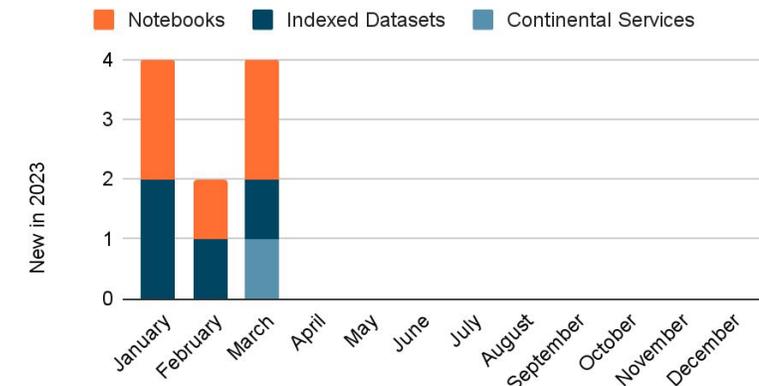
- Detailed work plans for the climate action toolkit
- Scoping new data streams
- Updating Jupyter notebooks
- Quality checking 2022 annual product updates
- Preparation and release of new continental service (NDVI Mean and Anomalies)

The team also focused on indexing and quality control of various external datasets such as the iSDA soil and 2021 ESA Land Use Land Cover, and internal datasets such as the WoFS 2022 annual update. New notebooks were created for loading soil and population data, and existing ones updated for improved filtering of Sentinel 2 data.

Finally the team made progress on developing new continental services and workflows; a new service the Mean Normalized Difference Vegetation Index (NDVI) and Anomalies is now operational. These data provide a monthly estimate of vegetation health, and how this compares to the long-term average conditions can provide valuable insights for decision-making in Crop Monitoring, Drought and Water Management, Forest Monitoring, and Land Cover Change Detection.



New Datasets, Services and Notebooks



Capacity Development

The user community highlights for the quarter included Digital Earth Africa's attendance at various events such as the Information for Agriculture, Food and Water Security (IAFWS) engagements in Botswana, Ethiopia, Kenya, Rwanda, Uganda, and South Africa.

Additionally, Digital Earth Africa participated in a national land cover mapping event in Rwanda and met with the University of Ghana, which expressed interest in using the platform for their work in coastal monitoring. An engagement was held with the University of Johannesburg in South Africa, with Dr Kenneth Mubea introducing the platform to over 50 students and faculty.

These engagements show Digital Earth Africa's commitment to working with users and stakeholders to ensure the platform meets their needs and remains relevant. The feedback and insights gathered from these engagements will continue to inform and improve Digital Earth Africa's operations and capabilities.



Engagement with University of Johannesburg



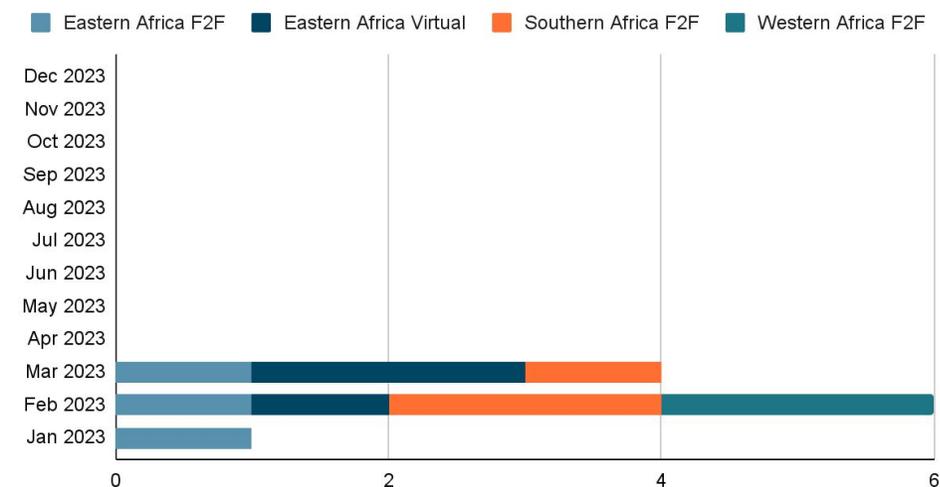
IAFWS Project in Pretoria with Director-General of CCARDESA, DE Africa Managing Director, and Australian Deputy High Commissioner to Pretoria.

Events and Engagements

During the first quarter, DE Africa was active across the continent. The team conducted a range of user engagement activities, including the Information for Agriculture and Water Security (IAFWS) Deep Dive Workshops in multiple countries, the leadership team visited an Implementing Partner, and participated in a conference in Pretoria. Below is snapshot of the engagements the team participated in.

Date	Face to Face Engagements	Country
Jan - March	Information for Agriculture, Water Security (IAFWS) Deep Dive Workshops	Addis Ababa, Ethiopia - 17 Jan Kampala, Uganda - 8 Feb Pretoria, South Africa - 14 Feb Nairobi, Kenya - 27 Feb Kigali, Rwanda - 2 March Gaborone, Botswana - 6 Mar
30 Jan - 2 Feb	Implementing Partner Visit at CSE	Dakar, Senegal
17 Feb	University of Johannesburg	Johannesburg, South Africa
6 - 9 Feb	2023 Implementing Partner Kick-Off	Accra, Ghana
13 - 15 March	Transforming Irrigation in Southern Africa Conference	Pretoria, South Africa

User Engagement Activities in Geographic Areas



Growing user community

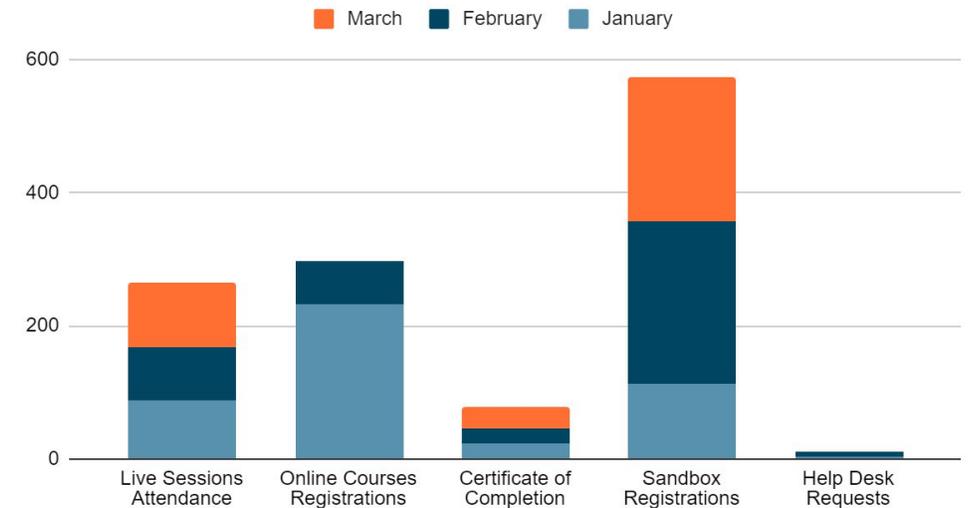
Digital Earth Africa's Live Sessions continued to be a popular and successful way to engage with the user community during the quarter, with 12 sessions held and 167 participants attending. The sessions, have now reached a total of 123 recordings are available on YouTube,

The user community for Digital Earth Africa has experienced significant user growth and engagement during the quarter. In January, the Water Resources course in French was released on the DE Africa Learning Platform, and other releases during the quarter included the Agriculture and Food Security Courses in French and English. These courses have been well-received, as evidenced by a remarkable 24% increase in online course registrations.

Moreover, user engagement extends beyond the courses, with a 13% rise in Sandbox Registrations, indicating an increasing interest in exploring and utilising the platform's capabilities. The growing popularity of Digital Earth Africa is further evident in the number of unique DE Africa Maps Users, which has reached an impressive 15,733 individuals.

This user community expansion demonstrates the platform's effectiveness in providing valuable resources and insights to a diverse audience interested in water resources, agriculture, and other related fields.

All time User Community



Latest use case studies and user stories

DE Africa is actively engaged in various use cases and user stories that highlight the platform's impact and potential. This quarter the following stories and use cases have been shared:

- Meet Victoria Neema - One of our inspiring women in STEM - Victoria is a Junior Developer who supports the DE Africa mapping platform and assists the DE Africa user community.
- Meet Khairiya Mudrik Masoud - Empowering the youth to solve the problems of tomorrow with Earth observation technology
- Working towards water and food security in Africa - Consultation workshops for the Information for Agriculture, Food and Water Security Project

Uses cases in development

- Elephant habitat suitability, Namibia
- Food security - SARIMAX/University of Johannesburg
- Somalia National Statistical Office use of Earth observation data.
- Profiles of Youth Mappers Technical Challenge winners
- Profiles of African Women in GIS Technical Challenge Winners



Images from the user story of Khairiya Mudrik Masoud who is empowering the youth to solve the problems of tomorrow with Earth observation technology of today

Projects with Implementing Partners

DE Africa continues to engage with partners from across the African continent, forging new partnerships while renewing existing ones.

During the quarter each of the Implementing Partners completed their remaining activities from 2022 that had been delayed during the handover from the Establishment team to the Africa based team.

In January, the leadership team visited Centre de Suivi Ecologique (CSE) and met with Prof Cheikh Mbow to discuss areas of continued collaboration in 2023 and beyond.

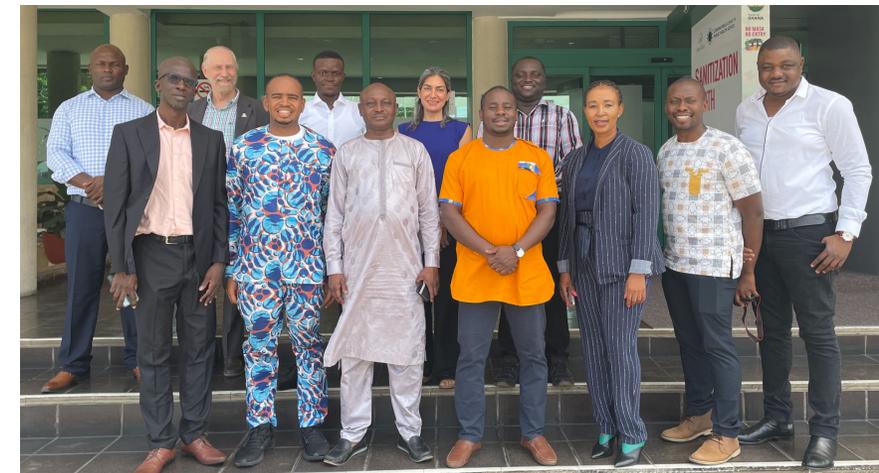
In February, the DE Africa team hosted it's Implementing Partners in Accra, Ghana for the 2023 Activity Kick Off Workshop. Partners are in the final stages of agreeing budget and activities for the year.



Digital Earth Africa Leadership Team visit to CSE in Dakar, Senegal

Partner	2023 Planned Activity
AFRIGIST	<ul style="list-style-type: none"> Face to Face Capacity Development in Nigeria and Benin Republic
AGRHYMET	<ul style="list-style-type: none"> Upscaling crop Extend and Types mapping methodology
CSE	<ul style="list-style-type: none"> West African coastline monitoring using the DE Africa Coastline tool Monitoring of surface water dynamics/flood risks and water quality
OSS	<ul style="list-style-type: none"> Assessment of land degradation in the Sahel and Sahara regions
RCMRD	<ul style="list-style-type: none"> Coastal Erosion Mapping Wetlands Monitoring and Assessments

Digital Earth Africa – Jan - March 2023



DE Africa Team and Implementing Partner Focal Points in Accra, Ghana

Projects with Aligned Programs

DE Africa continues to engage with partners from across the African continent, forging new partnerships while renewing existing ones.

Notably, DE Africa is partnering with the Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA) in the Information for Agriculture, Food and Water Security project.

DE Africa has also hosted workshops with the Global Partnership for Sustainable Development Data (GPSDD) to support Somalia Engagement on the Use of Earth Observation Data. In addition, DE Africa conducted land cover mapping training to support food security in Rwanda and Mozambique in partnership with the Food and Agriculture Organization (FAO) and Frontier SI.

These partnerships reflect DE Africa's dedication to collaborating with stakeholders across the continent to support earth observation data applications and sustainable development initiatives.



DE Africa: Dr. Lisa Rebelo, Zviko Mudimu, and Edward Boamah engagement with University of Ghana and GMES and Africa Consortium on Coastlines



Capacity building of Somalia NSO in collaboration with GPSDD.

Africa-Australia engagement

Digital Earth Africa has maintained a strong collaboration with Australia during the last quarter, particularly through engagements with the Department of Foreign Affairs and Trade (DFAT). In March, the DE Africa leadership team welcomed Dr. Lisa Hall and Dr Michael Wellington, from Geoscience Australia for a leadership meeting to discuss plans for Phase III.

The collaborative DE Africa team presented at the 2023 Regional Climate Smart Agriculture Policy Dialogue which was supported by Australian Centre for International Agricultural Research workshop in Pretoria that was hosted by FANRPAN.

The DE Africa team hosted Dr Neil Lazarow and Dr Leah Ndungu from Australian Centre for International Agricultural Research and shared an update on progress of the IAFWS project and preliminary findings.

During the same visit, the DE Africa leadership team met with the newly appointed Australian High Commissioner to South Africa, H.E. Ms Tegan Brink. This meeting provided an opportunity to discuss potential areas of partnership between DE Africa and Australia High Commission to South Africa.

Overall, the collaboration with Australia has been a crucial part of DE Africa's efforts to continue to build on strength of the establishment phase and will be important into scaling during Phase III.



Digital Earth Africa attending the 2023 Regional Climate Smart Agriculture Policy Dialogue with Australian High Commissioner to South Africa H.E. Ms Tegan Brink



Dr Neil Lazarow and Dr Leah Ndungu visiting the DE Africa office in Pretoria

Communications Impact

The platform has a growing presence on various social media platforms, with 5,922 followers on Twitter and 4,991 followers on LinkedIn. The growing engagement on various communications platform helps to extend the reach of DE Africa’s messages, updates and successes to a global audience interested in geospatial data, technology and applications.

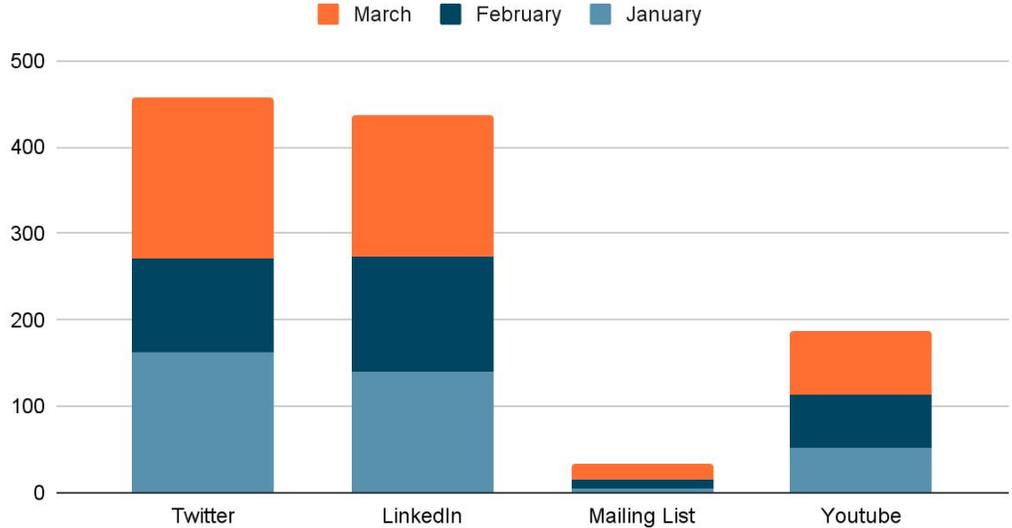
In addition, DE Africa’s website is also attracting significant traffic, with top user locations from Kenya, Nigeria, Rwanda, South Africa, the United States, and France. This global reach is indicative of the platform’s growing reputation and relevance in the field of geospatial data and analysis.

The DE Africa team is committed to using effective communication channels and strategies to engage stakeholders, partners and the wider public. By sharing information on the platform’s developments, events, and achievements we ensure that everyone is kept up to date on the latest news and insights.

Communication Platform Users



New Followers on Communications Platforms



Top 5 Visitor locations (% users)

United States (12%), Kenya (10%), South Africa (6%), Nigeria (5%), Ghana (4%)

Acknowledgements





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Connect with us

- **Website:** <https://www.digitalearthafrica.org>
- **Maps:** <https://maps.digitalearth.africa>
- **Learning Platform:** <https://learn.digitalearthafrica.org>
- **User guide:** <https://docs.digitalearthafrica.org>

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