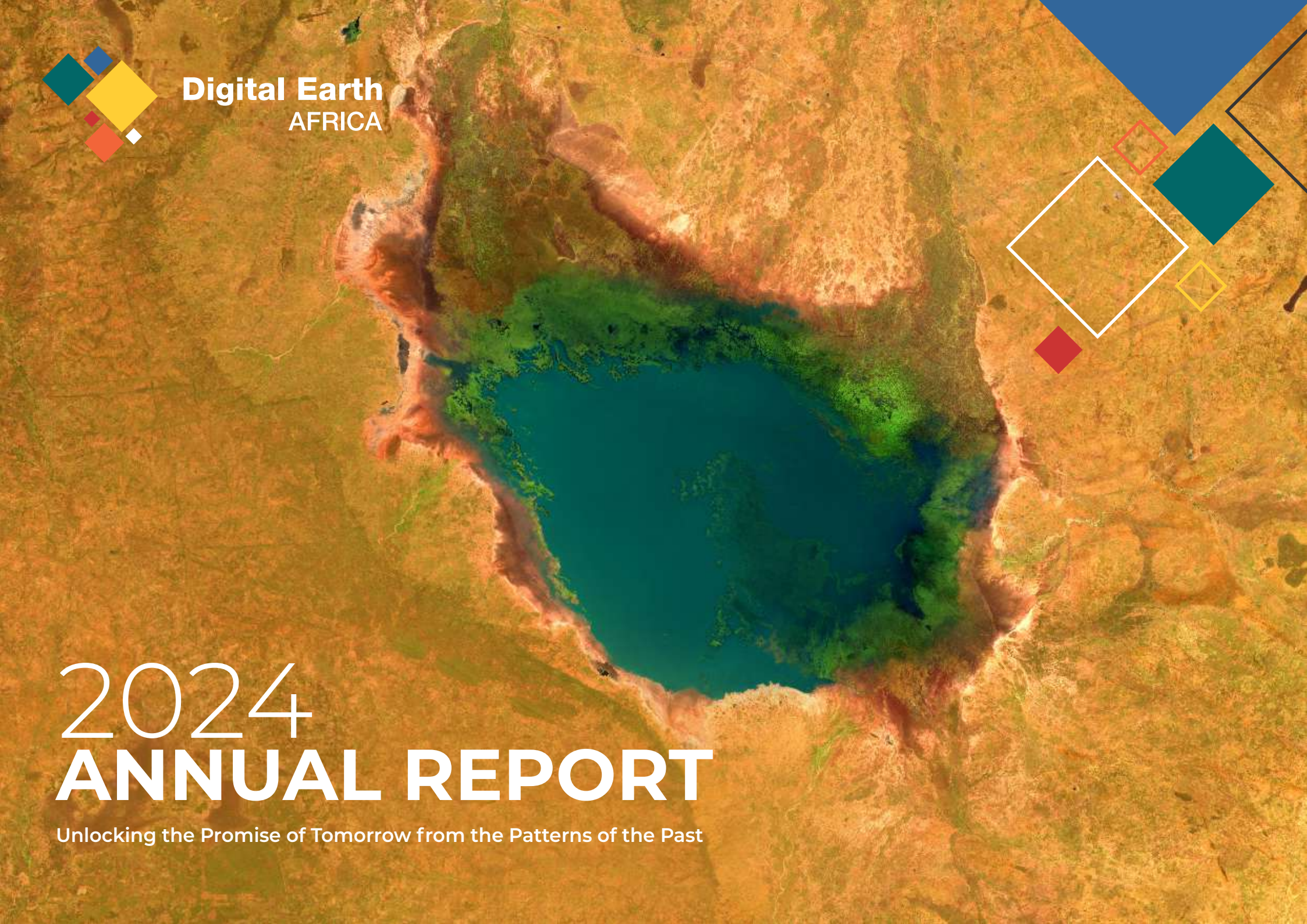
Digital Earth
AFRICA
2024
ANNUAL REPORT
Unlocking the Promise of Tomorrow from the Patterns of the Past

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About this Annual Report

This Annual Report covers the period 1 January 2024 to 31 December 2024. The Annual Report has been prepared by the DE Africa Leadership Team for the DE Africa Interim Advisory Board, Technical Advisory Committee, funding partners, and other stakeholders. The Report provides a summary of progress made through 2024.

Version Date: **25 February 2025**

Message from Digital Earth Africa Program Management Office

Foreword

2024 has been a pivotal year for Digital Earth Africa, with a strong focus on building new partnerships across the continent while strengthening existing ones, expanding our user base, and advancing the use of Earth observation data and technologies. It has been a year of growth, innovation, and impactful change, and I am proud of all that we have accomplished.

A key achievement of 2024 has been the increased scale and reach of our services. With new partnerships and collaborations, we've successfully enabled governments, NGOs, and local communities to harness geospatial data in tackling pressing challenges such as climate change, agriculture management, and post disaster response.

Our commitment to training and capacity-building has continued to empower local teams, ensuring that our technologies are fully harnessed by the communities that need them most. This year, we took significant strides in enhancing the capacity and skills of users across eight African countries, through targeted training programs and outreach. Empowering emerging African leaders with the tools to leverage data has always been central to our mission, and I am thrilled with the enthusiastic adoption of these skills at local, national, and regional levels.

Digital Earth Africa has continued to build on its foundational goals, expanding the accessibility of satellite data and Earth observation tools for decision-making across the African continent. In 2024, we launched our innovative new DE Africa Waterbodies Monitoring Service that will continue to strengthen and enable Africa institutions and communities to harness the power of Earth observation data and services for better decision making.

We are proud of the achievements made this year and are excited for the opportunities that 2025 will bring. None of this would have been possible without the amazing support we have received from our partners and stakeholders. Thank you to everyone who has contributed to Digital Earth Africa's journey so far.

Looking ahead to 2025, we are committed to scaling our impact further and working together to continue to fully realise the potential of Digital Earth Africa for the benefit of everyone across the continent. We will continue to evolve and innovate, always with the goal of equipping Africa with the digital tools necessary to manage resources sustainably, address pressing challenges, and realize its vast potential.

Together, we are shaping a brighter, more sustainable future for Africa, powered by data and technology.

Sincerely,
Dr Lisa-Maria Rebelo
Managing Director (Acting), Digital Earth Africa

Message from Interim Host of Program Management Office

Foreword

RIIS, Africa's largest innovation-focused advisory firm on the African continent and a longstanding, active proponent of Africa's space ecosystem, was appointed as the interim host for the Digital Earth Africa Program Management Office (PMO) in March 2024.

However, our knowledge of Digital Earth Africa precedes our direct involvement with the program. As with many other actors within Africa's innovation and development ecosystems, we were excited by the potential of Digital Earth Africa and its compelling vision – to equip Africans with accessible, analysis-ready data to help solve some of our continent's most pressing challenges. No other platform provides such rich, consistent and specifically tailored Earth observation data about our continent.

That perceived potential is being realised across the continent as the Digital Earth Africa program matures and expands, engaging with high-level decision-makers and individuals alike, to support real-world impact.

Our appointment as the Digital Earth Africa interim host has provided us with an incredible opportunity to play an active role in supporting the Digital Earth Africa PMO, governing bodies, implementing partners and more generally, the Digital Earth Africa program in reaching its considerable goals for 2024. It has been a pleasure working with Digital Earth Africa's PMO and flying the flag high for Digital Earth Africa throughout our interactions across the continent (and beyond).

We are strongly convinced of Digital Earth Africa's ability to further embed and drive impact across the African continent in 2025, and we are honoured to continue playing a supportive role throughout the year.

Sincerely,
Kuda Mukova
CEO, RIIS

Executive Summary

Digital Earth Africa (DE Africa) is the only Earth observation platform offering free, open-source data and products for the entire African continent, and is now the world's largest Open Data Cube implementation.

With support from our funding partners The Leona M. and Harry B. Helmsley Charitable Trust and the Australian Government Department of Foreign Affairs and Trade, DE Africa is on track to improve the lives of African people by providing planners and policy makers with tailored Earth observation information to support better decision making and enhance sustainable development outcomes.

A SNAPSHOT OF 2024

DE Africa is an Africa-based, owned and managed program. Our Program Management Office was transitioned from the South African National Space Agency in Pretoria, South Africa, following the contract expiration at the end of March, to the Research Institute for Innovation and Sustainability in Johannesburg, South Africa, with staff across an additional three countries; Ghana, Kenya, and Rwanda. We continue to work with our Implementing Partners to support critical engagement, capacity building and uptake with end users across the continent.

DE Africa operational infrastructure continues to provide timely and reliable Earth observation data and decision-ready insights accessible to diverse user groups. In collaboration with Amazon Web Services' Amazon Sustainability Data Initiative, at the end of 2024 DE Africa stored over 6 Petabytes of data at AWS Africa (Cape Town), providing a secure, stable and high performing platform for users across Africa. DE Africa now has 10 continental scale services, including the new Waterbodies Monitoring Service, along with >140 analysis tools supporting 7 SDGs.

DE Africa has continued to strengthen and empower users across the continent to harness the power of EO data and services for better decision making. DE Africa continues to provide committed bilingual training and user community support services with online training now completed by more than 1,300 users. DE Africa now has >6000 sandbox registrations and >29,000 unique DE Africa Map users, and we are demonstrating impact through a growing number of user stories across multiple sectors.

DE Africa continues to demonstrate the impact and benefits of EO data for Africa with exceptional examples from the user community showcasing decision making and changes. DE Africa has co-developed, published and promoted 16 new use cases, across 10 different countries, showcasing key Earth observation applications developed by our users.

About Digital Earth Africa

CAPACITY DEVELOPMENT

USER ENGAGEMENT AND TRAINING

>29000
UNIQUE DE AFRICA MAP USERS

>1,300
COMPLETED TRAINING

>6,500
REGISTERED USERS IN SANDBOX

USER APPLICATIONS SUPPORTING SDGs

>140 notebooks addressing the SDGs and additional applications.

1 new national dashboard released for coastal erosion impact assessment.

AWARDS

Three international awards for capacity development and community engagement.

VALUE AND IMPACT

$2.3bn
Even under conservative assumptions, the impact of Earth Observation could be higher than **$2 billion** (USD) per year.

THREE KEY AREAS

$500 million
Earth Observation industry accelerated growth.

$900 million
Agricultural productivity boost.

$900 million
Unregulated gold mining detection and prevention.

- **Marine Observation** $212 million
- **Renewable Energies** $27 million
- **Disaster Risk Reduction** $74 million
- **Oil and Gas** $15 million
- **Public Health** $113 million
- **Security and Civil Protection** $96 million

SERVICES AND INFRASTRUCTURE

~6 Petabytes
of data stored on AWS server in Cape Town through AWS Sustainability Data Initiative.

Five Operational Data Pipelines

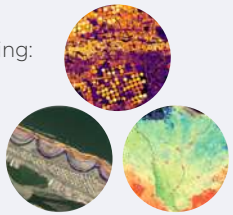
The largest operational platform of its kind in the world

- Analysis ready data
- Decision ready products & services
- Routine updates to Landsat, Sentinel 2 and Sentinel 1 to cloud optimized format

1 new continental services available

DE Africa now has ten continental services including:

- Waterbodies
- Coastlines
- Cropland Extent Map
- Fractional Cover
- NDVI Climatologies
- Geomedians
- Water Observations from Space
- Cropland Extent Map
- Mean monthly NDVI and Anomalies



GOVERNANCE

GB 57% M, 43% F
86% of GB members are African.

TAC 82% M , 18 % F
86% of GB members are African.

PARTNERSHIPS AND OUTREACH

Renewed partnerships with **Implementing Partners** and continued collaboration with over **35 partner organisations.**

AFRICAN OPERATIONS

- 12 African staff across five countries
- Program management office fully operational hosted in Africa
- 5 pan-African Implementing Partners

About Digital Earth Africa

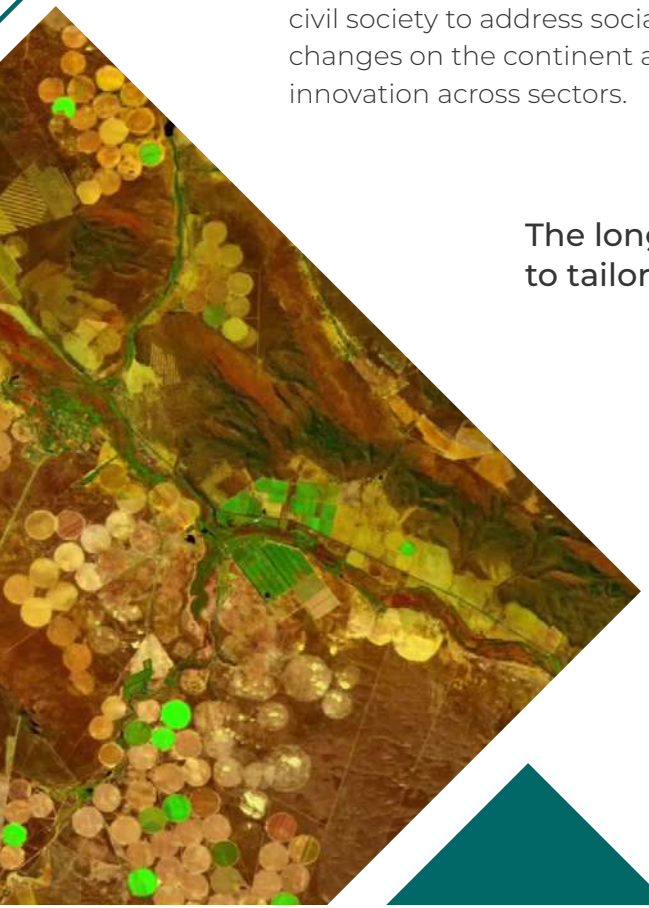
Digital Earth Africa (DE Africa) aims to improve lives across Africa by providing planners and policy makers with crucial Earth observation information to support better decision making, and through enhanced access to satellite data to progres sustainable development outcomes. See DE Africa Investment Logic.

OUR VISION

To 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

To 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.



The long-term DE Africa Goal is to improve the lives of Africans through access to tailored information for decision making. This encompasses:

Livelihood strengthening
Enhance informed decision-making across government and sectors, delivering both direct and indirect benefits to individuals and communities.

Digital transformation is advanced
Drive the evolution of Africa's digital economy by promoting industry uptake and fostering innovations

Economic development and job creation
Facilitate new business development and employment opportunities by providing access to data for commercial products and services.

Development activities are more effective
Enhance understanding of development challenges and solutions to strengthen collective impact and assess progress toward national priorities, the African Union's Agenda 2063, and the UN SDGs.

Strengthening Governance

DE Africa continues to prioritise inclusivity, transparency, and accountability, laying the foundation for a successful transition toward appointing a permanent host in Africa, while ensuring that its governance framework empowers the program's leadership within the African community.

During 2024 progress was made to reinforce the organisation's governance structures, ensuring alignment with ISO standards for Good Corporate Governance, and conducting internal reviews to develop foundational pillars that will secure DE Africa's long-term sustainability. DE Africa reinforced its governance structures to support long-term strategic growth and sustainability. The Governing Board and Technical Advisory Committee completed their three-year tenure in July 2024, prompting a structured transition process to ensure continued leadership and expertise.

In 2024, DE Africa:

- Transitioned to an Interim Host, the Research Institute for Innovation and Sustainability (RIIS) based in Johannesburg, South Africa, and with a presence in Nairobi, Kenya; the hosting arrangement covers the period April 2024 to end March 2026
- Initiated a governance recruitment process to succeed the Governing Board
- Appointed Mindcor, an executive search firm to facilitate the appointment of an Interim Advisory Board
- Initiated the membership rotation process for the Technical Advisory Committee
- Continued to work with an established network of 5 Implementing Partners who together represent the interests of 43 African countries

In 2024, DE Africa:

In June 2024, the Governing Board and Technical Advisory Committee convened to finalize end-of-tenure processes and review DE Africa's strategic priorities. These engagements provided an opportunity to refine governance structures, strengthen oversight mechanisms, and align decision-making processes with DE Africa's long-term vision. A governance monitoring survey conducted during the year offered valuable insights, informing updates to the Terms of Reference and competency frameworks for future appointments.

To support the evolution of its governance model, DE Africa initiated the recruitment of an Independent Advisory Board, engaging an independent search firm to facilitate the selection process. From a broad and highly competitive pool of 222 applicants, six candidates were shortlisted, with an additional 2 Governing Board members choosing to stand again.

The Technical Advisory Committee continued to provide strategic guidance throughout 2024, playing a critical role in shaping DE Africa's technical direction. In line with the governance transition, a membership rotation process was initiated to refresh the committee's composition and maintain a strong technical foundation. A structured selection process was launched, ensuring the inclusion of diverse expertise to drive DE Africa's scientific and technical priorities forward. Eight new members were recruited, while five members representing the Implementing Partners remained on the committee along with three existing members still having terms remaining on their membership.

Meeting of the Program Management Office, the Funding Host (Geoscience Australia), the Interim Host (the Research Institute for Innovation and Sustainability), and Implementing Partners (AFRIGIST, AGRHYMET, CSE, RMCRD, OSS) in Johannesburg.

Diversity and Inclusion

DE Africa remains committed to diversity and inclusion, actively supporting initiatives that foster equitable participation in Earth observation and geospatial sciences while being an exemplar of diversity and inclusivity by embedding the principles into all levels of the program.

In 2024, key activities included a social media campaign and live roundtable discussion for International Women's Day, highlighting the contributions of women in geospatial science. DE Africa also supported female leadership in research by sponsoring participation in international science planning discussions, where work on flood risk mapping was presented at a leading academic institution.

Participation in the first YouthMappers Summit in Kenya, bringing together 130 students from five universities to collaborate on open data for sustainable development. The program further promoted inclusivity through specialized training at a school for the blind in Kenya, reaching 20 students, including seven visually impaired learners. To support emerging female researchers, DE Africa supported a young Zimbabwean scientist to attend the International Astronautical Congress (IAC) in Italy, where she presented her research conducted using the DE Africa platform. At the event, she promoted DE Africa's platform through presentations, discussions, and technical sessions aligned with the SDGs.

Capacity building for students at the Machakos School for the Blind, Kenya - training was facilitated by the Chemichemi Foundation.

YouthMappers Summit in Kenya, bringing together 130 students from five universities to collaborate on open data for sustainable development.

Driving African-led technical innovation

DE Africa continued to build on the operational infrastructure previously established in Africa. This offers timely and reliable Earth observation data and decision-ready insights that are accessible to users from a wide range of technical backgrounds.

In 2024, DE Africa:

- Now hosts >6 Petabytes of data in AWS Africa (Cape Town) region
- Completed the Data and Services Roadmap which outlines the integration of Earth observation and ancillary datasets and the development of thematic services, endorsed by the Technical Advisory Committee
- Upgraded the operational data pipelines to include a Sentinel 1 monthly mosaic and a number of new datasets
- Launched the new continental scale service DE Africa Waterbodies Monitoring Service
- Launched a new Coastlines Monitoring dashboard supporting National Adaptation Planning for 38 coastal African countries
- Developed 9 new publicly available notebooks and user guides
- Undertook platform enhancements including increased security measures, several Amazon EKS upgrades, improved cost monitoring, and storage optimization

Africa-based infrastructure and Analysis Ready Data pipelines

DE Africa continues to provide a secure, stable and high performing platform - thanks to the continued support from Amazon Web Services through the Amazon Sustainability Data Initiative. During 2024, DE Africa continued to upgrade and enhance the operational data pipelines, maintaining the existing Landsat and Sentinel archives and derived services, while adding additional datasets including a Sentinel 1 monthly mosaic, the Africapolis urban agglomerations, monthly Planet tropical basemaps, and V2 of the Esri/Impact Observatory Land Use Land Cover.

Continental services:

DE Africa released a new operational continental service in 2024, co-designed with program partners. All continental services are the product of continental-scale collaboration, guided by DE Africa's Product Development Task Team. The Waterbodies Monitoring Service identifies more than 700,000 unique water bodies across Africa, incorporating over forty years of satellite observations. Updated on a weekly basis, the service maps persistent and seasonal waterbodies and the changes in the surface area of water in each of these over time. Waterbodies include lakes, ponds, man-made reservoirs, wetlands and segments of river system. The service:

- Is unique among satellite-based global surface water datasets given the accessible and operational nature of the service and the focus on providing timely, relevant and interpretable information to decision maker
- Provides waterbodies statistics for every country on the African continent, and is updated weekly with the most recent satellite measurements
- Provides the actual surface extent, along with the wet surface area, as a time series for each individual waterbody
- Has been developed to support Africa's governments, policymakers, and key private sector actors in undertaking insightful planning, adopting critical risk mitigation strategies, and proactively managing Africa's settlements, cities, communities, and livelihood activities which are dependent on, or adjacent to water bodies.

Learn more about the Waterbodies Monitoring Service **here**.

Analysis tools

DE Africa now hosts over 140 notebooks, supporting African countries to drive progress towards meeting over 7 SDGs.
In 2024 nine new notebooks were developed including:

- Near real time burnt area mapping
- Algal bloom detection
- Seasonal changes in water bodies

A new workflow was prototyped for undertaking national wetland inventories, and implemented in three countries through in national partnerships:

- South Africa with the South African National Biodiversity Institute (SANBI)
- Kenya with the Regional Centre for Mapping of Resources for Development (RCMRD)
- Senegal with the Centre de Suivi Ecologique (CSE)

In focus: DE Africa national coastlines dashboard

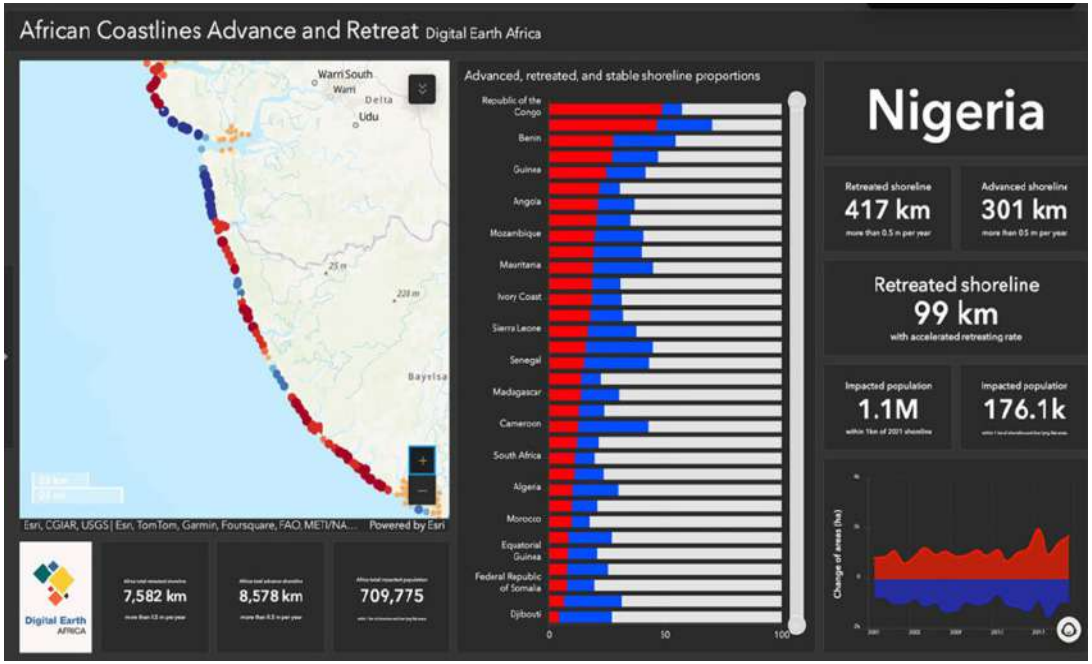
Based on the DE Africa Coastlines Monitoring Service, the aim of the **dashboard** is to empower national governments in their coastal adaptation planning efforts. By providing detailed, country-specific data, the data supports the identification of at-risk communities, infrastructure, and settlements, guiding targeted interventions. Going forward, it will play a crucial role in managing Africa's coastlines, protecting the environment, and supporting sustainable development goals.

Using Nigeria as an example, the coastline data reveals critical findings to inform policy:

- Of Nigeria's entire shoreline, 417 km are retreating inland at an average rate of 0.5 m per year, a trend observed consistently over the past 24 years
- A 99 km portion of this retreating shoreline has seen an accelerated rate of change in the last five years
- Targeting such high-risk areas for intervention enables authorities to prioritise limited resources.

The data also highlight the human impact in Nigeria. Approximately 1.1 million people live within one kilometre of retreating shorelines, and an additional 176,000 reside in low-lying areas under threat from coastal flooding. This puts the total at-risk population at around 1.3 million.

The dashboard further provides tools to examine specific years when significant coastal changes occurred. For example, a major retreat in 2017 in Nigeria likely resulted from a storm surge or a similar event. Such insights allow for the assessment of individual storms and their increasing intensity over time.



Expanding users and building capacity across Africa

Leveraging the multilingual Learning Platform, DE Africa has continued to strengthen and empower users across sectors and countries to harness the power of Earth observation data and services for better decision making. Through targeted capacity development initiatives, DE Africa has continued to build ownership and empower users to access and use Earth observation data and derived information.

In 2024, DE Africa:

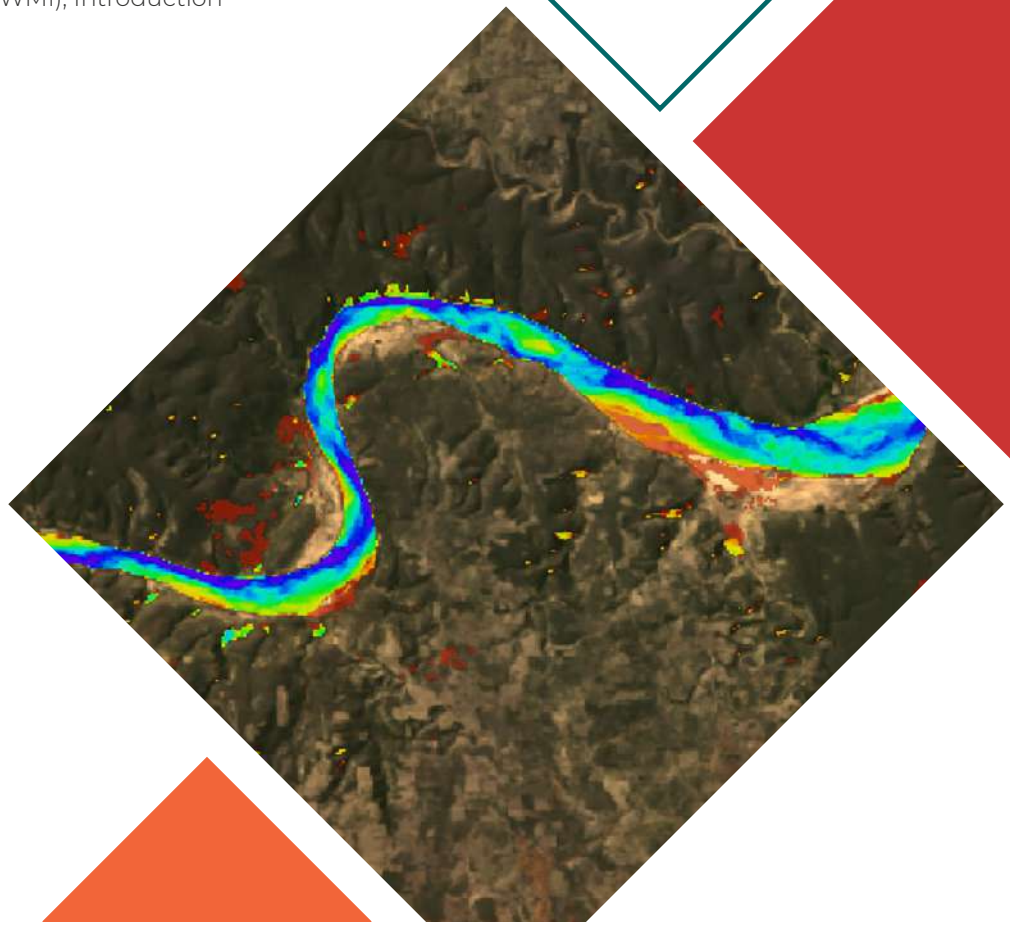
- Conducted 22 training sessions, 8 online and 14 face-to-face, across 8 countries: Congo, Ethiopia, Kenya, Malawi, South Africa, Tunisia, Zambia, and Zimbabwe
- Trained 945 individuals from across 22 different institutions (6 government agencies, 7 non-governmental organisations, and 8 academic institutions)
- Awarded 502 training completion certificates, and received >1,100 additional Learning Platform registrations
- Held 44 multilingual live sessions, 22 in English, 21 in French, and 1 Arabic
- Co-developed a new Learning Module with the International Water Management Institute (IWMI), Introduction to the Analysis of Water Data Products through Digital Earth Africa in English and French
- Saw numbers grow to >29,000 DE Africa Maps users and >6,500 Sandbox users
- Continued to maintain the **DE Africa Helpdesk** providing users with technical support

Growing our user community

Our user community continued to grow, with requests submitted through the Help Desk and for **Use Case support**. In 2024, 43 requests were submitted from users in 17 African countries, working on applications in thematic areas including coastal erosion in Kenya, Tanzania and Senegal; water quality assessment in Lesotho, Uganda, and Namibia; detection of mining in Zimbabwe; and flood impact assessments in Madagascar. During 2024 over 9,000 new users interacted with the DE Africa Maps, constituting a 48% increase over previous years, while more than 2,300 new registrations were received for the Sandbox, demonstrating an 18% increase over the previous year.

Training and user support

During 2024, the team participated in 22 training and awareness events, across 8 African countries, building capacity through dedicated events with three government agencies, eight universities, and six non-governmental organisations. The DE Africa online, bilingual Learning Platform continued to grow, and in 2024 we awarded over 500 certificates of completion, and witnessed a 13% increase in registrations from the previous year. A new bilingual training module was developed for the DE Africa Waterbodies Monitoring Service, while a collaboration with the Digital Innovations for a Water Secure World (DIWASA) resulted in a dedicated water resources module released in English. In collaboration with Esri, the three DE Africa "Learn" modules on the Africa Geoportal continued to receive attention from over 12,500 users since they were released in 2023.



Capacity Development for Government Agencies

Through the UN Statistics Division (UNSD) under the Data for Now initiative, DE Africa provided a series of training events to the Tunisian National Institute of Statistics (INS), the Agence de Protection et d'Aménagement du Littoral (APAL), the Ministry of Agriculture, the Sahara and Sahel Observatory (OSS) and the National Agency for Environmental Protection (ANPE). The training aimed at using DE Africa data and services to monitor erosion (SDG 13) and to assess change in the extent of water-related ecosystems over time (SDG 6.6.1).

DE Africa partnered with the Australian Government to deliver geospatial training in Madagascar for the Ministries of Mines and Agriculture, as well as the University of Antananarivo, focused on enhancing data literacy and the use of geospatial technologies for resource management. The event was launched by the Minister of Environment and Sustainable Development and the Deputy Head of Mission at the Australian Embassy in Mauritius.

DE Africa in collaboration with Centre for Scientific Industrial Research (CSIR) in South Africa organised a training in Cape Town on water resource management to the Department of Water and Sanitation, and Breede-Olifants Catchment Management Agency. Outcomes included further collaboration with the Department of Water and Sanitation (DWS) in Eastern Cape (South Africa) in monitoring water bodies.

Training was requested by the Kenya Marine and Fisheries Institute (KMFRI) on the use of Earth observation data for coastal and marine applications; DE Africa provided capacity building on coastlines, water quality, and mangrove monitoring tools. This led to further collaboration on the integration of DE Africa data for marine spatial planning of Kenya's coasts.

The Rwanda Forestry Authority (RFA) facilitated a training event for 20 field extensionists to improve their digital forest monitoring techniques in support of the initiative "Building Resilience of Vulnerable Communities to Climate Variability in Rwanda's Congo Nile Divide through Forest and Landscape Restoration", known as the Rwanda Congo Nile Divide (CND) Project. The training aimed to increase the participants skills in geospatial technologies and to enable the project to keep track of forest and landscape changes in eight Districts of the Project intervention area through DE Africa platforms and data.

Through the International Water Management Institute, DE Africa participated in a series of training events to the Ministries of Water, and Ministry of Agriculture in Zambia; Ministry of Water and Irrigation, Agriculture in Ethiopia; and in Ghana, the Ghana Space Science and Technology Institute.

Training event hosted by IWMI for participants from Ministry of Water and Ministry of Agriculture.

Training event hosted by AFRIGIST for participants from the Ministry of Agriculture in Abuja, Nigeria.

Training event hosted by UNSD for participants from Tunisia Statistics, Ministry of Water, and Ministry of Agriculture.

Capacity Development for Universities

In 2024, training events were provided to academic institutions in four countries, including UENR in Ghana, Kyambogo University in Uganda, University of Rwanda, and University of Sine Saloum in Senegal. The institutions were trained on agriculture and food security, water resources management, urbanisation and coastal management using DE Africa coastlines. Outcomes included an MoU with UENR (Ghana), and follow up training with Kyambogo university (Uganda) in March 2025, and an Mou will be signed including University of Rwanda.

Training events hosted by our implementing partners

AFRIGIST provided training to the Ministry of Agriculture in Abuja, Nigeria for 20 participants. Following this, AFRIGIST continues to engage with the Ministry on the application of DE Africa data and tools to monitor crop productivity.

During the RCMRD International conference (RIC), RCMRD hosted DE Africa training for 80 participants from 20 different institutions across four member states (Kenya, Uganda, Tanzania, Ethiopia). A collaboration was also facilitated with the Regional Geo Explorer Association to provide training on using the DE Africa platform to students completing a diploma of Geographic Information Systems.

CSE hosted training on DE Africa coastlines monitoring tools for West Africa Coastal Areas (WACA) countries, with 30 participants from Senegal, Benin, Mauritania, Gambia, and Togo learning how to access and analyse indicators of coastal erosion. In addition an event for Masters in Geomatics and Université Sine Saloum in Senegal was held by CSE, leading to strengthened and further collaborations between the university and DE Africa in 2025.

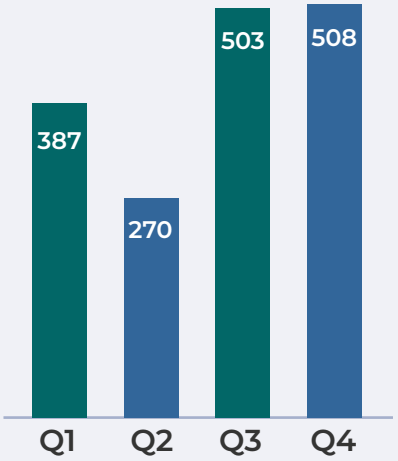
User engagement in Numbers

All time statistics vs 2024 increase

Online Course Registrations	Certificates of Completion Issued	Live Sessions Held	Live Sessions Attendees	Sandbox Registrations	Helpdesk Requests	Maps Users
4,803 +35%	**1,340** +38%	**207** +23%	**1,494** +22%	**6,808** +35%	**200** +32%	**29,071** +33%

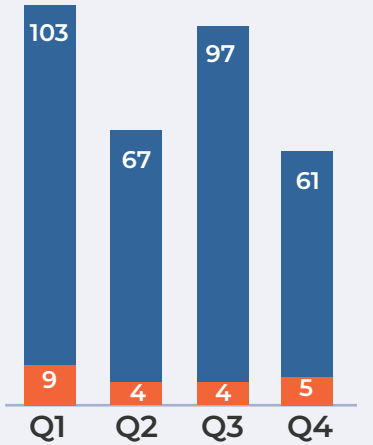
Online Courses

Total online course for 2024 1,668



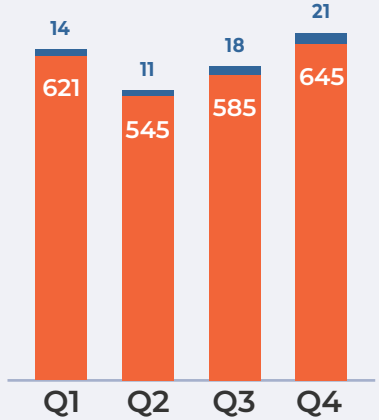
Live Sessions

Number of Live Session Attendees 328
Number of Live Sessions held 44



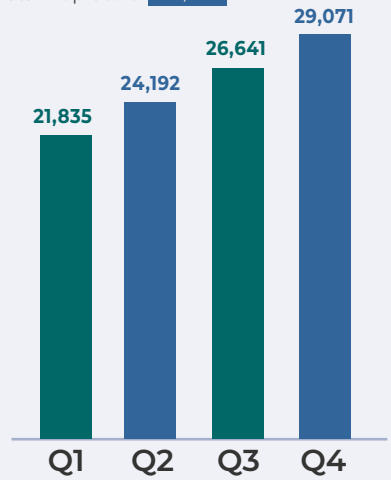
Sandbox and Helpdesk

Total Sandbox users 2,396
Total Helpdesk requests 64



Cumulative Map Users

Total Map Users 101,739

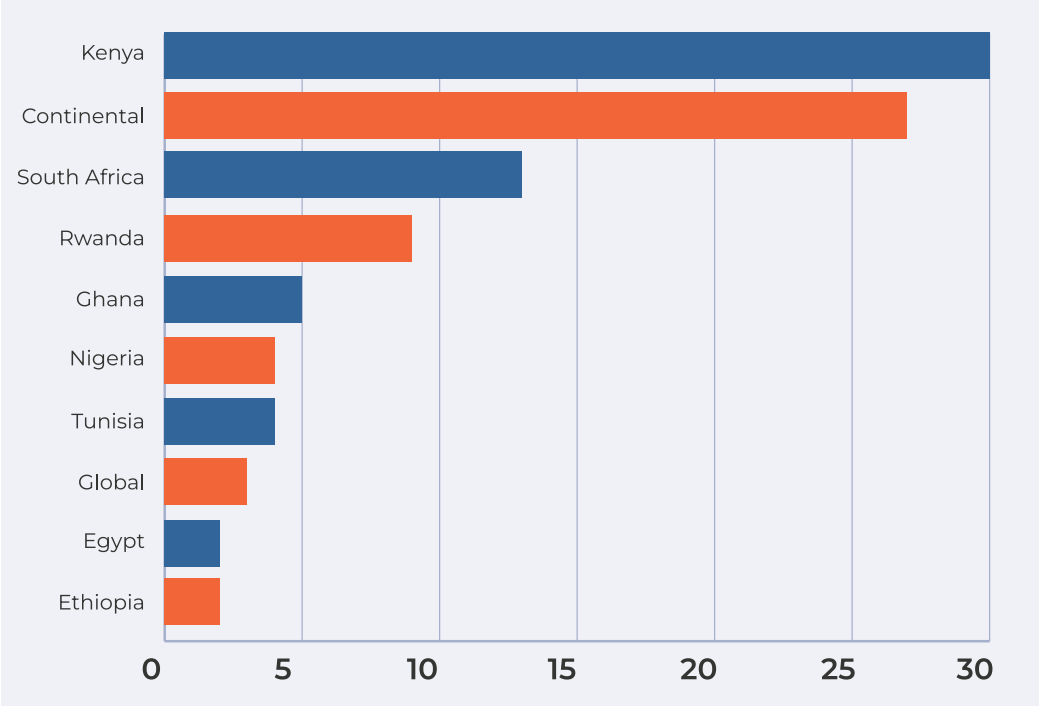


All time User Community

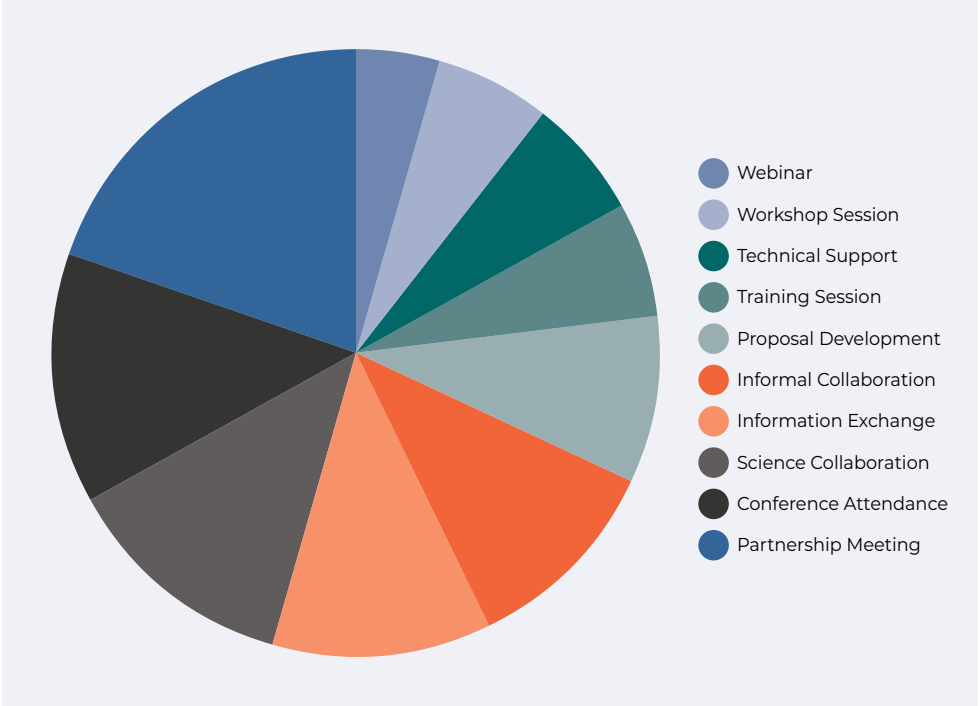
Unique DE Africa map users	Online Course Registrations	Certificates of Completion Issued	Sandbox Registrations	Helpdesk Requests
29,071 +9,471	**4,803** +1,668	**1,340** +502	**6,808** +2,396	**200** +64

User engagements by Numbers

Country engagements



Engagement type



Use Case Requests

43 requests received from 17 countries.

Events and engagements

22 training sessions and awareness events undertaken across 8 African countries.

Partnership Meetings

22 meetings held.

Partnerships

2 MoUs and 1 partnership framework signed.

Delivering and demonstrating impact

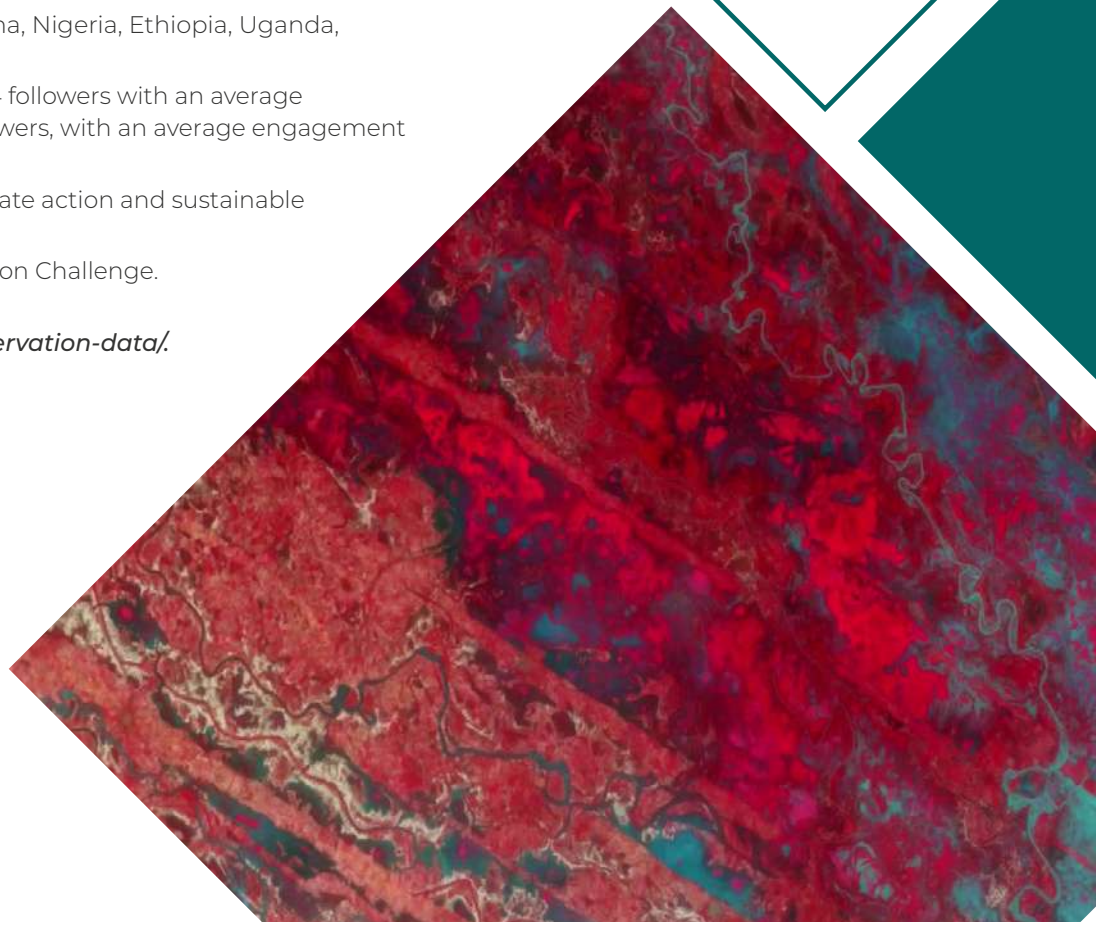
DE Africa continued to demonstrate the impact and benefits of Earth observation data for Africa through a wide range of examples from the user community, showcasing decision making. 2024 saw a growth in social media engagement and visitors to the website, with new followers across the various platforms.

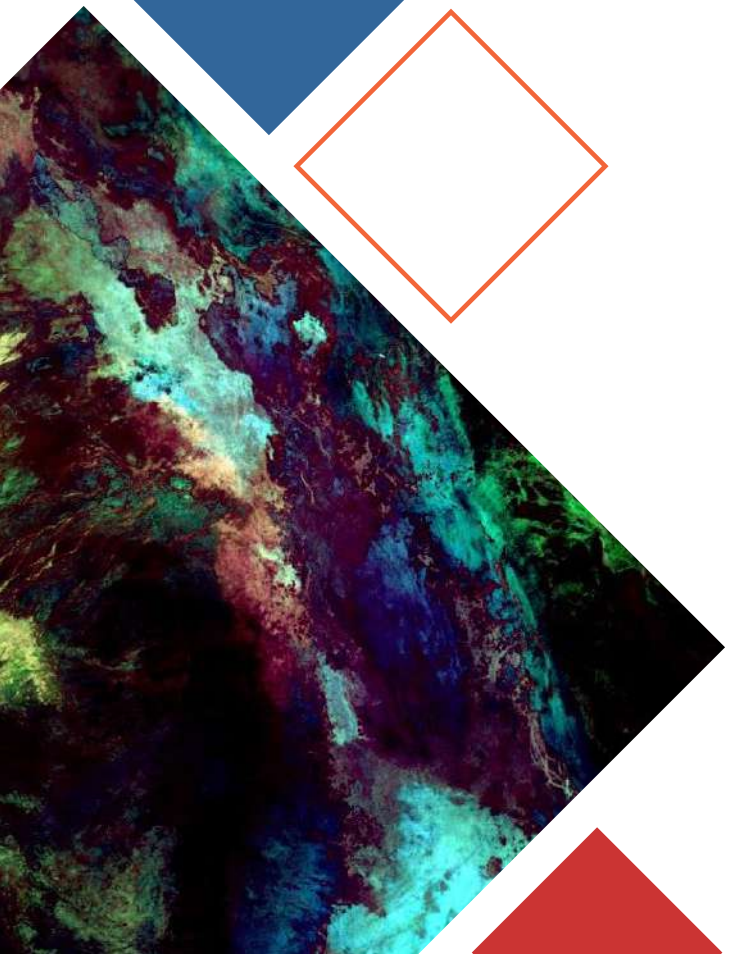
In 2024, DE Africa made significant strides in publications and media outreach, including:

- Release of the first stakeholder community newsletter: The first newsletter was published in **November** to 7,903 people followed by a second newsletter in **December.**
- Issued a press release announcing the Coastlines Dashboard which obtained wide coverage across 7 publications in Australia, Nigeria, United Kingdom, Zimbabwe and Egypt.
- Published 16 use case articles from across 10 countries, showcasing key Earth observation applications developed by our users
- Website had a total of 37,000 new users, with 8,500 returning users and an average engagement rate of over 4 minutes per user. Visitors were drawn from 204 countries.
- The top 12 African countries driving traffic to the website were Kenya, South Africa, Ghana, Nigeria, Ethiopia, Uganda, Zimbabwe, Egypt, Senegal, Madagascar, Tanzania, and Rwanda.
- Social media platforms X and LinkedIn grew throughout the year. By year end X had 7,334 followers with an average engagement rate of 5.14% and a total of 99,000 post impressions. LinkedIn had 8,545 followers, with an average engagement rate of 7.04% and total of 164,211 impressions.
- Developed an **impact video** profiling DE Africa's scientists and their contributions to climate action and sustainable development through Earth Observation (EO) tools.
- Supported multiple industry engagement initiatives, including the Africa Earth Observation Challenge.
- CNBC Africa interview with Dr Lisa-Maria Rebelo, discussing power of EO data: *https://www.cnbcafrica.com/media/6360088562112/unlocking-the-power-of-earth-observation-data/.*

In addition, DE Africa garnered (unsolicited) media coverage in South Africa, Egypt and Zimbabwe including:

- **Egypt's NARSS, Australia discuss cooperation in remotely-sensed data - Dailynewsegypt** (NARSS and Australian Ambadassador to Cairo discuss enhanced cooperation around DE Africa.
- **Des solutions durables à la pénurie d'eau** (7th Cairo Water Week address by Dr. Hani Sweilem, Minister of Water Resources and Irrigation, highlighting DE Africa to monitor coastal protection efforts).
- **Harare's water supply under threat - Newsday Zimbabwe** (Highlighting a study revealing the rising threat to Harare's water due to increased algal growth in Lake Chivero, the capital city's main water source).





Industry engagement:

Through sponsorship of key industry engagements we demonstrated our ongoing commitment to the growth of Africa's space industry:

- The Kenya Space Expo, resulted in strengthened and formalised partnerships with the Kenya Space Agency on the use of DE Africa data and services.
- The 8th African Space Generation Workshop in Abuja, Nigeria provided an opportunity to engage with the Federal Ministry of Agriculture and Food Security resulting in collaboration on crop and water monitoring for sustainable food security especially in arid and semi-arid areas in the North.

DE Africa was proud to continue to be a technical and funding partner of the Africa Earth Observation Challenge 2024 (AEOC), which calls on Africa's entrepreneurs and space-tech startups who incorporate space-based technologies, seeking to identify some of the most innovative downstream applications of space technology and geospatial intelligence across Africa.

The challenge was open to participants from across the continent and received 73 submissions from 23 countries. A total of 12 finalists were selected from across 7 countries including Cameroon, Ghana, Kenya, Mauritania, South Africa, Tunisia, and Zimbabwe. Finalists included three female-founded initiatives.

AEOC 2024 winner was named as AgriTech Analytics (Pty) Ltd from Kenya (represented by founder Maryanne Gichanga). Placed second and third respectively were Aquatech Integrated from Kenya (represented by founder Dickson Somali) and Nanosatellite Missions Design Ltd (represented by founder Dr Sofeng Tadadjeu).

The Africa Earth Observation Challenge final event, Nairobi, Kenya.

Communicating our impact

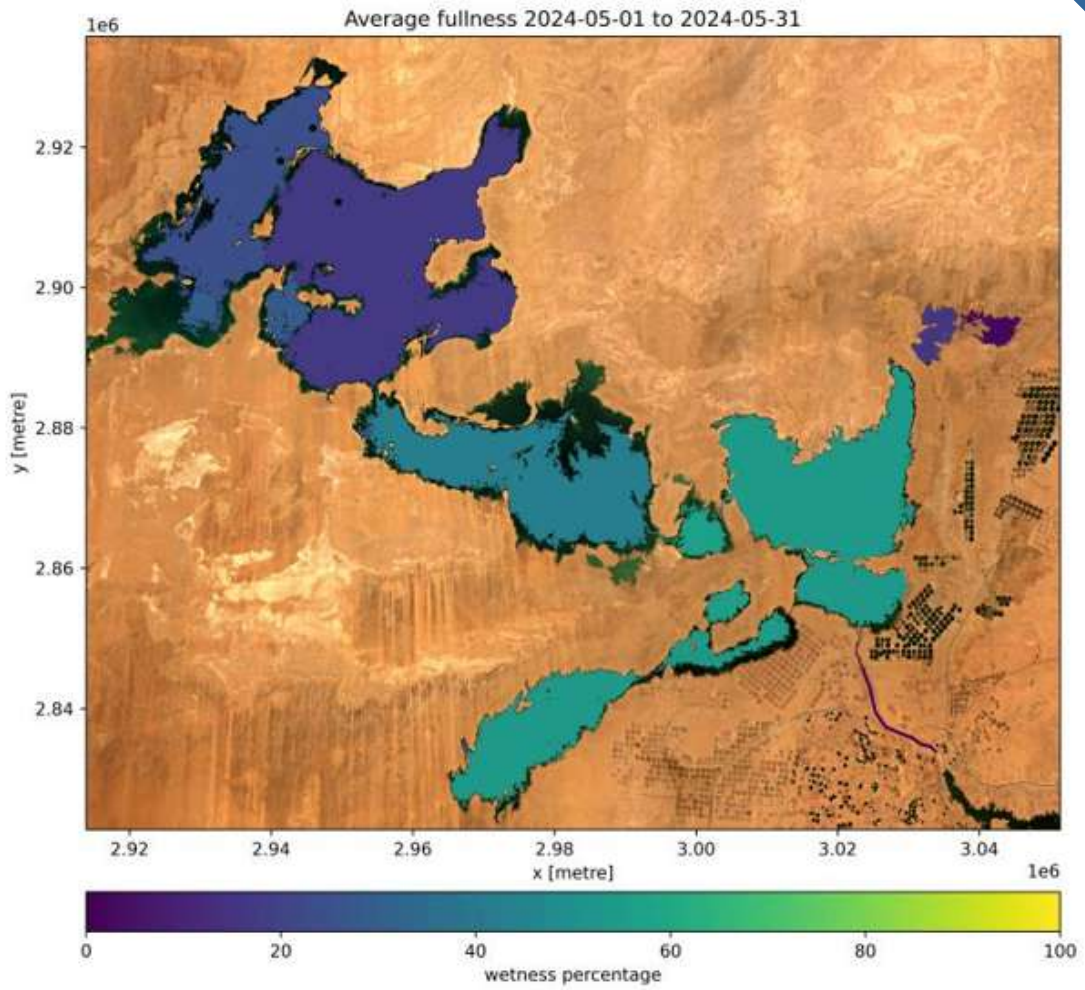
Major press release of 2024

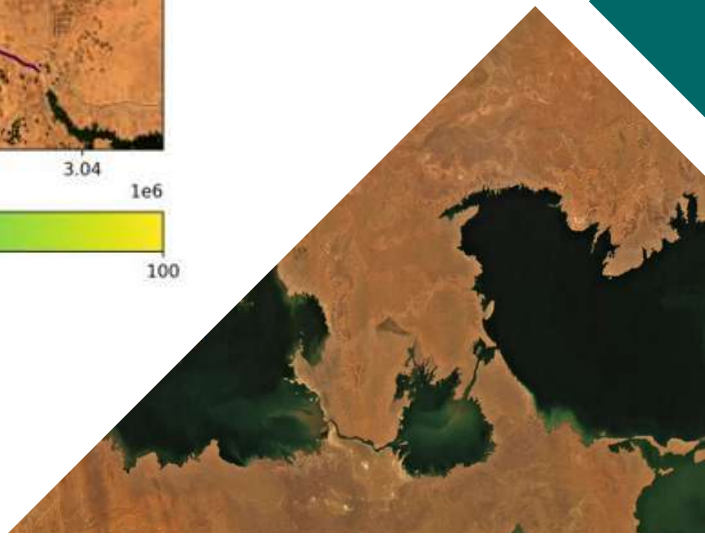
Introducing innovative continental service

The Waterbodies continental monitoring service is a world-first developed in – and for – the African continent. It is unique among satellite-based global surface water datasets given the accessible and operational nature of the data, and the focus on providing timely, relevant and interpretable information to decision makers.

The service identifies more than 700,000 unique water bodies across Africa, incorporating over forty years of satellite observations. Updated on a weekly basis, the service maps persistent and seasonal waterbodies and the changes in the surface area of water in each of these over time. Waterbodies includes lakes, ponds, man-made reservoirs, wetlands, and segments of river systems.

- The media release was picked up by 640 websites (English 52% and French 48%)
- The release received 131 727 impressions on Africa-Newsroom.com and was viewed 833 times on Africa-Newsroom platform dedicated to African journalists
- Total PR value of USD 12 026 080 (as released by APO).



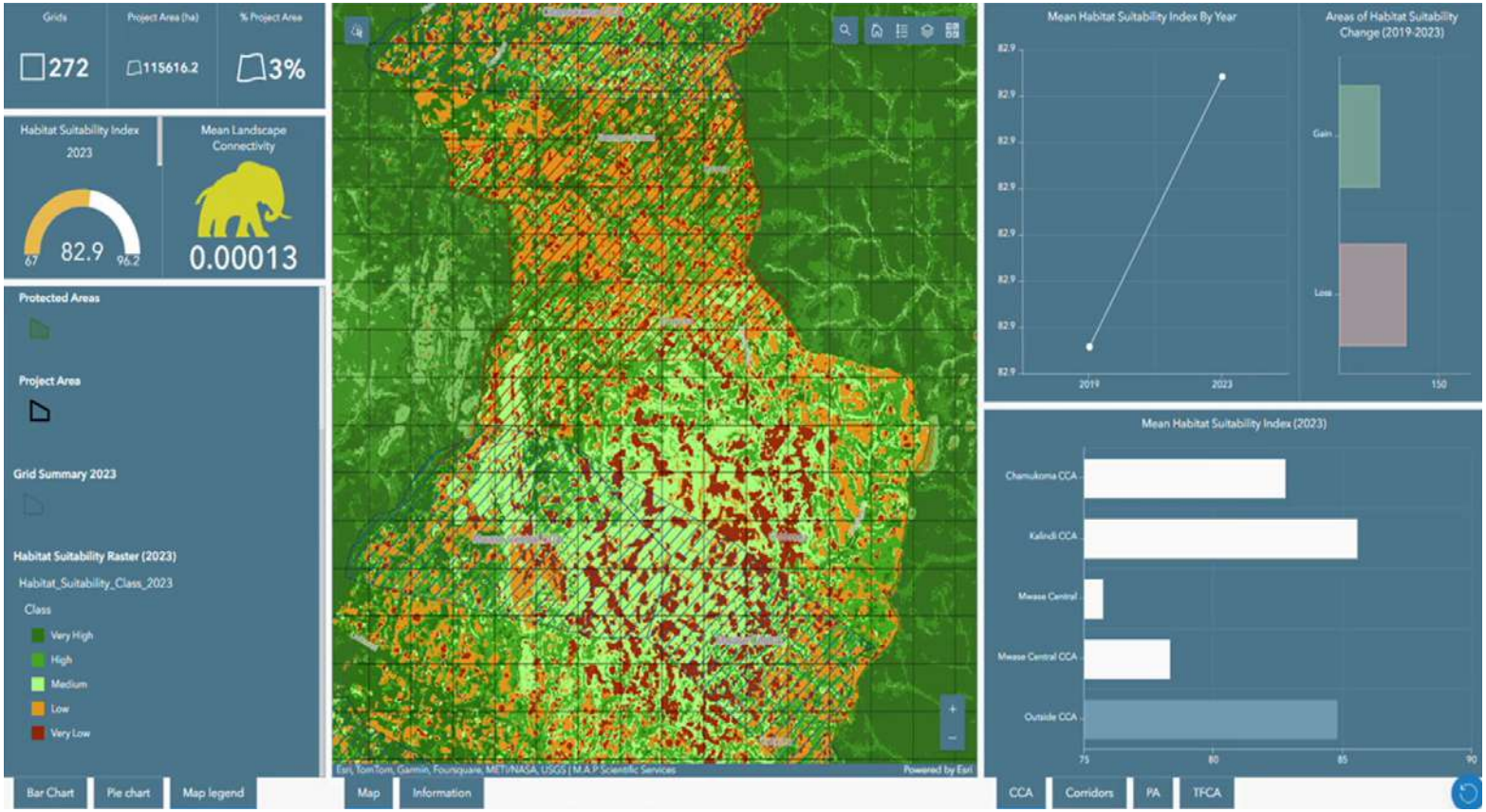


In focus: Private sector

Driving Conservation and Sustainability with DE Africa Data

In the rapidly evolving field of geospatial solutions, M.A.P. Scientific Services (MAPSS) is a powerful example of applying scientific knowledge and insight to real-world environmental challenges. Founded by a trio of visionary researchers from the University of Pretoria in 2017, Dr Pieter Olivier, Andrew Purdon and Michael Mole, the company has grown into a thriving enterprise that bridges the gap between scientific research and practical implementation. Their mission: to arm conservation organisations with insights from geospatial tools and earth observation data that enhance the protection and management of vast landscapes, particularly in under-resourced areas like national parks.

Andrew Purdon, an ecologist and geographic information system (GIS) specialist with a wealth of experience in conservation projects across Africa, says that the strategic use of partner Digital Earth Africa's expansive data resources, combined with the Environmental Systems Research Institute (ESRI) platform have been central to the success of MAPSS.



In focus: Government

Kenya's marine spatial plan poised to unlock mariculture investment opportunities

In support of Kenya's Blue Economy initiative, the Kenya Marine and Fisheries Research Institute (KMFRI), a state corporation established via Kenya's Science and Technology Act, is developing a Marine Spatial Plan to drive marine and coastal sustainability and investment opportunities, to support the initiative with scientific data and information. The Marine Spatial Plan will enhance the country's economic strategy reports, particularly as investors eye Kenya's cage cultures and seaweed farming opportunities. Using Digital Earth Africa's data, in combination with other data and tools, has informed the plan and led to some exciting off-shoot ideas around real-world impact creation.

Noah Ngisiange, a senior research scientist at KMFRI, says the benefit of DE Africa is that it provides analysis-ready data products and services that are unique to Africa and which can be utilized on a day-to-day basis, aiding in research and national activities. This differs to the products that they generally have access to, which provide global coverage but not enough detail for specific African regions.

In focus: Regional partners

RCMRD reveals fragile wetland ecosystems struggle against human hubs of activity

In partnership with DE Africa, RCMRD conducted assessments of wetland areas in Kenya and Uganda, with findings pointing to concerning mis- and overuse. This underscores the importance of continued wetland monitoring to guard against accelerated degradation. Many of the wetlands had a high level of degradation, encroached upon by communities and industrial practices. Surrounding communities demonstrated a lack of awareness to the damage that their activities are inflicting on the wetlands, including water contamination and ultimately health risks.

Partnerships and ongoing relationship building is necessary to build understanding and identify remedial actions. This should include working with county governments and Beach Management Units (BMUS) to integrate wetland conservation into development plans; partnering with community-based organisations with experience in the mobilisation of communities to conserve existing wetlands and traditional indigenous knowledge; and replicating best practice community initiatives that seek to preserve biodiversity with environmentally-driven, small-scale economic activities.

Impact stories, partnerships and publications from our user community

Utilising DE Africa tools through Africa GeoPortal
Demonstrating access to DE Africa's services via ESRI's Africa GeoPortal, highlighting diversification of user interfaces

University of Rwanda and Digital Earth Africa: A Strategic Partnership for Geospatial Innovation and Capacity Building
Outlining areas of collaboration including public lectures and student support

Keeping a watchful eye on landscape changes with the Rwandan Forest Authority
Exploring results of restoration efforts in the Western Province around Gishwati-Mukura National Park, where high demographic pressure is experienced

UENR and DE Africa Forge Partnership for Geospatial and Earth Observation Data Collaboration
Outlining the collaboration where UENR will focus on delivering data and outcomes that align with the DE Africa program

DE Africa collaborates with the United Nations Food and Agriculture Organization and EOSTAT
Highlighting Lead Scientist, Dr. Lisa Rebelo's contribution to publication "Space and Geospatial Technologies for the Africa We Want"

Documenting the regressive evolution of African forest areas
Utilisation of DE Africa tools and services is giving geospatial scientists from Afrigist, the tools to call attention to the regressive evolution and negative effects of forested land in Benin

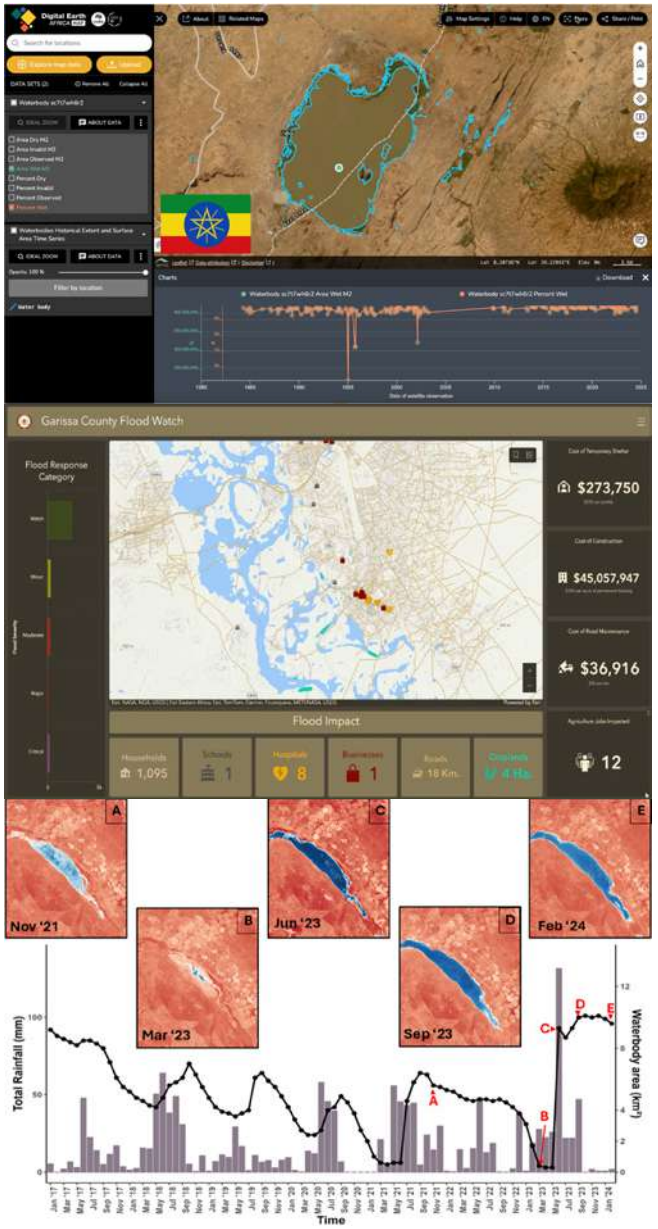
Suivi des inondations dans la ville de Filingué au Niger
Cheffou Rachid promoteur de l'entreprise HYGEO spécialisé dans la promotion et les services liés aux Technologies géo spatiales au Niger

Embarking on flood monitoring in the Filingué area, Niger
By combining field data with earth observations, Cheffou Rachid provides an overview of the extent of flooded areas, the material damage caused, and safeguarding strategies for local houses

Questioning the relationship between biological communities and the deterioration of cultural heritage
Research undertaken by Jokotola Omidiji, uses Digital Earth Africa's tools to answer the question about the relationship between biological communities and the deterioration of cultural heritage in temperate and tropical countries

Serendipity strikes as Digital Earth Africa extends into Southern Europe
DE Africa's datasets extending into a tiny corner of Southern Spain presents new opportunities for collaboration

Digital Earth Africa sandbox environment ideal for estuarine water quality research
Using the sandbox to track changes in water extent for Verlorenvlei Estuarine Lake, South Africa, researcher Priscah Lakane monitors water health and its knock-on effects



Strengthening partnerships

DE Africa continued to strengthen existing partnerships, as well as forming new relationships to progress embedding the program across sectors and countries.

In 2024, DE Africa:

- Formalised three agreements to collaborate with multi-sector partners including a government agency, an academic institution, and a non-governmental organisation
- Participated in events facilitated by technical partners (with AWS at Economist Sustainability Week Africa, and with Esri at the Esri User Summit)
- Commenced the preparation of project plans with 3 partners across Rwanda, Senegal and Kenya for operational use of DE Africa
- Continued collaboration with many key groups including the UN Economic Commission for Africa, the Group on Earth Observations.

DE Africa Memorandums of Understanding and formalised partnerships:

Kenya: Partnership Framework between the Kenya Space Agency and DE Africa was signed, encompassing:

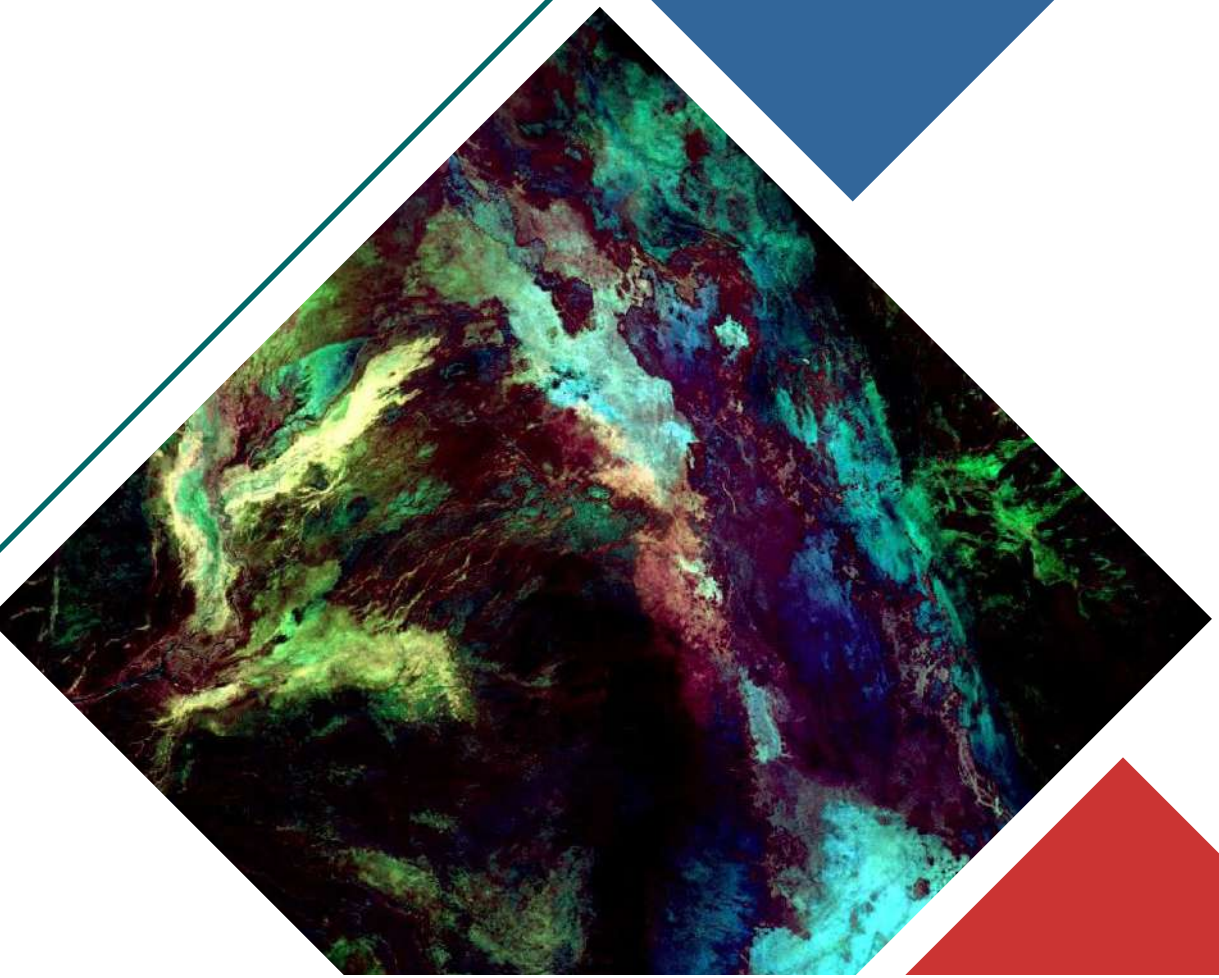
- Leveraging DE Africa to support national priorities related to the use of Earth observation data and its applications
- Collaboration between KSA and DE Africa that focuses on the use of the Open Data Cube infrastructure and DE Africa data and platforms for sustainable development activities including operational approaches for mapping land use and land cover through the Satellite Image Time Series (SITS) analysis for Earth observation data cubes in Kenya

Ghana: Memorandum of Understanding was executed between DE Africa and University of Energy and Natural Resources, detailing:

- The integration of key elements of the DE Africa Program into relevant academic programs
- A special focus on supporting the development of UENR's BSc Program in Space Sciences Engineering, where DE Africa content will serve as a core elective.

All African regions: Memorandum of Understanding was executed between DE Africa and the Vikara Institute, recognising:

- The potential value of collaboration to connect the international development sector to the data sets provided by DE Africa
- A shared interest in supporting the use of big data to improve market systems development efforts and achieve greater impact, particularly in the face of climate change



Group on Earth Observations

DE Africa continued to collaborate closely with the Group on Earth Observations (GEO):

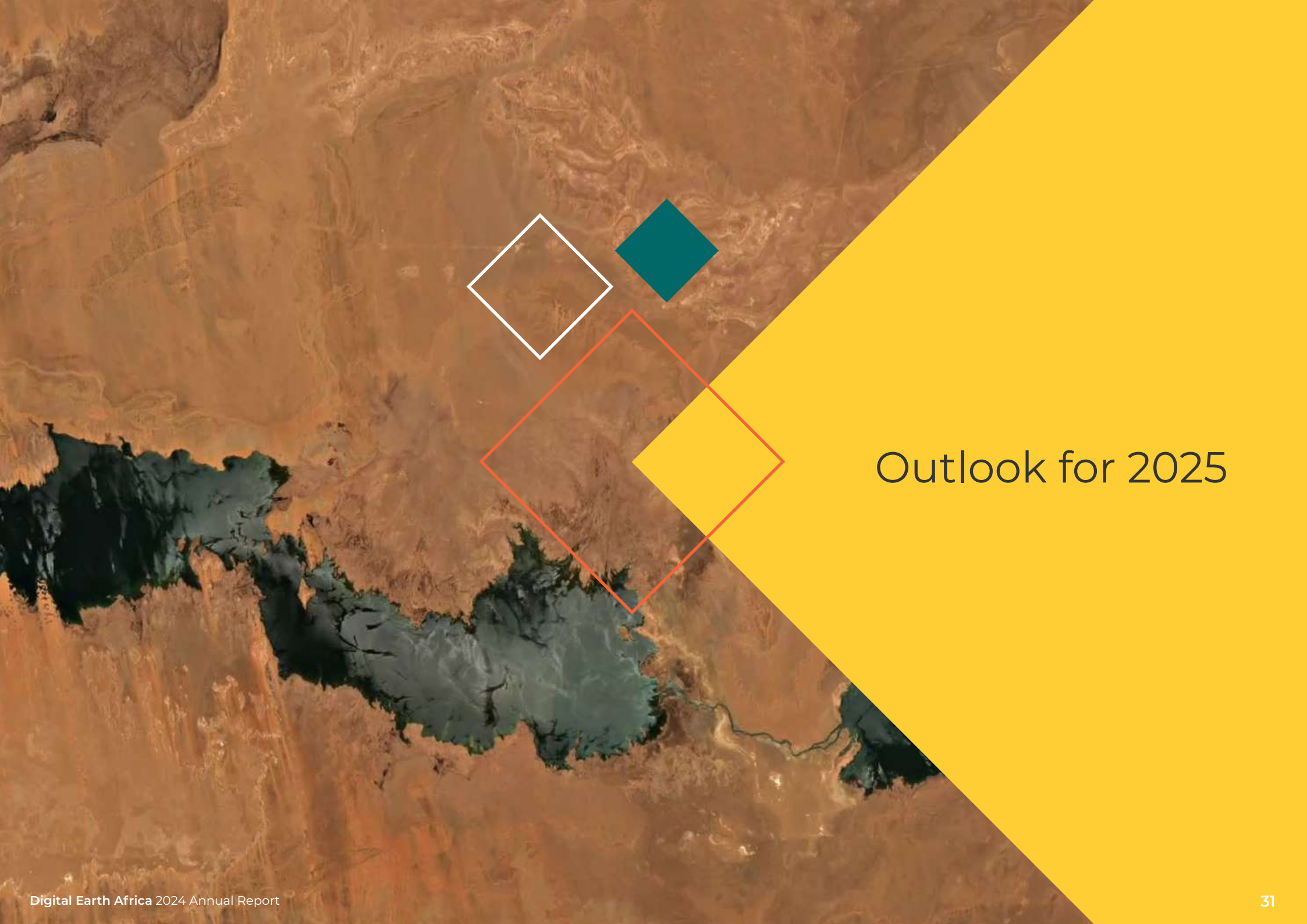
- Members of the DE Africa team participated in the 2024 GEO Symposium in China, giving presentations and participating in panel discussions in 7 sessions covering a range of topics including how DE Africa data and services contribute to weather and disasters management, ecosystems, biodiversity and carbon management, food security services, and Artificial Intelligence.
- Through the GEO Land Degradation Neutrality flagship, DE Africa provided a training event in English and French in the margins of UNCCD CoP16, focused on the use of DE Africa data and services for land degradation assessments.

Amazon Web Services

In 2024, DE Africa joined the AWS Social Impact team in Cape Town, South Africa, to participate in the Economist's first "Sustainability Week Africa, to give a presentation titled "Leapfrogging to Prosperity: How Technology is Driving Africa's Development." This event brought together African and global leaders in the tech industry, providing an opportunity to firmly establish DE Africa as a leader of African technology and innovation.

Esri

Through continued collaboration with Esri, DE Africa participated in the 2024 User Conference in San Diego, promoting the recently launched Waterbodies Monitoring Service and the broader availability of DE Africa data and services through Esri platforms.



Outlook for 2025

Looking ahead, 2025 will continue to see a strategic emphasis on embedding operations in Africa and ensuring sustainment in terms of governance, management and resources, while empowering climate action and enhancing community engagement. Activities will focus on increased user uptake, expanding in-country impacts, and ensuring long-term sustainability. In order to address these, and aligned with the Program outcomes, priorities in 2025 include:

- **Enhancing country engagement**: DE Africa will continue to work directly with countries to apply the continental infrastructure to support national priorities. This will be achieved by undertaking country-specific activities, including capacity development, co-design and development of workflows, services and data products that responsively address priorities specific to diverse country and cross-sector user needs. In order to have impact at a government level, we will engage directly with national governments through our Implementing Partners and members of our governance structures, as well as other program partners and aligned programs, to understand each country's government context, the key problems to be addressed, the information gaps that DE Africa can fill, the capacity building requirements, and the modalities to work in a particular country.
- **Ensuring our sustainability:** In 2025, efforts will focus on key priorities to ensure a smooth and effective transition to long-term arrangements. Efforts will continue to enhance and sustain efficient systems and processes, ensuring alignment with ISO standards for Good Corporate Governance. This will include strengthening reporting capabilities and facilitating improved monitoring of progress against defined outcomes. Emphasis will be place on resource mobilization, setting the path for diversifying funding and building a strong pipeline of project proposals.
- **Enabling climate action:** Africa is on the frontline of the climate crisis with populations across the continent severely and increasingly affected by extreme weather events which are resulting in extended droughts, floods, and coastal erosion. Given the unique role DE Africa has to play in supporting country-led action on risk mitigation and adaptation, we will continue with our overarching focus on climate action throughout 2025. This will be achieved by developing new tools and services to support planning and decision making, while engaging with in-country users to promote uptake and usage of DE Africa continental services and associated analysis tools.
- **Engaging the community:** We will continue to work to drive impact through wider uptake of DE Africa's platform and services by aligning DE Africa services with country-level use cases, expanding outreach and engagement, and positioning DE Africa capabilities to address specific requirements and national priorities. Country-level capacity building and institutional strengthening activities will also promote further uptake and usage of both existing and new DE Africa products and services to derive greater impact. DE Africa will work to understand its users and their needs, and provide tailored support that leads to increased use of DE Africa services and platforms. In 2025 we will continue to capture the impact our users have through storytelling via use cases, articles and user profiles, with the aim of growing awareness, engaging audiences and supporting uptake of DE Africa's platform and services. We will also continue to ensure that we serve an audience that meets our diversity and inclusion strategy.

The 2025 Annual Plan will be implemented with these priorities in mind, and success will be defined by the extent to which we can achieve them.

Acknowledgements

THE LEONA M. AND HARRY B. HELMSLEY CHARITABLE TRUST

Australian Government

aws

esri

Afri GEO Earth Observations for Africa

ECA

AFRIGIST

CILSS AGRHYMET

CSE Centre de Suivi Ecologique

RCMRD

Observatoire du Sahara et du Sahel

GHANA SPACE SCIENCE & TECHNOLOGY INSTITUTE

IWMI International Water Management Institute

KARTOZA OPEN SOURCE GEOSPATIAL SOLUTIONS

KSA KENYA SPACE AGENCY Possibilities beyond our skies

OPEN DATA CUBE

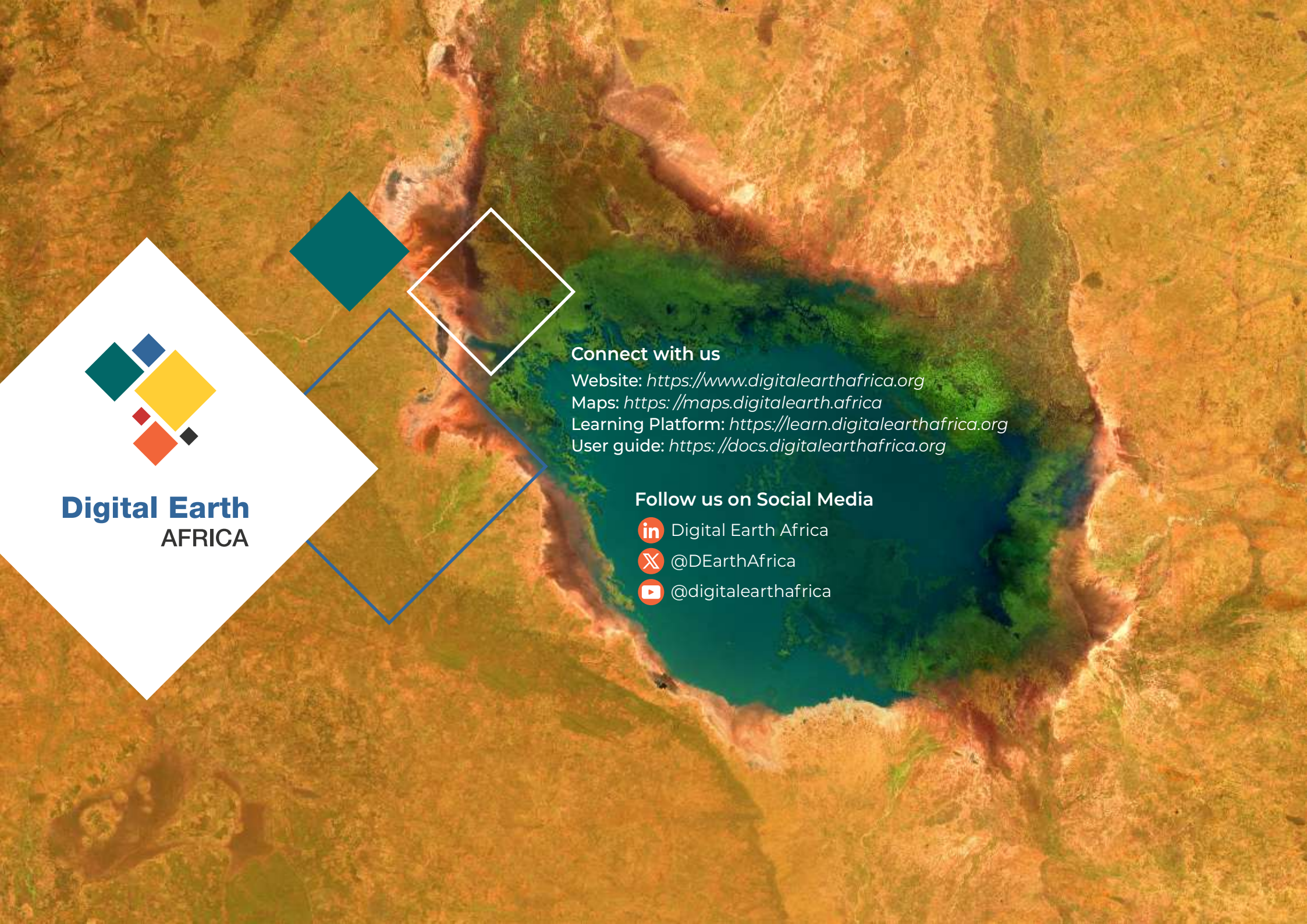
planet.

riis ENABLING INNOVATION

UENR University of Energy and Natural Resources

University of Rwanda

VIKĀRA INSTITUTE



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