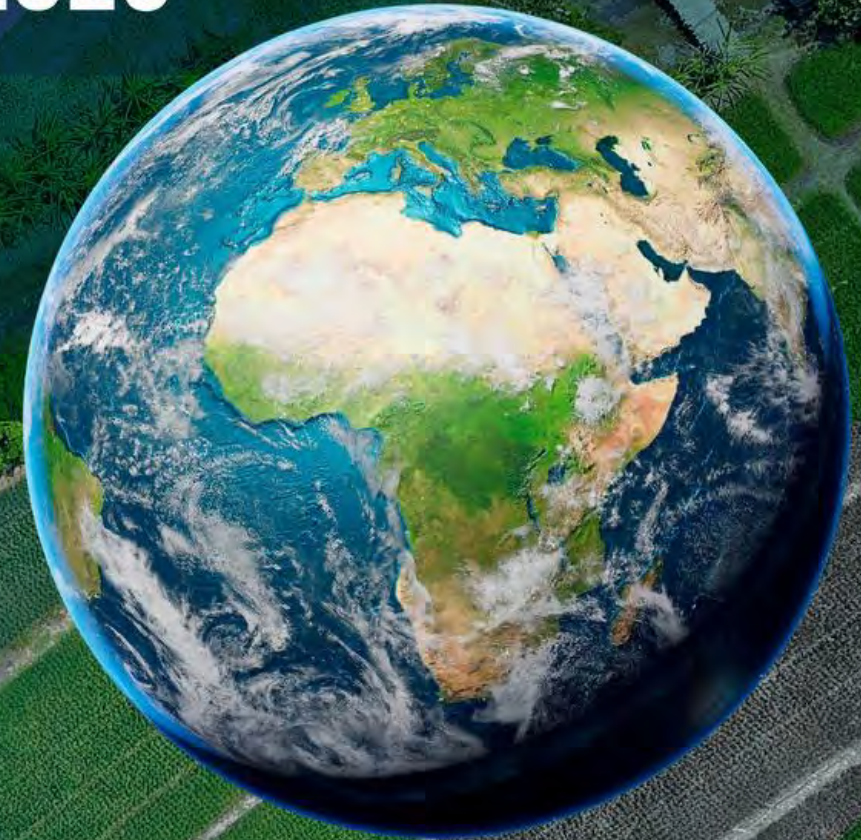


COMMUNITIES OF PRACTICE (COP)
INTEGRATED WORKSHOP AND TRAINING **2026**

SA GEO Knowledge Hub



INTEGRATED WORKSHOP

*An initiative of the DSTI that is hosted and
managed by the CSIR*

1. Rationale

South Africa Knowledge Hub

Preservation and Ownership

The South Africa National Knowledge Hub creates a dedicated space for South Africa's content, managed by the South Africa team with full ownership and stewardship

2. Thematic selection

National Priority Areas

South Africa environmental problems



One Health



Climate, Energy, and Urbanization



Weather, Hazard and Disaster Resilience



Ecosystems, Biodiversity and Carbon
Management



Land and Water Sustainability



Agriculture and Food Security

3. Building the South Africa GKH

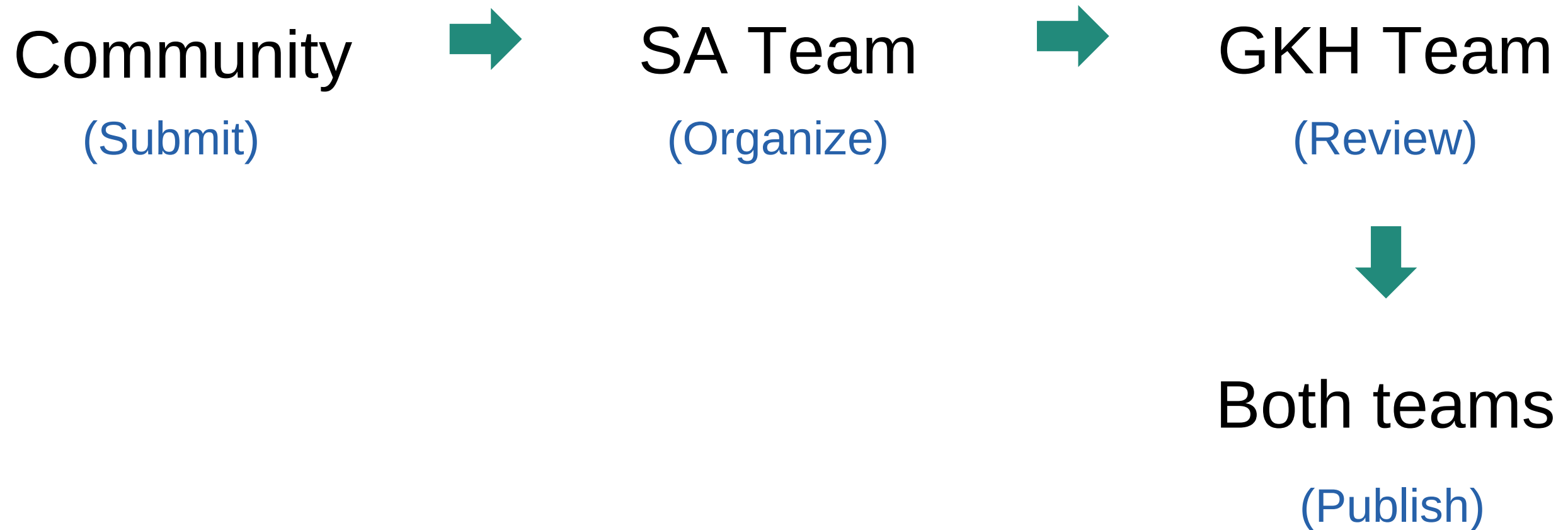
Implementation

Community contribution

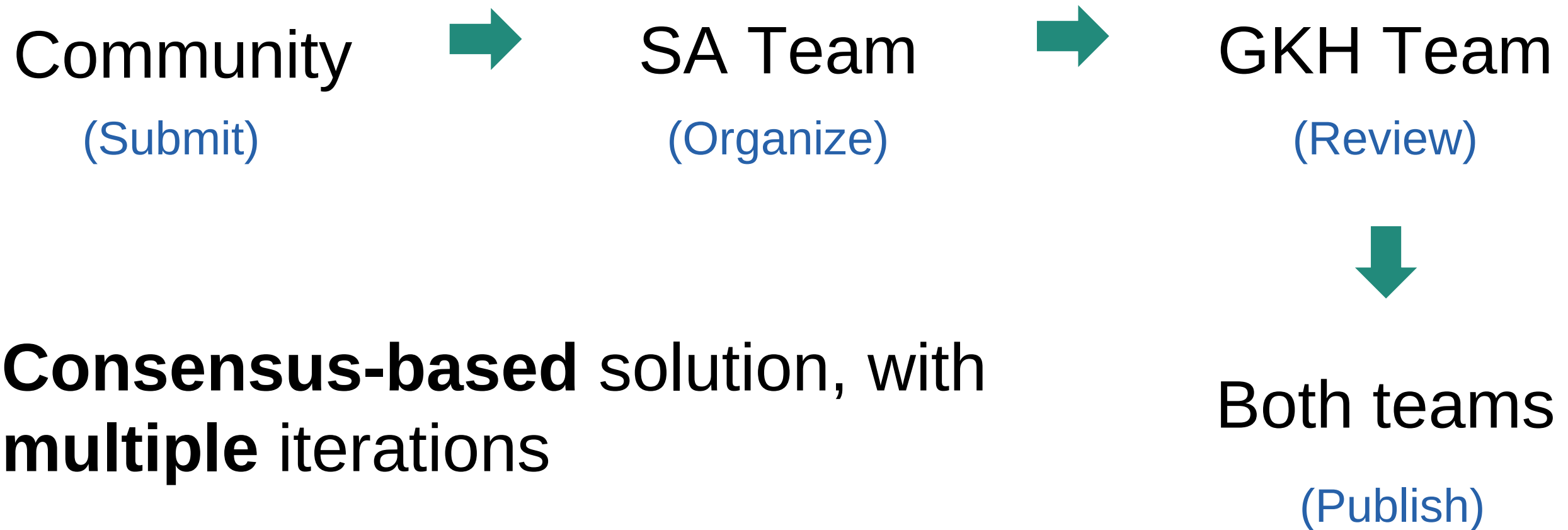
Engagements with the Communities of Practice with NEOSS

- Provide open tools, services, AI solutions
- Share case studies, use cases, publications or lessons learned.
- Offer training resources or co-create guidance material.
- Companies producing and selling EO data and services

Curation process



Curation process



A	B	C	D	E
GEO Focus Area	All challenges	Challenges in SA	Knowledge Package title	URL
Agriculture and Food Security	Drought Crop monitoring Land degradation	Crop monitoring	Building a crop map for South Africa using Sen2-Agri	https://doi.org/10.60566/ajbv5-e5b80
Capacity Building			Digital Earth Africa: applications showcase webinar series	https://doi.org/10.60566/897as-w7e89
Ecosystems, Biodiversity and Carbon Management	Loss of biodiversity Illegal mining Deforestation Overfishing Pollution	Loss of biodiversity	Monitoring Mangrove Extent in Africa using Digital Earth Africa Data Cube	https://doi.org/10.60566/1f0cq-zc482
Agriculture and Food Security	Drought Crop monitoring Land degradation	Crop monitoring	ASAP - Anomaly Hotspots of Agricultural Production	https://doi.org/10.60566/bf817-dc879
Ecosystems, Biodiversity and Carbon Management	Loss of biodiversity Illegal mining Deforestation Overfishing Pollution	Loss of Biodiversity Deforestation	OEMC project use case: Tool to estimate local temperatures changes following an increase in forest cover	https://doi.org/10.60566/6qydm-dkk05
Ecosystems, Biodiversity and Carbon Management	Loss of biodiversity Illegal mining Deforestation Overfishing	Loss of biodiversity Pollution	Monitoring Chlorophyll-a in Africa Waterbodies Using DEA Data Cube	https://doi.org/10.60566/mpx7j-a8510
Climate, Energy and Urbanization	Climate change Energy Urbanization	Urbanization	Detecting Change in Urban Extent Using Digital Earth Africa Data Cube	https://doi.org/10.60566/ka6hq-87x10
Climate, Energy and Urbanization	Climate change Energy Urbanization	Urbanization	Urban Area Mapping using Sentinel-1 data Using DEA Data Cube	https://doi.org/10.60566/syfyz-3j455

< Back

South Africa GEO Knowledge Hub

Discover the EO solutions available in South Africa GEO

SUPPORTED BY



Explore

Mechanisms

Learn

Community

Stakeholders

Representatives

Marketplace

Explore

Find EO solutions in South Africa GEO tackling the challenges of GEO Focus Areas

Q Search focus areas...

OK



Agriculture and Food Security



Climate, Energy, and Urbanization



Land and Water Sustainability

[Back](#)

FOOD SAFETY

Agriculture and Food Security

 South Africa GEO



List view

Map view

RECORD TYPE

7 results

Sort: Default

10 20 50

Knowledge Package

Knowledge Resource

RESOURCE TYPE

Publication Article

TARGET AUDIENCES

Aquaculture expert

Admin Officer Spatial Planning

Earth Observation Analyst

EO Data Practitioners

Agriculture and Forest Departments

OPEN

Journal article

September 7, 2022

A feature selection approach for terrestrial hyperspectral image analysis

Feature selection techniques are often employed for reducing data dimensionality, improving computational efficiency, and most importantly for selecting a subset of the most important features for model building. The present study explored the utility of a Filter...

[See on the map](#)
[Access →](#)

OPEN

Journal article

March 21, 2022

A Proposed Satellite-Based Crop Insurance System for Smallholder Maize Farming

Crop farming in Sub-Saharan Africa is constantly confronted by extreme weather events. Researchers have been striving to develop different tools that can be used to reduce the impacts of adverse weather on agriculture. Index-based crop insurance (IBCI) has...

[Access →](#)

OPEN

Journal article

July 7, 2024

A Satellite-Based Crop Insurance That Compensates for Rainfall Deficit

There is urgent need for innovative solutions that can be used to reduce the devastating impacts that extreme weather has on agriculture. Index-based crop insurance (IBCI) promises to be a capable tool that can be used to this end. However, the widespread...

[Access →](#)

OPEN

Journal article

January 31, 2022

Do Satellite Data Correlate with In Situ Rainfall and Smallholder Crop Yields? Implications for Crop Insurance

Adverse weather is one of the most prevalent sources of risk in agriculture. Its impacts are aggravated by the lack of effective risk management mechanisms. That is why resource-poor farmers tend to respond to weather risks by adopting low-capital investment...

[Access →](#)

OPEN

Journal article

September 9, 2022

Enhanced mapping of a smallholder crop farming landscape through image fusion and model stacking

Globally, Smallholder farming systems (SFS) are recognized as one of the most important pillars of rural economic development and poverty alleviation because of their contribution to food security. However, support for this agricultural sector is hampered by lack of...

[Access →](#)

OPEN

Journal article

September 7, 2022

A feature selection approach for terrestrial hyperspectral image analysis

Feature selection techniques are often employed for reducing data dimensionality, improving computational efficiency, and most importantly for selecting a subset of the most important features for model building. The present study explored the utility of a Filter...

[See on the map](#)
[Access →](#)

OPEN

Journal article

March 21, 2022

A Proposed Satellite-Based Crop Insurance System for Smallholder Maize Farming

Crop farming in Sub-Saharan Africa is constantly confronted by extreme weather events. Researchers have been striving to develop different tools that can be used to reduce the impacts of adverse weather on agriculture. Index-based crop insurance (IBCI) has...

[Access →](#)

OPEN

Journal article

July 7, 2024

A Satellite-Based Crop Insurance That Compensates for Rainfall Deficit

There is urgent need for innovative solutions that can be used to reduce the devastating impacts that extreme weather has on agriculture. Index-based crop insurance (IBCI) promises to be a capable tool that can be used to this end. However, the widespread...

[Access →](#)

OPEN

Journal article

January 31, 2022

Do Satellite Data Correlate with In Situ Rainfall and Smallholder Crop Yields? Implications for Crop Insurance

Adverse weather is one of the most prevalent sources of risk in agriculture. Its impacts are aggravated by the lack of effective risk management mechanisms. That is why resource-poor farmers tend to respond to weather risks by adopting low-capital investment...

[Access →](#)

LEARN. ENGAGE. CREATE.

Capacity building in South Africa GEO

Join capacity-building activities in South Africa GEO to learn, connect, and drive change with Earth Observation.

26 activities
available

[Explore Activities →](#)



Key representatives

The representatives supporting the National GKH activities and collaboration.



Lulu Makapela
Key representative

[View profile](#) 



Bolelang Sibolla
Key representative

[View profile](#) 



Kwanele Ngongoma
Key representative

[View profile](#) 



Elhadi Adam
Key representative

[View profile](#) 



Tshisikhawe Mphaphuli
Key representative

[View profile](#) 

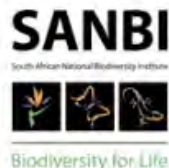
Stakeholders

Organizations supporting EO data and knowledge in South Africa GEO

Search stakeholders...



Water Research Commission



Sanbi



AfriGEO



Digital Earth Africa

< Previous 1

Stakeholders

Organizations supporting EO data and knowledge in South Africa GEO

Search stakeholders...



South African National Space Agency (SANSa)



Council for Scientific and Industrial Research (CSIR)



Agricultural Research Council



SAEON



Council for Geoscience



Stats SA

< Previous 1 2 Next >

EO Solutions for South Africa GEO

7
BUSINESSES

36
APPLICATIONS

3
FOCUS AREAS



Matsheliso Science Institute

A Journey To Excellence

Climate, Energy, and Urbanization

1 app →



SAICTS

Climate, Energy, and Urbanization

6 apps →



GeoSmart Space

Bringing Space down to Earth

Climate, Energy, and Urbanization

15 apps →



Threeconk Group

Creating a desirable space.

Land and Water Sustainability

4 apps →



TerraNexus Space Innovation

Earth centric through Space and GeoSpatial intelligence.

Climate, Energy, and Urbanization

1 app →



Spatial Data Services Africa NPC

Advancing a digital future to ensure Spatial Justice, Spatial Sustainability, Efficiency, Spatial Resilience,...

Land and Water Sustainability

5 apps →



Swift Geospatial

Transforming data into insights

Agriculture and Food Security

4 apps →



GeoSmart Space

Bringing Space down to Earth

15
apps

1
focus areas

South Africa GEO Western Cape

Climate, Energy, and Urbanization

Visit website

"From Elevation to Insight"

A geospatial intelligence company delivering the highest-resolution data-driven decision-makers across industries. Founded on earth observation modelling to offer powerful products, services, and consulting solutions for geographic patterns, assessing risk, and supporting strategic

Materials

Brochures, profiles, and reference materials from GeoSmart Space

GeoSmart for Agriculture

PDF

Applications

EO tools and platforms offered by GeoSmart Space

Search applications...

ED

Elevation Data providers

2 m Digital Elevation Model of South Africa (DEM2) 5 m Stellenbosch University Digital Elevation Model (SUDEM) 5 m Hybrid Digital Elevation...

Climate, Energy, and Urbanization Data Layers (.tif, .shp, .dwg), API

2M

2 m Digital Elevation Model of South Africa (DEM2)

2 m Digital Elevation Model of South Africa (DEM2) 5 m Stellenbosch University Digital Elevation Model (SUDEM) 5 m Hybrid Digital Elevation...

Climate, Energy, and Urbanization Data Layers (.tif, .shp, .dwg), API

5M

5 m Stellenbosch University Digital Elevation Model (SUDEM)

2 m Digital Elevation Model of South Africa (DEM2) 5 m Stellenbosch University Digital Elevation Model (SUDEM) 5 m Hybrid Digital Elevation...

Climate, Energy, and Urbanization Data Layers (.tif, .shp, .dwg), API

5M

5 m Hybrid Digital Elevation Model (FUSEDEM)

2 m Digital Elevation Model of South Africa (DEM2) 5 m Stellenbosch University Digital Elevation Model (SUDEM) 5 m Hybrid Digital Elevation...

Climate, Energy, and Urbanization Data Layers (.tif, .shp, .dwg), API

FH

Flood Hazard data providers

2 m Digital Elevation Model of South Africa (DEM2) 5 m Stellenbosch University Digital Elevation Model (SUDEM) 5 m Hybrid Digital Elevation...

Climate, Energy, and Urbanization Data Layers (.tif, .shp, .dwg), API

FF

FHI: Flood Hazard Index

2 m Digital Elevation Model of South Africa (DEM2) 5 m Stellenbosch University Digital Elevation Model (SUDEM) 5 m Hybrid Digital Elevation...

Climate, Energy, and Urbanization Data Layers (.tif, .shp, .dwg), API

FF

FHM: Flood Line Hazard Model

2 m Digital Elevation Model of South Africa (DEM2) 5 m Stellenbosch University Digital Elevation Model (SUDEM) 5 m Hybrid Digital Elevation...

Climate, Energy, and Urbanization Data Layers (.tif, .shp, .dwg), API

TD

Terrain data consultation

2 m Digital Elevation Model of South Africa (DEM2) 5 m Stellenbosch University Digital Elevation Model (SUDEM) 5 m Hybrid Digital Elevation...

Climate, Energy, and Urbanization Data Layers (.tif, .shp, .dwg), API

4. Next steps

Challenges & opportunities

Challenges & opportunities

- Pioneers, no well-defined path
- Sustainability, to keep the initiative evolving
- Establish protocols, country itself can run it, and others follow the same approach

THANK YOU

www.neoss.co.za