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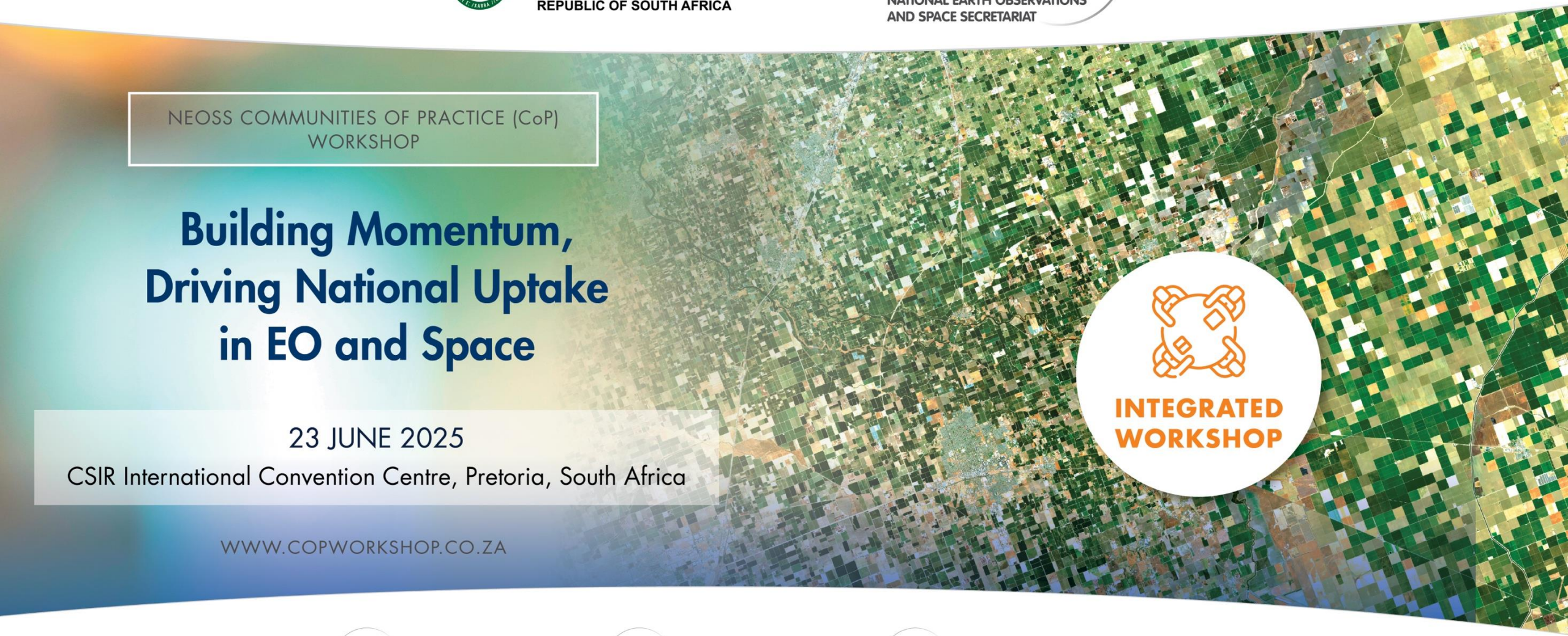
Science, Technology and Innovation
REPUBLIC OF SOUTH AFRICA

NEOSS
NATIONAL EARTH OBSERVATIONS AND SPACE SECRETARIAT

NEOSS COMMUNITIES OF PRACTICE (CoP) WORKSHOP

Building Momentum, Driving National Uptake in EO and Space



INTEGRATED WORKSHOP

23 JUNE 2025

CSIR International Convention Centre, Pretoria, South Africa

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Building Momentum, Driving National Uptake in EO and Space

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EOMI-ECOSYSTEM

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This section explores South Africa's EO ecosystem maturity, focusing on industry, academia, innovation, funding, and awareness.

Key content:

- South Africa has a well-developed EO ecosystem, particularly in Cape Town, Pretoria, and Johannesburg.
- The maturity spans upstream technology development to downstream application services.
- Coordination efforts are led by SANSA and NEOSS.

Let's now unpack each component of the EO ecosystem, beginning with the private sector.

South Africa’s EO industry features active participation across the value chain, from manufacturing to services.

Key content:

- 14 EO companies (Micro to Midcaps) identified.
- Simera Sense raised €13.5M in 2024 – optical payloads and on-board processing.
- Aerobotics raised $17M in 2021 – precision farming and crop health monitoring.
- GeoAfrika – over two decades in GIS solutions.

This vibrant industry reflects growing confidence and commercial uptake of EO solutions.

EO education is embedded in several universities across the country, feeding the national skills pipeline.

Key content:
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- 19 universities offer EO-related qualifications.
- 33 Bachelor/Master's, 5 PhD programmes in remote sensing, GIS, and geomatics.
- Universities with full spectrum: UJ, Limpopo, UP, SU, UNIVEN.
- Leading research institutions: UCT and UKZN.

This widespread academic capacity creates a strong base for EO literacy and technical expertise.

EO research in South Africa extends well beyond universities into specialist science institutions.

Key content:

- 293 EO-focused researchers in external institutes.
- Key institutions: SAWS, SAEON, SANBI, CSIR etc.
- CPUT leads in small satellite development through CubeSat projects.

These national institutions provide operational EO knowledge for environmental and climate resilience.

Targeted training events support the practical application of EO skills across sectors.

Key content:

- 12 EO training programmes identified from 2022–2024.
- “EO for Agriculture Under Pressure 2024” and “Agricultural Drought Monitoring from Space” hosted by NEOSS and ESA.
- General GIS and remote sensing training by SANSA in Pretoria.

Such initiatives ensure knowledge transfer and technical capacity for applied EO.

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South Africa’s innovation hubs are increasingly catering to EO and geospatial start-ups.

Key content:

- 29 innovation hubs and clusters exist nationwide.
- Support mechanisms: science parks, incubators, accelerators.
- mLab Southern Africa collaborates with SANSA on the International Space Apps Challenge.

The innovation ecosystem fosters experimentation and market-ready EO solutions.

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Access to EO innovation funding remains crucial for start-up growth and R&D continuity.

Key content:

- 5 funding programmes relevant to EO identified.
- NEOFrontiers (SANSA & NRF): EO-specific focus on sensors, services, and value chains.
- Supports both 1–2 year and 2–3 year R&D efforts.

Such targeted funding helps de-risk innovation and encourage EO entrepreneurship.

Awareness events are an essential part of strengthening national EO identity and visibility.

Key content:

- 9 EO-focused events held/planned between 2022–2024.
- Organised primarily in Pretoria by NEOSS and SANSA.
- GEO Week 2023 & Ministerial Summit held in Cape Town, hosted by the South African Government and Group on Earth Observations.

These events catalyse cross-sector collaboration and global recognition of local EO capabilities.

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The EO ecosystem is primarily concentrated in a few urban centres, underscoring the need for a broader reach.

Key content:

- Cape Town and Johannesburg are primary industry nodes.
- Pretoria hosts most government and coordination events.
- Limited direct EO engagement in rural provinces or townships.

Expanding EO efforts beyond metro centres will ensure wider inclusion and uptake.

Cross-Sectoral Integration: EO uptake is evident across multiple sectors, although formal integration varies.

Key content:

- EO is used in agriculture, water, biodiversity, and land planning.
- Strong partnerships exist between SANSA and departments such as DFFE, DALRRD, and SAWS.
- EO is increasingly used to support disaster and food security monitoring.

These interlinkages showcase EO's growing role in policy and service delivery.

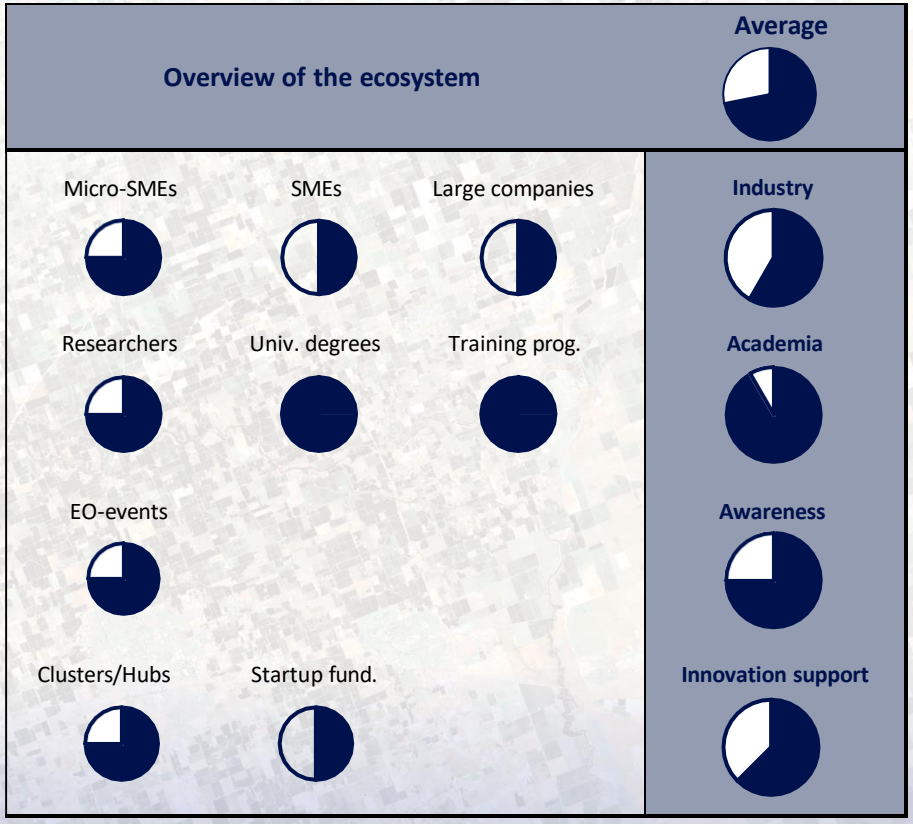
South Africa demonstrates ecosystem strengths across institutions, innovation, and capacity-building.

South Africa demonstrates ecosystem strengths across institutions, innovation, and capacity-building.

Key content:

- Academic and commercial actors are active and diverse.
- Targeted funding, such as NEOFrontiers, adds value.
- Training and awareness initiatives are growing.
- GEO Week 2023 achieves high international visibility.
- Startup funding is limited.

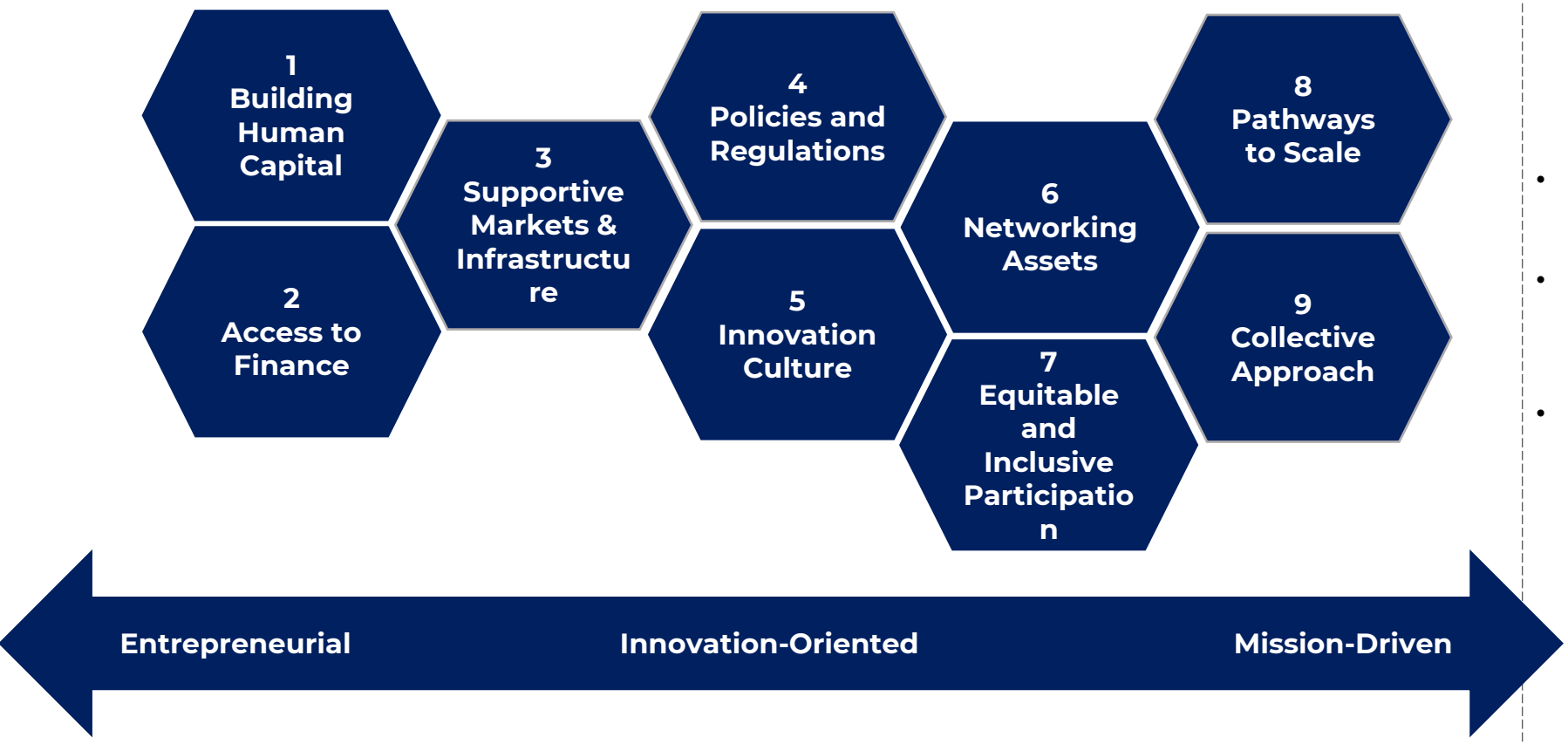
These elements provide a solid foundation for EO maturity and global engagement.



Some of my own reflections

- Require a better understanding of the outcomes and impact of EO initiatives to get a true reflection of the maturity and health of the EO ecosystem
- Policy and strategy are approximately 15-20 years old and need to be updated to be an enabler for a competitive and contributing EO ecosystem
- The linkages and knowledge flows between university research and industry and the broader ecosystem are unclear. A clearer research agenda aligned with strategic ambitions is required.
- Industry support is patchy. Requires a broader dialogue with industry to understand their needs and how the ecosystem can support them.
- Although NEO Frontiers provides funding for SMMEs, access to finance remains an issue for the majority of SMMEs.
- Support for SMME development through incubators and accelerators requires a more strategic and systematic approach. Vital for strengthening and scaling SMME's and derisking private sector funding into the ecosystem.

Assessing the maturity of space innovation ecosystems within an NSI lens



Why an innovation ecosystem approach?

- *Economic development needs to be undertaken on a holistic basis*
- *Identifying critical challenges enables more effective allocation of scarce resources*
- *It also enables effective conversations with decision makers across the entire ecosystem*

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Thank You

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