

The background of the slide is a dark blue image showing a portion of the Earth on the left, with several white lines representing satellite orbits or data paths extending across the frame. A green rectangular box is positioned at the top left, containing the title text.

NEOFrontiers Project Overview

Harnessing Earth Observation
Data and Data Science for
Tailings Dam Monitoring



Why this Project matters?



Improve Compliance



Promote Operational Excellence



**Prevent Harm: Lives, Environment,
Economic & Social**

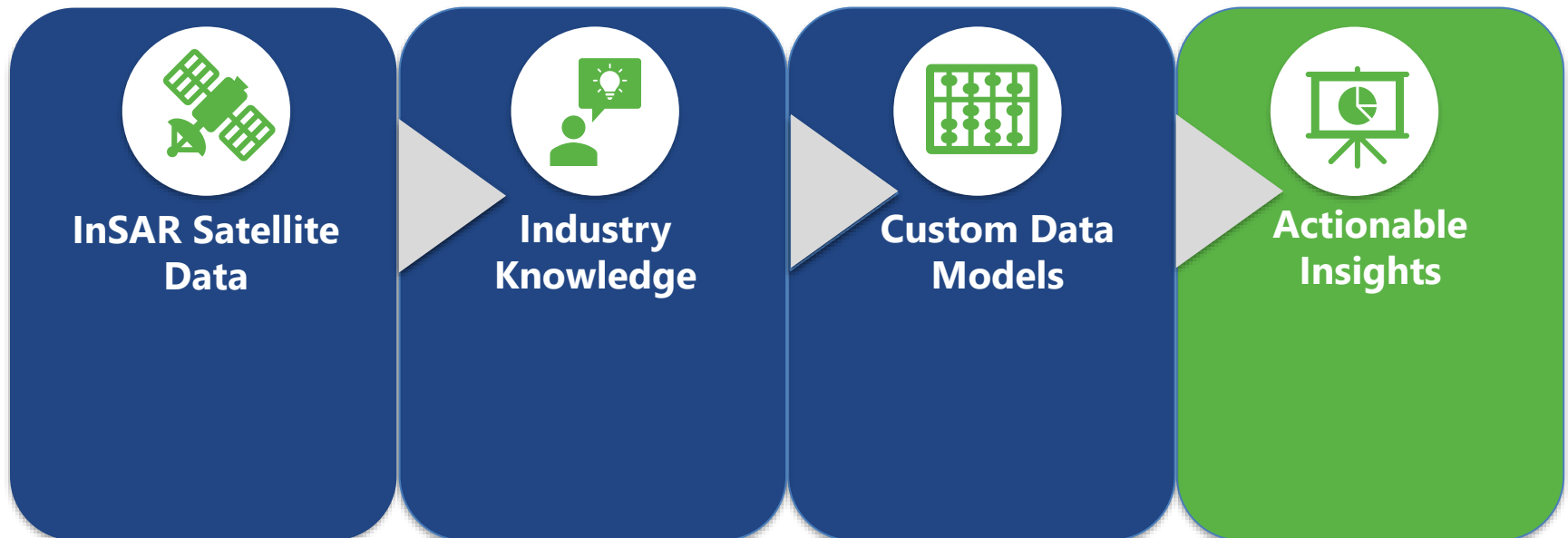


South Africa is estimated to have around **200 to 400 tailings dams** – most are old and monitored through inadequate methods. (source: www.earthworks.org)

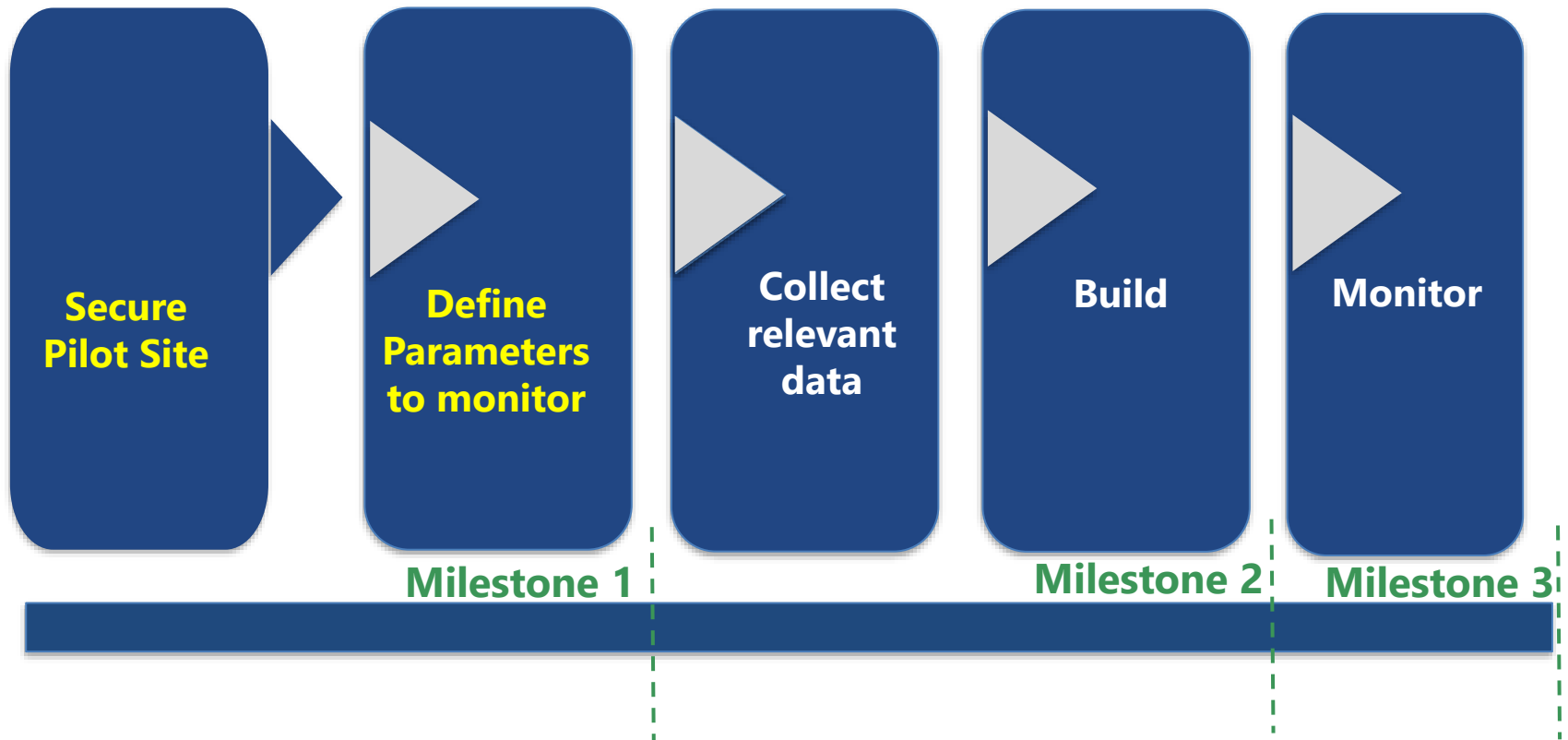


Project Value Prop & Approach

“To empower mining companies with satellite-driven insights to enhance safety, compliance, and environmental stewardship in tailings dam management.”



Progress





kgothatso
innovations

locate • analyse • manage

Earth Intelligence for Inclusion: Shaping South Africa's Space-Driven Development Future

Ndilisa Didiza



Introduction

About the Founder and Managing Director:

- BSc Honours in Applied Remote Sensing & GIS
- 18+ yrs Consulting Experience (DWS, SRK Consulting, KI)
- NEOSS: Co-Chair ('Agric & Food Security' Community of Practice)
- Papers Presented:
 - Assessing Engineering Risk (Geoweeek, Cape Town)
 - GIS in Asset Management (GISSA, Pretoria)
 - Qhumanco Irrigation - Water Use Licence (6TH AfriGEO, Accra)





Quick Facts About Us

Highlights:

- Founded 2009, Operational since 2015
- Focus: Engineering, Environmental, Mining, Public Sector
- 181 successful assignments, for 30+ customers
- BBBEE Level 1, 100% Woman-Owned

How we are structured:



What we do:



Our Partners:



Consulting:





Case studies



Case Study 1 – Engineering

Business Challenge:

Assess ground conditions for a renewable energy feasibility

Solution:


- Source satellite data with radar
- Process data to determine subsidence and swelling
- Map results & write report

Outcome:

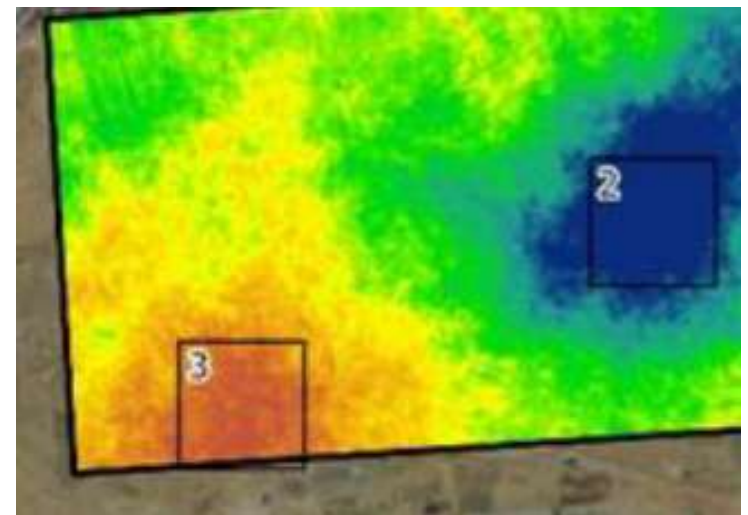
3 risky areas identified

TOTAL DISPLACEMENT BETWEEN MARCH 2015 AND JUNE 2024

Legend

 Study area

Displacement (mm)





Case Study 2 – Agriculture

Business Challenge:

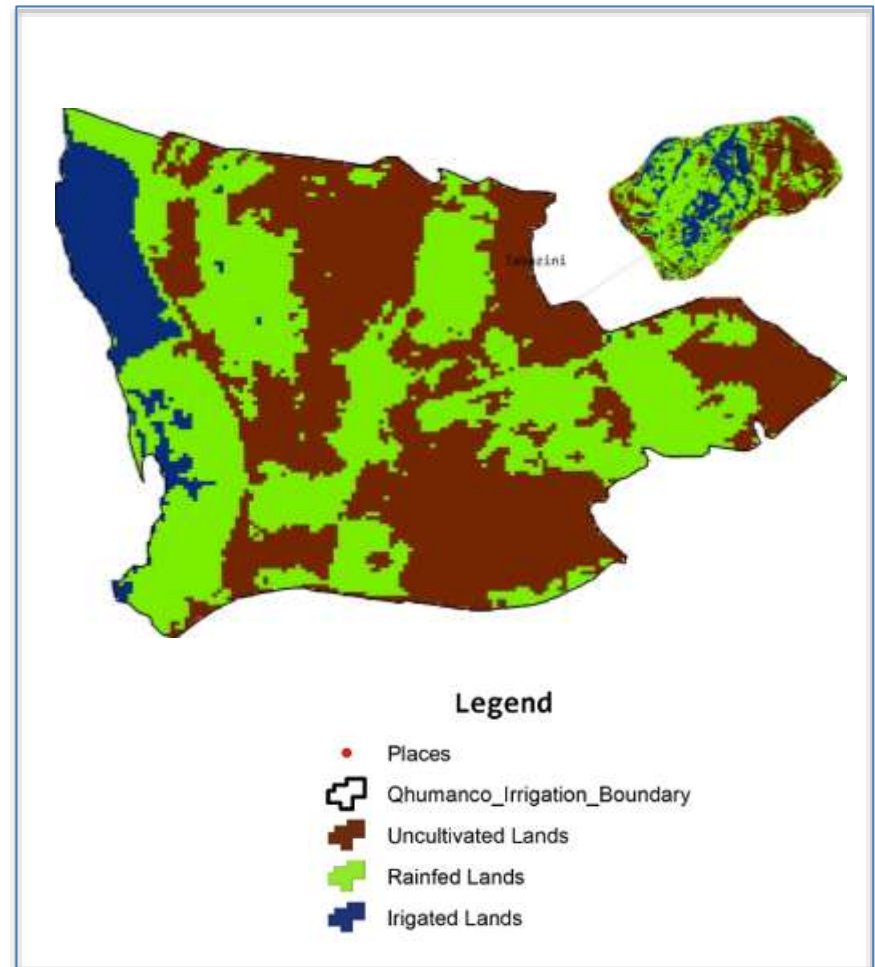
Determine WUL compliance for project

Solution:

- Obtaining historical satellite imagery
- Using remote sensing techniques to determine if irrigation occurred
- Compiling a report with findings

Outcome:

We found that irrigation occurred on >25% of study area, therefore WULA is necessary





Case Study 3 – Mining

Business Challenge:

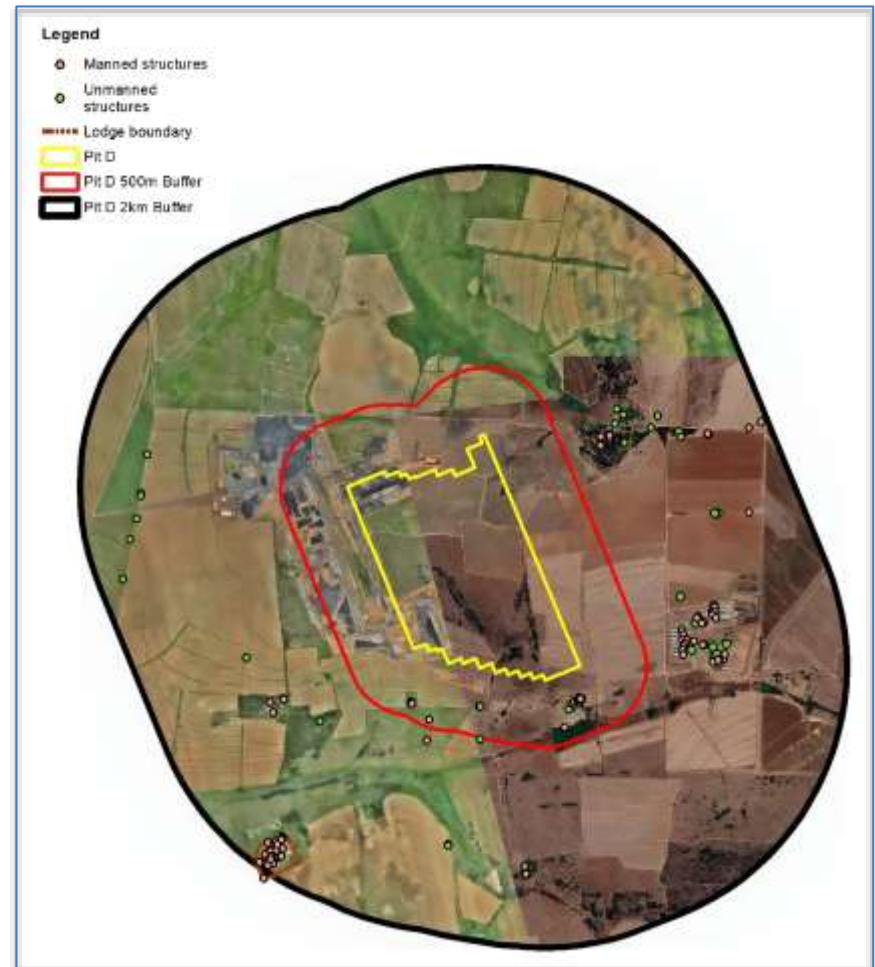
Reducing liability for coal mine as a result of blasting activities.

Solution:

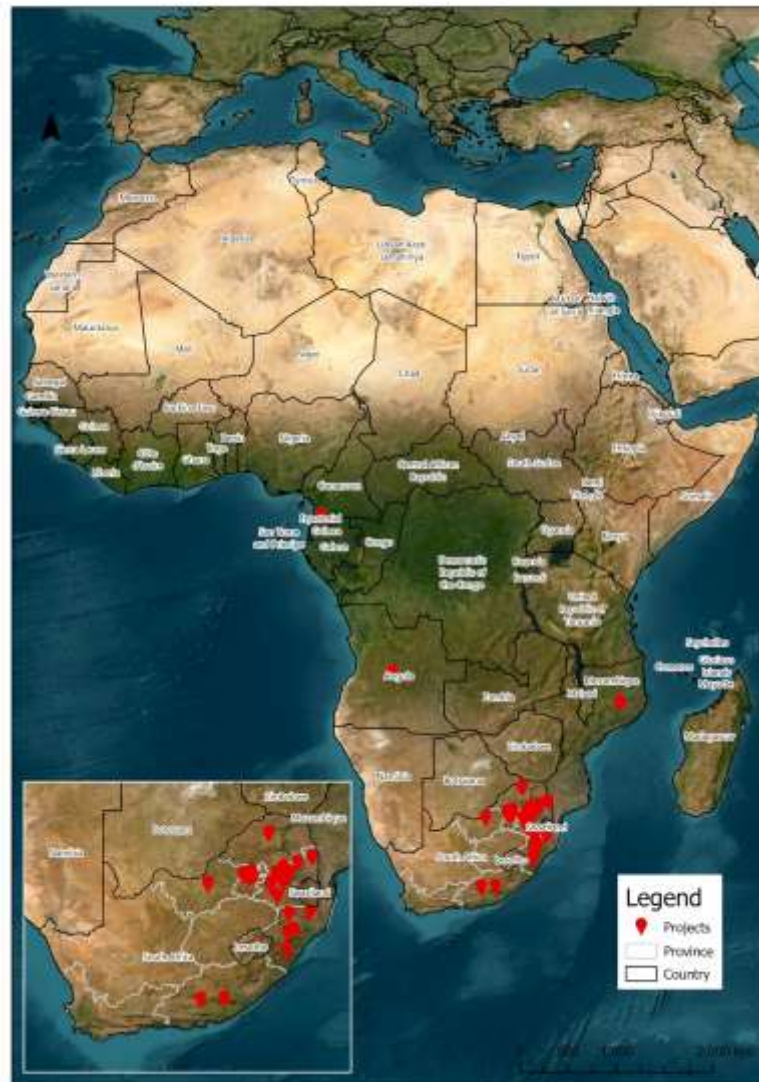
- Capturing and Geolocating Structures within 2km radius of blast
- Developing a Geodatabase for future reference
- Compiling a report and identifying 'at risk' structures

Outcome:

A referenceable database in the event of claims as a result of blasting activity



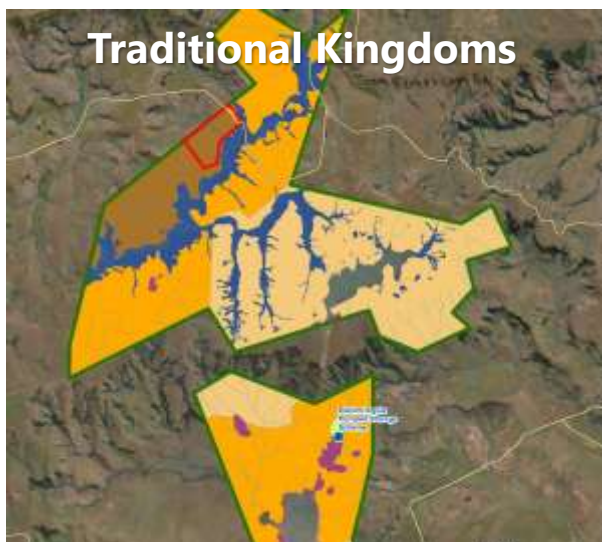
Projects Footprint





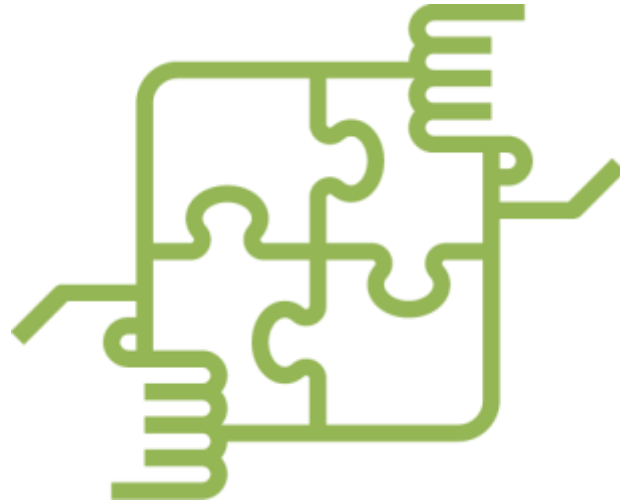
Earth Intelligence for Inclusion – Concrete examples of impact

Concrete examples of impact





How do we do it?



Co-Creation

People-first Innovations

Agencies (NEOFrontiers)

Govt/Funders

Researchers

ESD

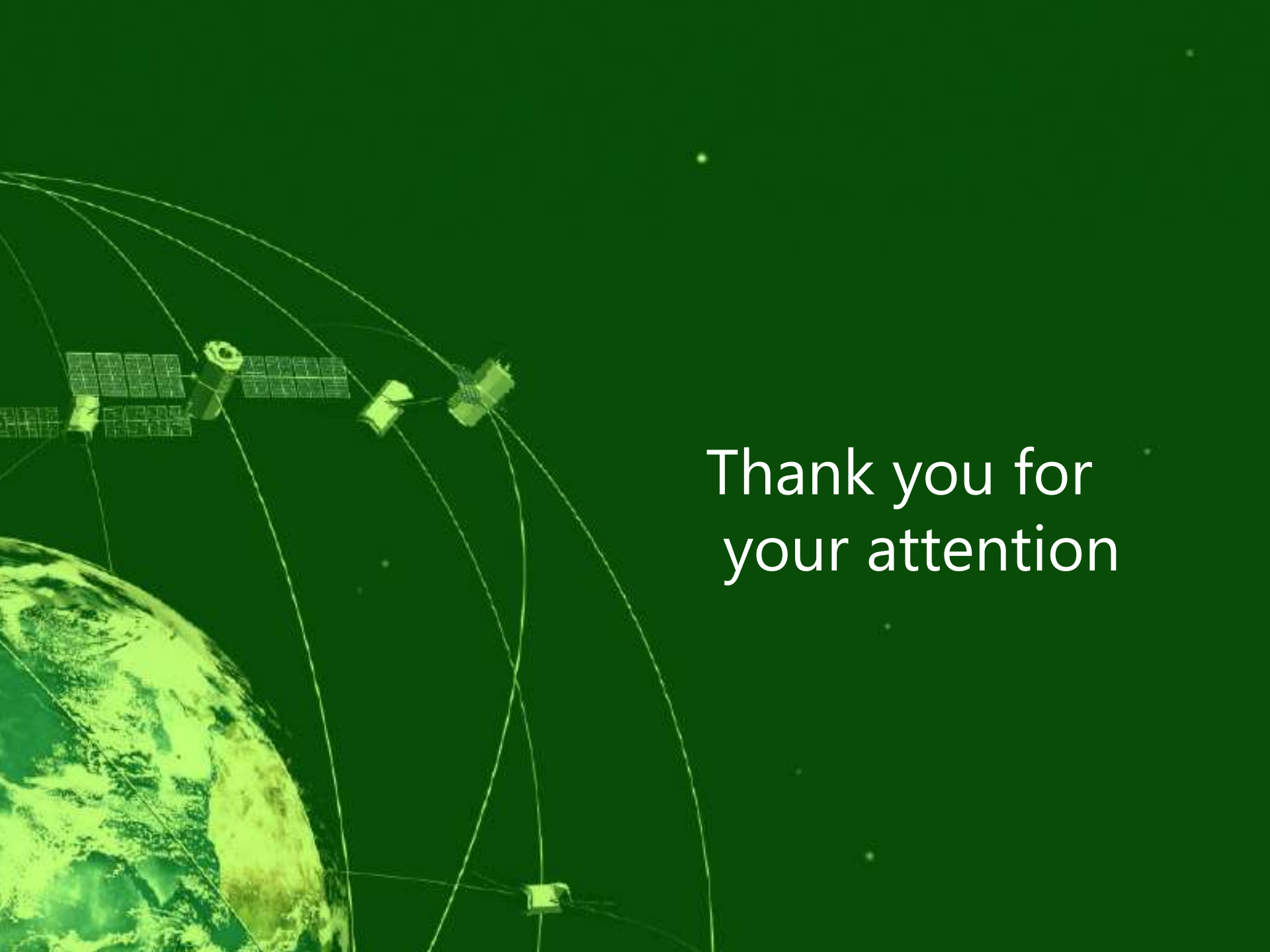


Closing vision

If we want a resilient and transformative space future, we must ground it in the lived realities of South Africans

EO is a shared national asset, not just a technical capability

A space economy where no one is left behind



Thank you for
your attention



Kgothatso Innovations

WhatsApp contact

