GEO WEEK & MINISTERIAL SUMMIT 2023

Flash Talk

#TheEarthTalks

science & innovation
Department:
Science and Innovation
REPUBLIC OF SOUTH AFRICA

GEO WEEK 2023 MINISTERIAL SUMMIT

GEO GROUP ON EARTH OBSERVATIONS

Leveraging satellite imagery for a sustainable future

Monitoring the effect of agriculture on deforestation

06.11.2023 (14:10)

James Saunders

OUTLINE

The issue

An Earth Observation perspective

Data types and fusion

Validation and data presentation

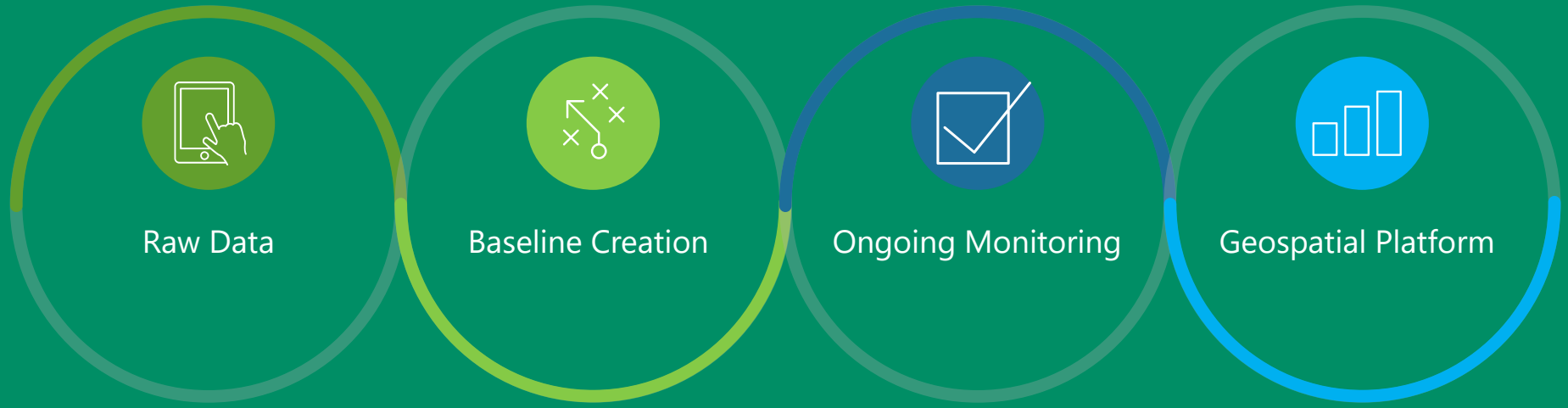
The issue

- 38% Earth’s land mass is covered by
- agriculture
- 31% Earth’s land mass is covered by forest
- Agricultural expansion continues to be the main driver of deforestation
- Deforestation occurs at SCALE, often in remote areas

An Earth Observation perspective

- Satellite data explosion
- Multiple sensors, multiple applications
- Over 100TB collected per day
- Modern computing makes processing easier
- Continual collection = analytics time machine

Data types and fusion



01 DATA

02 MEASURE

03 VERIFY

04 REPORT

Data types and fusion

- Optical high resolution
- RADAR medium resolution
- Optical low resolution
- Optical medium resolution

Data types and fusion

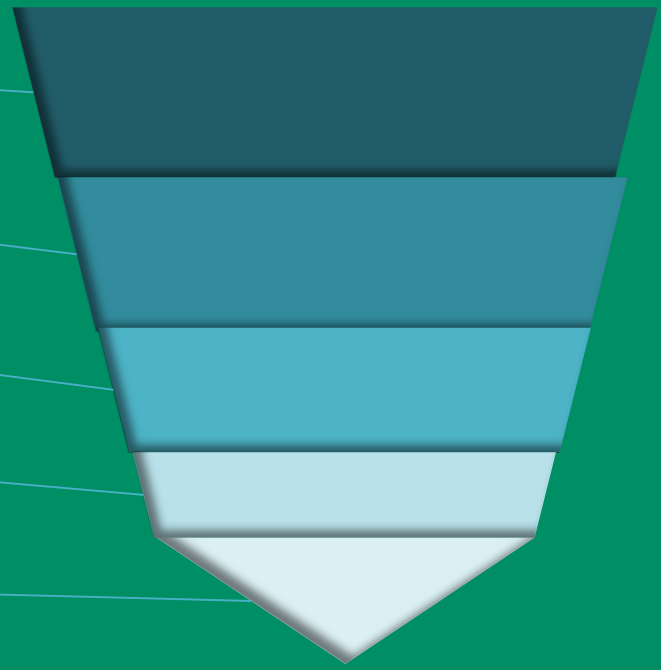
3rd Party Generated Deforestation Alerts – **Country Wide Analysis**

Sentinel-1 and/or Sentinel-2 satellite imagery verification

PlanetScope hot spot analysis and verification. **Smaller areas to be targeted**.

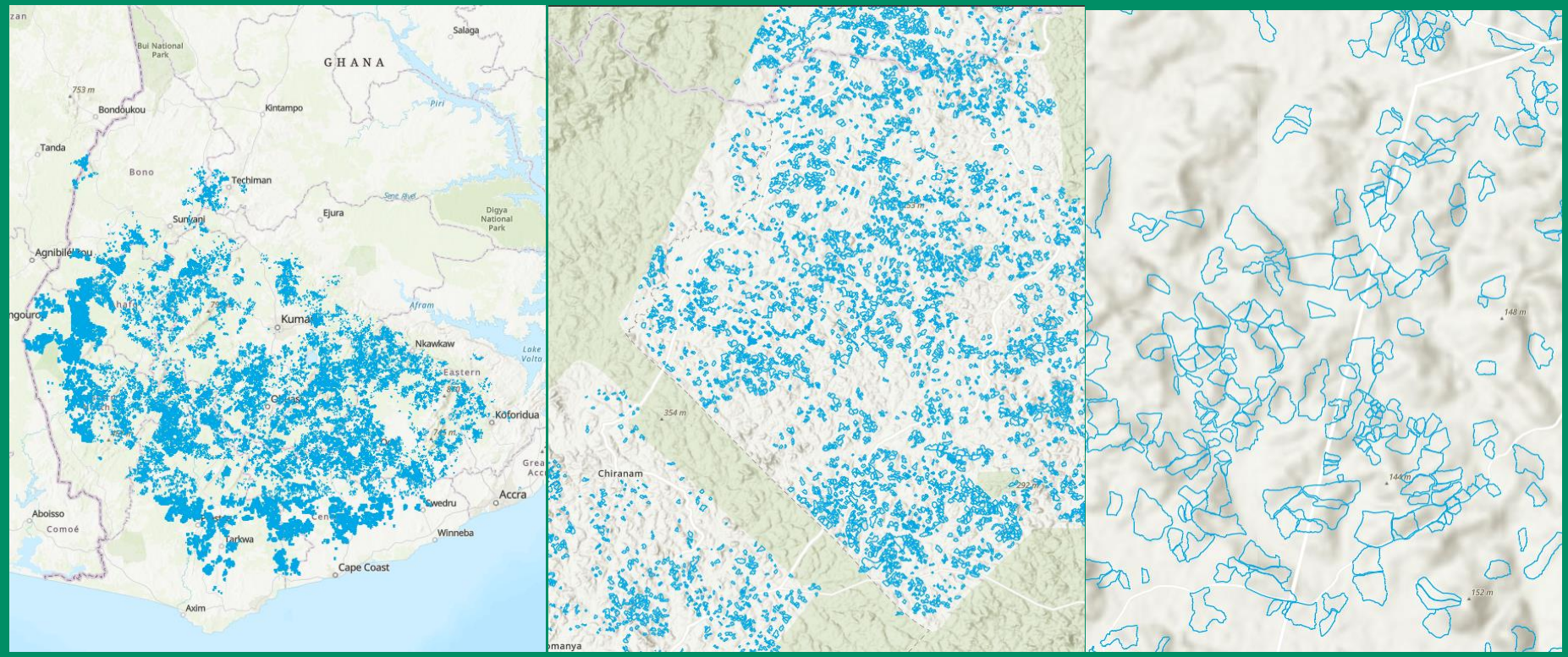
High resolution 30cm/50cm further verification for **small-scale deforestation**

Field teams to be sent to problematic areas with **in-field surveys to be conducted**



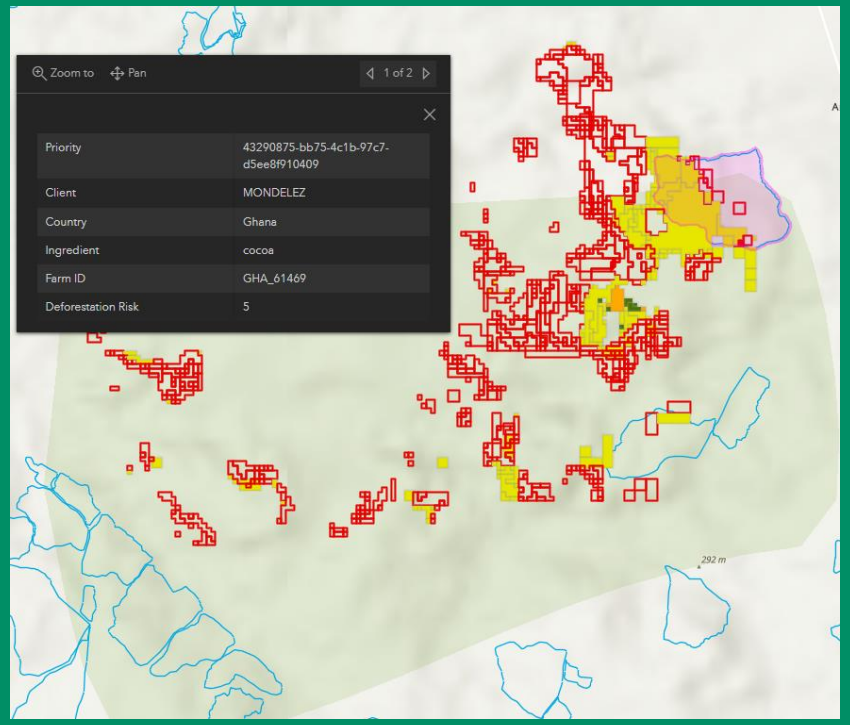
Validation and data presentation

+/- 165 000 fields within Ghana and over 550 000 worldwide



The issue

Disturbance Heat Map Analysis – Drill Down



Low resolution optical and radar

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Medium resolution optical and radar

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High resolution optical

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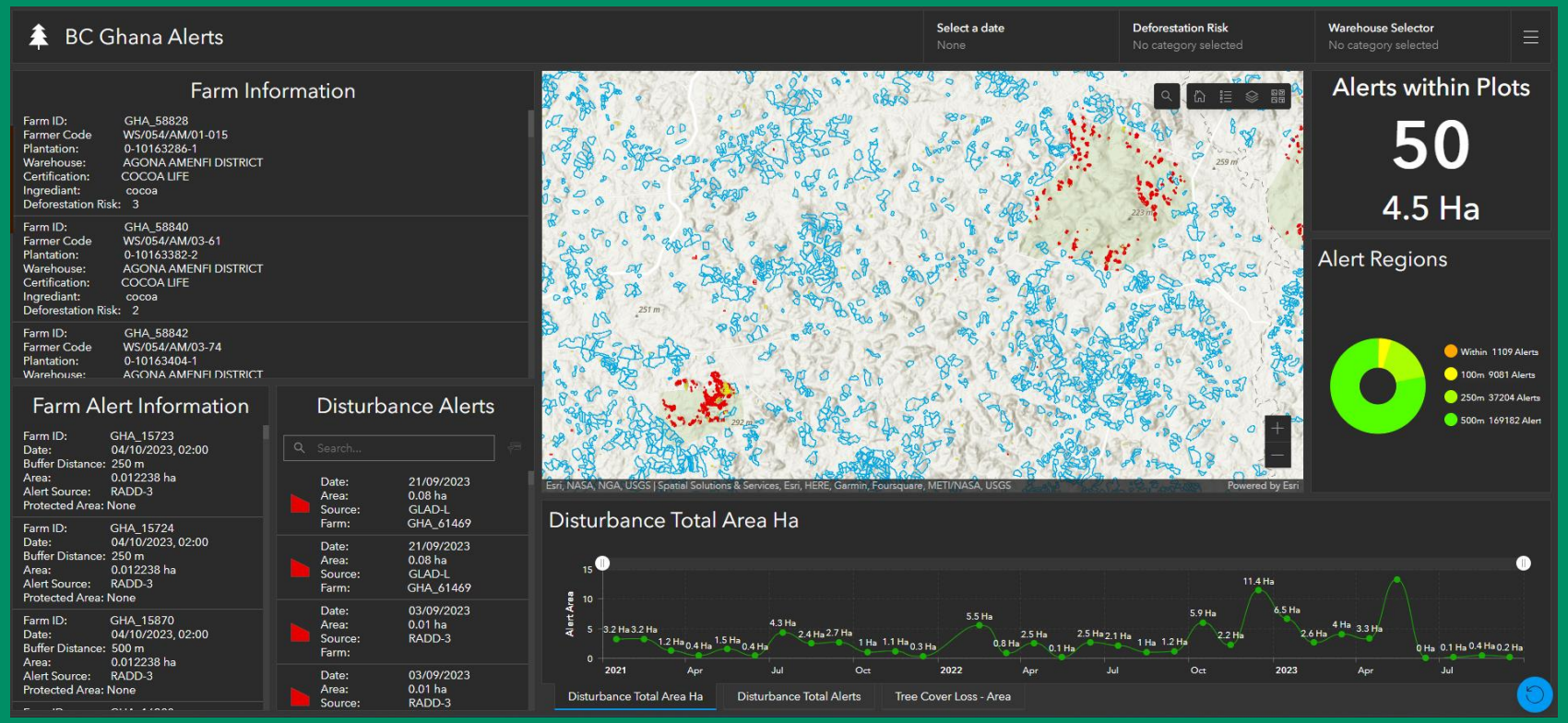
In field survey

Validation and data presentation



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6-10 NOVEMBER

CAPE TOWN, SOUTH AFRICA

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