AfriCultuReS

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ENHANCING FOOD SECURITY IN AFRICAN AGRICULTURAL SYSTEMS WITH THE SUPPORT OF REMOTE SENSING

This project has received funding from the European Union's Horizon 2020 Research and Innovation Framework Programme under grant agreement No 774652

CHALLENGE

- **224 million** individuals, about **38% of the population above 15** years in **sub-Saharan Africa,** suffered from severe food insecurity in 2016
- **≅ 3% of the current World's Population threatened by food** insecurity lives in **sub-Saharan Africa**

FAO estimations, Nov-2017

AfriCultuReS' **challenge is** to **IMPROVE PEOPLE's wellbeing** through the **improvement of Food Security in Africa**.

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OBJECTIVES

1. To **improve** and **turn operational** innovative food production **monitoring and forecasting** methods in Africa for **enriched decision making**
2. To **reduce** subjectivity and error in crop area and yield estimates
3. To **extend** the EU knowledge on EO based services for AG monitoring in Africa
4. To deliver a **platform** to assess and analyze food production
5. To **predict upcoming threats** due to climate change and propose sustainable adaptation in crop and livestock farming systems
6. To deliver information and best practices in a **user friendly** way
7. To **build capacity** and leverage **awareness raising** among decision makers concerned about food security in Africa

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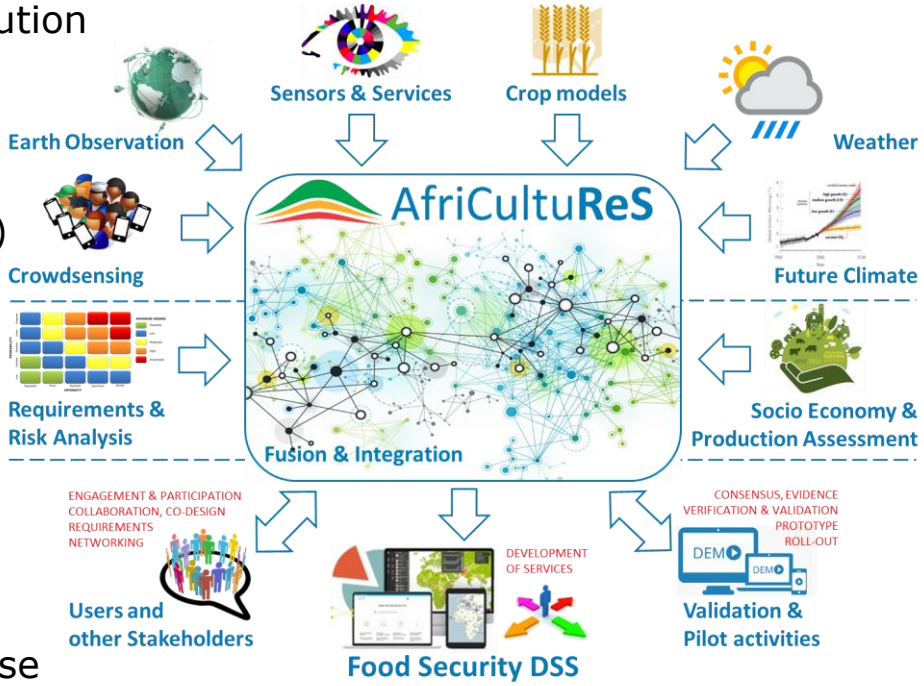
SUMMARY

AfriCultuReS will develop a comprehensive solution to **enrich Decision Making on food security** through a **Decision Support System**:

- Agricultural models (crops and livestock)
- Weather forecast and climate services
- In situ data, "crowdsensing"
- Earth Observation



These elements will be tightly woven to provide Decision Support System in **two phases**:

- A **pre-operational and validation** phase shall operate over pilot areas representative of the African agricultural systems
- A **operational demonstration** phase shall upscale the results to serve larger areas and to reach a **large number of users**

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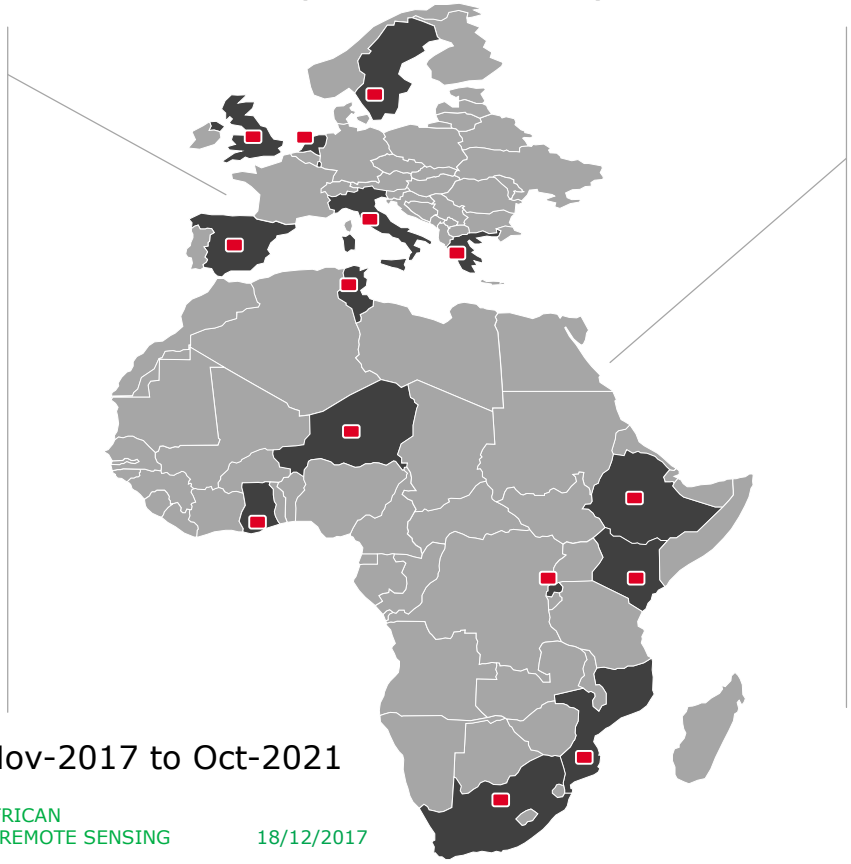
CONSORTIUM

H2020 - SFS-43-2017 "*EO services for the monitoring of agricultural production in Africa*"

17 Partners | 50% African + 50% European | Industry & Academia | Multidisciplinary Team

- GMV (lead, ES)
- Aristotle University of Thessaloniki (GR)
- DRAXIS Environmental Technologies (GR)
- HCP International (NL)
- Sapienza University of Rome (IT)
- Swedish Meteorological and Hydrological Institute (SE)
- University of Cantabria (ES)
- University of Leeds (UK)
- University of Sheffield (UK)



- Centre Régional AGRHYMET (NE)
- CGIS – University of Rwanda (RW)
- CERSGIS – University of Ghana (GH)
- GeoSAS (ET)
- LocateIT (KE)
- Observatoire du Sahara et du Sahel (TN)
- South African National Space agency (ZA)
- Eduardo Mondlane University (MZ)

EC grant 8.5M€ | 48 months | Nov-2017 to Oct-2021

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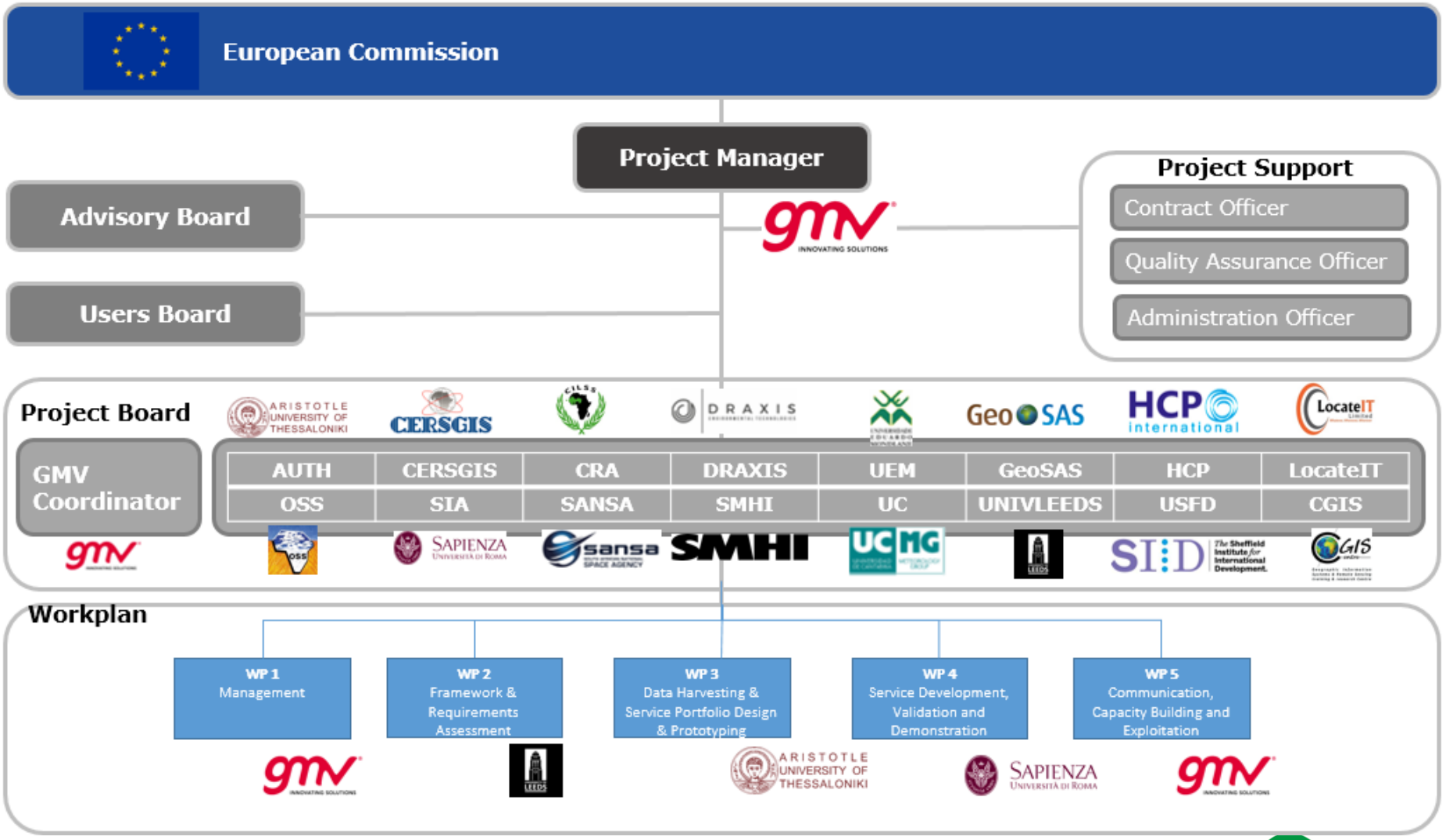
PROJECT ORGANIZATION



AfriCultuReS

Project Progress

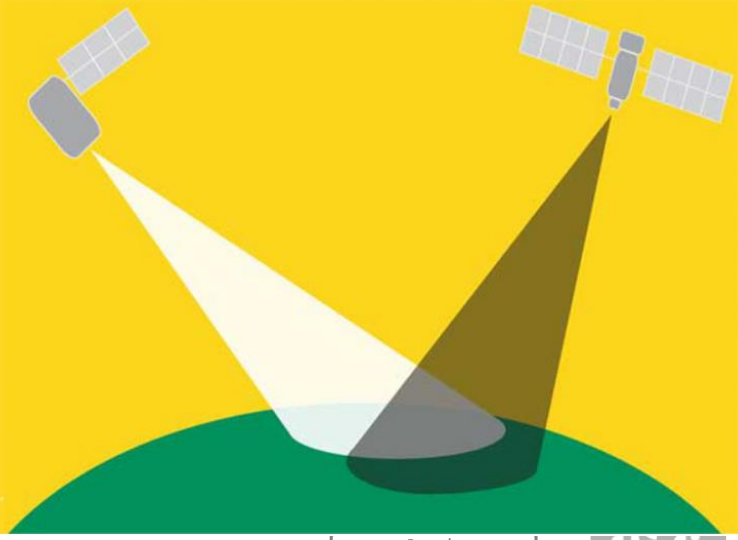
1. Project KOM, Addis Ababa, 23-24 Nov.2017

AfriCultuReS

news project about us

Our aim is food security in Africa

AfriCultuReS is a European H2020 project



Search

AfriCultuReS

Enhancing Food Security in African AgiriCultural Systems with the support of Remote Sensing.

Project Number	: 774652
Budget	: € 8.531.533
Starting date	: 01/11/2017
Duration	: 48 months

Summary

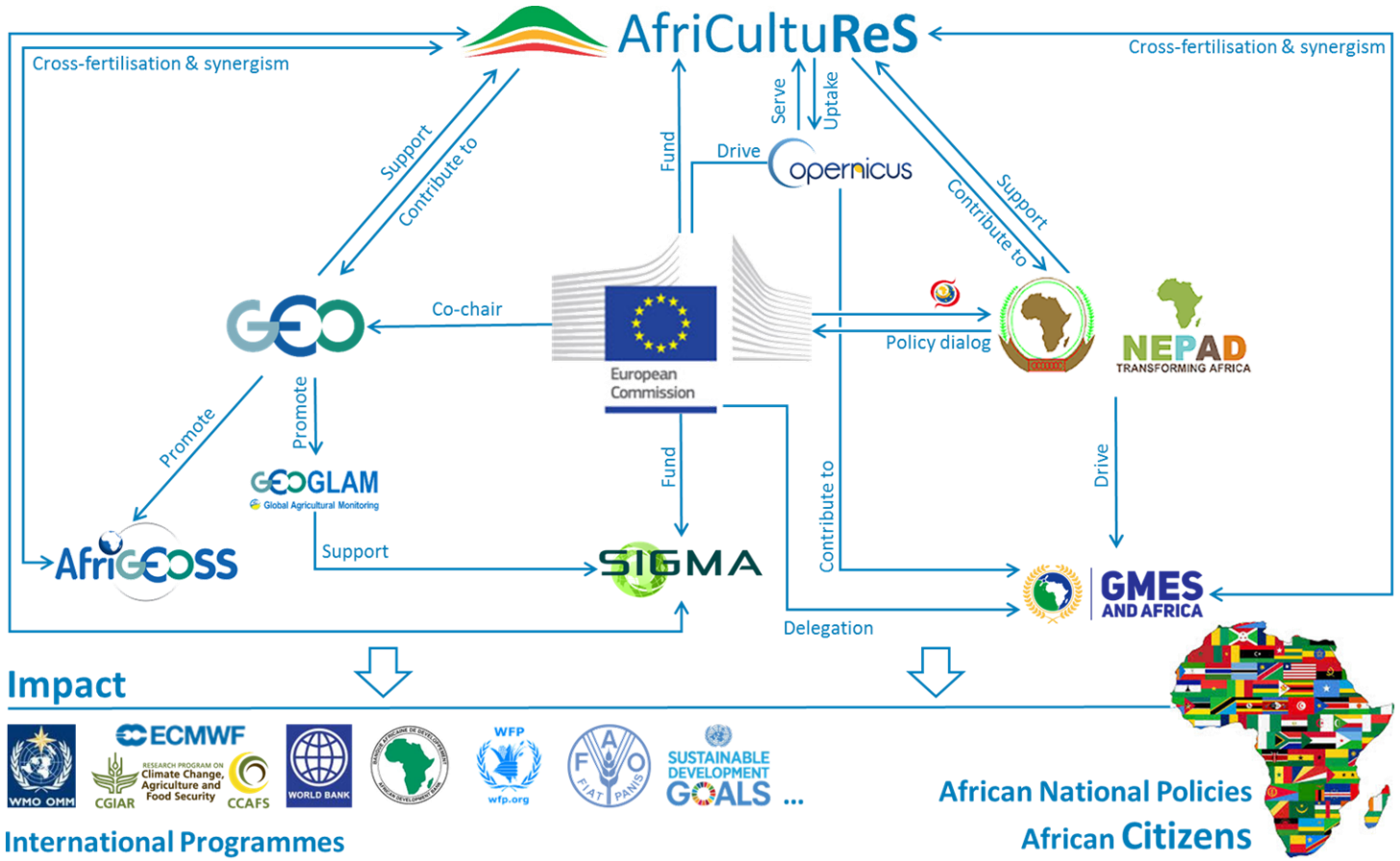
Integrated agricultural monitoring and early warning system
AfriCultuReS aims to design, implement and demonstrate an integrated agricultural monitoring and early warning system that will support decision making in the field of food security. AfriCultuReS delivers a broad range of climatic, production, biophysical and economic information, for various regions in Africa. AfriCultuReS applies geospatial science to sustainable agricultural development, natural resource management, biodiversity conservation, and poverty alleviation in Africa.

Key players
AfriCultuReS, supported by the GEO Secretariat, involves all key players of AfriGEOSS, GEOGLAM, SIGMA, ARTEMIS, African Drought Observatory and other initiatives as well as partners representing the diversity of African agricultural systems, in an effort to push forward the services provided by current systems, with innovative fusion of data from multiple sources (EO, in-situ, citizen-based crowdsourcing, climate services and weather, crop models) in a vertical manner. Crop yield and biomass prediction models is enhanced through the fusion of EO data and climate models, emphasizing the use of the complementary sensors of the EU Sentinels constellation.

Geospatial products are combined in a spatial Decision Support System (DSS) to enrich decision making and risk assessment. The geo component of the DSS is compliant with the GEO's interoperability standards, allowing its integration with the current services of the GEOSS Common Infrastructure.

African networks
The African partners and collaborating networks are essential for local training and promoting further use of the project tools. Social innovation is used to increase the number of involved stakeholders and to boost the flow of information in a user-friendly manner. The final target is to produce a web tool that supports early decision-making for

CONTEXT



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SUPPORTED BY…

European Commission | Horizon 2020 European Union funding for Research & Innovation

African Union | NEPAD TRANSFORMING AFRICA | GROUP ON EARTH OBSERVATIONS

AfriCultuReS is envisaged to be a **GEO** (**GEOGLAM, AfriGEOSS, EUROGEOSS**), **Copernicus** and **GMES & Africa** contributing action

AfriCultuReS partners are **heavily involved in GEO, Copernicus and GMES & Africa**

AfriCultuReS | GEO | Copernicus | GMES AND AFRICA

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http://www.africultures.eu/

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AfriCultuReS Coordinator

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thank you

European Commission

AfriCultuReS


science
& technology
Department:
Science and Technology
REPUBLIC OF SOUTH AFRICA
sansa
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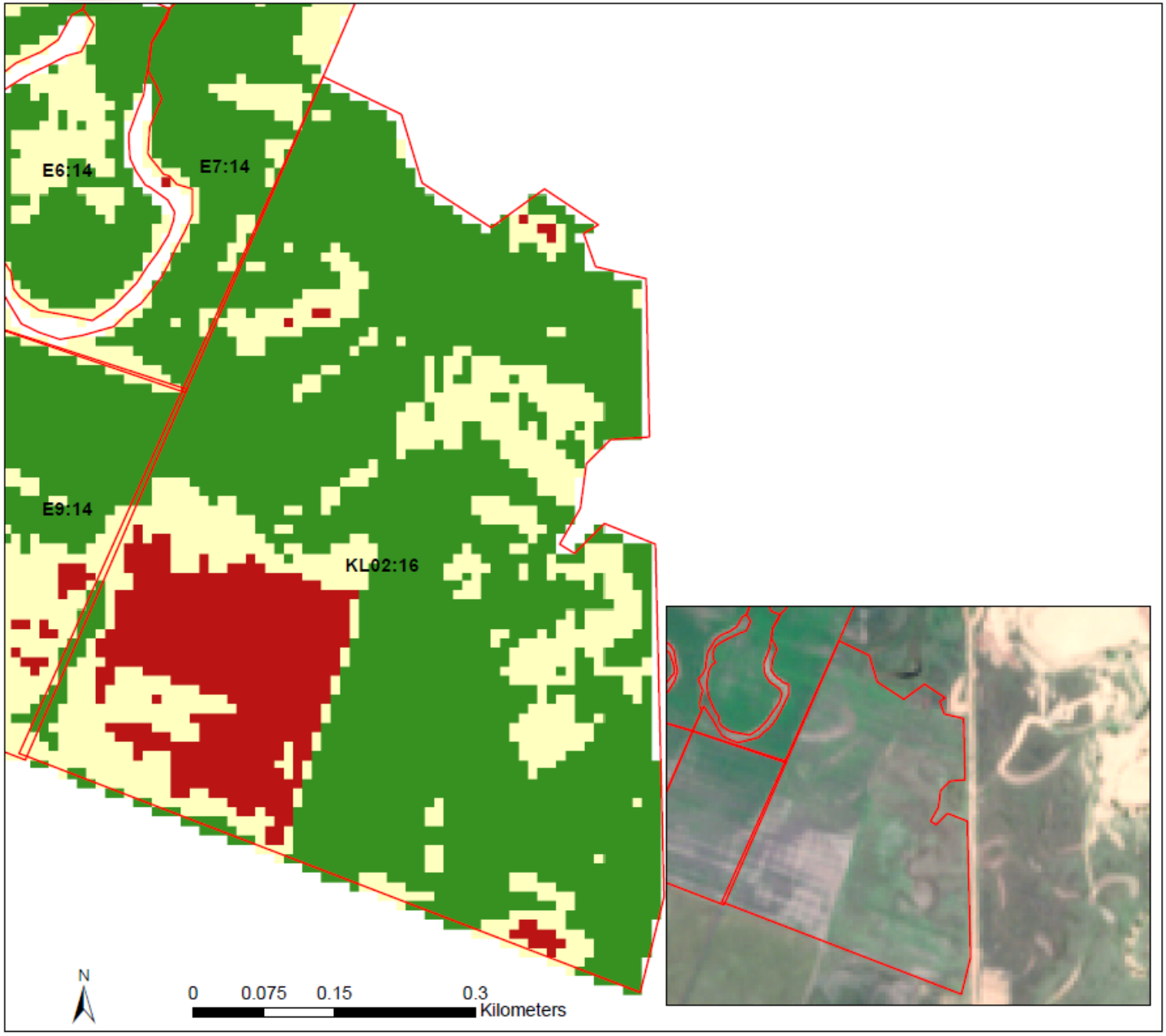
SPACE AGENCY
CropWatch Pilot Study
GFADA

Crop Monitoring Services: Within Field Anomaly



Legend

Farm Boundaries

Image Date 2018 02 01

Field Condition

- Sparse vegetation/water logging
- Lower vegetation cover/density
- Higher vegetation cover/density

Projection: UTM 35S
Datum: WGS 1984
Paper size: A4

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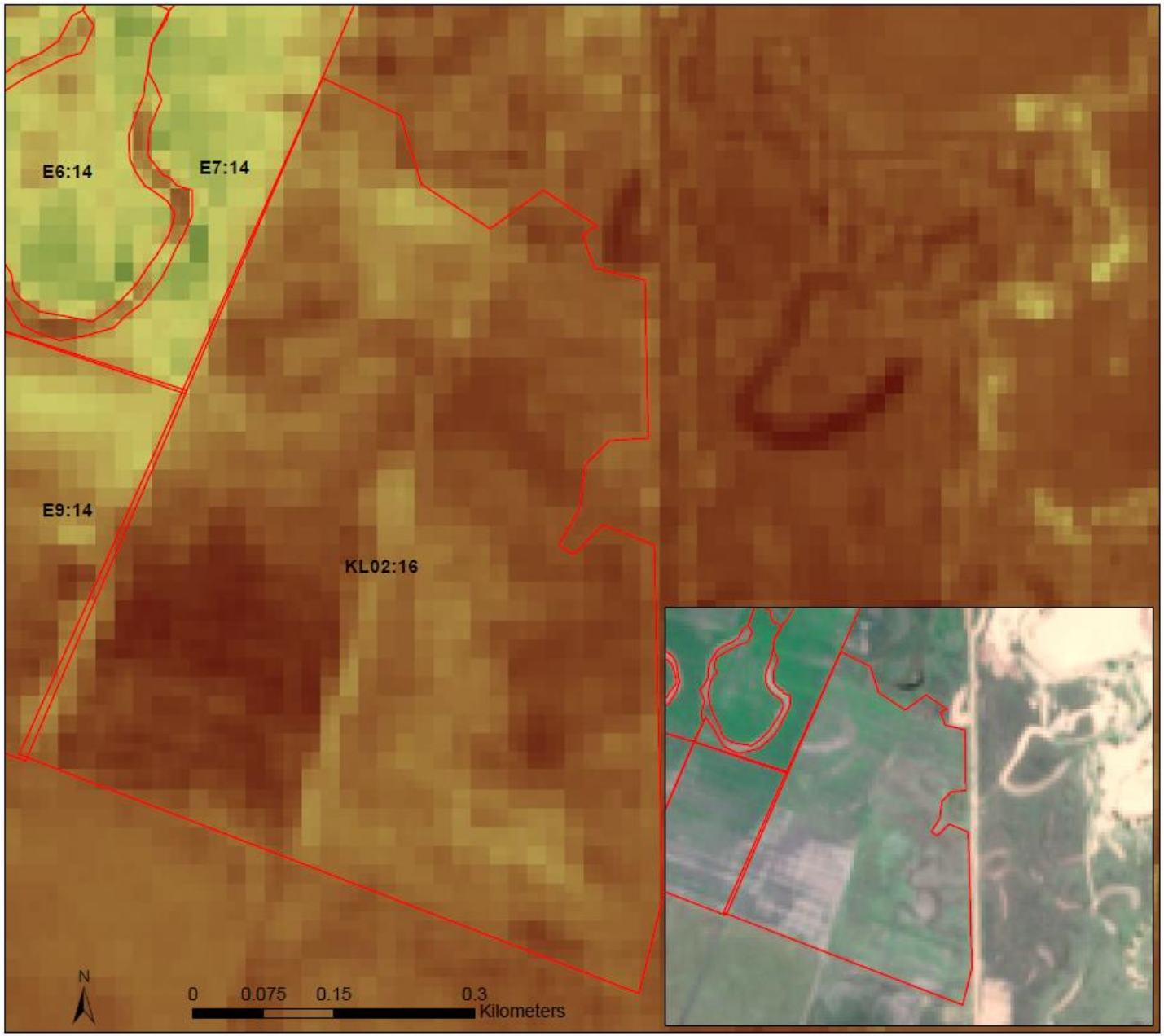
Leaf Area Index (LAI)



Legend

Farm Boundaries

LAI

Value

High : 24

Low : 0

Projection: UTM 35S
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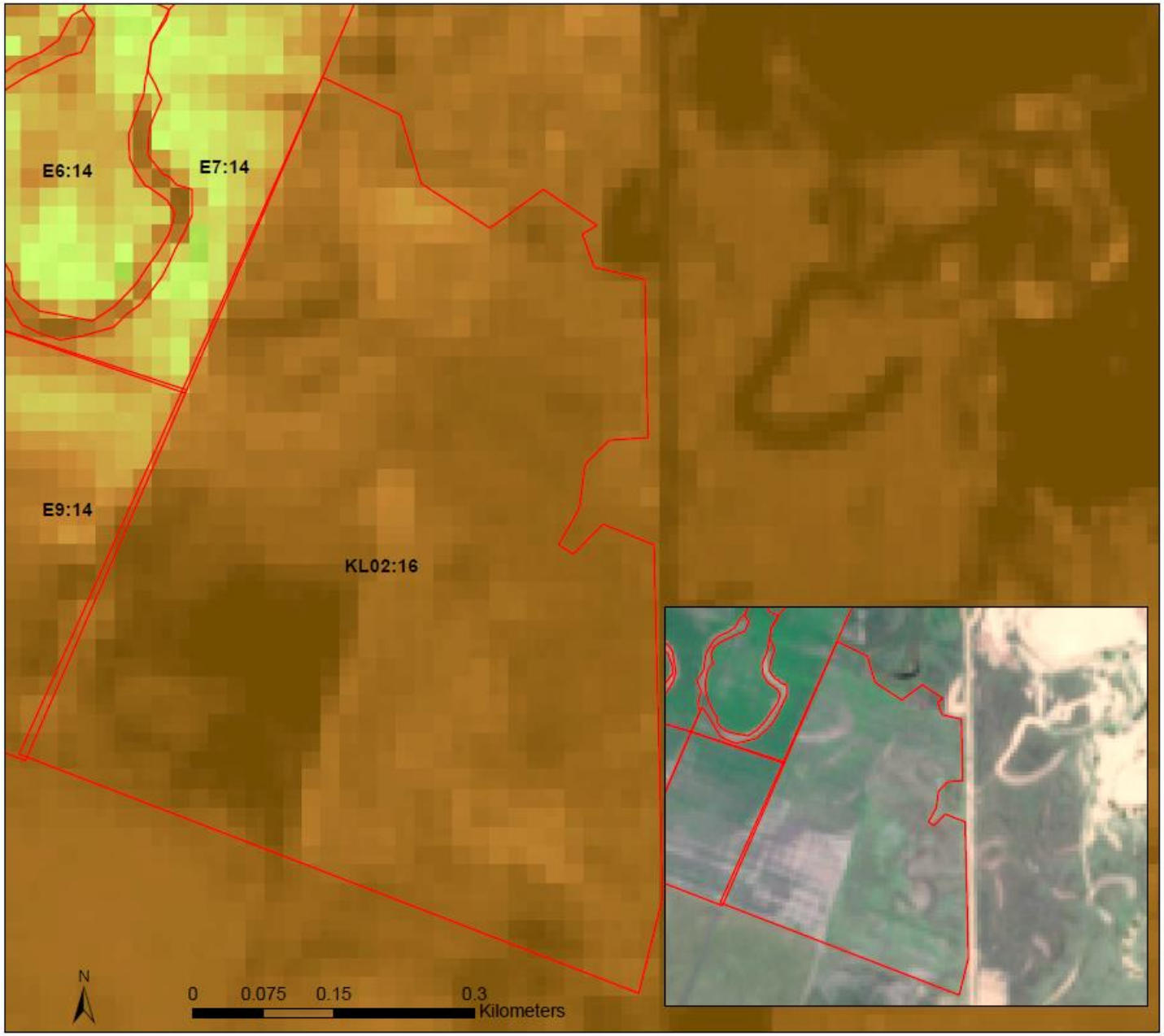
Crop Canopy Chlorophyll Content



Legend

Farm Boundaries

LAI_cab

Chl

High

Low

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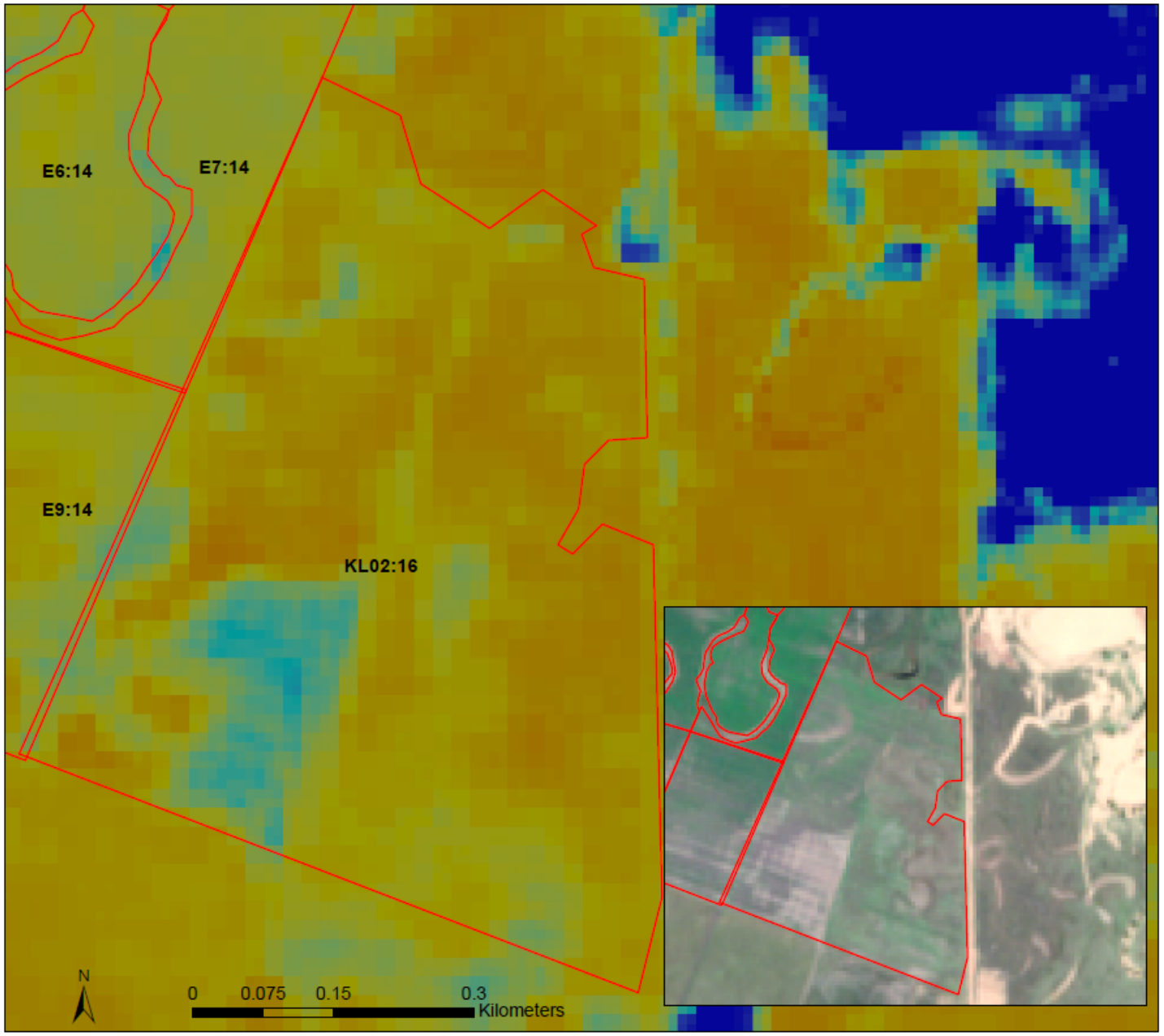
Crop Canopy Water Content Anomaly



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Farm Boundaries

LAI_CW

Water

High

Low

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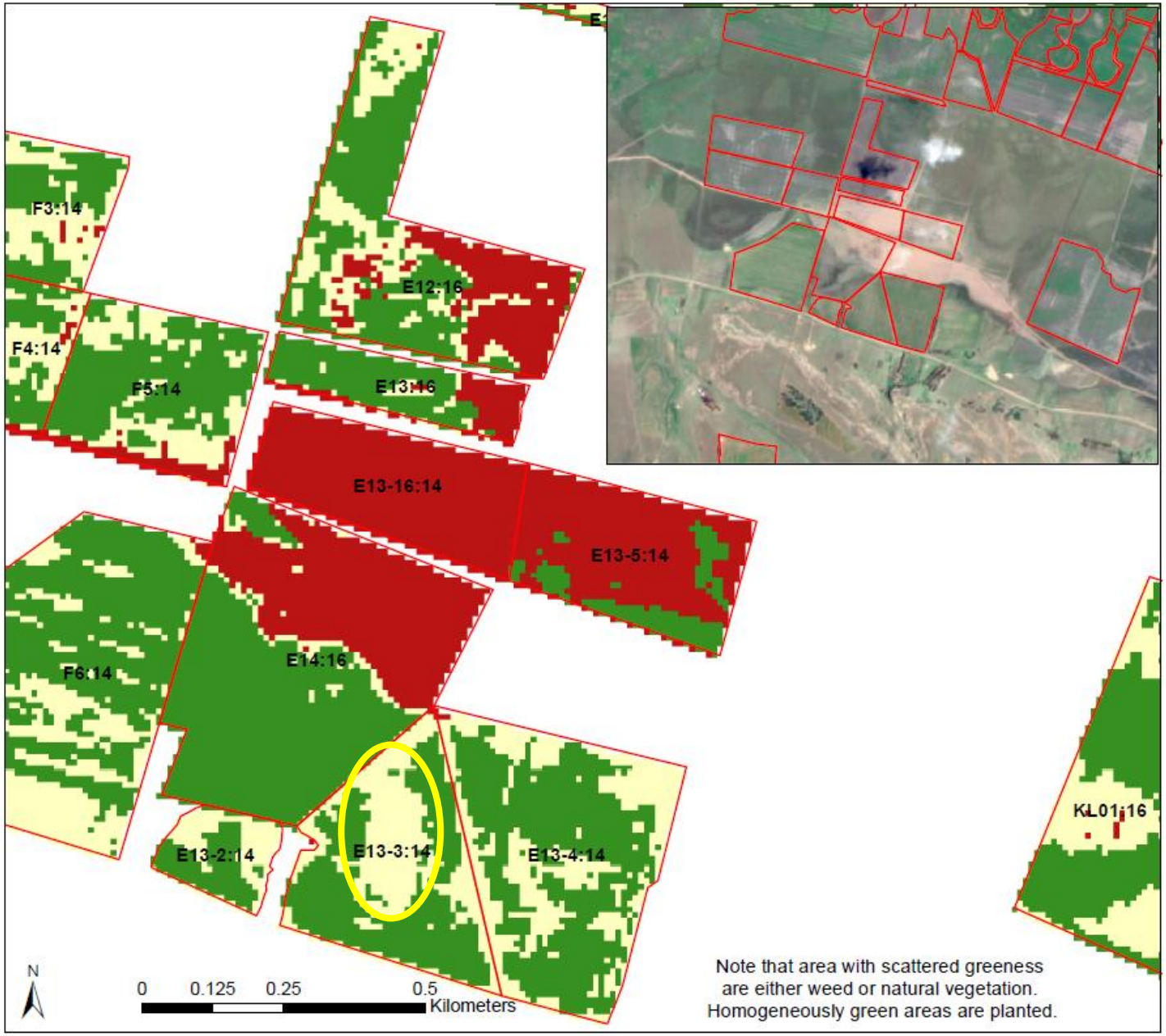
Crop Canopy Water Content



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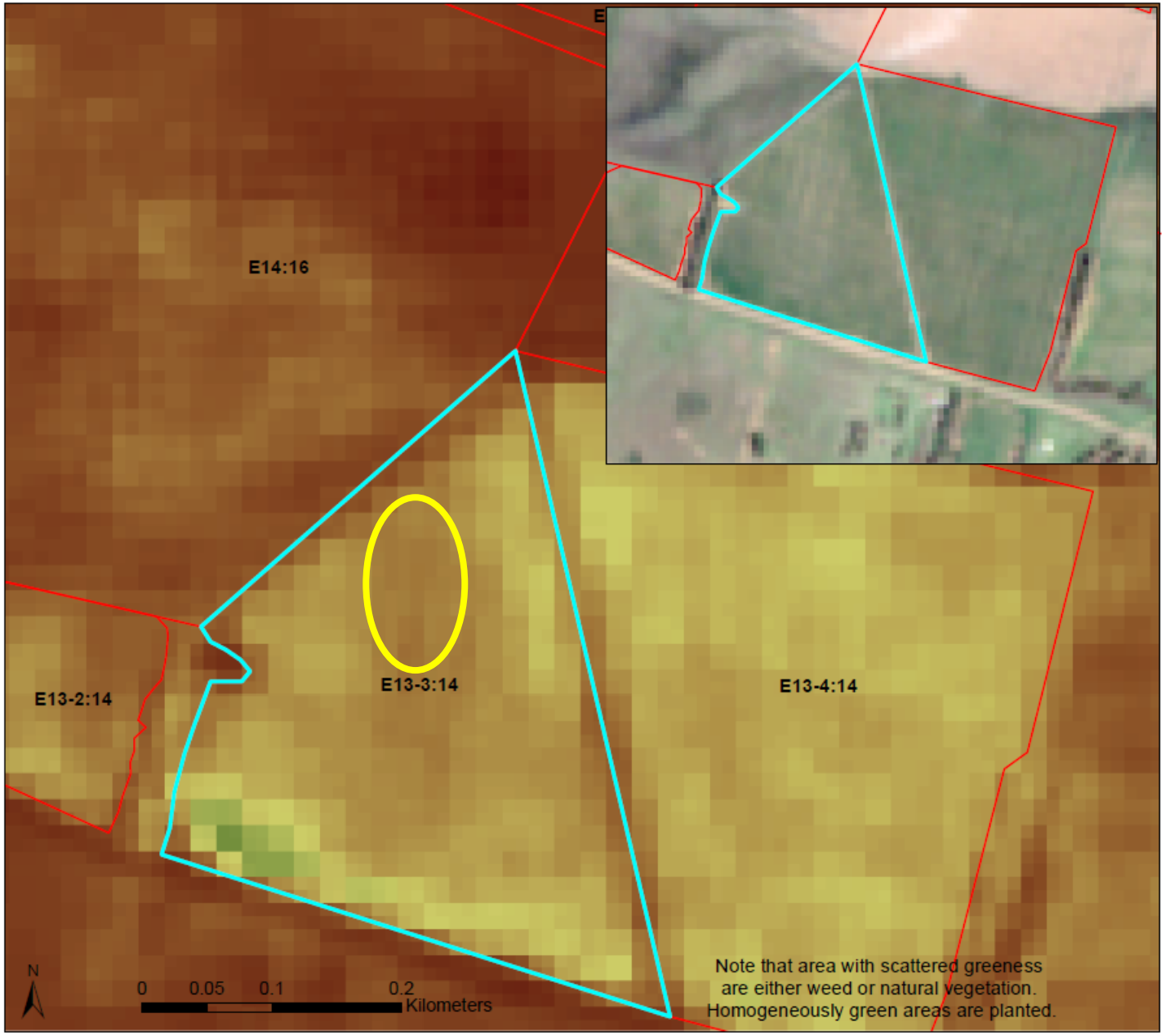

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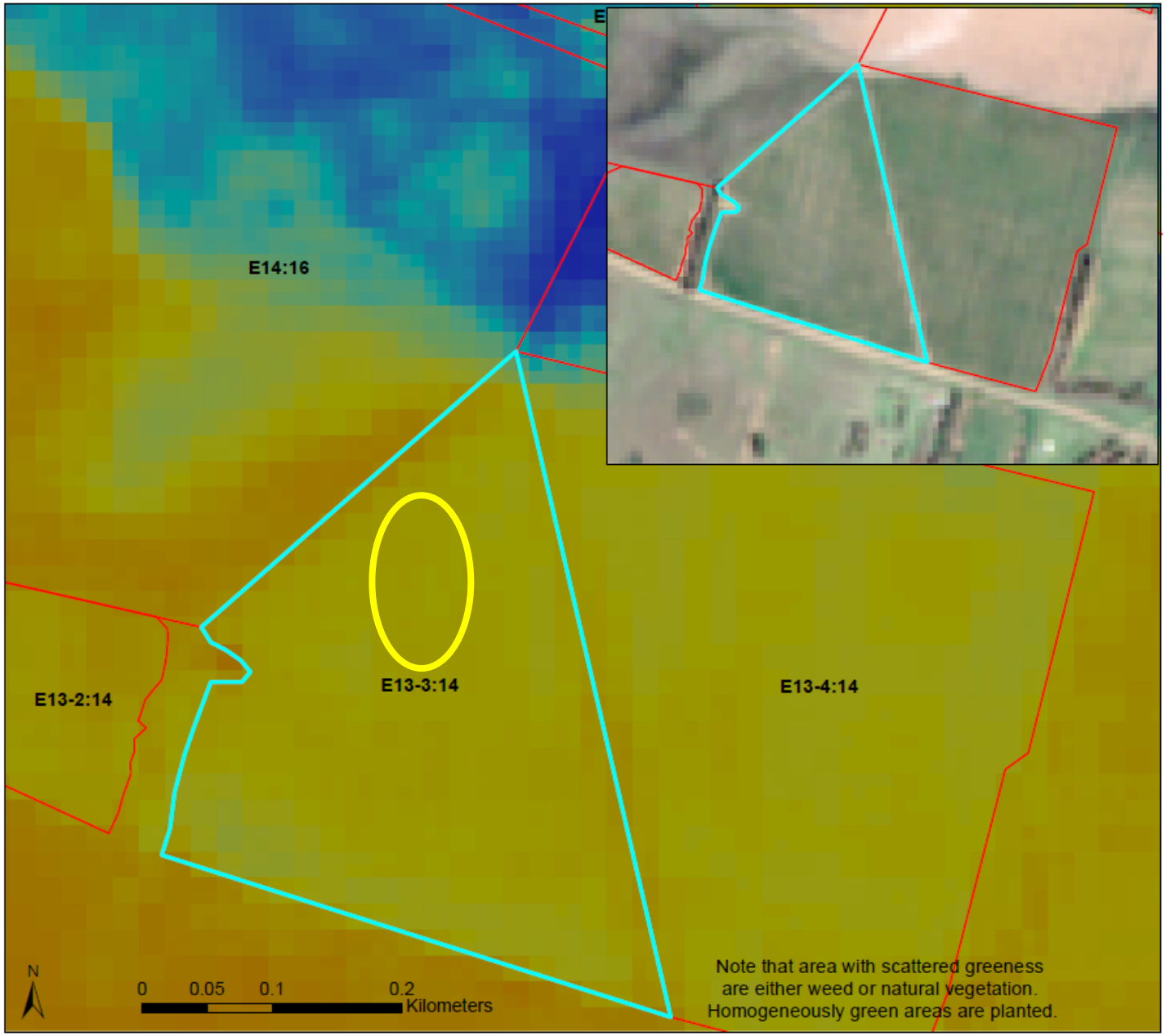

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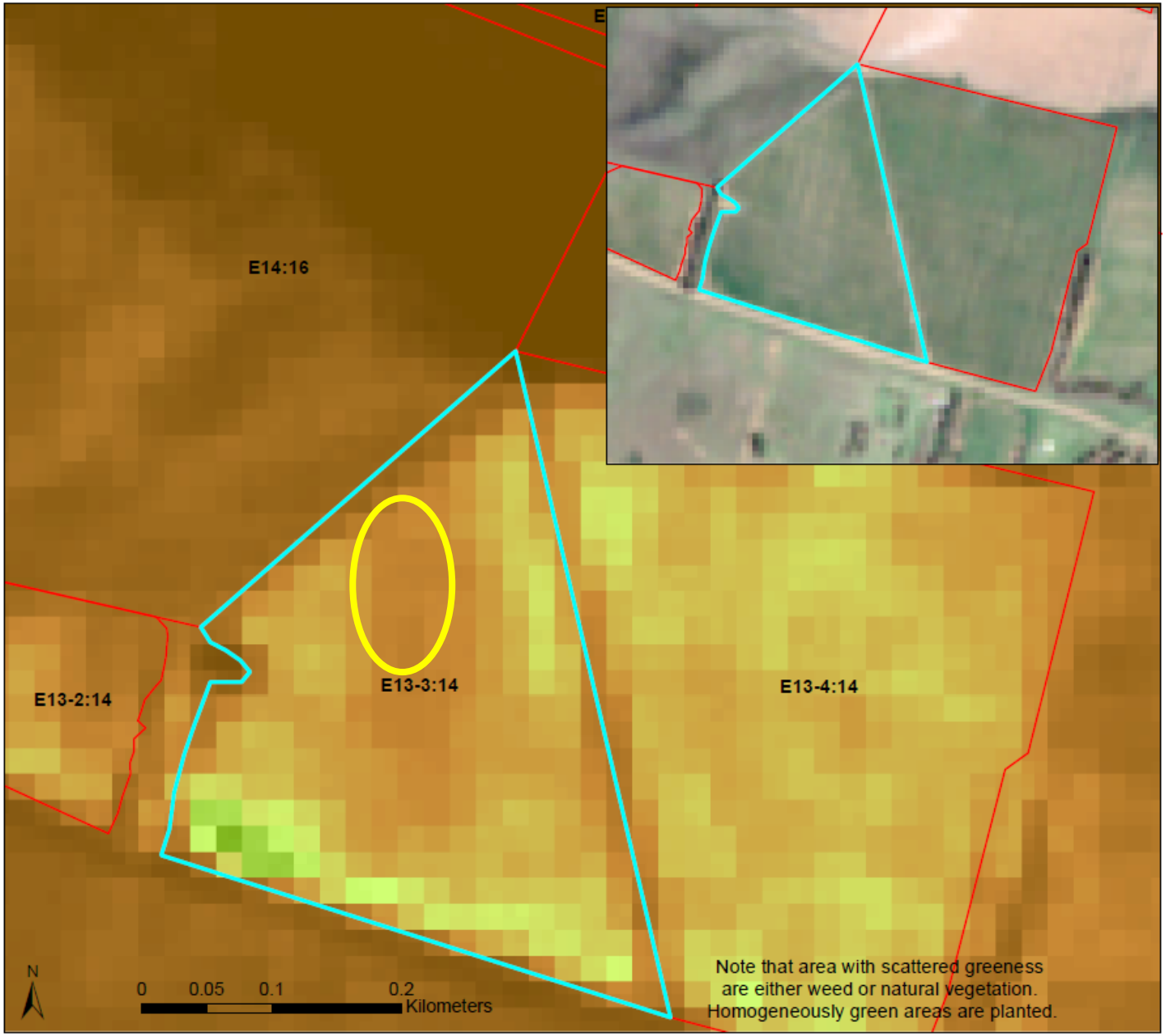

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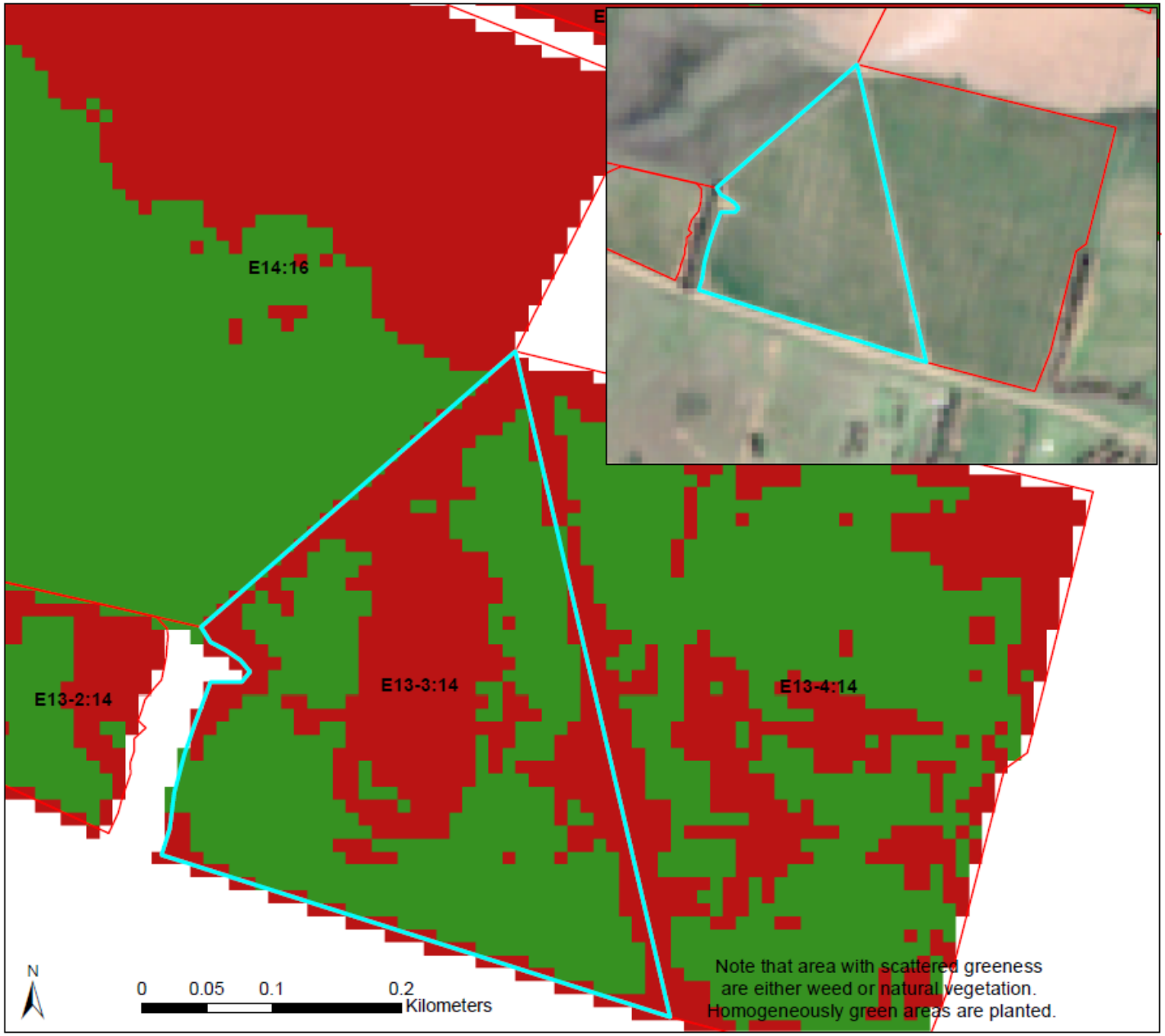

Legend

Farm Boundaries

Image Date 2018 02 01

Chlorophyll Map

Chlorophyll Deficit

Healthy Vegatation

Projection: UTM 35S
Datum: WGS 1984
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thank you

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