

# GEO WEEK & MINISTERIAL SUMMIT 2023

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Flash Talk

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#TheEarthTalks



science & innovation

Department:  
Science and Innovation  
REPUBLIC OF SOUTH AFRICA



GEO WEEK  
2023 MINISTERIAL  
SUMMIT

GEO GROUP ON  
EARTH OBSERVATIONS





**GEO  
WEEK  
2023  
MINISTERIAL  
SUMMIT**

#TheEarthTalks GEO WEEK & Ministerial Summit 2023

# First Global Seasonal Updated Crop Maps

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06.11.2023 11:10 - 11:20



Steven Krekels



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# Partners and Affiliations

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## WorldCereal Consortium



## Main Objectives of WorldCereal:

**Demonstrate** the feasibility of global crop mapping at field scale based on **open** high resolution EO data (**S1, S2, L8**)

Mapping at 10 m the global extent of **annual cropland** and **two of the major staple crops wheat and maize** on a seasonal basis

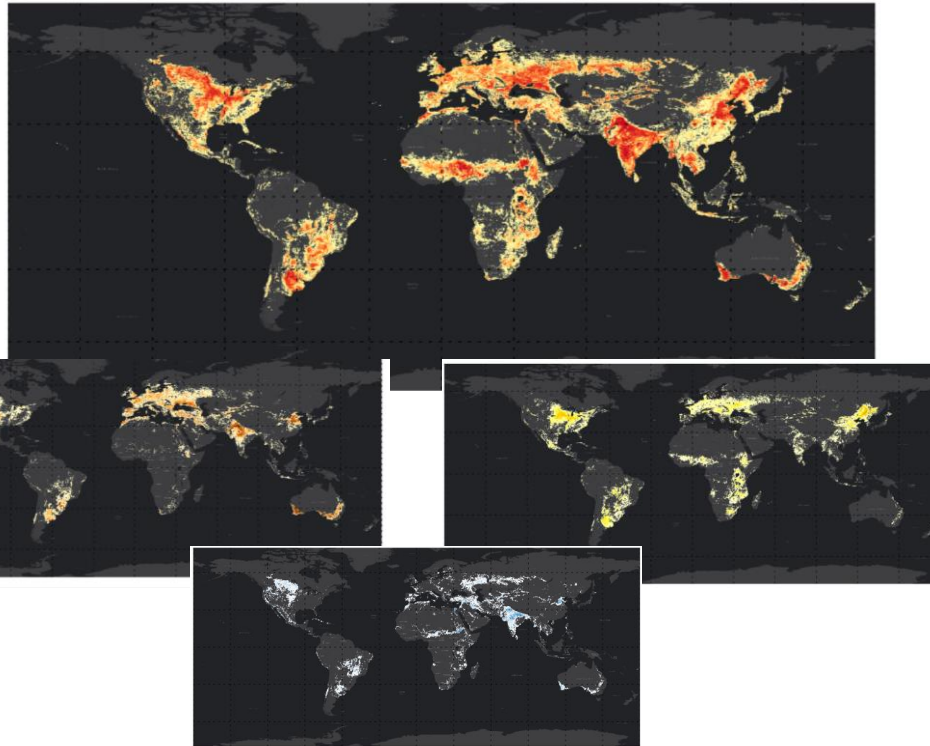
To develop innovative **opensource** Earth Observations algorithms and tools making full use of cloud computing capabilities

Build a **collaborative approach** to exchange with the agricultural community relevant **in-situ data** sets

Disseminate the global crop mapping results



WorldCereal



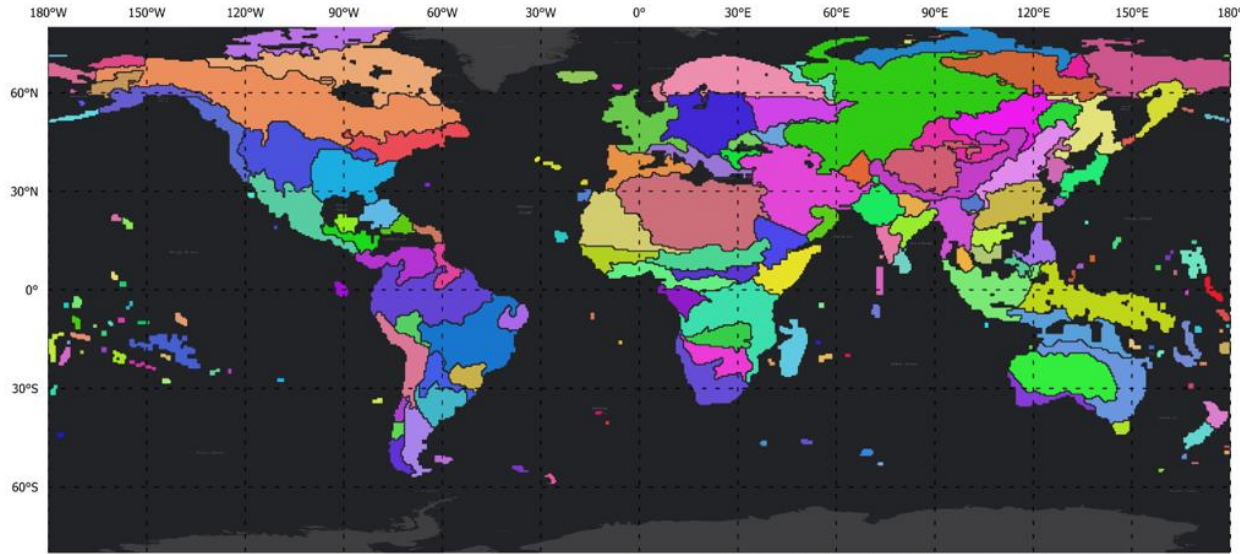
Core users: FAO, GEOGLAM, G20 AMIS  
& + 20 users around the world



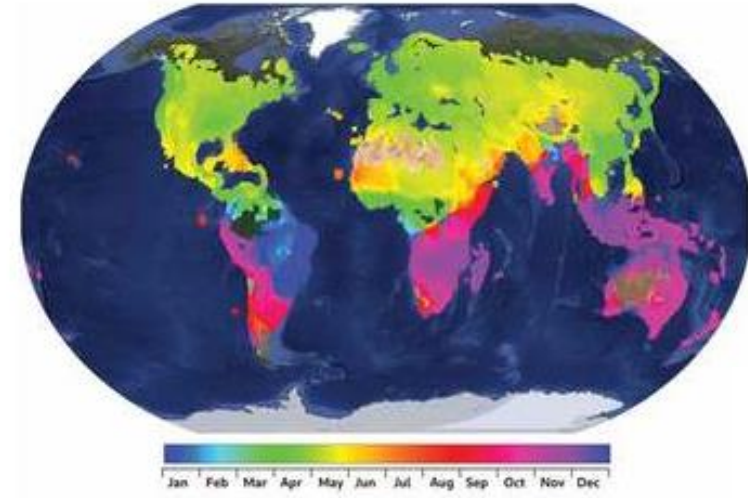


# Definitions matter

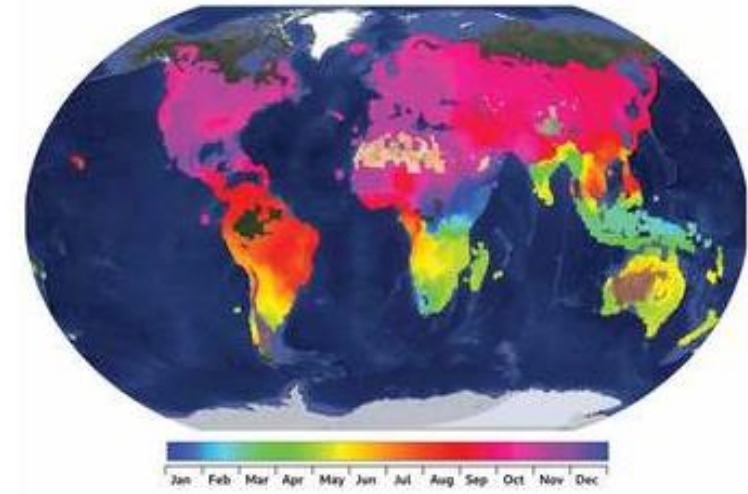
- Annual **temporary crop** map (FAO, 2023)
- Crop **seasonality**
- Agro-ecological zones (**AEZ**)
- **Cereals** = wheat + barley + rye (*Triticeae* tribe)



Sources: Eri, HERE, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community



(a) SOS



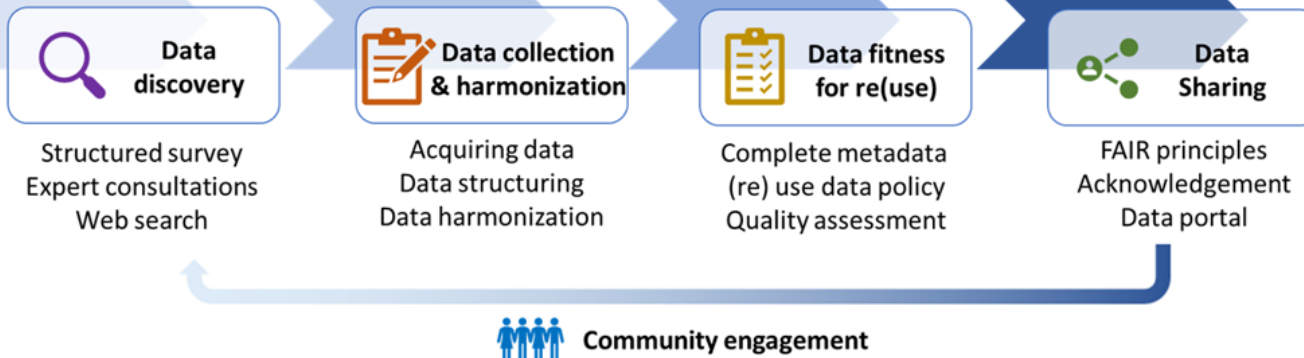
(b) EOS

Franch et al.,  
2022



WorldCereal





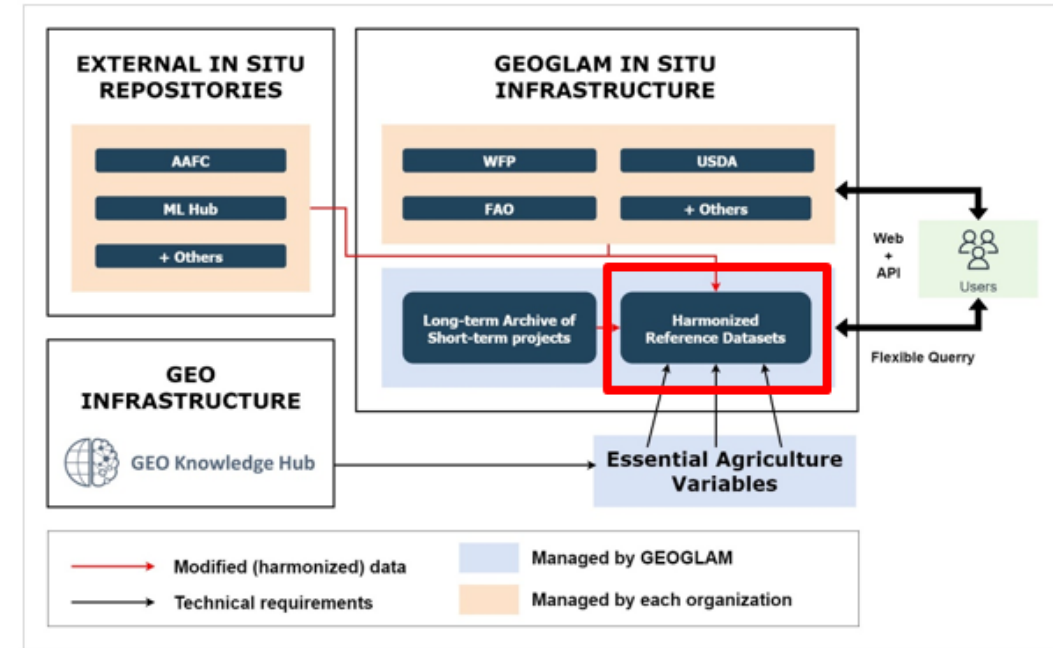

<https://zenodo.org/communities/worldcereal-rdm>

<https://worldcereal-rdm.geo-wiki.org>



- We encouraging the community to publish and share land cover and crop type data
- Need for sustainable continuation of WorldCereal system which enables:
  - Use of APIs to access data (e.g all grain maize labels for certain spatial extent)
  - Easy upload of newly harmonised reference data
  - Peer review and publication of new harmonized reference data

Planned GEOGLAM in situ infrastructure



WorldCereal

Contribution to GEOGLAM in-situ data working group





# WorldCereal seasonal product list



- Winter cereals
  - Spring cereals
  - Maize
  - Active irrigation
  - Active cropland
- Legend for the maps:
- to-wintercereals
  - to-maize-main
  - to-maize-main
  - to-maize-main
  - to-maize-second
  - to-maize-second
  - to-wintercereals
  - to-maize-main
  - to-maize-second
  - to-wintercereals
  - to-maize-main
  - to-maize-second

<https://vdm.esa-worldcereal.org/>



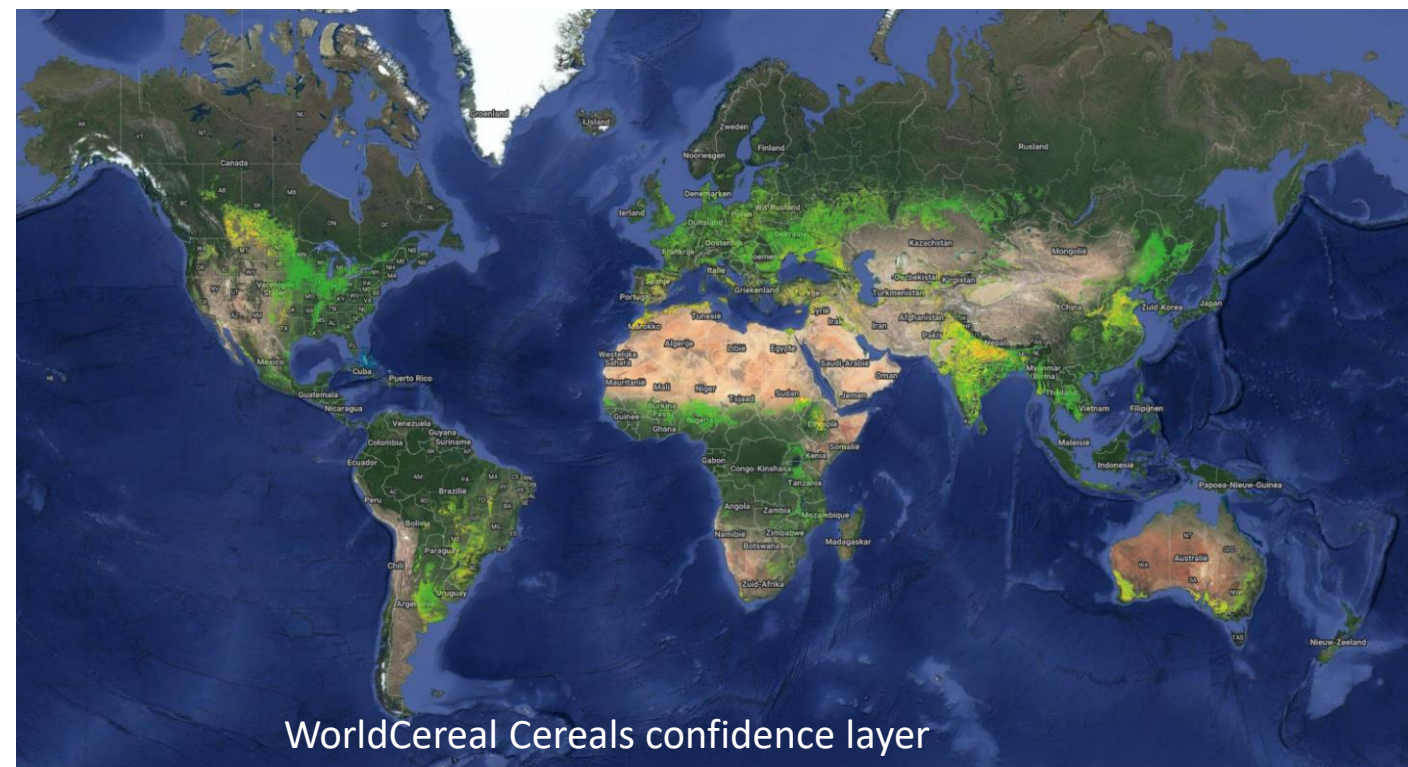
WorldCereal



→ THE EUROPEAN SPACE AGENCY



# WorldCereal Confidence Layers



- Confidence Layers for all main products available
- Drive in situ data collection to improve products



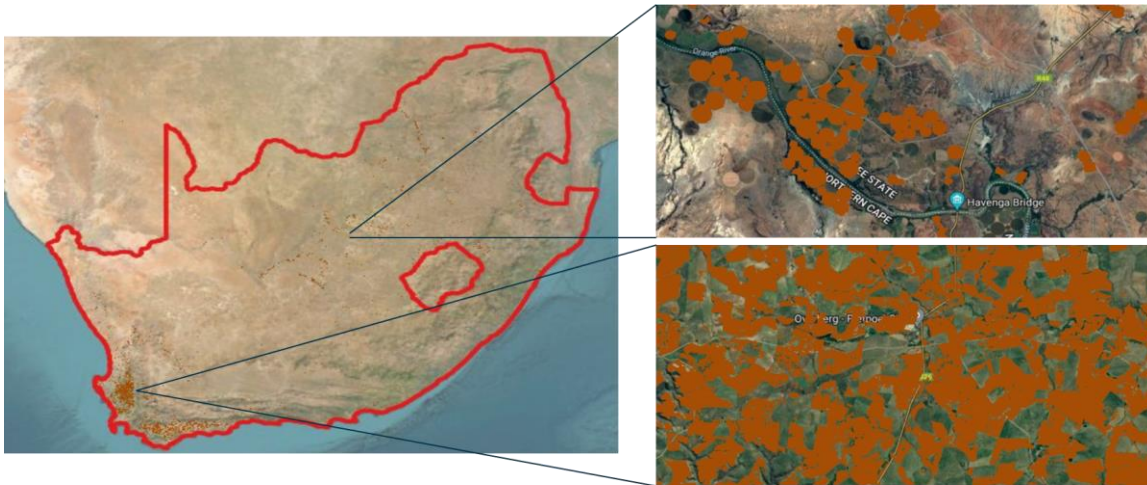
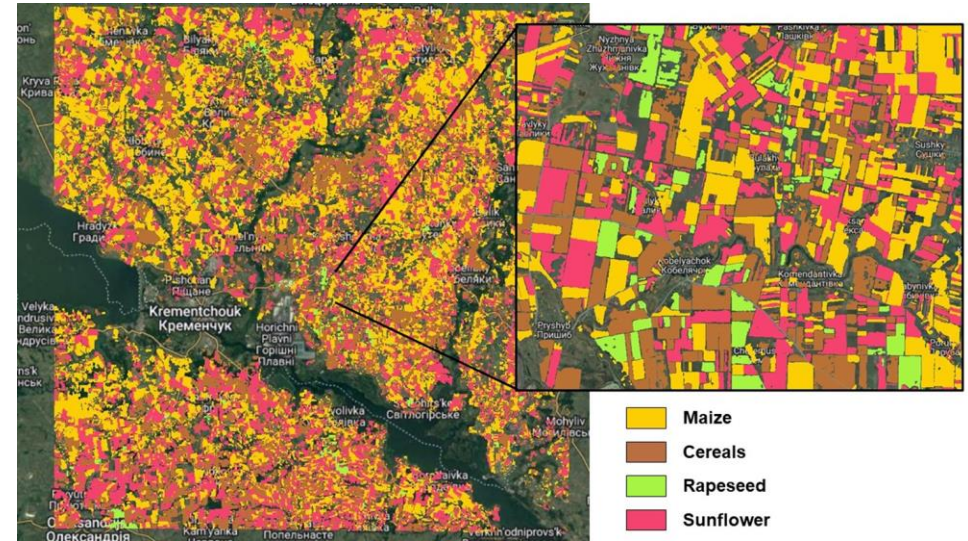
WorldCereal



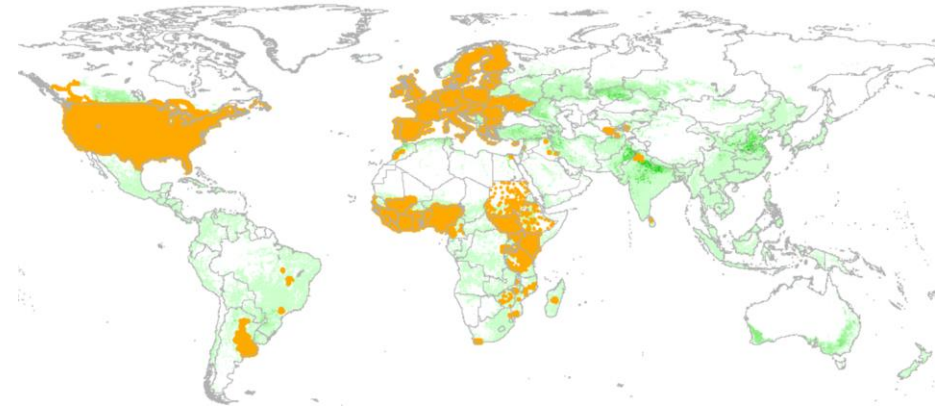


# Next Steps

- Include more crops
- Expand in-situ data base
- Upgrade of the system
- Capacity Building



South-Africa



WorldCereal







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# THANK YOU



[ESA-WORLDCEREAL.ORG](http://ESA-WORLDCEREAL.ORG)



[VDM.ESA-WORLDCEREAL.ORG](http://VDM.ESA-WORLDCEREAL.ORG)



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6-10 NOVEMBER

CAPE TOWN, SOUTH AFRICA

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