

living planet symposium | BONN

23-27 May
2022

TAKING THE PULSE
OF OUR PLANET FROM SPACE



EUMETSAT

ECMWF

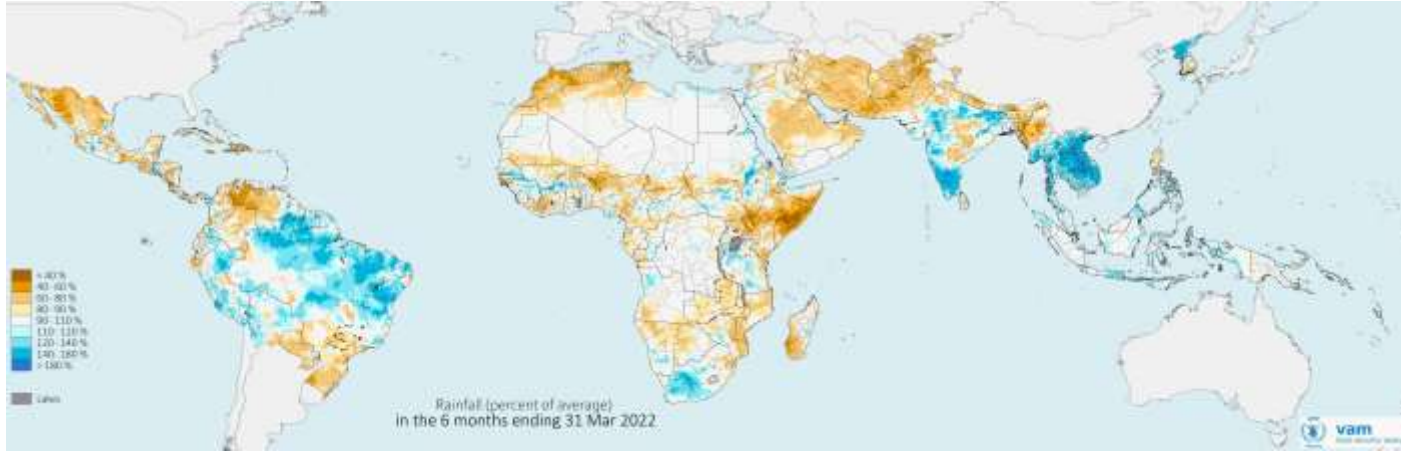


UNWFP: EO for Humanitarian Applications

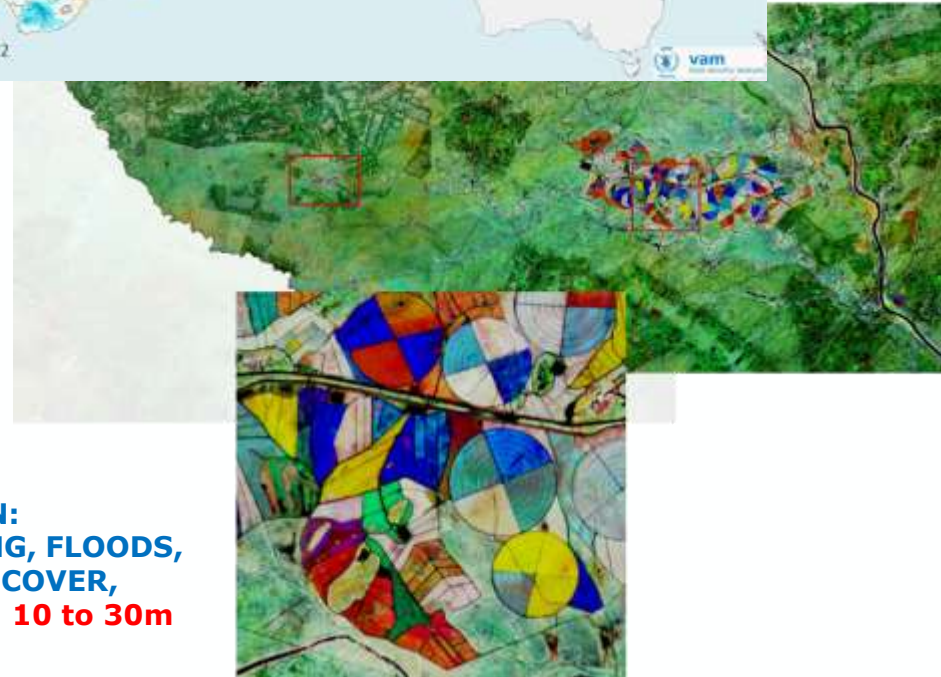
Rogério Bonifacio

23/05/2022

EO Datasets in Use



LOW RESOLUTION:
SEASONAL MONITORING,
CLIMATE ANALYSIS
250m to 5Km



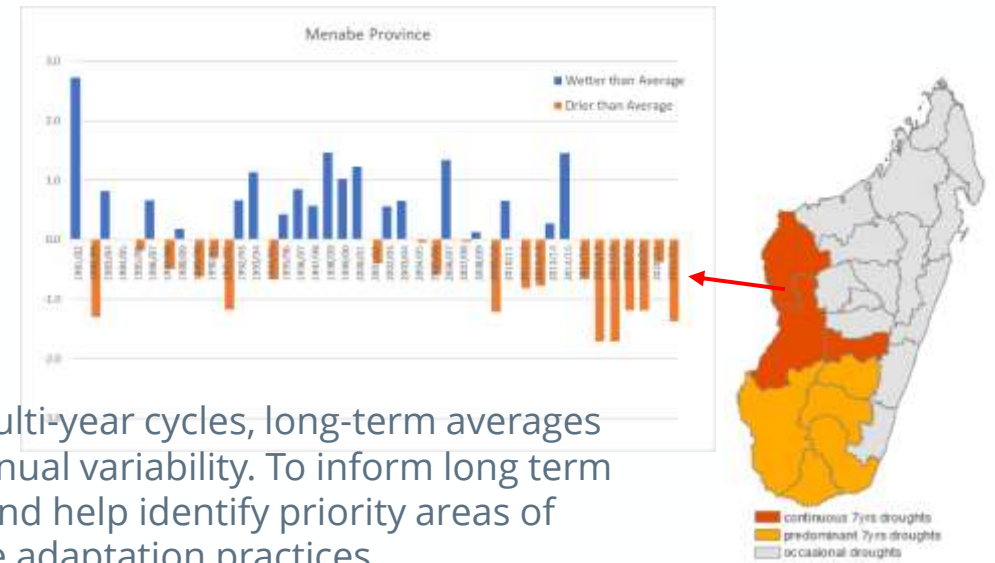
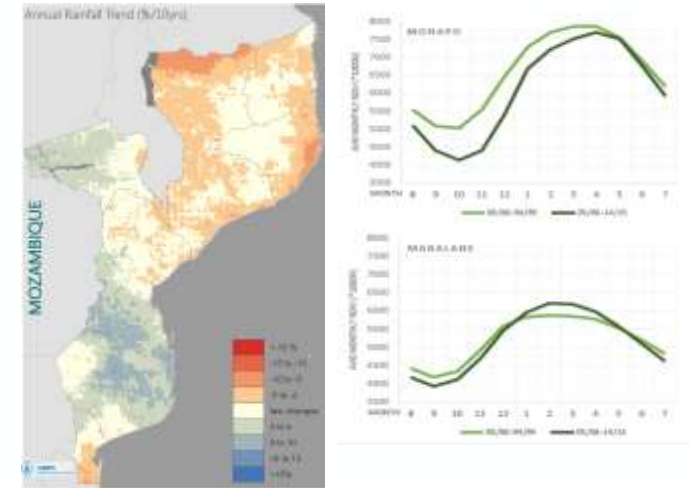
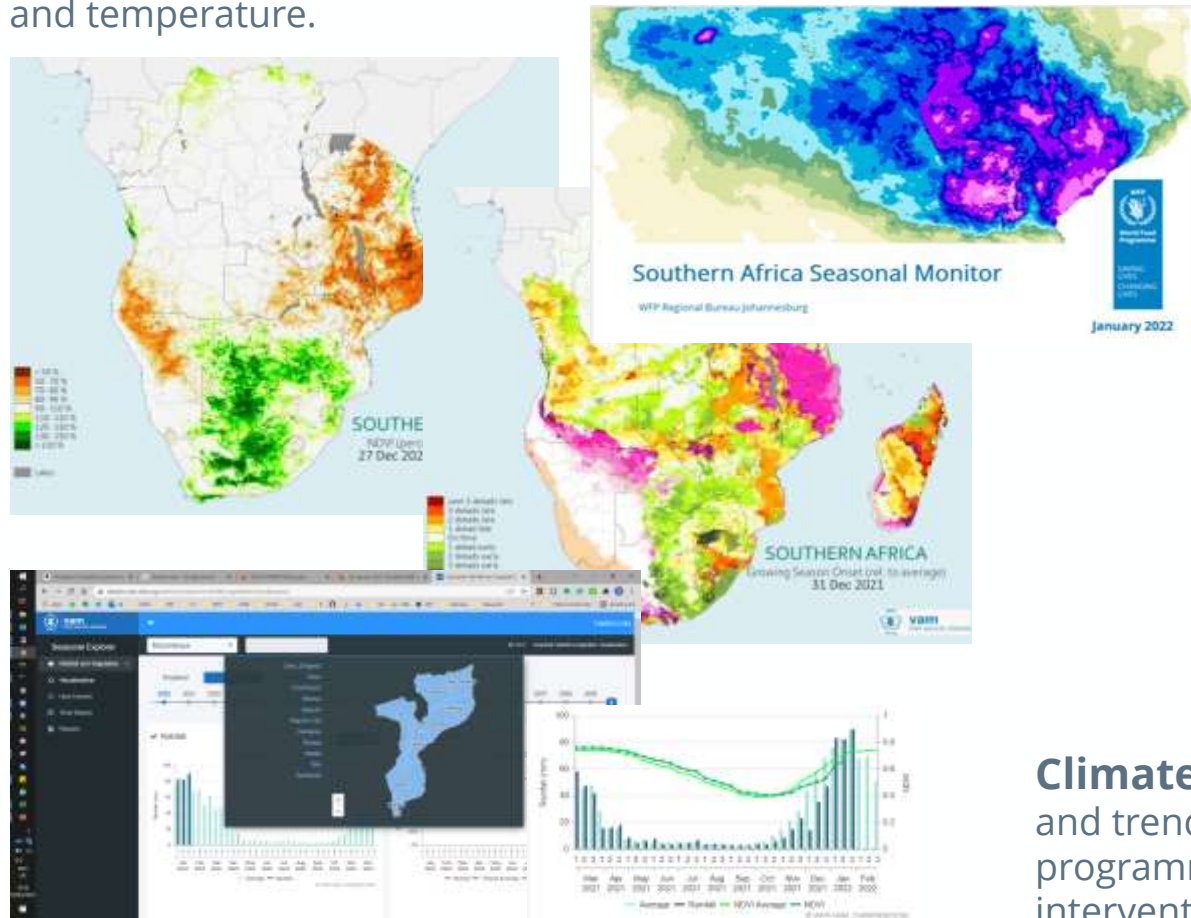
HIGH RESOLUTION:
AGRO-MONITORING, FLOODS,
HOT SPOTS, LAND COVER,
CROP MAPPING **10 to 30m**



VERY HIGH RESOLUTION:
CAMPS, ASSETS MONITORING,
URBAN APPs, CROP DETECTION
sub-meter

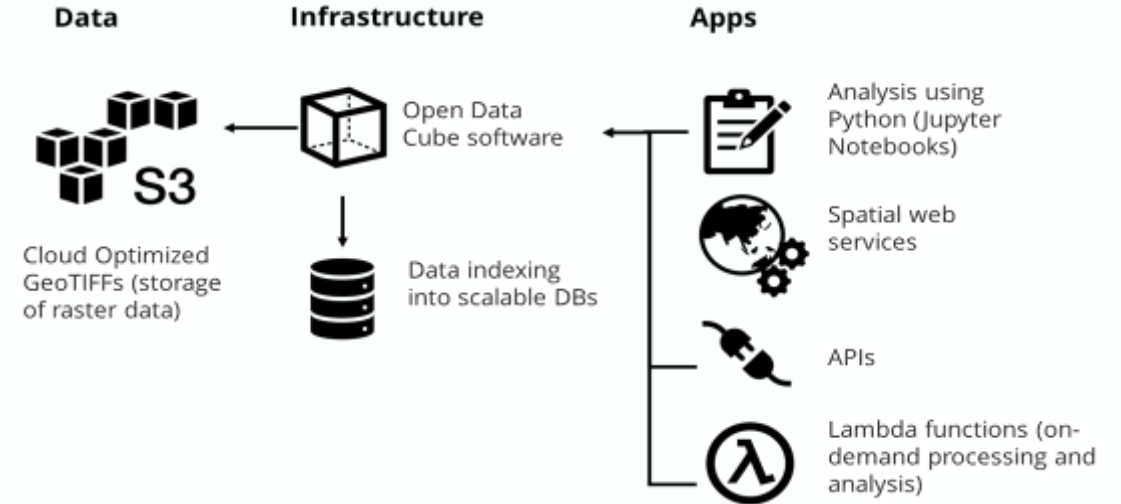
Seasonal Monitoring / Climate Analysis

Seasonal Monitoring: Following the course of the rainfall season, identifying situations of deficit or excess rainfall, quality of vegetation development and temperature.



Climate Analysis: multi-year cycles, long-term averages and trends and inter-annual variability. To inform long term programme strategies and help identify priority areas of intervention and climate adaptation practices.

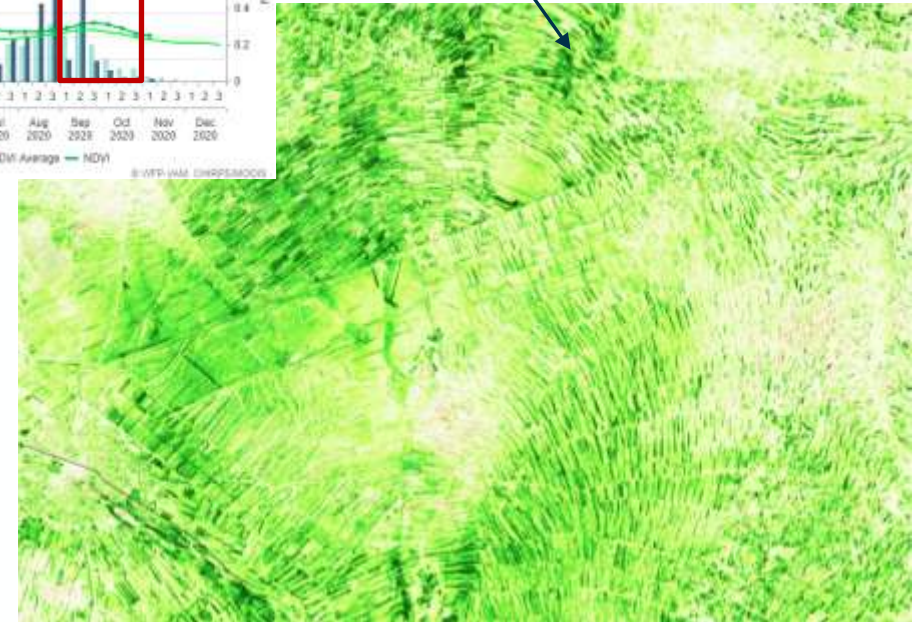
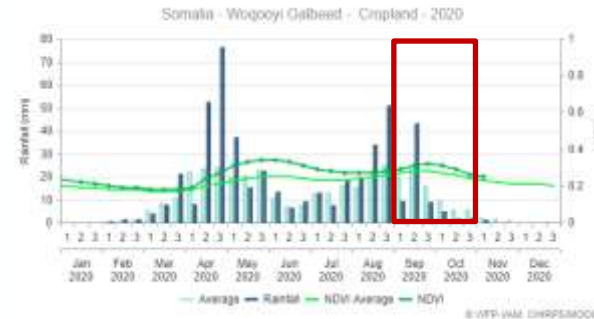
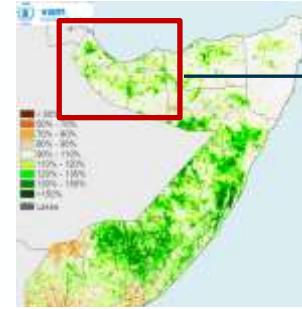
WFP's deployment of Open Data Cube on AWS cloud



- | Single EO data backend | Data processing at scale | Analysis | Harness cutting edge technology and software | Open data access |
|--|---|---|---|--|
| <ul style="list-style-type: none"> • Provide analysis ready data to users and services • Internal and external | <ul style="list-style-type: none"> • Leverage cloud computing to work with big EO data • Removing data redundancy | <ul style="list-style-type: none"> • Provide internal platform for quicker and more efficient analysis | <ul style="list-style-type: none"> • Jupyter, xarray, Dask • COG, Zarr • STAC • Serverless infrastructure | <ul style="list-style-type: none"> • Make value added data publicly available to anyone |

Hazard Mapping

Analysis of MODIS Land-Surface Temperature data reveals sustained above-average flood and wetland extent for three consecutive seasons

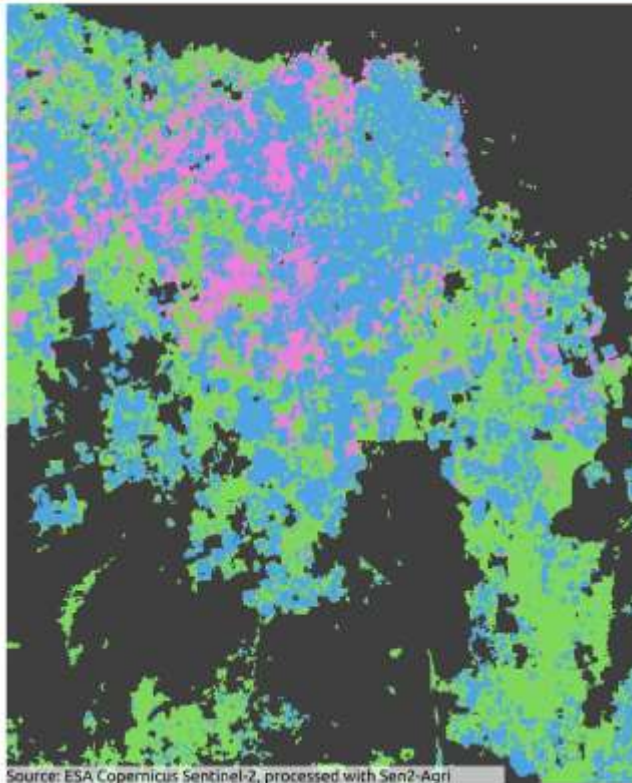


Sentinel-2 analysis of areas flagged by low resolution data. Identify type of landscape and likely crop performance.

Cropland Mapping

Extensive field presence allows WFP to collect in-situ agronomic data. Cooperation with ESA enabled a new area of work to develop

South Sudan - Crop Type Map Example 2018



- Crop Type**
- Class
- Maize
 - Sorghums
 - Cassava
 - Others
 - Groundnut
 - Sesame
 - Rice
 - Bulrush Millet



Sentinel-2 Data Assimilation



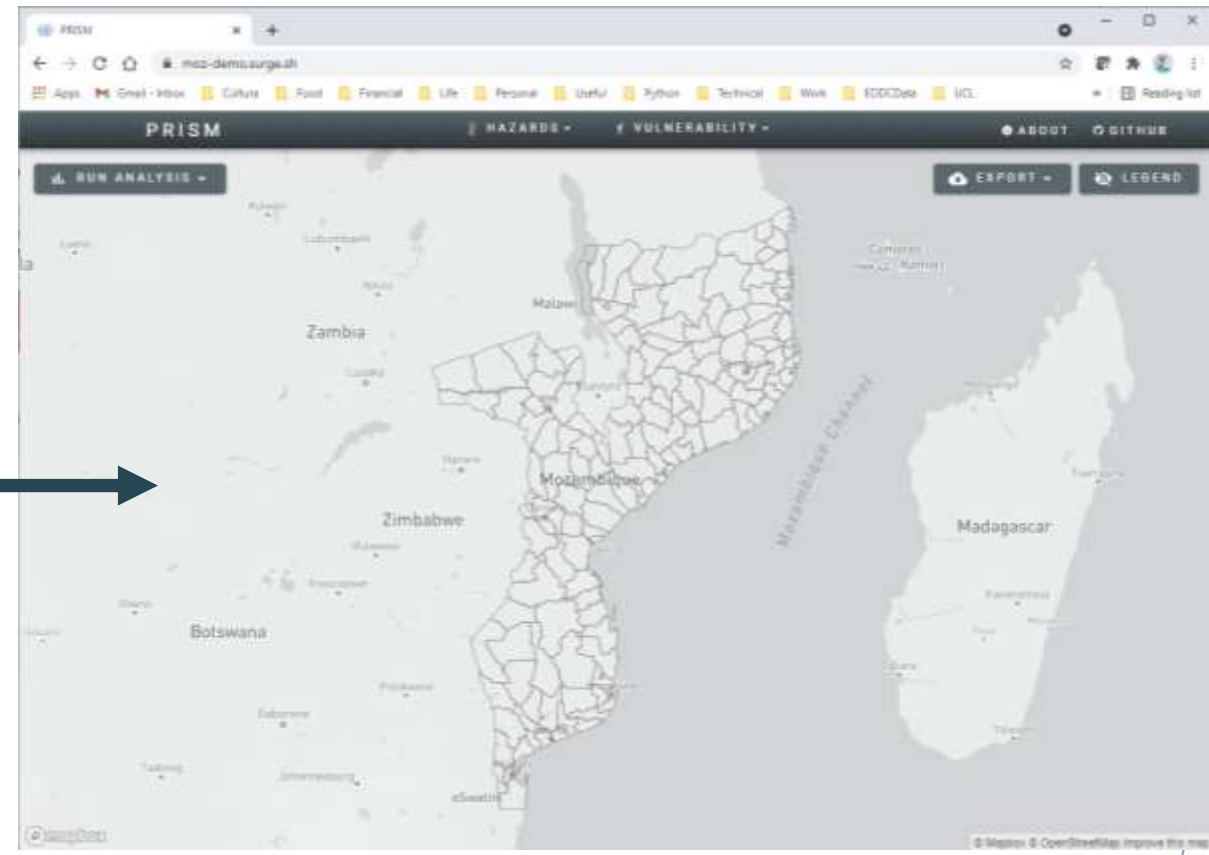
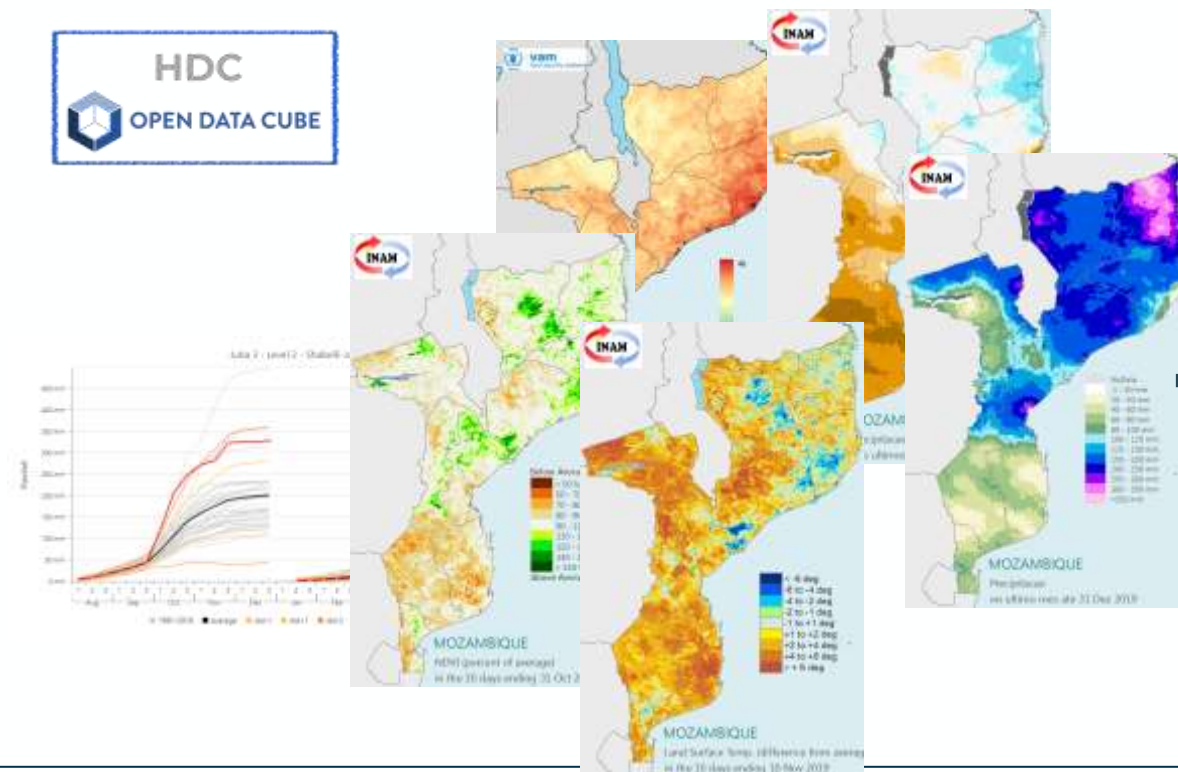
Crop Type Ground Data Collection



PRISM: Risk and Impact Analytics

Support to National Meteorological Services: Long term support programs led by WFP COs, enhancing NMS capacity to use satellite data, integration of station data with satellites, climatological data recovery

PRISM Platform: Government oriented tool, enabling the integration of climate hazard information with demographic and vulnerability / socio-economic data



AIMS: Resilience Intervention Monitoring



Monitoring of Community asset resilience building project:

- 1) Verification of asset implementation (VHR)
- 2) Assessment of asset long term impact (improvement in vegetation, soil moisture, etc)



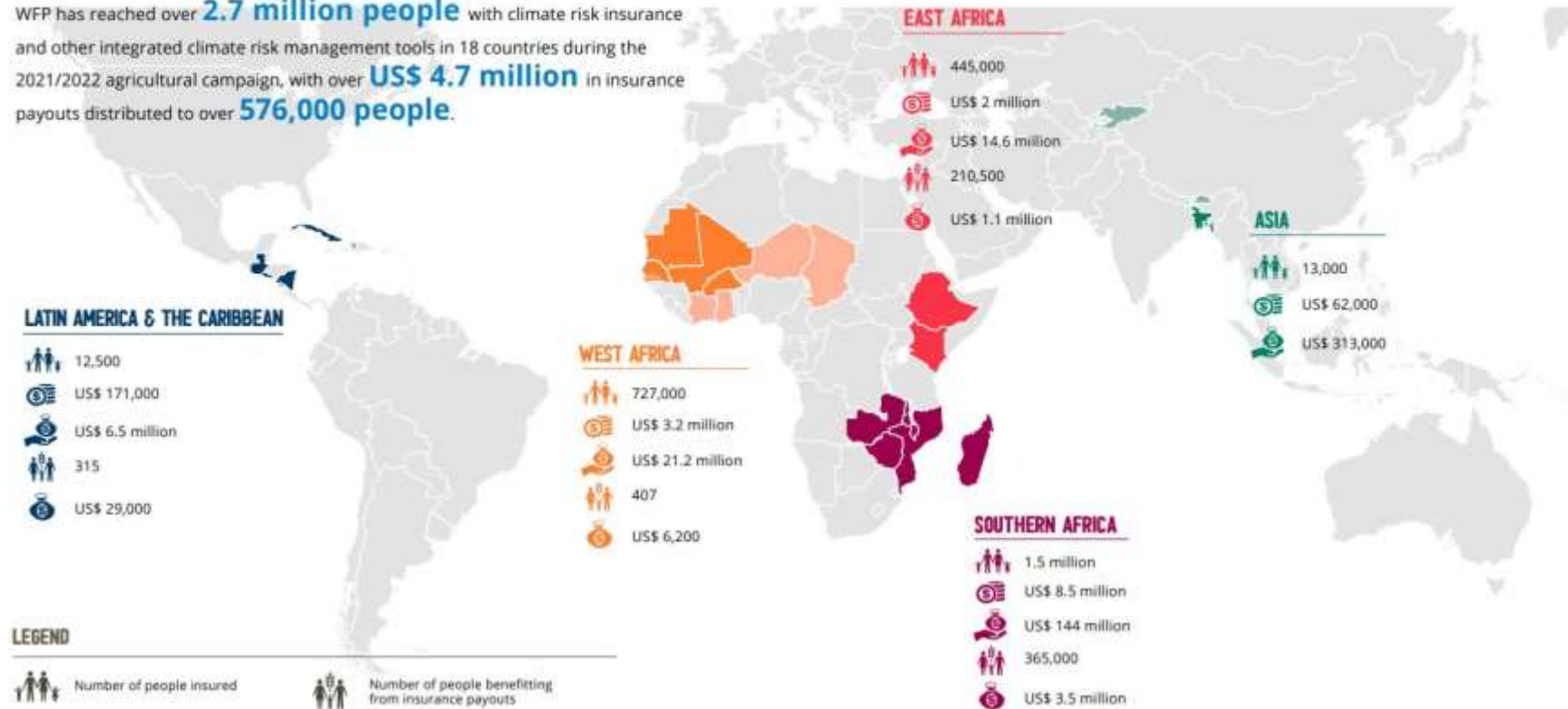
OUR REACH AND SCALE IN 2021

A growing Portfolio for WFP. Technical support from commercial providers.

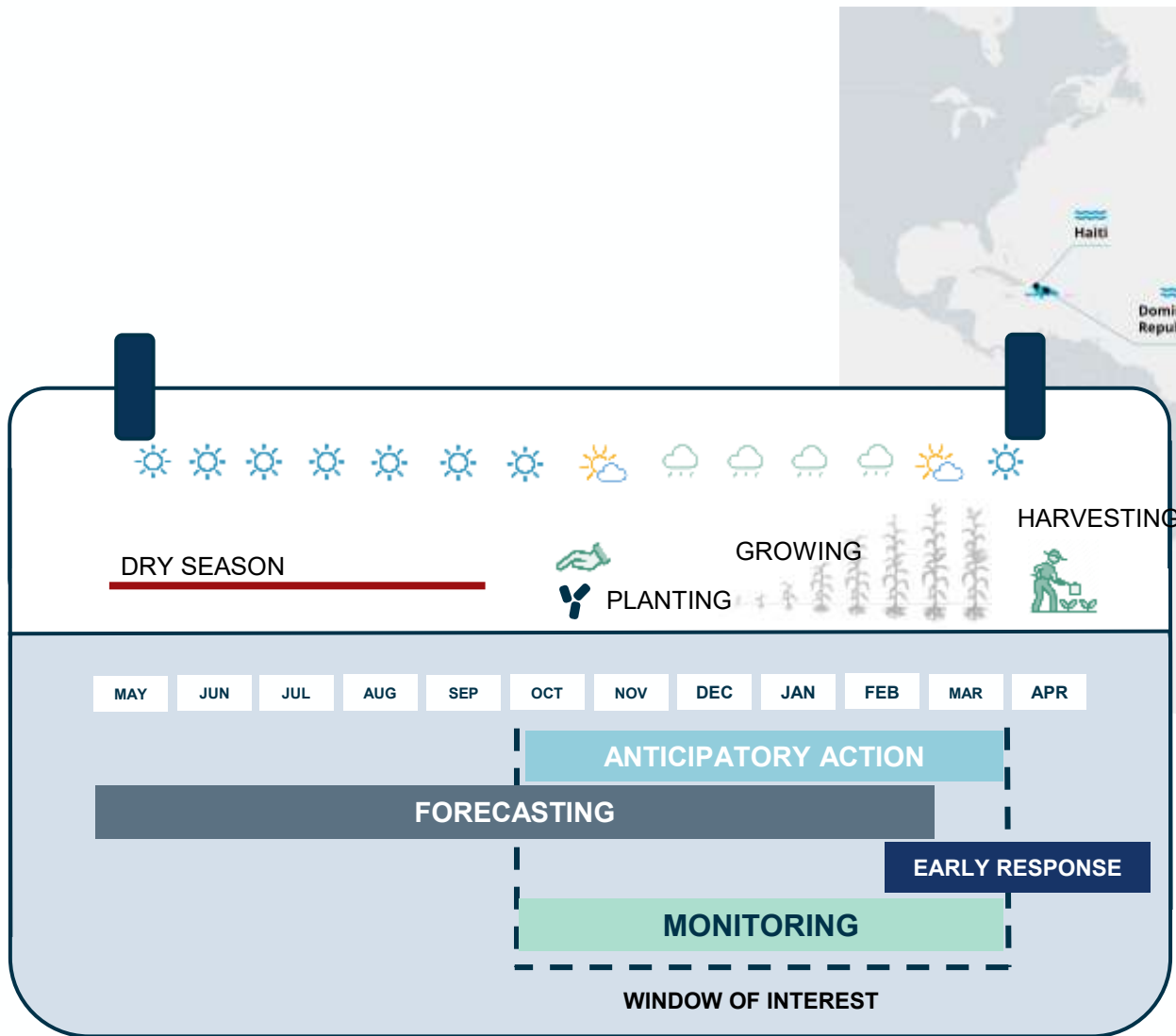
CIEO RAM provides satellite-derived inputs for Livestock Insurance scheme in Ethiopia.

Expect to benefit from ESA's RAMONA project to refine inputs for insurance

WFP has reached over **2.7 million people** with climate risk insurance and other integrated climate risk management tools in 18 countries during the 2021/2022 agricultural campaign, with over **US\$ 4.7 million** in insurance payouts distributed to over **576,000 people**.



Climate Risk Insurance and FbF



A growing Portfolio for WFP.
 Technical support from commercial providers.