GROUP ON EARTH OBSERVATIONS

GEOGLAM Global Agricultural Monitoring

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Global Agricultural Monitoring

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GEOGLAM Global Agricultural Monitoring

The G20 Agriculture Priority (2011)
G20 Final Declaration – Cannes, November 2011

- *44. We commit to **improve market information and transparency** in order to make international markets for agricultural commodities more effective. To that end, we launched:*
  - *The **"Agricultural Market Information System" (AMIS)** in Rome on September 15, 2011, to improve information on markets ...;*
  - *The **"Global Agricultural Geo-monitoring Initiative" (GEOGLAM)** in Geneva on September 22-23, 2011. This initiative will coordinate satellite monitoring observation systems in different regions of the world in order to enhance crop production projections…*

June 2016:

1. GEOGLAM re-endorsed (G20 meeting, Hangzhou)

2. GEOGLAM, member of the AMIS Secretariat (Rome)

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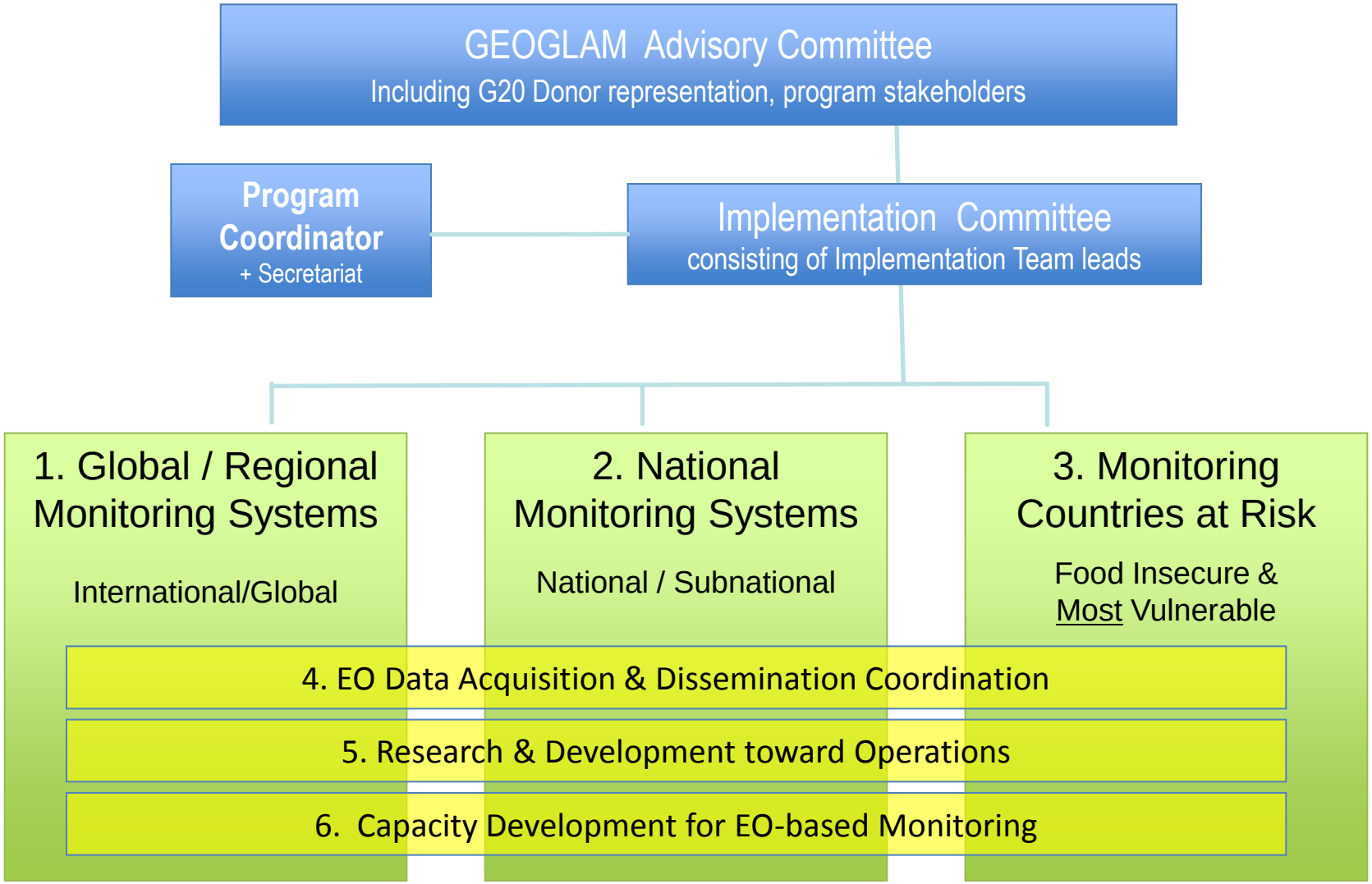
GEOGLAM Structure & Governance



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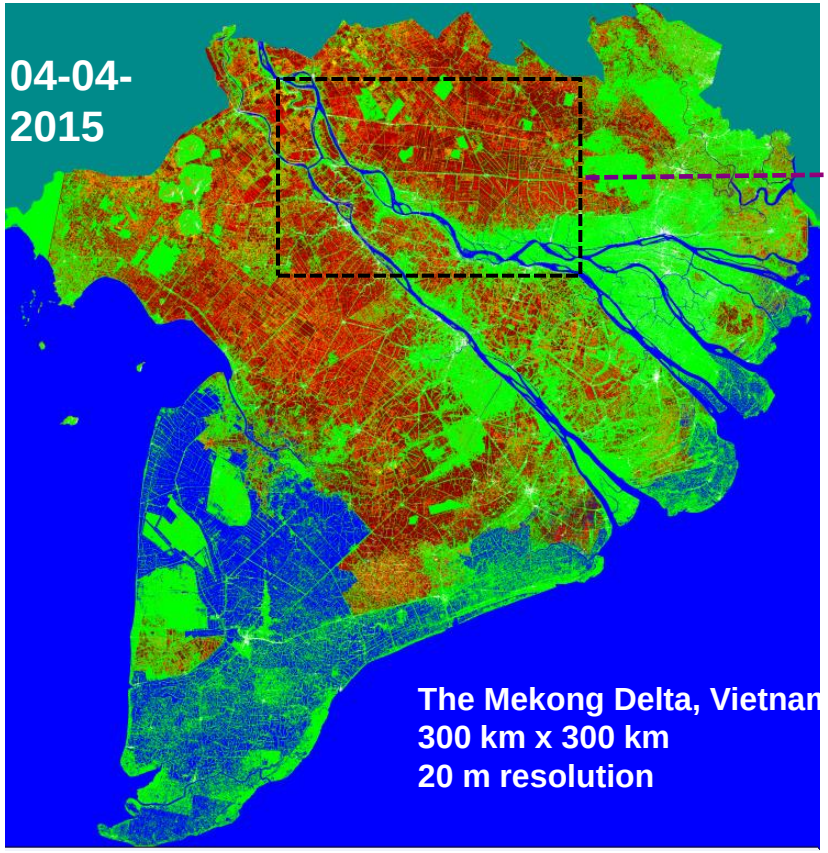
GEOGLAM Component #1
Global Agricultural Monitoring

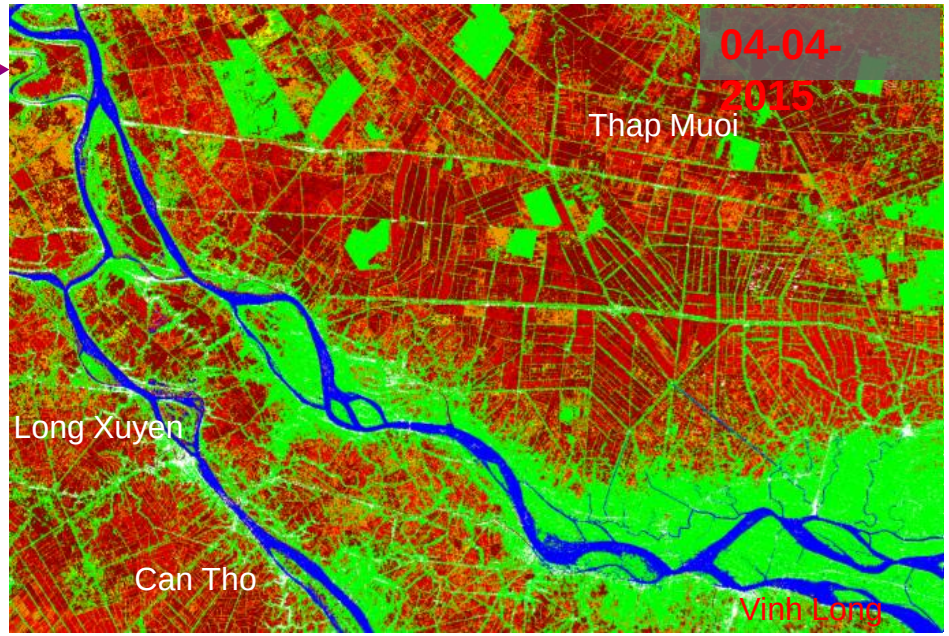
Asia-RiCE

Rice monitoring using Sentinel-1A data

Monitoring of Winter-Spring rice



100 km x 70 km, 20 m resolution



- Rice: early stage
- Rice: tillering stage
- Rice: reproductive stage
- Rice: maturity stage
- Non rice (forest, other LULC)
- Water (ocean, river, aquaculture)
- Land outside the Vietnam Mekong delta

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GEOGLAM Component #1
Global Agricultural Monitoring

RAPP

Rangelands and Pasture Productivity

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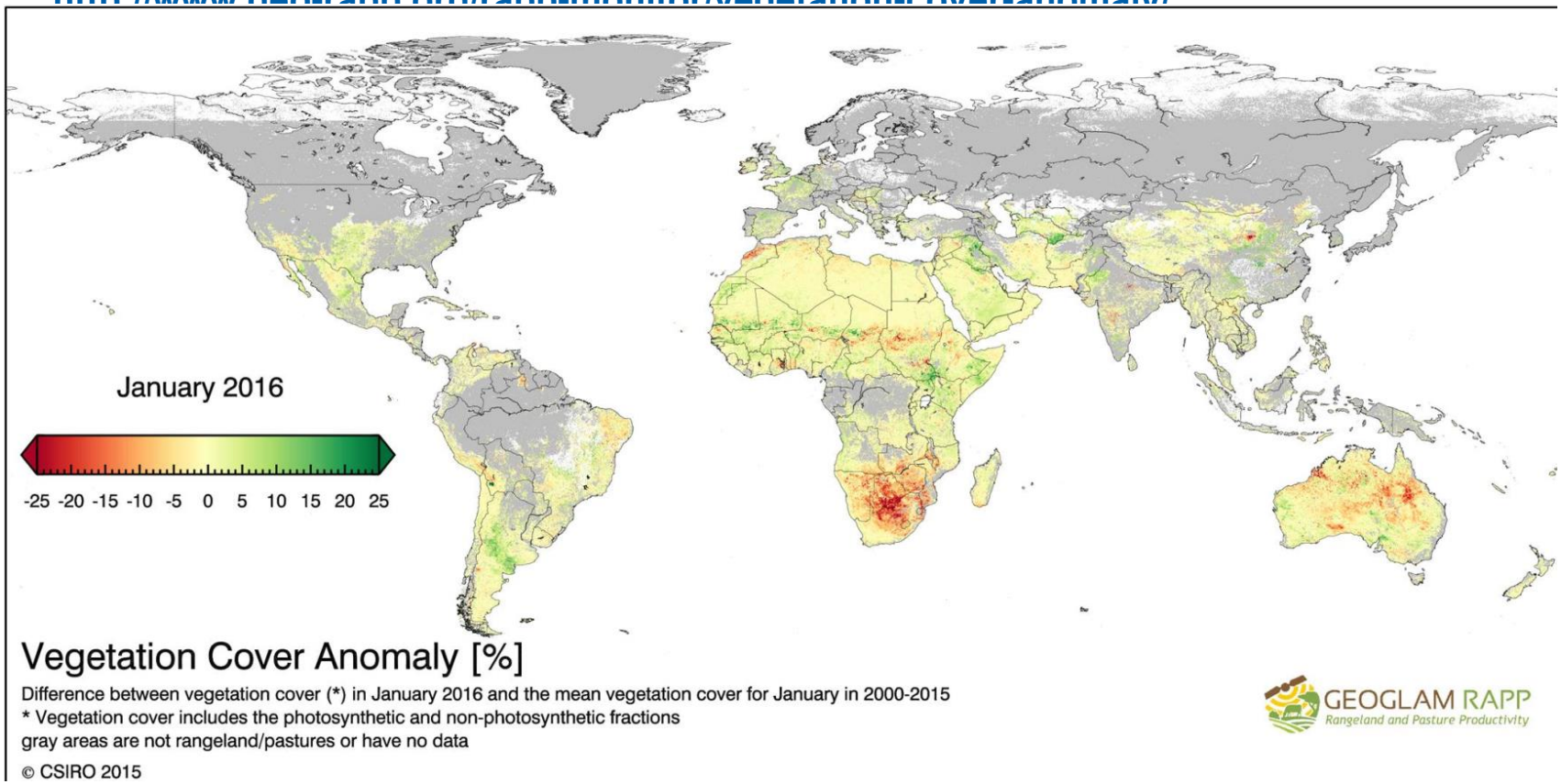
The GEOGLAM Rangelands / Pasture lands task

- establish a dedicated global system for observing pastures and rangeland status, biomass dynamics and productivity
  - an improved capacity to manage risk and improve production of animal protein at a range of scales due to a better understanding of the trends in biomass and its use for protein production.
  - the capacity to more effectively manage variability in production due to more timely and accurate national and regional agricultural statistical reporting and early warning of meat production shortfalls.
  - more effective planning based on accurate forecasts of pasture and rangelands productivity variability.
  - improved global understanding of risk across all landscapes as climate and land use change through the addition of these lands into global agricultural monitoring.

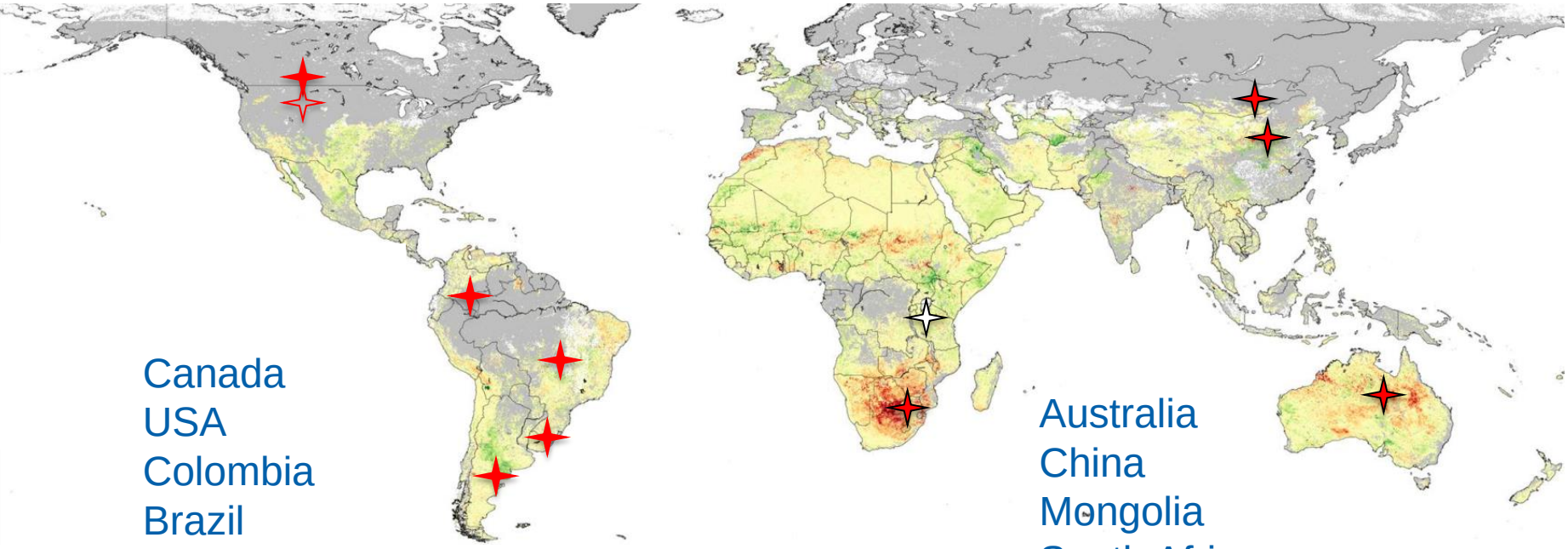
RAPP Product

- **Vegetation Cover Anomaly (*Rangeland-Pastures*) produced monthly & published on RAPP website & twitter account**

http://www.geo-rapp.org/rapp-monitor/vegetation-cover-anomaly/



GEOGLAM RAPP : Pilot Countries



Canada
USA
Colombia
Brazil
Uruguay
Argentina

Australia
China
Mongolia
South Africa
Kenya??

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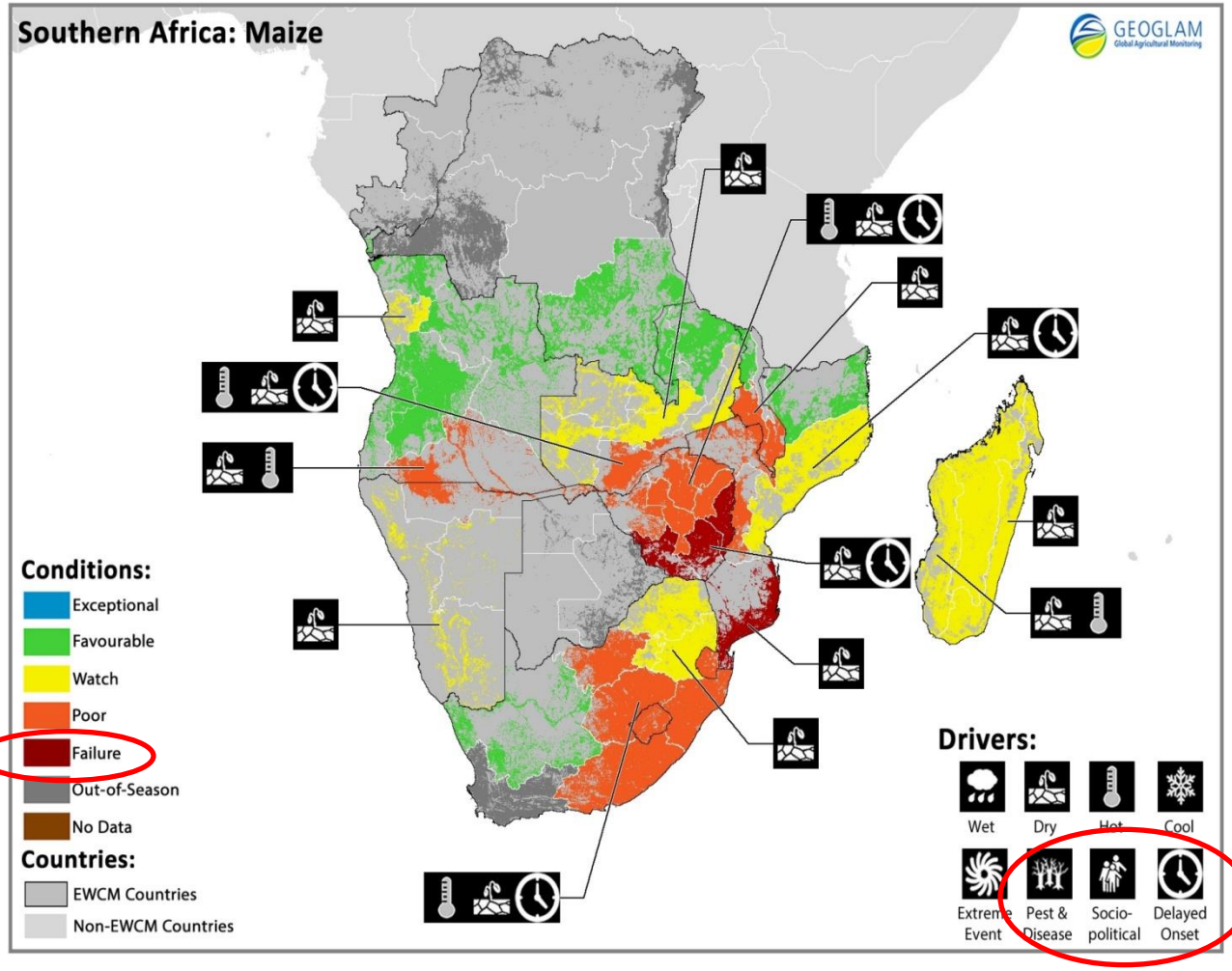
GEOGLAM Component #3
Countries at risk

First Early Warning Crop Monitor, Feb. 2016

Consensus Map highlighting the poor conditions in Southern Africa for Maize



1 new condition

3 more drivers

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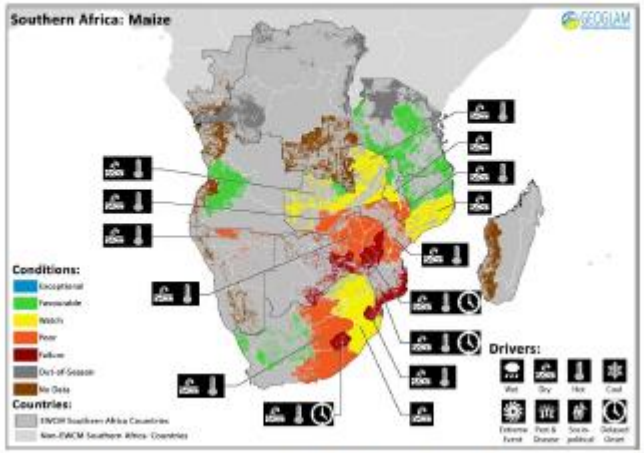
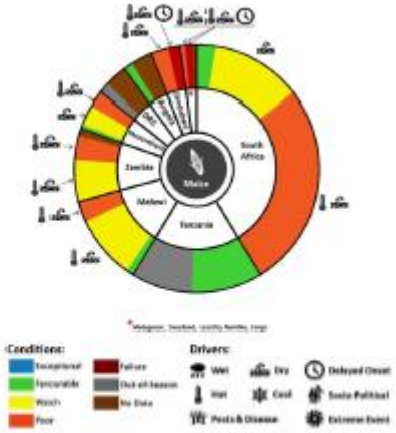
Early Warning Crop Monitor: bulletin #2, March 2016

Southern Africa:



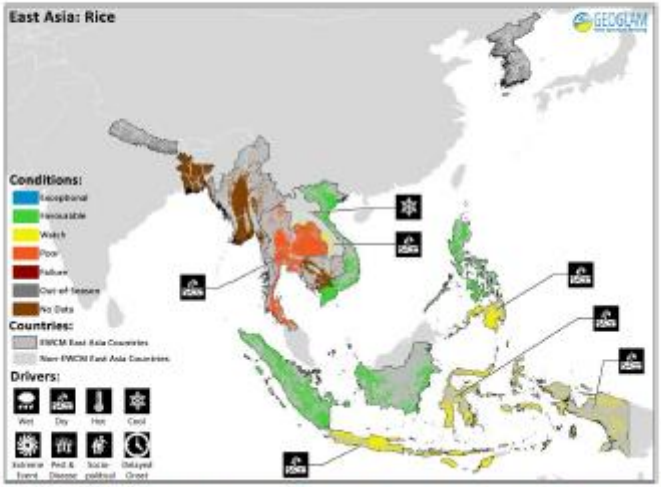
Crop condition map synthesizing information for all EWCM crops as of February 28th. Crop conditions over the main growing areas are based on a combination of inputs including remotely sensed data, ground observations, field reports, national and regional experts. ***Conditions that are in other than favourable conditions are displayed on the map with their driver.***

Severe drought, associated with one of the strongest El Niño events in the past 50 years, continues to cause widespread damage to crops across the region, raising significant concerns. As a result of dry and hot conditions, it is expected that regional production of major food crops (maize and sorghum) will be critically down. Planted area is significantly reduced, with very poor conditions, and even crop failure, experienced over broad areas. Crops are now largely in late reproductive to grain filling stages, the most sensitive period for crop development, and thus the window of opportunity for recovery of conditions is coming quickly to a close. Conditions continued to deteriorate in February over most areas in the southern half of the region. Seasonal forecasts indicate that the hot and dry conditions will continue through the rest of the season. Maize production forecasts for South Africa, usually an important regional exporter, are projected to be approximately 35% below average. This is the second consecutive poor season in the region. There is serious concern that many countries will need humanitarian assistance, including Zimbabwe, Malawi, Mozambique,



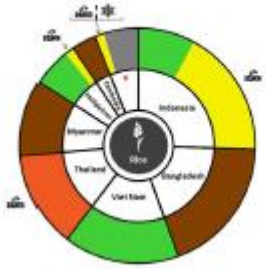
Lesotho, Swaziland, Madagascar, and Angola. Significant imports from outside the region will be needed in 2016-2017.

Southeast Asia:



Crop condition map synthesizing information for rice as of February 28th. Crop conditions over the main growing areas are based on a combination of inputs including remotely sensed data, ground observations, field reports, national and regional experts. ***Conditions that are in other than favourable conditions are displayed on the map with their driver.***

Overall crop conditions in Southeast Asia are mixed as a result of El Niño, which is affecting broad areas across the region and is causing delayed rains and dry conditions. Negative impacts are most notable in Thailand where conditions are poor across the country. The dry season rice is the main crop currently in season in the region with the exception of Indonesia, where the wet season (main crop) is currently growing. Planted area in Thailand and the Philippines has decreased due to insufficient water, and concerns over dry conditions and delayed rains are mounting over the main growing regions in Indonesia.



Pie chart description

Each slice represents a country's share of total average regional production, in the case of the regional charts, and total national production in the case of the national charts. Sections within each country are weighted by the average sub-national production statistics of the respective country.

Sources and Disclaimers: The Crop Monitor assessment is conducted by GEOGLAM with inputs from the following partners FEWS NET, JRC, WFP, ARC, and UMD. The findings and conclusions in this joint multi-agency report are consensual statements from the GEOGLAM experts, and do not necessarily reflect those of the individual agencies represented by these experts.

More detailed information on the GEOGLAM crop assessments is available at www.geoglam-crop-monitor.org

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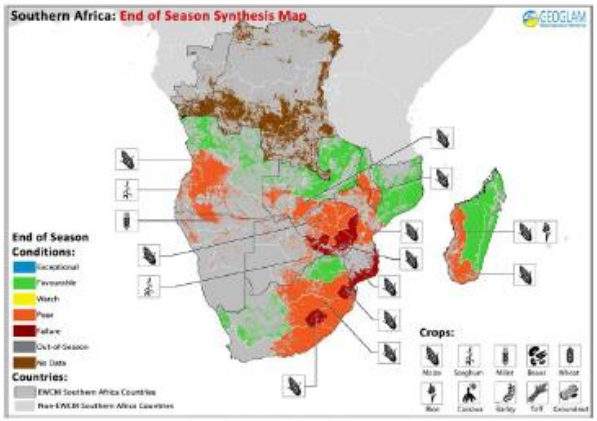
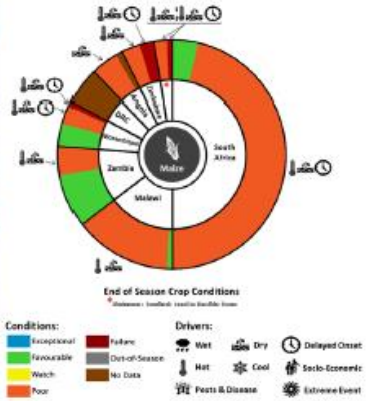
Early Warning Crop Monitor: bulletin #5, June 2016

Southern Africa:

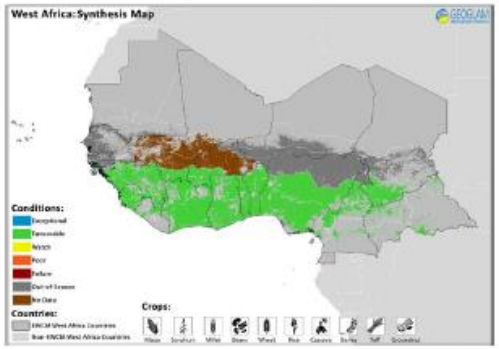


End of season crop condition map synthesizing information over the main growing regions in southern Africa. Crop conditions are based on a combination of inputs including remotely sensed data, ground observations, field reports, national and regional experts. ***Crops that finished the season in other than favourable conditions are labeled on the map.***

The main season in southern Africa has come to a close, with poor conditions and crop failure throughout large parts of the region due to the severe drought attributed to El Niño. Late season precipitation was mostly too late to improve conditions, however the rainfall did help to replenish soil moisture and water supplies. Serious concerns remain, as humanitarian assistance needs continue to increase across the region due to the poor harvest, especially in the most food insecure areas of Zimbabwe, Malawi and Mozambique. In South Africa, the main regional exporter, maize production is ca. 40% below the 5-year average, as a result of major yield decreases and large reductions in planted area. As this is the second consecutive season with significantly reduced production, this season's failed harvests are increasing food security concerns in the region.



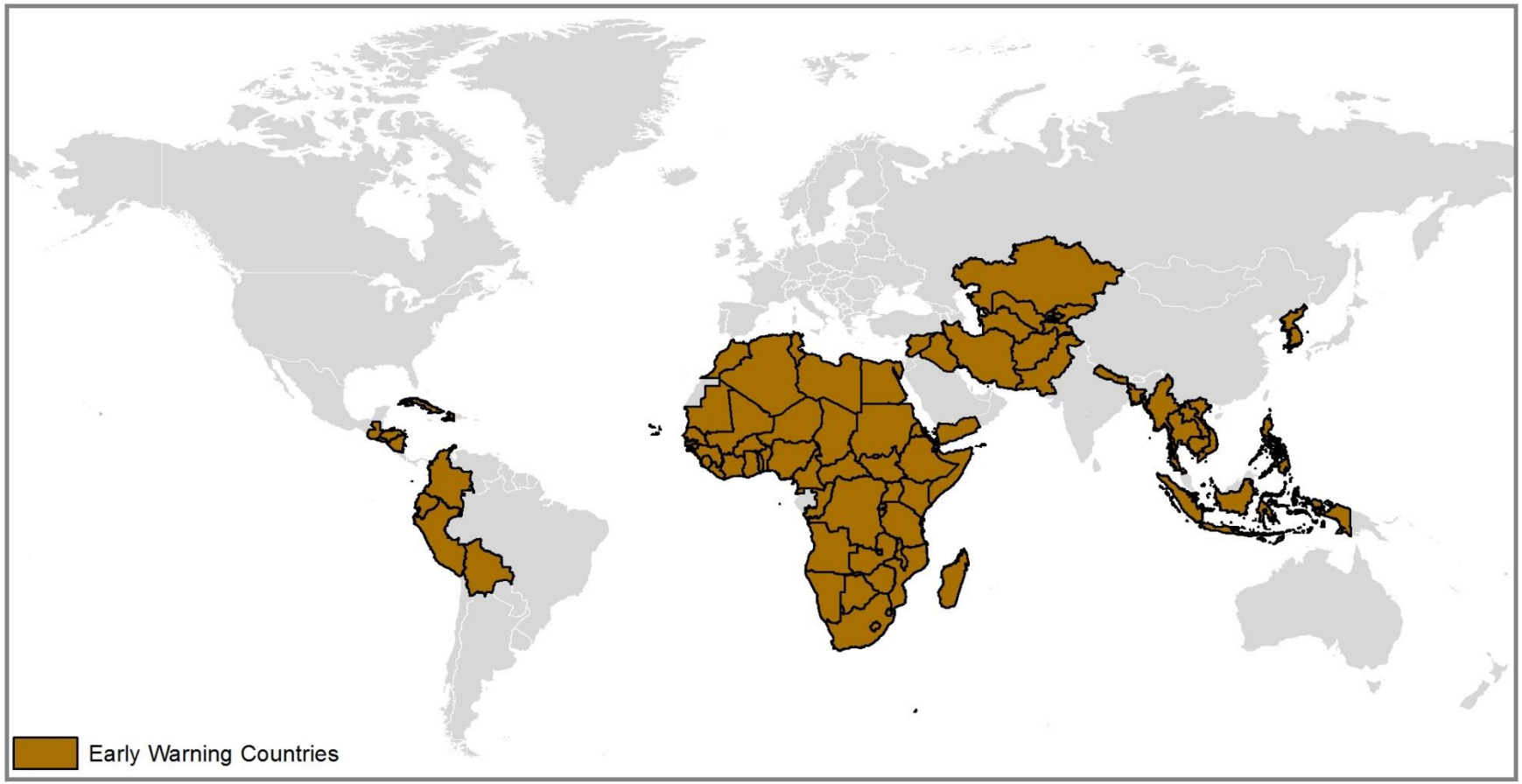
West Africa:



Crop condition map synthesizing information for rice as of May 28th. Crop conditions over the main growing areas are based on a combination of inputs including remotely sensed data, ground observations, field reports, national, and regional experts. ***Crops that are in other than favourable conditions are labeled on the map.***

In West Africa, the season is off to a promising start throughout the region owing to good weather and sufficient moisture levels. Cumulative rainfall from early April to late May has been average to above average over most of the region. The minor rainfall deficits experienced over small portions of the region during this time period are not expected to affect crop development as rainfall distribution has been good.

83 Countries to be Covered by EWCM



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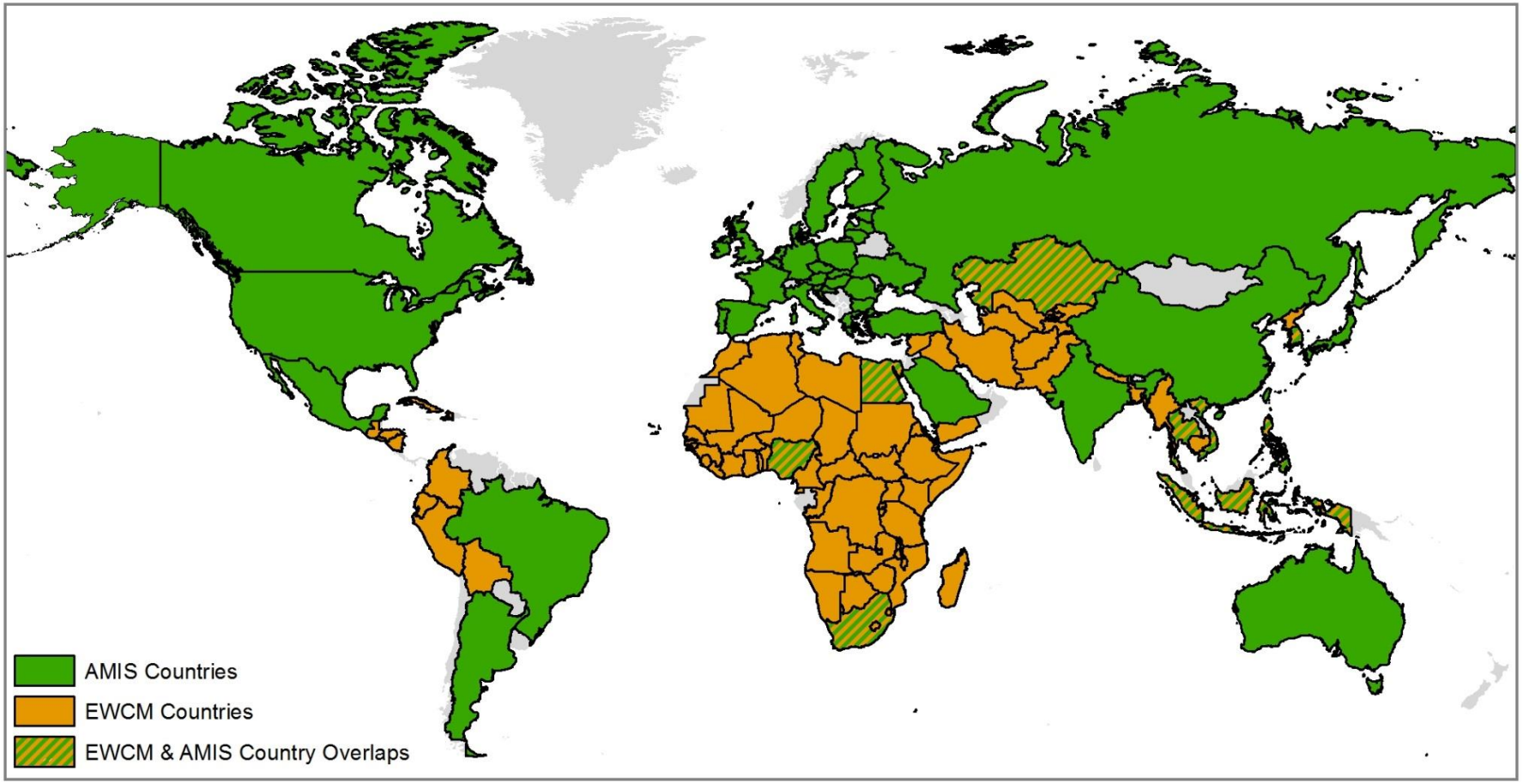
GEOGLAM Achievements

Achievements
Global Crop Monitoring



- **about 94% of world agricultural area…**

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http://www.earthobservations.org/geoglam