Enhancing GEOGLAM Coordination in African Nations Receiving Official Development Assistance

Background

Recognizing the value and importance of Earth observations (EO) for monitoring of agricultural production, the G20 in 2011 established the Group on Earth Observations Global Agricultural Monitoring Initiative (GEOGLAM). GEOGLAM uses EO to provide near real-time knowledge on agricultural production to support proactive and informed decision making with respect to agricultural markets, food security early warning and response. GEOGLAM has been operationally producing monthly agricultural production reports for the Agricultural Market Information System (AMIS) since 2013, and a Crop Monitor for Early Warning in food insecure regions since 2016. In 2019 GEOGLAM began producing mid-month Special Reports in areas of emerging concern. Beyond these products, in the last few years GEOGLAM has been down scaling the crop monitors and co-developing national and regional scale monitoring systems that provide near real time information close to decision makers. This proposal focusses on accelerating this work in Africa and expanding it to provide more quantitative metrics that can help support the UN Sustainable Development Goals and understanding the impact of climate change on crop production.

The current status of GEOGLAM crop monitoring is presented in figure 1.

Figure 1. Global Coverage of GEOGLAM Crop Monitors
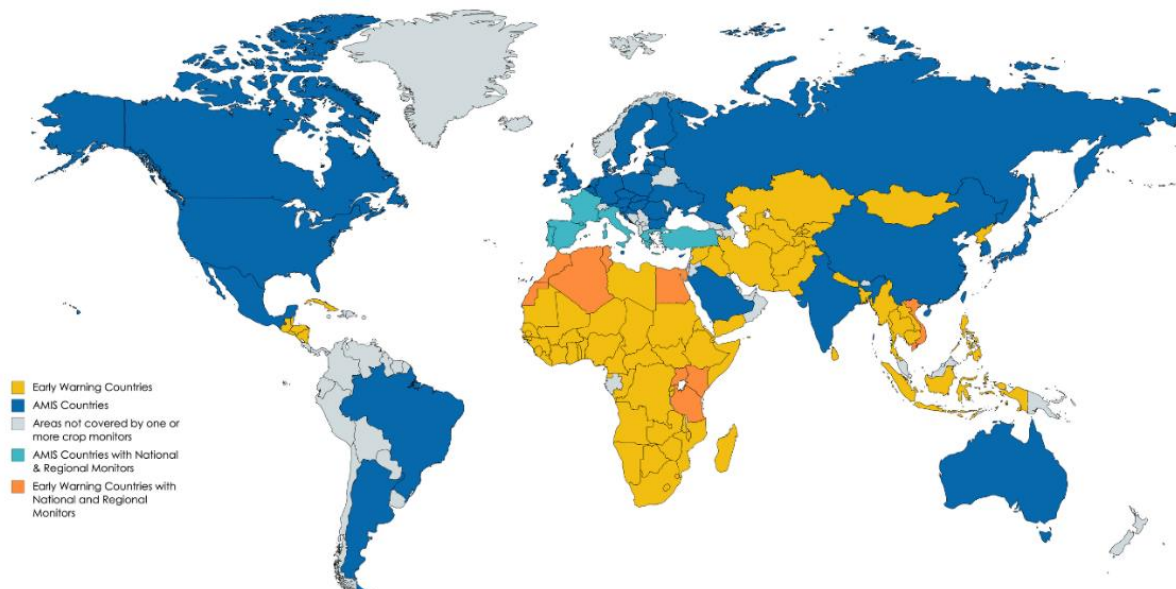
GEOGLAM is primarily a coordination initiative knitting together in-kind contributions from over 100 institutions worldwide, including a research network, Joint Experiments for Crop Assessment and Monitoring (JECAM) with 40 sites globally. Membership is based on shared interest and a community belief that the impact of a coordinated approach can be much greater than the sum of the individual contributions alone. This approach allows for the development of high-quality consensus information products that are authoritative and quickly turned into decisions that have impact. GEOGLAM is governed by an Executive Committee with 3 lead co-chairs, supported by a small Secretariat led by the Programme Director. GEOGLAM is a flagship initiative of the Group on Earth Observations (GEO) and the Secretariat is located within the GEO Secretariat. GEO in turn is hosted by the World Meteorological Organization (WMO), and all financial contributions to GEOGLAM are managed within the WMO system in the GEO Trust Fund.

Countries that receive Official Development Assistance (ODA) are often in food insecure regions of the world. GEOGLAM uses EO to provide early warning for timely and actionable information in response to emerging food security crises in these regions. Proactive responses based on GEOGLAM information can save lives, reduce human suffering and the cost of reactive emergency

response. For example, during a 2017 drought in Uganda, the Prime Minister's office received a three-month early warning that enabled the government to proactively scale up public works projects to offset losses in income from reduced agricultural production losses. This improved the outcome for 150,000 citizens while saving an estimated USD $2.6m in emergency food aid.

Increasingly, GEOGLAM has been working with the Agriculture Ministries and more recently, the Statistical agencies in least developed countries to create EO based information that support policies and programs. At the time of this proposal there are over a dozen GEOGLAM initiatives active in 14 African nations, including:

- Burkina Faso
- Kenya
- Madagascar
- Mali
- Morocco

- Mozambique
- Rwanda
- Senegal
- South Africa
- Tanzania

- Tunisia
- Uganda
- Zambia
- Zimbabwe

The GEOGLAM community understands better coordination results in better outcomes. To that end the purpose of this proposal is to improve coordination by creating an strategy that brings together technological solutions with capacity development best practices while leveraging work done by the GEO Secretariat on cloud computing environments (i.e. Sen2Agri tools on Amazon Web Services). The work will provide the capacity development and technological foundation to allow GEOGLAM to effectively engage with Digital Earth Africa (DEA) to deliver high quality crop monitoring information to the continent. It will also develop the potential to produce EO based monitoring information to complement the 50 X 2030 :Data to End Hunger initiative.

Project Deliverables

1. Technological Foundation: Analytical Tools and Computational Environments.
This work will review and assess existing open source operational tools for optical and SAR based agricultural monitoring, including crop condition, crop type and extent. GEOGLAM will also work with the GEO Secretariat to identify opportunities to leverage new computational environments, like Sen2Agri on Amazon Web Services, and the Digital Earth Africa Data Cube.
Deliverable: Technological Landscaping Report, 2nd quarter 2020.

2. Human Capacity: Co-Development Good Practice Guidance.
GEOGLAM Secretariat and Capacity Development Working Group will document good practices for designing, implementing and evaluating capacity development relationships at individual, organizational and/or institutional levels. The guidance document will also include narratives from GEOGLAM members and stakeholders on examples of successful engagement. It will be used to support the Monitoring Summit (Deliverable 3).
Deliverable: Capacity Development Guidance Report, 3rd quarter 2020.

3. Bringing it all Together: African Agricultural Monitoring Summit (possibly adjacent to 2020 GEO Plenary in South Africa). The summit will bring together GEOGLAM initiatives active in Africa with representatives from national agricultural and statistical agencies. It bring together the findings of the Technological Landscape and Co-Development reports to produce an "African Strategy" to scale up agricultural monitoring activities.
Deliverable: Monitoring Summit Report, 4th quarter 2020.