

## Agriculture Task AG-07-03

<b>Task Number</b>	<b>Operational Agricultural Monitoring System</b>
AG-07-03	The purpose of this Task is to support the development of an Operational Agricultural Monitoring System, enhancing the current capabilities in the areas of agricultural monitoring, famine early warning and food security.
<b>Area</b>	
Agriculture	
<b>Relevant Committee</b>	
ADC	

### Description of the Work to be Performed

#### Enhancements will be developed in the following three areas:

Global mapping and monitoring of changes in distribution of cropland area and the associated cropping systems

Global monitoring of agricultural production leading to accurate and timely reporting of national agricultural statistics and accurate forecasting of shortfalls in crop production and food supply and facilitating reduction of risk and increased productivity at a range of scales

Effective early warning of famine, enabling a timely mobilization of an international response in food aid

#### The Work Program is being developed under the following five sub tasks:

07-03.1 A Community of Practice Workshop on Crop Acreage Estimation. Report to be ready by November 2008

07-03.2 Regional Experiments on methods, intercomparison and accuracy assessment: Ethiopia 2008, Afghanistan, Argentina, Brazil, China and Nigeria in 2009,

07-03.3 Pilot studies integrating EO data within national statistical reporting systems leading to documentation of community guidelines and protocols:

Strategy to be developed (FAO) 2008.

07-03.4 Croplands data set (a) at c. 250m in 2009.. (b) input data set (20-60m, Landsat 2005) by NASA/USGS to be completed by 2009, (c) input data set (20-60m, multi source) GEOSS Task DA-07-02 to be initiated in 2009 (Lead- GOFD/GOLD/NASA/USGS).

07-03.5 Agricultural Monitoring Data Workshop to define a set of operational products for agriculture monitoring, and to address EO and in-situ data availability, timeliness, quality, dissemination and continuity issues (China 2009)

07-03.6 Coordination and implementation of regional capacity building workshops on EO, Agricultural Monitoring and Famine Early Warning ( coordination with Task AG-06-07 in discussion)

07-03.7 Web site for task ([www.earthobservations.org/cop\\_ag\\_gams.shtml](http://www.earthobservations.org/cop_ag_gams.shtml)) developed April 2008 by UMD.

07-03.8 Multi-source PAY (Production, Acreage, Yield) database on common platform (to be initiated by Task Secretariat in 2009)

07-03.9 Workshop to review methods for integration of in-situ and EO estimates of rainfall in Africa EC-JRC, 2008

07-03.10 global map of field size distribution and cropping system complexity in order to guide both EO data acquisition and crop area estimation methods

### Output & Deliverables

Global and Regional Products and Databases, Community Standards and Guidelines, Product Validation, Capacity Building for Agricultural Monitoring

## Agriculture Task AG-07-03

### Calendar (incl. milestones)

3rd quarter 2007	Start Phase 1
1 <sup>st</sup> quarter 2008	Establish Task secretariat at ISRO, India
1 <sup>st</sup> quarter 2008	Complete Task 07-03.7 (Agriculture CoP website)
2 <sup>nd</sup> quarter 2008	Complete Task 07-03.1 (Crop Area Estimation Best Practices Workshop )
4 <sup>th</sup> quarter 2008	Initiate Task 07-03.2 (Crop Experiments in Ethiopia)
4 <sup>th</sup> quarter 2008	Complete Task 07-03.9 (workshop on integration of EO and in-situ for rainfall)
1 <sup>st</sup> quarter 2009	Complete Task 07-03.9 ( PAY database)
2 <sup>nd</sup> quarter 2009	Complete Task 07-04.a (Global Croplands Map c. 250m)
2 <sup>nd</sup> quarter 2009	Complete Task 07-03.5 (Workshop on data for agricultural monitoring)

### Financial Contributions (from GEO Operations Budget)

- Travel for 6 developing country participants to the July 07 Workshop
- Travel support for developing country participants for future meetings
- Partial support for Ag Monitoring Coordinator at GEO
- Travel support for Ag Task Secretariat to 08 June Workshop

## Agriculture Task AG-07-03

### Recent Progress

On July 16-18, 2007 an IGOL/GEO workshop was convened at the UN Food and Agriculture Organization (FAO) in Rome to develop a strategy for global agricultural monitoring in the framework of GEO. Forty-seven participants representing twenty-five national and international organizations attended and established the 'GEOSS/IGOL Agricultural Monitoring Community of Practice'. The workshop reviewed the current state of agricultural monitoring through a series of presentations, discussions and breakout sessions, revised and enhanced the GEO AG-07-03 Task definition, and developed a set of priorities and recommendations calling for:

- The GEOSS/IGOL Agricultural Monitoring Community of Practice to implement the AG-07-03 subtasks by :
  - o Holding a workshop in early 2008 to establish best practices and future needs for national crop yield forecasting.
  - o Coordinating and running a set of regional experiments to determine the EO requirements for delivery of accurate crop area estimates early in the growing season.
  - o Organizing a series of regional workshop on how to best integrate earth observation into national statistical reporting.
  - o Establish a community of practice website and open lines of communication
  - o Produce and distribute a global croplands map at 250m resolution to be updated annually and freely available.
- The GEO Secretariat to work toward an international agreement on and implementation of a data policy that includes free and open access to data sets and products contributed by GEO members.
- The Committee on Earth Observation Satellites (CEOS) and its member space agencies to focus on securing spaceborne assets needed for agricultural monitoring emphasizing data continuity, reliability and timeliness of data delivery.
- The FAO and its member national agricultural agencies to facilitate the integration of satellite data with traditional agricultural monitoring methods to achieve timely accurate and verifiable reporting of national agriculture statistics.
- The WMO and its member agencies to improve the availability of meteorological station data and resultant products to enable improved prediction and monitoring of crop conditions and production shortfalls.

On June 5-6, 2008 held a GEOSS workshop on best practices for crop area estimation/forecasting with earth observation and future needs convened at the EC JRC in Ispra. Forty one participants representing twenty seven national and international organizations came together to:

- assess the current state of the art in crop area estimation
- develop a guidelines report on best practices for crop area estimation/forecasting with earth observations
- design a series of regional pilot experiments on cropland area estimation to compare methods and accuracies
- review and refine, based on workshop discussions and findings, priority tasks for the GEO Agricultural Monitoring Community of Practice (GEO AG-07-03 CoP) and develop the associated 2009-2011 task sheet

### Current Status

**Mar 06:** IGOL Workshop on the development of an Operational Agricultural Monitoring System March 8-11 2006.

**Oct 06:** First draft version of this Task Sheet compiled by the GEO Secretariat.

**Nov 06** IGOL Workshop Report Distributed.

**July 07:** IGOL/GEOSS Agricultural Monitoring Meeting, FAO Rome July 16-18

**Aug 07:** Revised Task Sheet for Ag 07-03

Nov 07: Published GEOSS Workshop Report

March 08 Established Agricultural Monitoring Community of Practice website

## **Agriculture Task AG-07-03**

May08: Established AG-07-03 Task Secretariat at ISRO, India

June08: GEOSS Crop Acreage Estimate Workshop, EC JRC, Ispra Italy, June 5-6

June 08: Revised Task Sheet for AG-07-03

### **Coordination with other tasks of committee**

Coordination with Task AG-07-02 with respect to integration of seasonal to interannual forecasts in food security and famine early warning monitoring.

Coordination with IGOL on Agricultural Task implementation

Coordination with GOF/GOLD on croplands mapping and monitoring and monitoring of agricultural fires

Coordination with CEOS WGISS for moderate resolution data exchange protocols and metadata standards and a coordinated acquisition strategy

Coordination with CEOS LSI for future land constellation coordination

Coordinateion with ADC on requiremets for AG-07-03 Task

### **GEO Member Potential Contributions**

Commonwealth Scientific and Industrial Research Organization (CSIRO, Australia)

Companhia Nacional de Abastecimento (CONAB, Brazil)

Centre National d'Etudes Spatiales (CNES)

Center of Astrophysical Research, Kazakhstan

Consultative Group on International Agricultural Research (CGIAR)

EFTAS Fernerkundung Technologietranfer GmbH (Germany)

EU Commision, Monitoring of Agriculture with Remote Sensing-Food (MARS FOOD)

European Space Agency (ESA)

European Space Agency, Global Monitoring for Food Security (GMFS) Programme

IGOL Agriculture

Indian Space Research Organization (ISRO)

Institute of Agri Resources & Regional Planning, CAAS

Institute of Remote Sensing Applications, Chinese Academy of Sciences

International Institute for Applied Systems Analysis (IIASA)

NASA Global Agricultural Monitoring Project (GLAM)

Rice Information System (RIS)

SADC Regional Remote Sensing Unit Drought Monitoring Center

Secretaría de Agricultura, Ganadería, Pesca y Alimentos (SAGPyA, Argentina)

Space Applications Centre, Indian Space Research Organization (ISRO)

Space Reserch Institute (Russia)

UCL Geomatics (Belgium)

UN FAO Global Information and Early Warning System (GIEWS)

## **Agriculture Task AG-07-03**

UN FAO Food Insecurity and Vulnerability Information and Mapping Systems (FIVIMS)

UN FAO Statistics Division Country Statistics Service (ESSS)

USAID/USGS Famine Early Warning Systems Network (FEWS NET)

USDA Foreign Agricultural Service (FAS)

USDA National Agricultural Statistical Service (NASS)

WMO C/AGM and World Agrometeorological Information System (WAMIS)

World Food Program, Vulnerability Analysis and Mapping (VAM) unit

ZAF (South Africa)

## Agriculture Task AG-07-03

### Task Participants

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