Monthly Market Prices of Corn, Soybeans and Wheat
Highlighting Current Prices

Corn Monthly Prices $/MT 2002-2012

Soybeans Monthly Price $/MT 2002-2012

Wheat Monthly Price $/MT 2002-2012
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 and weather forecasting data.
Background: the G20 Agriculture priority (2011)

2 initiatives to increase information availability, quality and transparency
GEOGLAM: Objective, structure, workplan

To strengthen the international community’s capacity to produce and disseminate relevant, timely and accurate information and forecasts on agricultural production at national, regional and global scales, through reinforced use of Earth Observations.

GEOGLAM is a « coordination programme », aiming at
- supporting, strengthening and articulating existing efforts
- developing capacities and awareness at national and global level
- disseminating information
1. Enhancing Global Agricultural Monitoring Systems
2. Strengthening National Capacity for Agricultural Monitoring
3. Monitoring Countries and Regions at Risk (EWS)
4. Coordinated Satellite and In-Situ Earth Observations
5. Operational Research and Development Techniques/Methods/Best Practices
6. Improved Reporting and Information and Timely Dissemination Systems

Public
Govts
AMIS
FAO STAT

MONITORING SYSTEM OF SYSTEMS

GEO-GLAM COMPONENTS
Agricultural Expertise (GEO CoP+)
Meteorological Expertise and Info
Earth Observations Satellite / Ground Data / Models

GEO-GLAM Global Agricultural Monitoring

Public
Govts
AMIS
FAO STAT

MONITORING SYSTEM OF SYSTEMS
Major rice cropping area and intensity at provincial level
Current Cropland Distribution: best available from existing satellite-derived sources

Source: IIASA, Fritz et al. Beta Version 1
NATIONAL COMPONENT: COUNTRY SELECTION

- Largest producing countries of four major crops (AMIS countries)
  
  **Focus on Major Producer Countries**

- India
- China
- Philippines
- Indonesia
- Thailand
- Viet Nam
- Mexico
- Brazil
- South Africa
- Argentina
- Kazakhstan
- Ukraine
- Turkey
- Japan
- Egypt/Nigeria
- Russia
- United States
- Australia
- Canada
- Saudi Arabia
- EU (Germany, France, Italy, UK, Spain)

90% producers
80% consumers
Maize, wheat, rice, soybeans
THE NORTHERN HEMISPHERE 2012
AGRICULTURE DROUGHT CASE

...A DEMONSTRATION ON WHAT GEOGLAM IS DELIVERING (GLOBAL PRODUCTS)
Northern Hemisphere Crop NDVI Anomalies

Crop NDVI Anomaly

-0.4
Worse than normal

0
normal

Better than normal

Non Cropland

Not shown
2012 Daily Crop NDVI Anomaly from MODIS
January 1 through September 10th, 2012

NDVI Departure from Median (2000-2011)
PROGRESS AND WATER SATISFACTION INDEX - NORMAL
GRAIN MAIZE

from: 21 August 2012
to: 31 August 2012

Year of interest (YOI)
After-season period length (dekads): 9

Unit:
- sowing rule scanning
- outside crop season
- no water shortage - early vegetative
- no water shortage - vegetative and reproductive
- no water shortage - maturity
- no water shortage - after season
- light water shortage - early vegetative
- light water shortage - vegetative and reproductive
- light water shortage - maturity
- light water shortage - after season
- medium water shortage - early vegetative
- medium water shortage - vegetative and reproductive
- medium water shortage - maturity
- medium water shortage - after season
- severe water shortage - early vegetative
- severe water shortage - vegetative and reproductive
- severe water shortage - maturity
- severe water shortage - after season

Source: JRC - FOODSEC Action - MARS Unit
source: Joint Research Centre
Processed by: ALTERRA consortium

05/09/2012
resolution: 0.125 x 0.125 degrees
Identifying Information and Product Types

INFORMATION PRODUCTS

- Crop outlook / Early warning
- Area estimate
- Yield forecast
- Production estimate
- Food Sec/vulnerability report
- Statistics reports

EO Data Products

- Cropland mask /Pasturelands
- Ag practices
- Crop condition indicators
- Crop type
- Biophysical variables
- Environmental variables (soil moisture)
- In-situ Weather
2. GEOGLAM : Earth Observation requirements

Input to CEOS : Summary table of requirements

developed taking into consideration the observation needs, the derived products they will serve, and regional specificities; ‘CEOS-GEOGLAM July 2012 Montreal)
**Input to CEOS:**
Regional analysis of EO data requirement (specifications, frequency)

---

**GEOGLAM EO Data Detailed Requirements Table:**

<table>
<thead>
<tr>
<th>Product Requirements</th>
<th>Europe &amp; North Africa</th>
<th>Medium fields&lt;br&gt;Growing season varies north-south&lt;br&gt;Assume Apr - Oct</th>
</tr>
</thead>
<tbody>
<tr>
<td>Croplands mask</td>
<td>100-300m optical + SWIR&lt;br&gt;50-150m SAR (X, C, L)&lt;br&gt;20-70m optical + SWIR&lt;br&gt;5-10m optical</td>
<td></td>
</tr>
<tr>
<td>Crop type area</td>
<td>100-300m optical + SWIR&lt;br&gt;50-150m SAR (X, C, L)&lt;br&gt;5-20m SAR (X, C, L)&lt;br&gt;20-70m optical + SWIR&lt;br&gt;5-10m optical&lt;br&gt;&lt;5m optical</td>
<td></td>
</tr>
<tr>
<td>Crop condition indicators</td>
<td>500-2000m thermal IR+optical&lt;br&gt;100-300m optical + SWIR&lt;br&gt;50-150m SAR (X, C, L)&lt;br&gt;5-20m SAR (X, C, L)&lt;br&gt;50-100m thermal&lt;br&gt;20-70m optical+SWIR&lt;br&gt;5-10m optical</td>
<td></td>
</tr>
<tr>
<td>Crop biophysical variables</td>
<td>500-2000m thermal IR+optical&lt;br&gt;100-300m optical + SWIR&lt;br&gt;50-150m SAR (X, C, L)&lt;br&gt;5-20m SAR (X, C, L)&lt;br&gt;20-70m optical+SWIR&lt;br&gt;5-10m optical</td>
<td></td>
</tr>
<tr>
<td>Soil moisture</td>
<td>1-15km passive microwave&lt;br&gt;50-150m SAR&lt;br&gt;5-20m SAR&lt;br&gt;radar altimetry&lt;br&gt;20-70m optical + SWIR&lt;br&gt;5-10m optical</td>
<td></td>
</tr>
<tr>
<td>Water extent</td>
<td>1-15km passive microwave&lt;br&gt;50-150m SAR&lt;br&gt;5-20m SAR&lt;br&gt;radar altimetry&lt;br&gt;20-70m optical + SWIR&lt;br&gt;5-10m optical</td>
<td></td>
</tr>
<tr>
<td>Cropping systems</td>
<td>100-300m optical + SWIR&lt;br&gt;50-150m SAR (X, C, L)&lt;br&gt;5-20m SAR (X, C, L)&lt;br&gt;20-70m optical+SWIR&lt;br&gt;5-10m optical&lt;br&gt;&lt;5m optical</td>
<td></td>
</tr>
<tr>
<td>Crop yield</td>
<td>100-300m optical + SWIR&lt;br&gt;&lt;5m optical</td>
<td></td>
</tr>
</tbody>
</table>

**Time legend:**

- **daily**
- **> once /week**
- **once/ week**
- **once/month**
- **annually**

Phases for GEOGLAM (11 July 2012 meeting):

(1) = tentatively 5 producer countries + 3 at-risk countries for Phase 1 (3 years)

(2) = adding 2 countries per year in Phase 2 (3 years)
THANK YOU!

earthobservations.org
jsoares@geosec.org
2. GEOGLAM: Earth Observation requirements

- **Rationale**: translating monitoring objectives into information needs and EO requirements

<table>
<thead>
<tr>
<th>Obs. requirements</th>
<th>Information needs</th>
<th>Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seasonal, real time global, reg., nat., local</td>
<td>Reference data</td>
<td>Yield forecast</td>
</tr>
<tr>
<td>multi-year global, reg., nat., local</td>
<td>Crop map (area, loc.)</td>
<td>Agricultural statistics</td>
</tr>
<tr>
<td>long term global, reg., nat., local</td>
<td>Crop type map</td>
<td>Environmental impact</td>
</tr>
<tr>
<td></td>
<td>Crop conditions</td>
<td>Agriculture changes</td>
</tr>
<tr>
<td></td>
<td>models stat. rel.</td>
<td></td>
</tr>
</tbody>
</table>

- Crop map
- Crop type map
- Crop conditions
- Farming system
- Farming practice
- Land use evolution
- Farm. syst. evolution
- Crop cond./ yield evol.
### 4. The GEOGLAM Initiative: Budget

<table>
<thead>
<tr>
<th>Component</th>
<th>Annual budget</th>
<th>6-year budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global /regional systems</td>
<td>1.00</td>
<td>6.00</td>
</tr>
<tr>
<td>National capacity development</td>
<td>2.00</td>
<td>12.00</td>
</tr>
<tr>
<td>Global/Regional Systems for Countries At Risk</td>
<td>1.40</td>
<td>9.00</td>
</tr>
<tr>
<td>Earth Observations Assessment (satellite and in situ)</td>
<td>1.20</td>
<td>6.00</td>
</tr>
<tr>
<td>Research Coordination for Monitoring Enhancements</td>
<td>0.60</td>
<td>4.20</td>
</tr>
<tr>
<td>Data, products and information dissemination</td>
<td>0.30</td>
<td>1.80</td>
</tr>
<tr>
<td>Coordination</td>
<td>1.00</td>
<td>6.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>7.50</strong></td>
<td><strong>45.00</strong></td>
</tr>
</tbody>
</table>

GEOGLAM 2012-2017 Budget requirements (M US$) – phased and scalable
# NATIONAL CAPACITY AND ENHANCEMENT NEEDS: Argentina

1. The statistics agencies have not trained groups to process, analyze and evaluate information operatively.

2. Universities and research groups do not participate in inter-institutional projects as in many other countries.

3. When they do, the time of research is not compatible with the times of public institutions and there is a lack of continuity in policies.

## CURRENT NATIONAL AGRICULTURAL MONITORING SYSTEM GENERAL STATUS

<table>
<thead>
<tr>
<th>QUESTIONS</th>
<th>INFORMATION TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Available/produced by current system?</td>
<td>Cropland Map</td>
</tr>
<tr>
<td></td>
<td>Crop Condition</td>
</tr>
<tr>
<td></td>
<td>Crop Type</td>
</tr>
<tr>
<td></td>
<td>Crop Area Estimate</td>
</tr>
<tr>
<td></td>
<td>Yield Forecasts</td>
</tr>
<tr>
<td></td>
<td>Statistics</td>
</tr>
<tr>
<td>Available/produced by current system?</td>
<td>Y</td>
</tr>
<tr>
<td>Are the products available operatively and in real time?</td>
<td>N</td>
</tr>
<tr>
<td>Are products generated using remote sensing?</td>
<td>NY</td>
</tr>
<tr>
<td>Importance of EO contribution (1-5)</td>
<td>4</td>
</tr>
</tbody>
</table>

### Why?

**

1. The statistics agencies have not trained groups to process, analyze and evaluate information operatively.

2. Universities and research groups do not participate in inter-institutional projects as in many other countries.

3. When they do, the time of research is not compatible with the times of public institutions and there is a lack of continuity in policies.

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Argentina and Mexico Examples: Developing National EO Crop Condition Monitoring Systems
GEOGLAM PROGRAM GOVERNANCE

GEOGLAM Steering Committee
Including G20 Donor representation, program stakeholders

Implementation Committee
consisting of Implementation Team leads

Program Coordinator
and Secretariat

1. Global / Regional System of Systems
   main producer countries, main commodities

2. National Capacity Development
   for agricultural monitoring using earth observation

3. Monitoring countries at risk
   food security assessment

4. EO data coordination

5. Method improvement through R&D coordination (eg. JECAM)

6. Data products and information dissemination

Task(s)
Task(s)
Task(s)
GEOGLAM ‘CAPACITY BUILDING’

GENERIC ENHANCEMENT PROCESS

Step 1. Regional Status Assessment, Needs and Priorities Workshop

Step 2. National Engagement / Commitments – interested parties

Step 3a. National Implementation

Step 3b. Regional Training / Information Exchange and continued regional networking

Linkages & feedback between the global/regional monitoring systems and activities