GEO vision in building GEOSS…

…the use of coordinated, comprehensive and sustained Earth observations to inform decisions and actions
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
## The GEOGLAM Initiative: 2012 advances and outreach efforts

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
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<tbody>
<tr>
<td>01/2012</td>
<td>Geneva: GEOGLAM Coordination Group meeting (outlined the GEOGLAM Work Plan)</td>
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<td>02/2012</td>
<td>Roma: Present. to the 1st meeting of the AMIS coord. Group</td>
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<td>02/2012</td>
<td>Cambera: International Workshop on crop monitoring</td>
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<td>03/2012</td>
<td>Mexico: Present. to XIIth “Foro de expectativas agropecuarias”</td>
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<td>03/2012</td>
<td>La Hoya: CEOS Strategic Implementation Team</td>
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<td>04/2012</td>
<td>Tokyo: GEOSS in the Asian Pacific Region Symposium</td>
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<td>04/2012</td>
<td>Mexico City: Report on progress to the G20 Ministries</td>
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<td>07/2012</td>
<td>Montreal: CEOS GEOGLAM user requirements workshop</td>
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<tr>
<td>09/2012</td>
<td>Buenos Aires: Regional workshop on crop monitoring</td>
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<tr>
<td>10/2012</td>
<td>Roma: Present. Northern Hemisphere Agriculture Drought results to the 2nd AMIS meeting</td>
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<tr>
<td>10/2012</td>
<td>Bangalore: presented GEOGLAM to CEOS plenary regarding satellite data coordination</td>
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+ national meetings
GEO-GLAM COMPONENTS

1. Strengthening National Capacity for Agricultural Monitoring

2. Monitoring Countries and Regions at Risk (EWS)

3. Enhancing Global Agricultural Monitoring Systems

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 Condition/Area/Yield forecasts

Agricultural Expertise (GEO CoP+)

Meteorological Expertise and Info

Earth Observations Satellite / Ground Data / Models

MONITORING SYSTEM OF SYSTEMS

Public

Govts

AMIS

FAO STAT
Asia Rice Monitoring
Regional GEOGLAM component

Major rice cropping area and intensity at provincial level

Cropping Intensity (cropping/year)
0
1
2
3
5. The GEOGLAM Initiative: Governance

- STEERING COMMITTEE
  DONORS/STAKEHOLDERS

- GEOGLAM Coordination Committee

1. GLOBAL/REGIONAL SYSTEMS
2. NATIONAL Capacity Development
3. COUNTRIES AT RISK

4. EO data coordination
5. R&D coordination
6. Data, products and information dissemination
THE NORTHERN HEMISPHERE 2012
AGRICULTURE DROUGHT CASE

...A DEMONSTRATION ON WHAT GEOGLAM IS DELIVERING (GLOBAL PRODUCTS)
Northern Hemisphere Crop NDVI Anomalies
2012 Daily Crop NDVI Anomaly from MODIS
January 1 through September 10th, 2012

NDVI Departure from Median (2000-2011)
Crop stage sensitive to moisture and temperature

Crop stages largely based on USDA/NOAA Joint Agricultural Weather Facility (JAWF)

Notes/Questions:
- Dry conditions in southern Ukraine affecting winter wheat?
- Dry conditions in Spain affecting winter wheat?
Northern Hemisphere NDVI Crop Anomaly, July 1st, 2012

Canada: Wheat
USA: Corn & Soy
Europe: Corn
Black Sea Region (Ukraine, Russia, Kazakhstan): Wheat & Corn
China: Corn, soy, rice

Notes/Questions?
- US NDVI anoms continues to spread and intensify - affect on corn/soy?
- NDVI anoms in Ukraine intensifying in the south
- NDVI anoms in Russia, Kazakhstan intensifying - impact on summer crops/wheat?

• Crop stage sensitive to moisture and temperature
• Crop stages largely based on USDA/NOAA Joint Agricultural Weather Facility (JAWF)
Notes/Questions:
- US negative anoms persists
- Negative NDVI anoms persist in Ukraine and continues to intensify in south east
- Negative NDVI anoms in Russia, Kazakhstan intensifying
- Mostly positive anoms in Canada & China

- Crop stage sensitive to moisture and temperature
- Crop stages largely based on USDA/NOAA Joint Agricultural Weather Facility (JAWF)
Northern Hemisphere NDVI Crop Anomaly, Sept 1st, 2012

Highlights:
- Negative NDVI anomalies start to mitigate in Russia, Kazakhstan & Ukraine
- Negative anoms persist in US, Romania

- Crop stage sensitive to moisture and temperature
- Crop stages largely based on USDA/NOAA Joint Agricultural Weather Facility (JAWF)
Northern Hemisphere Crop NDVI Anomalies
August 13th, 2012

Canada
USA
Russia
Ukraine
Kazakhstan
China
India

Crop NDVI Anomaly
-0.4 Worse than normal
0 normal
Better than normal

Non Cropland
Not shown

Kazakhstan, Kostanai
Orenburg, Russia
Russia, Chelyabinsk.
US, Illinois
US, Kansas

Spring Wheat
Spring Wheat
Spring Wheat
Corn/ Soy
Winter Wheat/ Corn

anomaly
anomaly
anomaly
anomaly
anomaly

Current season crop development (2012)
Average season development (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

05/09/2012
resolution: 0.125 x 0.125 degrees

Source: JRC - FOODSEC Action - MARS Unit
source: Joint Research Centre
Processed by: ALterra Consortium
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**
SOME FINDINGS & WAY FORWARD

- EO and Agro-met models provide now globally objective indicators for crop monitoring

- GEOGLAM Community of Practice coming together to share information and discuss openly the findings
  - Clear convergence of evidences between sources
  - US, EU, FAO, Canada, Russia, Ukraine, Kazakhstan, China, India involved in an invited Expert Panel (Mid Sept)
    - A first proof of concept

- A similar exercise foreseen for the southern hemisphere
EXPECTATIONS FROM THE PLENARY

• Recognition of GEOGLAM ownership by GEO (member countries and concerned participating organizations);

• Endorsement of the GEOGLAM Work Plan components (recognizing its phased and scalable approach);

• Encourage in-country coordination with Agricultural counterparts;

• Guidance on fund raising paths.
THANK YOU!

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