Introduction and overview

Chinese Taipei
17 Sept., 2018
GEOGLAM Objective

The main objective of GEOGLAM is to reinforce the international community's capacity to produce and disseminate relevant, timely and accurate forecasts of agricultural production at national, regional, and global scales by using Earth Observation data. This will be achieved by:

- enhancing national agricultural reporting systems, including through a geo-spatial education curriculum established to enable training of participants worldwide,
- establishing a sustained international network of agricultural monitoring and research organizations and practitioners; and,
- harmonizing the operational global agricultural monitoring systems based on both satellite and in situ observations, including through improved coordination of satellite observations.

http://geoglaml.org
JECAM GOALS

The overarching goal of JECAM is to reach a convergence of approaches, develop monitoring and reporting protocols and best practices for a variety of global agricultural systems.

http://www.jecam.org
Asia-RiCE Objectives

A work plan for the definition and development of the Asia-RiCE component for GEOGLAM.

• To ensure that Asian countries receive the full potential benefits of GEOGLAM, and that they are suitably engaged and prepared to do so;
• To ensure that rice crop monitoring issues are given suitable priority and attention within the scope of the full GEOGLAM initiative, including in the development of the observing requirements; and
• To establish a framework for the coordination necessary to engage, manage and support the various stakeholders.

http://www.asia-rice.org
DAY 1: Monday, 17 September

Morning Session: Welcome and Highlights  
*Lead: I. Jarvis*

GEOGLAM updates, JECAM updates, Asia-RiCE updates, Sen2 Agri updates  
GEORice updates

Afternoon Session: Status reports from JECAM / Asia Rice Sites  
*Lead: A. Davidson & S. Sobue*

JECAM sites report:  
Brazil, France, Poland, USA(Gulf Atlantic coast plain), Argentina, Bangladesh, Russia, South Africa, USA, India

Asia-RiCE sites report:  
Japan, Indonesia, Vietnam, Thailand, Cambodia, Taiwan, India

Poster session

GECAM / Asia-RiCE sites
DAY 2: Tuesday, 18 September

Morning Session: Multi-Site Experiments  
Lead: P. Defourny

Regional cropland maps, SAR inter-comparison experiment, estimate carbon & water budgets at plot scale, GeoRice experiment. Data fusion for rice monitoring, GHG observation, Prediction of crop yield variability, Rice Monitoring Best Practices documentation

Afternoon Sessions: **Agricultural Statistics** and Crop Interpretation and Monitoring Using Satellite Images / Field based yield estimation protocols and EO methods / Best Practices Documentation / Field survey Standardization /

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<td>AGRICULTURAL STATISTICS</td>
<td>SIDE MEETING ON YIELD ESTIMATION PROTOCOLS AND EO METHODS</td>
<td>RICE MONITORING BEST PRACTICES AND THE DEVELOPMENT OF ESSENTIAL AGRICULTURAL (II)</td>
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Field survey standardization  
Lead: T. Le Toan

Splinter Sessions [JECAM, Asia-RiCE]  
Side meeting on forthcoming experiments
AsiaRice side meeting about phase 3

All hands sessions to coordinate JECAM/AsiaRice joint experiments and follow up
DAY 3: Wednesday, 19 September

Morning Session: Demonstrations / Hands on  Lead: T. Le Toan

SAR lecture for agriculture (lecture & demonstration)

Afternoon Session: The Way Forward  Lead: I. Jarvis

Knowledge Management System (update from Sanya)
  I. Jarvis (GEOGLAM)

Report from splinter sessions  Leads

Summary of next steps and schedule for GEOGLAM/JECAM/AsiaRice
  I. Jarvis (GEOGLAM )

Action Items and Closing Remarks  C.F. Chen/H.Y. Guo
DAY 4: Thursday, 20 September

Morning Session: Field Trip and Site Investigation

TARI paddy rice plots

N fertilizer experiments  2nd crop  90KgN/ha & 180Kg N/ha

Real-Time Kinetic(RTK) paddy rice yields monitor

Drone with hyperspectral camera application
Culture tour

Afternoon
20 Sept

Sun Moon Lake

Tea experiment station
Welcome Banquet
hosted by DG. Chen, TARI

13F
Splendor Hotel, Taichung
0720 PM, 17 Sept

Grand banquet
Hosted by DG Hu, AFA, COA

YU YUE LOU Restaurant
0630 PM, 18 Sept.
Terrain
Precipitation
Temperature
Climate change
an agric-activity monitoring chain
Land cover database – (National scale)

- Monitoring processes regularly.
- Nearly-real time survey, timing and labor saving.
- Crop cultivation acreages will be published 3 times a year.
- Crop marketing early warning.
Land cover database ---- County scale
Township scale
Paddy rice cultivation and yields prediction
Agriculture Disaster Monitoring APP & Paddy rice Lodging Assessment

**Agriculture Disaster Monitoring APP**
- **In-situ Investigation**
- **Real-time Display in Website**

**Rice Lodging Assessment**
- **RGB Image**
- **3D point cloud**
- **Automatic Rice Lodging Area Assessment by UAV Image**
- **Rice Lodging Ratio**

**Additional Information**
- [http://117.56.11.184/DamageMap/](http://117.56.11.184/DamageMap/)
- [https://xkfb.lv/EsKYZ](https://xkfb.lv/EsKYZ)
Cabbages cultivation monitoring in winter season

- S1, 5cm
- S1, 10cm
- S1, 20cm
- S4, 25cm
- S4, 30cm
- S4, 40cm
Relationship of cabbage production area and price (2016-2017)
Pineapple phenology by BBCH scale
南投、嘉義、臺南、屏東鳳梨生長 NDVI 週期變化

鳳梨的物候期 BBCH系統

蓋70%黑網延遲開花、防果實日曬
106年11月水稻高光譜試驗--農業試驗所水稻品種試驗田

K means un-supervisor classification (5 class)
Hyperspectral image analysis

K means un-supervisor classification (20 class)
Thank you for your attention