

Earth Observation Technologies for Crop Monitoring: A Workshop to Promote Collaborations among GEOGLAM/JECAM/Asia-RiCE 2018

17-20 September 2018 – Taichung City (Taiwan)

Meeting Objectives

GEO Global Agricultural Monitoring (GEOSS Task AG0703a), endorsed by the G20 Summit, aims to enhance regional and global agricultural production (wheat, maize, soybean, and rice) estimates through the use of Earth observations

The Joint Experiment of Crop Assessment and Monitoring (JECAM) is developed in the framework of the GEO Global Agricultural Monitoring initiative (GEOSS Task AG0703a) and Agricultural Risk Management (GEOSS Task AG0703b). It is the cornerstone of the R&D component of the GEOGLAM initiative supported by the G20. The JECAM initiative is focused on developing and comparing methods, establishing data collection and reporting standards and developing best practices, through the analysis of coordinated ground and satellite data collected for a number of well-documented sites around the World.

Asia-RiCE (Asia Rice Crop Estimation and Monitoring) is a regional contributory project to GEOGLAM, focused on improved use of satellite data for rice monitoring, resulting in timely and accurate forecasts of rice production as input to the GEOGLAM Crop Monitor and the FAO Agriculture and Market Information System (AMIS). Test sites coordinated by Asia-RiCE are part of the JECAM Network. An emphasis for this workshop which is being held in Southeast Asia will be given to methods for rice monitoring and analysis of data from sites coordinated by the Asia-RiCE Project.

Participants will focus the discussion on the results of the application of earth observations for their selected “experiment sites”, reporting research and application results using various time series satellite data acquired with the support of the CEOS and Asia-RiCE group. The meeting will particularly highlight the benefits and the opportunities of the JECAM network to conduct inter-comparison of methods and results using geographically distributed experiment sites. Analysis approaches, field measurements and reporting protocols, as well as best practices for different cropping system will be shared and discussed in this workshop. The meeting will be used to develop a GEOGLAM Research Agenda for the next 5+ years that will improve operational monitoring for food security and markets. It will also be used to construct the research framework that will drive the evolution of GEOGLAM towards more quantitative metrics on our essential agricultural variables and prepare the community for its contribution to the emerging priorities of UN SDGs, Paris Agreement, and Sendai Framework for Disaster Risk Reduction.

Hosting Institutions

- Taiwan Agricultural Research Institute (TARI), Council of Agriculture, Executive Yuan, Taiwan.
- Center for Space and Remote Sensing Research (CSRSR), National Central University, Taiwan.
- Agriculture and Food Agency, Council of Agriculture, Executive Yuan, Taiwan.
- Information Management Center, Council of Agriculture, Executive Yuan, Taiwan.

Venue

Taiwan Agricultural Research Institute (TARI), Council of Agriculture, No.189, Zhongzheng Rd., Wufeng Dist.

Taichung City 41362, Taiwan.

Participants

The GEOGLAM research community, including all JECAM and Asia-RiCE teams are invited to this 2018 Workshop.

Preparation material

All oral and poster presenters are required to provide abstracts and posters.

Please submit your abstract to liliu@csrsr.ncu.edu.tw before 1st September, 2018.

DAY 1: Monday, 17 September

08:30 Registration

Morning Session: Welcome and Highlights

Lead: I. Jarvis

09:00	Welcome and Opening	<i>T.H. Lin (COA) / J.J. Chen (TARI) / J.I. Hu (AFA) / C.L. Lin (NSPO)</i>
09:40	Introduction and Overview	<i>H.Y. Guo (TARI)</i>
10:00	GEOGLAM: Updates	<i>I. Jarvis (GEOGLAM)</i>
10:20	<i>Break/Group photo</i>	---
10:40	JECAM: Updates	<i>P. Defourny (UCL) / A. Davidson (AAFC)</i>
11:00	Asia-RiCE: Updates	<i>S. Sobue (JAXA)</i>
11:20	Sen2Agri: Updates	<i>P. Defourny (UCL)</i>
11:40	<i>Lunch, networking and posters</i>	---

Afternoon Session: Status reports from JECAM / Asia Rice Sites

Lead: A. Davidson & S. Sobue

JECAM Sites	<i>Lead: Andrew Davidson</i>	
13:00	Site Report (Argentina)	<i>D. de Aballeyra (JECAM, Argentina)</i>
13:15	OSR JECAM Site (France)	<i>T.L. Toan (CESBIO)</i>
13:30	New JECAM Site (Poland)	<i>K. Dabrowska-Zielinska (IGC)</i>
13:45	Gulf Atlantic Coastal Plain JECAM Site (USA)	<i>A. Coffin (USDA)</i>
14:00	Site Report (Bangladesh)	<i>U. Schulthess (JECAM, Bangladesh)</i>
14:15	Site Report (Russia)	<i>I. Savin (JECAM, Russia)</i>
14:30	Site Report (South Africa)	<i>T. Newby / G.Chirima (JECAM, South Africa)</i>
14:45	Site Report (USA)	<i>P. Siqueira (JECAM, Massachusetts USA)</i>
15:00	Site Report (India)	<i>V. Kumar (JECAM, India)</i>
15:15	<i>Break</i>	---
Asia RiCE sites	<i>Lead: Shin-ichi Sobue</i>	
15:30	Site Report (Japan)	<i>K. Oyoshi (JAXA)</i>
15:45	Site Report (Indonesia)	<i>R. Shofiyati (MOA)</i>
16:00	Site Report (Vietnam)	<i>L. Dao Nguyen (VNSC)</i>
16:15	Site Report (Thailand)	<i>P. Petchprayoon (GISTDA)</i>
16:30	Site Report (Cambodia)	<i>M. Sotheavy (MAF)</i>
16:45	Site Report (Taiwan)	<i>H.Y. Guo (TARI)</i>
17:00	Site Report (India)	<i>S. Mamatha (NCFC)</i>
17:15	4-Country Report	<i>N. Rao (ADB)</i>
17:30	Philippine Rice Information System (PRISM)	<i>J. L. De Dios (PhilRice)</i>
Poster session		
17:30	All JECAM/Asia Rice sites	<i>ALL</i>
18:30	<i>Adjourn</i>	---
19:00	<i>Welcome Dinner</i>	---

DAY 2: Tuesday, 18 September

Morning Session: Multi-Site Experiments

Lead: P. Defourny

08:30	Introduction to the session	<i>P. Defourny (UCL)</i>
08:40	3 rd JECAM Exp: Comparison of different data sources to generate regional cropland maps across agricultural systems	<i>D. de Aballeyra (JECAM, Argentina)</i>
08:55	JECAM Exp: SAR Inter-Comparison Experiment	<i>A. Davidson (AAFC)</i>
09:10	A strategy for estimating the components of the carbon and water budgets for croplands at plot scale over large areas	<i>G. Pique (CESBIO)</i>
09:25	GeoRice Experiment	<i>T. Le Toan (CESBIO)</i>
09:40	<i>Break</i>	--
10:00	Using satellite data for Land Cover Mapping and Agricultural Land Use Monitoring in Lower Mekong Basin	<i>Kritsana Kityuttachai (MRC)</i>
10:15	Data fusion for rice monitoring	<i>N. T. Son / C.F. Chen (NCU)</i>
10:30	GHG observation of rice fields	<i>W. Takeuchi / H. Arai (U. Tokyo)</i>
10:45	Prediction of crop yield variability using seasonal climate forecasts	<i>T. Itsumi (NARO)</i>
11:00	Rice Monitoring Best Practices and the development of Essential Agricultural (I) – Best Practice Documentation (I)	<i>JECAM/AsiaRice (lead)</i>
12:00	<i>Lunch and networking</i>	--

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 /

	CONCURRENT SESSION I AGRICULTURAL STATISTICS <i>(LEAD: Z. YANG & S. KIMURA)</i>		CONCURRENT SESSION II SIDE MEETING ON YIELD ESTIMATION PROTOCOLS AND EO METHODS <i>(LEAD: A. DAVIDSON)</i>		CONCURRENT SESSION III RICE MONITORING BEST PRACTICES AND THE DEVELOPMENT OF ESSENTIAL AGRICULTURAL (II) <i>(LEAD: I. JARVIS)</i>	
13:00	County Acreage Estimation Based on Remote Sensed Land Cover Data and Administrative GIS Data	<i>Z. Yang (USDA NASS)</i>	Yield estimation protocols and EO methods	<i>JECAM leads</i>	Best practices documentation (II)	<i>JECAM/AsiaRice</i>
13:20	TBD	<i>C. Boryan (USDA NASS)</i>				
13:40	AFSIS/Japan for rice	<i>S. Kimura (AFSIS)</i>				
14:00	Vietnam outlook	<i>P.S. Hieu (MARD, Vietnam)</i>				
14:20	Weather Data in Crop Insurance Design	<i>S. Chen (NTPU)</i>				
14:40	Break					

Field survey standardization	<i>Lead: T. Le Toan</i>
15:00 Rice Field survey standardization / sampling method I	<i>T. Le Toan</i>
15:20 Rice Field survey standardization / sampling method II	<i>S.Kimura/T.Okumura</i>
15:40 Formosat-5 Image Application in Agriculture	<i>C.Liu (NSPO)</i>
16:00 Round table discussion about field surveys	<i>AsiaRice/JECAM (lead)</i>
Splinter Sessions [JECAM, Asia-RiCE]	<i>Lead: A. Davidson & S. Sobue</i>
16:20 Side meeting on forthcoming experiments	<i>JECAM leads</i>
16:20 AsiaRice side meeting about phase 3	<i>AsiaRice leads</i>
17:10 All hands sessions to coordinate JECAM/AsiaRice joint experiments and follow up	
17:40 Adjourn	
18:30 <i>Banquet</i>	---

DAY 3: Wednesday, 19 September

Morning Session: Demonstrations / Hands on

Lead: T. Le Toan

08:30	SAR lecture for agriculture		T. Le Toan
09:00	Demonstration I	SNAP toolbox	T. Le Toan
09:30	Demonstration II	Sen2Agri	N. Bellemans/P. Defourny
10:00	Demonstration V	JASMIN for agromet	T.Okumura/S.Kimura
10:30	Break		
11:00	Demonstration III	Vietnam Open Data Cube	L. Dao Nguyen
11:30	Demonstration IV	INAHOR on ODC	T. Okumura
12:00	Lunch		---

Afternoon Session: The Way Forward

Lead: I. Jarvis

13:00	Introduction to the session		I. Jarvis (GEOGLAM)
13:15	Knowledge Management System (update from Sanya)		I. Jarvis (GEOGLAM)
14:15	Report from splinter sessions		Leads
14:30	Break		--
14:45	Summary of next steps and schedule for GEOGLAM/JECAM/AsiaRice		I. Jarvis (GEOGLAM)
15:45	Action Items and Closing Remarks		C.F. Chen/H.Y. Guo
16:00	Adjourn		---

DAY 4: Thursday, 20 September

Morning Session: Field Trip and Site Investigation

Lead: H. Y. Guo

08:30	Field trip and sampling protocol demonstration		H.Y. Guo (TARI)
10:00	Discussion		---
11:00	Lunch		---

Afternoon Session: Cultural Trip (Optional)

12:00	Cultural trip - Sun Moon Lake, Xuanguang Temple		---
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