



Report of the GOFC-GOLD Workshop on the Proposed East Asia Regional Network

9 June 2006
Ulaanbaatar, Mongolia

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Global Observation of Forest and Land Cover Dynamics (GOFC-GOLD) is a coordinated international effort to ensure a continuous program of space-based and in situ forest and other land cover observations to better understand global change, to support international assessments and environmental treaties and to contribute to natural resources management.

GOFC-GOLD encourages countries to increase their ability to measure and track forest and land cover dynamics by promoting and supporting participation on implementation teams and in regional networks. Through these forums, data users and providers share information to improve understanding of user requirements and product quality.

GOFC-GOLD is a Panel of the Global Terrestrial Observing System (GTOS), sponsored by FAO, UNESCO, WMO, ICSU and UNEP. The GOFC-GOLD Secretariat is hosted by Canada and supported by the Canadian Space Agency and Natural Resources Canada. Other contributing agencies include NASA, ESA, START and JRC. Further information can be obtained at <http://www.fao.org/gtos/gofc-gold>

GOFC-GOLD

Global Observation of Forest and Land Cover Dynamics



Report of the GOFC-GOLD workshop on the PROPOSED EAST ASIA REGIONAL NETWORK

9 June 2006, Ulaanbaatar, Mongolia

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1. Introduction

Global Observation of Forest and Land Cover Dynamics (GOFC-GOLD) is a coordinated international effort to ensure a continuous program of space-based and in situ forest and land cover observations to better understand global change, to support international assessments and environmental treaties and to contribute to natural resources management. GOFC-GOLD encourages countries to increase their ability to measure and track forest and land cover dynamics by promoting and supporting participation on implementation teams and in regional networks. Through these forums, data users and providers share information to improve understanding of user requirements and product quality. GOFC-GOLD is a Panel of the Global Terrestrial Observing System (GTOS), sponsored by FAO, UNESCO, WMO, ICSU and UNEP.

Organized by the GTOS/GOFC-GOLD and the National University of Mongolia, an international workshop on “Forest and Land Cover Observations in Asia and Northern Eurasia” was held on 09 June 2006 in Ulaanbaatar, Mongolia. This meeting was preceded last year by a one day meeting in Beijing on the initiation of an East Asian Regional Network following the 3rd meeting of the Scientific and Technical Board in Beijing on 21 March 2005.¹

There are a number of challenges posed by international activities to provide continuous and consistent global and regional land cover observations. Prominent efforts include those of the Group on Observation (GEO), UN conventions including the United Framework Convention on Climate Change (UNFCCC) and the related implementation plan of the Global Climate Observing system (GCOS), the development of the IGOS-P theme for Integrated Global Observations for Land (IGOL), and activities of GTOS, the GOFC-GOLD regional networks, and the UN Global Land Cover Network.

The meeting follows previous GOFC-GOLD engagements in regional networks for Northern Eurasia (NERIN) and East Asia in building capacities and fostering international GOFC-GOLD implementation.

The workshop discussed:

- the status of land cover observations in the region,
- how to advance the inventory of observational data on land cover including access and dissemination of earth observation datasets,
- issues of harmonization and validation, and
- how to improve cooperation and sharing of information among observational data resources and networks.

The workshop was open for all participants of the 2nd International Conference on Land cover /Land use study using Remote Sensing and Geographic Information System in Mongolia held on 8 June and other representatives who wished to attend. The attendance list is provided in Appendix 1.

¹ M.A. Brady and M. Larsen (2005) Report of the 3rd Meeting of the GOFC-GOLD Scientific and Technical Board, Beijing, China, 19-22 April 2005, GOFC-GOLD Report 21, pp. 18-21.

2. Workshop Presentations

Presentations were made by individuals from Asia, specifically from China, Japan, Korea, Mongolia and Uzbekistan. In addition some scene-setting presentations were made by several researchers from outside the region (See Appendix 2). PDF versions of the presentations as available will be posted on a web site as is the custom with GOFC-GOLD meetings.

John Townshend introduced the current status of GOFC-GOLD and the role of the Regional Networks in its activities. Olga Krankina then outlined how the NERIN network evolved and indicated that the burgeoning East Asia Regional Network could learn lessons from its successful development.

In session 1, Dennis Ojima outlined the burgeoning Global Land Cover Project carried out under the aegis of the ESSC, its relation to NEESPI and the importance of both biophysical and socio-economic observations. Martin Herold discussed work by GOFC-GOLD on the need for standards in land characterization and the close relations between harmonization and validation. Van Gils described the various roles of ITC in GIS and Remote Sensing training and its contributions to Mongolian students. Zhihai Gao outlined the present and future contributions of Chinese remote sensing satellites and their potential contributions to East Asian network development.

In session 2, Ts. Enkhbat outlined governmental requirements for Mongolian land cover depiction and monitoring followed by a presentation by Tsolmon Renchin on land cover observations in Mongolia and access to data sets. Lin Zhen gave a presentation on behalf of Liu Jiyuan on the many land cover and land use activities of the Chinese Institute of Geographical Sciences and Natural Resources. Ryutaro Tateishi gave a presentation of the work of the global mapping carried out under the International Steering Committee for Global Mapping (ISCGM) and Global Land Cover by National Mapping Organizations (GLCNMO). Hiromichi Fukui described the role of JAXA in providing remote sensing observations relevant to land cover and access to them.

Sesion 4 started with a presentation by Lal Samarkoon on the work of the Asian Institute of Technology (AIT) in capacity building, in particular related to land cover. No-Wook Park described Korean remote sensing satellites and their contribution to the mapping and monitoring of land cover. Nam-Sun Oh provided a series of case studies of land cover analysis in Korea. Finally Sergey Nerozin described the status of land cover observations in Uzbekistan and their use in analyzing various environmental problems in that country.

3. Break-out Groups

3.1 Charge to Groups

Two break-out groups were chosen, the first on observations and the second on data and information systems. The key question for the first group was: “What are the key problems associated with observations, which can be improved by regional cooperation in East Asia?” and for the second “What are the key problems associated with data and information systems, which can be improved by regional cooperation in East Asia?”

Both groups were asked to consider the following issues:

- prioritize needs and proposed activities
- be as specific as possible concerning needs and activities

- focus on those issues which will benefit from networking
- ensure that all country's interests are considered
- make an assessment as to whether GOFC-GOLD East Asia Regional Network should be initiated

3.2 Break-out Group 1: Observations

- a) In deciding on the key priorities for observations it was concluded that it is important to establish thematic priorities. These were identified as follows:
 - Desertification, pasture overgrazing, land degradation
 - Hydrology-related issues – glaciers, water resources/snow cover
 - Urban expansion, permafrost melting, forest fires, mining activities
 - Other types of mapping to be considered:
 - energy resources – bio and fossil fuels
 - identification of hot spots with low resolution data, followed by use of high resolution data
 - mapping structure of ecosystems and their seasonality, along with other important characteristics and dynamic attributes
 - rapid response systems for disasters

- b) Several important issues relating to methods for extracting information from observations were identified:
 - Development of methodologies for converting data to useful information
 - importance of sharing methodologies
 - standardization of methodologies
 - Dealing with the spatial and temporal variability of land cover types in extracting consistent land cover information.
 - Need for standardization of land-use and land-cover types across the entire region.
 - Need to develop improved techniques to facilitate validation
 - Pressing need to make validation data sets widely available
 - Develop land cover classification legends to reflect regional priorities

- c) Several enhancements in community engagement were identified:
 - Need to leverage information from completed and ongoing mapping projects
 - Need for improved availability of metadata on forest and landcover
 - Need for outreach to land managers, delivery to users and the general public
 - Provide an interface between data users and data providers, based on the identification and understanding of users
 - Provide a web site for regional networking to enable the posting of data as well as giving information on regional conferences and workshops
 - Develop plans for a summer school in field techniques to bring together post-graduate students and scientists
 - Engage students in data collection especially in relation to international scientific research teams
 - Improve the sharing of data and products, including satellite data, training data and validation data
 - Improve sharing of data by users who are also producers

- d) Network development was considered. It was concluded that the Land Use for Temperate East Asia (LUTEA) provides a useful network experience in the region. Mongolia wishes to collaborate with NERIN, but is also interested in joining and with East Asia Regional Network. It would appear that China should play a leadership role in the region.

3.3 Break-out Group 2: Data and Information Systems (DIS)

- a) It was noted that data sharing can have many meanings and that it is important to identify which type of sharing is proposed. The spectrum varies among the following:
- Data is not available
 - Payment for data, thus data are restricted
 - Data exchange is between providers hence data is only available to data providers
 - This is a possible model for the provision of validation data
 - Free and open access
- b) It was recommended that there should be a GOFC-GOLD data policy. The following points were made:
- Data should be as open and free as possible; applications should not be constrained by available data not being accessible or usable
 - Such a policy would be in contrast to many national data sharing policies
 - In terms of practically achieving actual data access, much can be accomplished by seeking means to relax national policies rather than seeking to change them
- c) A number of regional DIS challenges were identified that need to be overcome:
- There is a lack of knowledge about the location and ownership of data sets
 - Many data sets are available only in non-digital formats.
 - Effective web-based access is unavailable for many users.
 - Most remote sensing satellite data that are used are from either the US (notably Landsat) or Europe. Data from some East Asian environmental satellites may not be available outside the country of origin or at times even for users within that country.
 - Recent high-resolution satellite data has to be paid for restricting their use.²
 - Needs to be an improved general willingness to share data.
- d) Various issues relate to remote sensing and ground (in situ) data were discussed, in particular whether the two types of data should be treated equally? For example the sharing was likely to be different for the two types of data sets. Although there is a crucial need for data sets the requirement for higher level packaged products is even more important.
- Common ground for data acquisition and characterization
- e) Capacity building priorities were discussed and the following were identified:
- Training opportunities on how to access and deal with data
 - Training on how to collect scientifically correct data and information

² During the subsequent discussion it was pointed out that the US is attempting to create a mid-decadal global Landsat data set primarily using Landsat 5 data, which would be available at low cost or for free.

f) Regional network initiation mechanisms were considered:

- There should be regional responsibility for data set inventories, possibly coordinated by an East Asia network office
- There is a need for a metadata exchange model based on international standards in building a clearinghouse of East Asian data sets
- Data from East Asian satellite assets currently in operation from China, Japan, Korea and India should be made available more widely
- Digital Asia framework is willing to support the East Asia regional network
- Input-output model, requiring people to contribute in order to receive.

It was concluded that all countries seemed to be willing to support and participate in an EA GOFC-GOLD regional network

Key actions required in the initiation of the network are as follows:

- Development of an organizational framework for the East Asia network,
- Need to start developing a clearinghouse of data sets,
- Identification of and increased availability of East Asian national assets of regional importance especially access to satellite data, and
- Development of capacity building.

4. The Way Forward

The meeting agreed on the following steps in the possible initiation of the network:

1. Selected participants of the workshop will prepare a report of the meeting. Subsequently the following agreed to take on this task: Tsolmon Renchin (Mongolia), Hiromichi Fukui (Japan), Zhihai Gao (China), No-Wook Park (Korea), T. Chuluun (Mongolia).
2. The report will be circulated to all those attending this workshop, the workshop held last year in Beijing and other interested parties.
3. All those receiving the report will be asked to comment on whether they agree that the network be initiated. Assuming that there is a positive consensus then the GOFC-GOLD Executive Committee will with regional guidance set up an organizing committee for a meeting of the First GOFC-GOLD East Asia Regional Network.
4. The proposed meeting will have the following goals:
 - Formal inauguration of the GOFC-GOLD East Asia Regional Network
 - Agreement on governance
 - Workshop on one key priority area identified at the Ulaanbaatar Workshop. Provisionally this is proposed to be a Validation Meeting on Best Practices and the creation of a shared land cover validation data base for East Asia.
5. A provisional East Asia Regional Network Web site will be hosted by Keio University containing the report of this meeting and the PDF's of the presentations as available.

5. APPENDICES

Appendix 1: List of Participants

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Appendix 2: Workshop Program

GOFC-GOLD regional workshop on forest and land cover observations		
Friday, June 9th at Ulaanbaatar, Mongolia		
Welcome and setting the stage (chair: R. Tsolmon)		
9.00-9.15	Start of Workshop / Organizational Issues / Logistics	R.Tsolmon/Herold
9.15-10.00	GTOS/GOFC-GOLD introduction/Intern. drivers	Townshend
10.00- 10.30	GOFC-GOLD regional networks and NERIN	Krankina
<i>10.30-11.00 Break</i>		
SESSION 1: International activities (IS Presentations + 5 min discussions), chair: S. Tschilin.		
11.00-11.20	Global Land Project and Asian activities	Ojima
11.20 - 11.40	Evolving standards in land characterization	Herold
11.40-12.00	Capacity Building in Earth Observation in Mongolia:	Van Gils
12.00-12.20	The ITC Experience	Gao
	East Asia regional network developments	
<i>12.20-13.30 Lunch</i>		
SESSION 2: Regional activities I (12 min Presentations + 3 min discussions), chair: Z. Gao.		
13.30- 13.45	Mongolia + national reporting obligations for land	Enkhbad
13.45- 14.00	cover Land cover observations and data access in	R.Tsolmon
14.00- 14.15	Mongolia LUCC + terrestrial study based on RS - GIS	Zhen
14.15- 14.30	(IGSNRR) 1SCGM and regional activities	Tateishi
14.30- 14.45	JAXA and land cover activities/data access	Fukui
<i>14.45-15.00 Break</i>		
SESSION 3: Regional activities II (12 min Presentations + 3 min discussions) chair: D. Ojima		
15.00-15.15	AIT, land cover observations and capacity building	Samarakoon
15.15-15.30	Land cover observation activities (K1GAM)	No-Wook Park
15.30-15.45	Land cover study examples activities in Korea	Nam-Sun Oh
15.45-16.00	Land cover observations in Uzbekistan	Nerozin
<i>16.00-16.15 Break</i>		
SESSION 3: Discussions (Breakout group discussions)		
16.15- 17.45	Breakout groups: Break-out Group 1: Observations (Chair: T. Chuluun; Rapporteur: Olga Krankina) Break-out Group 2: Data and Information Systems (Chair H. Fukue, Rapporteur Martin Herold).	
<i>17.45-18.00 Break</i>		
SESSION 4: Discussions (Presentations + breakout group discussions)		
18.00- 19.00	Group presentations, synthesis and closing	Townshend