



**GEOSS Symposium in Integrated Observation
for Sustainable Development in the A-P Region**

**Summaries in the Session on
“Monitoring of Ecosystem and Biodiversity”**

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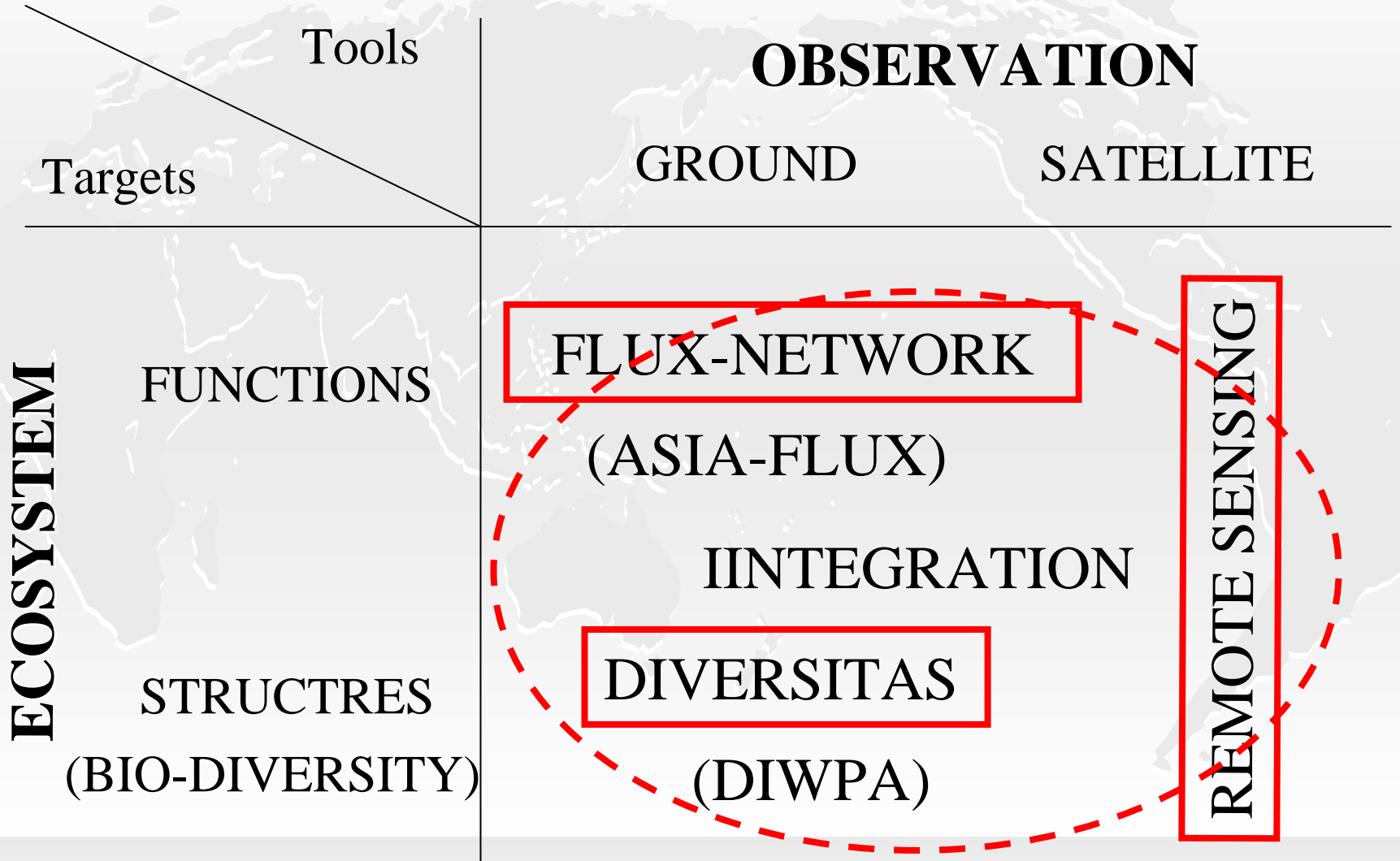
**Institute of Industrial Science
The University of Tokyo**

January 11-12, 2007

Tokyo, Japan

Themes and Subjects in the Session

Ecosystem and Biodiversity



1. REMOTE SENSING

Remote sensing; reports and discussions

Chair: Dr. Y. Honda

(1) Remote sensing programs for ecosystem monitoring in Singapore

Dr. L. K. Kwoh

(2) Satellite derived Vegetation Index for ecosystem monitoring

Dr. A. Huete

(3) A challenge of global biomass estimation using satellite data

Dr. Y. Honda

(4) Satellite observation network for environmental monitoring in Asia

Dr. Y. Yasuoka and Dr. W. Takeuchi

(5) JAXA's Challenge for Long Term Earth Observation System

Dr. N. Matsuura

2. ASIA-FLUX

Ecosystem and Biodiversity

Asia-Flux Network; reports and discussions

Chair: Dr. Y. Ohtani

(1) AsiaFlux activities in relation to the carbon flux observations in Asia

Dr. Y. Ohtani

(2) Strategy to evaluate the Global Carbon Budget of Terrestrial Ecosystem

Dr. G. Inoue

(3) HydroKorea and CarboKorea: Cross-scale studies of ecohydrology and biogeochemistry in complex landscapes of Korea

Dr. Joon Kim

(4) Situation of the terrestrial carbon/water observations in China

Dr. Yu Guirui

(5) Outline of "Integrated Research on Carbon Budget Management in Terrestrial Ecosystems of Asia in the 21st Century"

Dr. T. Oikawa

3. DIWPA (DIVERSITAS in WPA)

DIVERSITUS; reports and discussions Dr. T. Nakashizuka and Dr. E. Wada

- (1) Introduction Dr. E. Wada
- (2) DIWPA and JaLTER activities Dr. T. Nakashizuka
- (3) Activities on biodiversity-monitoring in China - On the Chinese forest biodiversity monitoring network Dr. K. Ma
- (4) Activities on biodiversity-monitoring in Malaysia - Ecological monitoring of tropical peat swamp forest ecosystems Dr. A. R. Nik
- (5) Activities on biodiversity-monitoring in Korea Dr. I. K. Lee

3. DIWPA (DIVERSITAS in WPA)

Ecosystem and Biodiversity

(6) Cross-cutting networks with emphasis on freshwater biodiversity

Dr. Z. Kawabata

(7) Global Land Project and other related activities in Japan

Dr. T. Kohyama

(8) Wireless LAN for large-scale observation of bio-diveristy and
ecosystem

Dr. T. Yahara

4. INTEGRATION

Integration of observation and modeling; reports and discussions

Chair Dr. Y. Yasuoka

(1) ALOS Kyoto and carbon initiative - to the global detection
of the forest biomass

Dr. M. Shimada and Dr. A. Roseqvist

(2) Coupling between observation and modeling for ecosystem

Dr. Y. Yasuoka

(3) Linking ecology, remote sensing and micrometeorology from
plot to regional scales

Dr. H. Koizumi

Missions of the Session

- # to exchange of information and knowledge
- # to identify scientific issues and difficulties
- # to investigate the steps for integrating observations, models and countermeasures
- # to investigate the steps for inputting to **GEOSS**

Discussions and Recommendations from the Ecosystem and Biodiversity Session

1. We will organize a committee (forum) to promote integration among

- Asia-flux network and remote sensing
- DIWPA network and remote sensing
- Asia-flux network and DIWPA network.

@ The session recommends the GEO, governments, and space agencies to support activities of the committee.

Discussions and Recommendations from the Session

2. Asia-flux network, DIWPA network and AP remote sensing communities will strengthen the function of capacity building.

@ The session recommends the GEO, governments, and space agencies to support these activities.

We will report the progress of these activities
in the next GEPSS AP Symposium

Recommendations from the Session



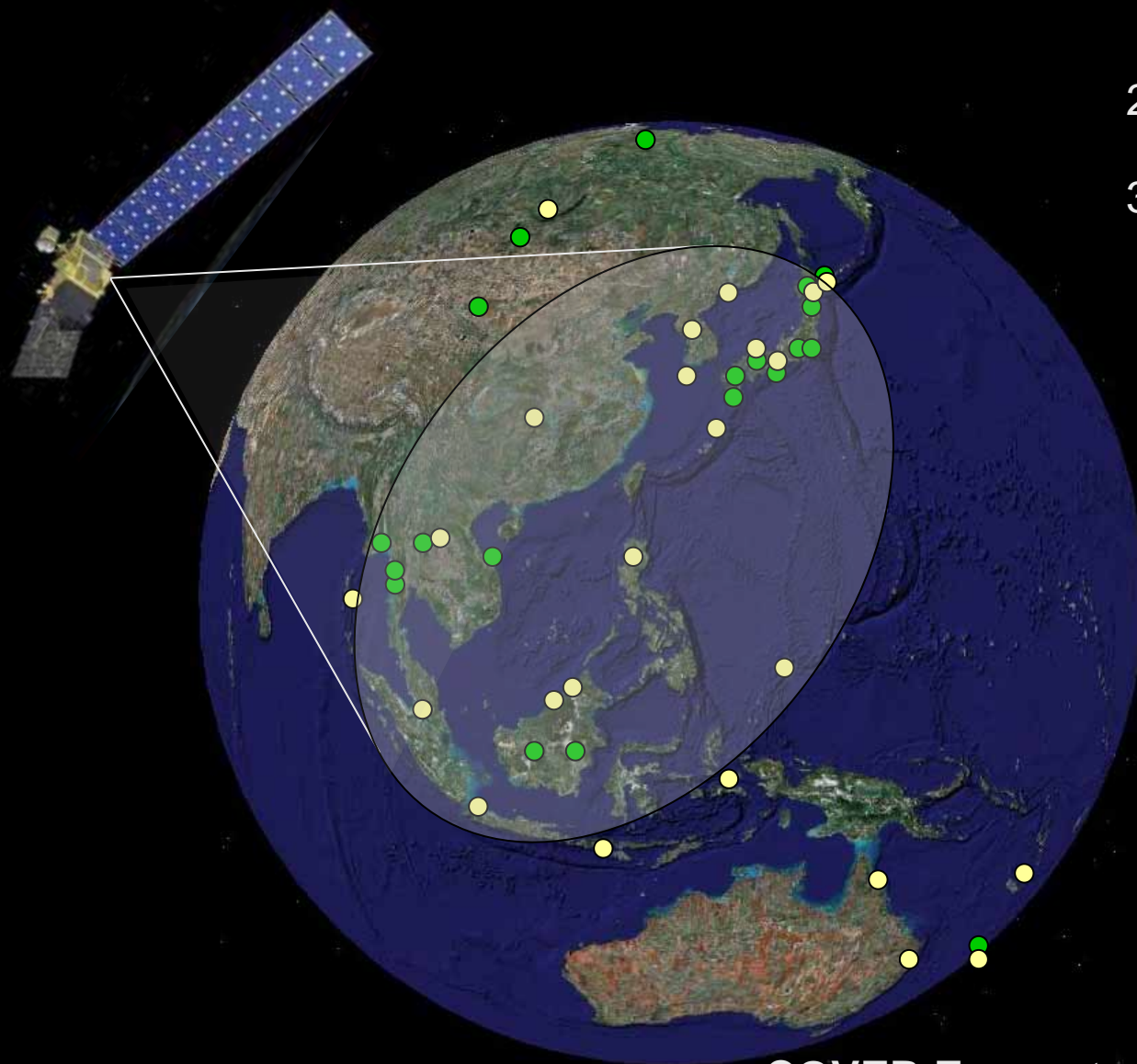
3. Data continuity is critical and needed
4. While there is a large site network, we need data collection, management, sharing and analysis, particularly in vegetation and biodiversity data, for calibration and validation

GEOSS-Asia Pacific ECOSYSTEM

1. Remote-Sensing

2. *ASIAFLUX* in *FLUXNET*
8 countries 43 sites

3. *DIWPA* in *DIVERSITAS*
16 countries 29 core-sites



**COVER Ecosystems in Asia-Pacific region
with NETWORKS of OBSERVATION on the
Ground and from Space!**

Overall summary and recommendations in DIVERISTAS Session

●Major issue and difficulty

- Confirm the importance of the biodiversity observation in Japanese society (put higher priority in GEOSS)
- Funding support** for continuing observation
(Man power & Site-maintenance)
- Consider the user's need (e.g., Biodiversity Target 2010)

●Step to the joint collaboration and integration

- Need for **coordination structure** for different activities and projects
- Additional participations, in particular developing countries in Asia-Pacific
- Develop interoperability of observation data and **database**
- Capacity building for developing countries** (Biology, Informatics, Observation techniques)

●Step to GEOSS

- Comprehensive observatory sites** “Super-Sites”
for the “System of Systems”
- Good balance between ground and remote sensing data
- Develop advanced methods for ground observation

Overall summary and recommendations in ASIA-Flux Session

3. Steps to the joint collaboration and integration

- To promote both scientific information exchange and capacity building in Asia.
- To keep up with the tower-based carbon flux research group with the atmospheric, oceanic, soil, and hydrological research groups and to bridge the gaps between the ground based measurements in both space and time and the products of remote sensing and modeling approaches.

Overall summary and recommendations in ASIA-Flux Session

4. Steps to GEOSS

- To minimize the temporal and spatial gaps in observation through the optimization of the observation network design from regional to global scales.
- To provide optimized data set to the modeling, and remote sensing groups.

5. Recommendations

- To construct the terrestrial carbon/water observation network by the combination of super- and remote-stations.

Overall summary and recommendations in Remote Sensing Session

- It is necessary to clarify the needs from two fields (ecosystem, biodiversity) etc.
- It is necessary to clarify users,
 - There are operational organizations, researchers of 2 fields (ecosystem, biodiversity), international projects of 2 fields (ecosystem, biodiversity), general persons and each combinations in user.

Overall summary and recommendations in Remote Sensing Session

6. Recommendations

- It is necessary to establish the user forum to link existing international projects, existing users and remote sensing field and clarify needs through this forum.
- DIWPA and ASIA-flux are regarded as existing international projects
- An organization to administer of this proposed user forum is necessary
- The other most important point
 - Long-term continuation of satellite observations is important for environmental studies

Overall summary and recommendations in Integration Session

2. Major issues and difficulties

@ Integration tools are not fully developed yet.

@ Data is not fully collected for specific purpose.

3. Steps to the joint collaboration and integration

4. Steps to GEOSS

@ Need to develop tools and to share them among communities.

@ Need to organize a forum which bridge over different communities.

Overall summary and recommendations in Integration Session

5. Recommendations

- @ to establish a committee (forum) to promote integration among
 - Asia-flux network and remote sensing
 - DIWPA network and remote sensing
 - Asia-flux network and DIWPA network.