

GEOSS Outreach Symposium in Japan

Contributing to and Benefiting for

a Global Earth Observation System of Systems in the Asian-Pacific region

Summary of Session `Biodiversity`

Eitaro Wada, Tohru Nakashizuka & Reiichiro Ishii

Ecosystem Change Research Program

Frontier Research Center for Global Change

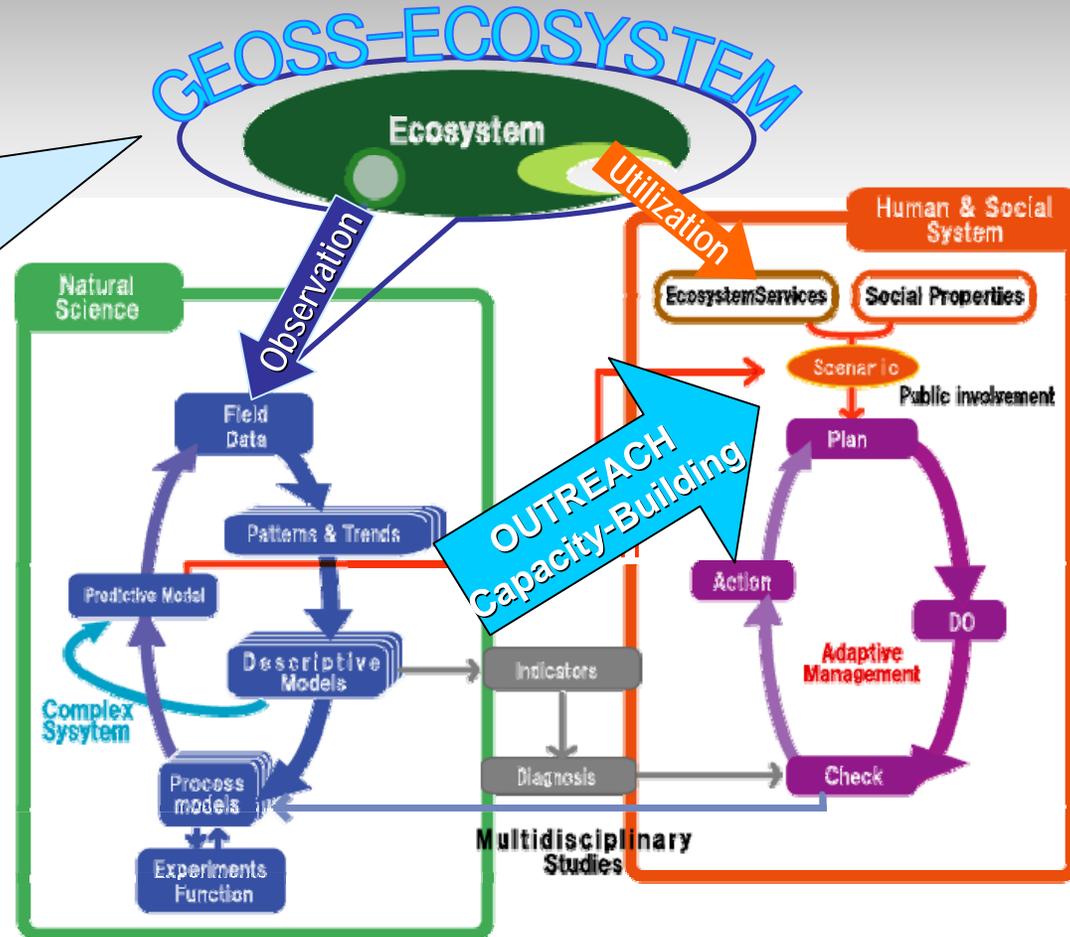
Japan Agency for Marine-Earth Science and Technology



NEW FRAMEWORK

We propose a new framework of environmental studies to enhance the interactions between the two cycles of *Nature* and *Humanity*.

GEOSS serves as the International standard program of the Observation part of this FRAMEWORK



(Wada & Ishii)

Integrative studies of **OBSERVATION, MODELING and SIMULATION** in *Natural Science* (Left-Cycle) are possibly connected to *Social Management Systems* (Plan-Do-Check-Action, Right-Cycle) to build multi-feedback paths which improve the mutual reliability and sustainability of Ecosystem and Human-wellbeing.

TODAY'S COTRIBUTERS' MAP 2: Study Area

DIWPA-IBOY Core Sites

Dr.LEE
Korea

Dr.MA
China

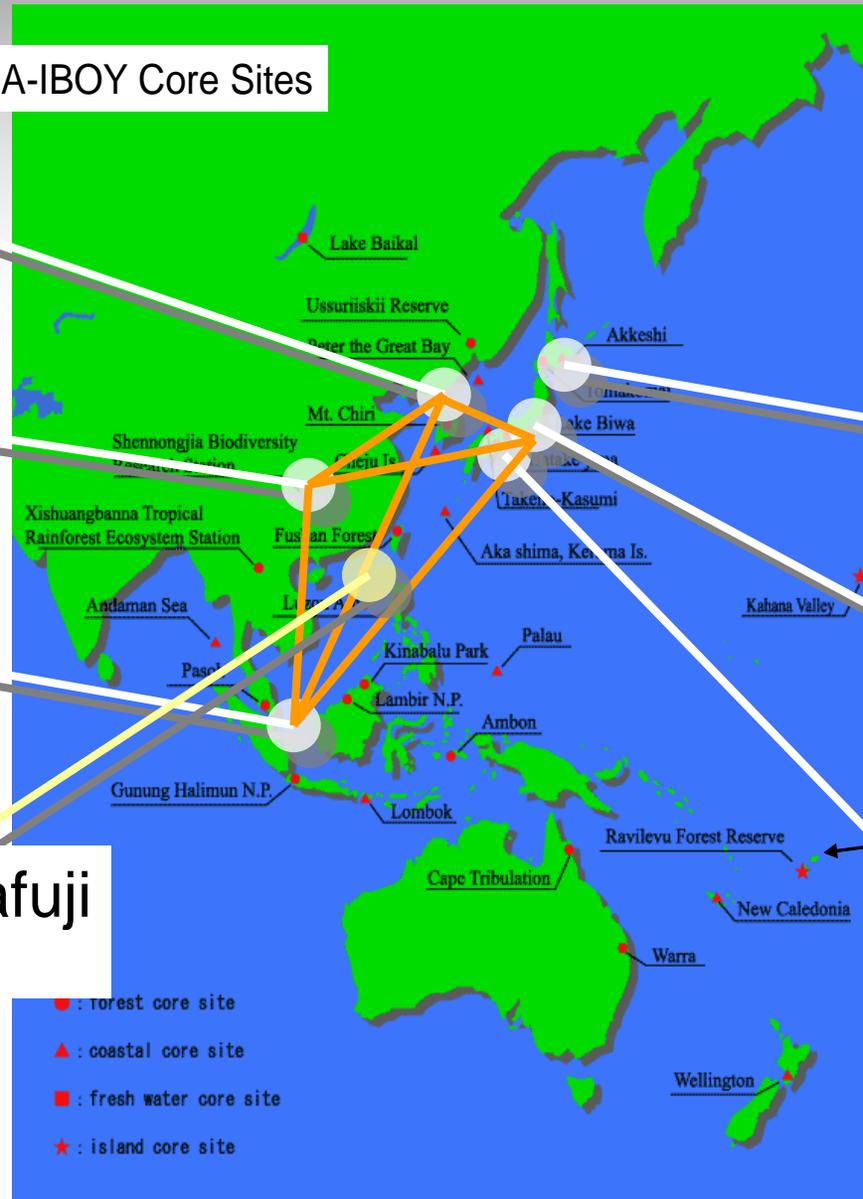
Dr.NIK
Malaysia

Dr.Kohyama
GLP in Japan

Dr.Nakashizuka
ILTER in Japan

Dr.Kawabata
Japan

Drs.Yahara & Hirafuji
Observation Network



- : forest core site
- ▲ : coastal core site
- : fresh water core site
- ★ : island core site

Overall summary and recommendations from today's presentations

- **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

Toward biodiversity observation in GEOSS

Keywords from today's presentations

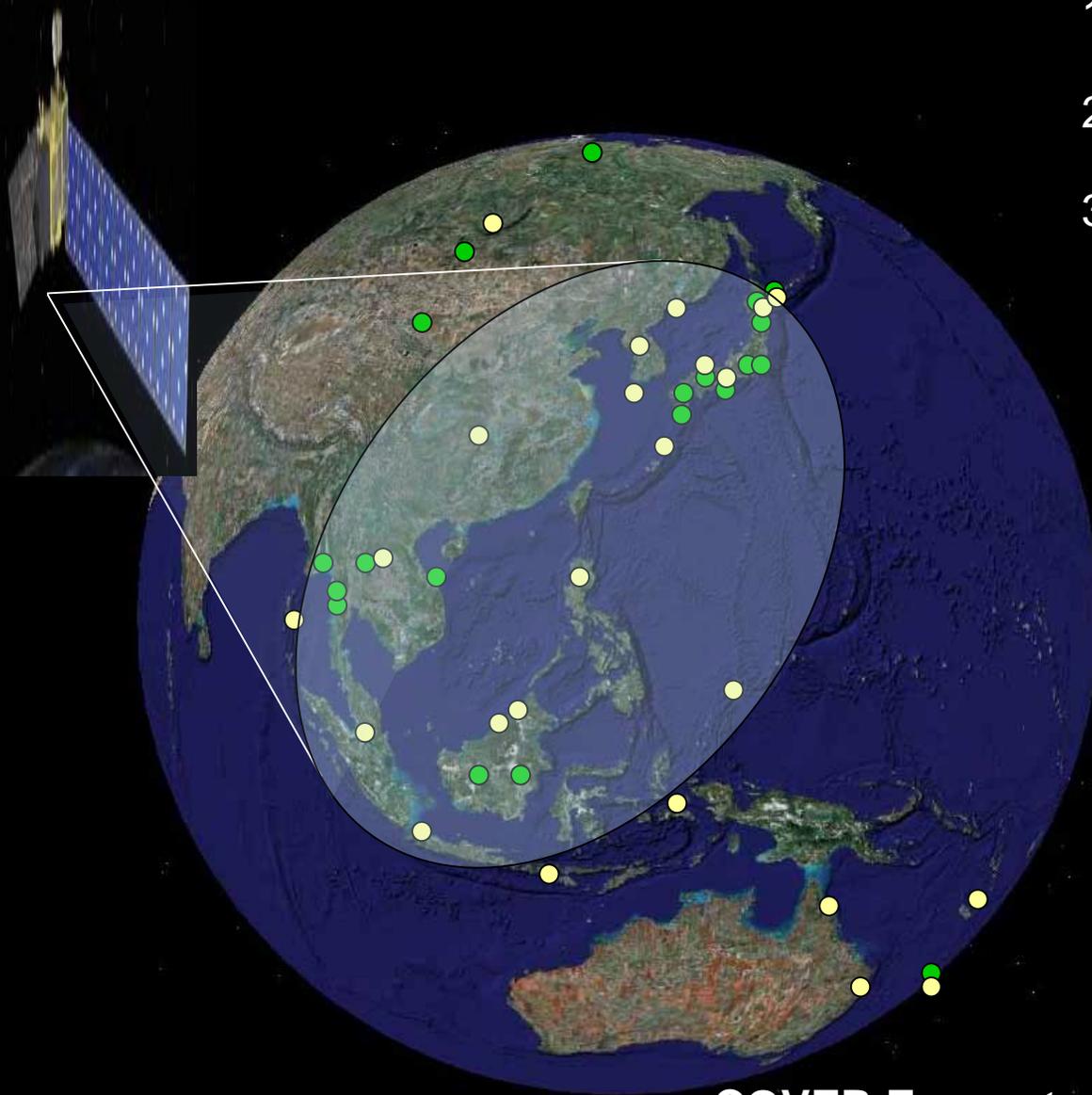
- Adaptive management
- Funding
- Training & Education
- Develop “indicators of Cost-Benefit” of Biodiversity
- Develop Standard Operating Key species.
- Comprehensive observatory sites : “*Super-Sites*”

GEOSS-Asia Pacific ECOSYSTEM

1. Remote-Sensing

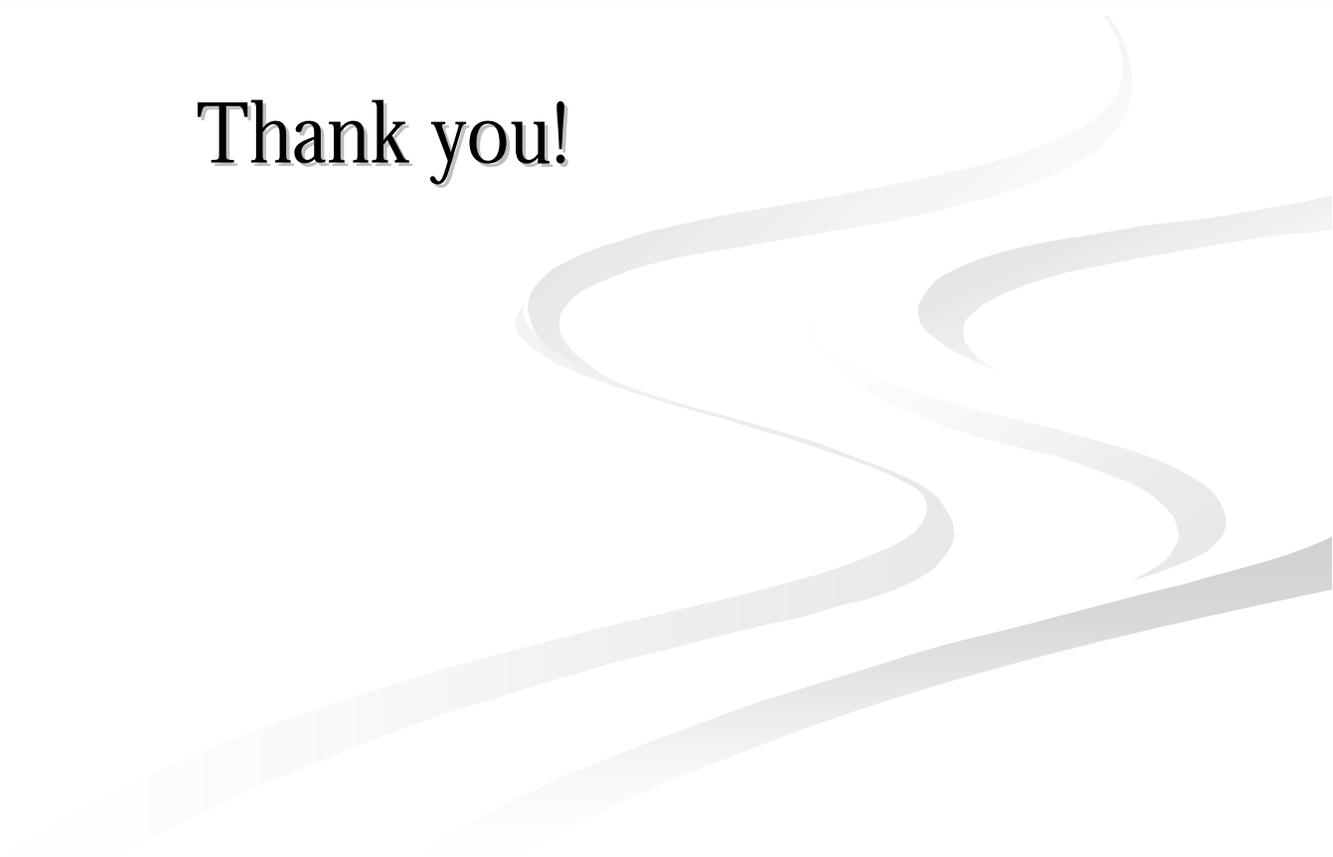
2. *ASIAFLUX* in *FLUXNET*
8 countries 43 sites

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!**

Thank you!

The background features a light gray gradient and several thick, wavy, light gray lines that sweep across the bottom right portion of the slide, creating a sense of movement and depth.

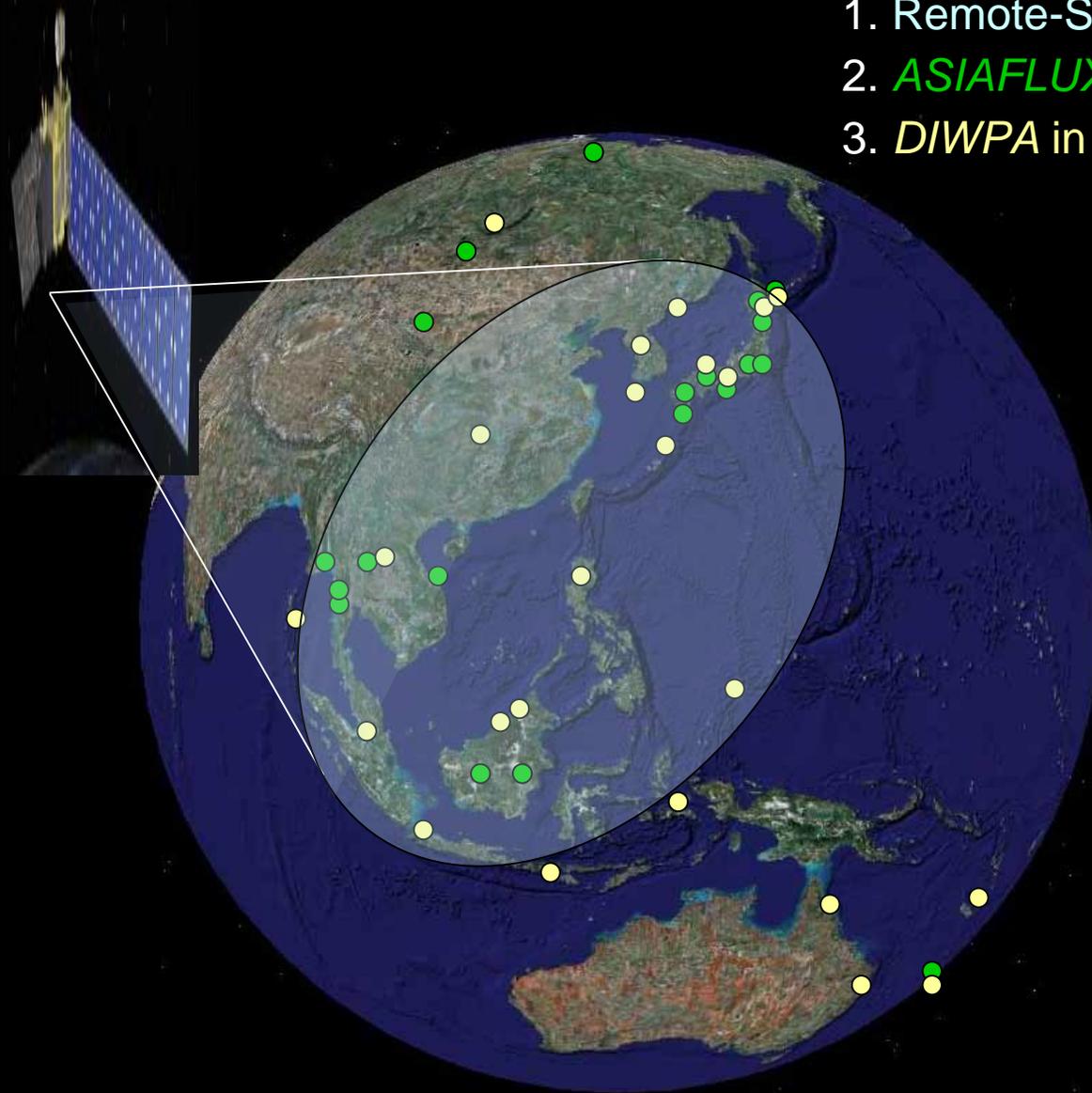


GEOSS-Asia Pacific ECOSYSTEM

1. Remote-Sensing

2. *ASIAFLUX* in *FLUXNET*

3. *DIWPA* in *DIVERSITAS*





Framework of Session 'Diversity'



Global Change Research Institute
Frontier Research Center for Global Change
Japan Agency for Marine-Earth Science and Technology



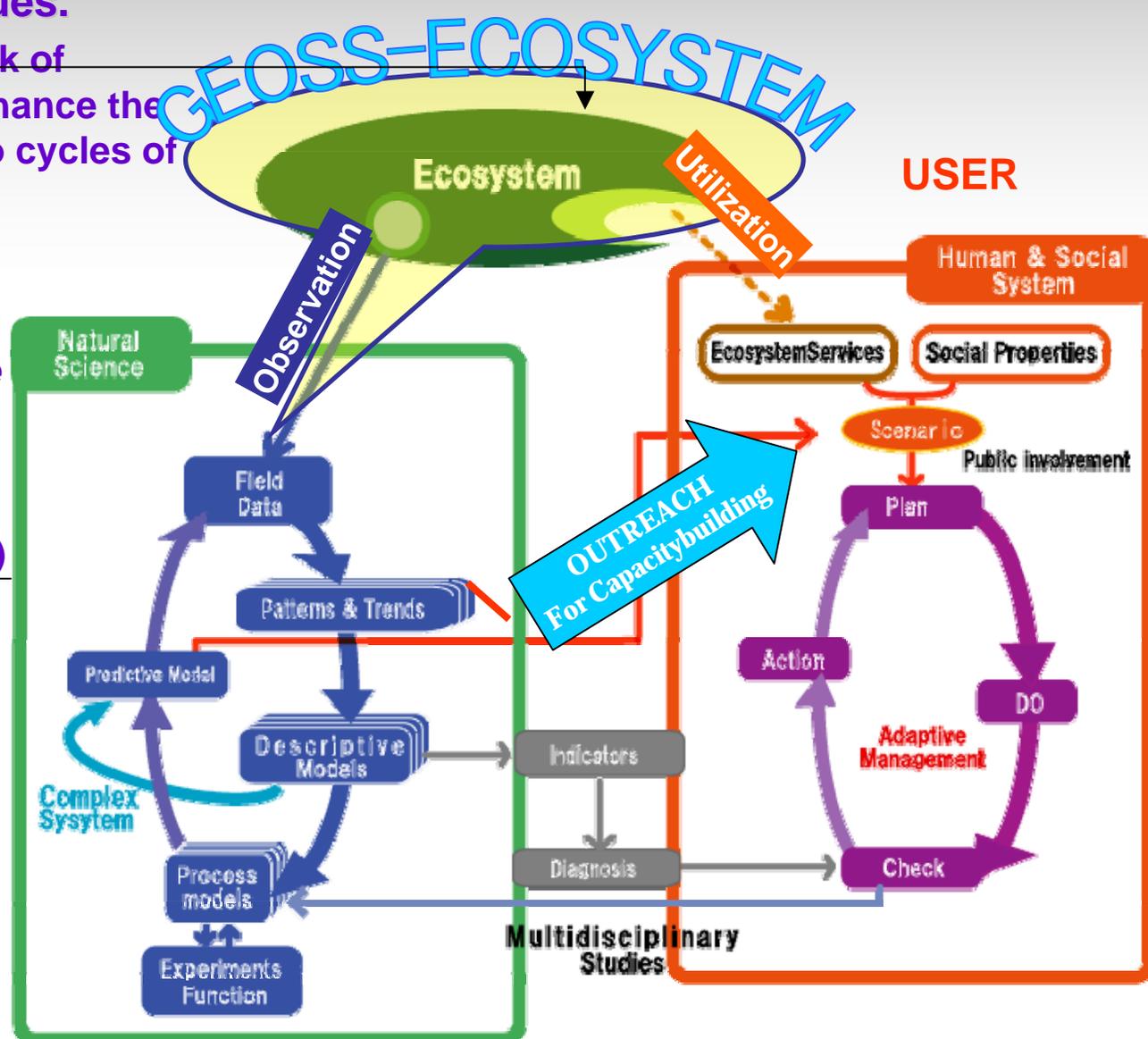
Framework of GEOSS-OUTREACH

At the present **tentative goal of the global environmental studies** is to provide clear-cut scientific scenarios to solve various kinds of problems under global environmental issues.

We propose a new framework of environmental studies to enhance the interactions between the two cycles of *Nature and Humanity*.

Integrative studies of **Observation, Modeling and Simulation in Natural Science** (left-Cycle) are possibly connected to *Social Management Systems (Plan-Do-Check-Action, right-Cycle)* to build multi-feedback paths which improve the mutual reliability and sustainability of Ecosystem and Human-wellbeing. Figure

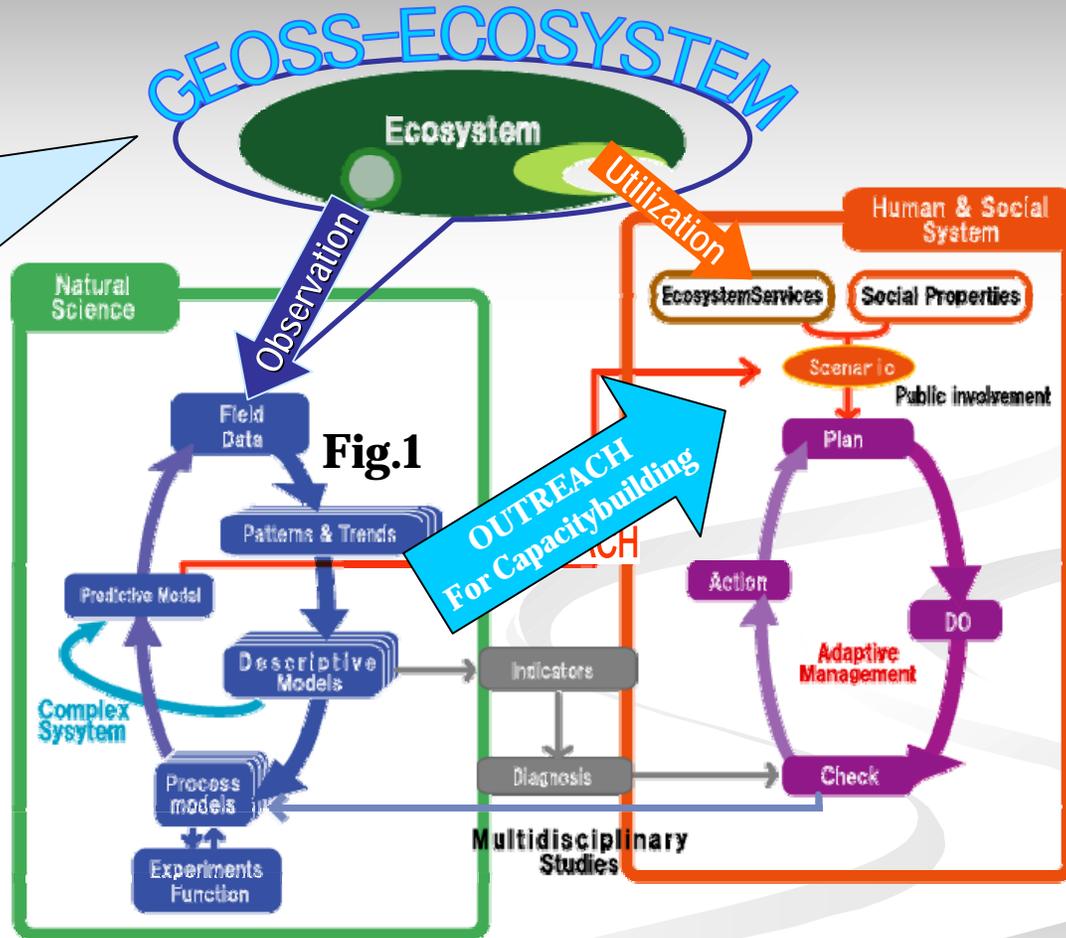
As the **Observation part (C!)**, GEOSS serves as the Intern'l standard programme.



NEW FRAMEWORK

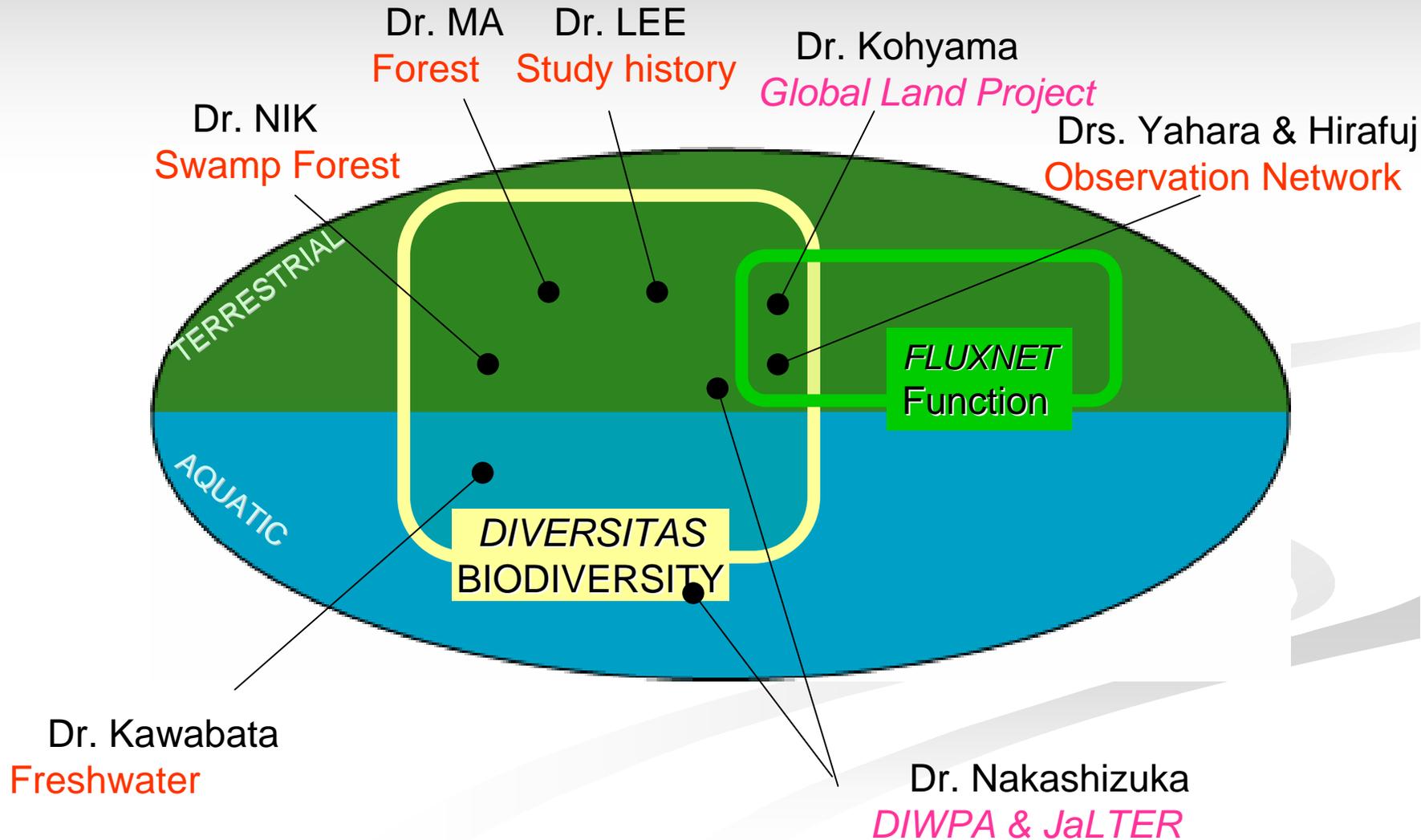
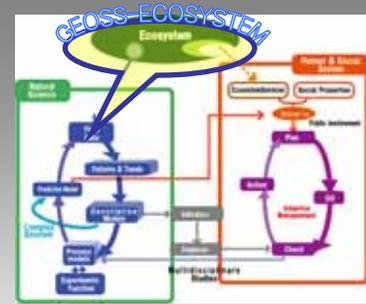
We propose a new framework of environmental studies to enhance the interactions between the two cycles of *Nature* and *Humanity*.

GEOSS serves as the International standard program of the Observation part



Integrative studies of Observation, Modeling and Simulation in *Natural Science* (Left-Cycle) are possibly connected to *Social Management Systems* (Plan-Do-Check-Action, Right-Cycle) to build multi-feedback paths which improve the mutual reliability and sustainability of Ecosystem and Human-wellbeing (Fig).

Targets & Topics in “DIVERSITAS” sub-session



Study-sites in “DIVERSITAS” sub-session

DIWPA-IBOY Core Sites

Dr.LEE
Korea

Dr.MA
China

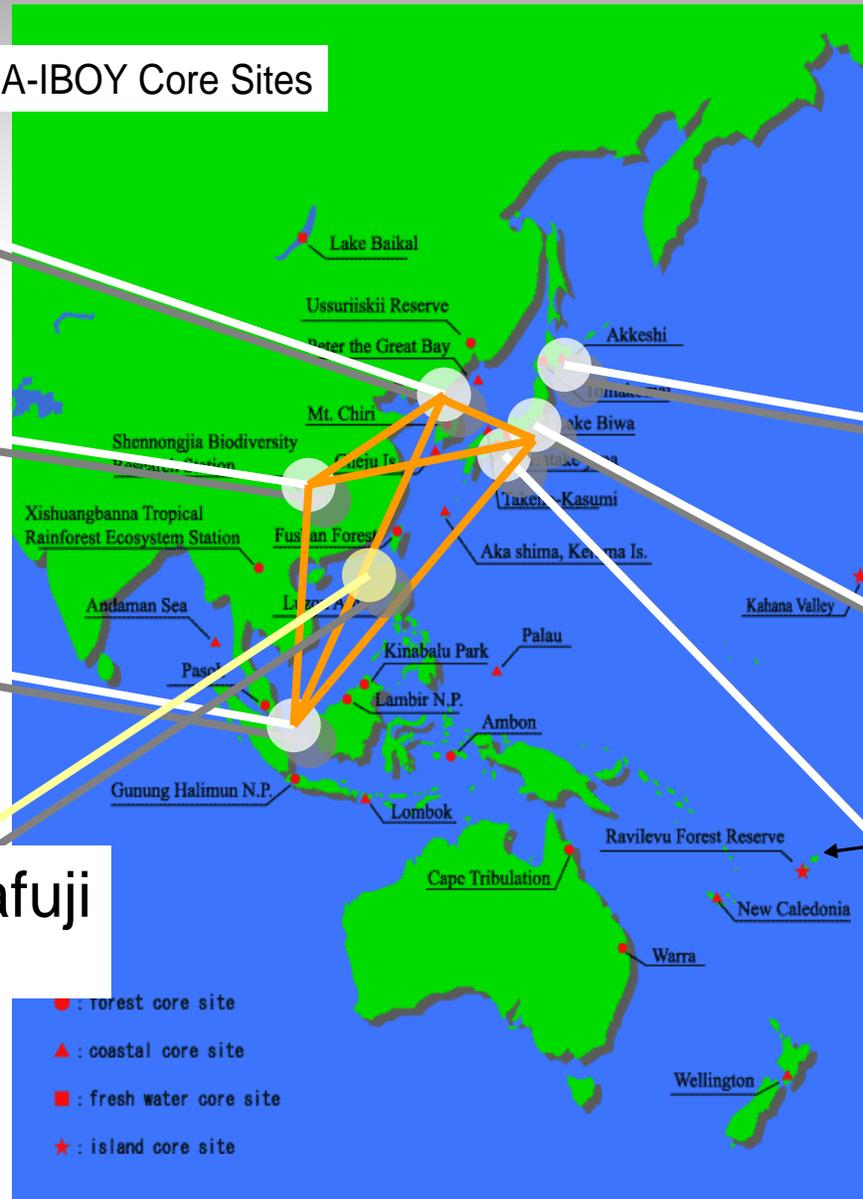
Dr.NIK
Malaysia

Drs.Yahara & Hirafuji
Observation Network

Dr.Kohyama
GLP in Japan

Dr.Nakashizuka
LTER in Japan

Dr.Kawabata
Japan





GEOSS Outreach Symposium in Japan

- Contributing to and Benefiting for a Global Earth Observation System of Systems in the Asian-Pacific region -**

Objectives:

The symposium aims to:

present GEO/GEOSS to Governments, Experts, Scientists, Public and Press widely

present GEO activities based on GEOSS 10-Year Implementation Plan in Asian-Pacific countries

summarize the current situation of satellite use and in-situ networks,

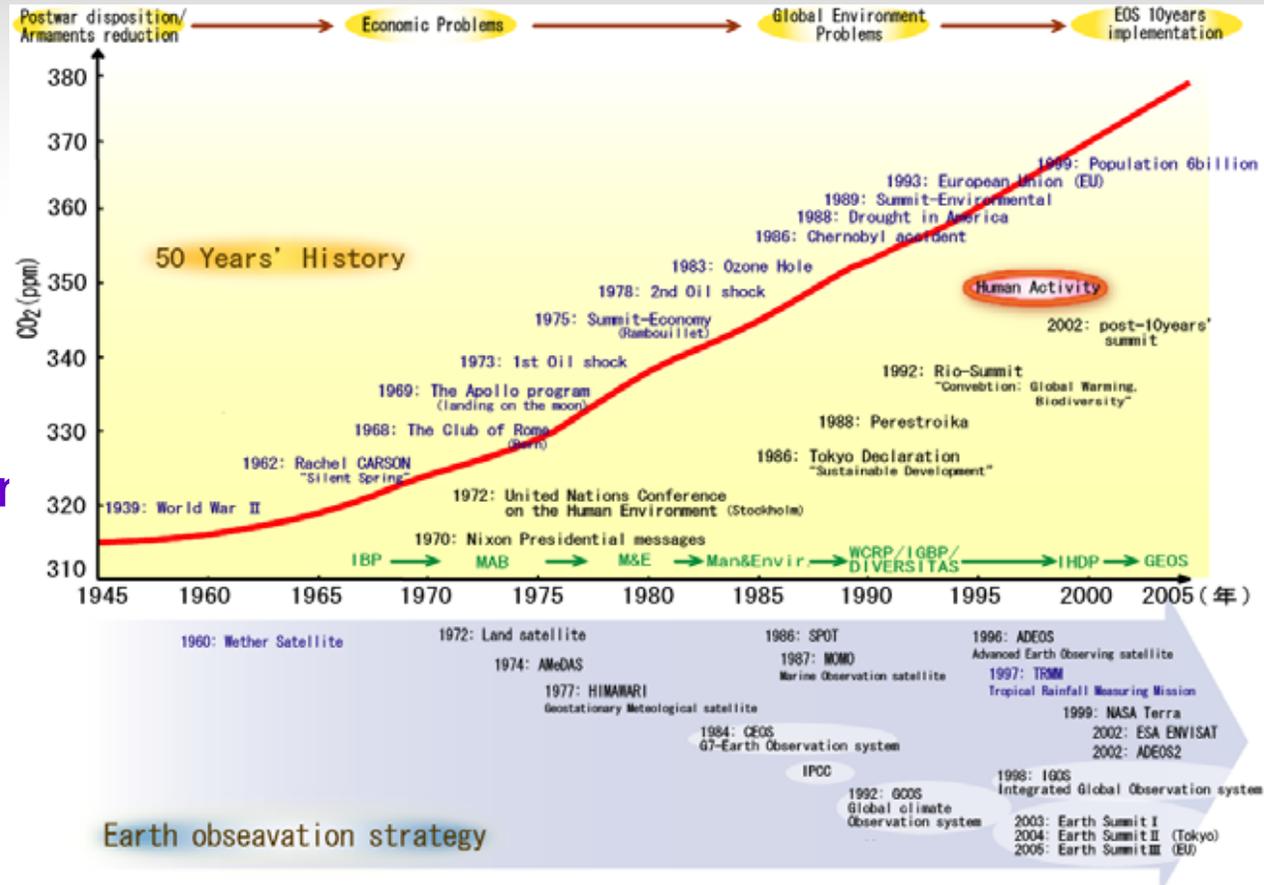
discuss future observing plans to avoid overlapping of the observation and contribution to the socio-economic activities

cooperate with existing networks and organizations promoting GEOSS framework

report Japan's contribution plan to public and concerning organizations in and outside Japan.

Introduction

50 years' progress of ecosystem studies is summarized with emphasis on the various kinds of international cooperative research programs under global environmental issues. These programs are IBP, MAB, IGBP, **DIVERSITAS** and HDP. At the beginning of 21st century, integrator of WCRP, IGBP and IHDP are highly required to provide significant practical solution and scenarios to social sciences and public involvement (Fig. 1).



IGY IBP

MAB WCRP/IGBP DIVERSITAS

IHDP GCC·LAND GEOSS

Three major subjects in this session are:

- **Asia-Flux Network for observing carbon exchange between ecosystem and atmosphere**
- **DIVERSITAS for biodiversity monitoring network**
- **Remote sensing for ecosystem and biodiversity monitoring.**

Because of rapid progresses in observation systems ,computer science and remote sensing , three subject could be unified in time and space near future!

Current Status

The ideas such as Earth System Science Partnership (ESSP) and Global Earth Observation System of Systems (GEOSS) are now well established together with simultaneous promotion of Earth Observation Systems involving developments of satellite remote sensing and automatic field observation systems.

At present tentative goal of the global environmental studies is to provide clear cut scientific scenarios to solve various kinds of environmental problems.

GEOSS-Asia Pacific ECOSYSTEM

1. Remote-Sensing

2. *ASIAFLUX* in *FLUXNET*

3. *DIWPA* in *DIVERSITAS*

