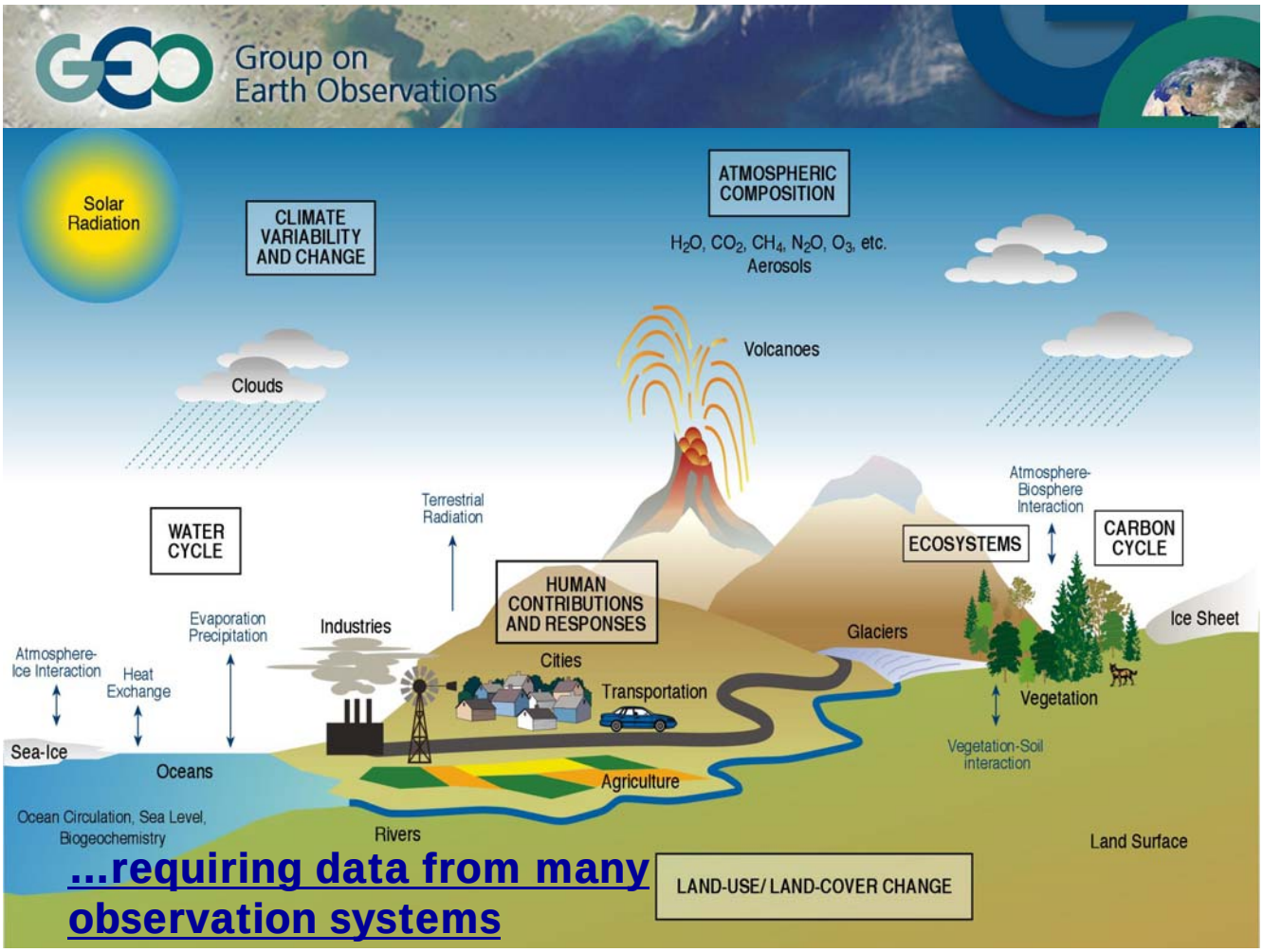
Data Integration and Analysis System (DIAS)

Toshio Koike
The University of Tokyo

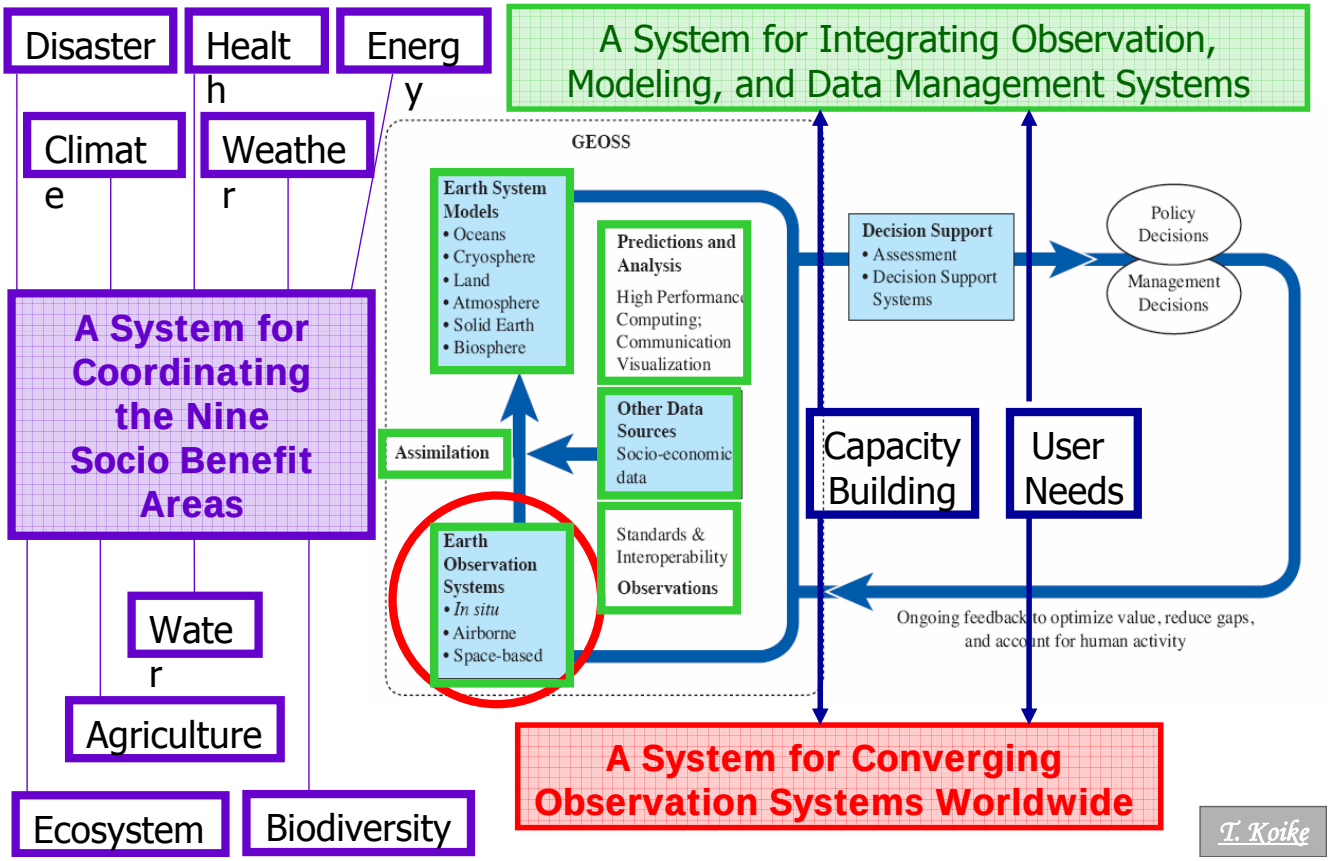


…requiring data from many observation systems

Group on Earth Observations

A Global Earth Observation System of Systems
GEOSS

GROUP ON EARTH OBSERVATIONS



T. Koike

Earth Observation and Ocean Exploration System

National Key Technologies
The 3rd Basic Program for Science and Technology of Ja

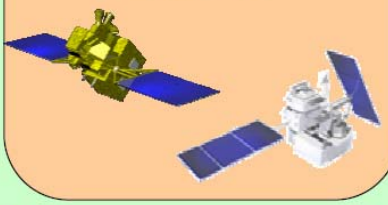
Objectives

The system contributes to national security in a broad sense by coping with global environmental and energy problems such as:

- monitoring of global warming and natural disasters
- exploration of energy resources

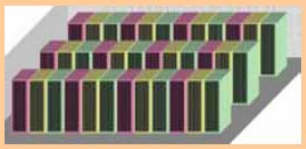
Components of the System

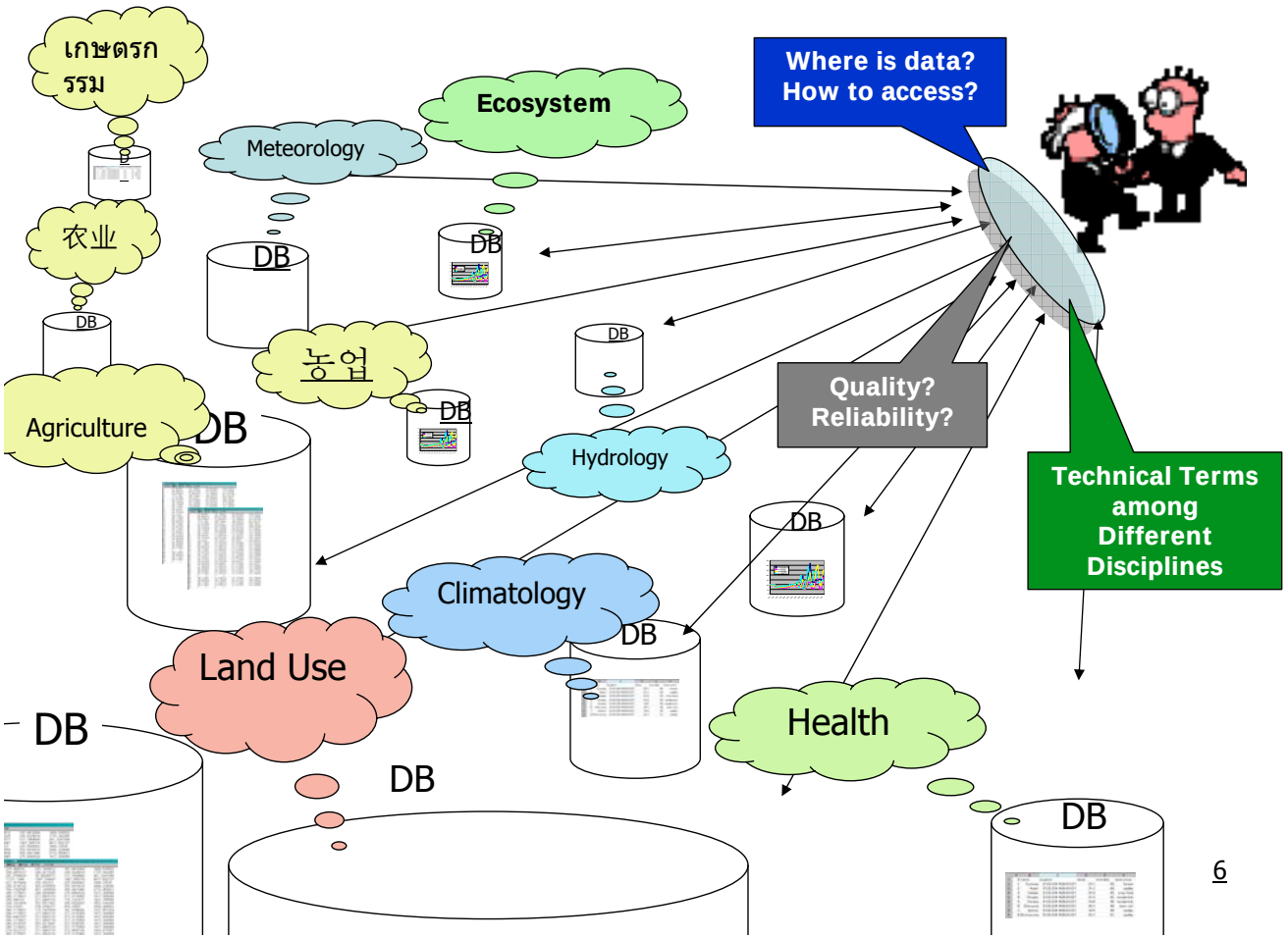
Satellite Observation & Monitoring System

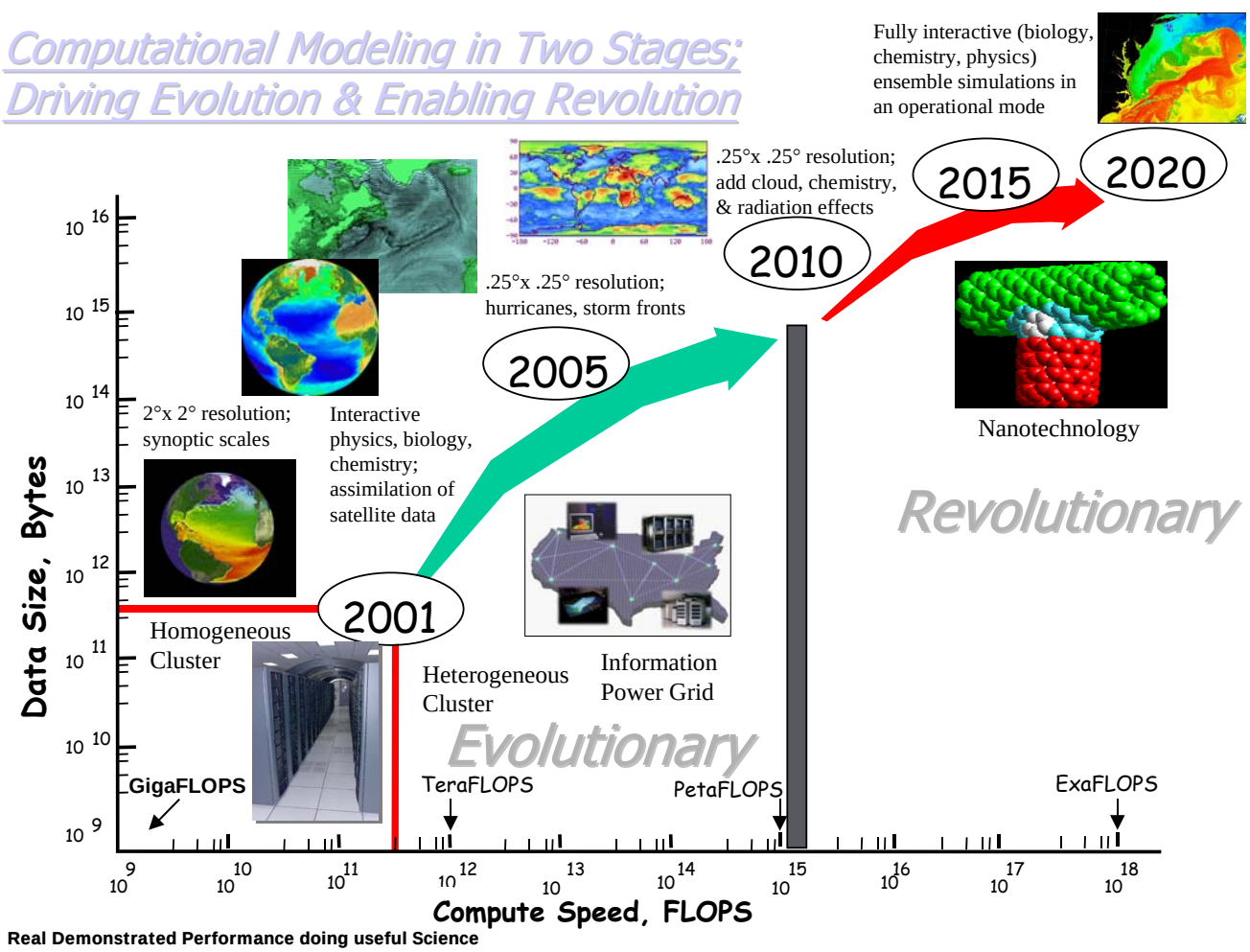


Advanced Ocean Exploration Technology

Data Integration and Analysis System (DIAS)







The Mission of DIAS

- to coordinate the cutting-edge information science and technology and the various research fields addressing the earth environment;
- to construct data infrastructure that can integrate earth observation data, numerical model outputs, and socio-economic data effectively;
- to create knowledge enabling us to solve the earth environment problems; and
- to generate socio-economic benefits.

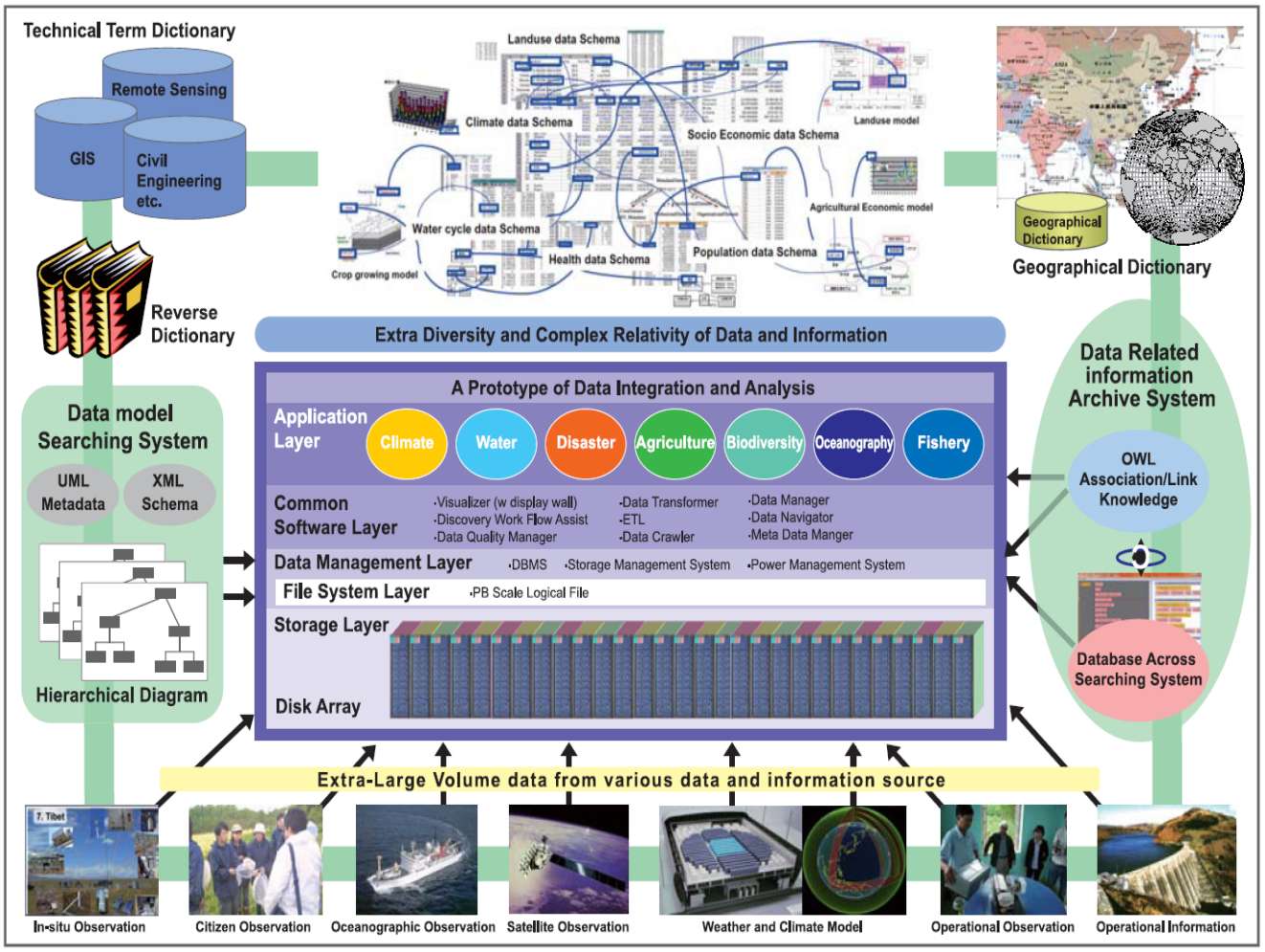
DIAS
Data Integration & Analysis System

DIAS, tackling a large increase in volume of the earth observation data

DIAS is developing a core system
for data integration and analysis
that includes the supporting functions of
life cycle data management,
data search,
information exploration,
scientific analysis,
and partial data down-loading.

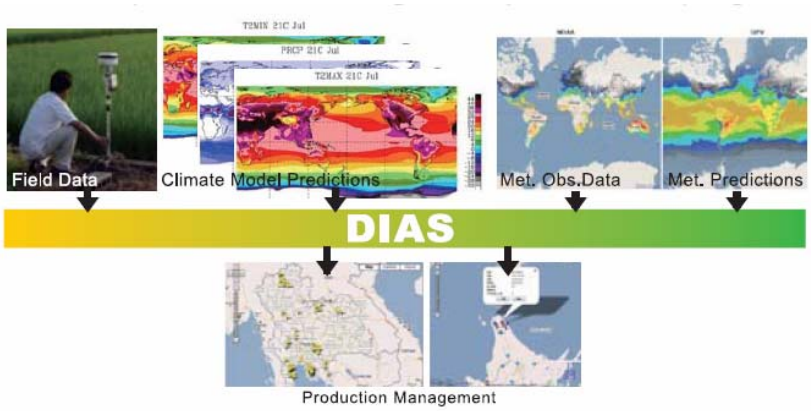
DIAS, tackling a large increase in diversity of the earth observation data

For improving data interoperability,
DIAS is developing a system
for identifying the relationship between data
by using ontology
on technical terms and ideas, and geography.
DIAS also is acquiring data base information
from various sources
by developing a cross-sectoral search engine
for various data bases.



Applications

Agricultural Production Management



DIAS develops an information system for agricultural production management by integrating the real-time monitoring data of farmland, the growing condition of each crop cultivar, meteorological data, numerical weather predictions, and climate model predictions. This system will be usable by the farming community, enabling them to make improved management decisions especially in regions which are susceptible to global warming impacts.

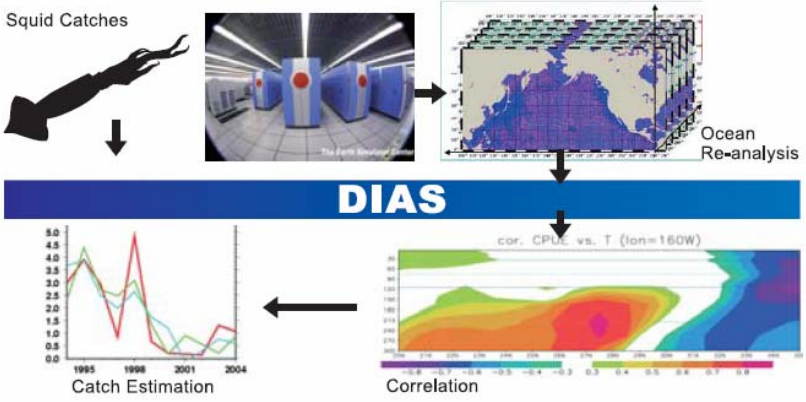
DIAS
Data Integration & Analysis System

Ecosystem Conservation and Participatory Monitoring Program

DIAS compiles data bases of a number of important indices of biodiversity, including invasive alien species and endangered species through participatory monitoring programs, integrates to analyze the data with other earth observation data, and disseminates the products in a form to be easily used for decision making related to biodiversity conservation..

Applications

Ocean Circulation and Fishery Resources Management



DIAS provides usable information for a sustainable fishery resources management by constructing an oceanography- fishery cooperative platform that enables resource managers to investigate relationships between fluctuations in the fishery resources and the seasonal to decadal ocean variations derived from an ocean re-analysis based on the data assimilation by applying the four dimensional variational assimilation methods.

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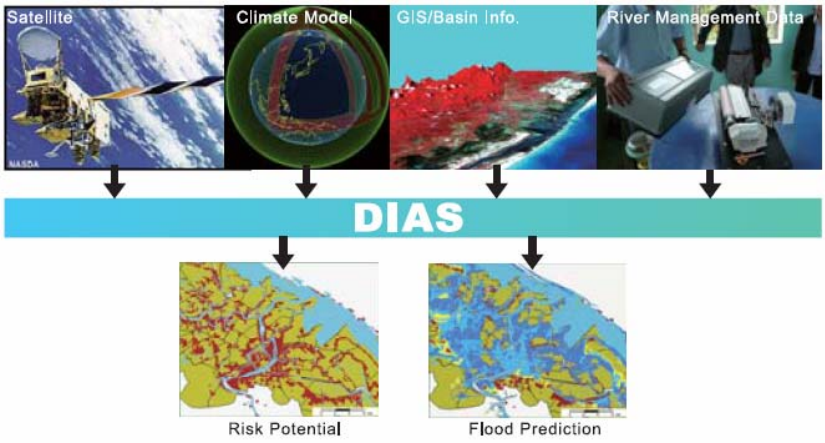
Integrated Water Resources Management



The Asian countries cooperatively integrate data from earth observation satellites and in-situ networks with other types of data, including numerical weather prediction model outputs, geographical information, and socio-economic data, to generate information for making sound water resources management decisions.

DIAS
Data Integration & Analysis System

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a legacy for Japan's contributions to GEOSS