

CEOS Water Portal

Status Update

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Introduction

- CEOS Water Portal is :
 - A web based portal system evolved from "Distributed Data Integration System Prototype for CEOP"
 - To provide access to a whole variety of hydrological data and water relevant data scattered over the world
 - To retrieve data from distributed data centers on-the-fly (by OPeNDAP etc.) and let users download and see rendered image/plot
- The Portal is **NOT** a system for data distribution.
- The Portal is aimed to become a system that enables data integration.

Concept

Data Integration

- Multiple types of data are available such as;
 - In-situ data
 - Satellite data
 - Model output data
- The portal provides multiple functionalities and services to perform data integration.

Portal System Concept

- Provide users “Easy to Access” service.
- Users include;
 - Scientists in hydrological domain
 - Non-researchers or operational users who are dealing with those data in their work

Problems of Current Approach

Distributed data center

In-situ hydrological data
(CEOP)

In-situ hydrological data
(AWCI)

MODEL output
(CEOP)

MODEL output
(CMIP3)

Satellite data
(CEOP, AWCI)

Satellite data (NASA)

Precipitation
(NOAA/GPCC)

River discharge
(GRDC)

DEM data

input

User's model
(ex. WEB-DHM)

Scientists

Model output

Wide users

Ex: decision makers of
Watershed Management

Not easy to provide
useful information

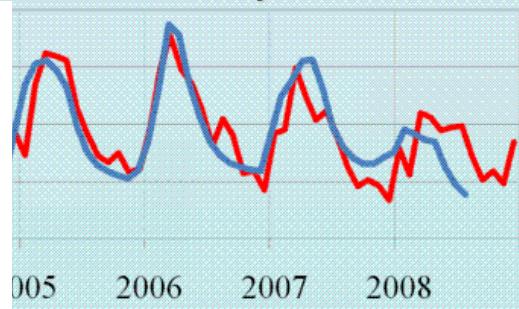
Useful information

Not easy to find data and convert data

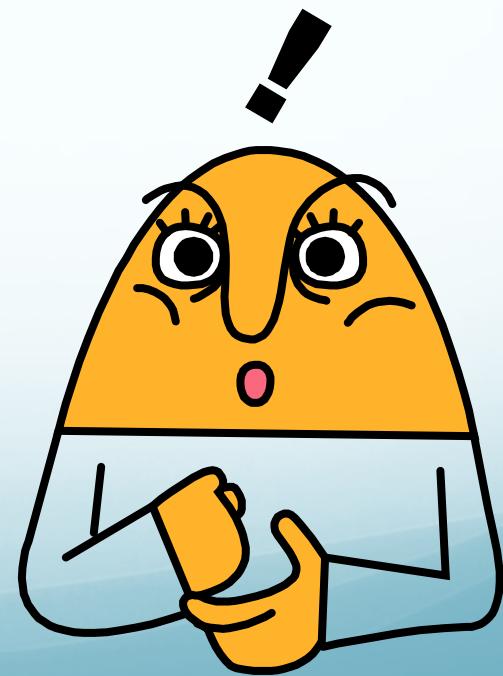
Find data
Convert data

Compare with other model data
Provide useful information to
wide users

Validate with GRACE and model output data



Water Portal makes it easier
and more efficient to settle
those problems.



If you use Water Portal

Distributed data center

In-situ hydrological data
(CEOP)

In-situ hydrological data
(AWCI)

MODEL output
(CEOP)

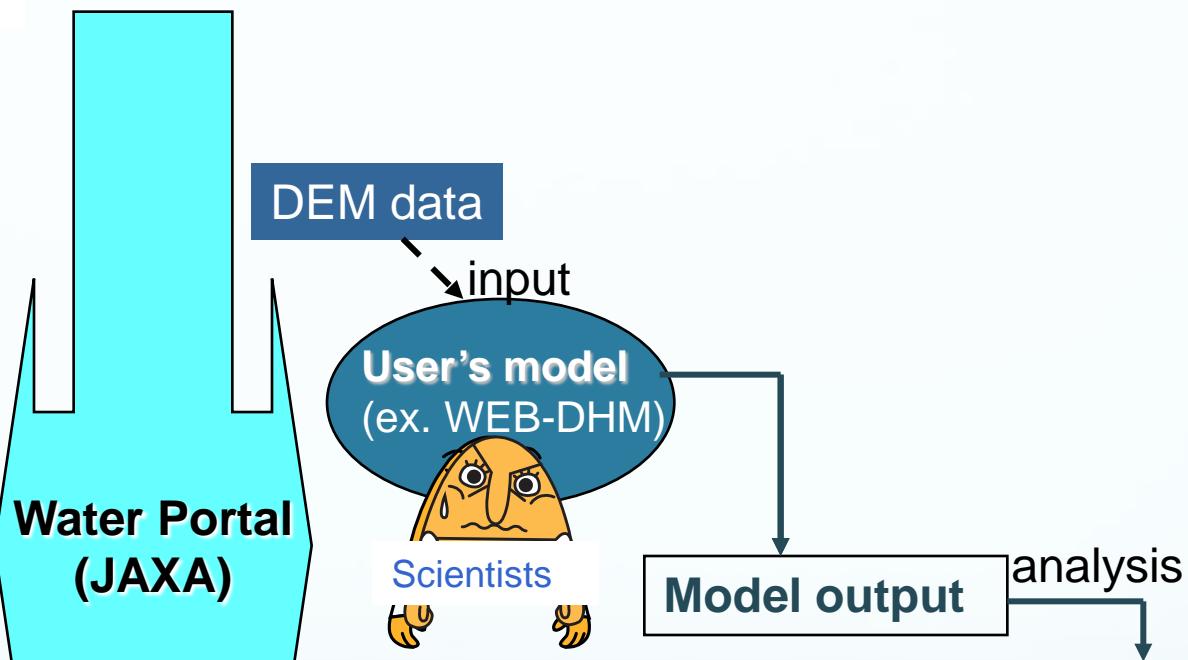
MODEL output
(CMIP3)

Satellite data
(CEOP, AWCI)

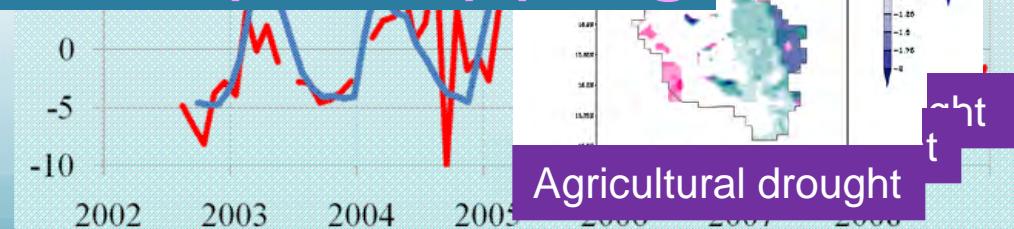
Satellite data (NASA)

Precipitation
(NOAA/GPCC)

River discharge
(GRDC)



Easy access to data
like one stop shopping



If you use Water Portal

Distributed data center

In-situ hydrological data
(CEOP)

In-situ hydrological data
(AWCI)

MODEL output
(CEOP)

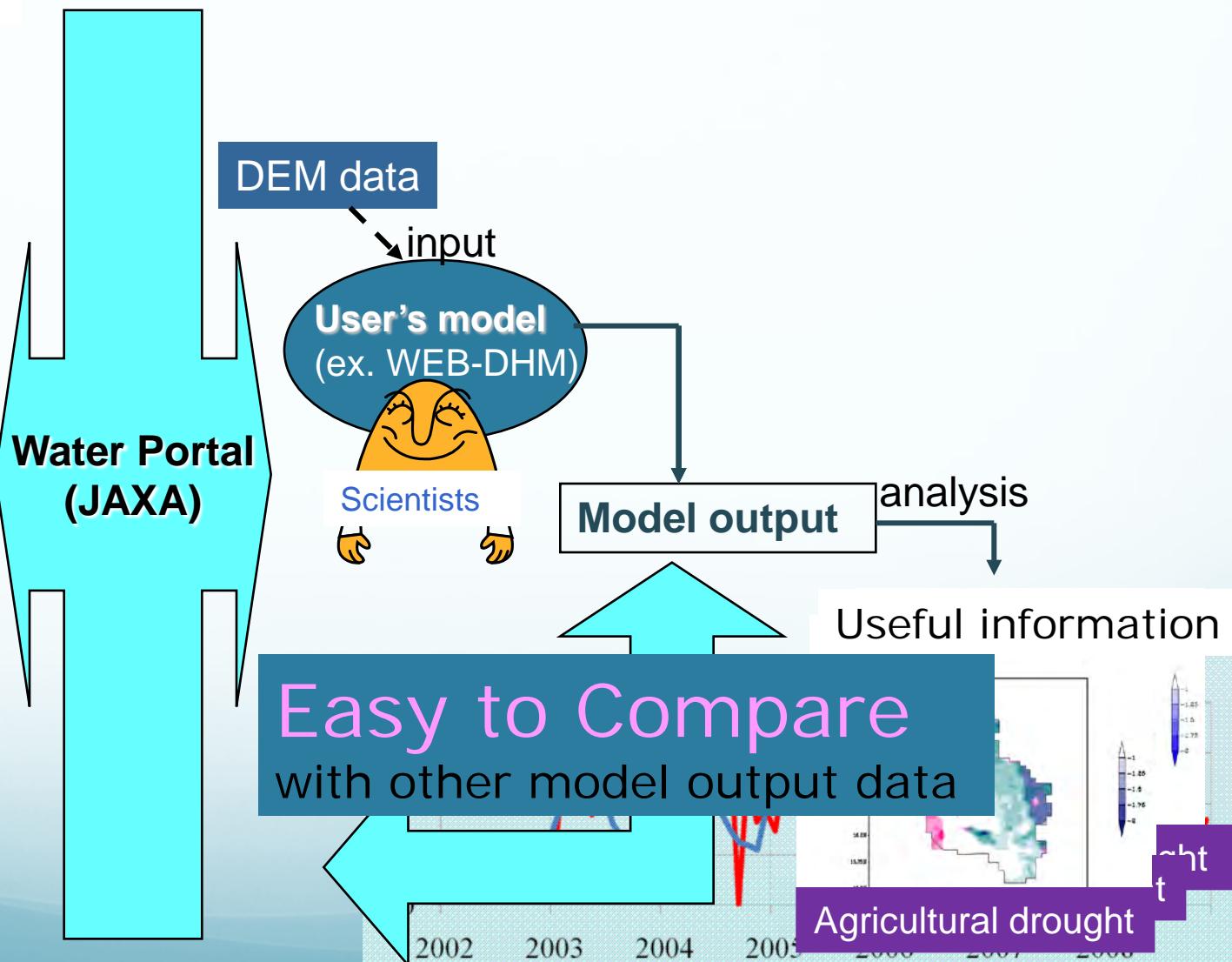
MODEL output
(CMIP3)

Satellite data
(CEOP, AWCI)

Satellite data (NASA)

Precipitation
(NOAA/GPCC)

River discharge
(GRDC)



If you use Water Portal

Distributed data center

In-situ hydrological data
(CEOP)

In-situ hydrological data
(AWCI)

MODEL output
(CEOP)

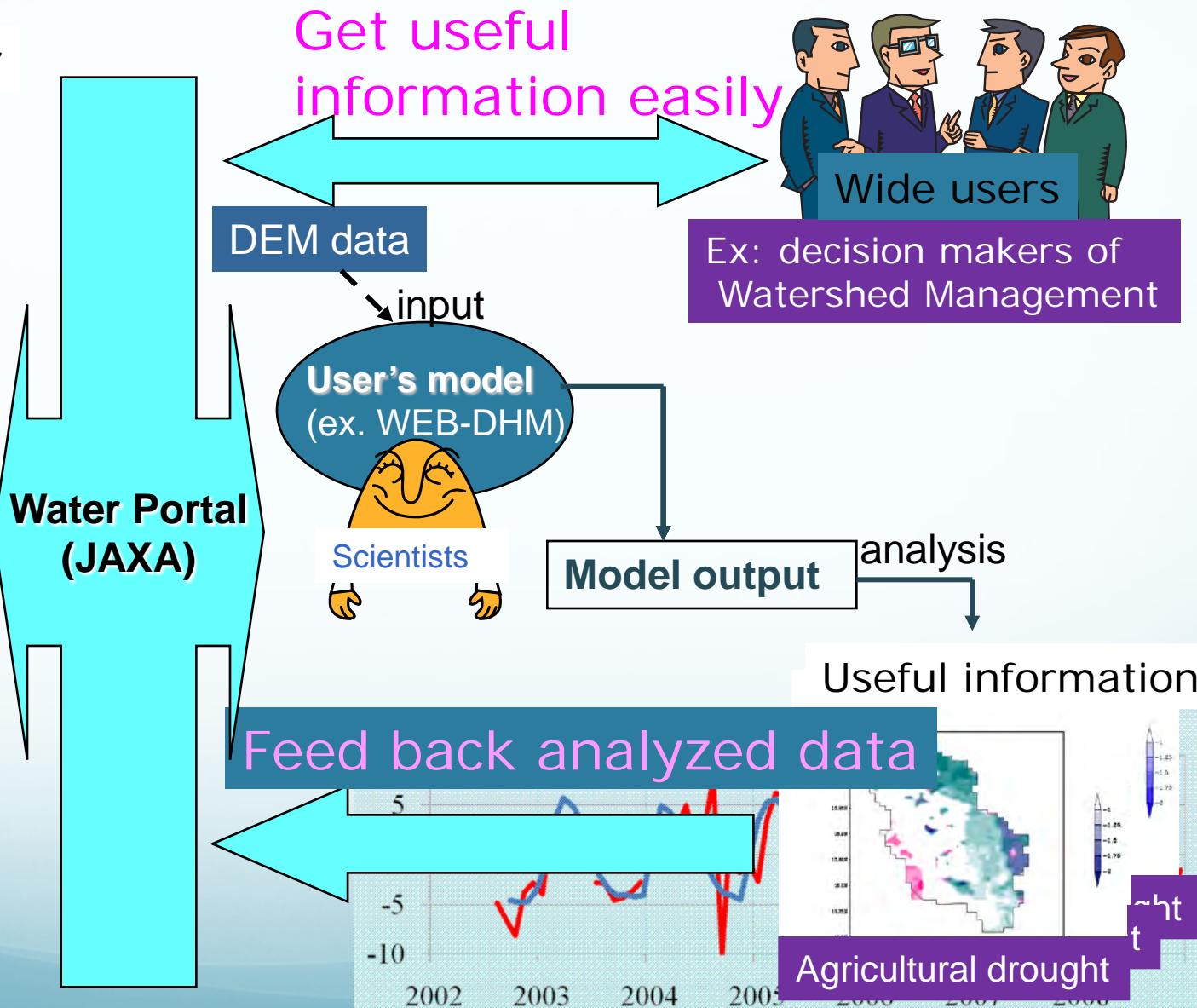
MODEL output
(CMIP3)

Satellite data
(CEOP, AWCI)

Satellite data (NASA)

Precipitation
(NOAA/GPCC)

River discharge
(GRDC)



Distributed data center

In-situ hydrological data
(CEOP)

In-situ hydrological data
(AWCI)

MODEL output
(GRDC)

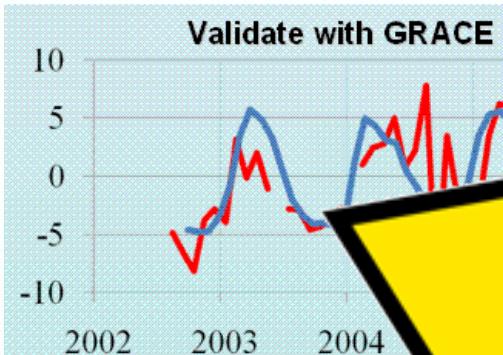
MAPS
(GRDC)

SAT
(CEOP, AWCI)

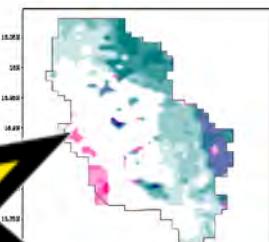
Satellite data (NASA)

Precipitation
(NOAA/GPCC)

River discharge
(GRDC)



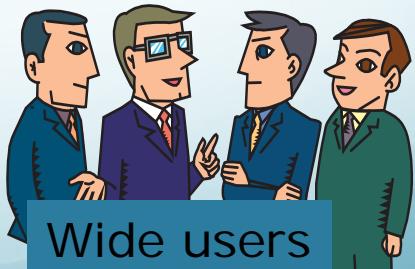
Useful information



Cultural drought



Easy access & integrate data
Communication is encouraged



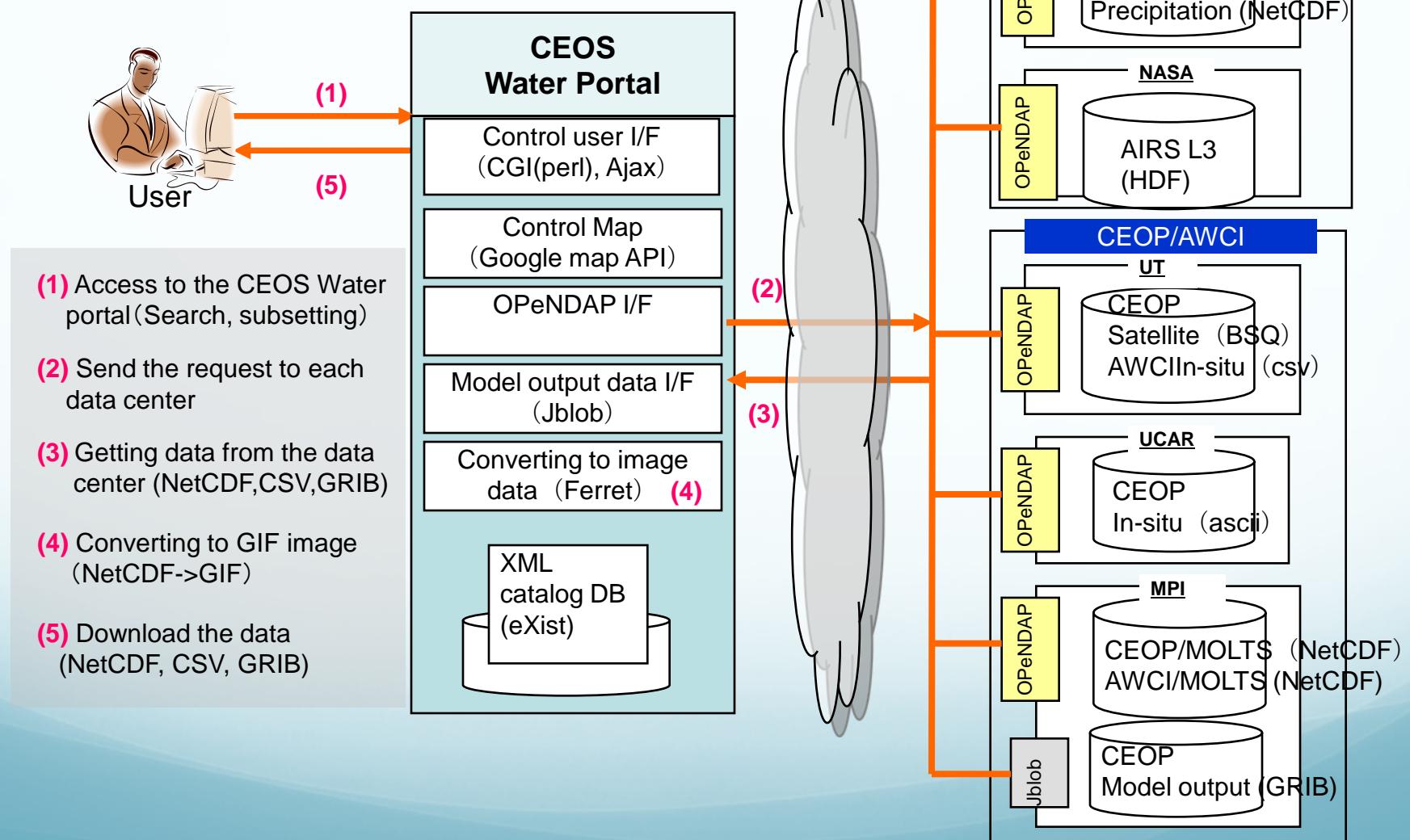
Wide users

Ex: decision makers of
Watershed Management

Main Features of the Portal

Data Integration (in-situ, satellite, and model output)	<ul style="list-style-type: none">(1) Data Archive Centers in remote locations are connected using standard data access protocol (OPeNDAP)(2) Single user interface<ul style="list-style-type: none">- Spatial Data Integration- Temporal Data Integration- Consistent data variable names
Functions to facilitate Easy Access	<ul style="list-style-type: none">(1) Different types of search features : Category, Map, etc.(2) Select data by<ul style="list-style-type: none">- time range (start time / stop time)- CEOP Reference Site, Station name- height or depth- variable name(3) View data (plot and view values on the screen)(4) Compare MOLTS data and In-situ Data in a single chart(5) Download data (NetCDF, ascii)

System Overview

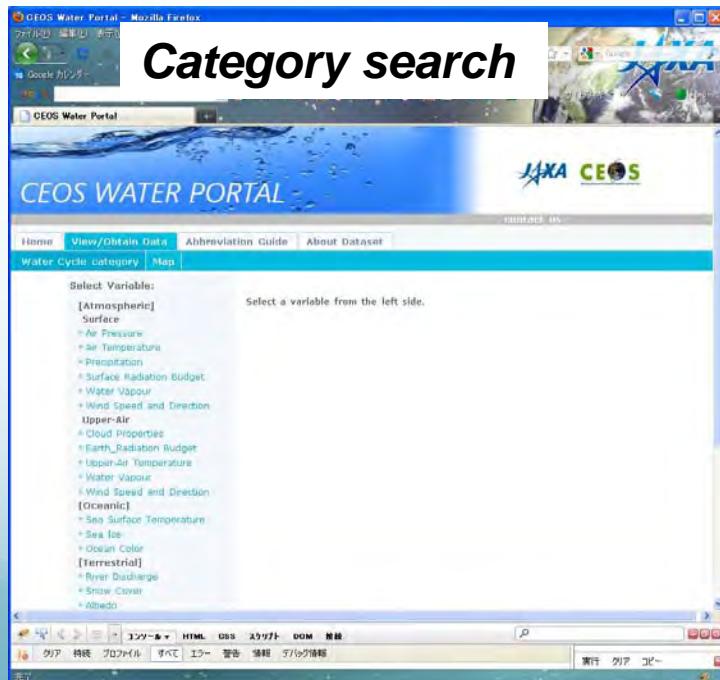


Release Announcement

- Alpha version now available
With limited data and functionality, the system is now publicly available at : <http://waterportal.restec.or.jp/>

The development is ongoing.

Category search



CEOS WATER PORTAL

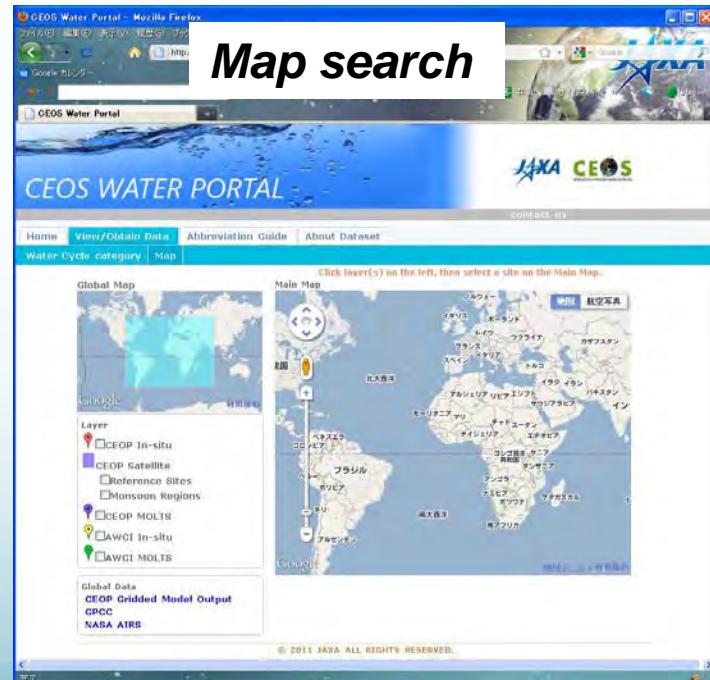
Home View/Obtain Data Abbreviation Guide About Dataset

Water Cycle category Map

Select Variable:

- [Atmospheric]
 - Surface
 - Atmospheric Pressure
 - Air Temperature
 - Precipitation
 - Surface Radiation Budget
 - Water Vapor
 - Wind Speed and Direction
 - Upper-Air
 - Cloud Properties
 - Earth Radiation Budget
 - Upper-Air Temperature
 - Water Vapor
 - Wind Speed and Direction
- [Oceanic]
 - Sea Surface Temperature
 - Sea Ice
 - Ocean Color
- [Terrestrial]
 - River Discharge
 - Snow Cover
 - Altitude

Map search



CEOS WATER PORTAL

Home View/Obtain Data Abbreviation Guide About Dataset

Water Cycle category Map

Global Map

Main Map

Layer

- CEOP In-situ
- CEOP Satellite
- Reference Sites
- Monsoon Regions
- CEOP MOLT8
- AWG1 In-situ
- AWG1 MOLT8

Global Data

- CEOP Gridded Model Output
- GPCP
- NASA AIRS

Click layer(s) on the left, then select a site on the Main Map.

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CEOS Water portal (1/2)

1. Choose either of the two types of search

Category Search



2. Choose a variable and location



Map Search



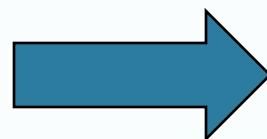
Go on to
next slide

CEOS Water portal (2/2)

3. Specify additional criteria (e.g. Band or Height) and time range

Screenshot of the CEOS Water Portal search interface. It shows the following search parameters:

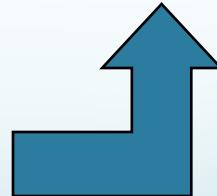
- Hydrological Variables:** Hydrological variable: Precipitation amount
- Reference Site:** Reference site: Tibet
- Criteria:** (Geophysical instrument): Select one: Level 2 Rain rate between 11.75 and 20.00mm height
- [Time range]:** Select a time range for the requested data. Available data period: 2002-10-01T00:00:00 to 2010-06-20T00:00:00. Start time: 2002-10-01, End time: 2010-06-20.



5. View image and download the data

Screenshot of the Retrieved Data Files of Satellite CEOS Water Portal page. It displays the following information:

- Search criteria:**
 - Project: CEOP
 - Type: Satellite
 - Satellite: TRMM
 - Sensor: PR
 - Product Name: 2PREC1
 - Parameter: Level 2 Rain rate between 11.75 and 20.00mm height.
 - Reference site: Tibet.
 - Requested time range: 2002-10-01 - 2010-06-30
- View Images and Download data:** If you want to download the data, click a button below.
 - View as NetCDF
 - Save as CSV

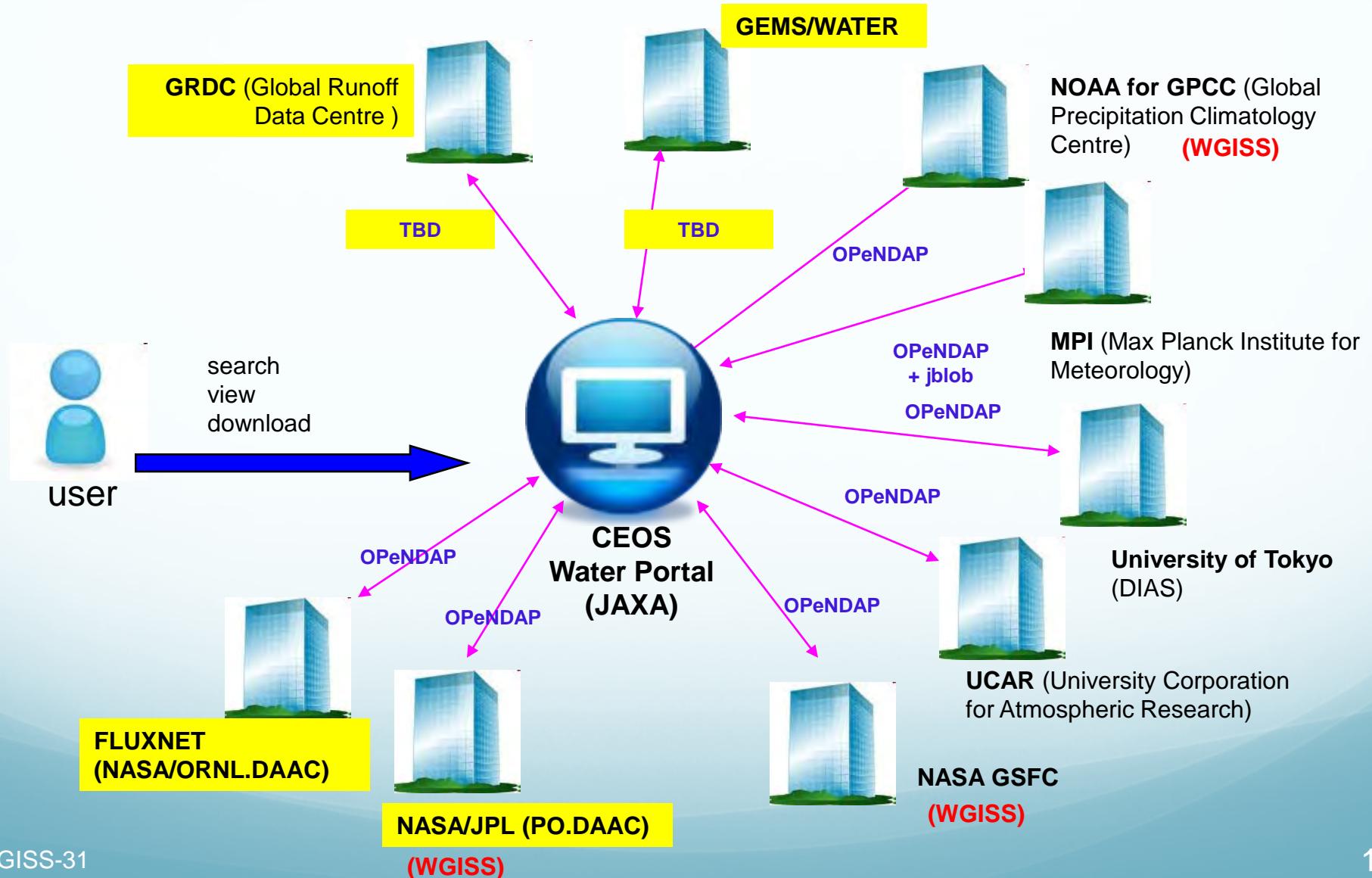


4. Choose a file (Satellite or MOLTS data only)

Screenshot of the Retrieved Data Files of Satellite CEOS Water Portal page showing a list of files:

File name	Observation date
202461_200211010332_1B_2PREC01.dat	2002-11-01 00:32:00
202461_200211020444_1B_2PREC01.dat	2002-11-02 04:44:00
202461_200211020737_1B_2PREC01.dat	2002-11-02 07:37:00
202461_200211020936_1B_2PREC01.dat	2002-11-02 09:36:00
202461_200211030048_1B_2PREC01.dat	2002-11-03 00:48:00
202461_200211060226_1B_2PREC01.dat	2002-11-06 02:26:00
202461_200211060352_1B_2PREC01.dat	2002-11-06 03:52:00
202461_200211090410_1B_2PREC01.dat	2002-11-09 04:10:00
202461_200211100352_1B_2PREC01.dat	2002-11-10 03:52:00
202461_200211100348_1B_2PREC01.dat	2002-11-10 03:48:00
202461_200211122233_1B_2PREC01.dat	2002-11-12 22:33:00
202461_200211130229_1B_2PREC01.dat	2002-11-13 02:29:00
202461_200211132227_1B_2PREC01.dat	2002-11-13 22:27:00
202461_200211162119_1B_2PREC01.dat	2002-11-16 21:19:00
202461_200211170055_1B_2PREC01.dat	2002-11-17 00:55:00
202461_200211172032_1B_2PREC01.dat	2002-11-17 20:32:00
202461_200211190235_1B_2PREC01.dat	2002-11-19 02:35:00
202461_200211201114_1B_2PREC01.dat	2002-11-20 11:14:00
202461_200211202227_1B_2PREC01.dat	2002-11-20 22:27:00
202461_200211211818_1B_2PREC01.dat	2002-11-21 18:18:00

Data Partners



Data Partners List

Listed below is current data partners.

Data Partners	Data Types	Server Locations	Interface Methods
CEOP	Satellite	University of Tokyo (Japan)	OPeNDAP
	Model(MOLTS)	MPI (Germany)	OPeNDAP
	Model(Gridded)	MPI (Germany)	jblob
	In-situ	UCAR (USA)	OPeNDAP
AWCI	Model(MOLTS)	MPI (Germany)	OPeNDAP
	In-situ	University of Tokyo (Japan)	OPeNDAP
	GIS	University of Tokyo (Japan)	TBD
NASA	Satellite	NASA (GSFC)	OPeNDAP
NOAA (GPCC)	In-situ	NOAA (USA)	OPeNDAP

Candidate Data Partners

Coordination with these agencies is foreseen.

Data Partners	Data Types	Server Locations	Interface Methods
GRDC* ¹	In-situ		TBD
GEMS/Water* ²	In-situ		TBD
NASA	Satellite (GRACE Level 3)	NASA/JPL (PO.DAAC)	OPeNDAP
NASA (FLUXNET)	In-situ (FLUX data)	NASA (ORNL DAAC)	OPeNDAP

*¹ : http://www.bafg.de/GRDC/EN/Home/homepage__node.html

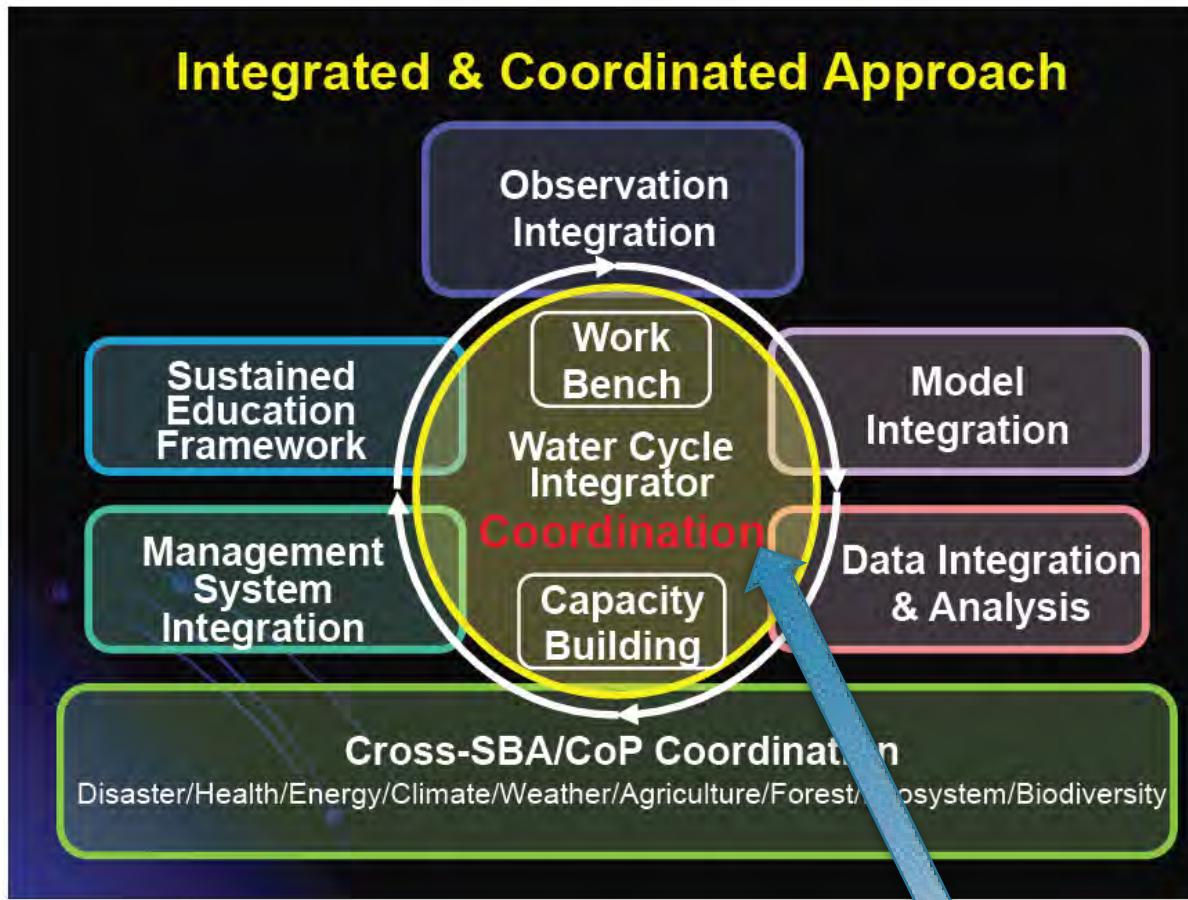
*² : <http://www.gemstat.org/>

Data request

We would like to cooperate with NASA to have these data incorporated to meet users request.

- GRACE Level 3 data (NASA/JPL (PO.DAAC) OPeNDAP Server)
- Flux data (NASA/ORNL.DAAC OPeNDAP Server)

Water Cycle Integrator (Currently proposed to GEO)



Water Portal can contribute this “Coordination”.

Future Plan

1. Contribution to GEO

- Work plan (2009-2011) Task WA-08-01 (already offered to CEO)
- Work plan (2012-2015, Version0, Under Technical Review) Task DS-05, “Water Cycle Integrator”.

2. New Data vs New Functions

- We are open to new data center collaboration (within budget !).
- The balance to be considered, based on the coordination with data center collaboration “candidates”.
- Adding the new function for more integrating the data and encouraging the communication among the users.

3. Collaboration with other “portal(s)”

- CEOS Precipitation Constellation (PC) portal