

Working Group 1

GEOSS Asian Water Cycle Initiative (AWCI)

Co-Chairs:

Richard Lawford (GEO Water: IGWCO)

Syahril Badri Kusuma (Institute of Technology Bandung (ITB))

Toshio Koike (The University of Tokyo)

The Fifth GEOSS Asia-Pacific Symposium:
2 - 4 April 2012, Tokyo, Japan

7 Year History of GEOSS/AWCI

2000 – **Integrated Global Observing Strategy (IGOS) Water Theme Proposal**

2001 – Water Theme Approved

2002 – Team Report Writing Team World Summit on Sustainable Development (WSSD)

2003 – Preparation for “**Integrated Global Water Cycle Observation (IGWCO)**” Ad-hoc (GEO)

2004 – **IGWCO** Team Report Preparation for 10-year Implementation Plan

2005 – 1st **IGWCO** in Tokyo → **GEO/GEOSS Asian Water Cycle Initiative (AWCI)**

2006 – 2nd **IGWCO** in Paris 1st **Sump.** in Tokyo
1st **TTM** in Bangkok

2007 – 3rd **IGWCO** in DC 1st **GEOSS AP** in Tokyo

2008 – 4th **IGWCO** in Geneva 2nd **GEOSS AP** in Tokyo 2nd **Simp.** in Tokyo
1st **ICG** in Bali

2009 – 5th **IGWCO** in Kyoto 3rd **GEOSS AP** in Kyoto 3rd **Simp.** in Beppu
2nd **ICG** in Tokyo

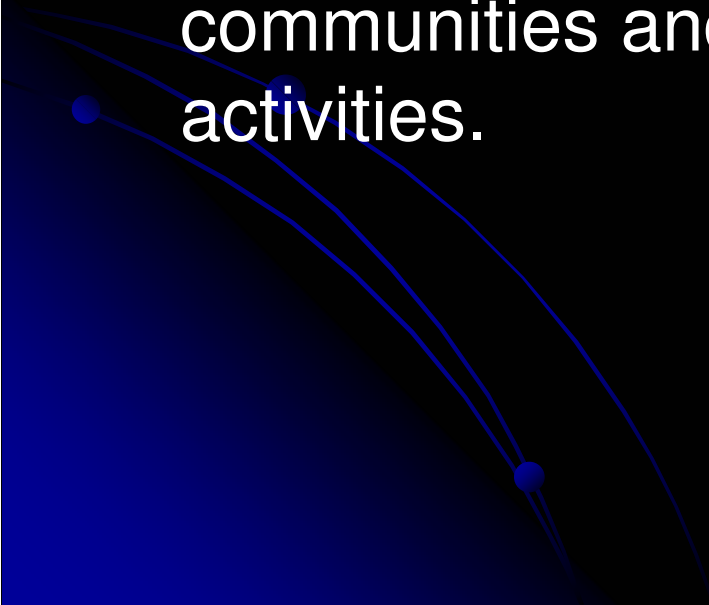
2010 – 6th **IGWCO** in New York 4th **GEOSS AP** in Bali 3rd **ICG** in Beijing
4th **ICG** in Kyoto

2011 – 7th **IGWCO** in Tokyo 5th **ICG** in Tokyo
6th **ICG** in Bali

2012 – 8th **IGWCO** in Hawaii 5th **GEOSS AP** in Tokyo 7th **ICG** in Tokyo
1st **CCAA/T** in Tokyo

8th **ICG** in Seoul

WG1 Session Objectives

- To introduce each draft implementation plan
 - To establish make an integrated cooperative framework among the member countries, the Earth observation communities, science communities and the related international activities.
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WG1 Session Agenda

09:30-09:40 Opening GEOSS/AWCI Breakout Session

Opening Remarks

D. Cripe, GEO Secretariat

09:40-10:30 GEOSS/AWCI Activity

Working Group Reports by Chair(s):

Flood WG K.

Fukami, ICHARM

Droughts WG

I. Kaihotsu, HU

Water Quality WG

P. Koudelova, UT

Climate Change WG

M. Rahman, BUET

Capacity Building Activities by Lead(s):

S. Herath, UN Univ.

WG1 Session Agenda

10:30-12:45 Brief introduction to Draft Implementation Plans:

1. Bangladesh: M.A. Islam
2. Bhutan: K. Chopel
3. India: R. Kumar/S. Kaur
4. Indonesia: S.B. Kusuma
5. Japan: T. Koike
6. Laos: S.Pathoummady
7. Malaysia: M.Z.M. Amin
8. Mongolia: G. Davaa
9. Myanmar : S. Lin
10. Nepal: S.K. Sharma
11. Pakistan: G. Rasul
12. Philippines: F. Hilario
13. Sri Lanka: G.R.A.S. Gunathilake
14. Thailand: T. Sukhapunaphan
15. Uzbekistan: I. Dergacheva
16. Vietnam: D.N. Tinh

WG1 Session Agenda

13:45-15:30 Inputs from Agencies

1. Asia-Pacific Network for Global Change Research (APN)
A. Takemoto
2. United Nations Educational, Scientific and Cultural Organization
(UNESCO) T. Sonoda
3. Network of Asian River Basin Organizations (NARBO) T. Kawasaki
4. Japan International Agency (JICA) Y. Amano
5. Japan Aerospace Exploration Agency (JAXA) R. Oki
6. Japan Meteorological Agency (JMA) K. Onogi
7. International Centre for Water Hazard and Risk Management
(ICHARM) K. Fukami

15:30-16:00 Discussion towards an Integrated Cooperative Framework

Template for Country Input to the AWCI Phase 2 Implementation Plan

1. Issues and Needs

- Issues related climate system - water cycle - water use
- Issues related to Water Nexus: agriculture, energy, health – water quality, biodiversity, and ecosystem
- Needs for functions and/or tools of WCI to address the identified issues
- Needs for collaboration framework at the national level: inter-agency, interdisciplinary

2. Implementation proposal

- Steps and Strategy following the three approaches:
 - ✓ Framework development approach Strategic approach
 - ✓ Technical approach
- Additional resources – suggestion of potential collaborators
- Specific request to GEOSS and to international community (data/tools accessibility)
- Coordination between water cycle integration and capacity development strategy

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NEED FOR RESOURCES

Available

Resources/Capabilities:

- Discharge measuring stations
- Water level measuring stations
- Groundwater level measuring stations
- Satellite images by SPARRSO
- Weather forecast by BMD
- Flood forecasting system by FFWC
- Well trained personnel of BUET & MoD
- Linkages with national & international organizations
- In-house training facilities

Lack of Capability:

- Improvement of climate & flood models
- Tools for impact modeling and assessment
- Vulnerability and risk assessment tools to various sectors
- Analytical tools to describe weather extremes and variability

specific issues

•Challenges in Quantitative Precipitation Forecast for Flood Forecast

- 1.The forecast should be time and space specific.
 - 2.It should not be an underestimate otherwise there will be an avoidable loss of life and property.
 - 3.It should not be also an over estimate as same may result in unnecessary displacement of population resulting in diminishing confidence in forecasts and warnings.
- Inadequate network in Himalayan region
 - Integration of Radar and Satellite data in NWP models.
 - Sea level rise



AWCI Phase 2 Implementation Plan: Nepal

- **Specific request to GEOSS/AWCI**
 - **Inventory: Water Resources Inventory and glaciers inventory**
 - **Future scenarios of GCM/RCM output for Nepal river basin**
 - **Distributed Hydrological Modeling techniques**
 - **Access to Satellite and radar data**
 - **Establishment of Regional data centre**

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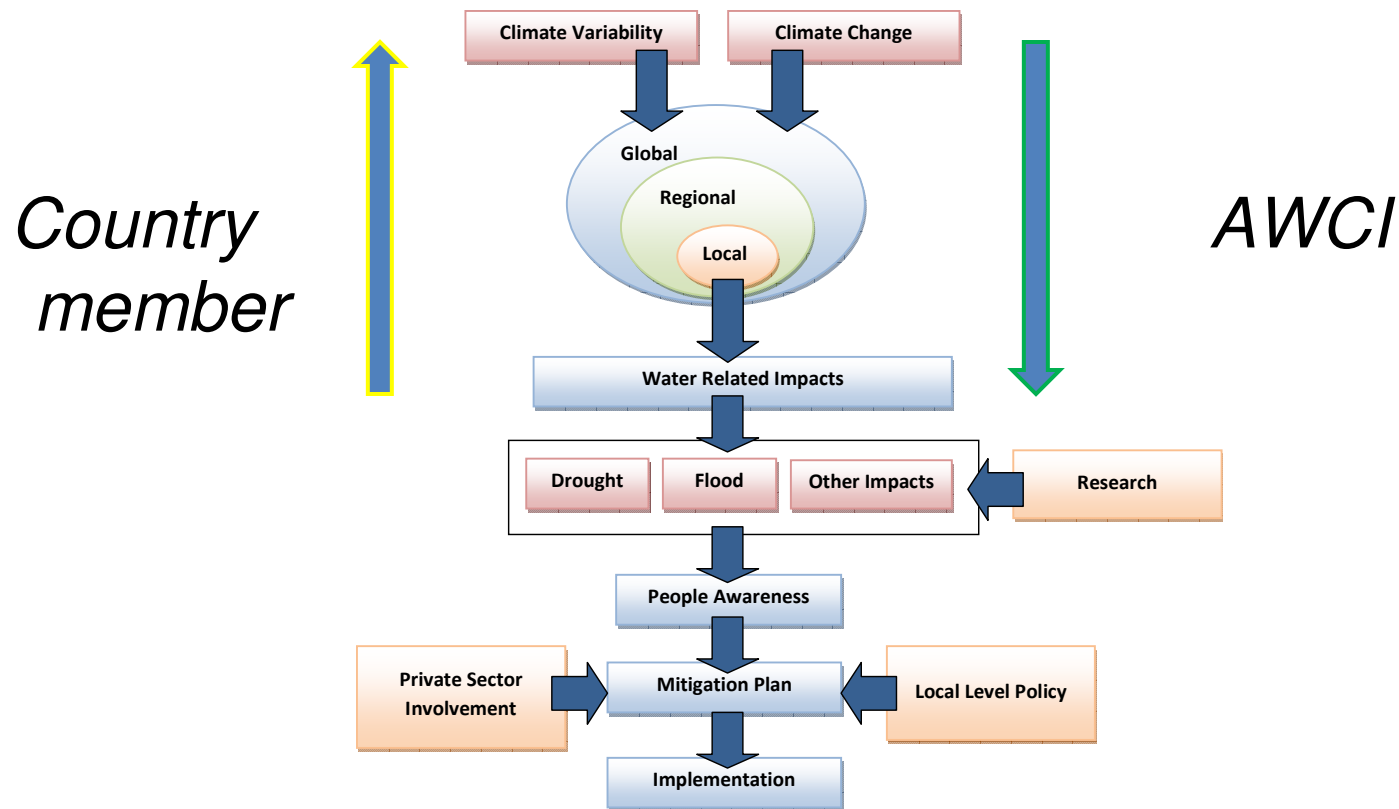
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Framework development based on simple approach

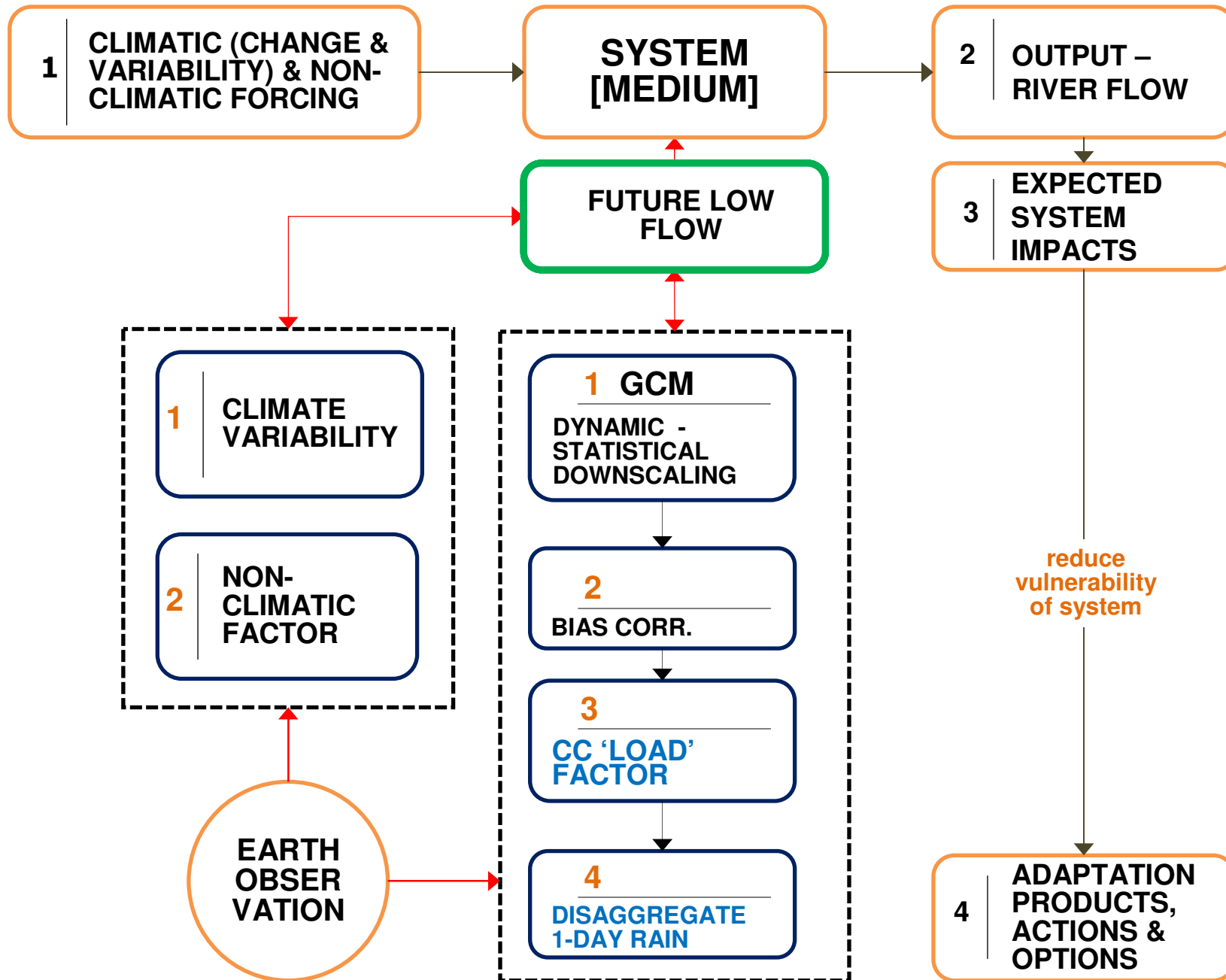
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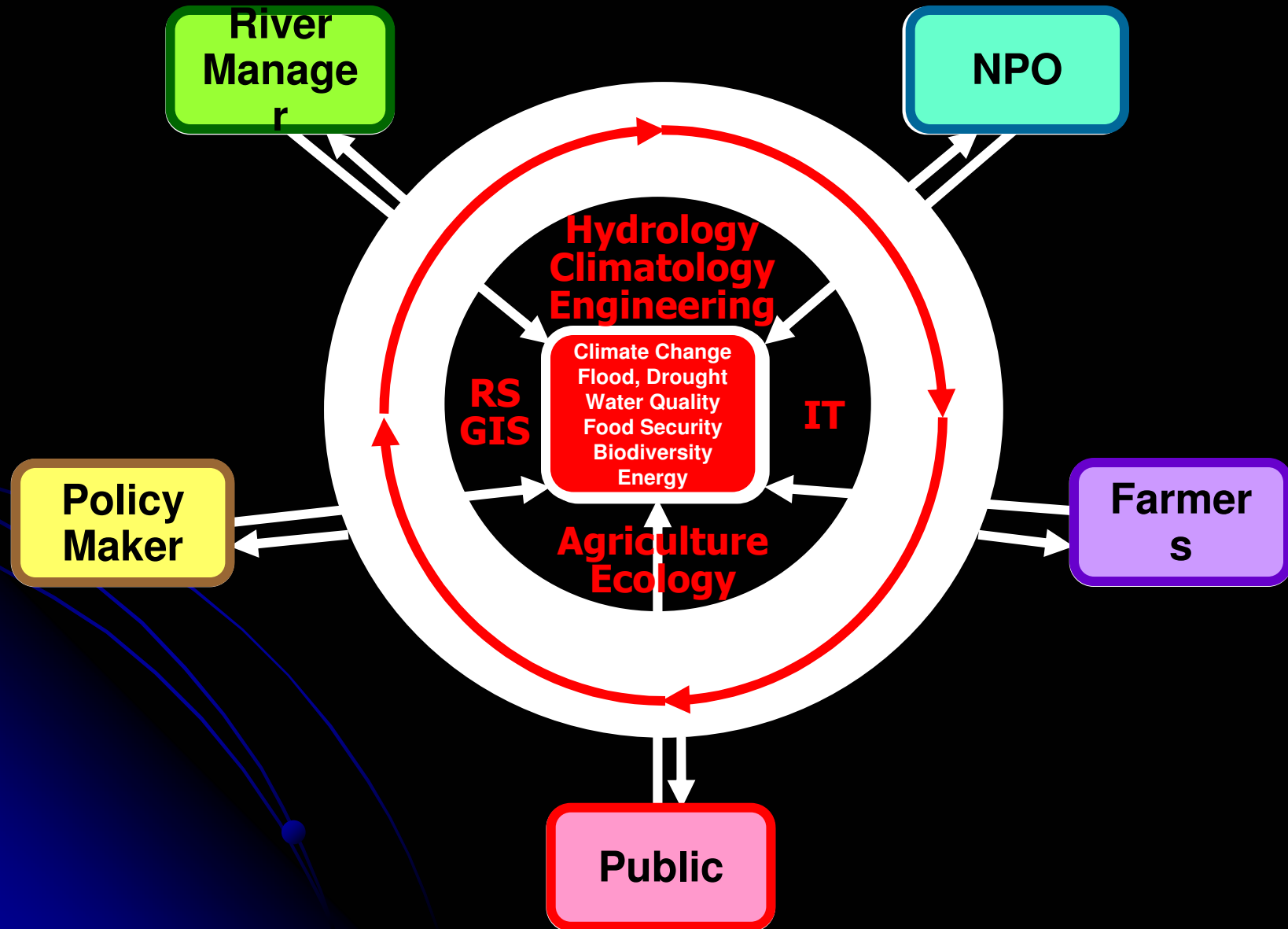
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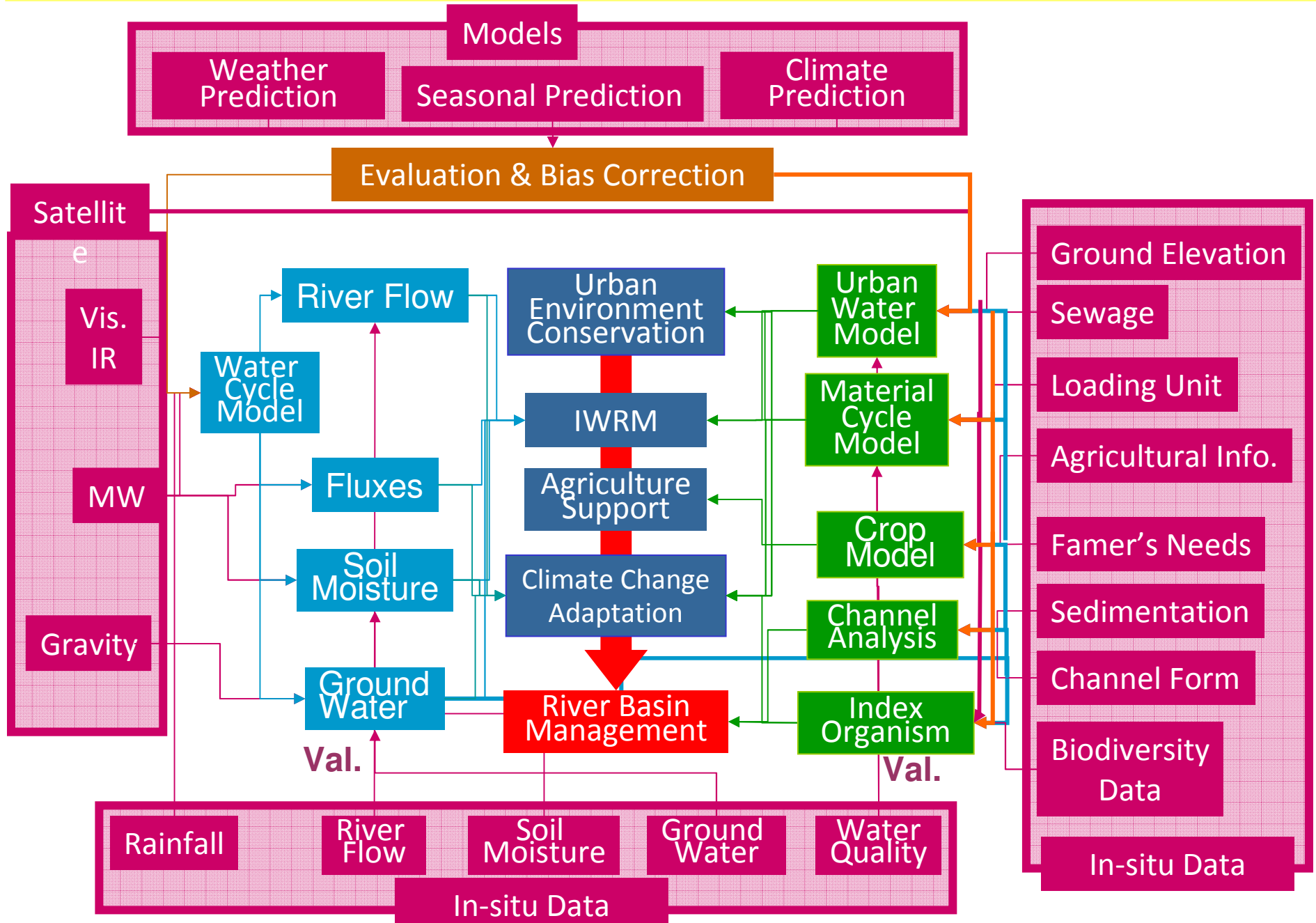
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Sharing Data and Information Exchanging Knowledge, Experiences and Ideas Working Together



Data Integration & Information Fusion



Sustainable Development

Climate Change

MDGs

Biodiversity

Coordinated and Integrated Efforts for Working Together

mitigation

adaptation

Regime Shift

Extremes

Light

Climate

Water Resources Management System

Contribution to Green Growth

cycle

Biodiversity/Ecosystem

Agriculture/Food

Health

Energy