

# GEO-Water under Three Key Global Agendas in 2015

Understanding    Governance    Investment    Implementation



**Concerted Action is Required**



**Sustainable Development**

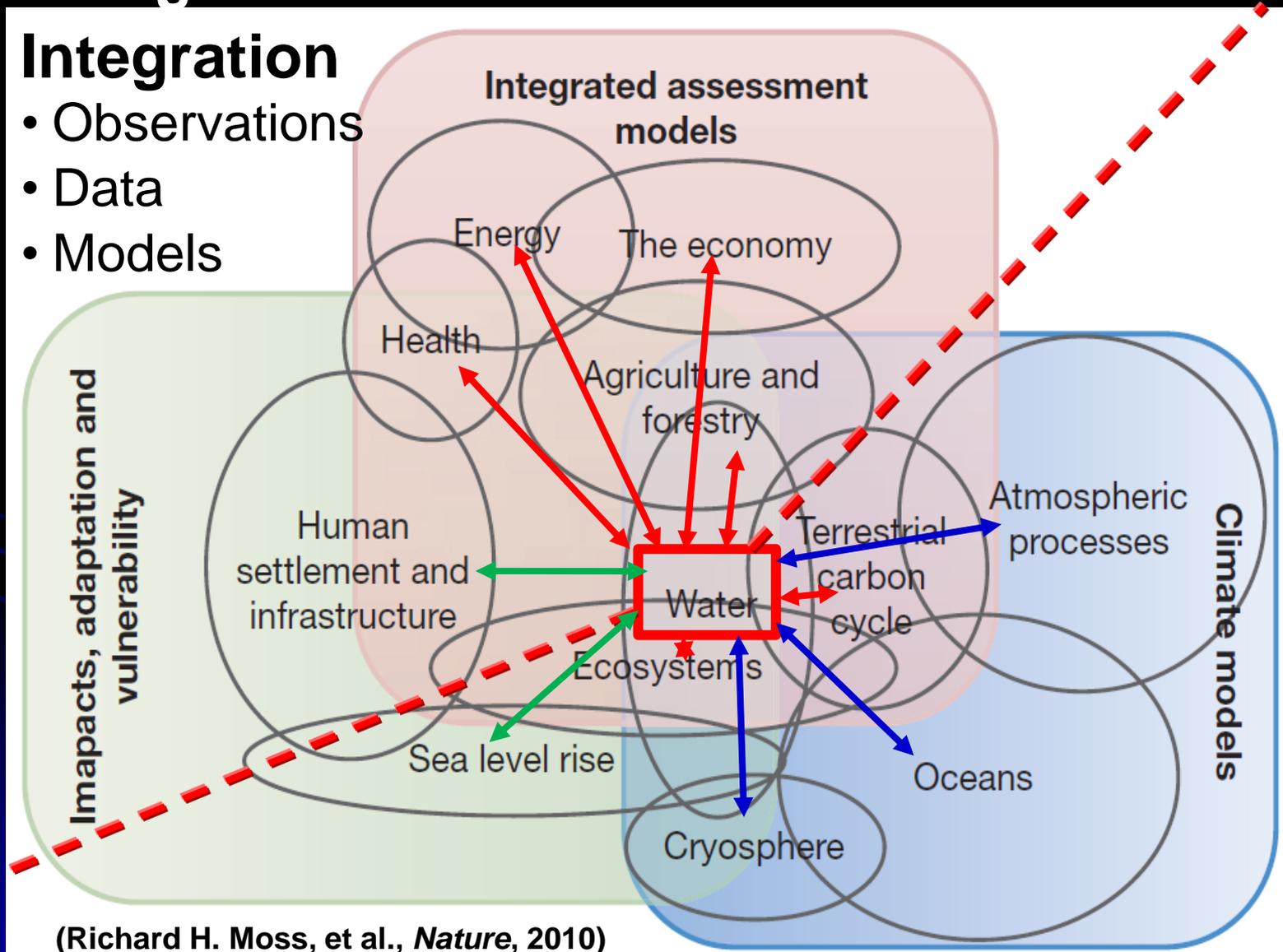
# Holistic, Evident-based, Quality, Quantity

## Water is Key

### Dialogue → Platform

#### Integration

- Observations
- Data
- Models

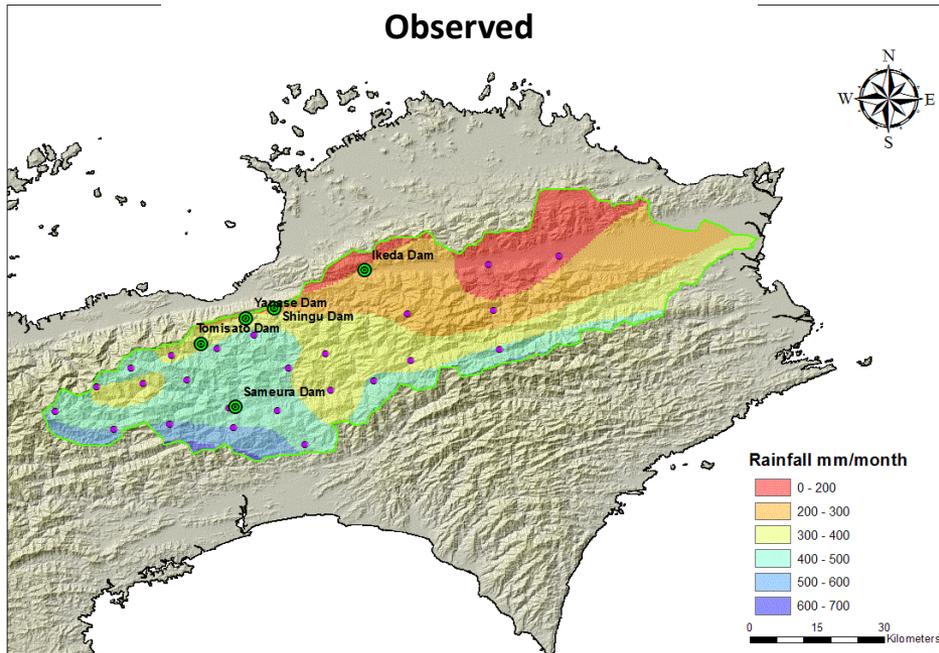


(Richard H. Moss, et al., *Nature*, 2010)

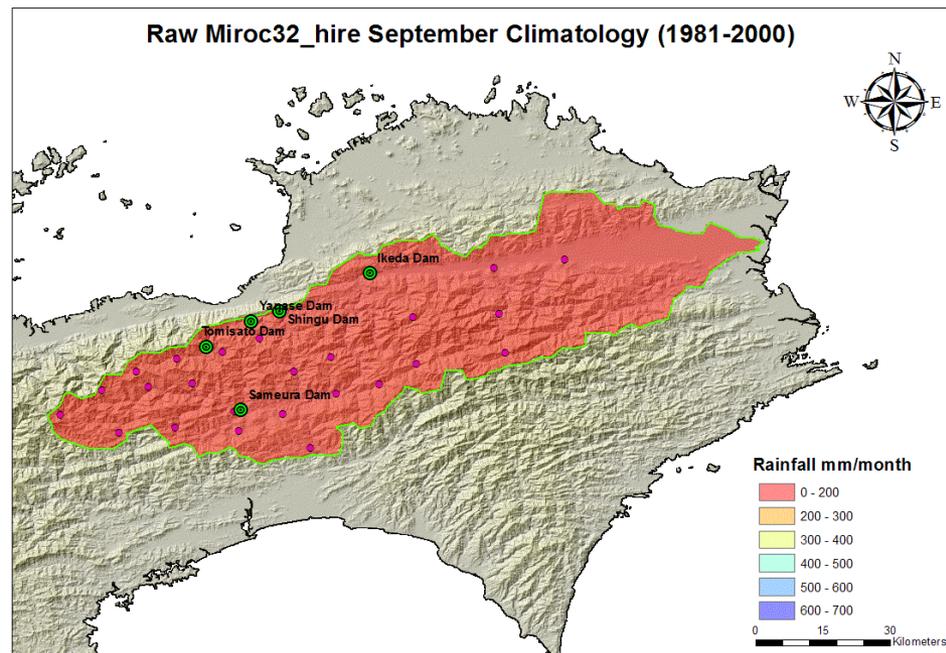
# Bias-correction and Down-scaling in Yoshino River

(20 years average of monthly rainfall in September)

Observed



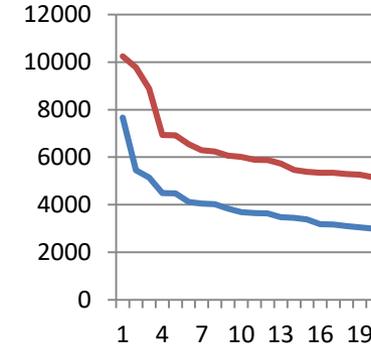
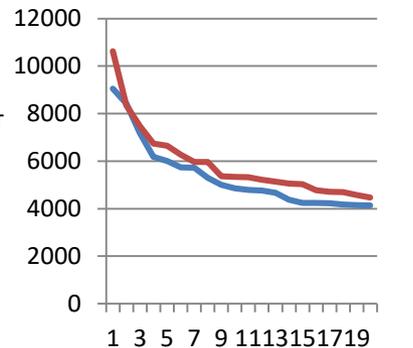
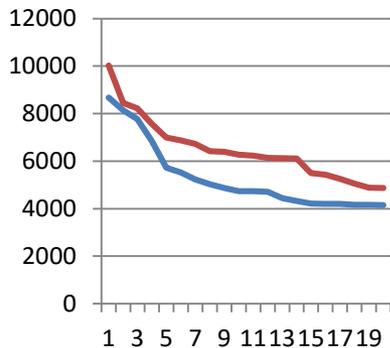
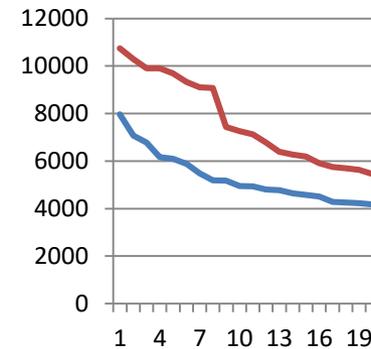
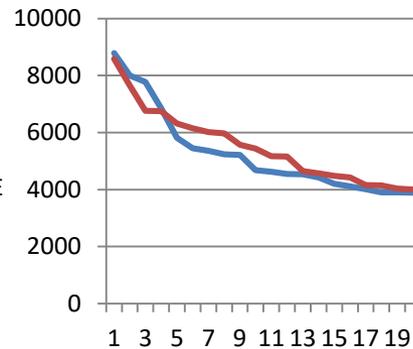
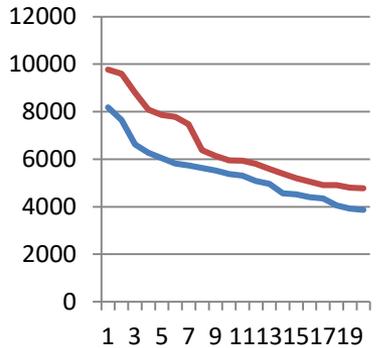
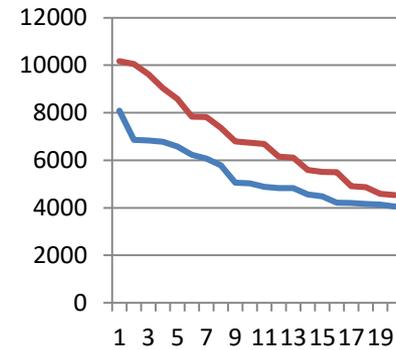
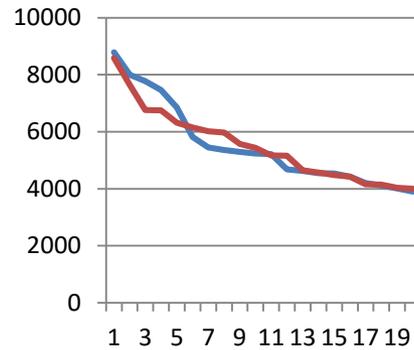
Raw Miroc32\_hire September Climatology (1981-2000)



# Top 20 Large Floods at the Ikeda, Yoshino River

past(1981-2000)—future(2046-2065) (m<sup>3</sup>/s)

**Severer Floods  
Very Likely**

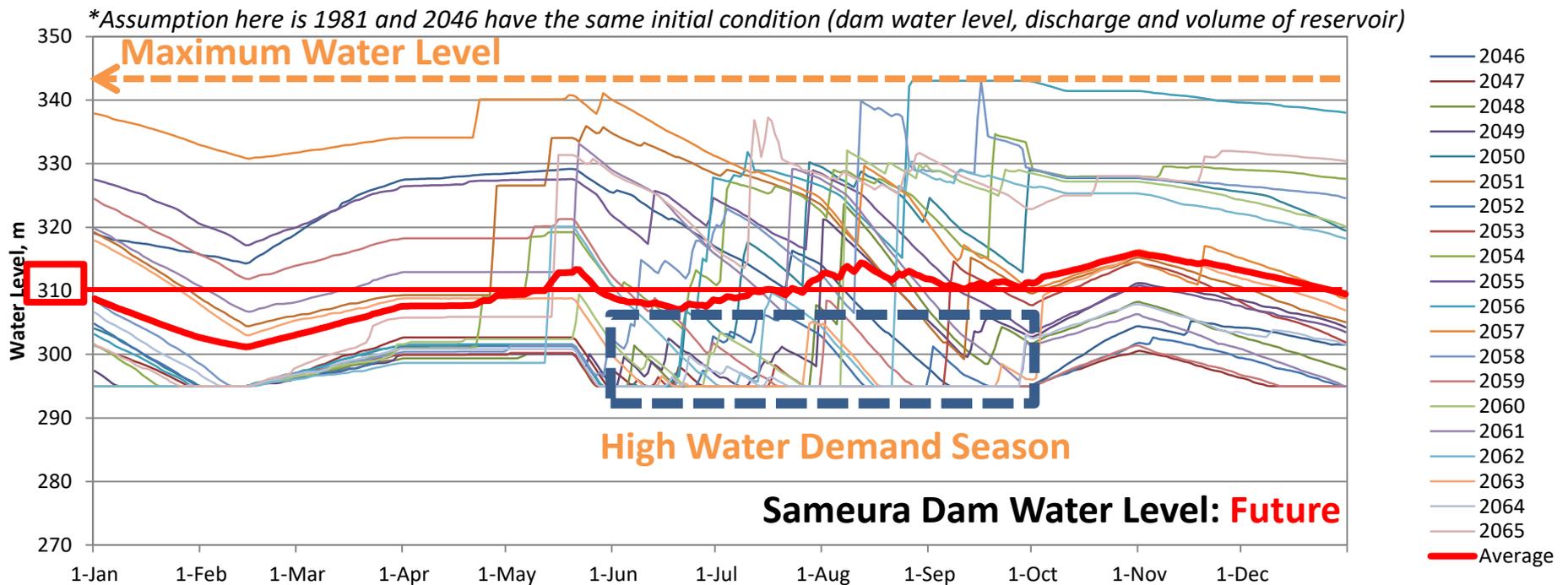
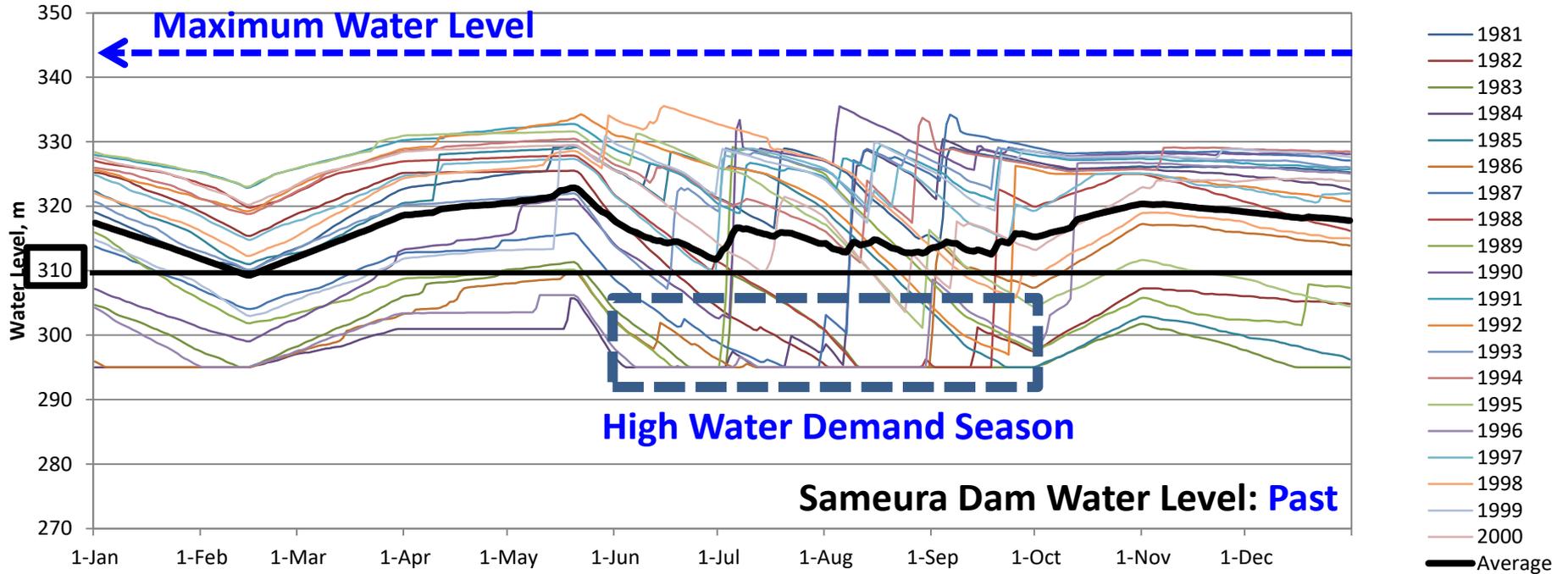


# Changes in Drought at the Sameura Dam

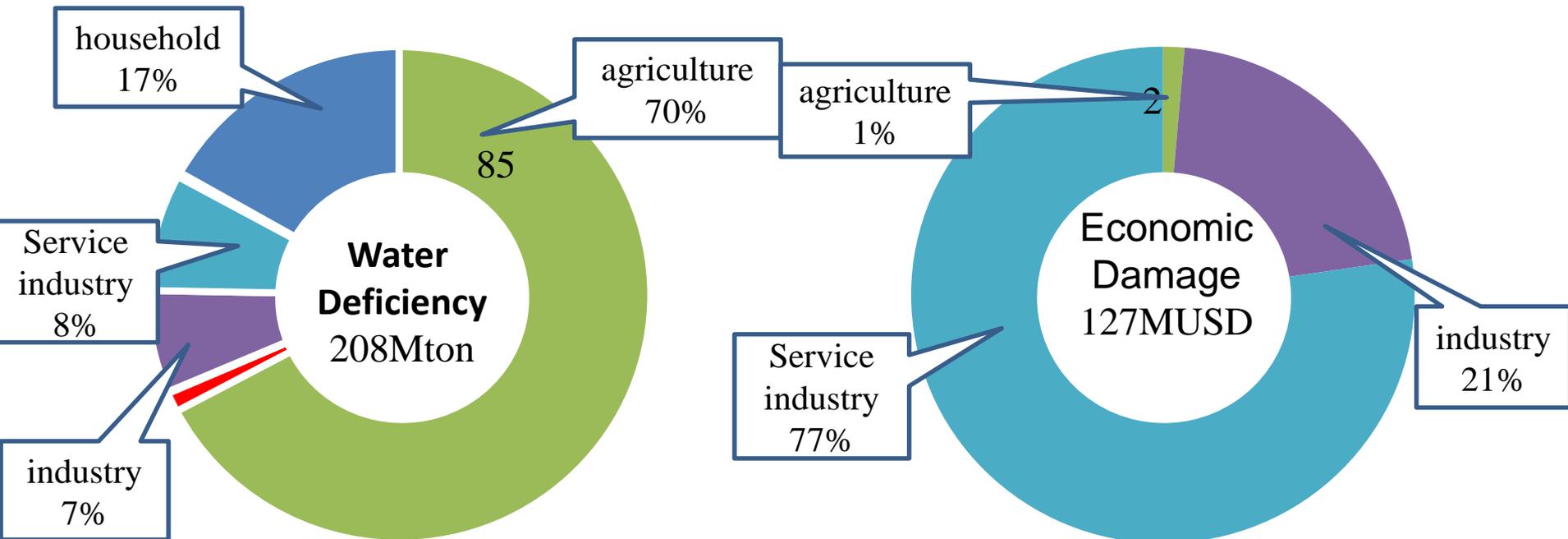
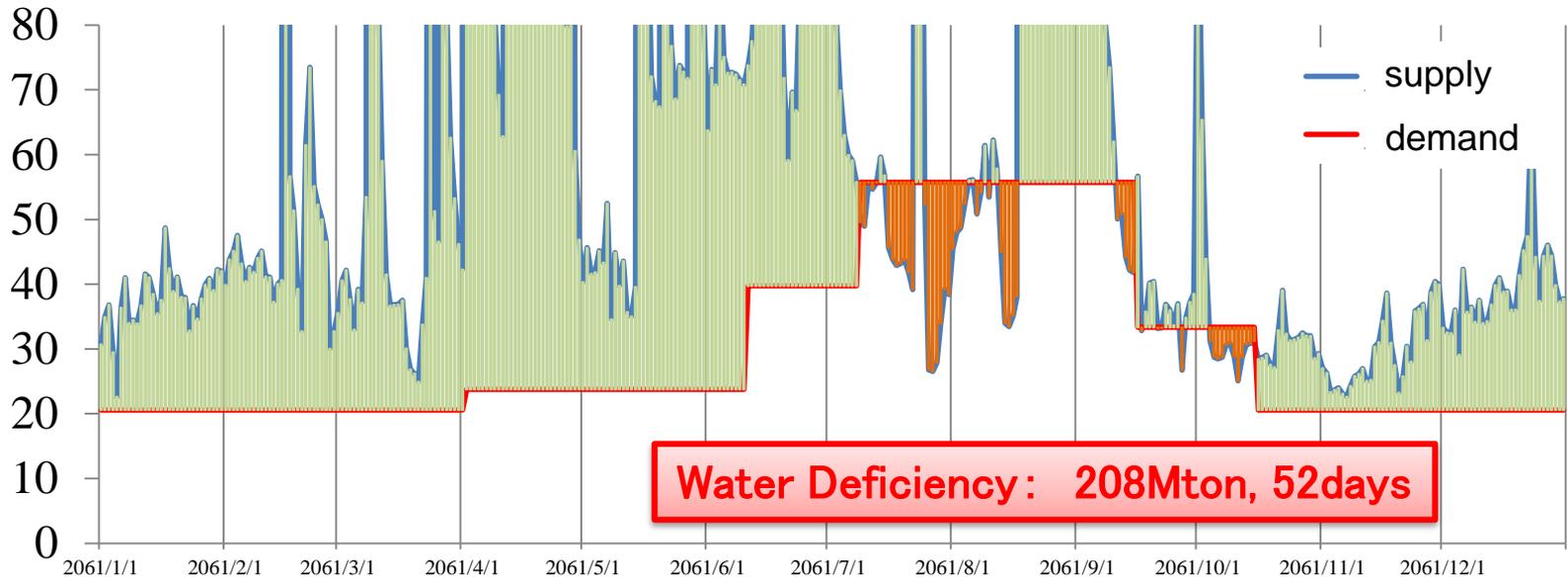
(blue: drought decrease red: drought increase)

## Severe Drought: Likely

Selected Models	20 Years Averaged Drought Discharge			10 Years Probability Drought Discharge	
	past	future		past	future
CSIRO_0	2.96	3.00	↑	1.21	1.10
CSIRO_5	2.97	3.00	↑	1.21	1.10
INGV	3.23	3.13	↓	1.10	1.24
IAP	3.51	3.57	↑	1.22	1.26
MIROC_H	4.35	3.18	↓	1.28	1.22
MIROC_M	3.14	3.17	↑	1.22	1.21
GFDL	4.77	3.8102	↓	1.26	1.26
MRI	3.14	3.17	↑	1.28	1.23



# Takamatsu City: Projected Most Severe Drought



**- Water Deficiency: 2.1Mton**

**- Economic Damage: 127MUSD**

Options of Climate Change Adaptation		Reduced Drought Volume (Mton)	Economic Option Effect (MUSD)	Cost (MUSD)	Reduced Economic Damage (MUSD)
Development of New Water Resources	Dam A	<b>1.12</b>	<b>68.3</b>	<b>3.7</b>	<b>62.7</b>
	Dam B	<b>1.00</b>	<b>61.0</b>	<b>5.0</b>	<b>70.9</b>
	desalinization	<b>1.30</b>	<b>79.5</b>	<b>31.7</b>	<b>79.1</b>
Effective Use	Recharge, Retention and Reuse (3R)	<b>0.98</b>	<b>67.1</b>	<b>1.5</b>	<b>61.3</b>
	Rain Water Harvesting (penetration: 30%)	<b>0.32</b>	<b>19.7</b>	-	<b>(107.2)</b>
	(penetration: 100%)	<b>1.08</b>	<b>65.8</b>	-	<b>(61.1)</b>
Water-Saving	Water-Saving Device (penetration: 30%)	<b>0.32</b>	<b>19.2</b>	-	<b>(107.7)</b>
	(penetration: 100%)	<b>1.05</b>	<b>64.1</b>	-	<b>(62.8)</b>
	Raising water-rate	<b>0.22</b>	<b>13.3</b>	-	<b>(113.6)</b>

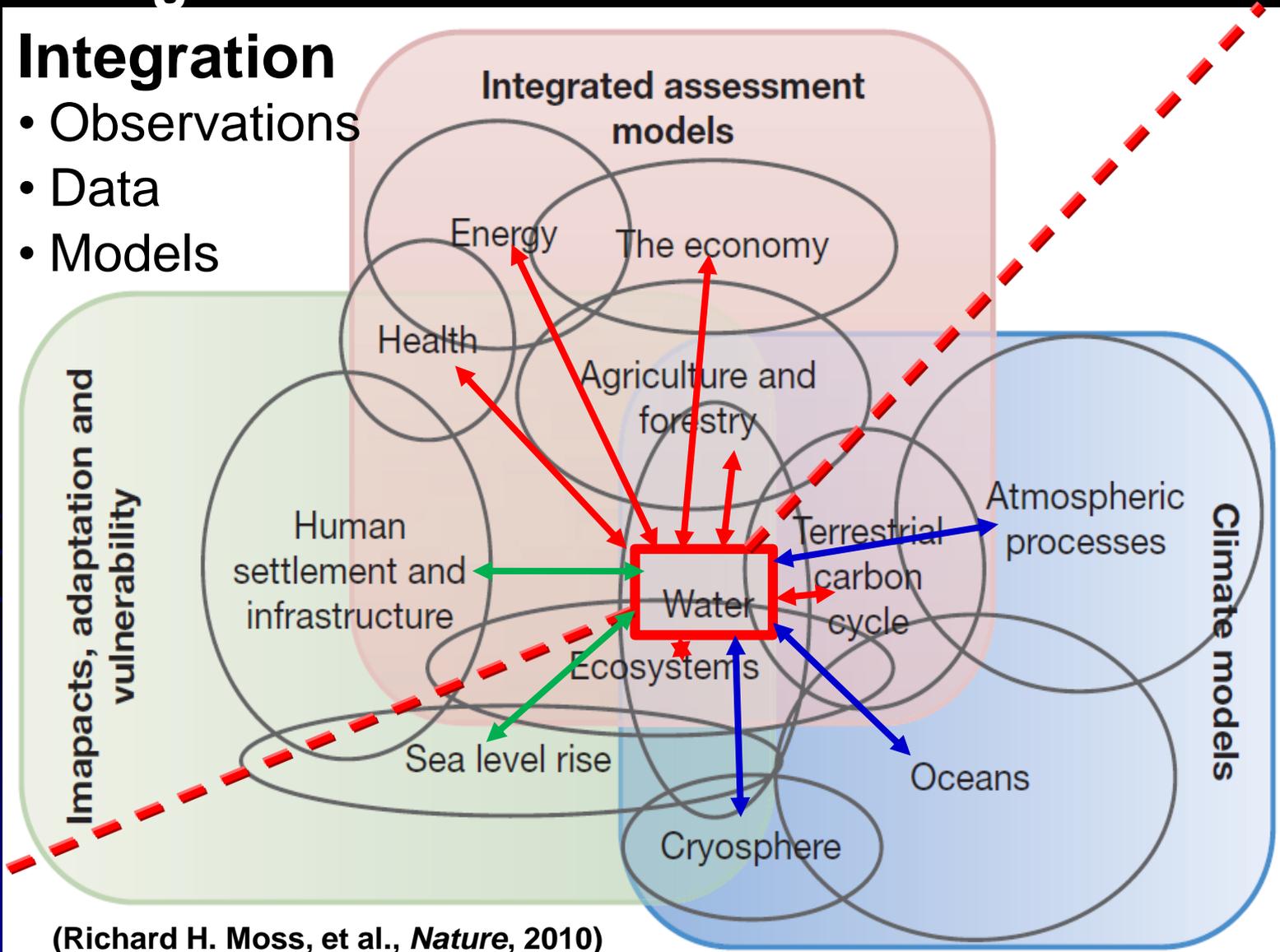
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**Sustainable Development**

How to promote to establish and strengthen a flood (IWRM) platform as a part of national platform?

How to confirm the IFI implementation plan?

1. To engage advanced S & T

- Data integration, in-situ, satellite and models
- Integrated assessment and change identification
- Co-design and co-production among policy-makers, practitioners and citizen society

2. To learn from Regional Knowledge and Experiences:

- Identify one or two target(s)
- Establish a senior level discussion framework in collaboration with IFI Partners

3. To leverage high level discussions:

- High Level Panel on Water
- New Water Decade, ““Water for Sustainable Development”

4. To collaborate with development agencies and donors:

- Capacity building framework: knowledge partnership function
- Funding steps: demonstration funding for preparation for full operation projects
- Mainstreaming DRR, strengthening DRR governance

## **How to promote to establish and strengthen a flood (IWRM) platform as a part of national platform?**

There is a need to link with the National Disaster Management Mechanisms ? these mechanisms normally include standard operating procedures under different levels of floods. A key component of IWRM upward spiral approach is stakeholder participation in decision making processes at all levels. Perhaps national IFI committees in pilot countries linked with existing UNESCO-WMO and other water related coordination mechanisms.

## **How to confirm the IFI implementation plan?**

We need confirmed intentions and work plans of the pilot countries for a given period with clearly identified milestones and deliverables to help prepare a regional plan. The national stakeholders need to sign off on the country plans and overall IFI Implementation plan could be endorsed by the partners through an MOU under the existing IFI framework.

**Thank you, Prof. Shahbaz Khan!**