

Operationalizing IWRM to Build Water Security: *What are Lessons for Food Systems, Climate Change & Inclusive Growth*

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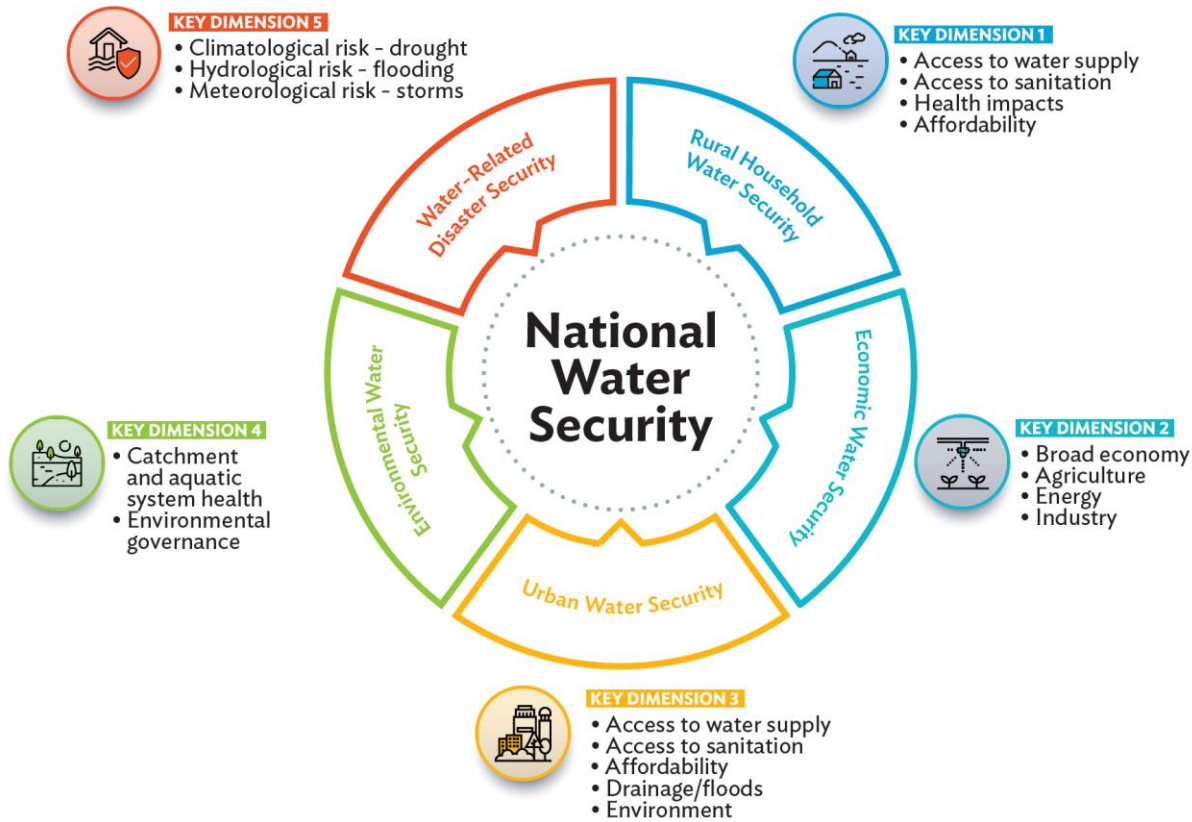


Outline

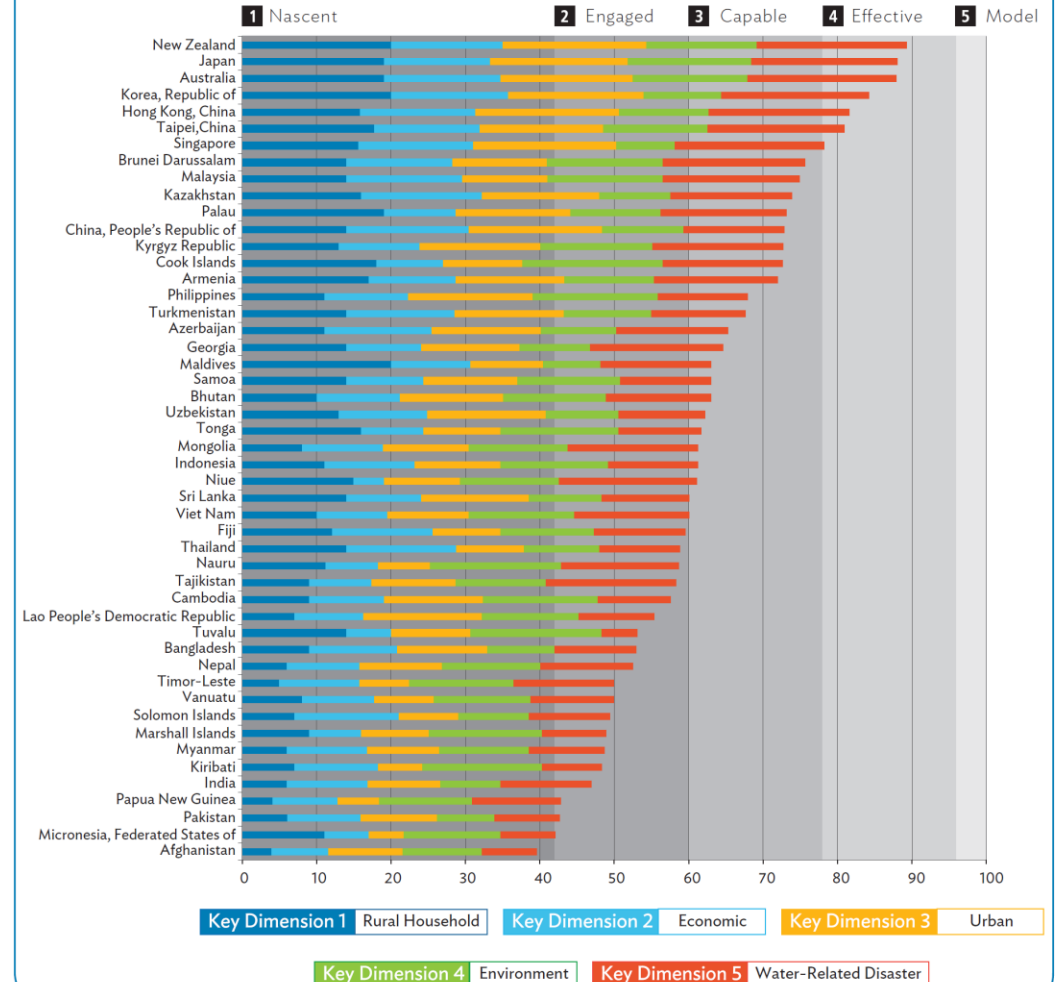
- Framing the Challenge – Building Water Security in Asia-Pacific
- IWRM – Concept and Critique
- Updated Pillars for IWRM – Examples
- Lessons for 2030 Agenda
- Recommendations

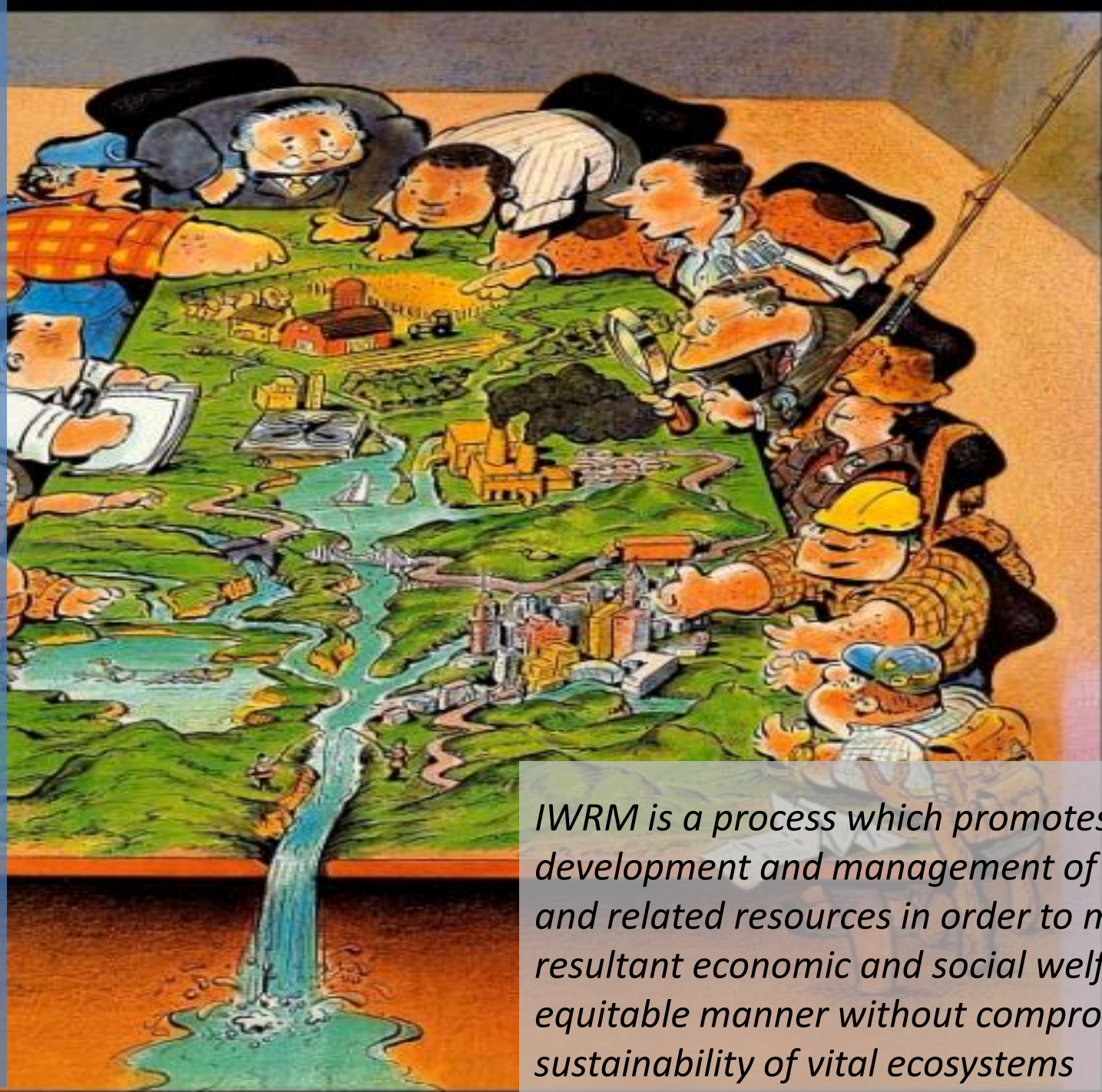
Framing the Challenge – Building Water Security in Asia-Pacific

Key Dimensions of National Water Security



National Water Security Index



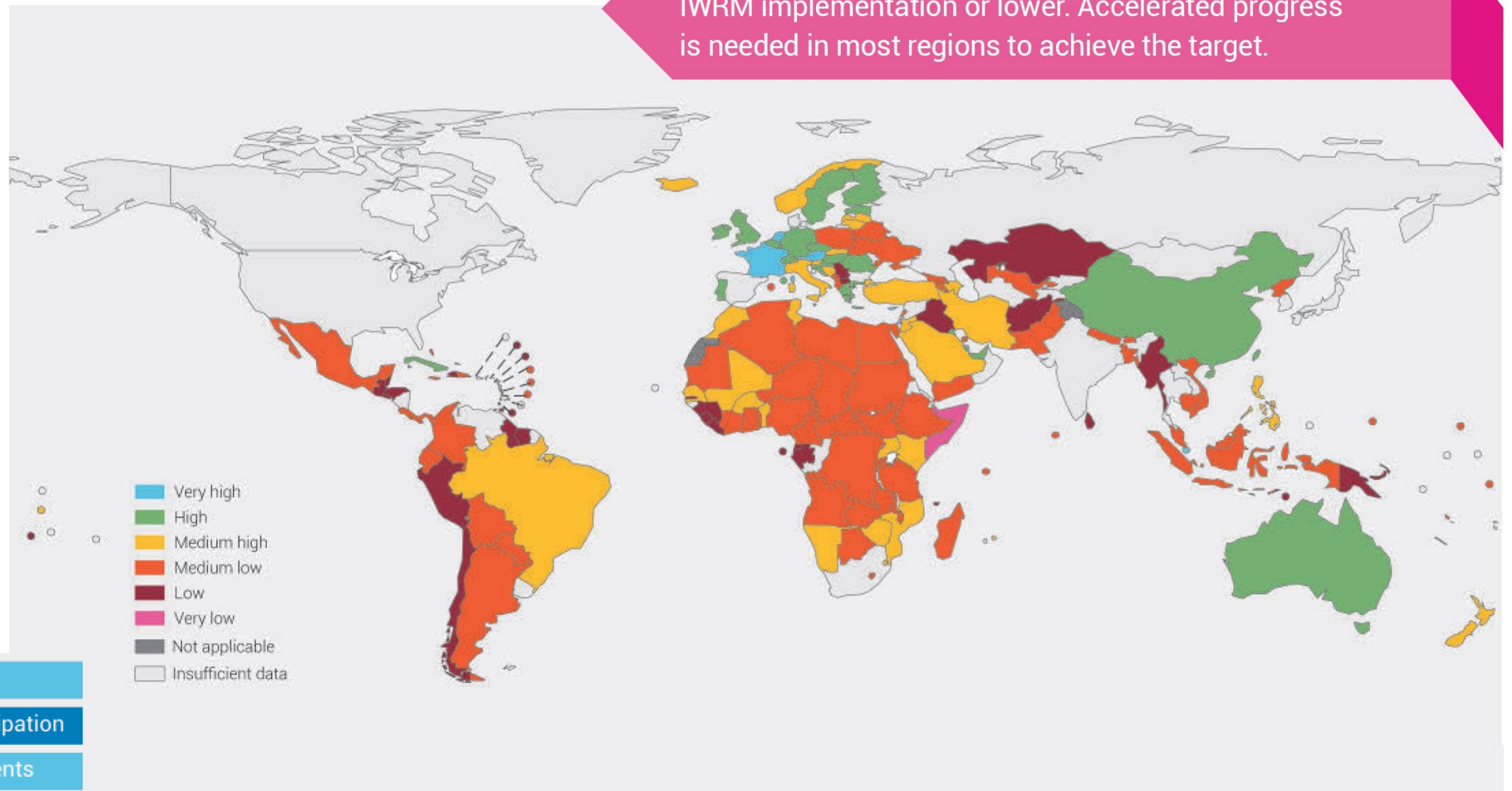


IWRM is a process which promotes coordinated development and management of water, land and related resources in order to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems

IWRM in Asia-Pacific

Status of IWRM implementation in countries in 2017/2018
SDG 6 Synthesis Report 2018

In 2017/2018, 62 per cent of countries reported medium-low IWRM implementation or lower. Accelerated progress is needed in most regions to achieve the target.



1. Policy, laws, plans
2. Institutions and participation
3. Management instruments
4. Financing

Data source: United Nations Environment Programme-DHI Centre (2018).

The [Original] Pillars of IWRM

1. A strong enabling environment – policies, laws & plans
2. A clear, robust and comprehensive institutional framework
3. Effective use of management & technical instruments – assessments, data, allocation, pollution control
4. Sound investments in water infrastructure with adequate financing available

Adaptive governance for change (Elinor Ostrom)...

- Decentralised, self-organising institutions
- Information rich
- Empowered for decision making
- Dialogue & deliberation
- Collective action

Cathedral...

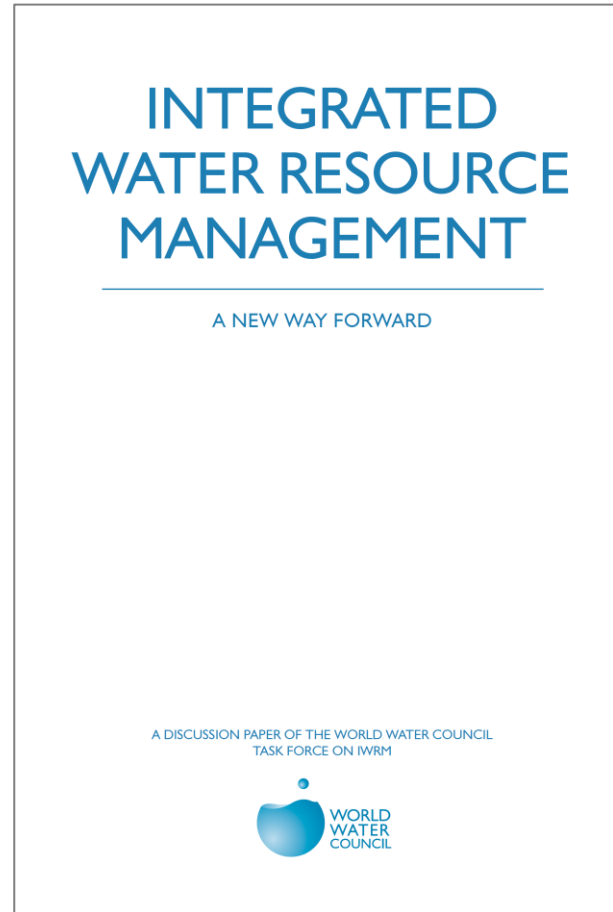


Credit – Lankford & Hepworth, 2010!

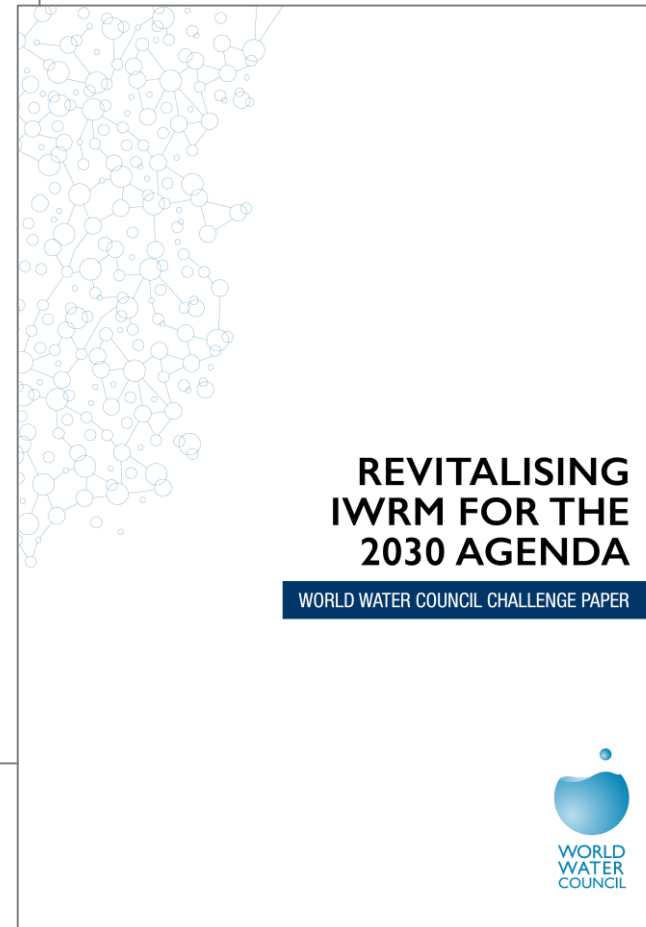


...or Bazaar

Operationalizing IWRM



Smith & Jønch-Clausen (2015)



Smith & Jønch-Clausen (2018)

The [Updated] Pillars of IWRM

1. A strong enabling environment – policies, laws & plans
2. A clear, robust and comprehensive institutional framework
3. Effective use of management & technical instruments – assessments, data, allocation, pollution control
4. Sound investments in water infrastructure with adequate financing available
5. *Effective strategies for dynamically catalysing & managing change at all levels*
6. *Operating mechanisms that bridge strategy setting and problem solving*

1. A strong enabling environment – policies, laws & plans

Figure 24: Water Governance Principles of the OECD



Source: Organisation for Economic Co-operation and Development (OECD). 2015. *OECD Principles on Water Governance*.

Figure 25: Regional Results Survey on Water Governance Principles of the OECD

	Principles	Central and West Asia	East Asia	Pacific	South Asia	Southeast Asia	Advanced Economies
Effectiveness	1. Roles and responsibilities	■	■	■	■	■	■
	2. Appropriate scales	■	■	■	■	■	■
	3. Policy coherence	■	■	■	■	■	■
	4. Capacity authorities	■	■	■	■	■	■
Efficiency	5. Data and information	■	■	■	■	■	■
	6. Financial resources	■	■	■	■	■	■
	7. Regulatory frameworks	■	■	■	■	■	■
	8. Innovative practices	■	■	■	■	■	■
Trust and engagement	9. Integrity	■	■	■	■	■	■
	10. Stakeholder engagement	■	■	■	■	■	■
	11. Trade-offs	■	■	■	■	■	■
	12. Monitoring and evaluation	■	■	■	■	■	■

Legend:

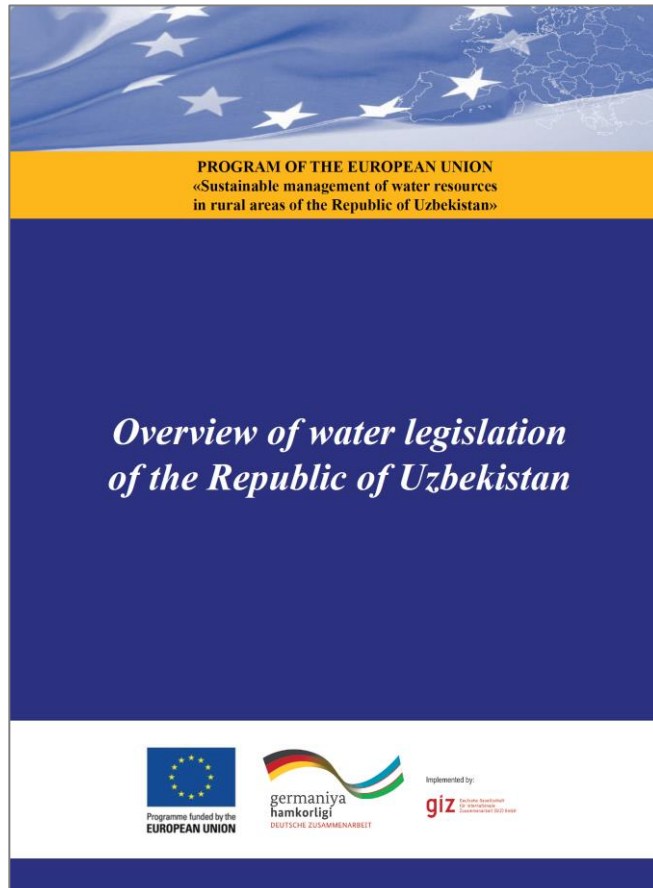
- in place and functioning
- in place but only partly implemented, partly not in place
- not in place
- not sufficient data to justify average for the region

Sources: Asian Development Bank and Organisation for Economic Co-operation and Development. 2015. *OECD Principles on Water Governance*.

1. A strong enabling environment – policies, laws & plans

National Policy Framework for Water Governance and IWRM, Uzbekistan

Implementing partners: GIZ, IWMI, UBA, CREA / Funding: EU



Policy Packages (e.g.)

- Amendments to Law on Water and Water Use
- Formalized coordination mechanisms
- Sector strategies
- Institutional mandates refined and delineated



Results

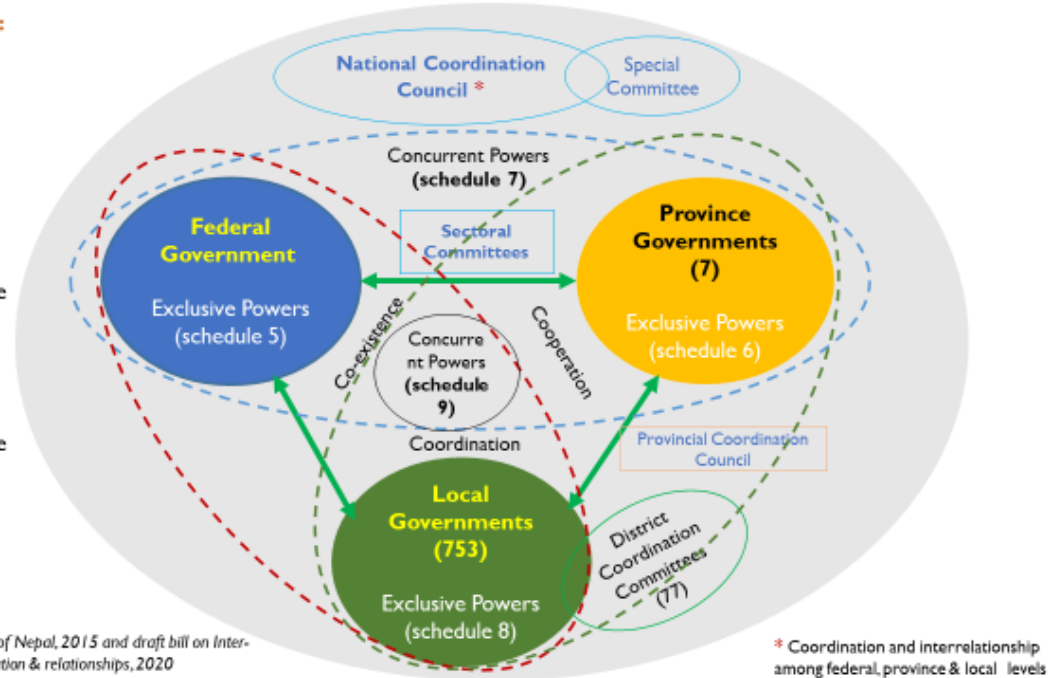
- National Working Group: MSP to facilitate policy reforms
- Data exchange between State agencies
- Basin management plans for 2 basins & SEAs
- Capacity development for policy makers
- Data technologies, economic assessments, climate change projections

2. A clear, robust and comprehensive institutional framework

Federalization of governance in Nepal

Federal Nepal:

- **3 levels** of government
- **761** governments
- Local governments with exclusive power on water supply
- All levels of government with exclusive & shared powers on water resources



Source: Constitution of Nepal, 2015 and draft bill on Inter-governmental coordination & relationships, 2020

* Coordination and interrelationship among federal, province & local levels

Opportunity now: decentralized and inclusive policies and institutions for water management

IWMI-led analysis of needs – e.g. inclusive irrigation:

- Delineate roles and responsibilities among 3-levels of government
- Articulate basin-level policies at federal level with **institutional cooperation mechanism** across govts.
- Enable **decentralization of irrigation** development and institutions to better address small-scale farmers
- Enhance **GESI sensitization** in all layers
- Complement institutional change with **investments targeted at small-scale and women farmers** – for water access, technologies, finance, skills

3. Effective use of management & technical instruments – assessments, data, allocation, pollution control

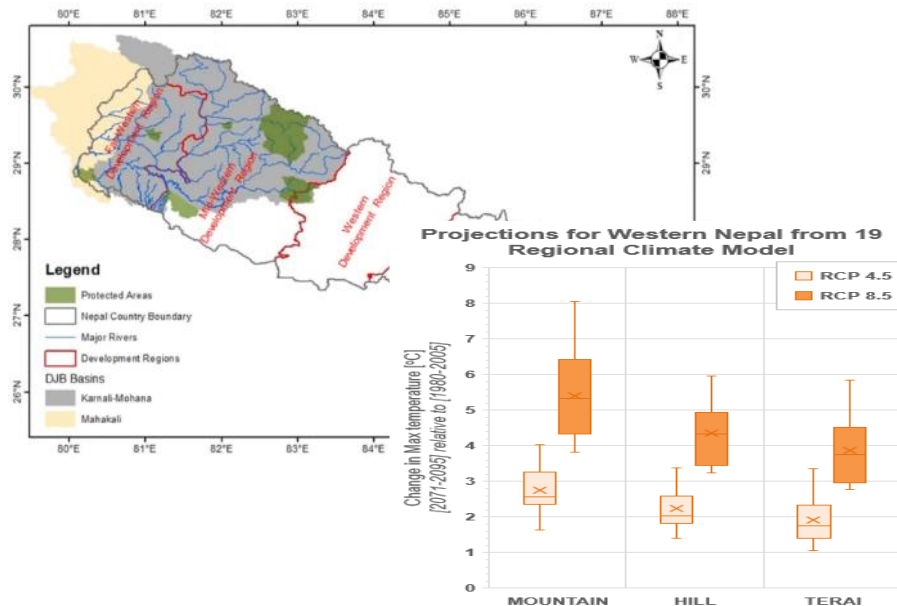
Key analysis

- Future climate projection
- Climate change impact assessment
- Evaluation of various water use sectors, development priorities and pathways
- Environmental water requirement
- Gender and governance



Products

- **Data, tools and models** available through the IWMI water data portal <http://waterdata.iwmi.org/>;
- **Integrated hydrological, socio-economic and livelihoods** analysis at basin level
- **Water governance and GESI** assessments and tools

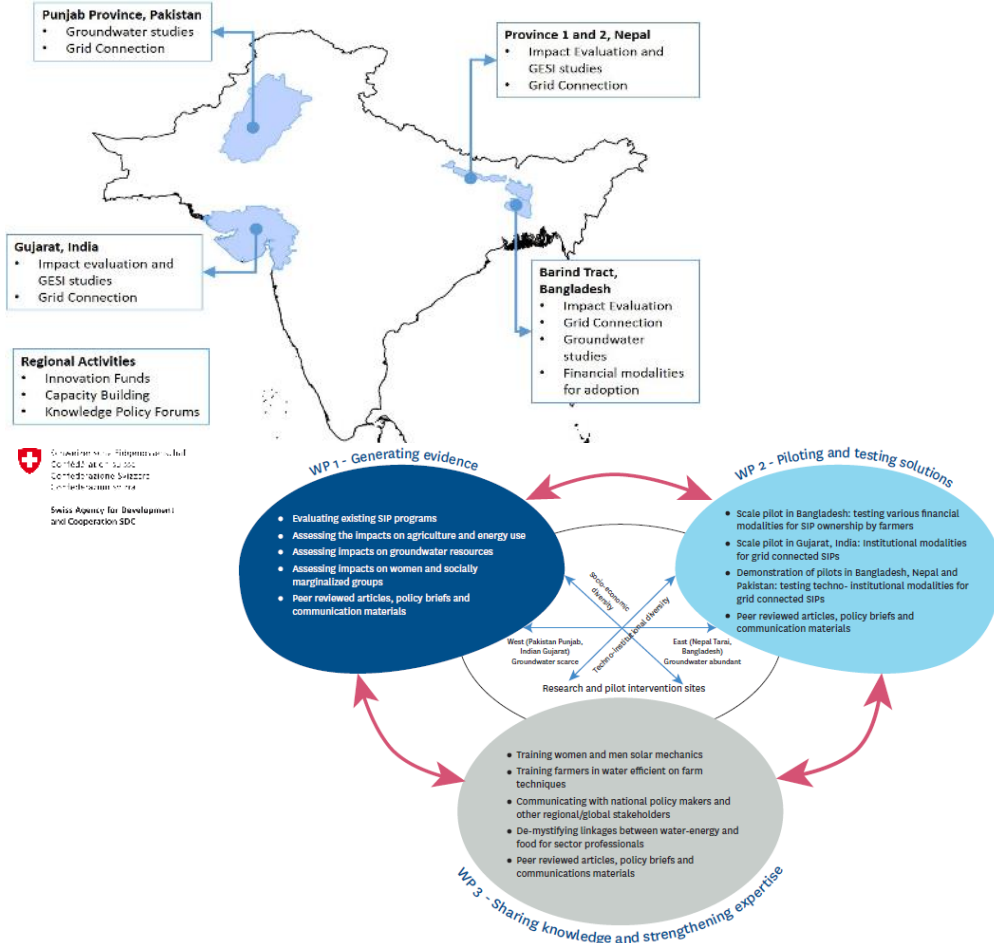


Applications to decision making

- **Irrigation Master Plan** developed by the Government of Nepal
- **E-flows Assessment** applied in Irrigation Master Plan
- **Local government planning and action** on agricultural water management and irrigation targeting small holder farmers and climate smart technology such as solar powered irrigation technologies
- **Building water resilience** through climate adaptation

4. Sound investments in water infrastructure with adequate financing available

Solar-Powered Irrigation: SoLAR Project



Early findings from Nepal

- **High demand from farmers for SIPs**
- > 80% of SIPs are installed with the **Government's subsidy (60% grants)**
- Increasing **role of private sector** in promoting SIPs
- Even with 60% subsidy, small-holder farmers struggle with managing up-front costs as **avg. cost for an SIP is US\$ 2,180**,
- **Present subsidy policy not inclusive** of women and small-scale farmers
- **Public-private partnerships offer avenue for scaling pro-poor and gender responsive irrigation development** – but anchored at local govt. level.

5. Effective strategies for dynamically catalyzing and managing change at all levels

Ferghana Valley IWRM Project (2001-2011)

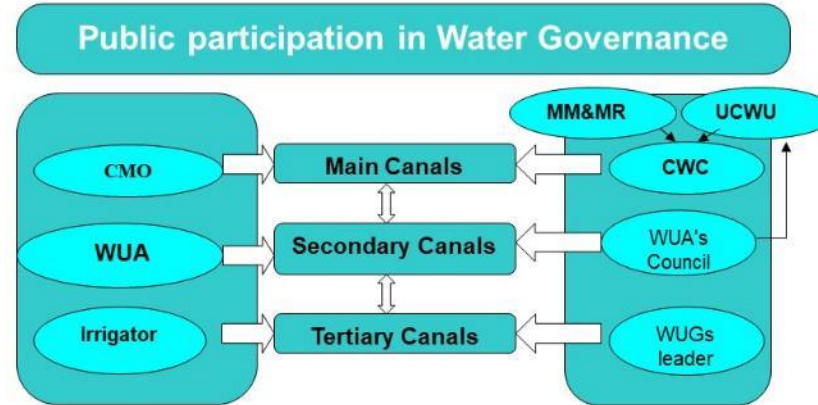
Uzbekistan, Tajikistan, Kyrgyz Republic

Actions Implemented

- Hydrographization – **basin administration**
- **Public participation** in governance
- **Water allocation** by sector – agric., drinking water, ecology, industry, etc.
- Conjunctive mgt of **water sources**
- **Information sharing**
- **Pilot demonstration** of irrigation canal management

Implementing partners: IWMI, SIC-ICWC
Funder: SDC

Facilitation & Change Management

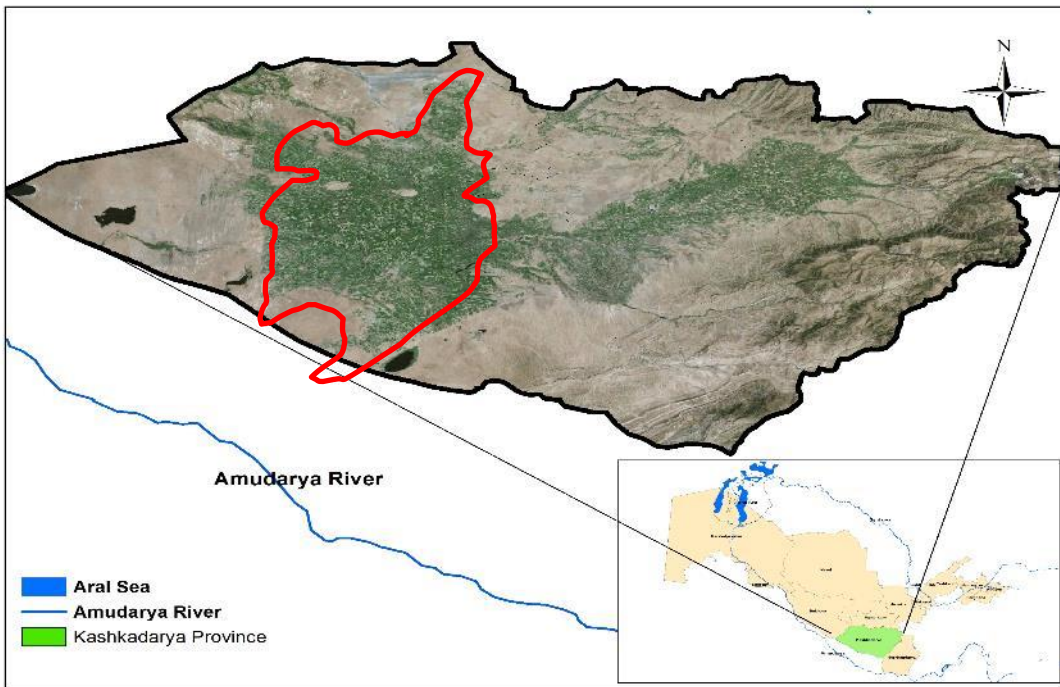


Results Achieved

- Reorganized **institutions**
- **Participatory** water allocation
- **Productivity** of irrigated agriculture increased 25-30%
- **Profitability** increased from \$270/ha to \$400/ha
- 200m m³ of **water saved** over 9 years
- Institutional framework for **transboundary cooperation** in tributaries

6. Operating mechanisms that bridge strategy setting and problem solving

Water-Energy-Food Nexus: Lift Irrigation, Uzbekistan



Karshi Lift Irrigation Scheme

- Water lifted from Amudarya river to irrigate 335,000 ha
- Study area is a home for 1.5m people
- Pumping distance ~80km
- Pumping height ~153m

Problem

- Inefficient: low productivity in irrigation
- High energy use and costs (21% nationally)
- Water pollution impacting downstream health



Solutions

- Transfer energy subsidies to water saving technologies (drip irrigation)
- Cut water use and raise productivity
- Cut sector energy use and costs
- Reduced return flows – cut pollution and health impacts

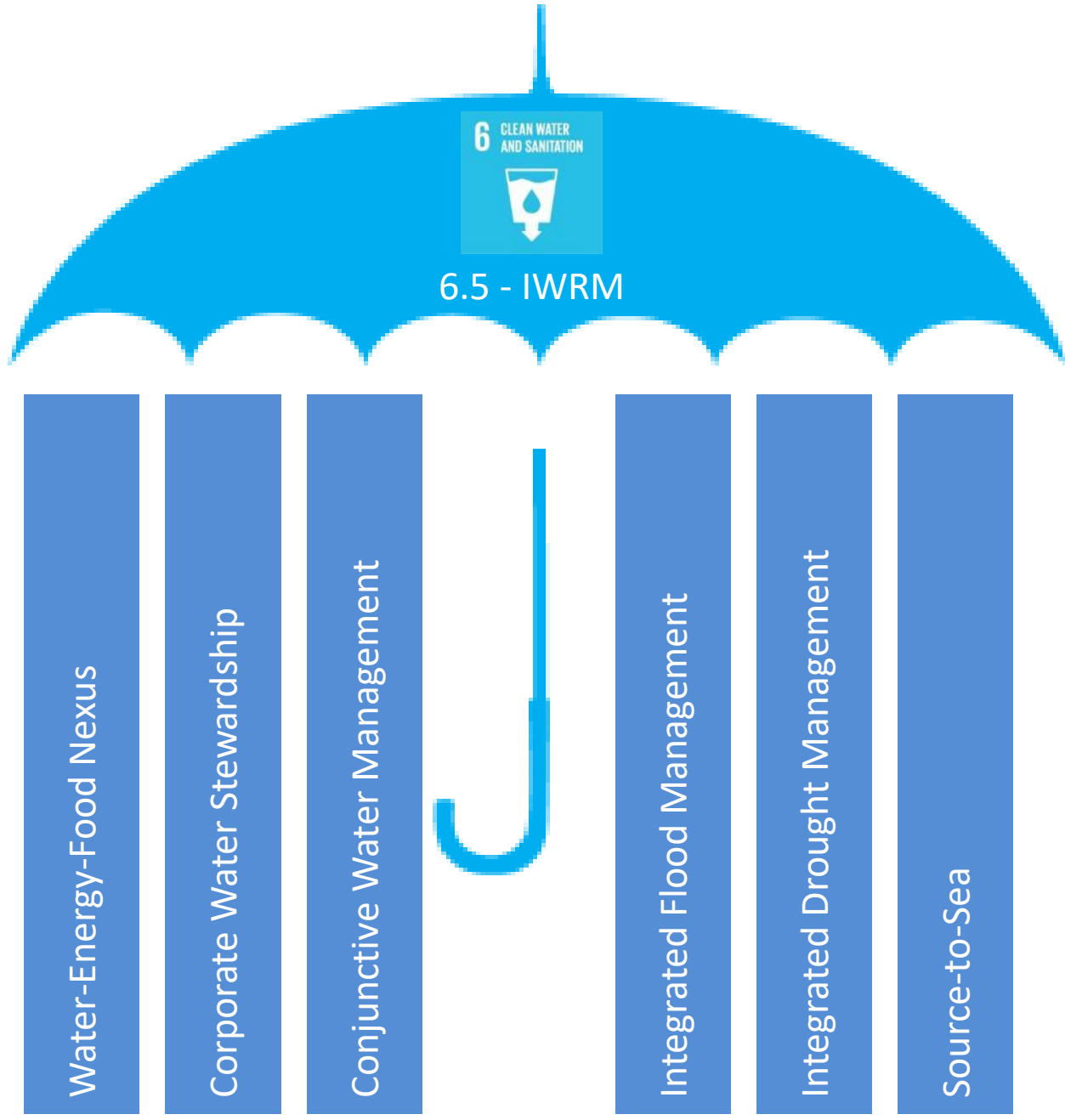
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Benefits

- ‘Rules of the game’
- Institutions – cross-scale, decentralized, participation, inclusion, enabling negotiation
- Data, information, tools – better, more ‘joined-up decisions’
- Investment – financing + made “sound”... right investment, in right place, targeting right problems
- Change management – learning, adaptive, deliberative, for complex systems change
- Operating mechanisms – problem solving under a guiding strategy, enabling collective action to solve priority problems

Operating Mechanisms



Water-Energy-Food Nexus

Corporate Water Stewardship

Conjunctive Water Management

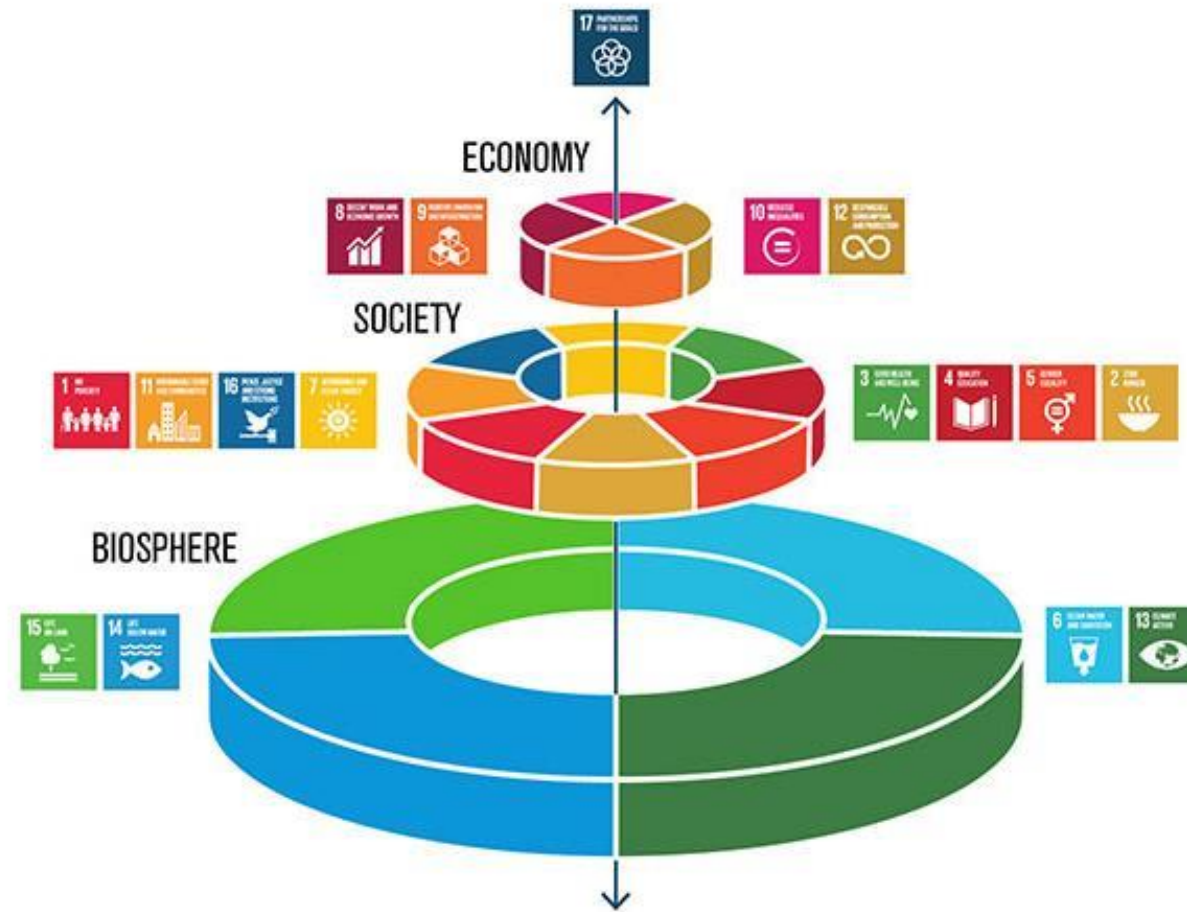
Integrated Flood Management

Integrated Drought Management

Source-to-Sea

What are the lessons for the 2030 Agenda and the mega-challenges?

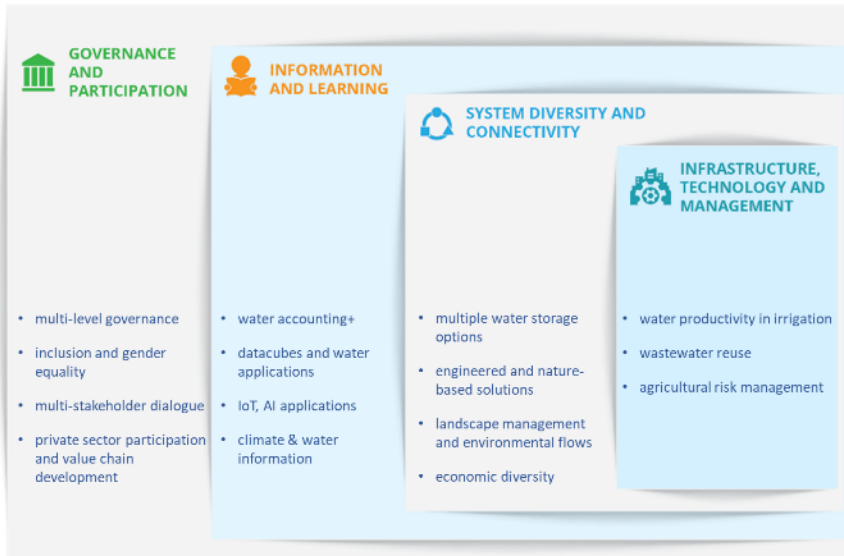
Interlinkages in the SDGs



Food Systems Transformation



Climate Change Resilience



Catalyzing Inclusion and Gender Equality



IWMI Gender & Inclusion Strategy 2020-2023

Conclusions – and Recommendations

- IWRM continues to be the cornerstone of building water security – but it needs to be made operational
- Introducing practical pillars with a problem-solving focus helps to align
 - competing narratives for water management
 - water solution for food systems, climate change resilience, inclusion and equality, etc.
- Making IWRM more practical means combining:
 1. High-level policy & strategy setting to put in place agreed high-level policies and goals
 2. Pragmatic problem solving that complements strategy setting to meet stakeholder priorities at all levels
 3. Operating mechanisms that bridge strategy setting and problem solving – that bring sectors together to work together, guided by strategy but focused on action
 4. Monitoring of progress, goals & targets – using data tools for transparency, trust and accountability



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