

# Basic elements of Effective Water Resources Management

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# EFFECTIVE WATER RESOURCES MANAGEMENT

When the outcome “at the bottom”  
reflects the priorities set “at the top”

*An observable fact...*

# GOOD WATER RESOURCES MANAGEMENT

When we approve of the outcome at  
the bottom

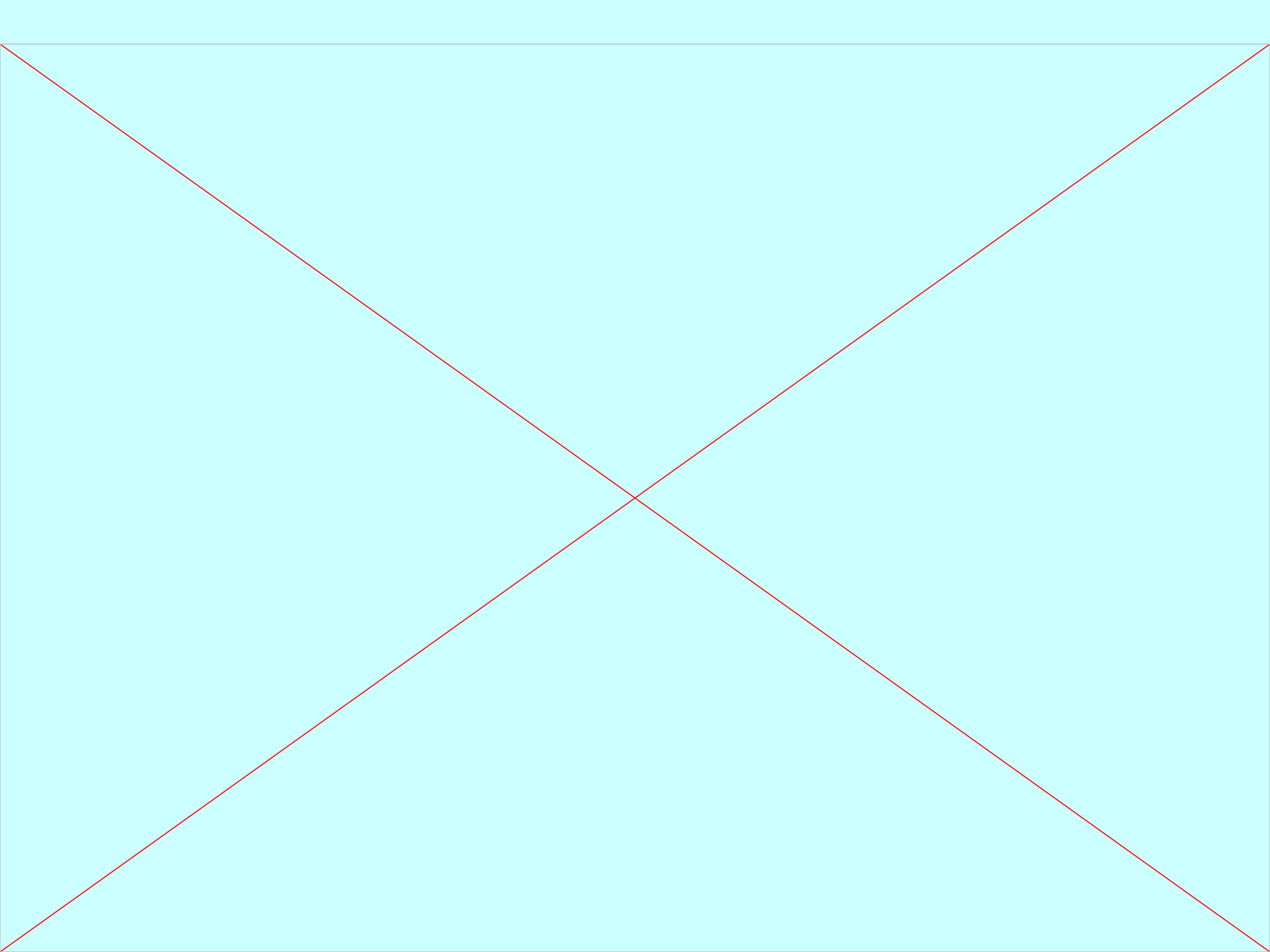
*A personal opinion...*

ABCDE...

COMPONENTS OF AN EFFECTIVE  
PROCESS

*NOT*

RECOMMENDATIONS FOR THE  
OUTCOME



# RIO+20!!

109. We recognize that a significant portion of the world's poor live in rural areas, and that rural communities play an important role in the economic development of many countries. We emphasize the need to revitalize the agricultural and rural development sectors, notably in developing countries, in an economically, socially and environmentally sustainable manner. We recognize the importance to take the necessary actions to better address the needs of rural communities through, *inter alia*, enhancing access by agricultural producers, in particular small producers, women, indigenous peoples and people living in vulnerable situations, to credit and other financial services, markets, secure land tenure, health care and social services, education and training, knowledge, and appropriate and affordable technologies, including for efficient irrigation, reuse of treated waste water, water harvesting and storage. We reiterate the importance of empowering rural women as critical agents for enhancing agricultural and rural development and food security and nutrition. We also recognize the importance of traditional sustainable agricultural practices, including traditional seed supply systems, including for many indigenous peoples and local communities.

Perhaps we need something  
simpler...





ABCDE OF WATER...

# The components

- Understanding how much water is available

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- Precipitation
- Hydrology/hydrogeology
- Committed inflows, committed outflows to specified uses

*Scarce? Plentiful? Variable? Seasonal?...*

# The components

- Understanding how much water is available
- **Prioritizing Allocation**

## •Prioritizing Allocation

*A **political** process involving:*

*Sectoral priorities (food security, poverty)*

*Economics (productivity, growth)*

*Special interest groups (wetlands, fish...)*

*Historical rights, cultural heritage...*

*DEBATE, ARGUMENT, COMPROMISE...*

# The components

- Understanding how much water is available
- Prioritizing Allocation
- **Setting Rules**

## •Setting Rules

*Translation of the priorities into laws, regulations and procedures*

- Surface water rights
  - Drought
  - Flood
- Groundwater rights
- Emergencies

# The components

- Understanding how much water is available
- Prioritizing Allocation
- Setting Rules
- Assigning responsibility



- **Assigning responsibility**

- Basin Management Authorities (national, international)
- Regional agencies
- Project operators (municipal, hydro, irrigation)
- Farmer organizations
- *Note that “intersectoral” competition can occur at every level!*

# The components

- Understanding how much water is available
  - Prioritizing allocation
  - Setting Rules
  - Assigning responsibility
  - Developing the facilities

- Developing the facilities

- Dams
- Canals
- Well fields
- Drainage/sewerage collection and processing

*The facilities must be able to deliver the agreed service*

## Summary

- Understanding how much water is available
  - ACCOUNTING
- Prioritizing allocation
  - BARGAINING
- Setting Rules
  - CODIFICATION
- Assigning responsibility
  - DELEGATION
- Developing the facilities
  - ENGINEERING

- - ACCOUNTING (HYDROLOGY)
  - BARGAINING (POLITICS)
  - CODIFICATION (LAW)
  - DELEGATION (INSTITUTIONS)
  - ENGINEERING

# Implications of the “Key Elements” ...

- Feedback—one intervention, many impacts
- Successful water management is multi-disciplinary
  - *Disciplines must respect each other*

# Implications of the “Key Elements” ... (2)

There is no unique “right” outcome

Government *always* has “stewardship” functions that cannot be delegated



ACCOUNTING

BARGAINING

CODIFICATION

DELEGATION

ENGINEERING

FEEDBACK...



ACCOUNTING

BARGAINING

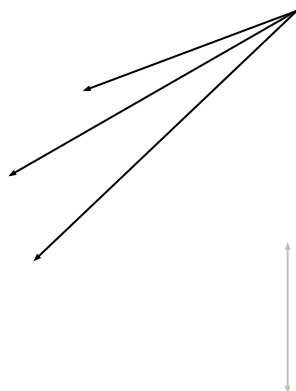
CODIFICATION

DELEGATION

ENGINEERING

FEEDBACK...

Other people are trying to use  
ABCDEF





# PILLAR I : RELIABILITY of IRRIGATION WATER

NO	SUBSTANCE OF MODERNIZATION	PHASE					
		ACCOUNTING	BARGAINING	CODIFICATION	DELEGATION	ENGINEERING	FEEDBACK
1	Water use right	Political right	Bargaining process among stakeholders	Setting up Government rule on water right	Implementation of Government rule on water right	Information and communication Technology , ICT	Participatory level
2	Water Supply and Water Saving	Water balance study	Agreement among stakeholder	Adjustment with stated pattern of water management in the basin level	Basin manager	ICT	
3	Water availability	Study on calculation of water consumption for both irrigation and non irrigation sector	Agreement among stakeholder In the meeting of basin water management coordination team based on water right rule	Rule of chairman of basin water management coordination team	Basin manager	Setting up water allocation model	Monitoring and evaluation
4	Watershed sustainability	Study on calculation of watershed capacity to support water supply	Agreement between stakeholder and asset owner in the watershed	Some rules on watershed sustainability , agrarian, space planning	Water resources council as coordinator  Watershed manager as implementer	Watershed Asset Management  Consistency between space planning and land use	Monitoring and evaluation

Thank you...