

**International Conference on IWRM**  
Management of Water in a Changing World:  
lessons learnt and innovative perspectives  
*Dresden, 12-13 October 2011*

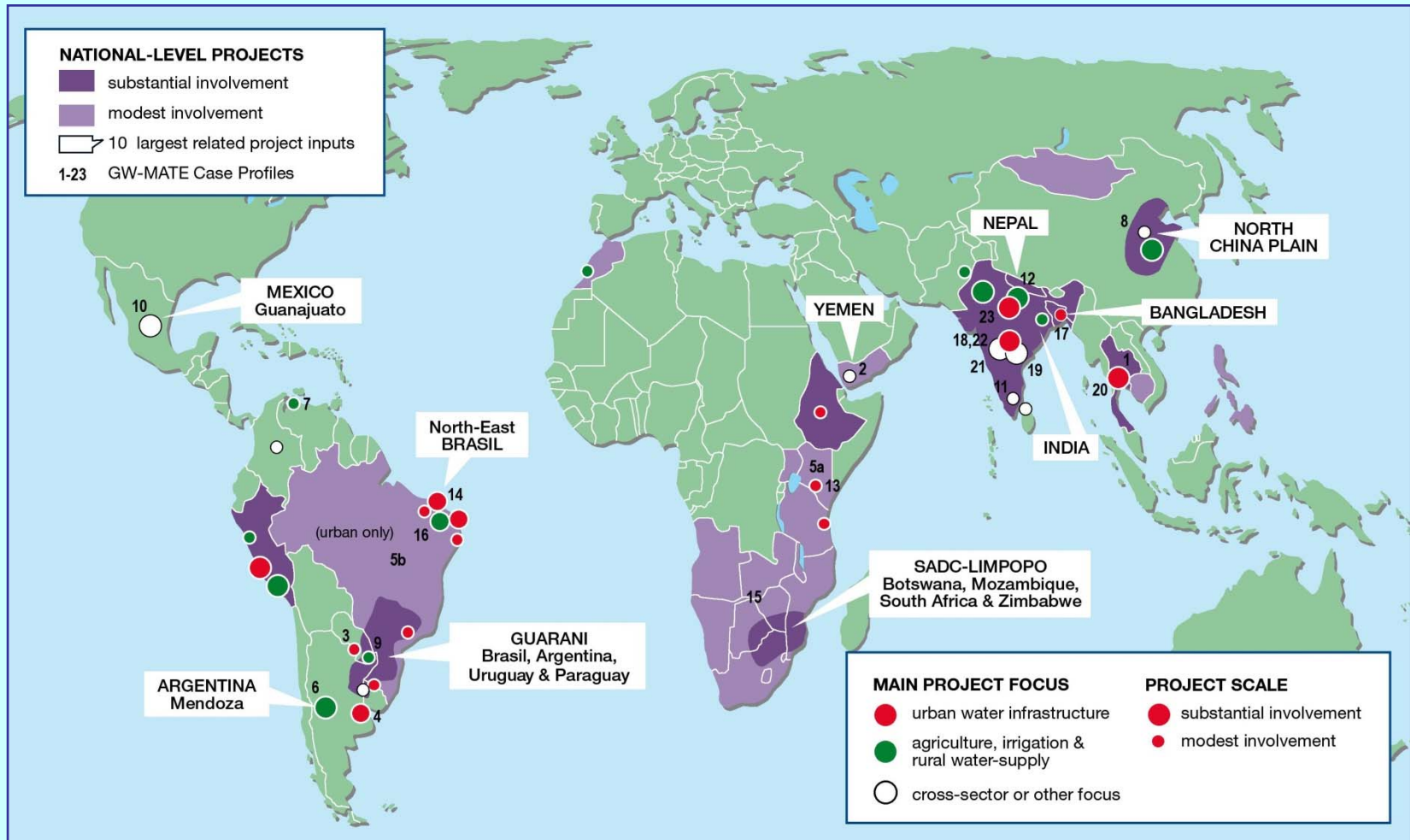
**GROUNDWATER GOVERNANCE**  
**understanding the resource and proposing**  
**implementable solutions**

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**ACKNOWLEDGMENT** GW-MATE, World Bank/GWP program 2000-2010. Authors were core team members with Stephen Foster as Director



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- **Ethics** in Water Use and the ‘Tragedy of Commons’
- **Pragmatic** Framework for GWG
- Stakeholder **Participation** and the Critical Role of **I&C**
- 20 ‘Top’ **Benchmarking** Criteria & the **Jigsaw Puzzle** of GWG
- Institutional **Impediments** to GWG in Federal Countries
- GWG is **not Isolated**
- The role of **CD** in Addressing the ‘**SUR**’ Challenge

# ETHICS IN WATER USE

the reason for 'saving water' in a Mexican Sports Club



Shouldn't the current message

Please let us save water, because:

*tomorrow **you** will need the drop you waste today'*

be changed to

*today **your neighbor** needs the drop you waste ?*

# THE 'TRAGEDY OF THE COMMONS'

## & 2009 Nobel Laureate Elinor Ostrom's Principles

1968 Garret  
Harding: in  
'common pool  
resources'  
**what one  
resource user  
does can  
affect what is  
available to  
other users**

- clearly-defined **boundaries**
- community rights formally **recognized**
- arrangements for **collective** decision making
- **nested stakeholder groups** in larger systems
- **monitoring** with stakeholder involvement
- graduated **sanctions** for not complying
- low-cost **conflict-resolution** mechanisms

# THE CONCEPT OF GROUNDWATER GOVERNANCE

exercise of appropriate **authority** and promotion of responsible **collective action** to ensure **sustainable and efficient** utilization of groundwater resources for the **present and future benefit** of humankind and dependent ecosystems

# GROUNDWATER MANAGEMENT & PROTECTION

progress through World Bank operations and beyond during 2000-10

COMPILED BY : Stephen Foster, Catherine Tovey & Gill Tyson



THE WORLD BANK



Global Water  
Partnership



WATER  
PARTNERSHIP  
PROGRAM

GW·MATE

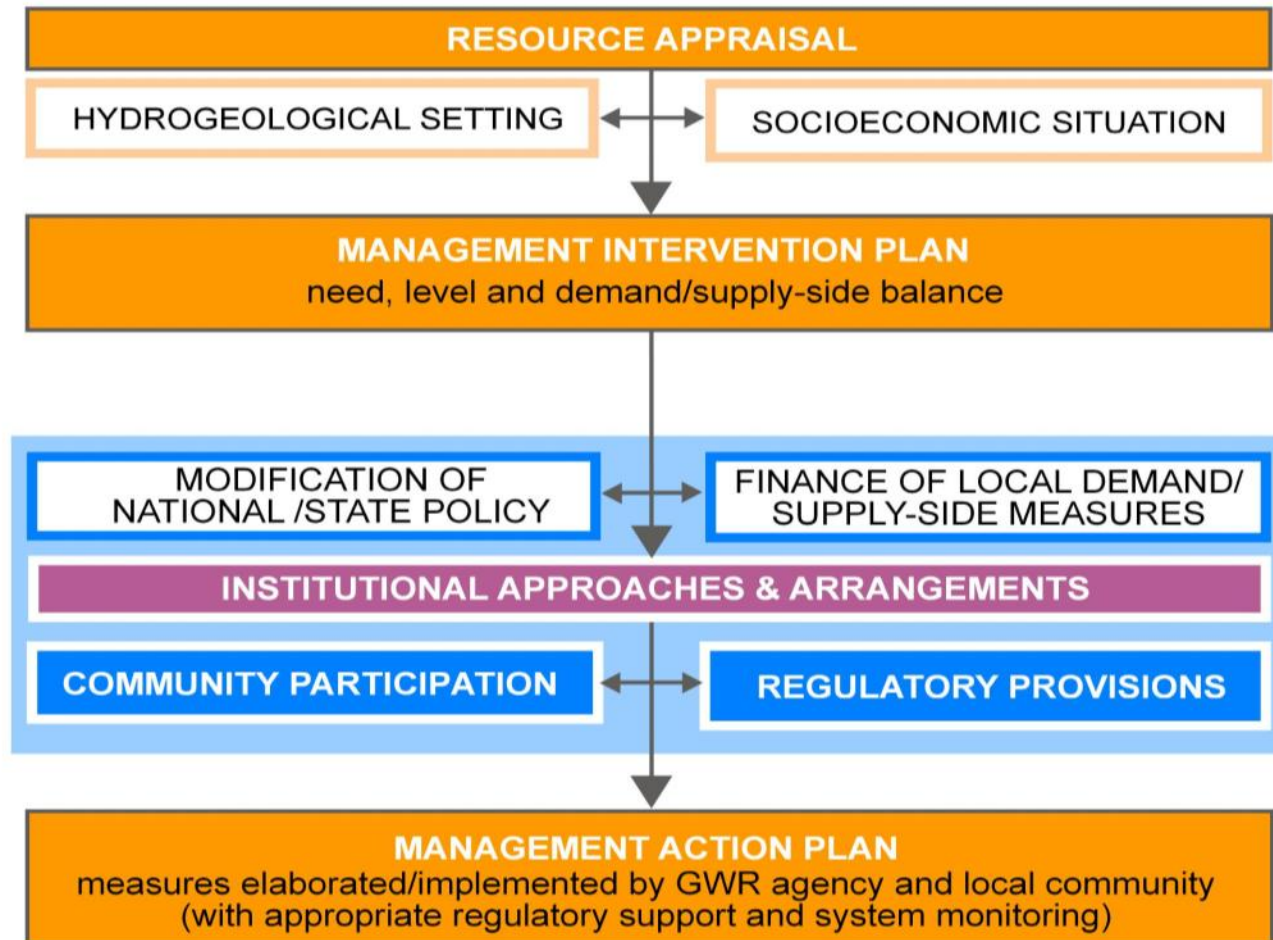
Groundwater  
Management  
Advisory Team

10th ANNIVERSARY  
EXECUTIVE OVERVIEW

## THE KEY LESSON FROM EXPERIENCE

after 10 years of on-the-ground joint work with developing nations: **'one-size-fits-all' simply inappropriate**

**'pragmatic framework'**  
to guide selection of a balanced approach –  
recognising **hydrogeologic, cultural & socioeconomic setting** defines problem and constrains solution





# STAKEHOLDER PARTICIPATION

**Without participation**

**being groundwater a decentralized resource its management is impossible,**

**but...**

**participation is not the magic bullet**

- it must be based on sound hydrogeology**
- it does not come free**
- It needs to be complemented by some regulation & economic incentives/disincentives**
- and must be enabled/nurtured by local government.**

# THE CRITICAL ROLE OF INFORMATION & COMMUNICATION

Effective I&C: key to **transparency** – and hence accountability.

Technical information on resource status, trends and vulnerabilities and **complex network** of agencies, users and other stakeholders.

In most developing nations **narrowly-focused public information offices** not well-suited to the technical complexity of groundwater and the social aspects of stakeholder participation.

A **more appropriate approach** needs to be compatible with networks, enable stakeholder feedback, and should be reviewed periodically for effectiveness.

# 20 'TOP' BENCHMARKING CRITERIA

## FOR THE EVALUATION OF GWG PROVISION AND CAPACITY

**TECHNICAL** hydrogeological maps, aquifer /GWB delineation, piezometric monitoring network, numerical management models, pollution hazard assessment and quality monitoring network

**LEGAL & INSTITUTIONAL** drilling permits and use rights; instruments to reduce GW abstraction, prevent well construction & sanction illegal well operation; abstraction charging; land-use control; levies on discharge of potential pollutants; government 'groundwater resource guardian' & AMOR

**CROSS POLICY COORDINATION** agricultural development, urban/industrial planning, compensation for GW protection, public participation & GW Management Action Plan

**OPERATIONAL** public participation & GW Management Action Plan

# THE JIGSAW PUZZLE OF GROUNDWATER GOVERNANCE

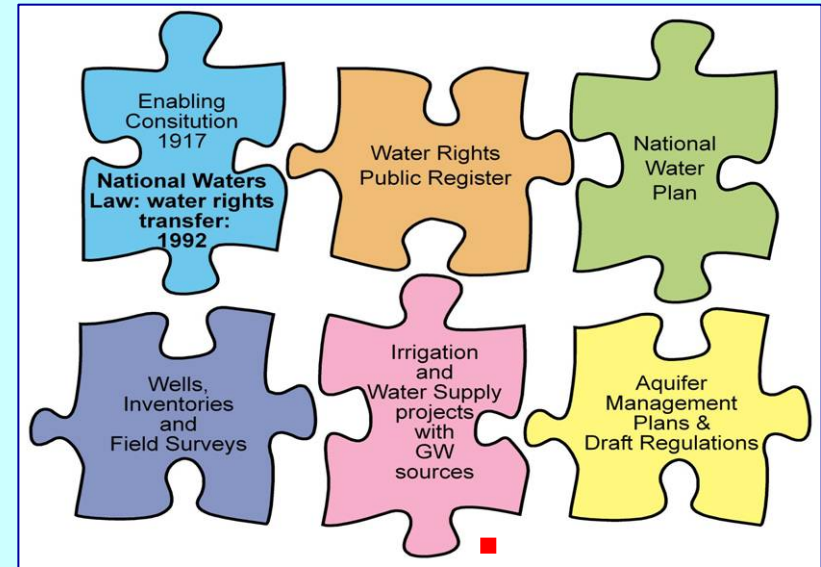
push of 'aquifer champions'  
and 'glue' of effective coordination needed

**CEAG**  
world class  
aquifer modelling

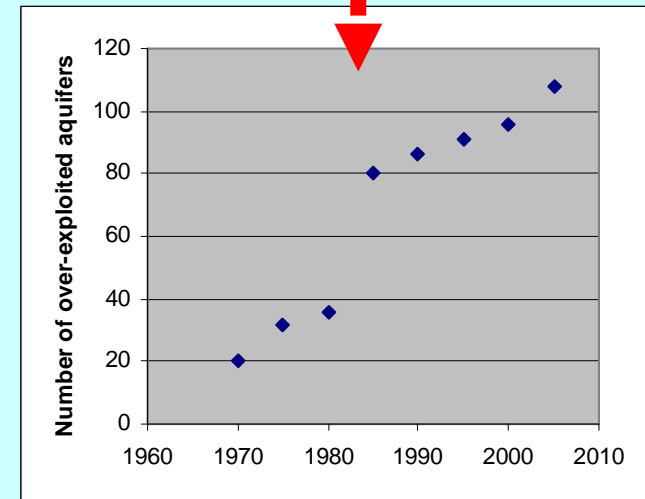
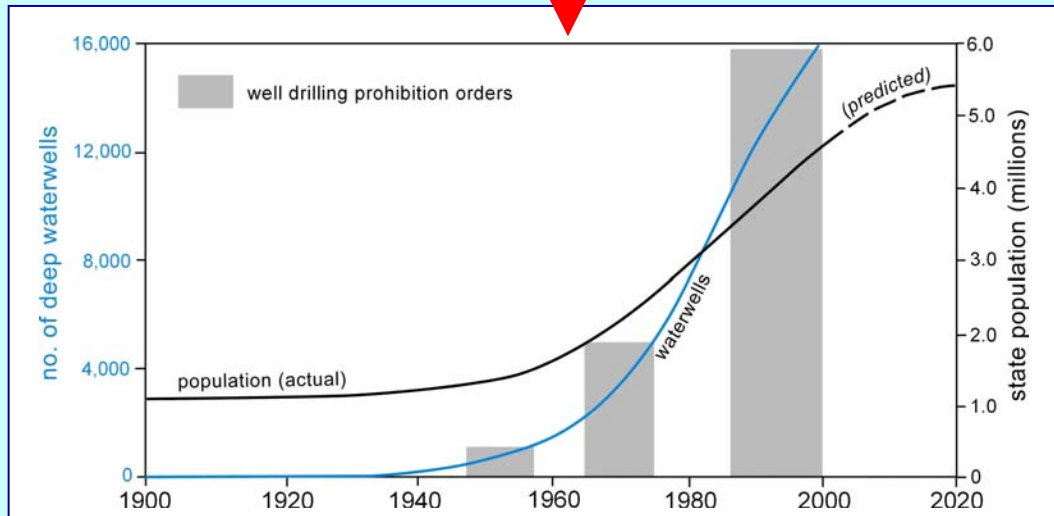


**COTAS**  
successful in  
awareness raising

**CONAGUA** : world-class legal-institutional framework



**Guanajuato  
Mexico**



# INSTITUTIONAL IMPEDIMENTS IN FEDERAL COUNTRIES TO 'THINK GLOBALLY ACT LOCALLY'

## SOME EXAMPLES BOTH FROM DEVELOPING & DEVELOPED NATIONS

**BRASIL** strong federal set-up --- but no legal or fiscal authority over state governments

**CHINA** excellent local county organizations --- but MWR with difficulties in directing them towards more long-term sustainable policies

**ENGLAND** slim-lined and well focused national office --- but recent financial cuts have resulted in serious staff reductions

**MEXICO** strong CONAGUA -- but unable or unwilling to work with local governments

**SOUTH AFRICA** good federal DWA direction although decision to go down RBO-route was perhaps rather ambitious

**SPAIN** reasonably solid and clear conceptually at ministry level --- but little fiscal or policy authority over the organization at regional level,

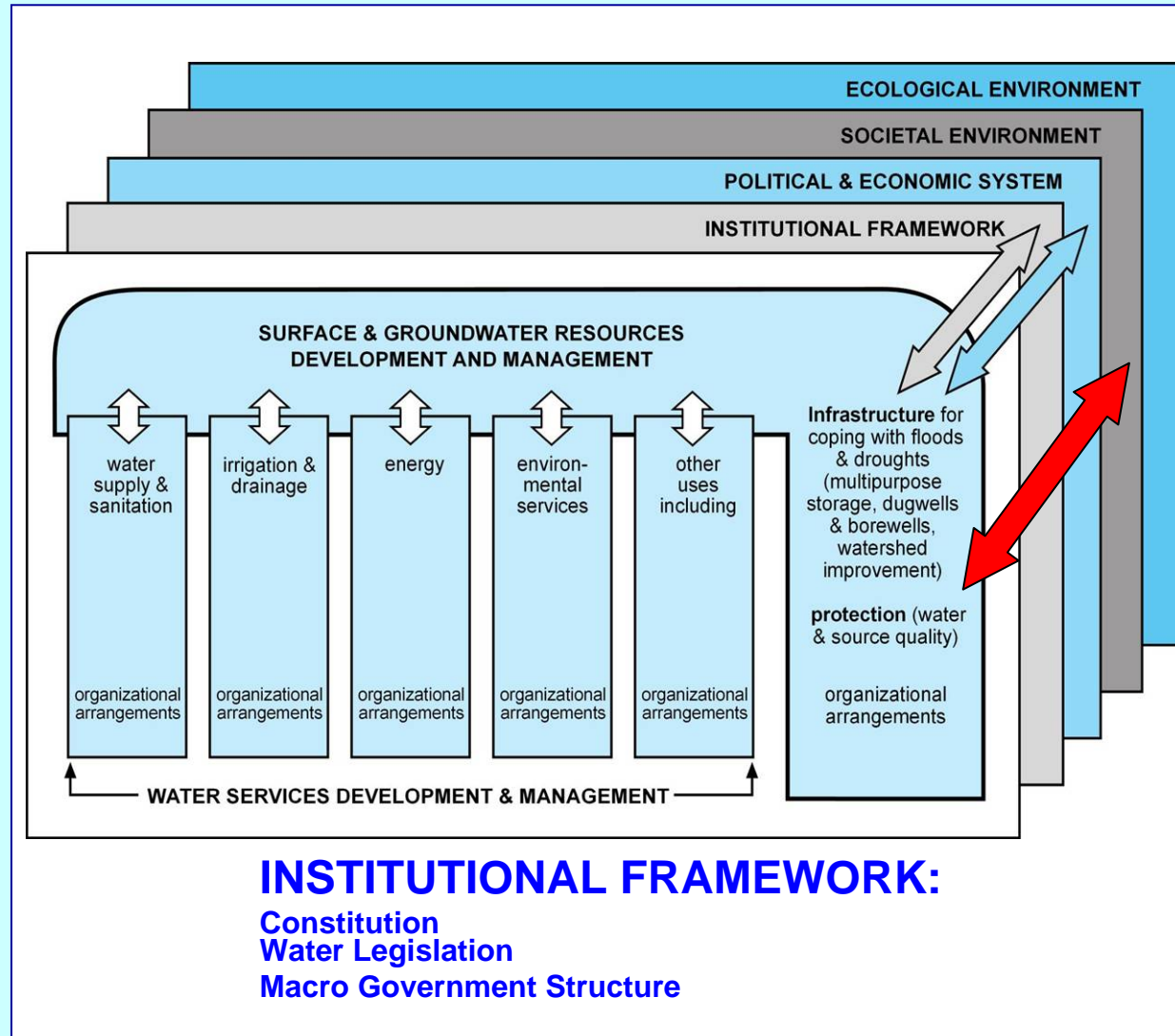


General need: local office under line management of national ministry with **fiscal control** but also playing role of '**national lighthouse**'

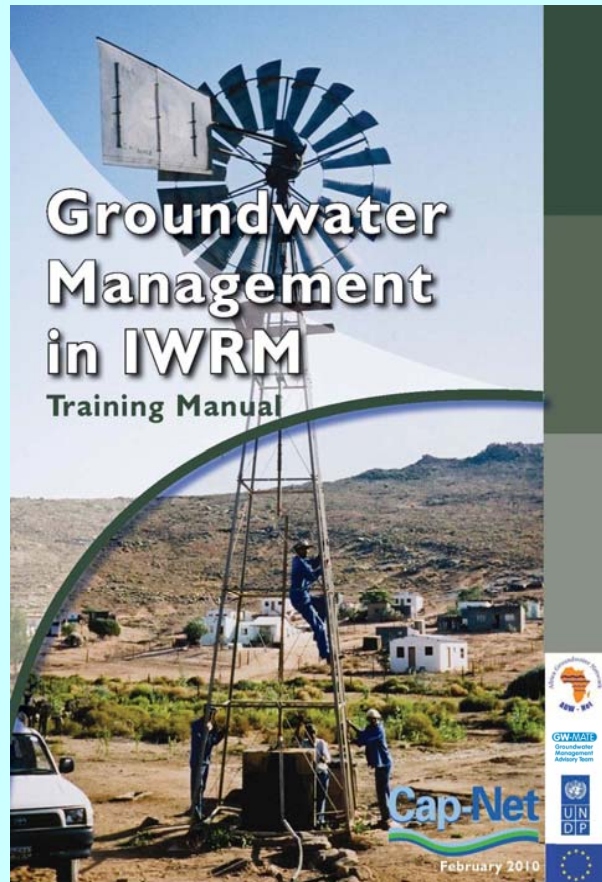
# GWG IS NOT ISOLATED

managers must voice their concerns to empower society  
& strengthen governance

- being frank about 'business as usual' consequences
- acknowledging current limitations and advocating future needs as regards capacity for resource management implementation
- providing transparent information to society so as to counteract vested interest and corruption
- challenging macro-policies which increase groundwater demand



# THE ROLE OF CD IN ADDRESSING THE 'SUR' challenge (Sustainability-Upscalability- Replicability)



After a series of Case Studies in Africa and some pilot training courses, Cap-Net, the Africa Groundwater Network (AGW-Net) and GW-MATE produced this **“Training of Trainers” manual**.

Similar manuals could be prepared for **other regions**, in collaboration with interested international organizations.

**Perspective:** WB & UNESCO are exploring options for CD by disseminating GW-MATE publications and developing application courses through IHE.

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THANK YOU!