



**Better water resources management -
Greater resilience today, more effective
adaptation tomorrow**

**GWP Perspective on water and
climate change adaptation
Fifth World Water Forum
Istanbul, March 2009**

Three core elements

- **Water is a primary medium** through which early climate change impacts will be felt by people, ecosystems and economies
- The core challenge of adaptation is **water security**: ensuring the ability to **harness water's social and productive forces** and **control water's destructive forces**
- **Proactive water management is proactive adaptation** -- in the same way that a strategic energy policy is the key to mitigation



framing the
issue

what are the
challenges?

what can be
done?

Solutions

take home
messages

But also ...

Actions will need to

- balance the three Es
- take place at all levels -- projects, villages, economy wide, global
- involve both software and hardware

An integrated approach is therefore crucial

framing the
issue

**what are the
challenges?**

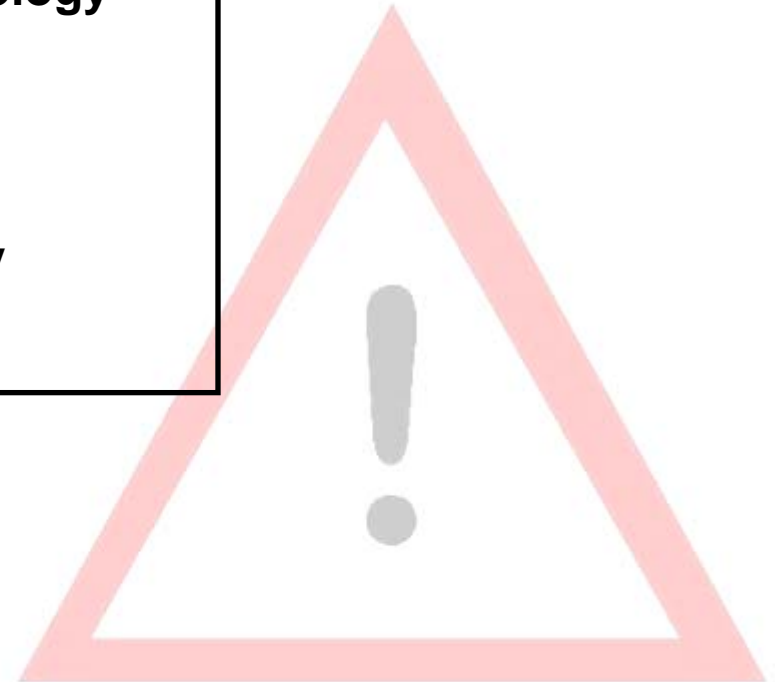
what can be
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Challenges

- **The physical science -- impacts on hydrology**
- **The broader dynamics**
- **Timeframes, sequencing and uncertainty**



Impacts on hydrology

• **rainfall, runoff and streamflow** – floods and droughts, more intense and more frequent storms

temperature –
aridity,
evaporation,
glacier and
snow melt, loss
of storage

**sea level
changes** --
impacts on
estuaries,
deltas, and
groundwater
intrusion



The broader dynamics

- Changes will affect demand for water
- Changing availability, timing and certainty of water will play out in all water-using sectors – agriculture, hydropower, water supply and sanitation, the environment...

Changes will also affect the broader dynamics of the economy – water scarcity, water related disasters, spatial patterns of development, structural changes in economies

Adaptation means managing these dynamics

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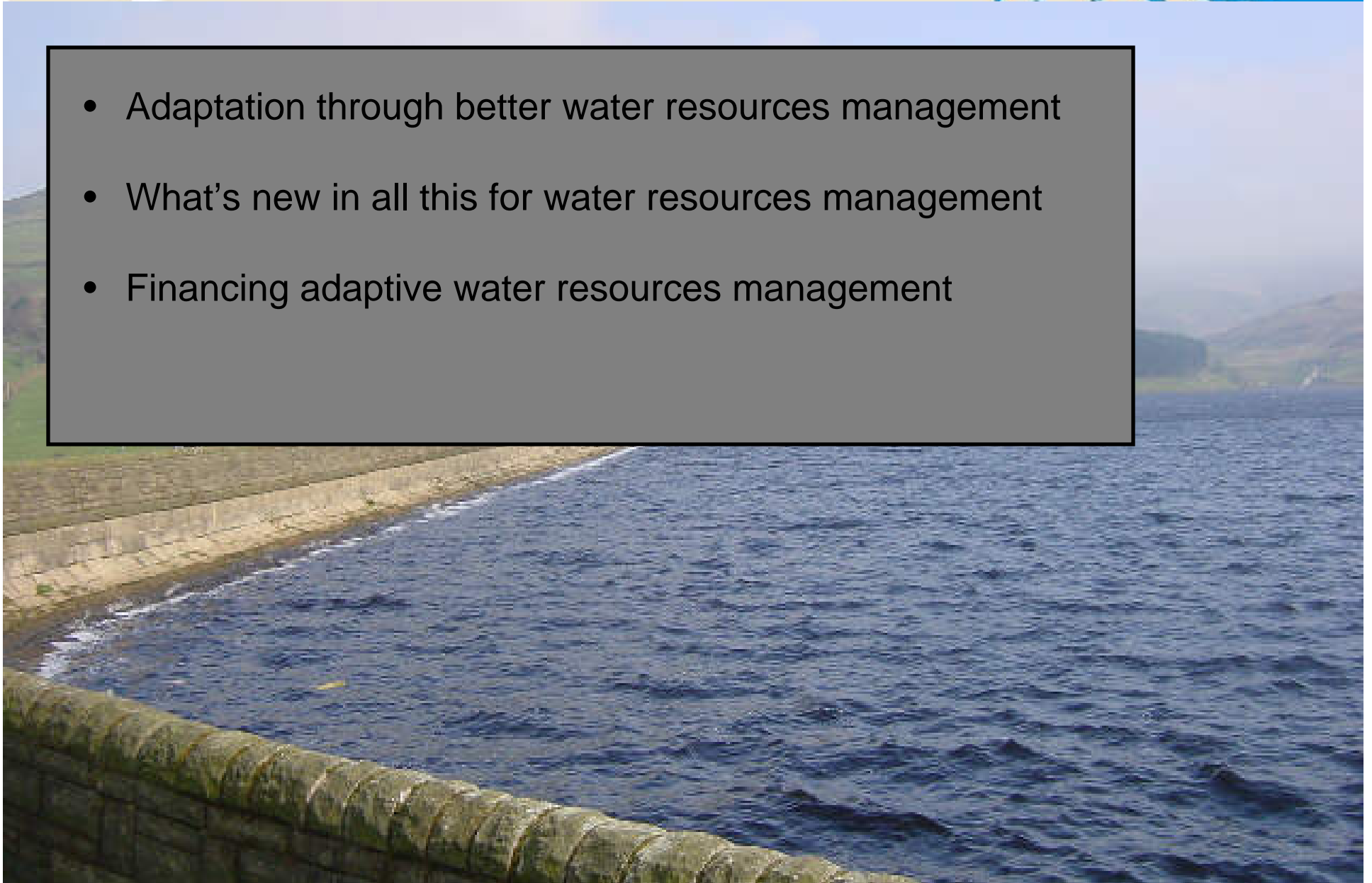
The temporal dimension: timeframes, sequencing and uncertainty

- Impacts are in the future, uncertainties are great

Some responses are particularly long-lived

Timely now to focus on strengthening management, information, infrastructure

- Adaptation through better water resources management
- What's new in all this for water resources management
- Financing adaptive water resources management



Adaptation through better WRM

- Strengthen institutions, information and capacity to predict, plan and cope with today's climate variability
- Actions will need to take place at all levels, from villages to projects to economy wide to global
- Guided by science and best practices
- Balance software and hardware
- Balance the 3 Es

What's new in all this for WRM

- Risk management
- Information and cooperation
- Also water quality! Must understand these dynamics
- Water rights and allocation mechanisms in the face of new realities
- Rethinking water storage – natural, man-made, virtual
- Adaptive management – building dynamic organizations



Financing adaptive WRM

- **Why should poor countries address tomorrow's climate change if they cannot afford to manage today's drought?**
- **Some principles of adaptation financing**
- **WRM investments should be viewed as sustainable development financing that delivers adaptation benefits**



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Final take home messages

- 1. Adaptation is about water security – an important goal today, and a stretch goal for tomorrow**
- 2. Water security is about good water management**
Mix of soft and hard, enhanced information & cooperation
- 3. Water management is a fundamental adaptation strategy**
Today's investments in water security should be explicit part of coherent strategy for adaptation



THANK YOU

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