

# SEA and IWRM -A World Bank Perspective

Warren Evans  
Director,  
Environment Department, World Bank  
Copenhagen, December 10, 2009

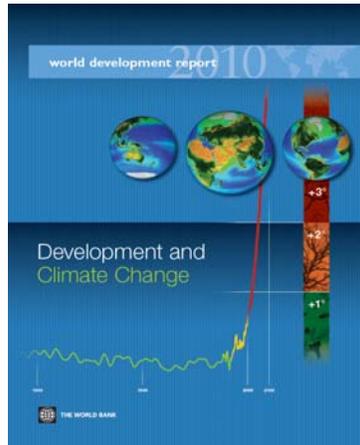


## Outline

- Climate Change, Water and the Bank
- Using SEA to move forward in the face of uncertainty
- WB Analysis of IWRM and SEA
- Summary



# Climate change as a development challenge



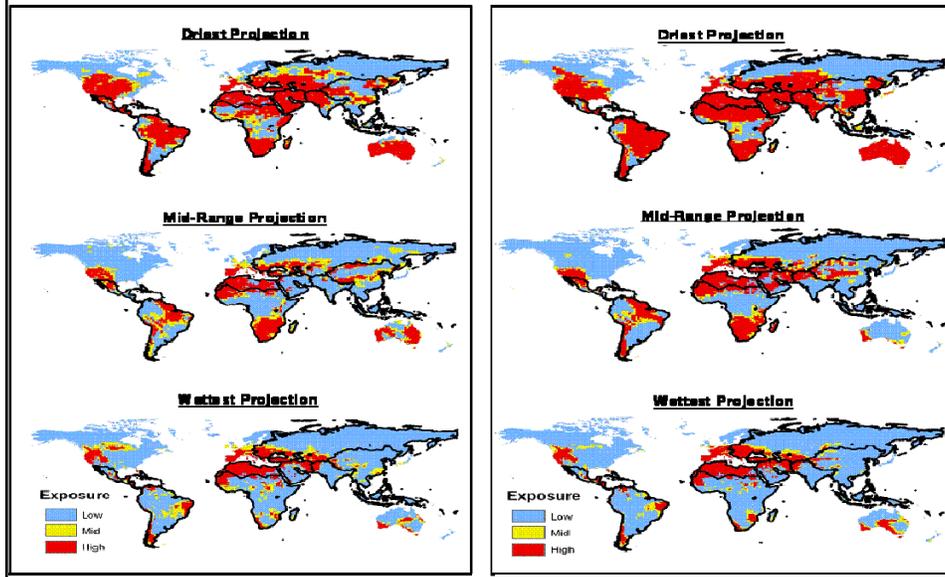
- Meeting the challenge is not a choice between growth and climate change
- A climate smart world is within reach if we act now, act together and act differently...
- ... building on new finance, technology and capacity at scale



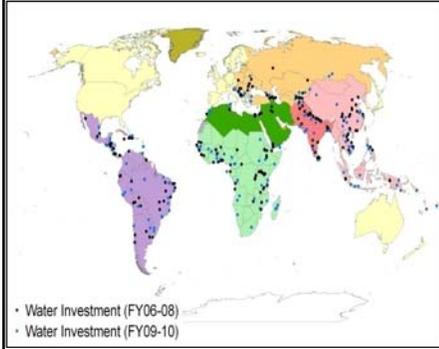
# Climate change impact is uncertain

Projected % change in Runoff 2030

Projected % change in Runoff 2050



# Water investments are exposed



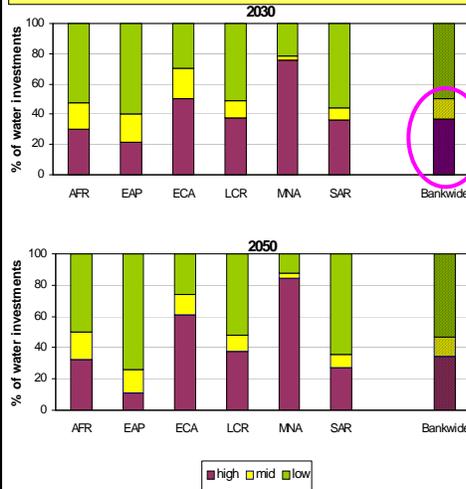
## Water Investments\*

FY 06 – 08: \$8.7 b

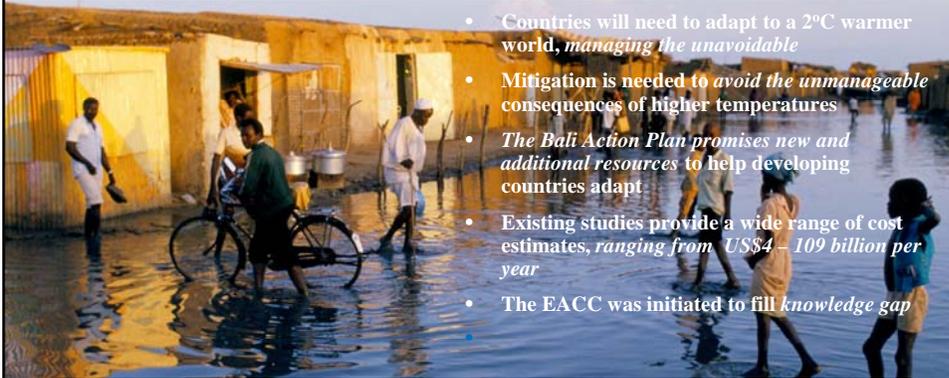
FY 09 – 10: \$10.6 b

\* Includes projects with > 20% water component

## Exposure of Water Investments to Change in Runoff



# ECONOMICS OF ADAPTATION TO CLIMATE CHANGE – EACC



- Countries will need to adapt to a 2°C warmer world, *managing the unavoidable*
- Mitigation is needed to *avoid the unmanageable* consequences of higher temperatures
- *The Bali Action Plan promises new and additional resources* to help developing countries adapt
- Existing studies provide a wide range of cost estimates, *ranging from US\$4 – 109 billion per year*
- The EACC was initiated to fill *knowledge gap*

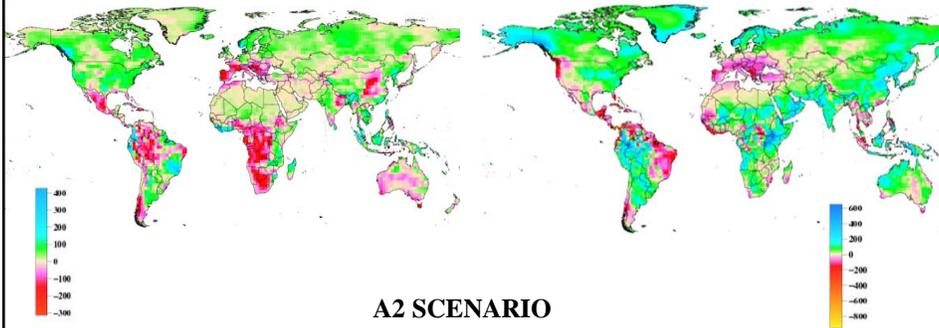


## Assumption: Adapt to what?

Change in average annual precipitation, 2000 – 2050

CSIRO (DRY)

NCAR (WET)



Two extreme GCMs used to estimate range of costs

## Annual Costs of Adaptation: by Sectors, 2010-2050, US\$ Billion

SECTOR	Climate Scenario	
	DRY	WET
Agriculture, Forestry, Fisheries	7.3	7.6
Water Supply	18.8	13.7
Human Health	1.6	2.0
Coastal Zones	29.6	30.1
Infrastructure	13.7	29.5
Extreme events	6.5	6.7
<b>Total</b>	<b>77.6</b>	<b>89.7</b>
<b>Adding costs differently</b>	<b>75.0</b>	<b>100.0</b>

2005 Constant Prices, 0% Discounting  
Source: World Bank Analysis

## Adaptation means “being ready” ....

.....to manage the impacts of climate change and variability

- And “being ready” means that organizations need to .....
  - gather data, plan and take decisions in the face of uncertainty, better incorporating climate risks
  - Be able to “pick up signals” fast and act on them, so participatory approaches are crucial

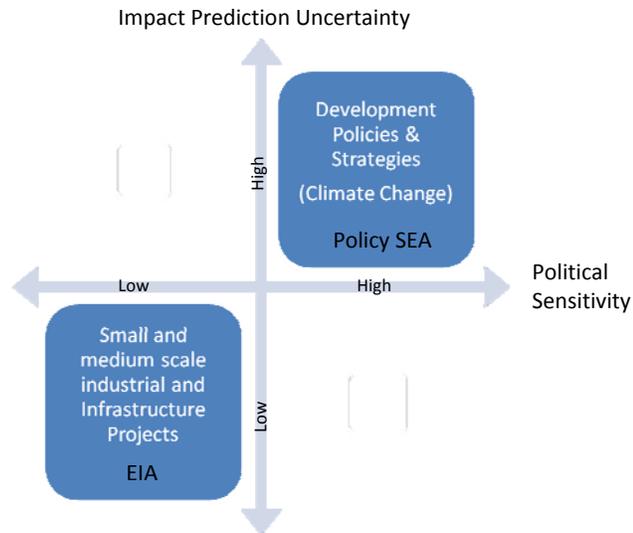


## SEA and the Bank

- Environment Strategy (2001) highlighted SEA as a key tool to inform sectoral policy reform and programs
- SEA is a planning tool for improved decision-making at the strategic level of policies, strategies, plans, programs and large projects
- SEA combines analytical and participatory approaches
- The Bank has a major program underway currently on SEA applied to policies
  - focus is on strengthening underlying institutional capacity to better manage potential impacts, no matter what they are



## Uncertainty and EA



## SEA of Policies

- Less experience compared with land-use plans and programs
- Due to high uncertainty for impact prediction and relevance of political processes, policy SEA must focus on:
  - Existing systems and capacities to manage current environmental impacts/risks → incentives systems and rules for social interaction (institutions)
  - Responsiveness of existing systems to changes induced by development and to the concerns of potentially affected stakeholders (institutional effectiveness)
  - Checks and balances systems that minimize risk of policy capture by powerful stakeholders (governance effectiveness)



## SEA in the context of Climate Adaptation:

- SEA is potentially a very useful tool for:
  - Assessing CC adaptation capacity and CC induced risks
  - Strengthening institutional CC capacity to develop planning tools and better manage climate variability and its impacts
  - Assessing, applying and strengthening participatory approaches to involve climate-affected stakeholders



## WB analysis of SEA and IWRM

- Analysis of Synergies between SEA and IWRM Principles
- 10 SEA case studies
- Some conclusions re. SEA and IWRM based on case studies review

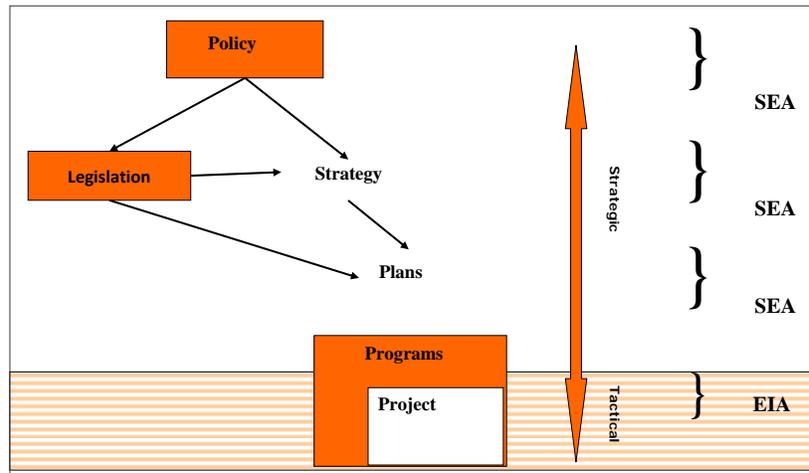
Sources:

World Bank (2007). **Strategic Environmental Assessment and Integrated Water Resources Management and Development**. Economic and Sector Work, Environment Department.

Hirji and Davis (2009). **SEA: Improving Water Resources Governance and Decision Making**. Water Sector Board Discussion Paper Series. Paper No. 12. World Bank



## The SEA Decision Process in Water Resources Management



## Some SEA Case Studies

- India: SEA of Palar Basin
- Indonesia: SEA of Water Resources
- Tanzania: Rapid Water Resources Assessment
- Colombia: Water and Sanitation Sector SEA
- Lake Victoria: Transboundary Diagnostic Analysis/Strategic Action Program
- Laos: Nam Theun II Hydropower
- Nepal: Hydropower Development
- Australia: Pioneer Valley Water Allocation Plan
- South Africa: SEA of Mhlathuze catchment



## SEA and IWRM

- Potentially SEA is a powerful tool to integrate sustainability concepts in water resources policy, planning and management and hence support IWRM application
- SEAs have had long-term influence in supporting integrative approaches to water sector management
- SEA's structured approach to stakeholder participation has helped strengthen participatory approaches and win advocates



## Summary

- Climate Change is a development challenge: impacts on water are significant at both macro and micro levels and yet uncertain at a micro level
- There are many synergies between SEA and IWRM
- Applying combined SEA and IWRM approaches in the context of climate change and variability seems very promising to:
  - Assess CC induced risks in water resources institutions (river basin organizations) and in river basin planning
  - Strengthen capacity to respond to any climate challenge
  - Apply participatory approaches to improve decision making

