

# **The relevance of water management to climate change adaptation in South Asia**

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*Second Asia-Pacific Climate Change Adaptation Forum*



**12-13 March 2012, Bangkok, Thailand**

# The Challenge in South Asia

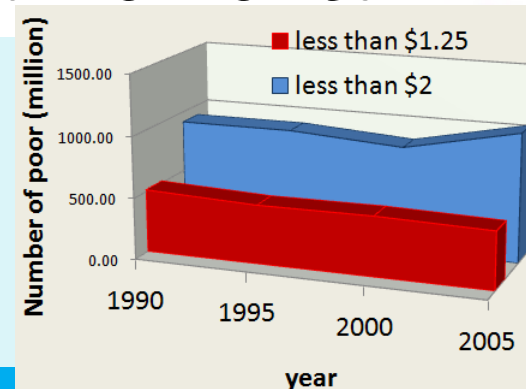
- South Asia spreads over about **4%** of the World's land area
- Possesses about **4.5%** of the water resources
- The sub region is the home for about **23%** of global population
- Poor soil conditions and aridity (Pakistan, Afghanistan), topography (Bhutan and Nepal), pollution and disaster-prone areas further restrict the resources
- The resources are considerably stressed (even without climate change)





# ***Knowledge and information requirements***

- The rural livelihoods are heavily dependent on agriculture. Therefore, improved management of water is vital for sustaining productivity, food security & livelihoods



- Need to distinguish between information requirements for long term water resources planning and short term operation of irrigation systems and farms.
- The contribution of monsoonal rains is crucial for rural livelihoods.
- Changes to rainfall pattern and characteristics impact small farmers and worry irrigation system managers and policy makers:



- rainfall pattern such as delayed onset of monsoon rains
- rainfall characteristics such as rainfall intensity, number of rainy days, number of wet spells

# *Research Needs*

Some of the identified research needs in water and agriculture with a focus on water management include:

- Increasing the efficiency of rain-fed cultivation,
- Technologies to increase groundwater storage and recharging,
- Social, economic and technological constraints to achieve the potential in rainwater harvesting
- Variations of the rainfall pattern





# Capacity Building

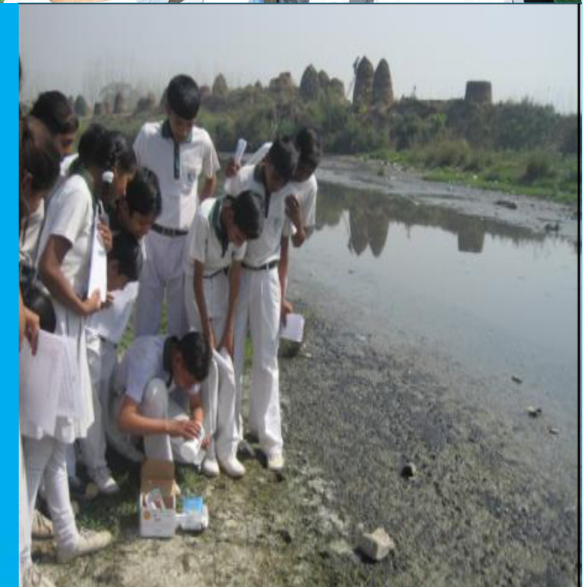


- Information generated from Global Climatic Models and research carried out by the scientists, are not frequently used in operational scale water management.
- The capacity building should address the need for transformation of available information to a type that can be directly applied by water managers and farmers.
- There is a need for hydrological models with high resolution catering for local variations of rainfall and runoff. The skills for operation of irrigation facilities to mitigate the impacts of water-related disasters need to be improved. Incorporating climate change into design of water infrastructure could involve modifying some design criteria, in the light of changed frequency of extreme events.

# Missing Links

**There are some links which need to be strengthened, though not entirely missing.**

- **the links between the water system managers and the academics, which could be improved through tailor-made training programs and research funded by water management institutions.**
- **Communities and academics should be brought closer as well, considering the ability of communities to contribute to identify research needs. Community-based NGOs link could perhaps contribute to this effort.**



THANK YOU