

# Workshop on Climate Change Projection and Adaptive Management in IWRM



**Makassar, Indonesia**

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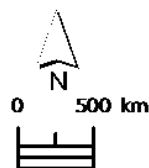
# Asia – Possible Climate Change Impacts



## Additional Data Sources:

Global Rural-Urban Mapping Project, Center for International Earth Science Information Network (CIESIN), Columbia University; International Food Policy Research Institute (IFPRI); The World Bank; Centro Internacional de Agricultura Tropical (CIAT) 2005; USGS EROS Data Centre; ArcWorld, ArcWorld Supplement

- Major Cities
- Countries
- Impact areas
  - Coastal Flooding
  - Cyclones / Typhoons
  - Riparian Flooding
  - Water Stress



## North-Eastern Asia



May 2009

# What is Climate Change Adaptation?

- Adjustment in natural or human systems in response to actual or expected climate stimuli or their effects, which moderates harm or exploits beneficial opportunities (IPCC)
- Adaptation to global warming consists of initiatives and measures to reduce the vulnerability of natural and human systems against actual or expected climate change effects (wikipedia)
- Adaptation is about reducing the risks posed by climate change to people's lives and livelihoods (DFID)
- Achieving and sustaining water security against a backdrop of climate change is the immediate challenge of adaptation (GWP)

# Climate Change Adaptation - We Do Not Know What We Are Doing

- The modeling of climate change impacts is uncertain and compounded by the problem of downscaling in smaller basins – some people still question the existence of climate change
- There are no universally agreed methodologies or approaches to operationalizing climate change adaptation – this is still evolving process
- Concrete examples of effective climate change adaptation are few and far between – much more work is needed
- The water resources knowledge base, the water resources management institutional set-up, and existing technical and management capacity are insufficient and incapable of effectively addressing climate adaptation

# Climate Change Adaptation - We Have a Good Idea of What To Do

- The science and modeling is improving on a daily basis and although precision can be improved, the general trends for impacts known and can provide some basis for planning
- Many opportunities exist for “no regret” interventions to improve water resources management with or without adaptation
- The knowledge base needed for climate change adaptation overlaps significantly with that for good water management
- Institutions such as effective river basin organizations that can address cross sectoral issues in water management will be essential to address and manage climate change adaptation
- Good practice for water resources management is by and large the same with or without climate change adaptation

# A Few Questions to Consider for Climate Change Adaptation?

- What does climate change adaptation mean for water management institutions in my basin?
- What does climate change adaptation mean for the knowledge base and staffing skills of my river basin organization?
- What does climate change adaptation mean for the development and management of infrastructure in my basin?
- What does climate change adaptation mean for the development of sustainable non-structural responses in my basin?
- What does climate change adaptation mean for financing water resources management and development in my basin?
- How and at what scale does climate change adaptation take place? Inter-basin, basin, sub-basin, urban, community?



# Workshop Objectives

- Provide an overview of current progress in climate change science, and how this science can be utilized in adaptive water resource management
- Demonstrate how model-generated projections of future climate can be used in IWRM/adaptive management
- Discuss how managers of river basins can best prepare for the impacts of a changing climate, supported by NARBO, regional knowledge hubs and other knowledge partners.

## Panel Members For Discussion

- Prof. Toshio Koike, University of Tokyo
- Mdm. Erna Witoelar, Vice-chair of the Governing Council of the Asia-Pacific Water Forum (APWF)
- Mr. Herman Idrus, PJT II, Indonesia
- Mr. Suresh Chandra Mohapatra, Secretary of Water Resources, Orissa, India
- Mr. Charles Rodgers, Senior Climate Change Specialist, ADB
- Mr. Thomas Panella, Principal Water Resources Specialist, ADB - Moderator



# Climate Change Adaptation - Moving Forward

- Isolated technical solutions alone are not sufficient and can even add to the problem. Managing a complex problem with multiple sectors and interests, possible conflicts, risk and uncertainty about future impacts requires a facilitating platform offered by institutions close to the problem.

Thank you for your attention

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