

Climate Change and Adaptation Challenges in Water and Agriculture Sectors in South Asia

**Asia-Pacific Climate Change Adaptation Forum
Panel 4.4 Water Resources Management**

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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
- world's highest concentration of poor people with over **1 billion** living on **less than USD 2 per day**
- high levels of malnourishment
- high economic growth
- high urban growth
- low access to energy.
- The resources are considerably stressed (even without climate change)
- Water - key role in adaptation to climate change, agricultural productivity and poverty alleviation.
- **Water Security Index 1.6 – South Asia less secure**



The Challenge in South Asia - Water

1. Climate Change Adaptation and Disaster Coping
2. Flood and Drought Management
3. Trans-boundary Water Issues
4. Overexploitation of Groundwater and Groundwater Depletion
5. Eliminating the social, economic and technological constraints to achieve the potential in Rainwater Harvesting, and Inadequate storage and maintaining the quality of the harvested water
6. Water Management and Agricultural Productivity Issues
7. Matters related to the core issue of water governance, implementation of IWRM related policies and laws
8. Rapid Urbanization - water supply, sanitation and wastewater issues
9. River Basin and lower level organisations - Inadequate capacity at the field/grass-root level to address the water challenges
10. Inadequate use of Information Technology/Media in the Water Sector

Agriculture in South Asia

Country	Agriculture contribution to GDP / percent	Rural population / percent	labor force employed in agriculture / percent	Agricultural Area / percent	Irrigated area / percent
Afghanistan	31.6	77	70.0	58	3.4
Bangladesh	18.6	72	48.0	65	35.1
Bhutan	17.4	65	59.4	15	1.0
India	19.0	70	56.0	55	18.9
Maldives	5.6	60	12.0	30	--
Nepal	32.8	81	66.0	30	8.0
Pakistan	21.2	64	45.0	33	25.0
Sri Lanka	12.8	85	33.0	40	8.9

Sources: FAOSTAT, 2011; ADB, 2011; CIA, 2012 and World Bank, 2011

The Challenge in South Asia - Agriculture

- Produces substantial food grain
- **Least Food-secure Sub-region**
- Floods and Droughts - Devastate Agriculture
Irregular Rainfall – Cultivation & Harvesting
Combined effects of temperature and relative humidity
- A **major part** of South Asian agriculture is **managed by smallholder farmers –Vulnerable**
- Most threatened- Rain-fed farmers
farmers depend on small reservoirs and small diversion schemes.

Challenges Faced in the Region

- Financial resources – Nationally generated – shortfall
- Research Technology Gaps -Access to climate data, their management, and forecasting and modeling capacity are constraints
- Weak linkages, data exchange coordination and communications among stakeholders
National & Regional Level -Transboundary

Inadequate Capacity to Address Water Challenges

- Are our capacities adequate to address the requirements and expectations of national policies and national strategies on climate change?
- What are the public expectations, and are our responses adequate?
- Is there sufficient policy support to improve the capacities of the water sector institutions dealing with food security?
- Do we have sufficient links with local universities, to develop our capacity?
- Are we linked with global climate change adaptation networks? Do we get the required information from them?
- Do we have sufficient regional or global training programs? Are we using the expertise available within the region in an optimum manner?
- What specific subject areas are more relevant for having training?
- What can we do to improve the collaboration among institutions to improve the adaptation capacity? (local, regional and global level)
- How to improve capacity at the field/grass-root level to address the water challenges?

GWP South Asia Climate & Water Programs

APAN – Thematic Node

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THANK YOU