

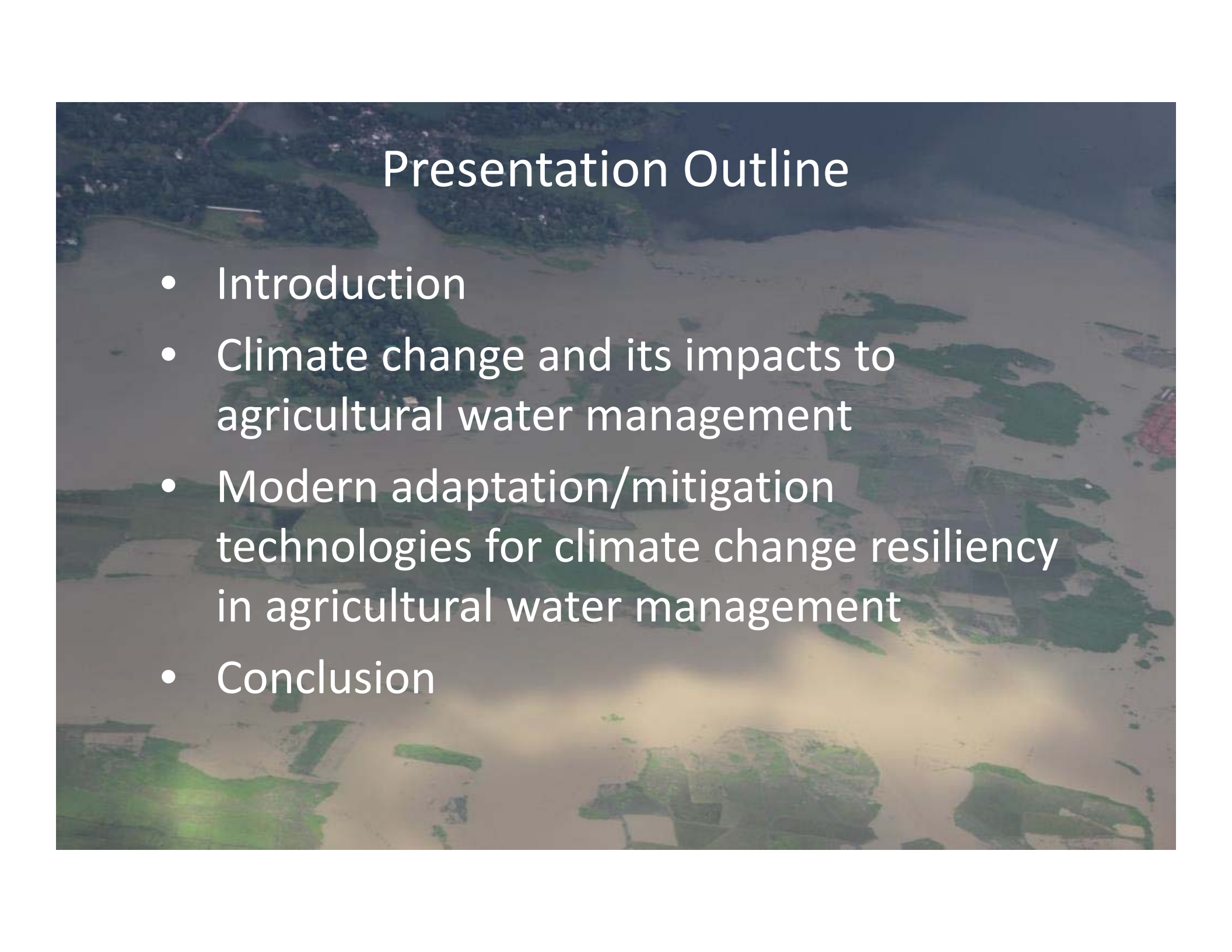
Agricultural Water Sector Resilience to Climate Change by Modern Technologies



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An aerial photograph of a flooded agricultural landscape. A wide, muddy river flows through the center, surrounded by green fields and some small structures. The water is a brownish-grey color, and the surrounding land is a mix of green and brown, indicating some flooding and some dry areas.

Presentation Outline

- Introduction
- Climate change and its impacts to agricultural water management
- Modern adaptation/mitigation technologies for climate change resiliency in agricultural water management
- Conclusion

Introduction

Indigenous technology –

- Low capital intensity,
- Sustainable (environment and ecology-friendly),
- Location and site specific,
- Low mobility,
- Low productivity (limited to only few practices not whole system package)

Modern technology –

- Dramatic impact,
- Low labor,
- High cost,
- Adaptable to wide areas,
- High mobility

Introduction cont.

Appropriate technology –

- Benefitting from local knowledge can only be achieved with modern scientific and technical knowledge. Science and technology validates and upgrades indigenous knowledge and drives modernization
- Farming system approach and participatory research recognizes need to adapt innovations to farmers' conditions and requires involvement of farmers as functionaries in the process

Introduction cont.



Appropriate technology

- Sustainable approach to modern technology innovation thus springs from a realization that sustainable adoption will be based from a mechanism where the 'professionals' first learn from the 'practitioners' before suggesting improvements
- Research achieves greatest pay-offs when they are based on a strong base of indigenous technology

Climate change and impacts

- Spatial and temporal change of precipitation
- Extreme events of droughts and flooding
- Water quality and quantity deterioration
- Non-water impacts of water access to general socio-economic set up of communities



Modern adaptation/mitigation technologies for climate change resiliency in agricultural water management

Adaptation to climate change involves an “adjustment in natural or human systems in response to actual or expected climatic stimuli and their effects which moderates harm or exploits beneficial opportunities” (IPCC, 2001)

Infrastructure, machinery and equipment:

Dams, ponds, tanks, rain water harvesting, improved irrigation systems, water conveyance systems, energy sources development, inter-basin water transfers, desalination, drainage, levees, terraces and contour farming, shallow and deep tube wells, surface system linings, treadle pumps, bucket drip systems/ceramic pot technology, fog harvesting



Knowledge, skills and practices –

Climate models, GIS and remote sensing, data and information management, institutional systems (FMIS, WUA's), reclamation and reuse, tillage practices (no-till/minimum tillage), water scheduling, deficit irrigation

Information technology –

Weather and climatic systems, awareness development, early warning systems and real-time forecasting, monitoring for impacts and adaptation planning



Conclusion

- Improve dissemination of information on climate change impacts to farmers
- Improve national and local capacities on adaptation technologies
- Enhanced research, development and access to area specific adaptive technologies rooted on indigenous knowledge and capacity but with modern improvements



Thank you!

Dhanyabhad!

