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Drinking Water Salinity Associated Health Crisis in Coastal Bangladesh

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International Conference Adaptation Future 2016
Rotterdam, the Netherlands
May 12, 2016

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Presentation Outline

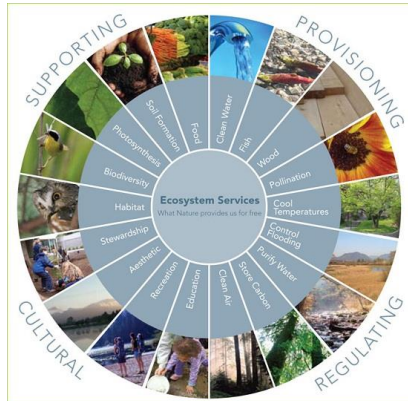
- Introduction
- Research background
- Methodology
- Results
- Conclusion

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Ecosystem and its Services

Ecosystem defines the dynamic interaction between the living organism with its surrounding nonliving environment

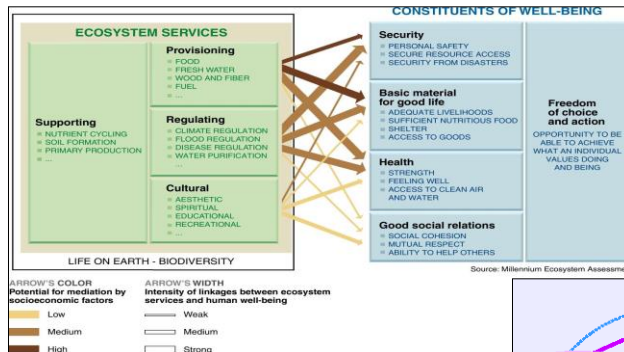


- Ecosystems are the planet's life support system
- Provides benefits to people which are defined as Ecosystem Services
- Divided into 4 categories- supporting, **provisioning**, regulating and cultural

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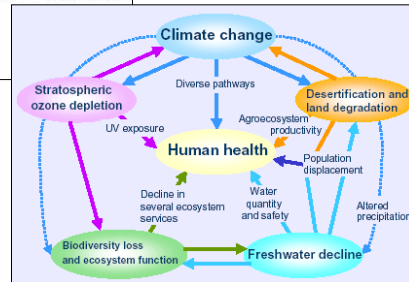


Ecosystem Services and Health-Wellbeing



- Human health and wellbeing status is closely linked with local ecosystem

- Climate is changing and the unprecedented impact will be greatest on human health and natural environment



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Research Objective

❑ Overall objective

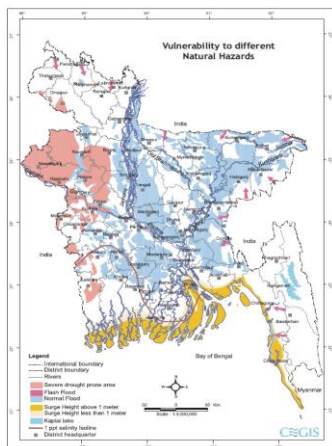
- ❑ Explore drinking water salinity status and associated health crisis in Bangladesh

❑ Specific objectives

- Assess the salinity status of drinking water in coastal areas
- Explore the hypertension status of coastal population
- Understand the linkage between drinking water salinity and hypertension prevalence in coastal Bangladesh

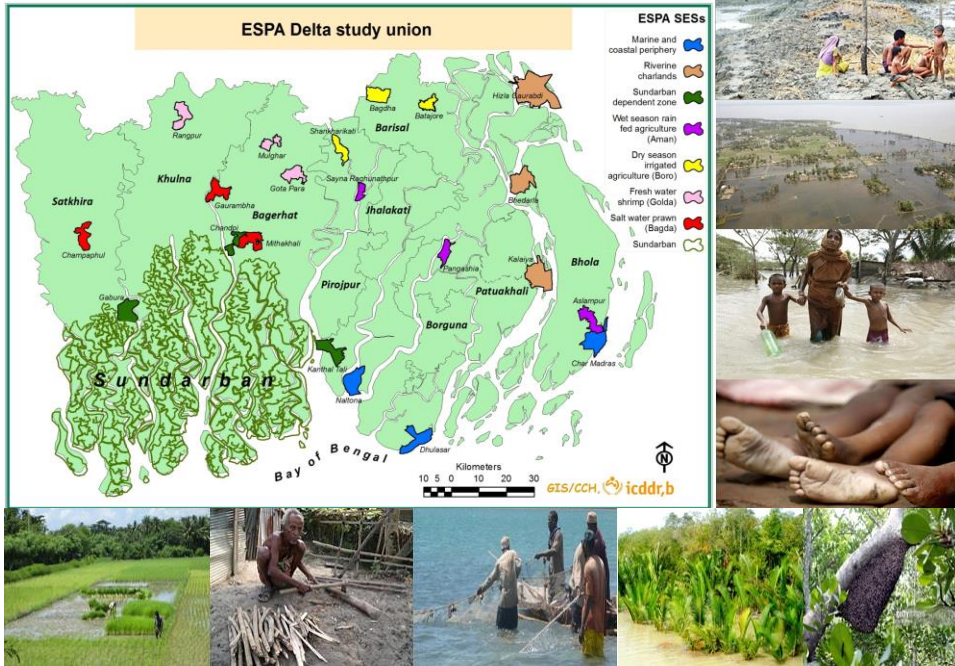
Context

- Bangladesh,
 - situated in the world's largest and most populous Ganges–Brahmaputra delta
 - most vulnerable to tropical cyclone
 - third most vulnerable to sea level rise
 - sixth most vulnerable to floods



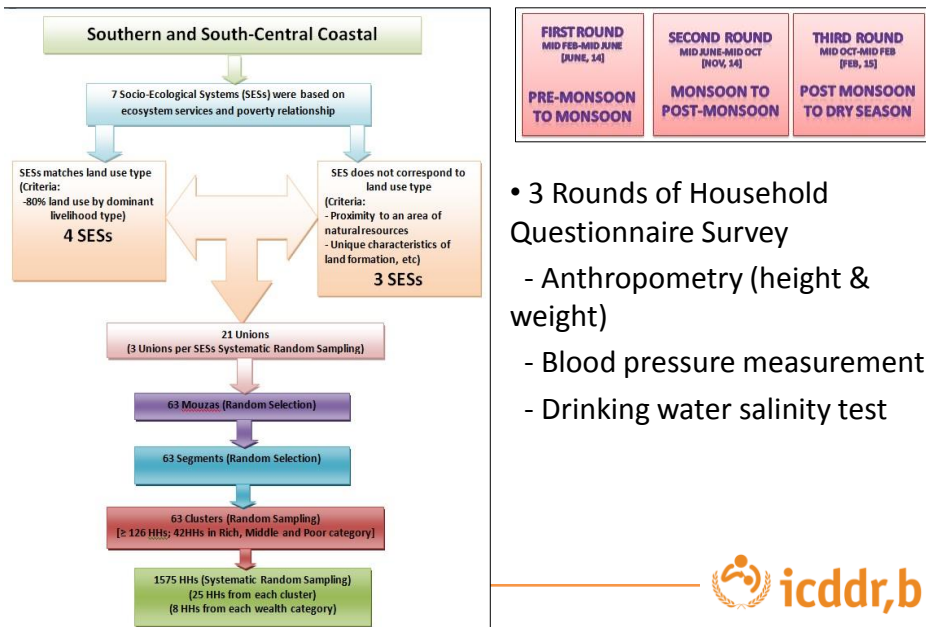
Bangladesh is one of the countries most susceptible to the negative impacts of climate change (IPCC)

Study Area

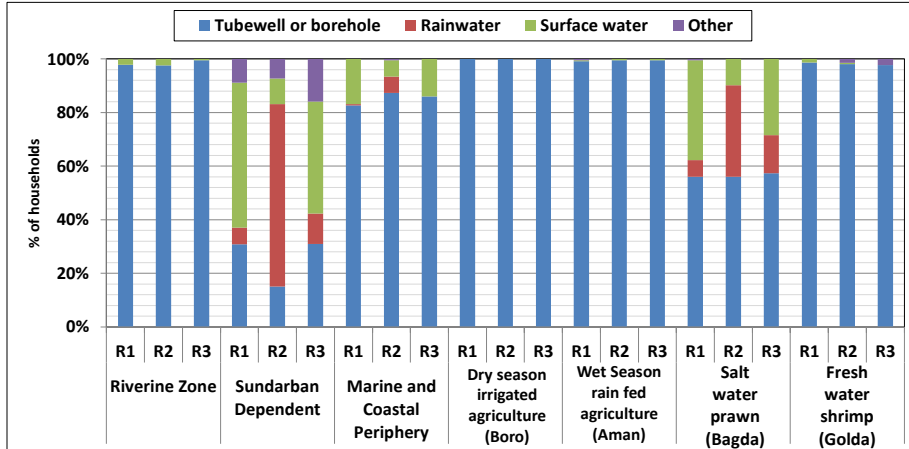


Methodology

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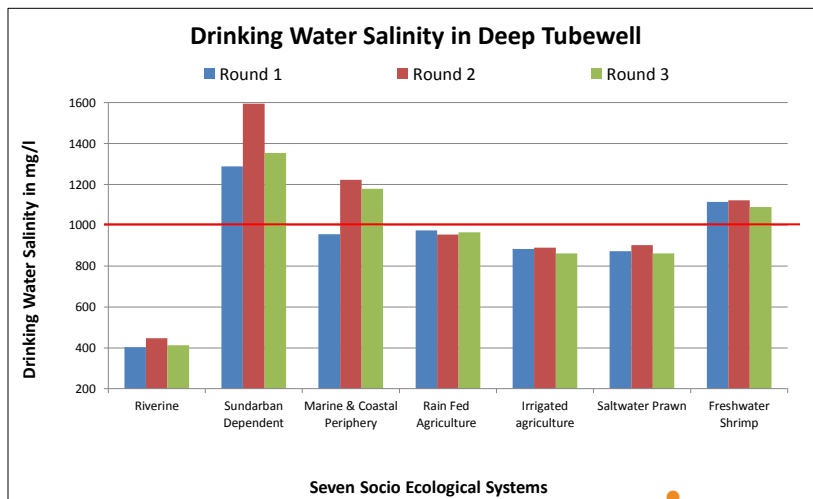
Findings: Drinking Water Sources



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Drinking Water Salinity in Deep Tubewell

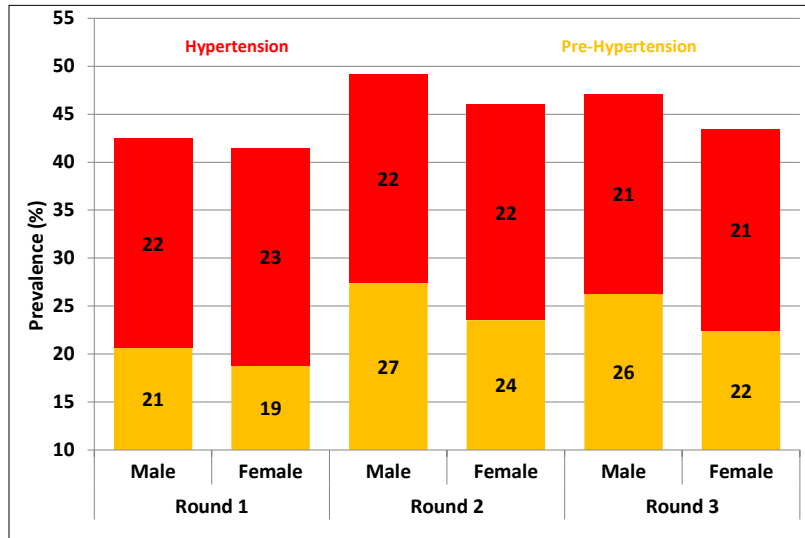


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Blood Pressure Prevalence of Respondents

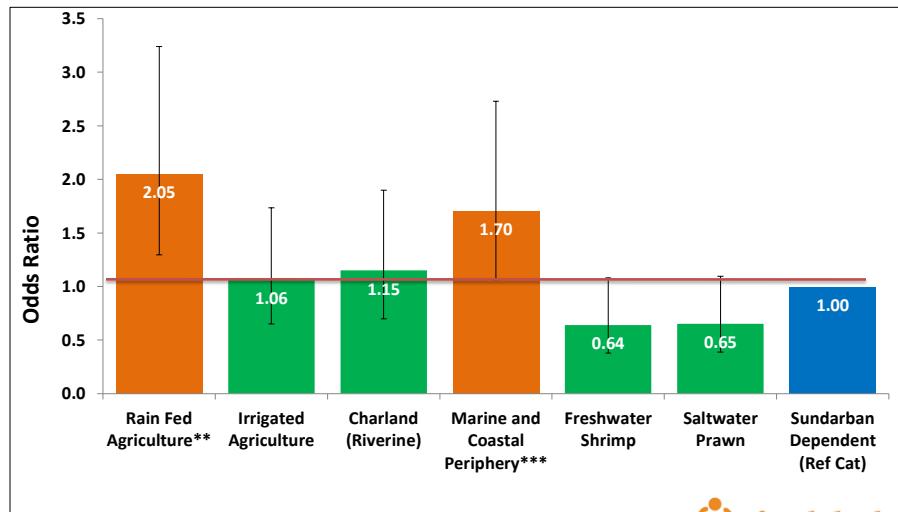


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Prevalence of High Blood Pressure (BP) among Men Fluctuated by Socio-Ecological Systems

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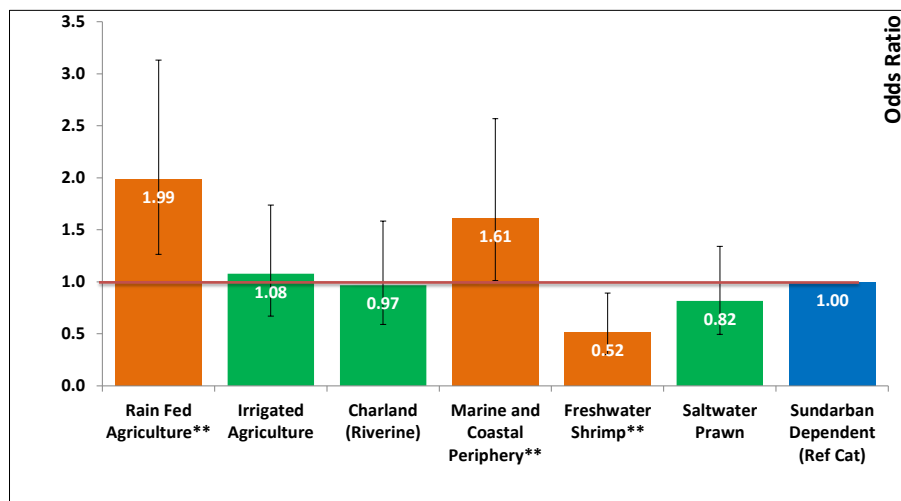


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Prevalence of High Blood Pressure (BP) among Women Fluctuated within Socio-Ecological Systems

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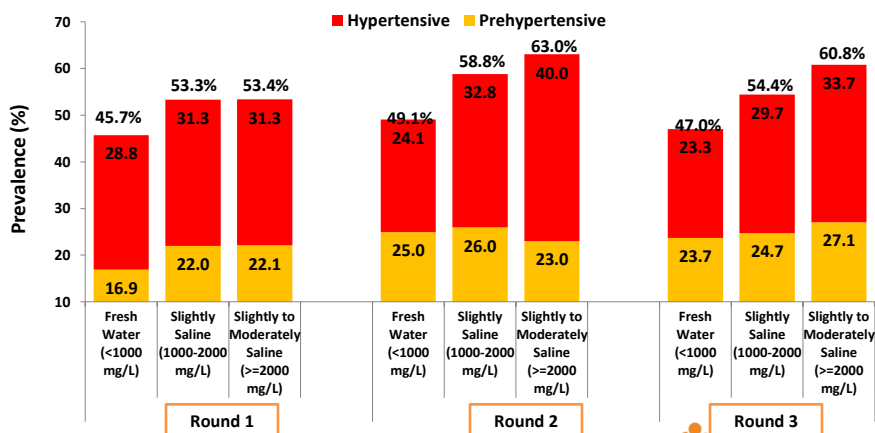


Association between Drinking Water Salinity and Hypertension Prevalence

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High Blood Pressure increases with rising salinity in drinking water, in the Coastal area of Bangladesh, (M+F, 35-59) 2014

Levels of Hypertension are similar to national for women, 16% higher than national for men



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Summary Findings

- Dependency and use of ground water as drinking water source is increasing
- Salinity in deep tubewell water is more than BD safe limit of 1000 mg/l in 3 SESs and very close in other 3 SESs
- More than 20% of surveyed respondents (both male and female) have blood pressure in hypertensive and pre-hypertensive range
- Prevalence of high blood pressure show association with local SESs (significant in 2 SESs for male and 3 SESs for female)
- Prevalence of high blood pressure shows association with salinity level in drinking water

Conclusion

- The spatial nature of the problem will become critical with ongoing climate change events and extremes
- People's life, livelihood, health and wellbeing is linked with local environment and ecosystem
- The study findings- increase in salinity and associated high blood pressure is an emerging problem at the backdrop of climate change
- Future public health and water resources management should consider and include this critical issue in policy formulation and implementation

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