



Cyclone induced salinity intrusion causes loss and damage in rice fields in the coast of Bangladesh

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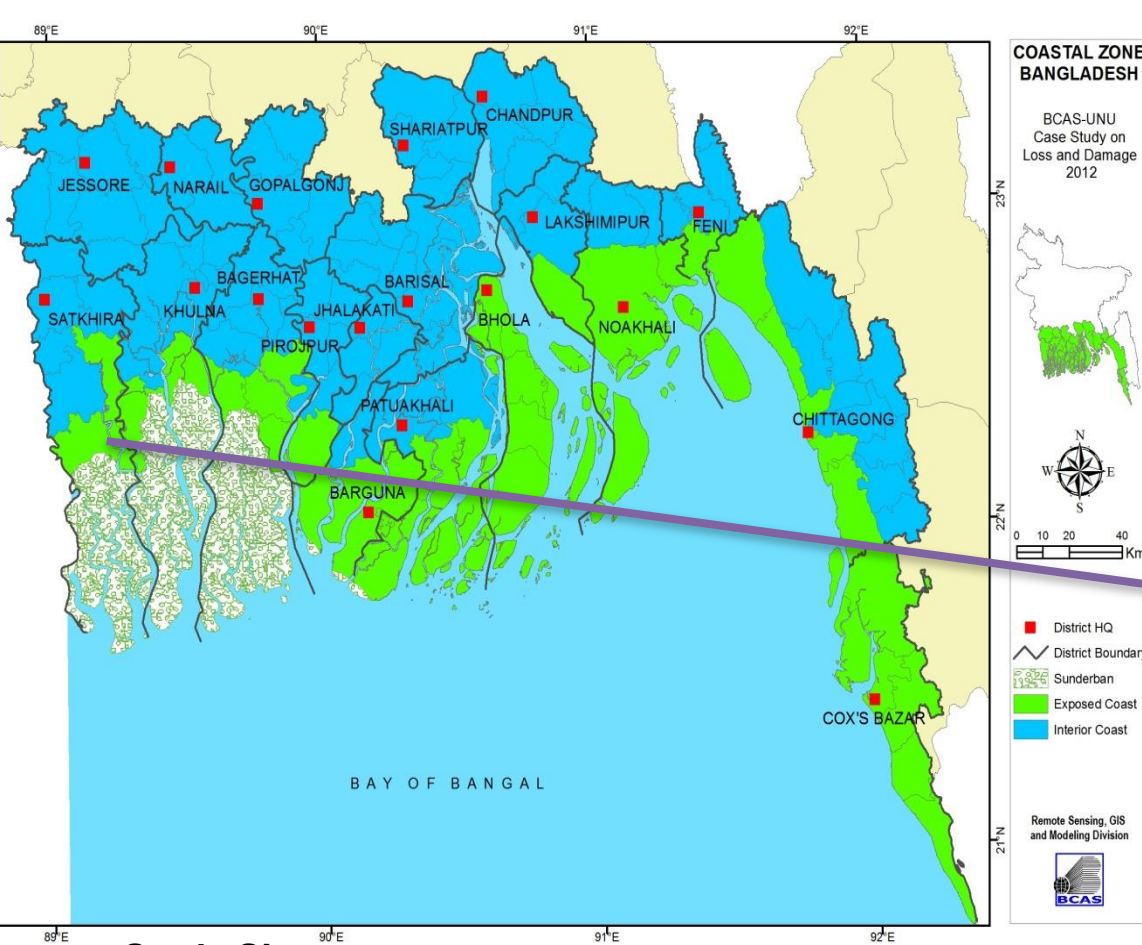


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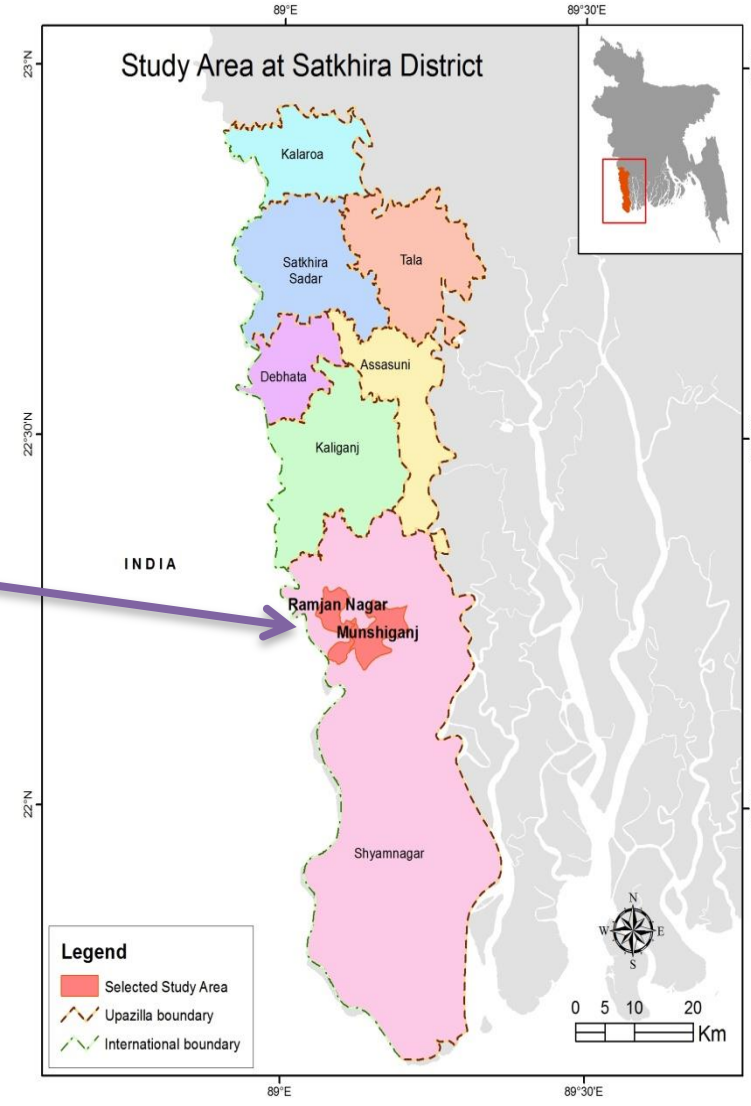
Objective of the study

- ✓ To understand the interactions of salinity intrusion and rice production in the study areas
- ✓ To start understanding how the salinity intrusion might interact in coming decades as the impacts of climatic variability and climate change are expected to manifest them more prominently.
- ✓ In the context of salinity intrusion may be caused by climatic variability and climate change, gain a better understanding of what combinations of policies can decrease loss and damage, and increase resilience to the adverse impacts of climate change in Bangladesh

Study Areas



Study Site
 District: Satkhira
 Sub-district: Shyamnagar
 Union: Ramjannagar and Munshiganj
 Village:: Jelehali, Kultoli, Patarakhola and Tengrakhali



Key Findings

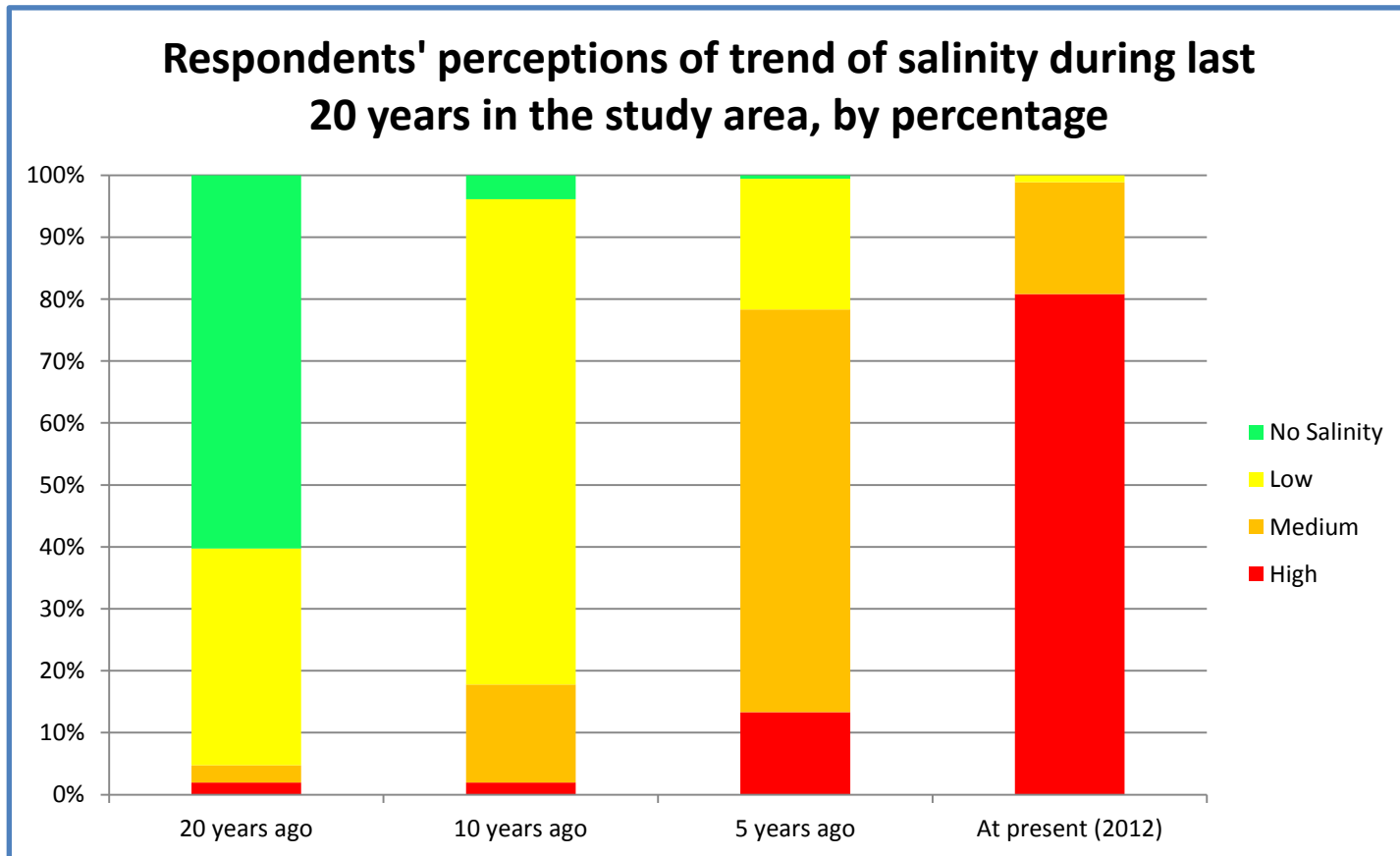
Factors related climate change affecting rice production

- Increased temperature (especially in Mar-Apr-May)
- Salinity in agricultural field and water
- Shifting of rainfall pattern (early or late rainfall)
- Lack of rainfall
- Excessive rainfall
- cyclone and storm surge
- Drought
- Water logging



Key Findings

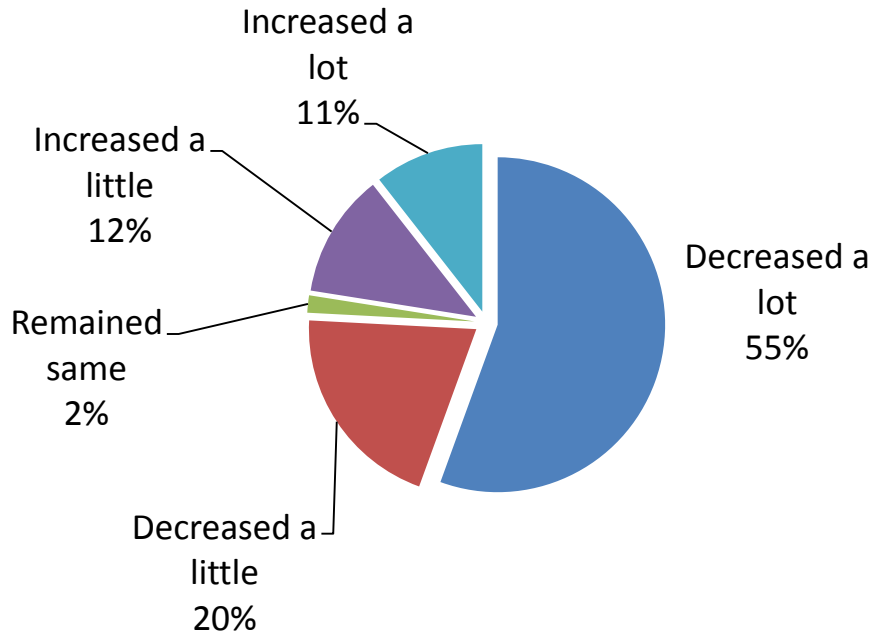
Trend of salinity in the rice fields in the study areas during last 20 years



Key Findings

Impacts of salinity intrusion in the rice fields in the study areas

Change in rice production in the study areas over the last 20 years



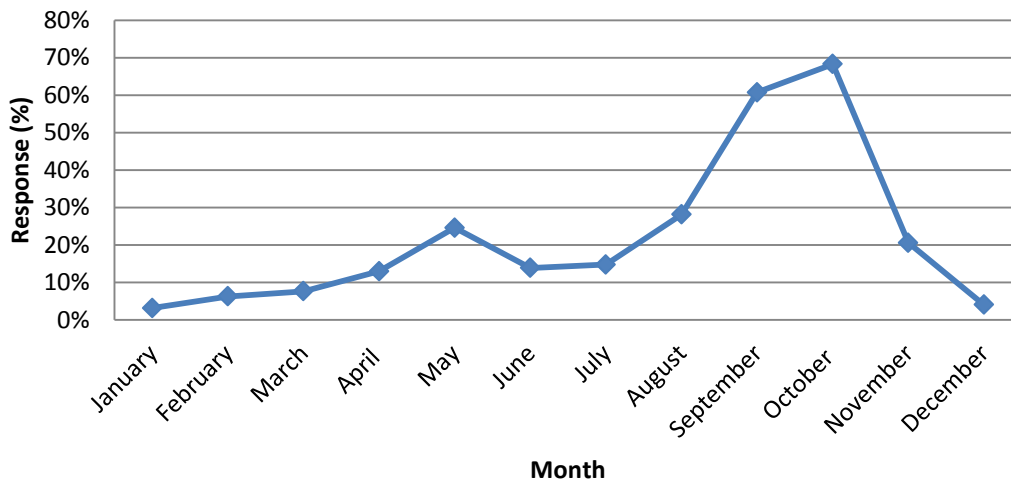
✓ salinity intrusion has increased in soil and water causing reduction of rice production in study areas

✓ In some areas it has increased due to improved farming technology and variety

Key Findings

Impacts of salinity intrusion in the rice fields in the study areas

Percentage of respondents facing food crisis during different months of the year

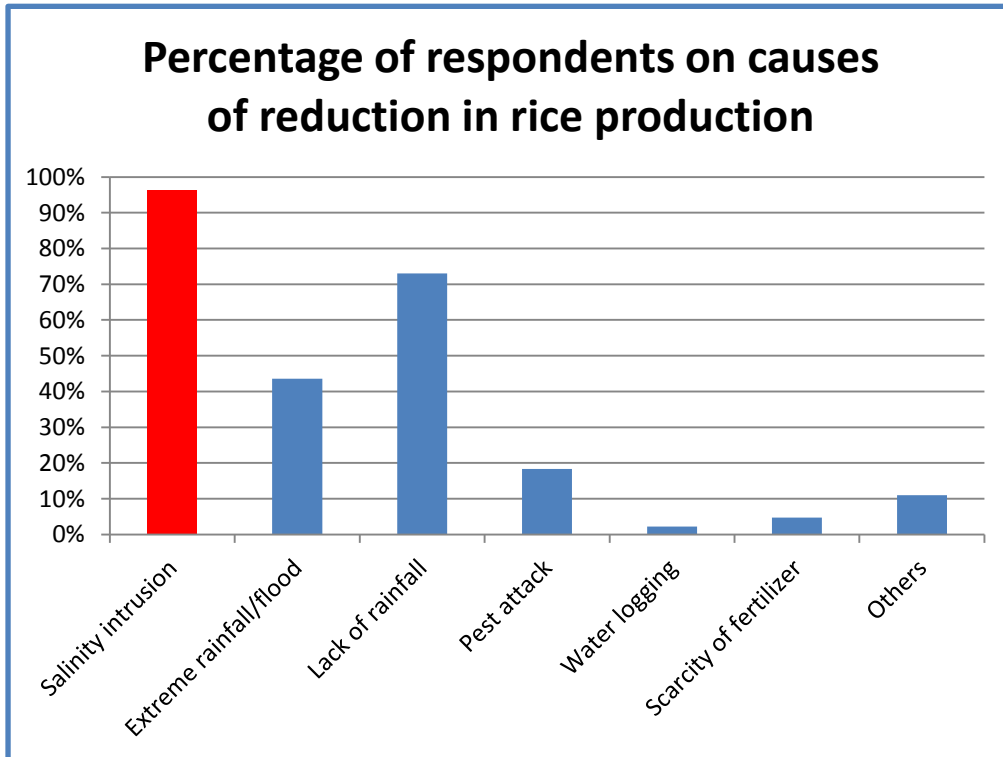


✓ Changes in rice production cause food crises in the study villages

✓ The food crisis was extreme during 2009-2011 for many of the study HHs

Key Findings

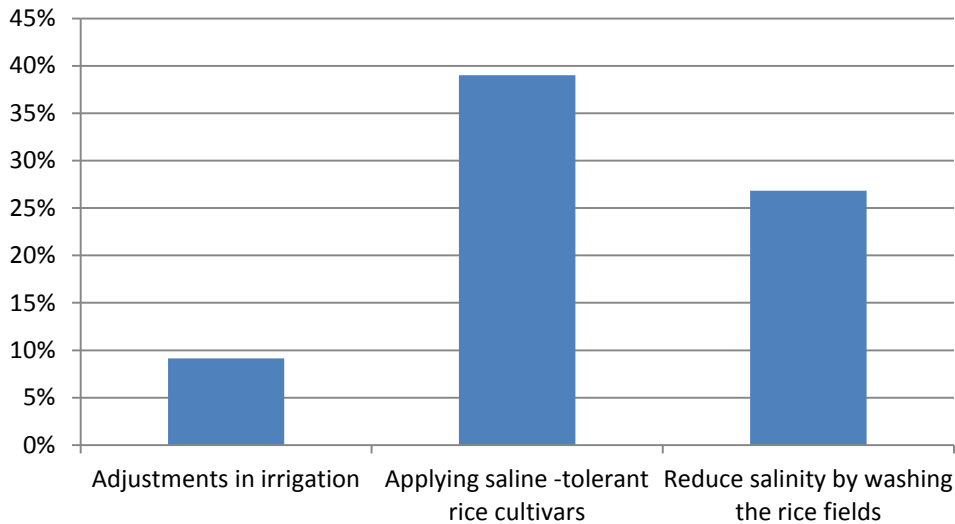
Salinity intrusion is the main cause of declining rice production in the study areas



- ✓ Most respondents (96%) identified salinity intrusion as the main cause of declining rice production
- ✓ Lack of rainfall is also one of the major reasons (73%)

Key Findings

Existing adaptation measures to deal salinity intrusion in rice fields



✓ Field and non-field based adaptation measures;

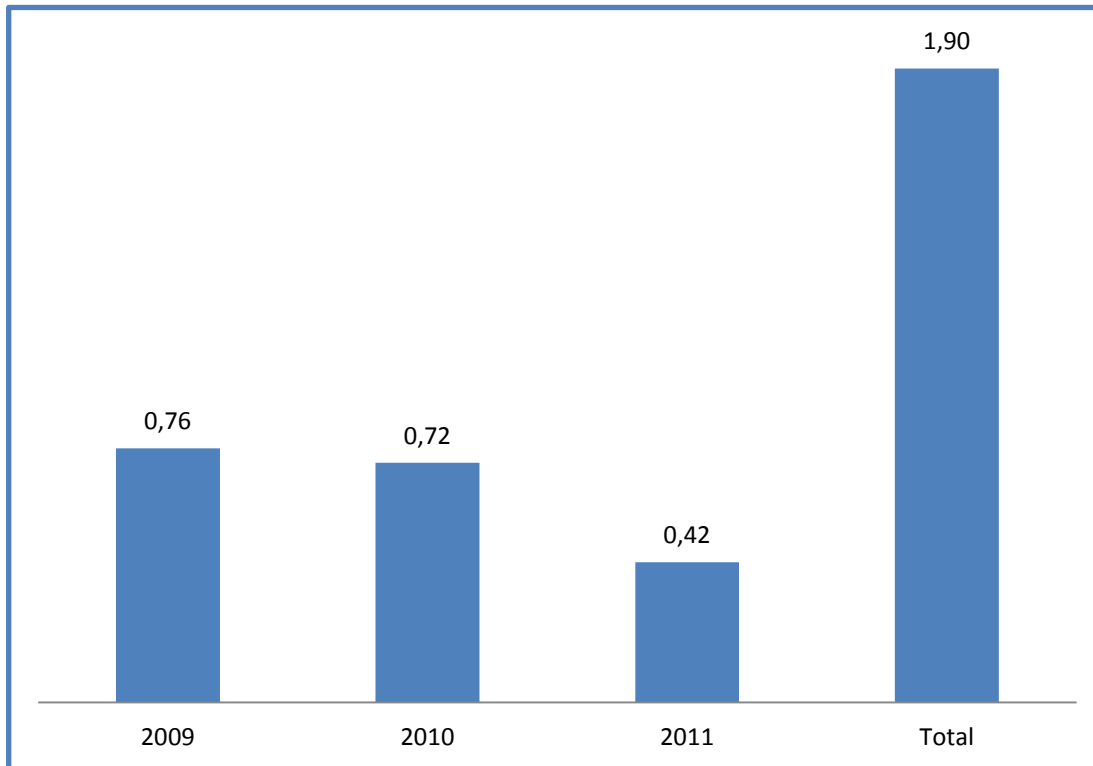
✓ Non-field measures include temporary migration for work, switching to non-agricultural activities, taking loans and others

✓ 39 % adopted saline tolerant varieties



Key Findings

Cost of loss of rice production due to salinity intrusion caused by extreme event (Cyclone Aila) in four study villages (Million USD)

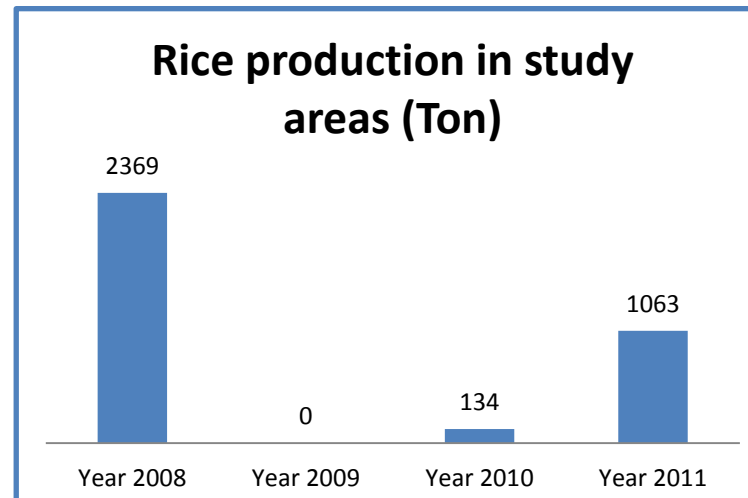


4 villages=1.9 Million USD

1436 Villages (Satkhira District)=?

12 Districts affected by Cyclone Aila=?

Rice production in study areas (Ton)



Few questions from the field

- How do you measure indirect health damage/loss due to long term consumption of saline water caused by extreme or slow onset events?
- How many times you will assess the impacts, vulnerabilities and damages of the disasters without interventions?



Cyclone affected these PSF in 2009 but still (2012) non-functional

Acknowledgement

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Thank you