Agriculture and Adaptation to Climate Change in Bangladesh


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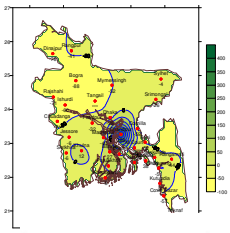
Warming of the climate system in recent decades IS REAL

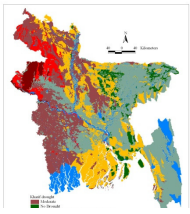
Global surface temperature has increased 0.74 ± 0.18 °C (1.33 ± 0.32 °F) during the last century (The IPCC)

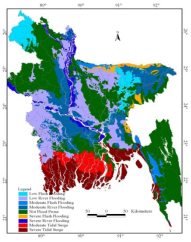
Predicts that global temperatures will rise between 1.8 and 4.0 °C


THE CLIMATE OF BANGLADESH IS CHANGING

INCREASING TEMPERATURE WILL REDUCE CROP YIELDS







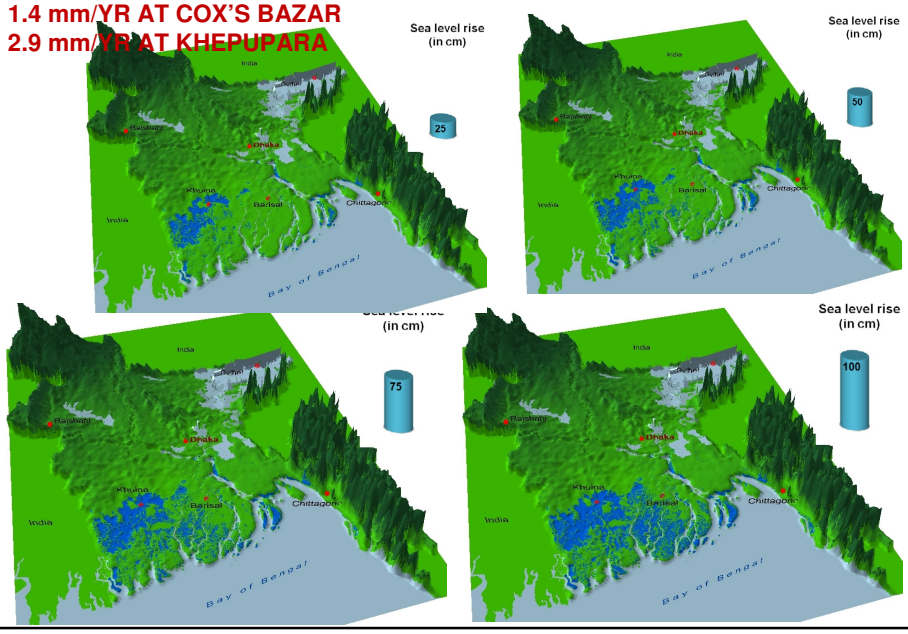
WE HAVE EVIDENCE OF ERRATIC

- **RAINFALL,**
- **DROUGHT, AND**
- **FLOOD AND SUBMERGENCE**

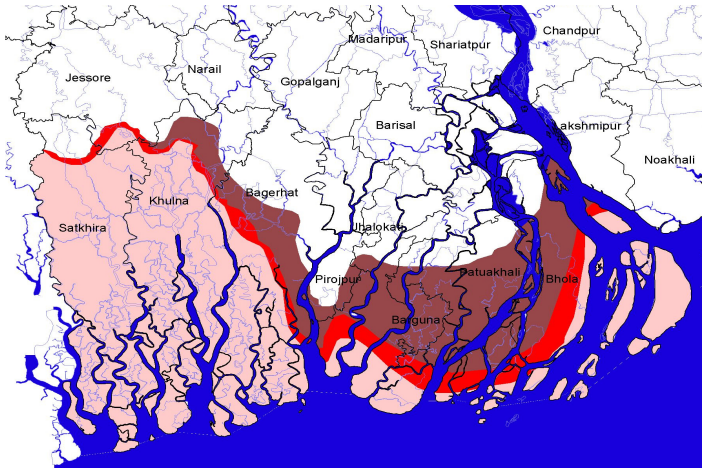
ALREADY ARE MAKING AGRICULTURAL PRODUCTION DIFFICULT and RISKY

Sea Level Rise induced Coastal Flooding and Salinity

5.6 mm/YR AT HIRON POINT
1.4 mm/YR AT COX'S BAZAR
2.9 mm/YR AT KHEPUPARA



SEA LEVEL RISE and STORM SURGES AGGRAVATE Salinity Intrusion



Impact of Sea level rise will negatively impact crop suitability in coastal area of Bangladesh

Scenarios	Highly suitable area	Suitable area	Moderately suitable area	Not suitable area
For T. Aman	% area			
Base	0	84	14	2
32 cm SLR	0	60	24	16
88 cm SLR	0	12	57	31
Boro				
Base	10	36	43	11
32 cm SLR	0	6	37	57
88 cm SLR	0	6	33	61

WE MUST ACT …TO

- **INSULATE FARMERS FROM IMPACT OF CLIMATE CHANGE**
- **STRENGTHENING ADAPTIVE CAPACITY OF COMMUNITIES**
- **DEVELOPING ADAPTATION MEASURES**

Climate has been changing always ….

Farmers over generations and 1000s of years adapted gradually to temporal and spatial changes of climate through developing appropriate farming systems

PRIMARY FOCUS OF ADAPTATION SHOULD BE

to help the farmers and farming communities to improve and strengthen their adaptive capacity to

TO DEAL WITH IMPACTS OF
What we are calling Climate Change

Base on facts and figures,

We need to understand well:

- **WHAT HAS HAPPENED**
- **WHAT IS HAPPENING**
- **FARMERS TRADITIONAL WISDOM AND COPING STRATEGIES**

We should be able to visualize

- **WHAT CHANGES and CHALLENGES COULD BE IN THE FUTURE – short, medium and long term**

IMPROVE SUSTAINABLE FARMING and LIVELIHOOD SYSTEMS to Reduce Risk and Uncertainty and improve income and production

INTEGRATING

- **CROP**
- **LIVESTOCK**
- **FISHERIES**
- **OTHER INCOME GENERATING OPTIONS**

  - **Look at the whole livelihood system**
  - **INTENSIFY while CONSERVING RESOURCES**

- **COMMUNITY ORGANIZATION**
- **CAPITAL FORMATION at household and community level through SMALL savings and its management**

Technologies available:

- ✓ Submergence tolerant Rice varieties
- ✓ Drought tolerant variety
- ✓Salinity Tolerant CROP varieties and crops
- ✓Alternate Wetting and Drying (AWD) in Rice cultivation
- ✓Water management for coastal area integrating
  - ➢ storage of fresh water,
  - ➢ management of polders,
  - ➢involving farming communities, other stakeholders, and
  - ➢crop management technologies

MAKE THE TECHNOLOGIES AVAILABLE TO FARMERS ASAP

On-Going efforts in systems improvement

- ✓Improving our understanding
- ✓Improvement of Farming systems in Coastal area – LACC, MOE projects, IRRI, BRRI, BARI, BLRI, BFRI collaborative projects, CDMP, BCAS, CEGIS, DAE
- ✓ Pulse in between two rice crops
- ✓ Modeling
- ✓ Capacity building – training
- ✓ Varieties with multiple stress tolerance
- ✓ Green Super Rice
- ✓Resource conservation and intensification – and Resource use efficiency

BUILDING UPON FARMERS KNOWLEDGE AND RESILIENCE TO IMPROVE SYSTEM

- **Crop Insurance be introduced**

•MITIGATION is not discounted

•Enable ability to predict – Data generation and management

•STRENGTHEN RESEARCH CAPACITY
•INFRASTRUCTURE

•Policy environment
•Link with market