THE GOBESHONA CONFERENCE FOR RESEARCH ON CLIMATE CHANGE IN BANGLADESH
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Potential impacts of climate variability and change on waterborne diseases in Bangladesh

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Background

- Policymakers, scientists and world leaders are concerned about the association between waterborne epidemic outbreaks and climatic factors.
- Most observed associations between climate and waterborne diseases are based on seasonal variations and occasional outbreaks following extreme events.
- Several studies provide quantitative evidence that waterborne diseases are linked to climatic factors, such as precipitation and ambient air temperature.
- This work is focused on specific waterborne diseases that are more susceptible to Global climate variability and change and the key features that help in their transformation.

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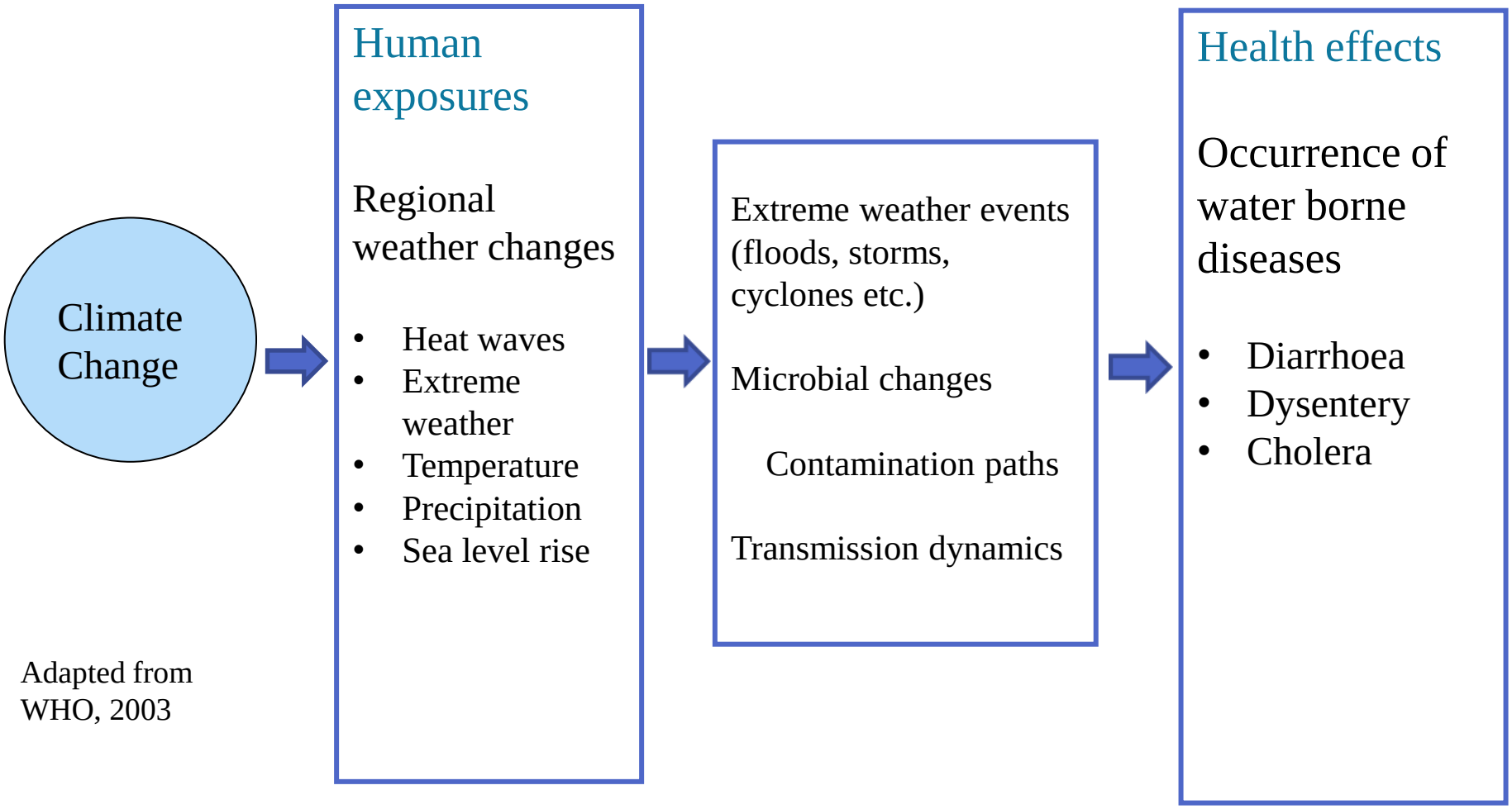
Climate change and water borne diseases linkage



Adapted from WHO, 2003

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Climate change impact on waterborne diseases in Bangladesh

- Bangladesh has been already vulnerable to outbreaks of infectious, water borne and other cases of diseases.
- Climate change, the combination of higher temperature and potential increase in summer precipitation, cause the spread of many infectious and water borne diseases.
- The common waterborne diseases in Bangladesh include diarrhoea, dysentery, cholera, jaundice, skin diseases etc.
- Waterborne diseases such as diarrhoeal disease remains common in Bangladesh, causing around 100,000 deaths a year.

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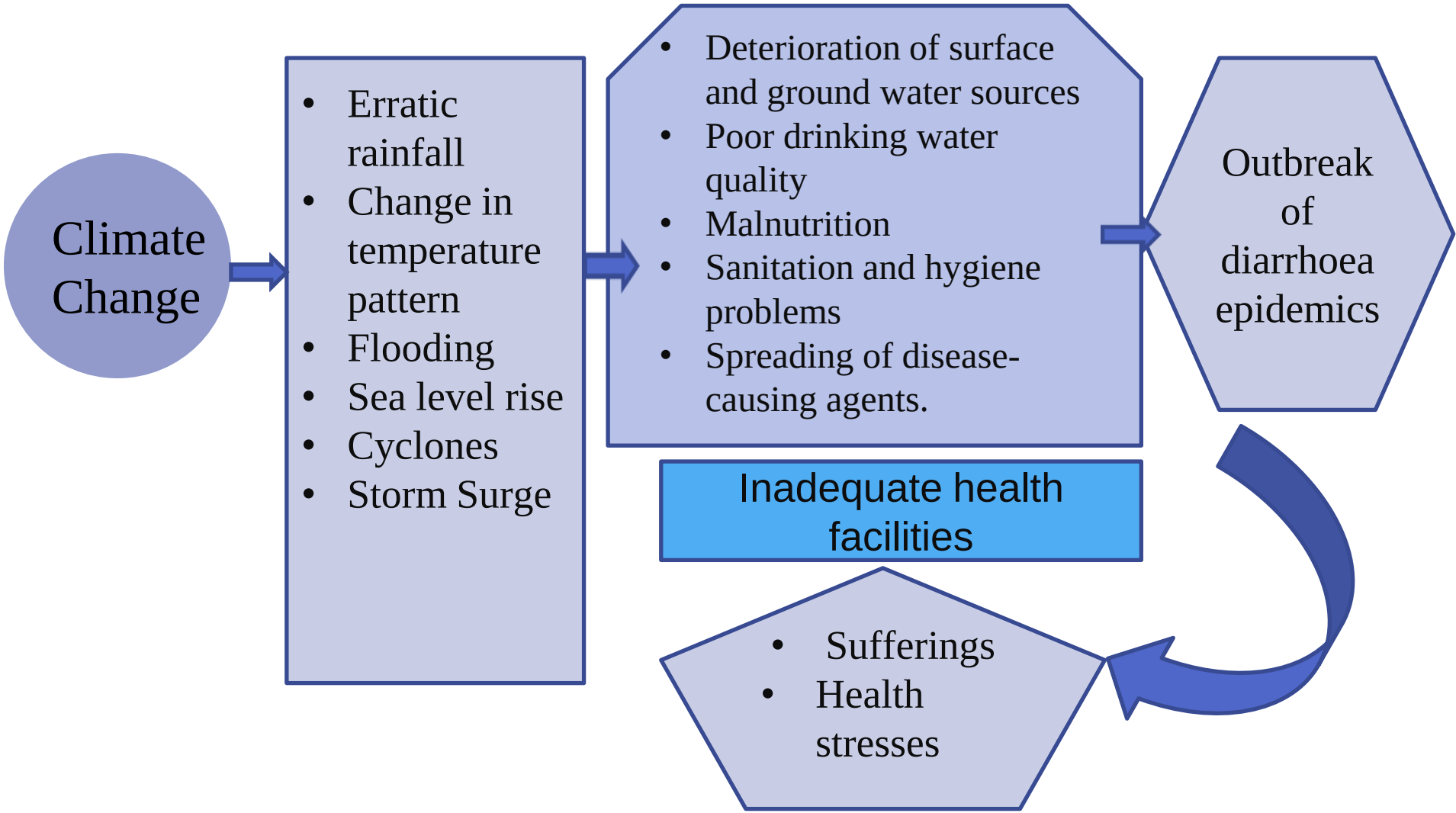
Climate change impact on waterborne diseases in Bangladesh (A case study on diarrhoea)



Spatial distribution of diarrhoea in Bangladesh

District	Incidence rate (Per 1000)
Bagerhat	21.71715
Bandarban	41.85105
Bogra	16.79199
Chittagong	12.7039
Cox's Bazar	21.1751
Dhaka	6.006176
Dinajpur	29.03014
Faridpur	4.788819
Ghazipur	15.11415
Gopalganj	113.1282
Jhalokathi	101.8625
Khulna	40.16981
Kishoreganj	35.40363
Kushtia	56.20005
Lalmonirhat	5.914867
Sylhet	26.78883
Tangail	29.40989

Source: BBS, 2010, DG-Health, 2010

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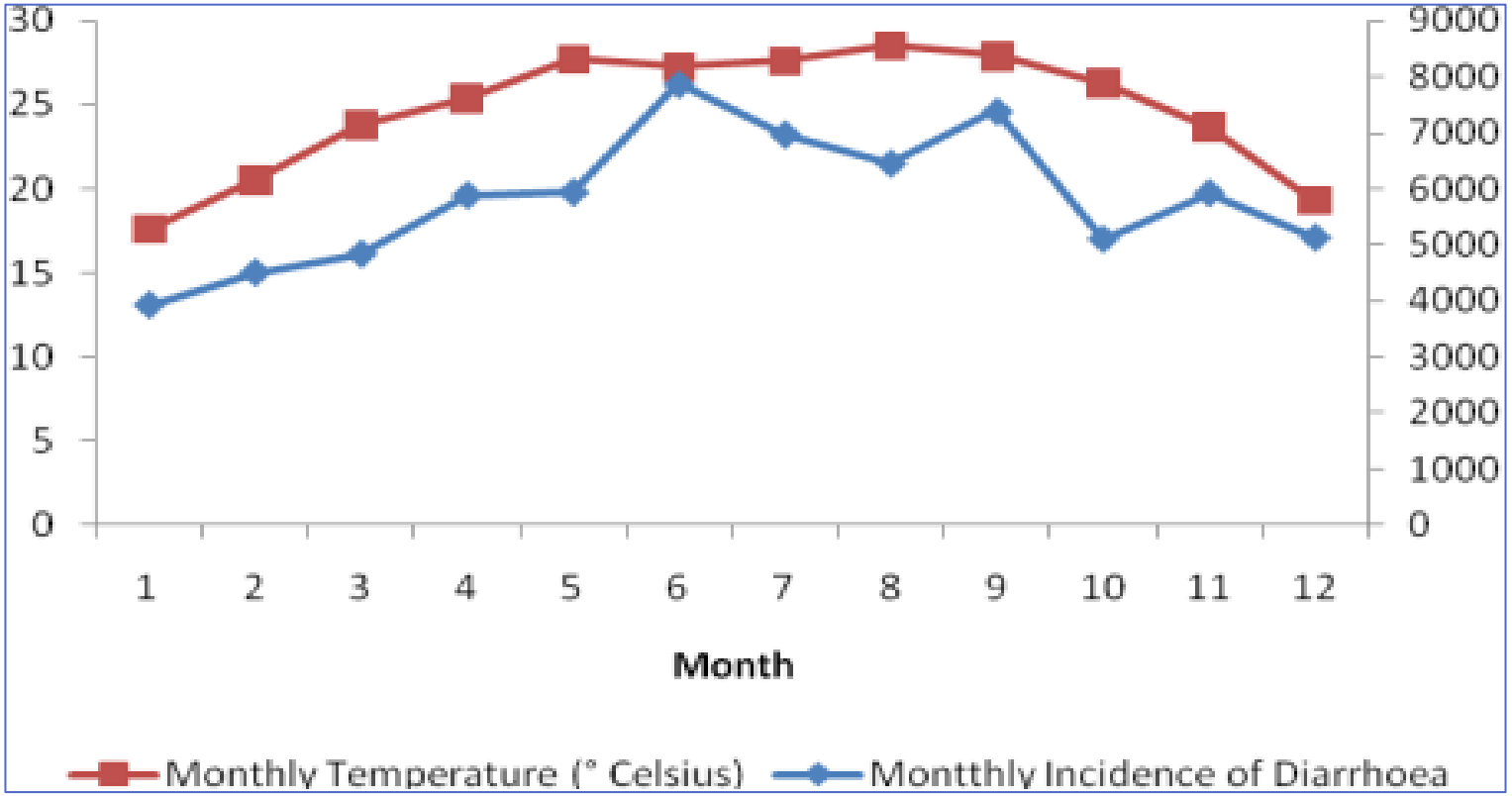
Observed relationship between temperature & incidence of diarrhoea in Khulna District (2010)



Data Source: BMD, 2010; DG-Health, 2010

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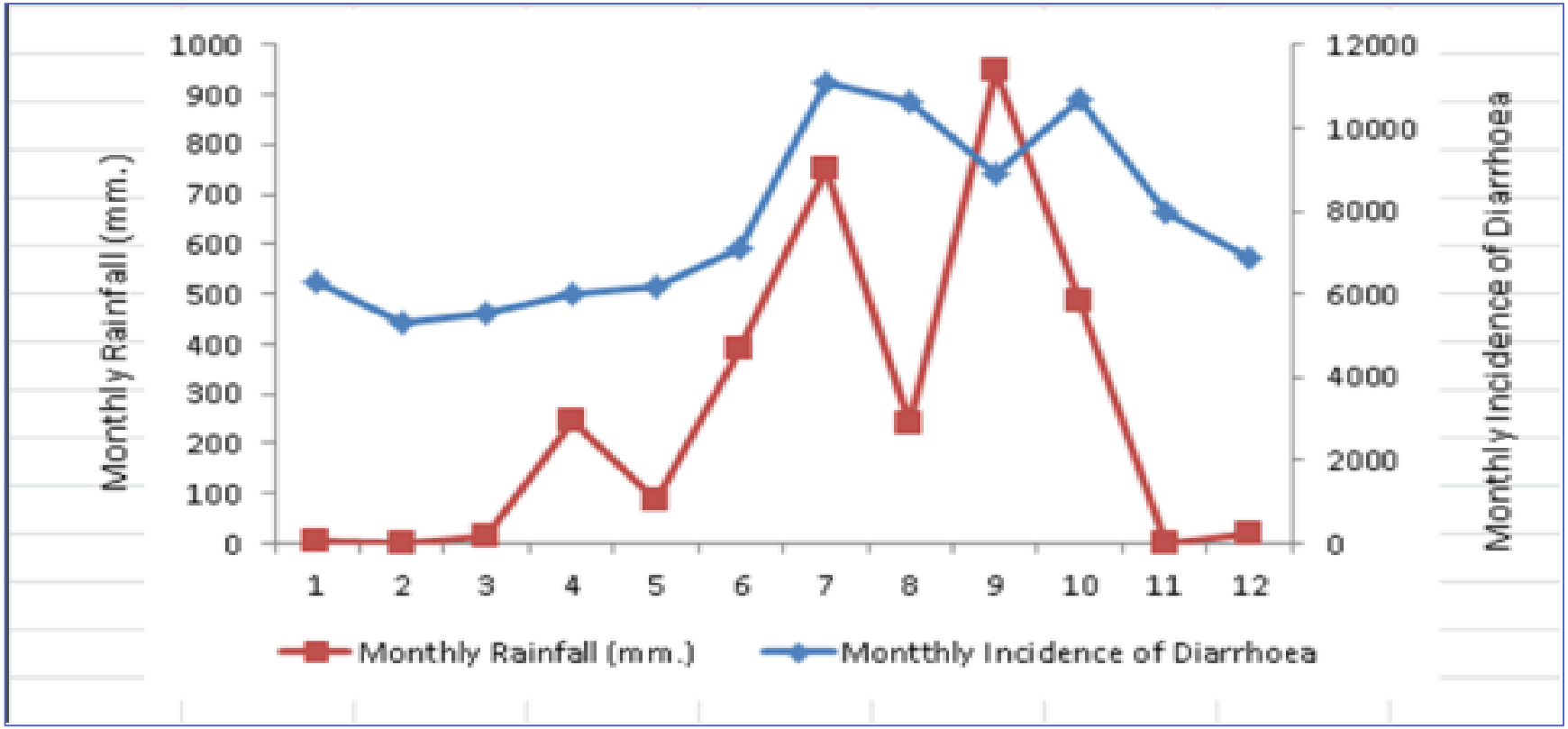
Observed relationship between rainfall & incidence of diarrhoea in Khulna District (2010)



Data Source: BMD, 2010; DG-Health, 2010

The relationship between monthly average temperature and diarrhoea in Khulna District (Rx): 2003-2009

Year	2003	2004	2005	2006	2007	2008	2009
Regression (Rx) value	0.75	0.78	0.65	0.73	0.71	0.61	0.61

The relationship between monthly average rainfall and diarrhoea in Khulna District (Rx): 2003-2009

Year	2003	2004	2005	2006	2007	2008	2009
Regression (Rx) value	0.38	0.32	-0.03	0.21	0.29	0.17	0.27

Relationship between yearly average temperature and incidence of diarrhoea in Khulna District (2003-2009)

Regression (Rx) value (according to total incidence)	Regression (Rx) value (according to incidence rate)
-0.34	-0.54

Relationship between yearly average rainfall and incidence of diarrhoea (2003-2009)

Regression (Rx) value (according to total incidence)	Regression (Rx) value (according to incidence rate)
-0.29	-0.56

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Thank You

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