Determining Minimum Risk Depending on Least Adaptive Response of a Coastal City in Bangladesh during Cyclone Generated Storm Surge

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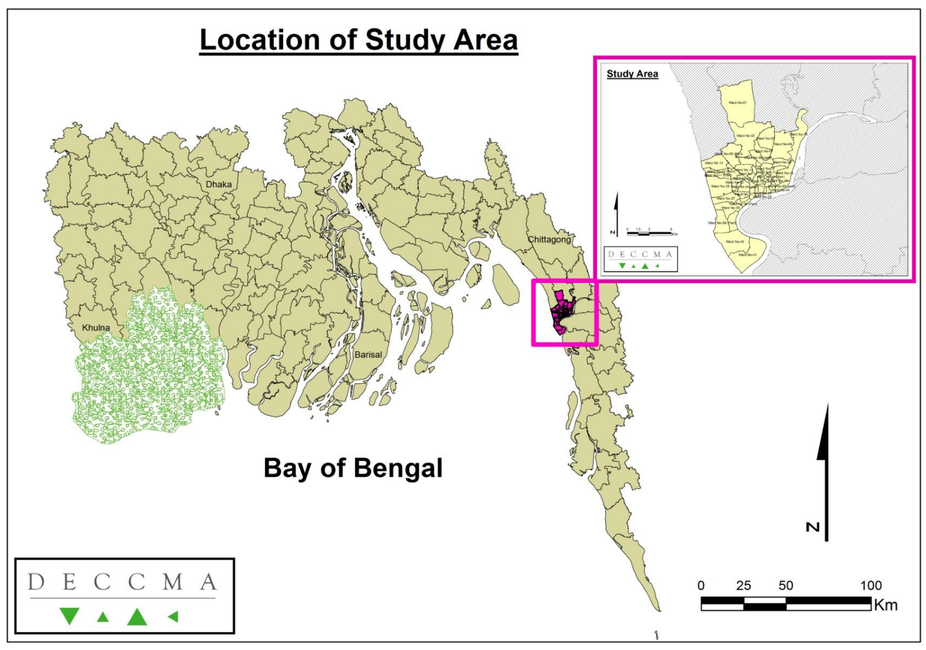
DECCMA 5th Consortium Meeting, 2016

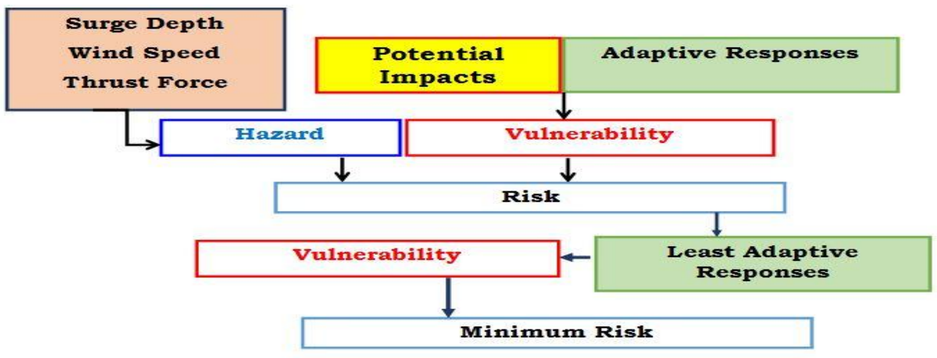
STUDY AREA

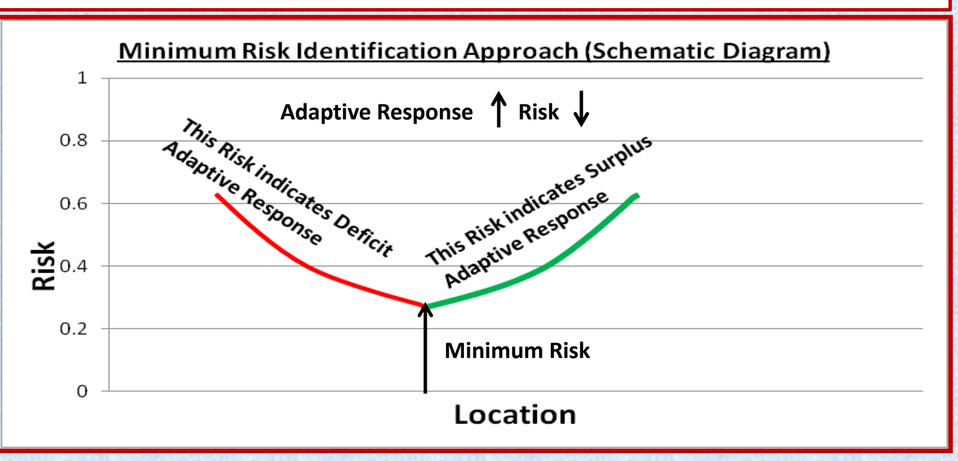
CHITTAGONG CITY CORPORATION: 41 WARDS



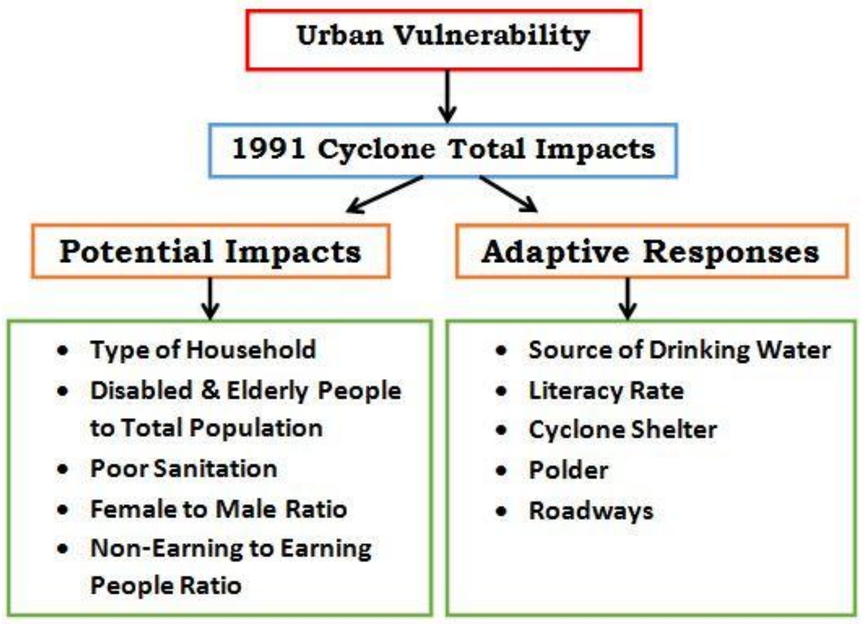
METHODOLOGY

- Vulnerability = Potential Damage Impacts- Adaptive Responses
- Risk = Probability of Hazard * Vulnerability (based on IPCC TAR report)





URBAN VULNERABILITY INDICATORS



CONCLUSION

- In this particular urban city, there is a minimum limit of risk, depending on maximizing the 'least adaptive response'.
- The cycle of continuation of risk minimization is possible by increasing the 'next least adaptive response'.

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INTRODUCTION

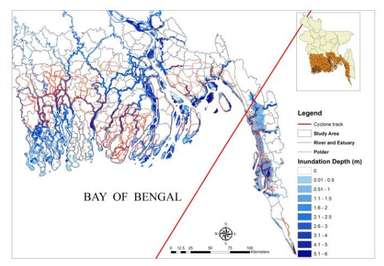
- Chittagong is a coastal city of Bangladesh having different types of structural and non-structural adaptive measures against cyclones and cyclone generated storm surge.
- 1991 cyclone, a category 4 type cyclone hits the Chittagong coast and caused severe damage in both exposed and interior urban coast.
- The adverse impact of vulnerability with low and inadequate adaptive measures makes this urban coastal city at high risk from cyclones.
- This study presents a risk minimization approach by increasing and re-adjusting the adaptive responses prevailing in the city.

FINDINGS

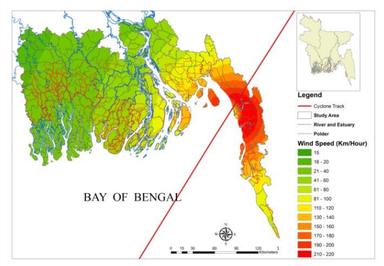
HAZARD AND URBAN VULNERABILITY

HAZARD

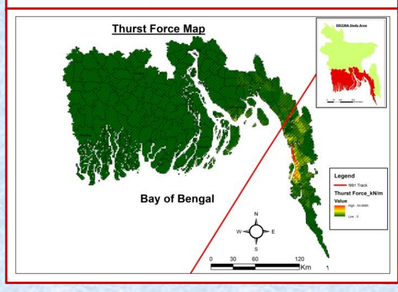
Surge Depth



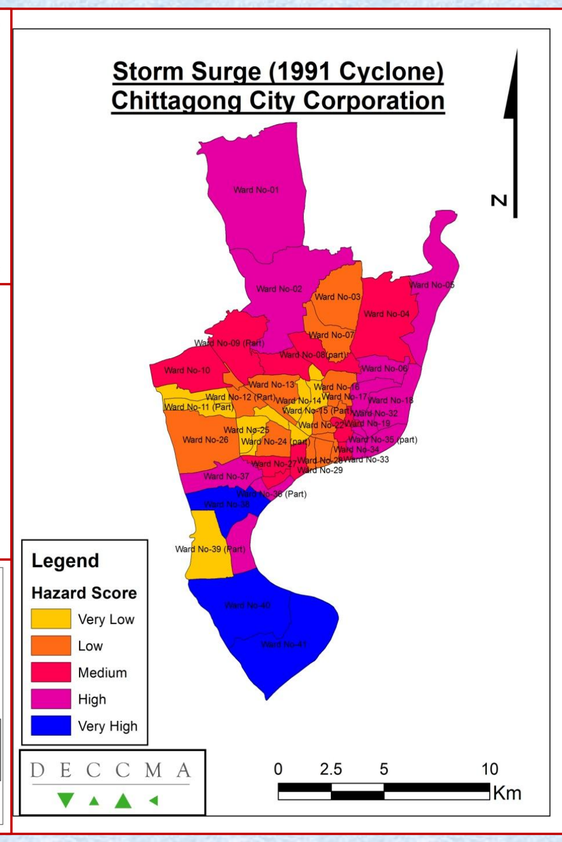
Wind Speed

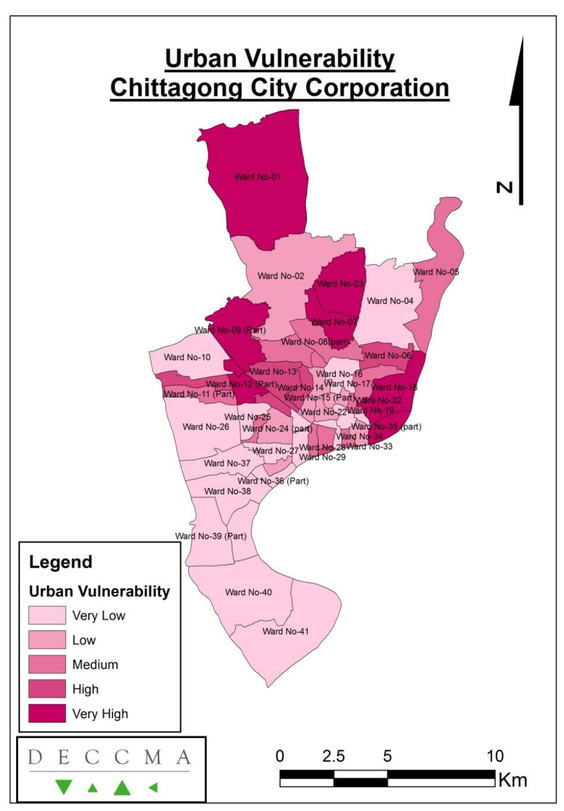


Thrust Force



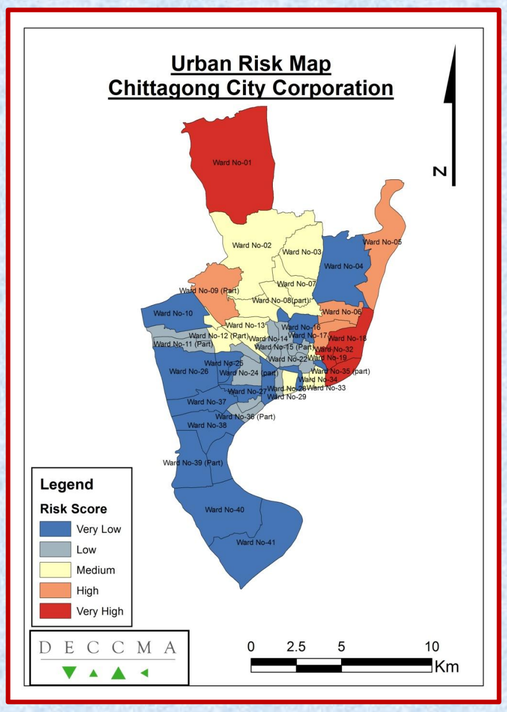
VULNERABILITY



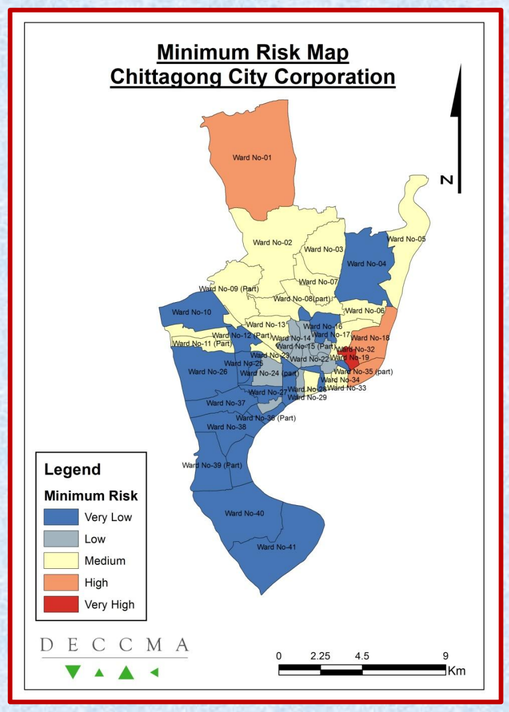


VARIATION OF RISK MAPS

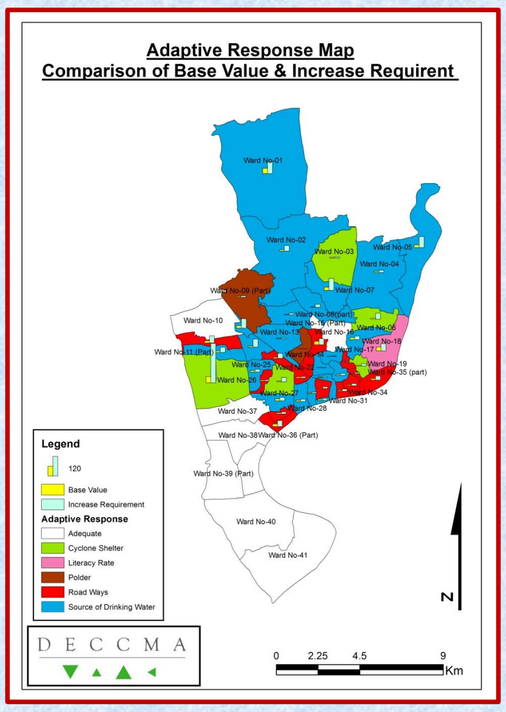
RISK MAP



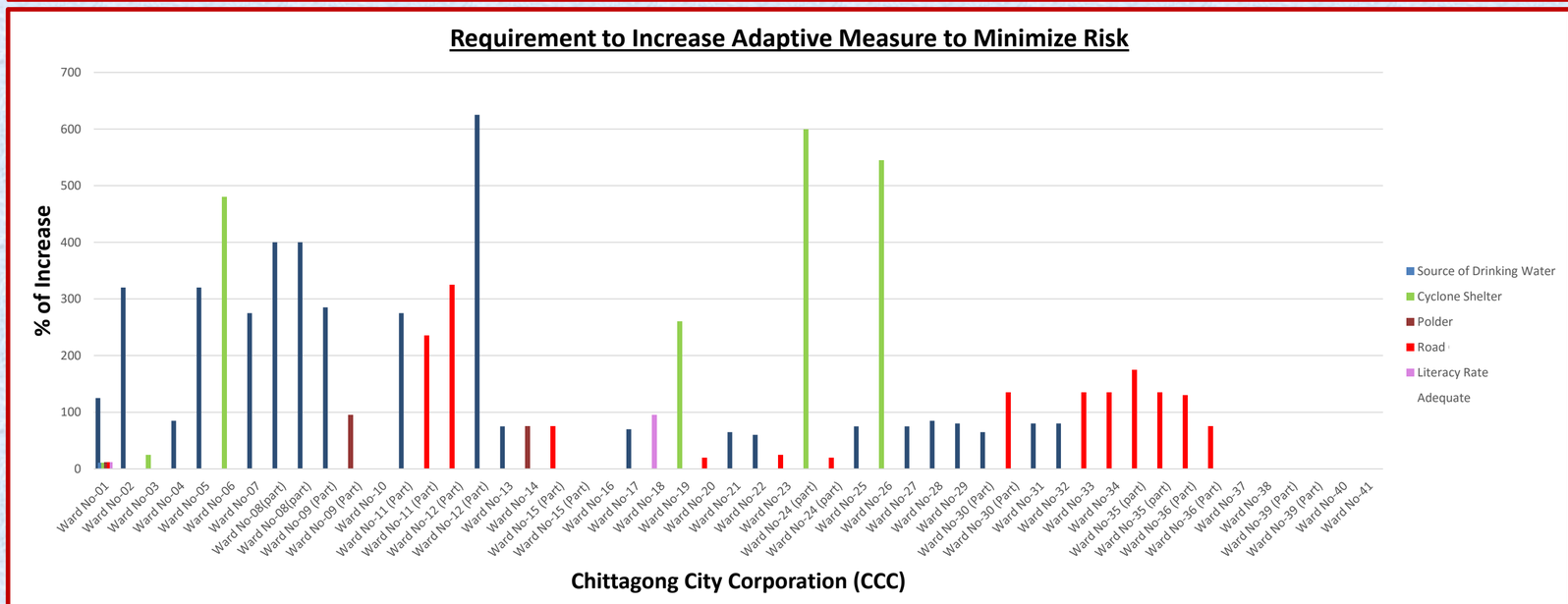
MINIMUM RISK MAP



ADAPTIVE RESPONSE MAP



RESULT



ACKNOWLEDGEMENT

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