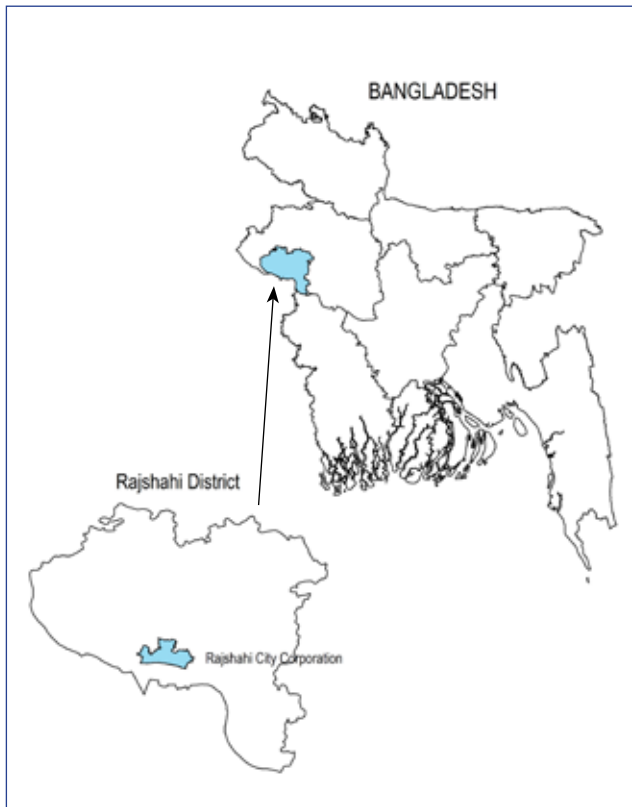


City Resilience Strategy: Rajshahi

The metropolitan city of Rajshahi is situated on the north bank of river Padma and is the headquarters of the Rajshahi Administrative Division of Bangladesh. It covers an area of 45 sq km and accommodates a population of about 448,087. Rajshahi is a centre of excellence for education with a large number of educational institutions and is often called the Education City of Bangladesh. The University of Rajshahi is the second oldest and one of the largest public universities in the country. Rajshahi



Municipality is one of the first municipalities in Bangladesh and was established in 1876. It became Rajshahi City Corporation (RCC) in 1991. The city is served by the Shah Makhdum Airport. It is also famous for Rajshahi silk and is often referred to as the Silk City of Bangladesh.

The city's maximum mean temperature observed is about 32°C to 36°C during the summer months and the minimum temperature recorded in winter is about 7°C to 16°C. The annual rainfall in the district is about 1,448 mm. Rajshahi experiences a number of natural disasters such as floods, drought and cold waves, which have started to appear with an increased frequency and intensity compared to previous years.



Climate Risks











The two climate risks identified through the ICLEI ACCRN Process (IAP) for Rajshahi are:

| Changing Climate Conditions | Climate Scenario Summary Statements |
|--|---|
| Decreased rainfall  | There will be an increase in the amount of run-off and rainfall intensity. |
| Increased temperature  | Mean temperatures across Bangladesh are projected to increase between 1.4°C and 2.4°C by 2050 and 2100, respectively. |



Vulnerability Assessment

The fragile urban systems and their corresponding climate fragility statements for Rajshahi are:

| Fragile Urban Systems | | Climate Fragility Statements |
|---|---|--|
|  |  | • The water resource in the city will be under greater stress, leading to health impacts and impacts on economy dependent on water such as agriculture. |
|  |  | • In case of health risks due to sudden climatic impacts the health system may fail in the city if there are suddenly more patients. |
|  |  | • Can exacerbate habitat loss due to impact on biological cycles of species, that will further reduce urban biodiversity. |
|  |  | • May cause waste to decompose in open dumps creating health hazards; choking of drains can lead to improper drainage and health hazards to population by water logging in rainy season. |
|  |  | • Impacts agriculture, fishery, fruit cultivation, and thereby economy of the city. It can also increase immigration to the city from surrounding areas. Daily labour and vendors will be impacted since they will be unable to work in harsh climate. |

Through the vulnerability assessment, the adaptive capacity of the key actors identified in the IAP was scored based on three parameters: capacity to organize and respond, availability of resources, and access to information. Actors who receive a low adaptive capacity score are classified as vulnerable while those who receive medium and high scores are classified as supporting and can aid the local government in resilience building activities. The table below presents an overall analysis of actors across the different fragile urban systems.






Actor Analysis for Rajshahi City

| Vulnerable Actors | Supporting Actors |
|---|---|
| <ul style="list-style-type: none"> • Slum dwellers • Women • Children • Elderly • Citizens • Farmers • Vendors • Rickshaw pullers • Sanitary Workers | <ul style="list-style-type: none"> • City Development committee • Entrepreneurs • Water Supply and Sewerage Authority • RCC |

RCC has high adaptive capacity since it has access to resources, information and ability to respond to stress.

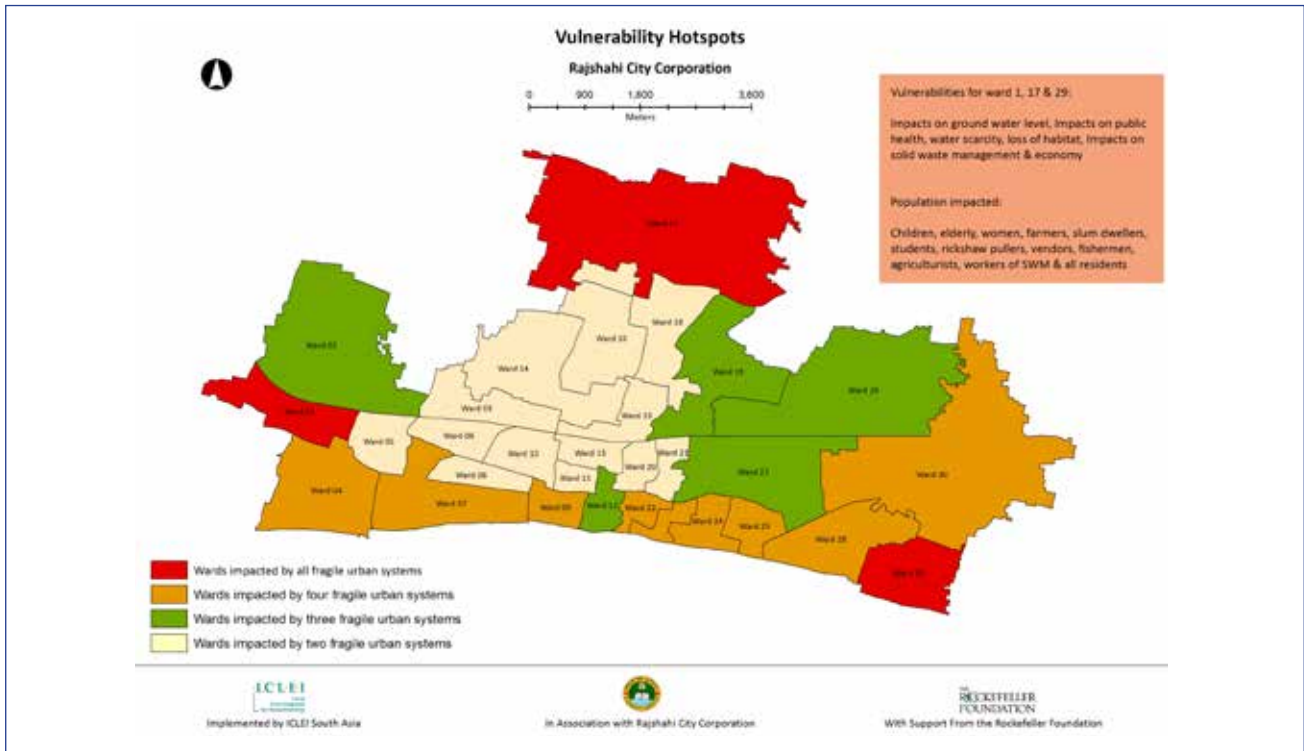
The adaptive capacities of the fragile urban systems are assessed on the basis of five broad categories – economic, technology/infrastructure, governance, social, and ecosystem services. Each of these five categories was rated as high/medium/low and averaged across all the urban systems to generate an overall score for each parameter in the city as detailed in the following table.

Overall Adaptive Capacity of Systems in Rajshahi City

| Adaptive Capacity Parameters | Adaptive Capacity Score | | |
|--|-------------------------|--------|------|
| | Low | Medium | High |
|  Technological/ Infrastructural | | | |
|  Economic | | | |
|  Governance | | | |
|  Societal | | | |
|  Ecosystem services | | | |

In Rajshahi the areas that were found to be most vulnerable were wards 1, 17 and 29 which are vulnerable to all five fragile urban systems, while wards 4, 7, 9, 22, 23, 24, 25, 28 and 30 are vulnerable to four fragile urban systems (refer map). Wards 1, 17 and 29 are located on the peripheral edges of the city and lack coverage of the basic services. The wards which are affected by four systems are mostly close to the river and have slum population.





The policy/non-infrastructural measures identified through the IAP include awareness generation activities for water conservation, waste segregation, training and capacity building for alternate livelihoods, research on resilient species for agriculture or fishery among others. Also important are intergovernmental coordination

and cooperation as well as formulation of long term and holistic city level plans for development. The hard measures include infrastructural development to improve water supply and waste management, maintenance and conservation of natural resources, and investment in improvement and diversification of livelihood.

Key Interventions Identified for Rajshahi City

| Infrastructural Measures | Non-Infrastructural/ Policy Measures |
|---|--|
| Water Supply | |
| <ul style="list-style-type: none"> Rainwater harvesting program with the collaboration of the city water supply department, for storing rainwater on surface (public) ponds/tanks and recharging ground water where appropriate. RCC can also encourage citizens to apply this rainwater harvesting program in their building rooftops for both potable and non-potable usage. <p>Costs associated (Civil and construction costs, labour, equipments, materials, staff costs, training, meetings): USD 10,000 per unit</p> <p>Co-benefits: Improve soil conditioning, green area development</p> | <ul style="list-style-type: none"> Awareness building programs for residents and community groups such as arranging workshops, seminars, school programs, ward level visits and campaigns for preservation of water, publication and dissemination of leaflets and posters, exhibitions, etc. These programs could be implemented by NGOs and sectoral representatives with initiatives and leads taken by the Urban Local Body. <p>Costs associated (Cost of materials, trainings, meetings, publications, logistics, staff costs): USD 2,500 per training.</p> |
| Economy | |
| <ul style="list-style-type: none"> To increase climate adaptive trade and tourism based activities, eg. Eco-tourism, green procurement practices. <p>Costs associated (Cost of planning, construction and civil costs, Labour, Materials, training): A detailed project report is needed for the estimation of costs.</p> <p>Co-benefits: Alternate skill development.</p> | <ul style="list-style-type: none"> Alternative income streams for affected low income earners and daily labourers. Trainings with the help of NGOs on production of home-made foods like pickles, papad, toys, vegetable vending, handloom production, driving auto rickshaw etc. <p>Costs associated (Cost of training, meetings, logistics, IEC, staff costs): USD 5,000 for each training for 30-50 people.</p> <p>Co-benefits: Alternate skill development.</p> |

| Infrastructural Measures | Non-Infrastructural/ Policy Measures |
|---|--|
| Solid Waste Management | |
| <ul style="list-style-type: none"> Establish a sustainable waste collection system. Segregation of waste at source should be enforced and RCC could take initiatives to collect both residential and commercial waste against a service charge by engaging NGOs or any other private organizations. Covered vans with a number of bins into which the separated waste is collected can be used for transportation. A composting facility should be created along with the aforementioned infrastructure. <p>Costs associated (Cost of IEC, renovation of vans for collection, sorting facility, labour, staff, training): A detailed project report needs to be developed to assess actual costs. Decentralised systems can be set up for about USD 25,000 for each ward, including small pit composting system, simple sorting facility and IEC.</p> | <ul style="list-style-type: none"> Development of an Integrated Solid Waste Management Plan for the city. <p>Cost associated (Cost of consultant, meetings, trainings, designing and printing): USD 20,000.</p> |
| Biodiversity | |
| <ul style="list-style-type: none"> Afforestation along roads and riversides wherever appropriate. <p>Costs associated (Cost of plants, staff costs, materials, maintenance costs, labour): USD 30,000 per drive</p> <p>Co-benefits: Can provide livelihood options.</p> | <ul style="list-style-type: none"> As the RCC is planning on setting up a biodiversity park in the city, training on the same is required. <p>Cost associated (Cost of training of two people in international partner city): USD 15,000.</p> |
| Health | |
| <ul style="list-style-type: none"> Improvement of RCC Hospital and Urban Primary Health Care Centres in terms of increasing beds, specialists, number of nurses and other staff, availability of medicines, diagnostic and operational equipment. <p>Costs associated (Construction costs, materials, staff costs, training): USD 75,000</p> <p>Co-benefits: Will increase the storage of medicine.</p> | <ul style="list-style-type: none"> Preparation of a health emergency response plan jointly by the municipality and city hospitals to respond to climate and disaster emergency events. This may include regular drill/practice sessions, staff specific emergency situation guidelines, containment of risks, check lists for post emergency situation and treatment etc. <p>Costs associated (Meetings, training, planning cost, staff costs, logistics): USD 15,000 to formulate plan.</p> |

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