Study – Dhaka, Bangladesh

A Sponge city to fight Climate Change

This case study examines the difficulties Dhaka City, Bangladesh, has in handling flood concerns brought on by climate change, as well as the major initiatives taken by the administration to adapt to and mitigate these problems. The idea of a "Sponge City" has evolved as a sustainable strategy for managing urban water consumption, with the goal of absorbing, storing, and reusing surplus water to lower the danger of floods. The management of Dhaka City has used the Sponge City concept's potential by putting a number of initiatives into place to strengthen the city's resilience and guard against the effects of climate change.

Image Source: Free Stock Photo (pexels.com)

Photograph 1: Dhaka City Photograph

Bangladesh's capital, Dhaka City, is particularly susceptible to floods brought on by climate change because of its geographic position and rising urbanisation. Flood dangers have worsened by the city's low-lying geography, heavy rainfall, and shoddy drainage infrastructure. The government has implemented a number of actions that use the Sponge City idea in order to solve this urgent problem, as mentioned below:

1. Improving Drainage system: The city's drainage system has benefited from major government investment. This includes developing fresh stormwater drainage systems, maintaining current canals, and dredging waterways to improve water flow. The goal is to reduce the likelihood of flooding by facilitating the effective disposal of extra water during periods of heavy rainfall.

2. Creating Green Spaces and Water Absorbing Surfaces: The government has been pushing the development of green spaces and water-absorbing surfaces to improve water absorption and lower runoff. In addition to encouraging permeable pavements and green roofs, these methods entail building parks, gardens and rooftop gardens. Such actions lessen the burden on drainage systems by increasing the city's capacity to absorb precipitation.

3. Implementing Flood Resilient Infrastructure: The government has included flood-resilient elements in the design and construction of buildings and infrastructure projects as a result of realising the necessity for resilient infrastructure. These include creating structures that can withstand flooding, establishing higher roads, and putting floating homes in risky regions. By using these methods, the city can more effectively endure flood occurrences and reduce infrastructure damage.

4. Water Harvesting and Reuse: The government has placed a strong emphasis on water harvesting and reuse techniques in order to maximise water supplies. To collect and store rainwater for non-potable applications, rainfall harvesting technologies, including rooftop collection systems and subterranean reservoirs, are being developed. With this strategy, the city's overall water management is improved, and its dependency on groundwater is decreased.

5. Community Engagement and Awareness: The government is aware of how crucial community involvement and awareness are to fostering resilience. The neighbourhood’s residents are being encouraged to participate in flood preparedness and response activities. To empower locals and improve their resistance to floods, training programmes, early warning systems, and community-based flood management committees have been formed.

Conclusion

The government's involvement in the administration of Dhaka City shows a proactive approach to addressing the flood issues made worse by climate change. The city hopes to improve its urban water management systems by adopting the Sponge City idea, therefore fostering sustainability and resilience. In order to adapt to and reduce flood risks, it is essential to adopt the major interventions mentioned in this case study, such as improving drainage infrastructure, developing green areas, installing flood-resistant infrastructure, encouraging water harvesting and reuse, and encouraging community involvement. To guarantee long-term efficacy, these treatments must be continuously monitored, assessed, and modified. As an example of the possibilities for resilient and sustainable urban growth in the face of similar climate difficulties, Dhaka City's dedication to becoming a Sponge City serves as an inspiration for other metropolitan regions.