

## RETHINKING THE POLICY CAPACITY OF PAKISTAN TO ADOPT BLUE-GREEN INFRASTRUCTURE

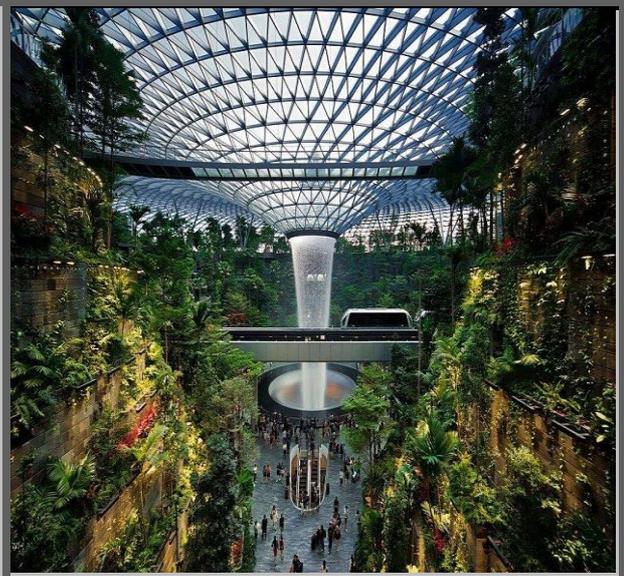
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*(Views expressed in the brief are those of the author, and do  
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### ***Background***

The notion of incorporating nature into urban planning is becoming quite popular in cities throughout the world, mainly due to aggravating impacts of climate crisis in the form of shifting rainfall patterns, floods, droughts, and heat waves. This is where the blue-green infrastructure comes into play; a novel approach that offers nature-based solutions for flood resilience by combining green infrastructure and sustainable water management.

### ***What is Blue-Green Infrastructure***

The blue-green infrastructure projects cover a broad array of examples from small-scale green roofs and rain gardens to large-scale living walls and urban forests, treating water as an opportunity rather than a threat.<sup>1</sup> However, the mainstreaming of blue-green approaches to sustainable development depends heavily on the knowledge and priorities of stakeholders. Therefore, the policy capacity of a nation holds prime importance in disseminating awareness regarding sustainable water resilience, engaging relevant interest groups, and providing incentives to corporations for investment in blue-green infrastructure.

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<sup>1</sup> Almaaitah, T., Appleby, M., Rosenblat, H., Drake, J., Joksimovic, D., "The Potential of Blue-Green Infrastructure as a Climate Change Adaptation Strategy: A Systematic Literature Review," *Blue-Green Systems*, Vol. 3, no. 1, December 2021, pp. 223–48.



**Figure 1:** Urban Resilience and Sustainability by means of Blue-Green Infrastructure<sup>2</sup>

Policy capacity can be referred to as the government's ability for efficient analytical, operational, and political decision-making. It addresses the technical capacities of public structures to make strategic choices to perform policy functions on the individual, organizational and systemic levels. Policy capacity is a critical determinant to explain whether the policy actors can tackle challenges to the implementation phase of a policy and if yes, to what extent.<sup>3</sup> Generally, there are two approaches to explicate policy capacity: one, operationalizing it as a tool to measure how much freedom a government enjoys in formulating and implementing a policy from agenda setting and choosing policy instruments to achieving the desired outcomes; and two, measuring the competence and capabilities of a government in terms of assessing, processing and disseminating information at different stages of the policymaking process.<sup>4</sup> This brief takes into account the second approach to address the adoption of blue-green infrastructure from the perspective of the policy capacity of Pakistan.

### ***Policy Capacity of Pakistan***

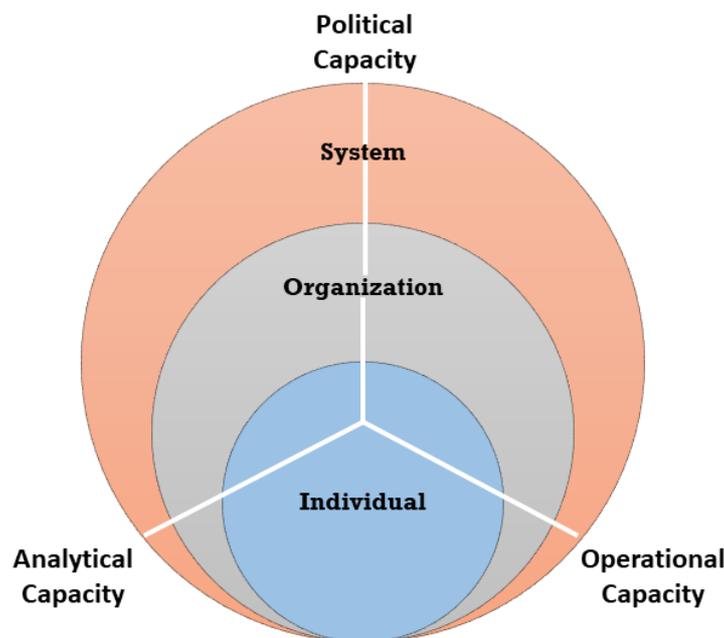
Pakistan has much to do to adapt to climate change and mitigate the risks posed by the climate crisis as evidenced by the recent floods of 2022 in Pakistan which inflicted the loss of over 1718 lives,

<sup>2</sup> Dhyani, S., Singh, S., Basu, M., Dasgupta, R., Santhanam, H., "Blue-Green Infrastructure for Addressing Urban Resilience and Sustainability in the Warming World," in *Blue-Green Infrastructure Across Asian Countries*, ed. Shalini Dhyani et al. (Springer, Singapore, 2022), pp. 1–22.

<sup>3</sup> Wu, X., Ramesh, M., Howlett, M., "Policy Capacity: A Conceptual Framework for Understanding Policy Competences and Capabilities," *Policy and Society*, Vol. 34, no. 3–4 (2015), pp. 165–71.

<sup>4</sup> Newman, J., Cherney, A., Head, B. W., "Policy Capacity and Evidence-Based Policy in the Public Service," *Public Management Review*, Vol. 19, no. 2 (2017), pp. 157–74.

injuries to nearly 13000 people, displacement of about 8 million people, and damage to more than 2.1 million houses and over 4.5 million acres of crops and orchards.<sup>5</sup> While many in Pakistan decision making circles are clinging to the primitive notion of building big dams for water storage while the rest of the world is investing in eco-friendly and sustainable water management practices. It appears that Pakistan does not have the policy capacity to integrate nature-based solutions into urban water management because there is a noticeable lack of climate change specialists, urban water managers, and sustainable flood resilience experts in the governance structures. Moreover, there is very limited practical knowledge to adopt blue-green infrastructure in Pakistan because of gaps in evidence on hydrological mapping, concrete information on the tangible economic cost of shifting to blue-green water management structures, and the social and environmental implications of this transition.



**Figure 2:** Dimensions of Policy Capacity<sup>6</sup>:

### ***Policy Recommendations***

Pakistan needs to build up the expertise of its government officials as well as institutions with reference to climate change and sustainable water resilience to make room for integrative governance structures. It's time for climate change experts and urban water managers to get a seat

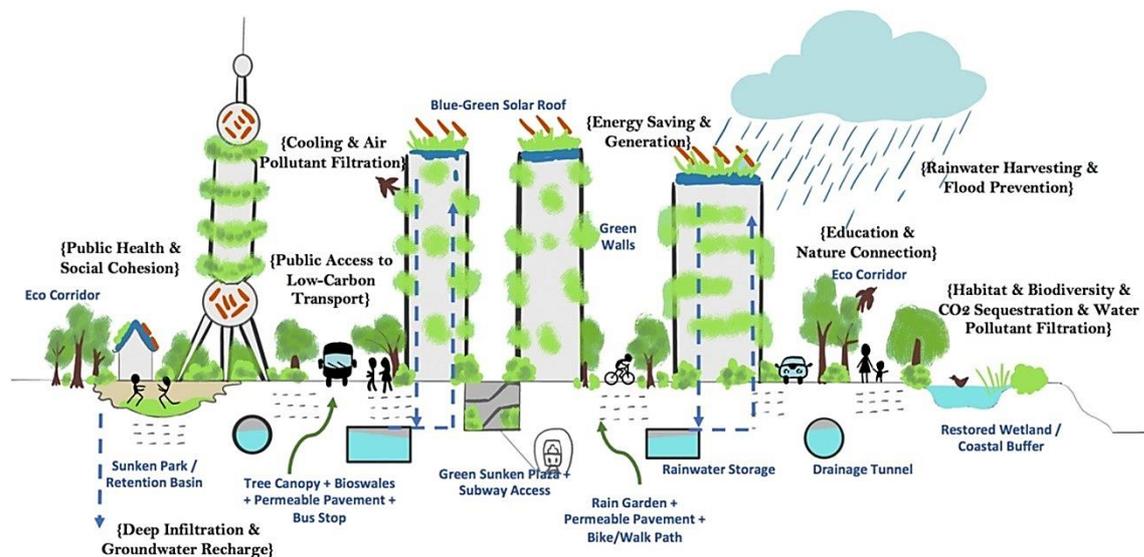
<sup>5</sup> "Pakistan: 2022 Monsoon Floods - Situation Report No. 9 (As of 14 October 2022)," <https://reliefweb.int/report/pakistan/pakistan-2022-monsoon-floods-situation-report-no-9-14-october-2022>.

<sup>6</sup> X.Wua, M.Ramesha, M.Howlett, "Policy capacity: A conceptual framework for understanding policy competences and capabilities," *Policy and Society*, Volume 34, Issues 3–4, September–December 2015, Pages 165-171

at the table and offer their technical capabilities in Pakistan's journey to sustainable water management; the recent floods of 2022 are a vivid example to make the case for engaging these experts in policy making.

Furthermore, the government of Pakistan needs to enhance its analytical capacity by filling in the data gaps and providing insights into the societal and environmental implications of adopting blue-green infrastructure.

The operational capacities of public structures also need attention to develop multifunctional urban development plans. Pakistan can take the examples of Philadelphia's citywide mosaic of green stormwater infrastructure, Melbourne's green laneways, and Singapore's city gardens and green buildings as a reference to initiate the development plans for blue-green water management structures.<sup>7</sup>



Blue text = Blue-Green Infrastructure. Bracketed text = {Urban & Eco Function} Source: Siehr, Sun, and Nucamendi. Based on Ramboll, 2016; Catalano and Beaumann, 2017. Graphic: Irene Ohshita

**Figure 3:** Blue-Green Infrastructure Plan- Example from China

Moreover, there is a dire need to work on the political capacities of public officials in Pakistan to engage all the relevant stakeholders and steer their priorities toward finding sustainable solutions to combat the ongoing water crisis. The main practitioners and decision-makers need to ensure the collaboration of interest groups in a coherent approach toward urban design, planning, and water sensitivity. Pakistan also needs to enhance its institutional policy capacity to set up social protection

<sup>7</sup> <https://www.evergreen.ca/blog/entry/five-blue-green-infrastructure-projects-making-a-splash/>.

<sup>8</sup> Siehr, S. A., Sun, M., Nucamendi, J. L. A., "Blue-Green Infrastructure for Climate Resilience and Urban Multifunctionality in Chinese Cities," *Wiley Interdisciplinary Reviews: Energy and Environment*, Vol. 11, no. 5, June 1, 2022.

mechanisms against water-related disasters in terms of risk mitigation and resilience, building the potential to uplift the communities vulnerable to climate-induced hazards and ensuring a sustainable future for the nation.