Chapter 2
Bridging the Climate Gap: Leveraging Green Infrastructure and Technology for Resilient Health Systems in Developing Nations

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ABSTRACT

Green infrastructure is a crucial strategy for climate change adaptation, enhancing health, air quality, and patient outcomes. It also offers ecosystem services that improve human health and well-being. However, the benefits of green infrastructure have not been thoroughly assessed. Geographic Information Systems (GI) in the

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context of climate change can provide economic and public health benefits. Green infrastructure, including sustainable building techniques, water management systems, and renewable energy systems, reduces reliance on finite resources and promotes environmental sustainability. Advancements in technology, such as early warning systems, telemedicine, and health data analytics, enhance operational effectiveness, disaster preparedness, and service delivery. This book chapter explores the potential of green infrastructure and technology in constructing resilient health systems in developing nations, highlighting the need for a comprehensive strategy that combines innovation and sustainability to address climate change.

INTRODUCTION

Green infrastructure is defined as "an interconnected network of green space that preserves the values and functions of natural ecosystems and offers related benefits to human populations (Canzonieri, 2007) and has been identified as an effective adaptation strategy for climate change (Byrne & Jinjun, 2009). The implementation of green infrastructure as a climate adaptation strategy has promise for mitigating the many health hazards associated with climate change, encompassing both mental and physical health and wellness. For dangers associated with excessive heat, this is especially true. High temperatures raise the chance of both death and illness (Field, 2014). From an adaptation standpoint, it offers several advantages, including as improved air quality, cooling, and less floods. It also offers a variety of ecosystem services that enhance human health and well-being and make cities more livable (van den Berg et al., 2015). Human civilizations can profit from the preservation of the ecological system and the integration of biodiversity and ecological mechanisms into territorial design and execution, according to the theory behind green infrastructure. One of the two main features of green infrastructure is multifunctionality and interconnectedness (Phillips et al., 2022).

Human health is being seriously impacted by climate change, which opens up new problems and raises the need for robust health systems. Heatwaves, wildfires, droughts, floods, and storms are among the climate-related disasters that are occurring more frequently, which has a wide variety of negative health effects. These include ailments brought on by the heat, wounds, mental health issues, vector-borne infections, food and water-borne infections, and disorders of the heart, lungs, and kidneys. Because of the increased demands for services, the strain on infrastructure, the disruption of supply chains, and the resulting costs, healthcare systems must become more resilient in order to adjust to climate change (Okara, 2024). The ability, competence, and capacity of the health system to anticipate, avoid, prepare, absorb, adapt, and change when subjected to shocks and pressures and provide regular