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Climate-Resilient Planning: Legal Pathways for Building Cities in an Uncertain Future

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ABSTRACT

Cities are at the forefront of climate change. Urban populations face significant hazards such as heavy rainfall, high temperatures, and rising sea levels. High energy consumption from fossil fuels for heating, industrial activity, and transport has become a major driver of climate change through greenhouse-gas emissions. Rapid urbanisation, inadequate planning, and damage to the natural environment render cities increasingly susceptible to climate risks. This paper examines climate-resilient planning as a governance and legal response to urban climate risks. It analyses the constitutional guarantee of the right to life and liberty, environmental legislation, and key legal principles such as precaution, sustainable development, and the public trust doctrine as means of building resilient, sustainable cities capable of addressing future climate uncertainties.

Keywords: *Climate change, urban planning, climate resilience, sustainable cities, environment.*

I. INTRODUCTION

Climate change is one of the most serious global issues confronting nations around the world. It has greatly affected the social, economic, and environmental sectors of many countries in recent years. Among the most sensitive regions affected by climate change is the urban area, because urbanisation, growing populations, and infrastructure development have made cities more vulnerable to climate risks.

Climate-resilient planning has become part and parcel of sustainable urban governance. It may be defined as a practice in which climate adaptation, disaster-risk reduction, environmental protection, and sustainable infrastructure are incorporated into the planning and development of urban areas.

In India, the need for climate-resilient cities is rendered more pressing by the duties prescribed in the Constitution, by environmental legislation, and by the judicial recognition of a right to a

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clean and healthy environment within the ambit of Article 21 of the Constitution of India.¹ This study analyses the legal avenues that would enhance the capacity of urban planning to deliver climate resilience, in light of constitutional provisions, statutes, judicial pronouncements, and governance frameworks.

II. CONCEPT OF CLIMATE-RESILIENT PLANNING

Climate-resilient planning involves a scientific methodology for developing an urban area so that the city becomes capable of preparing for and adapting to the adverse effects of climate change. Whereas conventional urban planning concentrates mainly on expanding urban activity and infrastructure, climate-resilient planning integrates environmental considerations, risk mitigation, energy efficiency, and long-term sustainability into its processes. The principal goal is to make communities and infrastructure less vulnerable to climate-related risks such as flooding, heat waves, droughts, and rising sea levels.²

This concept rests on the idea that urbanisation should neither interfere with ecological balance nor generate increased future risks. It entails climate-sensitive land-use planning, resilient infrastructure, efficient urban transport systems, renewable energy, the preservation of green areas, and the rehabilitation of natural environments. Such measures also help to reduce carbon emissions.

From a legal perspective, climate-resilient planning is consistent with the wider goals of sustainable development and environmental governance. It requires governments and planning authorities to take climatic considerations into account when formulating policies, laws, and development plans. In the Indian context, the Constitution, together with statutory law and the principles enunciated by the judiciary, provides a solid legal framework for incorporating climate resilience into urban planning.

III. CLIMATE RISKS FOR URBAN AREAS IN INDIA

Fast-paced urbanisation in India has made its cities more susceptible to climate risks. Population growth, unregulated construction, deforestation, and the degradation of wetlands and natural drainage systems make it difficult for urban areas to cope with extreme climatic events. Consequently, Indian cities face floods, heat waves, water shortages, pollution, and coastal erosion that threaten human life, infrastructure, and the economy.

¹ INDIA CONST. art. 21.

² G.A. Res. 70/1, *Transforming Our World: The 2030 Agenda for Sustainable Development* (Sept. 25, 2015).

Urban flooding is one of the most frequent climate risks for Indian cities. Poor drainage, high levels of concretisation, and unlawful construction on floodplains lead to urban floods during heavy rainfall. Rising temperatures aggravate the urban heat-island effect, whereby densely developed areas experience much higher temperatures than their surroundings. Moreover, several Indian cities are situated on the coast, which exposes them to sea-level rise, cyclones, and storm surges that threaten infrastructure, transport networks, and human settlements.³

These risks are especially acute for the poorer sections of society, who often live in environmentally vulnerable areas without access to basic necessities. Climate change is therefore not only an environmental risk but also a social and urban problem. Overcoming these dangers requires planning and coordinated effort within established legal frameworks.

IV. CONSTITUTIONAL FRAMEWORK FOR CLIMATE-RESILIENT PLANNING

The Indian Constitution provides a strong legal framework for promoting climate-resilient urban planning. Although the Constitution does not mention climate change explicitly, judicial interpretation has brought environmental protection and sustainable development within several of its articles. Article 21, which guarantees the right to life and personal liberty, has been interpreted by the Supreme Court to include the right to a clean and pollution-free environment.⁴ This obligates the State to adopt measures protecting people from environmental pollution.

Under Article 48A, the State is directed to protect and improve the environment and to safeguard forests and wildlife. Similarly, under Article 51A(g), it is a fundamental duty of every citizen to protect the natural environment.⁵ These provisions are directed towards environmental protection and the sustainable use of natural resources. Furthermore, Article 243W read with the Twelfth Schedule empowers urban local bodies to discharge functions relating to urban planning, regulation of land use, public health, water supply, sanitation, and environmental protection.⁶ This furnishes the constitutional basis for incorporating climate resilience into urban governance. Climate-resilient planning is therefore not merely a policy agenda but a constitutional obligation directed towards sustainable development and environmental protection.

³ The Disaster Management Act, 2005, No. 53 of 2005, India Code (2005).

⁴ *Subhash Kumar v. State of Bihar*, (1991) 1 SCC 598 (India) (holding that the right to life under Article 21 includes the right to enjoyment of pollution-free water and air).

⁵ INDIA CONST. arts. 48A, 51A(g).

⁶ INDIA CONST. art. 243W & sch. 12.

V. ENVIRONMENTAL AND URBAN-PLANNING LEGISLATION

Several environmental and urban-planning laws in India, though not directed specifically at climate-resilient urban development, indirectly promote climate resilience by controlling pollution, conserving natural resources, and facilitating sustainable land use. Foremost among them is the Environment (Protection) Act, 1986, an umbrella statute under which the Central Government may take measures for environmental protection and pollution control.⁷

The Water (Prevention and Control of Pollution) Act, 1974,⁸ and the Air (Prevention and Control of Pollution) Act, 1981,⁹ control water and air pollution respectively and thereby help to protect the ecosystems necessary for sustainable urban development. The Disaster Management Act, 2005, provides the institutional framework for disaster management and encourages authorities to incorporate disaster-risk reduction into their development activities.¹⁰

Municipal laws, master plans, zoning regulations, and building bye-laws, which govern land use and infrastructural development, also shape urban planning. Together, these instruments can enhance resilience to climate change by protecting wetlands, increasing green cover, promoting sustainable buildings, and discouraging development in ecologically vulnerable areas. Their effective enforcement is essential to constructing resilient, inclusive, and environmentally sustainable cities.

VI. INTERNATIONAL CONTEXT AND INDIA'S COMMITMENTS

The development of resilient cities is also shaped by international environmental agreements that promote sustainable development and climate action. India is a party to the United Nations Framework Convention on Climate Change (UNFCCC), 1992, which provides an international context for efforts against climate change.¹¹ The Convention emphasises the importance of adaptation measures that increase the resilience of vulnerable societies and ecosystems.

In addition, the Paris Agreement, 2015, reinforces the obligations of States to take steps towards climate-change mitigation, adaptation, and resilience-building.¹² India has submitted its Nationally Determined Contributions (NDCs), committing to reduce the emissions intensity of its economy and to promote renewable energy and sustainable urban development.¹³

⁷ The Environment (Protection) Act, 1986, No. 29 of 1986, India Code (1986).

⁸ The Water (Prevention and Control of Pollution) Act, 1974, No. 6 of 1974, India Code (1974).

⁹ The Air (Prevention and Control of Pollution) Act, 1981, No. 14 of 1981, India Code (1981).

¹⁰ The Disaster Management Act, 2005, No. 53 of 2005, India Code (2005).

¹¹ United Nations Framework Convention on Climate Change, May 9, 1992, 1771 U.N.T.S. 107.

¹² Paris Agreement, Dec. 12, 2015, T.I.A.S. No. 16-1104.

¹³ MINISTRY OF ENVIRONMENT, FOREST & CLIMATE CHANGE, *India's Updated First Nationally Determined Contribution Under the Paris Agreement (2021 to 2030)* (2022).

Moreover, the 2030 Agenda for Sustainable Development, and in particular Sustainable Development Goal (SDG) 11, aims to make cities inclusive, safe, resilient, and sustainable.¹⁴ SDG 13 further calls for urgent action against climate change and the strengthening of adaptive capacity. Although such international treaties are not enforceable domestically until incorporated into national law, the Indian judiciary has often referred to them when interpreting constitutional and environmental provisions. As a result, India's international climate obligations support its legal system by guiding policy-making and reinforcing the commitment to build resilient and sustainable urban areas.

VII. CHALLENGES TO CLIMATE-RESILIENT URBAN PLANNING

Despite constitutional provisions, environmental legislation, and judicial support, the adoption of climate-resilient urban planning in India faces several challenges. First, the rapid pace of urbanisation outstrips the capacity of planning agencies to provide sustainable infrastructure and services. Uncontrolled urban growth through illegal construction, encroachment on floodplains and wetlands, and improper land use continues to increase the vulnerability of Indian cities to climate-induced calamities.

A second challenge arises from the fragmented institutional mechanism for urban development. Climate resilience implicates urban-planning agencies, environmental agencies, disaster-management authorities, water-resource bodies, and municipal institutions, among others. The lack of coordination among these institutions produces inconsistency in policy and in the implementation of measures needed to develop a resilient urban-development plan.

The inadequate implementation of environmental policy is a further challenge. There are cases in which impact assessments have not accounted for climate risks, and instances in which violations of land-use policy go undetected and unpunished. Greater involvement of citizens in urban-planning processes is needed to overcome these obstacles.

VIII. RECOMMENDATIONS

Making climate-resilient urban planning a reality requires a holistic legal and institutional framework that ensures the integration of environmental sustainability at every stage of urban development.

First, climate resilience should be made an integral part of all legislation on urban planning, including master plans, zoning regulations, and building bye-laws. Development plans should be cleared only after their climate risks have been assessed and analysed.

¹⁴ G.A. Res. 70/1, *supra* note 2.

Second, coordination between central, State, and local governments should be improved to ensure the proper implementation of climate policy. Urban local bodies should be equipped with sufficient financial and institutional capacity to prepare and implement climate-resilient development plans.

Third, greater emphasis should be placed on nature-based approaches such as the conservation of wetlands, urban forests, water bodies, and other green areas, which enhance ecological resilience and mitigate the effects of climate-induced disasters. Provision should also be made for public participation through the inclusion of local communities, civil-society organisations, and environmental experts in decision-making.

Finally, the strict enforcement of environmental laws and judicial directions is crucial to preventing illegal construction, pollution, and ecological degradation. By integrating constitutional principles, statutory requirements, scientific studies, and sustainable-development policy, India can build resilient cities capable of adapting to future climatic change.

IX. CONCLUSION

Climate change has transformed the way cities must be planned, built, and managed. The incidence of floods, heat waves, water scarcity, and coastal erosion demonstrates that traditional planning practices are no longer sufficient to cope with emerging problems. Climate-resilient planning has accordingly become one of the most effective tools for securing the safety of populations, conserving the natural environment, and sustaining the economic growth of cities. In India, the relevant legal tools include the Constitution, environmental legislation, judicial doctrine, and international obligations.

At the same time, the efficacy of these mechanisms depends largely on their implementation, which is currently hampered by weak institutional coordination, poor enforcement of environmental regulation, unplanned urbanisation, and insufficient public involvement. A proactive approach to urban governance that embeds climate adaptation at every stage of development is therefore necessary.

The resilience of a city consists in more than its recovery after climatic disasters; it lies in the anticipation of risk, the protection of ecology, and the promotion of sustainable development. By developing legal systems that promote compliance with environmental law, science-based urban planning, and public participation, India can secure environmentally safe, socially equitable, and economically sustainable urban centres. The climate resilience of cities must be

regarded as both a legal duty and an imperative for safeguarding the welfare of generations to come.
