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Balanced Urban Development: Options and Strategies for Liveable Cities

 Springer Open

MISTRA
**URBAN
FUTURES** 

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Preface

The current world population is about seven billion, split almost evenly between rural and urban. Projections are that by 2050 the global population will increase to about ten billion. It is likely that the bulk of the increase will occur in urban population, perhaps due to migration from rural areas. The massive migration is and will be posing huge challenges with regard to water security, energy security, food security, transportation, housing, education, health services, protection from natural disasters, social tranquillity, economic opportunities and health of ecosystems. These challenges will be daunting for any government – local, state and national. Already, migration of people from rural areas to urban areas is occurring at an accelerating pace, particularly in developing countries, such as Brazil, China, Egypt, India and Mexico. For the lack of space, urban development is moving into the countryside, eliminating much of the best farmland surrounding cities, and peri-urban areas are rapidly sprouting. In many countries, some of the highly valued natural resource assets, such as biodiversity, native vegetation, peri-urban agriculture, wetlands and waterways, occur in peri-urban landscapes. In view of the impacts of climate change, energy costs, rising world population and changing patterns of food consumption, the value of these assets will increase even further.

The aim of any government body is to strive for balanced urban development (BUD). However, BUD may mean different things to different people and different sectors. There is no universal definition of BUD. It is therefore important to have a dialog on this very critically important issue. In many countries, the way urban areas have come up, there are limited options left for BUD. The local and state governments do not have well-developed strategies to achieve BUD or have limited opportunities to develop new and innovative strategies for BUD. The motivation for this book therefore stemmed from the desire to provide a discussion of BUD and options and strategies for achieving it.

Introducing the theme of this book in Chap. 1, the subject matter of the book is divided into nine parts. Part II deals with peri-urbanisation comprising five chapters. Chapter 2 discusses lessons learnt from re-ruralising in the USA, Europe and Global South; what is being done to keep the countryside (peri-urban areas) green is treated in Chap. 3. Chapter 4 discusses rural design connecting urban and rural futures. The

role of archaeology and urban dynamics in developing more resilient and sustainable cities in the peri-urban interface is presented in Chap. 5. One consequence of urbanisation is the generation of pollutants and their transport by run-off. Chapter 6 deals with the decontamination of urban run-off.

Part III, comprising three chapters, deals with peri-urban culture and social economy. Chapter 7 discusses the case of Lisbon, Portugal, to illustrate the social and economic dimensions of urban areas. Taking the case of Udaipur City in Rajasthan, India, Chap. 8 discusses the changing economic scenario of peri-urban areas. Chapter 9 deals with the stakeholder viewpoints on urbanisation, with particular reference to Ma Oya River in Sri Lanka.

Peri-urban land use planning is the theme of Part IV that comprises three chapters. Chapter 10 discusses the role of peri-urban land use planning, with particular reference to Melbourne, Australia, whereas Chap. 11 discusses how to engage peri-urban stakeholders in natural resource management which is a challenge in any landscape. Chapter 12 deals with a master plan for urban farming in western Sydney from planning to implementation. It highlights the challenges the plan will face, including legislative and regulatory processes and environmental and social factors, and provides insights into planning-to-reality of the farming plan.

Urban water security is the theme of Part V that comprises four chapters. Chapter 13 discusses urban water bodies, such as wetlands, that act as coolers for urban environment and natural filters for water purification. Chapter 14 deals with groundwater crisis, with particular reference to Delhi, India, and reflects on the sustainability of this valuable resource. Using the case of peri-urban communities of southeast Nigeria, Chap. 15 discusses safe water supply determinants, and Chap. 16 deals with risks of groundwater and aquifer contamination due to hydraulic fracking.

Part VI deals with the recycling of wastewater and its use for irrigation. It contains three chapters. Chapter 17 deals with the use of recycled wastewater for irrigation of open spaces, such as lawns, golf courses and parks. Chapter 18 discusses challenges and opportunities, based on global experiences on the use of wastewater for irrigation. It makes a strong argument for the employment of modern technologies to mitigate detrimental environmental consequences of wastewater irrigation. Discussing a case study of Udaipur City, Rajasthan, India, Chap. 19 deals with the impacts of wastewater reuse on peri-urban agriculture.

Urban agriculture and food security constitute the subject matter of Part VII containing four chapters. Chapter 20 deals with urban agriculture in Cuba, with regard to legal structures in response to food security crisis. Chapter 21 discusses new ways to identify high-quality agricultural lands and use them as a decision-making tool, whereas Chap. 22 discusses planning and design of food-efficient neighbourhoods. Using Kampala, Uganda, as a case study, Chap. 23 discusses the role of peri-urban areas in the food system.

Part VIII treats the impact of climate change and adaptations and contains four chapters. Chapter 24 discusses a project in Victoria, Australia, that identifies, analyses and evaluates climate change risks and develops an adaptation plan to prepare for likely impacts of climate change. Chapter 25 emphasises the role of awareness

through education and training to understand climate change impacts and develop plans to cope with these impacts, using a case of Pakistan. Chapter 26 considers the effect of climate change on food production with particular reference to urban agriculture and the associated impact on food security. It also considers the value of urban agriculture to the health and nutrition of developing and developed countries. Chapter 27 discusses the adaptive capacity of Indigenous People living in coastal urban and peri-urban areas to climate change.

Legal, policy and institutional challenges are described in Part IX that contains three chapters. Chapter 28 argues for voluntary collective action to be essential for natural resource governance in peri-urban settings, where a complex behavioural and institutional matrix and the net balance of incentives and disincentives, supports and impediments determine the likelihood of effective action. The chapter explores the dynamic nature of the challenge of collective action in a peri-urban setting. Real estate is a major driver of the economy in many countries of the world and is one of the main barriers to the development or implementation of zoning and planning regulations that would make urban agriculture more than a fortuitous and temporary use of space. Taking the case of Beirut, Chap. 29 deals with gentrification versus territorialisation in reference to peri-urban agriculture. Chapter 30 discusses the role of mega urban regions as economic integration regions in Southeast Asia.

The last part, Part X, deals with integrated urban development. Beginning a discussion of lessons learnt from the journey of engagement for the sustainability of water resources in peri-urban landscapes in Chap. 31, it goes on to discussing the development of future management options for Hawkesbury River in Chap. 32. Case studies from New South Wales discussing the development of plans for reducing mosquito hazards in peri-urban landscapes are presented in Chap. 33. Chapter 34 presents and demonstrates the use of an information modelling platform for assessing alternative urban development scenarios. It also illustrates the application of the platform to a peri-urban development in the city of Melbourne, Australia.

It is hoped that peri-urban planners and managers, municipal council representatives, local governments and state governments, as well as students, researchers and consultants of water and land use planning, environmental management, peri-urban agriculture, food security, water security, energy security and ecosystems management, will find this book to be useful.

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of the Arid Land Hydraulic Engineering Award, Ven Te Chow Award, Torrens Award, Norma Medal and Lifetime Achievement Award all given by ASCE and Ray K. Linsley Award and the Founders Award given by the American Institute of Hydrology. He has been awarded two honorary doctorates one by the University of Waterloo, Canada, and the other by the University of Basilicata, Italy. He is a fellow of ASCE, EWRI, AWRA, IE, ISAE, IWRS, IASWC and IAH and a member of AGU, IAHR, IAHS and WASER. He is member/fellow of ten engineering/science academies.



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