

Preface

Freshwater scarcity has engendered two immediate responses: different water allocation methods, and development and use of alternative sources of water. While water markets are seen as a means to achieve efficient allocation of the scare resources, urban wastewater reuse (for non-potable applications including agricultural irrigation) appears as a viable option to augment traditional water supplies. Additionally, with the ‘fit-for-purpose’ argument surfacing on the global water governance agenda, the search for a reliable alternative source of water has triggered governmental support for the development of water reclamation and reuse laws, policies, and projects in many countries. As such, water recycling or use of recycled water (for non-potable applications) has assumed a recognized and important role in the portfolio of urban water management strategies around the world. As the level of water recycling increases, the choice and implementation of alternative policy instruments, governance arrangements, and incentives to assist in the promotion and coordination of water recycling also assume increasing importance. Among other factors, decision support in policy design and implementation (institutions and governance) is a key to achieving water sustainability. Institutions and governance frameworks will need to provide for the rights of access, rights of ownership, rights to manage source and treated water, and the obligations of final use of recycling operations. The primary focus of this book is not on the technical aspects of designing and building infrastructure. Rather, it seeks to provide guidance to better understand the institutional and governance challenges of managing urban wastewater, particularly for reuse in agriculture.

This book is one of the main outputs of a Ph.D. project which has gathered and synthesized knowledge from Australia and India on governance paradigms and institutional arrangements for urban wastewater reuse in these countries, specifically in two metropolitan areas: Adelaide (Australia) and Hyderabad (India). Using three case studies representing different models of governance, this book analyses the role of different societal sectors—public, private, and the community in provision and use of wastewater for irrigation. This book is, therefore, not intended as technical manual for engineers or planners involved in designing or building water/wastewater infrastructure. Instead, it is designed to help users systematically

examine the institutional and governance issues that influence the implementation of urban wastewater reuse projects.

Lastly, literature on wastewater reuse mostly comprises studies that have adopted a scientific and biophysical approach, and there is lack of institutional studies using a combination of social, quantitative, and qualitative methodologies. This impedes the formulation of recommendations that could enhance the benefits and ease the concerns of all groups involved with wastewater reuse. Furthermore, these studies can be carried out at different levels—macro-, meso-, and microlevels. The mesolevel includes the wastewater delivery or supply system, which is the largest element of the complex system, and the unit of analysis at the microlevel includes the beneficiaries/households and those local institutions that shape the wastewater use. Accordingly, this book adopts an institutional approach and focuses at both the meso- and microlevels of analysis, thereby contributing to the literature.

This book is organized into nine chapters. Chapter 1 sets the context and scope of the research study. Chapter 2 provides an account of urban wastewater reuse and its applications and discusses the challenges facing policy makers and water managers as they implement wastewater reuse projects while Chap. 3 focuses on the water governance regimes and wastewater reuse in Australia and India. Chapter 4 provides the theoretical background as various theories related to water governance are discussed and the interrelationship between these theories are examined to provide a framework for analysing the institutional frameworks and regulations governing the use of urban wastewater for agriculture. Chapter 5 describes the research methods and introduces the case study sites in Australia and India, and explains the criteria adopted to select the schemes, respondents, and key stakeholders. Chapters 6 through 8 discusses the results of the three case studies separately as they all have varying governance or organizational structures, and are examples of wastewater reuse that rely on cohesive local networks and involvement of all three societal sectors—public, private, and community. Chapter 9 presents the conclusions drawn from the analysis of the three case studies in Australia and India. It covers the theoretical and empirical conclusions, followed by the recommendations and policy options for wastewater reuse in agriculture.

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