

# **Land Readjustment: Solving Urban Problems Through Innovative Approach**

Written, edited and organized by

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**JICA RESEARCH INSTITUTE**

Japan International Cooperation Agency Research Institute

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THROUGH INNOVATIVE APPROACH**

Japan International Cooperation Agency Research Institute

(JICA-RI)

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# Land Readjustment: Solving Urban Problems Through Innovative Approach

## Contents

<b>Foreword</b> .....	iv
<b>Preface and Acknowledgements</b> .....	v
<b>Contributors</b> .....	viii
<b>Introduction</b>	
Land Readjustment: Making Cities Inclusive, Safe, Resilient and Sustainable .....	1
<i>Akio Hosono</i>	
<b>Part I. Land Readjustment: Concepts and Practice in Japan</b>	
<b>Chapter 1. What is Land Readjustment?</b> .....	15
Concepts on Land Readjustment .....	15
<i>Felipe Francisco De Souza</i>	
Land Readjustment and the Law in Japan .....	33
<i>Felipe Francisco De Souza and Takeo Ochi</i>	
The Japanese Procedures and Methodology for Land Readjustment .....	39
<i>Felipe Francisco De Souza and Takeo Ochi</i>	
The Successful Extensive Use of Land Readjustment in Japan .....	52
<i>Felipe Francisco De Souza</i>	
<b>Chapter 2. Land Readjustment and Post-Disaster Reconstruction in Japan</b> .....	63
From Arable Land Readjustment to Land Readjustment .....	64
Reconstruction Following the Great Kanto Earthquake and Land Readjustment .....	66
Postwar Reconstruction and Land Readjustment .....	67
Post-Disaster Reconstruction and Land Readjustment in the Latter Half of the 20th Century .....	70

The Great Hanshin-Awaji Earthquake as a Turning Point for Post-Disaster Reconstruction Projects .....	72
The Reconstruction Project for the Great East Japan Earthquake .....	73
<i>Norihiko Yanase</i>	

## **Part II. Land Readjustment: International Experiences, Case Studies and Future Possibilities**

<b>Chapter 3. International Experiences of Land Readjustment</b> .....	81
A Brief History of Land Readjustment in the World and Case Studies .....	81
<i>Felipe Francisco De Souza</i>	
Land Development and Land Readjustment Possibilities in <b>Afghanistan</b> .....	97
<i>Habib Ahmad Javid</i>	
Participatory and Inclusive Land Readjustment in Huambo, <b>Angola</b> .....	99
<i>Allan Cain, Beat Weber and Moises Festo</i>	
Land Readjustment, an Urban Planning Tool in <b>Bhutan</b> .....	104
<i>Tashi Wangmo</i>	
Land Readjustment and its Planning Perspectives for Belo Horizonte, <b>Brazil</b> ...	111
<i>Livia Monteiro, Tiago Esteves Gonçalves Da Costa, Thiago Medeiros De Castro Silva and Leonardo Amaral Castro</i>	
Land Readjustment Within the Context of Partial Plans in <b>Colombia</b> .....	116
<i>María Cristina Rojas Eberhard</i>	
Urban Land Readjustment in <b>Finland</b> .....	123
<i>Kauko Viitanen</i>	
The Land Readjustment System in <b>Germany</b> .....	128
<i>Hans Joachim Linke</i>	
Land Readjustment in <b>India</b> .....	136
<i>Jacob Manohar Abraham Peter and Harpal Dave</i>	
The Application of Land Consolidation in <b>Indonesia</b> .....	140
<i>Andri Supriatna</i>	
The Issue of Land Reparcelsation as Part of Land Readjustment in <b>Israel</b> .....	146
<i>Rassem Khamaisi</i>	
Land Readjustment in <b>Mongolia</b> .....	152
<i>Ganbat Bayartuvshin</i>	

Land Readjustment in <b>Nepal</b> .....	157
<i>Kirti Kusum Joshi and Sunil Babu Shrestha</i>	
From Land Consolidation to Land Readjustment in the <b>Netherlands</b> .....	166
<i>Adri Van Den Brink</i>	
The Failure of Land Readjustment in <b>Sweden</b> .....	171
<i>Tommy Österberg</i>	
Urban Land Readjustment in <b>Taiwan</b> .....	175
<i>Tzu-Chin Lin and Hsiu-Yin Ding</i>	
Land Readjustment in <b>Thailand</b> .....	180
<i>Ittipong Tanmanee</i>	
The Shortcomings of Land Readjustment Application in <b>Turkey</b> .....	183
<i>Tahsin Yomralioglu, Bayram Uzun and Recep Nisanci</i>	
Why Land Readjustment in the British Former Colonies, but not in the <b>United Kingdom</b> ? .....	189
<i>Robert Home</i>	
Land Readjustment Possibilities in <b>Vietnam</b> .....	194
<i>Nguyen Ngoc Hieu</i>	
<b>Chapter 4. JICA's Technical Cooperation and the Global Dissemination of Land Readjustment</b> .....	205
The 1980s and the Internationalization of Land Readjustment .....	205
Japanese Technical Cooperation Concerning Land Readjustment in Foreign Countries .....	211
The Significance of Land Readjustment in Developing Countries .....	218
Future Developments .....	224
<i>Takeo Ochi</i>	
<b>Afterword</b> .....	227
<i>Felipe Francisco De Souza, Takeo Ochi and Akio Hosono</i>	
<b>Index</b> .....	233
<b>Source of Figures</b> .....	236

## Foreword

According to an estimate by the United Nations, the world's urban population is set to grow by an additional 2.5 billion people by 2050, with nearly 90% of that growth occurring in Africa and Asia. The "World Development Report 2016" states that the rapid urbanization of the developing world "creates urgency to get our cities 'right' because global response to our most pressing challenges – from climate change to rising inequality – will likely succeed or fail in cities." Against this background, Goal 11 of the "Sustainable Development Goals" (SDGs) aims to "[m]ake cities and human settlements inclusive, safe, resilient and sustainable." Land readjustment may be an effective approach for achieving this goal and addressing the global issues of urban population and human settlements.

Definitions of land readjustment differ according to country contexts. However, the essential concept can be found in the general provisions of the Japanese *Land Readjustment Law* enacted in 1954. According to this law, land readjustment means to alter the shape and land conditions of lots, and to install or improve public facilities in a city planning area in order to provide better public facilities and increase the usage of each lot. As this volume discusses, one advantage of land readjustment is that all dwellers remain in the area after project implementation and community cohesion is therefore maintained. Japan is considered a pioneering country in mainstreaming the land readjustment approach in its urban development policy. Japan has provided technical cooperation to developing countries related to land readjustment since the 1980s, with the former Ministry of Construction and the Japan International Cooperation Agency (JICA) playing a central role.

This book is the outcome of a research program on land readjustment conducted by the Japan International Cooperation Agency Research Institute (JICA-RI) with the participation of 33 researchers and practitioners, many of whom have played key roles in urban development in their respective countries. This book aims to provide insights into the main features of the land readjustment approach, focusing on its effectiveness, advantages, and challenges. This volume explores how experiences in Japan and other countries have been applied and further improved in developing countries. I am convinced that this book will offer insightful lessons for the inclusive, sustainable, and resilient urbanization/reurbanization that is essential for quality growth and the achievement of the SDGs, in particular Goal 11.

**Naohiro Kitano**  
**Director**  
**JICA Research Institute**

## Preface and Acknowledgements

Land readjustment is an important instrument for the development and redevelopment of urban areas that is used widely around the world, especially in Japan, but still relatively unknown – or not extensively used – in other countries. In order to overcome this limitation, the Japan International Cooperation Agency (JICA) gathered international specialists and prepared this volume as a means of sharing high-quality knowledge and experience with an international audience. The past decade, in particular, has seen unprecedented academic and practical interest in land readjustment and, in an interconnected world, the instrument needs to be critically examined, disseminated, and adapted to suit highly diverse urban contexts. The major value of this publication is that it considers the underlying theories, provides an overview of the Japanese experience and offers many additional case studies from different countries. These case studies range from basic functions of land readjustment to the most complex processes, and are used to provide a better understanding of the fundamental contributions of the method to different systems of governance and urban planning. International readers seeking to implement – or improve – land readjustment within their own contexts will learn from the experiences of others around the world and will develop an appreciation of the major challenges, advantages and disadvantages of the process. This will limit the potential for misplaced ideas or oversimplistic blueprints in applications of land readjustment.

This publication is comprised of two parts and four major chapters. Chapter 1 introduces several land-related theories and problems faced as a result of the urbanization phenomena – including urban sprawl and real estate holdout – before considering how land readjustment can be used to address such problems. It also discusses public policies and institutional challenges such as path dependent planning policies, correction of coordination failures and structural reconfigurations that are likely to be faced when adopting and adapting new planning techniques such as land readjustment. After providing this substantial background, Chapter 1 takes us to Japan, which is one of a few countries that have, over the past decades, managed to utilize land readjustment to overcome urban problems faced by all developing countries, mainly related to migration from rural areas to urban centers, urban expansion and uncontrolled growth, as well as countless environmental problems. Chapter 1 also provides an explanation of the legal bases, the procedures, and methodologies as practiced in Japan and discusses why land readjustment had a successful and extensive usage there, according to different points of view.

Chapter 2 addresses the history of Japan's land readjustment, focusing on post-disaster

reconstruction processes, since its origins in the *Arable Land Readjustment Act* of 1899. The objective of this act was to improve productivity and modernize agriculture by consolidating scattered and irregularly shaped fields into areas with regular shapes while simultaneously developing irrigation canals and farm roads. However, it also began to be used for housing land developments in the suburbs of Tokyo and Osaka, where rapid urbanization was taking place in the industrial revolution of the early 20th century. After analyzing such “upgrading” process, Chapter 2 provides an in-depth examination of the usage of land readjustment in major disasters throughout Japanese history, such as the fire caused by the Great Kanto Earthquake in Tokyo and Yokohama and the massive destruction resulting from aerial bombing during World War II. This chapter also provides an overview of how the legislation progressed prior to the enactment of the *Land Readjustment Law* of 1954, and how it was later applied in events such as the Great Hanshin-Awaji Earthquake in 1995 and the Great East Japan Earthquake in 2011. The last is considered the worst natural disaster in world history in terms of economic damage, according to estimations by the World Bank.

Chapter 3 provides a brief history of the usage of land readjustment around the world. It starts exploring three well-documented experiences of land readjustment, dating back to the 18th and 19th centuries, before the approval of the first legislation related to urban land readjustment in history. In 1902, after approving a law related to the transfer of lands in Frankfurt, known as *Lex Adickes Frankfort-am-Main*, a compulsory process of land reorganization was initiated. This was hindered by the heritage of old laws that created extensive and narrow lands that were difficult to use for development. The main idea was to exchange land between the government and the private sector without requiring their expropriation. After the results of this new legislation in Germany became clear, an international dissemination of land readjustment to other countries was initiated, and Chapter 3 explores, decade after decade, country by country, what was significant in terms of practices and legislation up until the present. The subsequent pages present 19 international cases – from 29 different contributors – aiming to explain its legal origins, objectives, organization processes and results, as well as conflicts and impasses faced throughout its implementation. The presentation of such country cases provides a recognition that there are multiple paths for land readjustment in different contexts and realities.

Conclusively, Chapter 4 focuses on the global dissemination of land readjustment through the efforts of Japan and, in particular, its international cooperation agency. It ranges from small and unsuccessful initiatives taken to implement land readjustment up to the most successful cases, such as those in Thailand, Nepal, and Colombia. A chronology of land readjustment in these countries is presented, with the aim of illustrating the efforts, challenges and outcomes of the land readjustment adaptation process. Chapter 4 also discusses the significance of land readjustment for developing countries and publishes the main results from questionnaires directed at landowners in Thailand, with the goal of showing their particular perspectives before and after the implementation of a pilot project. This chapter ends with a discussion of land readjustment as a means of securing land for the urban poor and considers how some more diverse and inclusive frameworks for the

conversion of rights – reframed to address issues faced by the urban poor – should be created. These frameworks could include, for instance, the conversion of rights not only from land to land by administrative measures like practiced in Japan but also from land to building floor through agreements between private parties, as has been the practice in Colombia and Mongolia.

This book was created by dedicated contributions from around the world. We would earnestly like to thank those who contributed to this volume: Norihiko Yanase, Habib Ahmad Javid, Allan Cain, Beat Weber, Moises Festo, Tashi Wangmo, Livia Monteiro, Tiago Esteves Gonçalves Da Costa, Thiago Medeiros De Castro Silva, Leonardo Amaral Castro, María Cristina Rojas Eberhard, Kauko Viitanen, Hans Joachim Linke, Jacob Manohar Abraham Peter, Harpal Dave, Andri Supriatna, Rassem Khamaisi, Ganbat Bayartuvshin, Kirti Kusum Joshi, Sunil Babu Shrestha, Adri Van Den Brink, Tommy Österberg, Tzu-Chin Lin, Hsiu-Yin Ding, Ittipong Tanmanee, Tahsin Yomralioglu, Bayram Uzun, Recep Nisanci, Robert Home, and Nguyen Ngoc Hieu.

The editors are most grateful to Naohiro Kitano, director of the Japan International Cooperation Agency Research Institute, for his strong support for this study project. We would especially like to thank Hiroshi Kato, vice-president of JICA and former director of JICA Research Institute for encouraging us to prepare this volume, and we are thankful to Yoshihiko Sato, chief editor of JICA Research Institute as well. Finally, we would also like to express our sincerest appreciation to Nobuko Kayashima, Naotaka Yamaguchi, Shimpei Taguchi, Kota Sakaguchi, Sayuri Uematsu, Yukiko Aida, and Imari Nakamine for their preparatory and editorial work, and their management in making the publication of this volume possible.

**Editors**

**Felipe Francisco De Souza,  
Takeo Ochi, and Akio Hosono**

## Contributors

### Introduction

**Akio Hosono** is senior research adviser for the JICA Research Institute (JICA-RI). He holds a doctorate in economics from the University of Tokyo, Japan. He served as vice-president at Tsukuba University in Tsukuba Science City; Japanese ambassador to El Salvador; professor at the National Graduate Institute for Policy Studies (GRIPS) in Tokyo; professor at the Research Institute of Economics and Business Administration at Kobe University; professor at the Institute of Policy and Planning Sciences at Tsukuba University; economic affairs officer at the United Nations Economic Commission for Latin America and Caribbean (UN-ECLAC) in Santiago, Chile; and researcher at the Institute of Developing Economies (IDE) in Tokyo. He became a senior advisor at the Japan International Cooperation Agency in 2007. He served as director for the JICA-RI from 2011 to 2013.

### Part I

**Felipe Francisco De Souza** is an architect and urban planner, holds master's degree in government and public administration, and he is a Ph.D. candidate in urban engineering at the University of Tokyo, Japan. He has 10 years of work experience as project manager for the Municipal Government of São Paulo, and 7 years of work experience as consultant for international cooperation agencies, such as Vale Foundation, the Japan International Cooperation Agency, and the World Bank. Author of five books, and several research papers and government reports on urban policy making and planning tools, he worked as consultant for the UN-Habitat and the Brazilian Ministry of Cities on metropolitan governance, regional planning and integrated plans, and worked as consultant for the UN-Habitat and the World Bank on land readjustment capacity building and training development. Nowadays, he is a research fellow for the Lincoln Institute of Land Policy, United States of America.

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**Moises Festo** works for the Development Workshop Angola since 2001. He is responsible for the company's land use management and land readjustment projects in Huambo since 2005. Also, he coordinated several similar projects in other provinces of Angola and, currently, he is coordinating a land use management project funded by the European Commission that is promoting participatory planning, land readjustment and the usage of cadastral systems in several town administrations of Angola's central highlands. He is also enrolled in the master's program of the San Lorenzo University in Paraguay.

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