

FOOD INSECURITY IN ASIA

Why Institutions Matter

Edited by Zhang-Yue Zhou and Guanghua Wan

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Zhang-Yue Zhou

*Professor, College of Business, Law and Governance,
James Cook University, Townsville, Australia*

Guanghua Wan

*Principal Economist, Economic Research and Regional
Cooperation Department, Asian Development Bank,
Manila, the Philippines*

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Contributors

Jock R. Anderson, emeritus professor of agricultural economics, University of New England and adjunct professor, Georgetown University, studied agricultural science at the University of Queensland. Academic persistence took him into postgraduate studies and thence to academe. Interest in sustainable agricultural intensification led him to knowledge-generation processes, many involving international research centers of the CGIAR. In 1989, the World Bank hired him to assist its clients develop their agricultural innovation systems. Since retiring in 2003, he continues to address agriculture and food security issues.

Rabiul Alam Beg, senior lecturer at the College of Business, Law and Governance, James Cook University, earned his bachelor's and master's degrees in statistics from the University of Rajshahi, a master's of economics degree from the University of Sydney, and a PhD in econometrics from La Trobe University. Prior to joining James Cook University, he taught at the University of New England, La Trobe University, the University of Rajshahi, and Al-Fateh University Tripoli. He has published a number of journal articles and a book, *Essentials of Business Statistics*, by McGraw-Hill Education.

Miri Endeweld has been the head of the Economic Research Department in the Research and Planning Administration of the National Insurance Institute of Israel (NII) since 2008. She is an author of the national poverty and social gaps report and editor of the annual report of the NII. She holds a PhD in labor studies from Tel Aviv University. Her research focuses on poverty, inequality, food insecurity, labor market mobility, and social policy.

Vasant P. Gandhi, NABARD chair professor, Indian Institute of Management (IIMA), holds a PhD from Stanford University, a master's degree from Stanford and IIMA, and a bachelor's degree from Pantnagar. He was chair of IIMA's Centre for Management in Agriculture, and founding chair of its postgraduate program in food and agribusiness management. He has worked with the World Bank the International Food Policy Research Institute and is chair of the editorial board of the *Indian Journal of Agricultural Economics*. His research and publications span international food policy, food

security, new technology for agriculture, institutions for water management, and agribusiness.

Akihiko Hirasawa, joint general manager/senior chief economist, Norinchukin Research Institute, has been with the institute since 1992 as an agricultural economist. His current research area is trends of agricultural policy in the United States, the European Union, and Switzerland (from 2006 to the present). He received his PhD in agronomy from Tokyo University in 2004. He also has been a part-time lecturer at Tokyo University and Waseda University.

Meenchee Hong is a lecturer at the Graduate School of Business, Universiti Sains Malaysia. After completing her master's degree, she worked as a researcher at the WorldFish Center (CGIAR) for 10 years. From there, she gained experience in research related to rural development and poverty reduction, working with people from multicultural backgrounds, and managing cross-disciplinary projects. She has been active in research, working in small to medium-sized enterprise development and humanity-related issues. Recently, she obtained her PhD (economics) from James Cook University in Australia.

Dinesh Jain is assistant professor, National Institute of Bank Management (NIBM), Pune, India. He holds a doctorate from the Indian Institute of Management Ahmedabad, a master's degree in agribusiness management, and a bachelor's degree in agricultural engineering. He has undertaken research projects supported by bodies such as the Australian Centre for International Agriculture Research, the International Food Policy Research Institute, Global Development Network, and the Ministry of Agriculture, India. His research and publications span institutional design and behavior in water management, food and agriculture policy, biotechnology in agriculture, agri-entrepreneurship, and the impact of development programs.

Tae-Jin Kwon, director at the Center for North Korean and Northeast Asian Studies at the GS&J Institute, retired from the Korea Rural Economic Institute (KREI) in 2014 after 35 years of research. He served as a vice-president of KREI. He has studied agricultural and economic issues in the Democratic People's Republic of Korea for the last 20 years. He now serves as a member of South and North Exchange and the Cooperation Promotion Council. He received his bachelor's and master's degrees from Seoul National University and a PhD from Washington State University. His research interests

include inter-Korean agricultural cooperation and international rural development.

Jacques Silber, professor emeritus of economics at Bar-Ilan University and senior research fellow, Luxembourg Institute of Socio-Economic Research, received his PhD from the University of Chicago in 1975. He is a specialist in the measurement of income inequality, poverty, and segregation, and author of more than 150 scientific papers and several books. Founding editor of the *Journal of Economic Inequality*, he is the editor of the book series, *Economic Studies in Inequality, Social Exclusion and Well-Being* (Springer). He was president of the (International) Society for the Study of Economic Inequality between 2011 and 2013.

Joo-Ho Song, senior economist, GS&J Institute, the Republic of Korea, was a government official for 23 years, mostly at the Ministry of Agriculture. As a director of the International Cooperation Division in the ministry, he was involved in the World Trade Organization negotiations and Organisation for Economic Co-operation and Development Agricultural Committee meetings. He also worked in the Korea Rural Economic Institute for 12 years, retiring in 2015. He graduated from Seoul National University in 1977 and received a PhD in agricultural economics from the University of California, Davis in 1994. He has an interest in comparing agricultural policies between developed and developing countries.

Wei-Ming Tian, professor (retired), College of Economics and Management, China Agricultural University, worked at state farms before starting his university education at Beijing Agricultural University in October 1978. After graduation, he worked at the Institute of Agricultural Economics of the Chinese Academy of Agricultural Sciences. In 1995, he joined the College of Economics and Management of the China Agricultural University. He has managed over 70 research projects funded by the Government of the People's Republic of China, international organizations, and foreign research institutions. Since retirement in 2013, he continues to serve as co-editor for the journal *China Agricultural Economic Review* and as a consultant for the China Agricultural Trade Promotion Center.

Guanghua Wan is principal economist at the Asian Development Bank and honorary professor of a dozen top universities in the People's Republic of China (PRC). Previously, he was director of research at the Asian Development Bank Institute and principal economist and

head of the Poverty/Inequality Group at the Asian Development Bank. He has been a senior economist in the United Nations and taught at universities in Australia and the PRC. As a multi-award winning scholar on the economy of the PRC and an expert on Asia, he has published more than 100 professional articles and more than 10 books, including two by Oxford University Press. According to RePEc, he is ranked in the top 10% of economists in the world and in the top 5% in Asia.

Jing Xiang, assistant professor, Institute of Population and Labor Economics, Chinese Academy of Social Sciences, received her PhD in agricultural economics from Nanjing Agricultural University in 2012. She has managed projects related to demographic dynamics and sustainable development in rural areas of the People's Republic of China.

Zhang-Yue Zhou, professor at the College of Business, Law and Governance, James Cook University, was born and raised in rural areas of the People's Republic of China. He worked as a farmer before attending university. From 1982 to 1987, he worked at the Institute of Agricultural Economics of the Chinese Academy of Agricultural Sciences. In Australia, he was the founding director of the Asian Agribusiness Research Centre at the University of Sydney and the Centre for AusAsia Business Studies at James Cook University. His research focuses on food demand and supply, food security, and rural development. He works to improve the lives of farmers and the development of rural communities, especially in developing countries.

Preface

At the end of World War II, food was insufficient in many Asian countries. Subsequent efforts to repair war damage and to boost food supply gradually resulted in improved food security. The rate of improvement, however, seems to differ drastically across borders. Japan and the Republic of Korea achieved and maintained high levels of food security. The People's Republic of China (PRC) and Indonesia managed to improve the status of food security, although more remains to be done. Nevertheless, the progress in the Democratic People's Republic of Korea and Pakistan was less impressive. The heterogeneity naturally leads to a very important question: why have Asian countries differed so much in terms of improvements in food security levels given that their economic conditions were similar at the end of World War II?

Studies that examine differences in food security performance among Asian countries are sparse. In this book, we fill this gap by providing cross-country comparative perspectives on food security improvements. Such a study can be valuable for Asian countries to learn from each other. After all, over 500 million Asians still suffer from hunger (over 65% of the total hungry people of the world), according to the Food and Agriculture Organization.

Countries included in this book are Bangladesh, the PRC, Indonesia, Israel, Japan, the Democratic People's Republic of Korea, the Republic of Korea, Pakistan, and Singapore. These countries share some similarities but also differ in terms of their institutional settings, natural resource endowments, population size, and level of economic development. Our study concludes that institutional differences are the most fundamental determinants of divergent food security status.

The book is chiefly written for anyone who is interested in Asian food security, including officials of national governments and international bodies, researchers, and university students. Asia's experience can also be valuable in improving the food security of countries beyond Asia.

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Zhang-Yue Zhou and Guanghua Wan

Abbreviations

ADB	Asian Development Bank
ADER	average dietary energy requirement
ADESA	average dietary energy supply adequacy
AERR	ASEAN Emergency Rice Reserve
AMS	aggregate measurement of support
ASEAN	Association of Southeast Asian Nations
CBS	Central Bureau of Statistics
CGIAR	Consultative Group on International Agricultural Research
CPC	Communist Party of China
CPI	consumer price index
DES	dietary energy supply
DRI	dietary reference intake
EIU	Economist Intelligence Unit
EU	European Union
FAO	Food and Agriculture Organization
FPW	Food Price Watch
FTA	free trade agreement
G20	Group of 20
GATT	General Agreement on Tariffs and Trade
GDP	gross domestic product
GFSI	Global Food Security Index
GHQ	general headquarters
GTAP	Global Trade Analysis Project
ha	hectare
IBRD	International Bank for Reconstruction and Development
IDA	International Development Association
IDR	import dependency ratio
IEG	Independent Evaluation Group
IFI	international financial institution
IFPRI	International Food Policy Research Institute
kcal	kilocalorie
kg	kilogram
km ²	square kilometer
KOTRA	Korea Trade–Investment Promotion Agency
KREI	Korea Rural Economic Institute
M&E	monitoring and evaluation
MAF	Ministry of Agriculture and Forestry

MAFF	Ministry of Agriculture, Forestry and Fishery
MDER	minimum dietary energy requirement
MDG	Millennium Development Goal
mt	million tons
NGO	nongovernment organization
OECD	Organisation for Economic Co-operation and Development
PDS	public distribution system
PRC	People's Republic of China
PSE	producer support estimate
R&D	research and development
RDA	Rural Development Administration
RDI	reference daily intake
SARS	severe acute respiratory syndrome
SOFI	State of Food Insecurity
SSR	self-sufficiency ratio
TFA	Totally Fuzzy Approach
TFP	total factor productivity
TFR	Totally Fuzzy and Relative Approach
TPP	Trans-Pacific Partnership
TRQ	tariff rate quota
UN	United Nations
URAA	Uruguay Round Agreement on Agriculture
US	United States
USAID	US Agency for International Development
WFB	World Food Board
WFP	World Food Programme
WFS	World Food Summit
WHO	World Health Organization
WTO	World Trade Organization

PART I

Introduction

1

Introduction: Food Insecurity in Asia

Guanghua Wan and Zhang-Yue Zhou

1.1 Why This Book?

This book explores the issue of food security in various Asian countries, with a special emphasis on the role played by institutions.

Achieving food security is of utter importance in any nation. However, food insecurity still prevails in many developing countries. According to the latest report by the Food and Agriculture Organization of the United Nations (FAO), during 2014–2016, the number of undernourished people in the world was as large as 794.6 million, with the vast majority—779.9 million—living in developing regions (FAO 2015a).

Asia is still home to almost 65% of the world's undernourished, totaling 511.7 million (FAO 2015a), despite some progress in food security since World War II. This is disturbing and unacceptable, and calls for urgent action.

At the national level, however, the status of food security or insecurity varies dramatically. For example, the proportion of undernourished in the Democratic People's Republic of Korea amounted to a high 41.6% over 2014–2016, but it was less than 5% in the Republic of Korea. This proportion is 16.4% for Bangladesh and 22% for Pakistan in the same time period, above the Asian average of 12.1%. In the People's Republic of China's (PRC) the proportion is low, but the total number of undernourished remains sizable at 133.8 million (FAO 2015a). Some other Asian countries, such as Japan and Singapore, have done well in improving their food security, with the proportion of undernourished being less than 5%.

The difference in the status of food security across countries over the past 6 decades cannot be explained by some of the conventional arguments, such as resource endowments, country and/or population size, level of economic development, and cultural or social differences.

- **Resource endowments.** Japan and the Republic of Korea have limited agricultural resources; Singapore and Israel also have limited resources. Yet, at the national level, these countries do not suffer from food insecurity problems. Ironically, as far as food security is concerned, these countries top Asia as measured by the Global Food Security Index compiled by The Economist Intelligence Unit (EIU 2015). Within Asia, Singapore ranks the first, followed by Israel, Japan, and the Republic of Korea. They all ranked high globally as well, with Singapore being the highest ranked in second position (EIU 2015). Many countries in Asia and beyond have better resource endowments, yet some of them have serious food insecurity problems. Another convincing example refers to the PRC. The world's most populous nation suffered from serious food shortages before 1980, but today the food supply is abundant even though the country is endowed with less land and farming labor, compared with the years before 1980.
- **Country and/or population size.** India and the PRC are the most populous countries in the world. From 1958 to 1962, the PRC suffered from a large-scale famine resulting in tens of millions of deaths (Becker 1996; Yang 2008; Dikötter 2010). India has also experienced several famines since its independence in 1947, but the death tolls were minimal. Clearly, the size of population is not a determining factor of a country's level of food security. In the 1960s, the PRC had a smaller population size, but it suffered from food shortages chronically. Today, the PRC's population has more than doubled, yet its food security has dramatically improved.
- **Level of economic development.** Many Asian countries suffered from the effects of World War II including Japan, the Republic of Korea, and the PRC. However, Japan and the Republic of Korea quickly improved food availability after the war. For the PRC, it took 30 years to do so. The sharply contrasting stories of the Republic of Korea and the Democratic People's Republic of Korea are even more convincing. When Korea was divided in 1945, both countries were at a similar level of economic development (with the Democratic People's Republic of Korea being even better). Since then, the Democratic People's Republic of Korea has been struggling to feed its people, while the Republic of Korea quickly improved its food supply and has remained at a high level of food security. (In 2012–2014, the Democratic

People's Republic of Korea's average dietary energy supply adequacy was 92, being one of the few countries in the present times whose adequacy is below the threshold of 100. For the Republic of Korea, this adequacy indicator stood at 137 in 2012–2014.) (FAO 2015b).

- **Cultural or social differences.** Cultural traditions and social settings can affect food security to some extent; however, again, they are not determining factors. Before the separation in 1945, the Republic of Korea and the Democratic People's Republic of Korea were part of the same country, with the same cultural traditions and social settings. Today, while food availability is no longer an issue in the Republic of Korea, the number of undernourished in the Democratic People's Republic of Korea is still large, ranging from about 30% to 40% of the total population. The PRC is another example where people, culture, and the society remain the same, but the food security status has changed enormously. In the pre-reform period, tens of millions of people died of hunger or suffered chronically from undernourishment during the the famine (1958-1962) and the Cultural Revolution (1966–1976). This is no longer the case.

These observations appeal for a deeper analysis to identify determining factors of food security elsewhere. It is postulated that differences in institutions between countries are responsible for the differences in the levels of food security between nations.

It is noted that poverty is a root cause of malnutrition, especially micronutrient deficiencies, which primarily affect the poor and disadvantaged. Over the last 20 years, the distribution of income has worsened with economic growth in many, especially developing, countries, leading to rising inequality and poverty. If left unchecked, they could lead to social unrest, thus undermining food security. However, in many cases, it is the poorly equipped institutions that result in poverty and inequality.

1.2 Institutions: What Do We Mean?

“Institutions are systems of established and embedded social rules that structure social interactions” (Hodgson 2006: 18). Five primary institutions are found among all human groups: (1) in determining kinship, (2) in providing for the legitimate use of power, (3) in regulating the distribution of goods and services, (4) in transmitting knowledge from one generation to the next, and (5) in regulating our relation to the

supernatural (Sociology Guide 2015). These five basic institutions can be called family institutions, political (or governmental) institutions, economic institutions, educational institutions, and religious institutions, respectively.

While all five institutions can affect the food security of a country, we hold that two of them, government and economic institutions, are the most influential. In this book, we focus on the impacts of these two sets of institutions on food security of selected countries.

More specifically, an economic institution is the set of rules and norms that govern the production and distribution of goods and services, e.g., laws governing property rights and commercial transactions, court systems, and policy organizations such as regulatory agencies. A government or political institution is the set of rules and norms within which governments operate, including the right to vote, responsible government, and accountability. Governments create, enforce, and apply laws; mediate conflicts; and make policies on the economy and social systems.

To verify that government and economic institutions are most important in affecting a country's food security, we postulate:

- (i) A country achieves a higher level of food security if all the following three conditions are met:
 - (a) the government is elected by the citizens and is accountable to the citizens,
 - (b) the government policy process is transparent, and
 - (c) government operations are efficient.

When these three conditions are met, a country is most likely to achieve food security. If any one of the three is not met, a country is unlikely to achieve its food security along all dimensions, although partial improvement may be possible, e.g., improved food availability.

- (ii) A country achieves a higher level of food security if the market is allowed to play a major role in coordinating food production and distribution (except during extreme emergency food shortages).

Many aspects of a country's economic institutions can affect food security. However, whether the market is allowed to play a major role is most important. In countries where the market is allowed to work and market failures are monitored and corrected, food security is likely to be achieved at a higher level.

1.3 Objectives

This book examines how institutions, especially government and economic institutions, affect food security in various countries. It will draw policy implications for national governments and international bodies, through improved institutions, to reduce poverty and inequality and to achieve higher levels of food security nationally and globally. The specific objectives are:

- to investigate whether and how institutions of selected countries have affected their food security status;
- to assess the role of institutions on food security compared with other possible major factors in selected countries;
- to examine the impact of institutional arrangements on poverty and inequality, and subsequently on food security; and
- to demonstrate how countries can learn from each other in terms of setting institutional arrangements conducive to achieving higher levels of food security.

A cross-country comparative approach will be used to address our research questions and to achieve the research objectives. Representative countries selected for in-depth case study include the PRC, Israel, Japan, the Democratic People's Republic of Korea, and the Republic of Korea. References will also be made to Bangladesh, Indonesia, Pakistan, and Singapore. The findings of the country case studies will be synthesized to demonstrate how institutions affect food security and what lessons and experiences countries can learn from each other.

1.4 Overview of the Book

This book is divided into three parts. Part I has three chapters that set the scene for the book. Chapter 2 reviews literature concerning food, food security, and food security evaluation techniques, together with other issues of Asian food security. Chapter 3 presents Asia's food security achievements and current and emerging challenges for improving food security.

Part II contains six chapters, providing in-depth discussions and comparisons of food security experiences of 9 selected countries: the PRC (Chapter 4); Japan (Chapter 5); the Republic of Korea and the Democratic People's Republic of Korea (Chapter 6); Israel (Chapter 7); and Indonesia, Pakistan, Bangladesh, and Singapore (Chapter 8). Chapter 9 compares country experiences.

Three-fifths of the global population lives in Asia. Changes in the status of food security in Asia, especially in the PRC and the Subcontinent (which account for 37% of the world's population), can have a significant impact on global food security. It is thus useful to project how their future food security efforts may affect food security in other parts of Asia and the rest of the world. It is also important to examine how Asia can learn from other countries.

Part III of the book, consisting of three chapters, assesses how the PRC and the Subcontinent can affect global food security under various scenarios by 2030 and 2050 (Chapter 10). It explores how Asia can further improve its food security by learning from experiences elsewhere (Chapter 11). The last chapter, Chapter 12, concludes the book.

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Food Insecurity in Asia

Why Institutions Matter

Achieving food security is of utter importance in any nation. However, food insecurity still exists in many developing countries, with Asia home to almost 65% of the world's undernourished. This calls for urgent action.

Studies that examine differences in food security performance among Asian countries are sparse. This book fills this gap by providing cross-country comparative perspectives on food security improvements. Such a study can be valuable for Asian countries to learn from each other. Country studies included in this book are Bangladesh, the People's Republic of China, Indonesia, Israel, Japan, the Democratic People's Republic of Korea, the Republic of Korea, Pakistan, and Singapore. These countries share similarities but also differ in terms of their institutional settings, natural resource endowments, population size, and level of economic development. This study concludes that institutional differences are the most fundamental determinants of divergent food security status.

This book will be useful reading for anyone who is interested in food security of individual Asian nations and Asia as a whole, including officials of national governments and international bodies, researchers, and university students.

About the editors

Zhang-Yue Zhou is a professor at the College of Business, Law and Governance, James Cook University, Townsville, Australia.

Guanghua Wan is a principal economist, Economic Research and Regional Cooperation Department, the Asian Development Bank, Manila, the Philippines.

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ASIAN DEVELOPMENT BANK INSTITUTE
3-2-5 Kasumigaseki, Chiyoda-ku
Tokyo, 100-6008 Japan
Tel +81 3 3593 5500
www.adbi.org

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