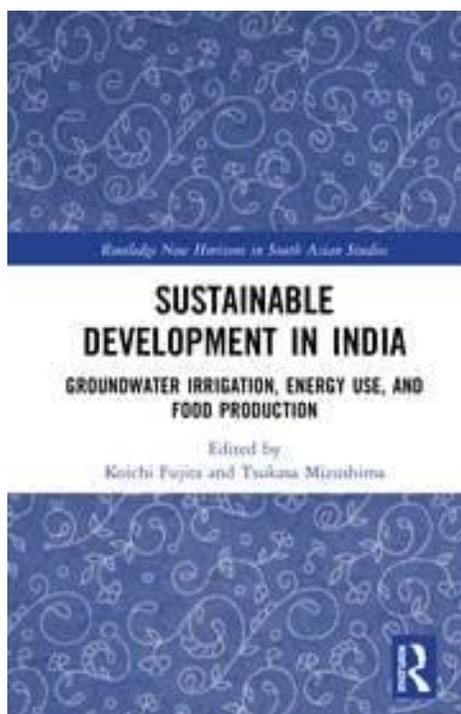


## BOOK REVIEW

### The Crisis of Sustainability in India

Pranab Mukhopadhyay\*

Fujita, Koichi, and Tsukasa Mizushima, eds. 2020. *Sustainable Development in India: Groundwater Irrigation, Energy Use, and Food Production*. Abingdon and New York: Routledge, 270 pages, ISBN 9780367460976 (Hardcover)



There has been a long-standing debate on the role of public policy and markets in enabling efficient and equitable allocation. Advocates of *laissez faire* argue that greater state intervention distorts markets, leading to inefficient allocation. Unfettered markets, on the other hand, are known to have equity concerns. This problem is especially pronounced in the case of intergenerational allocation as future generations are not at the bargaining table. This challenge is at the heart of the debate on sustainable development. India is a prominent entity in the global sustainability debate for a combination of reasons—its growing economic position, its demographic structure with a population of more than a

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billion, and a growing aggregate carbon footprint. A persistent challenge for India has been keeping its population out of poverty while ensuring citizens' sustained food security.

In the first couple of decades after Independence, the government had to increase food production and ensure self-sufficiency. The Green Revolution, with introduced irrigated agriculture and new seed technologies, replaced traditional modes of farming in India. While India did achieve rapid agricultural growth, the revolution left in its wake a number of questions about its sustainability.

A new set of problems evolved around what is termed the “food–water–energy” nexus, and this crisis has been deepening over the years. The roots of today's agrarian problems are embedded in India's historically interwoven social, ecological, and economic structures. In response to this crisis, Koichi Fujita and Tsukasa Mizushima have brought together a set of studies in this edited volume.

The volume is divided into two parts. The first is titled “Land, Water, and Population in the Past and Future” and the second is titled “Regional Path Dependencies and Policy Orientations for Sustainability”. The editors, in contrast to many other contributions in this area, have rightly taken a long-term view of agrarian change in the country. Going back to the eighteenth century, the contributors examine land issues in Tamil Nadu (Tsukasa Mizushima), Odisha (Akio Tanabe), and Bengal (Shinkichi Taniguchi). There are also reflections on traditional irrigation technologies like the tank irrigation system that evolved in South India (Kuppanan Palanisami and Mohanasundari Thangavel) and the *abars* (water reservoirs) based on gravity flow in southern Bihar (Tetsuo Satoh). These traditional technologies that have stood the test of time are suitable candidates to become part of the adaptation toolkit for climate-proofing agriculture in South Asia.

The contemporary crisis is discussed in the five chapters of Part II of this volume. The reasons for, and the consequences of, the rapid decline in groundwater in Punjab (Kamal Vatta and Parisha Budhiraja), Tamil Nadu (Takahiro Sato), Gujarat, and West Bengal (Tushaar Shah and Sujata Das Chowdhury) are discussed in detail in this section. The contemporary policy of governments in India providing subsidies for various inputs is sometimes considered a critical driver for the unsustainable use of resources. On the energy front, subsidised electricity and use of fossil fuels are regarded as primary causes for the rapid depletion of groundwater in many parts of the country with inadequate recharge (Koichi Fujita and Atsushi Fukumi). This has also led to the distortion of water markets. In the context of public finances, the growing gap (due to low tariffs) between the revenues and

costs of state electricity boards have made them financially unviable. This is also increasing the pressure on states' finances.

In parallel, the subsidy-based fertiliser–insecticide policy has led to their excessive use (Ippai Sekido). This has resulted in the unhealthy accumulation of chemical residues in produce (thus affecting human health, groundwater, and water bodies). It is also seen as the primary cause for soil contamination and exhaustion as well as water pollution.

An associated issue with new farm technologies is their impact on biodiversity. Current farm technologies encourage monoculture, leading to a loss of crop and seed varieties. This may have long-term consequences for how we adapt to climate change—it is a fact that some traditional, climate-resistant varieties of crops have gone extinct because of low productivity or low market uptake. Further, the entry of large seed companies has stripped the farmer of control over seeds as well as the production process. This will adversely affect long-term risk reduction strategies in agriculture.

Geographically, the book focuses on a limited number of states—Tamil Nadu (Chapters 2 and 5), West Bengal (Chapters 4 and 11), Odisha (Chapter 3), Bihar (Chapter 6), Punjab (Chapters 8 and 10), and Gujarat (Chapter 11). Chapter 7 takes a larger view of the country as a whole, and Chapter 9 provides reflections on other parts of South Asia.

The book offers a comprehensive view of sustainability challenges in the agricultural sector. It highlights the heterogeneity of outcomes, based on the role of institutions and their evolution, and the diversity of agro-ecological landscapes in India. This will provide good reference material for researchers dealing with questions relating to agricultural production, water and electricity prices, and their combined impact on ecology on the one hand and state finances on the other.

A couple of areas that the book does not touch upon are sustainability issues in the industrial sector and urban landscape. Considering that almost half the population now lives in urban areas, and considering the significant contribution of industry to India's economy and industry–agriculture linkages, there is a need for similar comprehensive assessments of sustainability in these domains.