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BOOK REVIEW

Agricultural Innovation Systems in Asia: Towards Inclusive Rural Development

■ Lakhwinder Singh and Anita Gill, eds.

London and New York: Routledge Taylor and Francis Group, 2020. ISBN: 978-0-367-14666-5, 339 pp.

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This book points to the need for finding alternative science, technology, and innovation or STI pathways to meet the new challenges from South Asian agriculture experiences. While technological, institutional, and policy innovations continue to remain important, embracing a systems approach to agricultural development will be critical, the authors argue.

Though the framework of Agricultural Innovation Systems (AIS) has been around for the past two decades, it is yet to be mainstreamed in agricultural policies and practices globally. International agencies investing in agriculture such as the World Bank, the Food and Agriculture Organization (FAO) of the United Nations, and the Consultative Group on International Agricultural Research or CGIAR have been talking about the importance of using AIS in the design of research and development projects during the last decade. However, many of these organizations are still guided by a linear thinking when it comes to designing their interventions in science, technology, and innovation (STI). Quite often, the word technology has been replaced with innovation and AIS has become a jargon, and in this process, the underlying idea of AIS such as actor interactions, interactive learning, and

institutional change have been neglected. This book, *Agricultural Innovation Systems in Asia: Towards Inclusive Rural Development*, tries to bring back the focus of our discussions on AIS to some of these neglected aspects.

The book is organized in 15 chapters, offering a critique of our past development policies in agriculture, with more focus on Indian Punjab. It is impossible to analyze Indian agriculture without discussing the green revolution in Punjab. Though the package approach of the green revolution helped the state in achieving commendable increase in productivity of wheat and rice, it also brought several environmental and economic challenges.

The increasing concerns around unsustainability of the input-intensive monoculture in Punjab has led to the development of better performing varieties and new technologies in

natural resource management, enhanced nutrient use efficiency, pest management, and farm machinery, among others. Many of these new technologies are being applied, adapted, diffused and used beyond few pilots to become innovations. However, the innovation process is not highly effective and is making slow progress due to weak extension and advisory services (chapters 3 and 7), low human and social capital (chapters 2 and 12), and lack of complementary policy and institutional innovation (chapter 14).

While the discussion on innovations often tend to ignore the other non-technological innovations—social, product, process, marketing, organizational, and institutional—this book examines some of these. They include innovations in marketing (chapter 9), the use of information and communication technologies (chapter 6), and policy (chapter 14). But will these technological and complementary institutional and policy innovations suffice to deal with the unprecedented challenges (sustainability, climate change, value chains, nutrition, inclusion, and equity, among others) we currently witness in the agriculture sector? So far, the answer seems to be no.

In chapter 8, the author calls for alternative pathways for sustainable agricultural transformation to address these new challenges. These pathways should be developed around agro-ecological approaches. The author also argues for a new discourse on how science, technology, and innovation (STI) be reshaped in India, emphasizing the need to learn from some of the promising experiences piloted by civil society organizations to strengthen these alternate pathways.

In chapter 4, the authors highlight the importance of governance of research and development (R&D). The authors argue for democratizing and broadening interactions as these determine the R&D performance, more than investment, in research per se. The global trends in private agricultural research are discussed in chapter 5 and the author argues for more public investments in AIS to stimulate more private sector involvement.

The book also discusses the development of the national innovation systems framework during the 1980s and early 1990s and the underlying ideas informing these (Chapter 1). While the book discusses the varied types of innovations by different actors in AIS in different chapters, it does not provide lessons on how to move forward in strengthening AIS. A final chapter summarizing the key ideas presented in the book could have added more value to this publication. With a few exceptions, most of the chapters focus on Indian experiences in shaping agricultural innovation, even as the title of the book refers to Asia.

There is an increasing recognition on the need for strengthening capacities for AIS in developing countries. In response to this, the Tropical Agricultural Platform of FAO has come up with a common framework on capacity development for AIS. Several publications in this area have come out during the last two years and the readers might benefit from available resources (FAO 2020). An earlier investment resource book for AIS (The World Bank 2012) is yet another publication useful for broadening the understanding of AIS.

The book is highly relevant for all those who are interested in understanding the past and present of Indian agriculture, and the shaping of its future. Scholars in the fields of agricultural sciences, economics, political science, extension, science policy, and innovation studies might find this book extremely valuable.

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