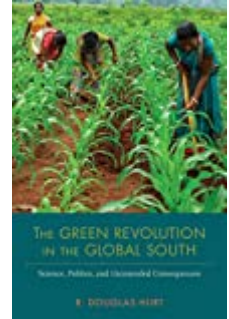


**R. Douglas Hurt.** *The Green Revolution in the Global South: Science, Politics, and Unintended Consequences.* Nexus Series. Tuscaloosa: University Alabama Press, 2020. Illustrations. 280 pp. \$49.95, cloth, ISBN 978-0-8173-2051-5.



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*The Green Revolution in the Global South* is a history of the unintended consequences of the Green Revolution. R. Douglas Hurt, a historian of agricultural history in the United States, took on a global project in this exploration of the history of agricultural technology in Latin America, Asia, and Africa. The book focuses on these geographic regions with the aim of understanding how agricultural and social scientists theorized and assessed the Green Revolution. Hurt examines a wealth of literature on the effects of the twentieth and twenty-first centuries' efforts to alleviate hunger.

Norman Borlaug's (1914-2009) efforts to introduce hybrid high yield varieties (HYV) of maize, wheat, and rice had unintended consequences, but he continued to believe that the benefits outweighed the consequences of the movement he started. However, there were many opinions on the outcomes of agricultural modernization, and in this book, Hurt examines how these ideas changed over time and across geographical locations. These assessments focused on the uptake of

new HYV plants and the corresponding technology scientists created to accompany the seeds, such as manufactured fertilizers, machinery, and monocropping field techniques.

The book starts in Latin America where the Green Revolution began. Hurt describes Borlaug's involvement in Mexico to introduce new agricultural technology. The Mexican government eagerly took up new methods of wheat production in order to become self-sufficient in food production. The outcome was that the institutions set up by the Mexican government and international organizations, such as the Rockefeller Foundation, prioritized large landholding farmers who could grow large amounts of food. This left small farmers on the outside unable to compete. Nor could they experience the purported benefits of the Green Revolution. It is in this chapter that the author introduces a common theme of the book. The Green Revolution in Mexico increased food production, even to the point that Mexico began exporting wheat, but its benefits did not reach those who were actually food insecure. In response to

the critiques lodged against the use of HYV and chemical fertilizers that continued to privilege those with access and disadvantage those who did not have access, Borlaug's response was: "Our primary concern has to be to produce food. We're not in the business of a land-reform agency; we can't decide to split up land into small pieces" (p. 43). The chapter describes similar outcomes in such countries as Colombia and Guatemala. Each nation had its own specific implications for how plans did not work as expected, but the theme was the same.

Chapters 2 and 3 cover south, east, and south-east Asia, a region with as much variance in the application of Green Revolution technology as Latin America. As with Latin America, success was uneven across the region. Pakistan and India, in particular, both greatly increased their wheat production, but politics, war, class, caste, and gender all shaped farmers' access to necessary seed and fertilizers. The unequal distribution of land enabled some to access farming technology and the profit from sales to urban dwellers, while others continued in poverty. The theme of the Green Revolution's ability to produce large quantities of food while nearby people remained poor was particularly stark in India. In some areas where new agricultural practices were adopted, many found themselves without work because tractors replaced their labor. Many social scientists argued that in South Asia, as in other parts of the global south, the Green Revolution may have brought modern agricultural technology, but it ignored the social dynamics of poor countries. Despite the Indian government's focus on a scientific approach to agriculture, parts of the country remained food insecure. Particular groups, such as women and lower castes, could not access resources. Gender is not discussed at length in any of the chapters. In the developing world, gender plays an important role in food production and distribution, but it is possible that the literature, which includes development impact assessments, government analysis documents, and peer-reviewed articles from agri-

cultural-related disciplines, does not take it into account.

Since most of the sources came from the global north, some scientists overlooked the importance of gender in making agricultural programs successful. Borlaug's argument was that agricultural scientists were just offering the technology; they had nothing to do with the social spaces where these HYV crops would grow. This was the central critique of many social scientists and development organizations. Case studies from Japan to Vietnam demonstrated the hesitancy on the part of both farmers and governments to take up HYVs. South Korean farmers continued to plant the traditional varieties of rice alongside the *Tongil* HYV, a Korean-produced hybrid seed, the government required them to grow because they trusted the reliability of the heritage variety. Hurt points out that this was a good thing because disease ruined *Tongil* crops in the early 1960s. Although the war in Vietnam prevented farmers from planting crops, the nation still benefited from the Green Revolution, albeit through importation from other countries. These two chapters offer Asian examples of governments attempting to legislate price protections and other incentives to alleviate fears that the adoption of HYVs would force many into crowded urban areas.

China is examined in its own chapter, given the history of the rise of Mao Zedong and the Great Leap Forward. The agricultural history of China during this time was rather different in that rather than adopting Western-created HYV or depending on foreign experts, they established research institutions to create their own HYV. Many of these, however, did not grow well, exacerbating famines. This all came at the same time as collectivization and a rapidly growing population. China also differed from other nations in that HYVs and fertilizers were attainable by more farmers because of direct government intervention in providing assistance. But the outcome was often the same in many parts of China. Crops were sent to urban

areas and many rural dwellers remained food insecure.

Hurt opens the chapter on sub-Saharan Africa with a quote from the *New York Times* in 1985 that “Africa is the tragic example” (p. 129). As with the rest of the global south, there was uneven adoption of Green Revolution strategies. Some states did try to encourage, and sometimes force, the adoption of HYV. But Africa is no stranger to forced agricultural schemes. Colonial governments also wanted African farmers to grow high-yielding crops for export.[1] It is no wonder that many Africans were skeptical of adopting unfamiliar varieties after the hunger and poverty induced by growing for the state. The Green Revolution in Africa picked up steam in the 1980s. This coincided with an increase in international development programs by both nongovernmental organizations and foreign states. African states began agricultural programs incentivized by aid from international donors and lending agencies. As with the rest of the case studies, some areas experienced an increase in food production, but other areas suffered. Many common varieties of high-yielding crops did not do well in drier African environments. Some observed that there was not enough technical know-how on the continent to enable more widespread adoption. This seems like a rather stereotypic, and racist, view of African ability to modernize.

The final chapter is a departure from the geographic overview of the Green Revolution. The “Gene Revolution” introduced new varieties of crops that were genetically modified (GM) rather than using more traditional hybridization. The implications of this are still playing out. Many countries have been skeptical of adopting GM varieties. China, for example, would not use foreign GM varieties, seeing the importation of American seeds as an invasion. Some countries like Guatemala were concerned about the safety of GM varieties. They were wary of the environmental consequences of using GM crops and the damage it would have on the cultural significance of some traditional vari-

eties. But because of global food supply chains, some countries were forced to adopt GM if they wanted to continue to trade.

*The Green Revolution in the Global South* is a good source for a nonexpert on the history of this region or those working in the field of development. It provides a thorough synthesis of how scientists and observers understood agricultural modernization in its application. The literature backing the history of the scientific perspectives on the Green Revolution in the global south is thoroughly researched. It would be helpful to have more discussion of who exactly was doing the observing and assessing within the text to better understand the politics of science. The approach to this book also means that the personal experiences of farmers are not included. Area specialists will find the broader geographic overview helpful in its coverage of a topic of interest beyond their own area specialty.

This book highlights the dangers of seeing a problem from only one point of view or thinking that all points of view are considered but they really are not because so much of the research and researchers come from the global north and cannot imagine other ways of thinking and doing. Since so many were left out of agricultural improvement, it raises the question, what could have been done instead of the Green Revolution?

#### Note

[1]. For example, Allen Isaacman, *Cotton Is the Mother of Poverty: Peasants, Work, and Rural Struggle in Colonial Mozambique, 1938-1961* (Portsmouth: Heinemann, 1995).

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