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Synopsis

COMPETITIVENESS OF GLOBAL AGRICULTURE

Policy Lessons for Food Security

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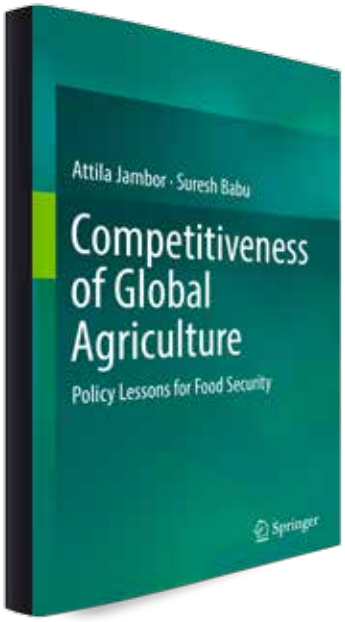
The issues of food security and agricultural competitiveness are central to agricultural and food policy making in the 21st century. Although developed and developing countries are at different stages of achieving food security and their agricultural competitiveness varies, they face a common and increasingly urgent challenge: feeding their growing populations with finite natural resources. The issues, constraints, and challenges related to competitiveness and food security have not been fully understood or studied in the context of policy making at the national and global levels.



Food security is one of the biggest development challenges of the 21st century. According to 2015 estimates from the Food and Agriculture Organization of the United Nations (FAO), about 795 million people worldwide are undernourished, and roughly 2 billion suffer from micronutrient deficiencies. At the same time, some 30 percent of all food produced goes to waste. Assuming that current global trends in food consumption and population growth continue, by 2050 food needs will have increased by 70 percent. How can rising food demands be met judiciously, using the finite natural resources available?

Competitiveness of Global Agriculture: Policy Lessons for Food Security explores the relationship between agricultural competitiveness and food security—defining the concepts, explaining their evolution, and laying out a theoretical framework for analyzing linkages between the two. In doing so, this book addresses an important gap in the scientific literature, which has yet to treat the issues of agricultural competitiveness and food security together in a policy context. *Competitiveness of Global Agriculture* covers food security challenges at all levels, scoring countries' agricultural competitiveness at the national, regional, and global levels and examining why performance varies between countries. Finally, the book provides policy recommendations and lessons on how to increase agricultural competitiveness and food security in the long run.

WHO FEEDS THE WORLD?

According to FAO data, 35 percent of agricultural production was traded globally in 2013. Meat and cereals have been the most traded product groups, with the general growth trend

favoring the trade of high value-added products. Although the high proportion of agricultural products traded seems to imply that most countries can feed themselves, international agricultural trade positions vary widely from country to country. *Competitiveness of Global Agriculture* places countries into one of five categories based on their trade markets: (1) rich net food exporters, (2) emerging net food exporters, (3) self-sufficient countries, (4) rich net food importers, and (5) low-income net food importers.

For the last 25 years, the United States has been both the biggest exporter and biggest importer of agricultural and food products. On average, countries that export mostly raw materials with low value-added receive fewer payments in foreign currency and are worse off economically than those that mainly import raw materials and export processed products. Rich and emerging net food exporters seem to be feeding rich and low-income net food importers, while many countries are self-sufficient.

TRENDS IN COMPETITIVENESS

The book provides a systematic country and country-group analysis of the competitiveness of 176 countries between 1991 and 2014. This analysis uses the Balassa index, which identifies a country as having competitive advantage in a commodity if its exports of that commodity in relation to total exports are greater than the exports of said commodity from a reference region in relation to the reference region's total exports. Results suggest that the Netherlands, Spain, and Denmark were the most competitive in global agricultural and food trade from 1991 to 2014 (Table 1). At the regional level, Europe and North America were the most competitive. A review of the regional breakdown together with feeding status (that is, countries' ability to feed themselves, denoted by the five trade categories above) reveals that the rich food exporters of Europe were the most competitive in agricultural and food trade during the period studied.

Results also show that rich net food exporters had the highest comparative advantage (that is, the ability to produce food more efficiently), while low-income net food importers had the lowest comparative advantage. Product maps suggest that the share of products with net export positions and comparative advantage decreases from rich food exporters to low-income food importers (while the share of products with net export positions and comparative disadvantage increases), suggesting different possible strategies for pursuing global agrifood trade. Yet given the diversity among the product maps of individual countries—even those within the same country groups—members of the five trade categories cannot be treated as homogeneous.

TABLE 1 Competitiveness in Global Agricultural and Food Trade, 1991–2014

Country	Mean Balassa Index	1991–1998	1999–2006	2007–2014
Netherlands	1.96	2.11	1.77	2.01
Spain	1.92	1.66	1.95	2.11
Denmark	1.73	1.65	1.67	1.72
Argentina	1.48	1.36	1.42	1.65
New Zealand	1.40	1.34	1.40	1.49
Chile	1.38	1.40	1.47	1.30
Australia	1.34	1.32	1.45	1.08
Poland	1.29	1.47	1.20	1.28
France	1.28	1.17	1.24	1.39
Lithuania	1.27	1.27	0.92	1.54

Source: Authors' analysis, based on World Bank (2015) data.

KEY LESSONS

The authors of *Competitiveness of Global Agriculture* find that nine key factors account for countries' uneven competitive performance in global agricultural markets. (Figure 1).

Based on these factors, the authors make the following recommendations for increasing competitiveness and food security:

Create efficient institutions. Institutions set the rules of the game, and many stakeholders and institutions are involved in delivering the range of services required by farming communities globally. Stakeholders should coordinate with one another to avoid duplicating efforts and wasting resources. The creation of a sound institutional framework—including decision-making and implementing bodies—for coordinating agricultural and food-related policies is therefore crucial.

Invest in physical infrastructure. Neither the competitiveness of agriculture nor food security depends solely on production capacities; both also depend on physical infrastructure. Better roads, railway, transportation, storage facilities, energy generation, and communication services are essential for agricultural development. More specifically, the development of rural roads, crop storage, and stockholding grounds or abattoirs will foster agricultural

competitiveness through increased income or decreased production costs. Water storage and management are also crucial for agriculture-related infrastructure development in many countries. Building irrigation systems, rainwater storage facilities, and water development all help to make farmers less vulnerable.

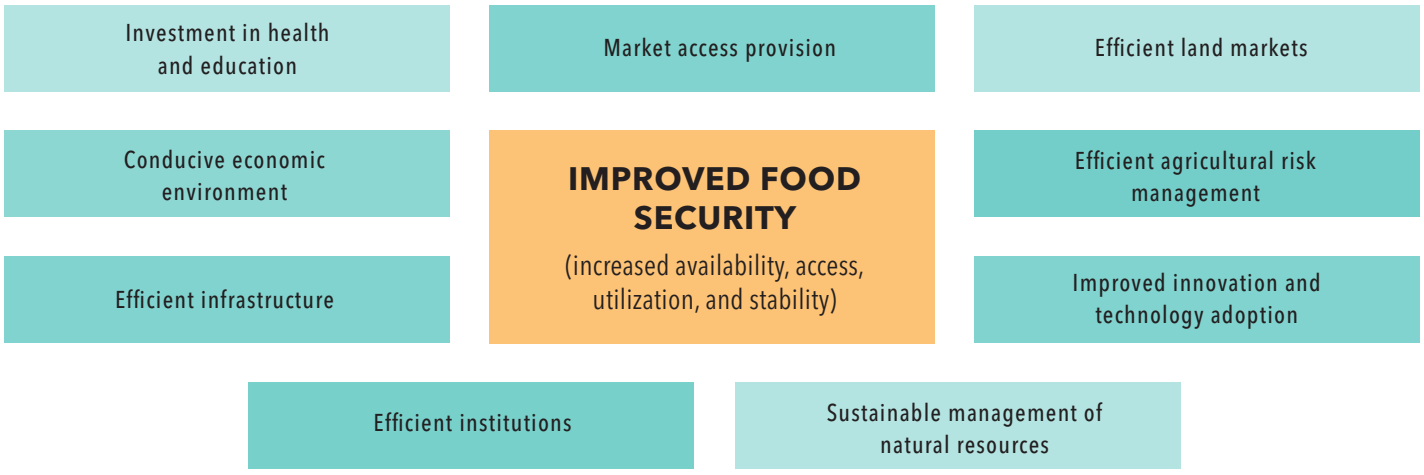
Create a conducive macroeconomic environment. Macroeconomic stability is a key element for creating an environment conducive to increasing agricultural competitiveness and food security. A well-designed agricultural policy is also good economic policy, as it leads to overall growth and speeds up structural change in agriculture. A stable macroeconomic environment rests on prudent fiscal, monetary, and trade policies, along with efforts to encourage investments and savings. Whereas an overvalued exchange rate penalizes exports and harms competitiveness on world markets, for example, a trade restriction leads to less efficient use of scarce resources. It is not enough, however, to create a sound macroeconomic environment. It is also important to monitor volatile food prices, for example, as they can raise inflation.

Invest in health and education. A competitive economy depends directly on human capital. The agriculture sector is particularly affected when workers' basic health is compromised. In developing countries, women, who do much of the everyday farm work, are more vulnerable than men to HIV-AIDS, malaria, and water- and airborne diseases. Thus when such diseases go unchecked, the farm-labor supply drops, healthcare costs rise, and household assets decline. In countries where productive adults die young, poverty rates worsen and problems of social exclusion intensify. While a healthy labor force is a key immediate factor, in the long run the most important prerequisite for a country's agricultural competitiveness is education. Providing infrastructure for basic agricultural education, ensuring quality education services, and improving the efficiency of research and development services are key.

Improve market access. Market access is vital to agricultural competitiveness and food security. To be productive, farmers need access to inputs such as seeds, fertilizers, and chemicals as well as to credit markets. Access to inputs is critical if small-scale, resource-poor farmers are to increase their production and move out of poverty. Increasing farmer's access to fertilizers, for instance, is particularly important in many African countries, where under-delivery and black markets are serious impediments to agricultural competitiveness. Farmers should also have easy access to new varieties of seeds and seedlings, whether sourced locally or imported.

Create efficient land markets. Land is the foundational factor for agricultural production. Countries with highly unequal land distribution, lack of access to land, and environmentally unsustainable cultivation practices usually underutilize their productive land. Land-market regulations generally govern the exchange of land-use rights. Liberal land-use policies tend to encourage agricultural competitiveness and growth. Governments should avoid the bureaucratic administration of land-use rights, which together with the introduction of governmental concessions causes an artificial redistribution of agricultural land ownership, regardless of productive purposes. Governments should also avoid imposing ideologically inspired taxes and regulations that hamper the productivity of large- and medium-scale farms, unless there is a clear economic rationale for introducing efficiency-enhancing interventions.

FIGURE 1 Factors affecting food security through agricultural competitiveness



Source: Authors

Improve agricultural risk management. Managing year-to-year risks is a major issue for agricultural producers today. Climate variability poses a growing challenge for a sector whose profitability depends on natural resources, requiring farmers and governments to design adaptive risk-management strategies. Farmers should prepare to deal with known climate risks, such as cyclical droughts and inland water loss, to improve their competitive potential. Further, governments should oversee protection and response efforts in the wake of natural shocks such as floods and hurricanes. Pest and disease management, with all their economic, environmental, and social costs, are also an issue that national agricultural policies must tackle. In addition to natural shocks, farmers are also affected by economic shifts. Recent global agricultural price spikes and fluctuations have brought price-stability issues back to the policy agenda. Governments and institutions play a crucial role in devising schemes to mitigate farmers' losses from global economic shocks and crises.

Improve innovation and technology adoption. The potential advantages that agriculture-related technologies can bring are nearly limitless. Investment in research and development makes possible technological innovations such as improved crop and livestock resistance to droughts and diseases, which in turn make possible breakthroughs that can offer large competitive advantages. For agricultural innovations to increase, an efficient research and development system is essential. Such a system should focus on the development of diversified, demand-driven, and market-oriented crop varieties in order to increase farmers' productivity—and hence their competitiveness. At the same time, national agricultural policies are needed to facilitate the adoption of the latest technologies. Improving crops and livestock resistance to droughts or diseases will also enhance competitiveness.

Ensure sustainable management of natural resources. Improvements in forestry and land management and adoption of climate change mitigation and adaptation strategies are necessary to increase competitiveness. Countries must support afforestation and reforestation efforts, rehabilitate degraded lands, conserve forest resources, and improve watershed management. In agriculture, countries should adopt modern land- and water-management practices—changing cultivation and sowing times and techniques, adopting new tillage and soil conservation practices, adopting climate-resilient crops, and choosing crops and species better adapted to the new growing seasons, water management, and use of biotechnology. General climate change mitigation and adaptation also foster sustainable management of natural resources. Droughts and floods, which are among the most consequential manifestations of climate change in agriculture, cause significant variability in yields from year to year; even short droughts can affect agricultural production for an entire year.

If governments, farmers, and other stakeholders heed these lessons, taking into account their particular contexts, agricultural productivity and competitiveness should increase, thereby improving food security globally.

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