

MADELEINE PULLMAN AND ZHAOHUI WU: *Food Supply Chain Management: Economic, Social and Environmental Perspectives*. 2011, 312 pp., ISBN 978-0415885898 (paperback), \$89.95.

The food supply chain is interesting—and important—for a variety of reasons. First, we depend on food for survival. While we might do without the newest electronic device or consumer good because of a supply chain disruption, and incur little discomfort, disruptions in the food supply chain are much more problematic, having the potential to transform society (and not, I would argue, in a good way). Second, food is perishable. The nature of the product and how it's produced, affect that perishability. Perishability requires exceptionally well managed supply chains. Third, it's not one supply chain, but many—the chains vary greatly for meat, dairy, vegetables and fruit, for example. Even within a food type—seafood, for example—there is great variety in the chains. Fourth, the climate affects food production; most would argue that we have entered into a period of greater climate variation, resulting in less consistent food supplies. Fifth, we are seeing—at least in the United States of America—a rediscovery of food, with a large set of related and developing movements—to name a few, avoiding genetically modified organisms, eating seasonally, eating sustainably, farm-to-table, locavores, organic, nose-to-tail and knowing the provenance of one's food. Sixth, the price and availability of certain food products have resulted in food counterfeiting, particularly of seafood. Seventh, because food products are often comingled in the supply chain, tracking the movement from origin to consumption is a challenge, yet important because of food-borne pathogens and, potentially, food terrorism. Finally, the chains vary greatly in the size of the players involved, ranging from small, farmer-owned and run operations, to large multinational corporations.

The book delves into these issues and numerous others. Many people will find this book interesting—government employees who are responsible for regulating and monitoring food production, people in the food production industry, retailers of food products, restaurant supply chain managers, even the casual readers interested in what food chains are now and where they are heading.

The titles of the book's chapters, which give a good idea of what it covers, are: Introduction; Food Safety; Animal Protein Supply Chains; Commodity Crop Supply Chains; Fruit and Vegetable Supply Chains; Food Regulation and Verification Mechanisms; Food Service; Food Manufacturing and Logistics; Food Retailing; Food Aid and Hunger Relief; The Future of Food Supply Chain Management. Most chapters end with a company profile or case study. The chapters also have discussion questions, which would make the book well suited for educational purposes. Where appropriate, the authors provide information on the extent to which the chain is concentrated; it was surprising to see the extent that major players have at different levels of the chain for different items—the top two companies account for over 40% of the production of broiler chickens, for example. It's hard to single out one or two chapters to highlight, but for me the chapter on

Food Aid and Hunger Relief reinforced the challenges we're likely to face more often in the future, given weather-related disruptions to the supply chain.

As the book is chock full of facts and figures, the authors were thorough in their research. The book was an easy and generally engaging read. As I noted above, the use of company profiles and case studies helped ground the work. To me, the best single page in the book was Table 11.1, in which the authors compare conventional agriculture with alternative agriculture. The differences the authors point out, and the movement toward the latter, capture much of the challenges in food supply chain management (or, at least, gets one thinking about those challenges). This dichotomy can be divisive, because food brings out passions in people. To their credit, the authors have presented a balanced view, not only in this table but throughout the book. A big take away from the book for me was a much better understanding of the complexity of the food supply chain; that complexity helps explain why my favorite grocery store is sometimes out of stock of a desired item.

I have a couple of minor quibbles. I found some of the pictures and graphics hard to follow, perhaps that's because they were better suited to reproduction in color, yet were gray scale in the book. In particular, the graphics of the USA showing food production were hard to understand. There were also several tables that seemed to contain errors. Finally, the book is USA-centric. However, it's hard to imagine that people in other countries, with an interest in the topic, would not find it of great value.

On a more personal note, I would like to have seen a little on the supply chain for one of life's great sustenances: wine!

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