［*Jpn. J. Agric. Econ.* Vol.24, pp.16-18, 2022］

The 2021 Annual Meeting Symposium of the AESJ

Corona Shock, Food and Agriculture: Emerging Food System Risks and Future Prospects

Seiji Mitsuishi[1]

Since the impacts of COVID-19 extend to all aspects of the Japanese food systems, it is necessary to organize the viewpoints in their examination. We introduce the basic disease classification and the concepst of Triple R by the Institute for Global Environmental Strategies. A comparison with the Great East Japan Earthquake is conducted first. After pointing out the vulnerability of the Japanese food system, the trends of entire food industries are reviewed based on the data from two previous censuses by the Ministry of Internal Affairs and Communications. Although there are clear behavior changes that occurred after COVID-19, there are several structural changes that had already occurred before the pandemic, and Corona shock is likely to accelerate these changes.

Key words: food system, structural changes, triple R

1. Introduction

Since the impact of COVID 19 will extend to all aspects of social activities, it was necessary to first organize our thinking to examine its impact on food and agriculture. We introduced the basic disease classification and the concept of Triple R by IGES. We then made a comprehensive comparison with the Great East Japan Earthquake and examined Japanese vegetable imports in 2020. Finally, we examined the trends that occurred at each stage of the food system based on figures from the Economic Census of the Ministry of Internal Affairs and Communications, and summarized the results.

2. Framework for Thinking: From Disease Classification to Triple R

In general, diseases are classified into three types: acute, chronic, and lifestyle-related diseases. For each of these, there are different causes, effects, diagnoses, treatments, and relationships. While it was possible to examine the impact of Covid-19 using this framework, it is insufficient to understand the impact on economic and social activities in general, when the perspective would expand to include sustainable production, consumption, and the future of our society.

This was where the IGES Triple R (Response, Recovery, and Redesign) framework came into play. It is similar to the idea of Recovery and Reconstruction used in the Great East Japan Earthquake.

The Great East Japan Earthquake had presented us with several lessons and challenges. The first was that the “wisdom of the ancients” was reaffirmed, the second was that the global logistics risks associated with mass production and mass consumption became apparent, and the third was that even if the initial response was swift, many hurdles arose in the subsequent recovery and redesign. Fourth, many studies focused on the immediate aftermath of the earthquake, and there was limited research on long-term time frames. The fifth challenge was how to recover and redesign the "post-Corona stage" in light of the prolonged Corona shock that was expected.

3. Impact on the Food System: Example of Vegetables Imports in 2020

Of the vegetables consumed in Japan, approximately 12 million tons were domestically produced and 3 million tons imported; however, in 2020, imports decreased to approximately 2.6 million tons. In terms of the breakdown of imported vegetables, although there was little impact on frozen vegetables, for which the manufacturing and processing procedures were automated, and safety and hygiene management, as well as preservation technology and facilities, had been established, imports of fresh vegetables

[1] Miyagi University
mitsuisi@myu.ac.jp

were at their lowest level for the past five years.

Although the percentage of China-produced vegetables in Japan's total vegetable imports was 52%, fresh vegetables accounted for 66%, and of these, more than 90% of the major commodities were produced in China. For example, onions accpounted for the largest import volume (220,000 tons), but this was a decrease of 60,000 tons compared to the previous year, due not only to the production area, but also to the fact that local vegetable processing plants and port operations were suspended due to Covid-19. Furthermore, since the demand was mainly for commercial use, an import system was established based on the premise of local peeling, and there was a phase of confusion in the redevelopment of a domestic system.

This was also the result of pursuing maximum efficiency without considering the risk of a total shutdown of specific activities in the entire food supply chain.

4 . Vulnerability of the Food System

It is important to note that the vulnerability did not appear suddenly, but had many prior causes, such as overdependence on external labor, increasing domestic demand from overseas producers, rising import prices, declining domestic demand for business use, and changes in domestic stakeholders' behavior.

From the above, there were two lessons to be drawn. The first was the danger of overdependence on a particular strong production area or mechanism. The key to solving this problem lies in the interactivity of the entire food system, including logistics, and the compatibility of specific sectors within the system. The second was the possibility that we underestimated the value and demand for domestic agricultural products. Immediately after the Great East Japan Earthquake, local farmers and small- and medium-sized stores provided people with food during the period when the major supply chains lost their functions. It is necessary to reevaluate their complementary functions in times of disaster, and it is important to understand that this was a question of what each region thinks about agriculture and food for our own future.

5 . Accelerated Structural Change

Although clear behavioral changes occurred after Covid-19, such as wearing masks, several structural changes had already occurred before the pandemic. This was well illustrated in the Ministry of Internal Affairs and Communications' Economic Census, which compares changes over time (2012 and 2016), and reported changes in the number of establishments and employees.

In the agricultural sector, both the number of establishments and of employees in rice-growing agriculture had grown. It is important to understand which forms of agriculture were growing in the overall agricultural sector. In the food manufacturing sector, there was significant growth in sushi, boxed lunch, prepared bread, frozen food, and prepared food manufacturing sectors, which were classified as "others." The wholesale sector had decreased, but the increase or decrease differed depending on the sector. In the retail sector, "Cafeterias and restaurants (other than specialty stores)" and "Soba and Udon noodle stores" decreased, while "Bars," "beer halls," and "Yakiniku restaurants" increased. Takeaway/delivery food and beverage services all increased, but takeaways decreased while deliveries increased rapidly before the pandemic.

Overall, there was a decrease of about 30,000 establishments, mainly retail and restaurants; during the period under review. The number of "convenience stores," "Yakiniku restaurants," "Bars and beer halls," and "take-out and delivery food service businesses" increased. Aside from full-time farmers, there was an increase in the number of employees in the agricultural sector of approximately 20,000, which was significant. Furthermore, of the 1.3 million people in the food manufacturing industry, 10% were in the sushi, boxed lunches, and prepared bread category, while food wholesalers accounted for 0.79 million. Of the 1.3 million people in the food retailing industry, 1.05 million were in supermarkets and 0.77 million were in convenience stores. In addition, there were 4.12 million restaurants and 560,000 takeaway/delivery food services, and these were the main components of the food system in modern Japan. In terms of food services, the impact on fast food was relatively small, but the impact on pubs, izakayas or Japanese-style taverns, and dinner restaurants was large.

6. Conclusion

If we assumed that the Corona Shock started at the end of January 2020, then one year later, the response phase was considered to be reasonably well underway. We may now be in the recovery and redesign phase. The effects of the shock not only affected our country's food and agriculture, but also all aspects of people's daily lives. We should take this as an important opportunity to fundamentally rethink the design of

our agriculture and food systems for the future.

References

Brandenburger, A. M. and B. J. Nalebuff (1997) *Co-opetition,* Currency Press, 17-22.

Hotta, M (2012) Roles and Challenges for the Food Service and Food Service Industries in the Wake of the Great East Japan Earthquake, *The Great East Japan Earth Quake and the Food System* 31-47 (in Japanese).

Japan Food Service Association (2021) Monthly Data, Annual Data, JF Food Service Industry Market Trend Survey, http://jfnet.or.jp/data/data_c.html (accessed on February 28, 2021).

Number of Evacuees Nationwide, https://www.reconstruction.go.jp/topics/main-cat2/sub-cat2-1/20210226_kouhou1.pdf (accessed on February 28, 2021).

Kawamura, T. (2011) The Role of Private Sectors in Food Supply after the Earthquake: Experience in Sendai City, *Journal of Foodsystem Research* 18(3): 357-360 (in Japanese).

Minisitry of Health, Labour and Welfare (2009) Documents 2 : about the Whole Picture of Chronic Diseases*, The 1st Meeting for Further Enhancement of Measures for Chronic Diseases* https://www.mhlw.go.jp/shingi/2009/07/dl/s0701-4b-1.pdf (accessed on February 28, 2021).

Mitsuishi, S. (2011a) *Toward the Promotion of Flour Milling in Japan: Lessons Learned from the East Japan Earthquake,* Seifun-Shinko, 534: 9-15 (in Japanese).

Mitsuishi, S. (2011b) Lessons to be Applied to the Tohoku Region's Recovery Initiative: Focusing on Recovery and Reconstruction Strategy for the Sumatra Earthquake in Indonesia, *Proceeding of the 2011 Japan Food System Society Conference* 190-191 (in Japanese).

Morita, A. (2020) Tsunami-affected areas 10 years after the disaster(Miyagi Prefecture): Agricultural Management, Impacts of Covid-19, *Nogyo Kenkyu* 33: 317-326 (in Japanese).

Reconstruction Agency of Japan (2021) Attachment 1 Number of Evacuees by Prefecture of Residence (as of February 8, 2021).