

# Vegetables for Processing and Food Service Uses in Japan

## - Current Trends and Future Directions

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### 1. Introduction

As the number of households comprising singles, double income, or senior citizens continues to rise dramatically in Japan, the trend towards convenience with regard to food is increasingly prevalent. Against this backdrop, the externalization of our diet is continuing to advance. Concerning vegetable consumption, the trend toward convenience is also clearly observable in the broad segment of the population who consume “ready-to-eat” foods, those that do not require time-consuming preparation and have relatively short cooking times, for example, dishes such as salads, and pre-cut vegetables; and “time-saving” foods, for example, frozen vegetables, pre-cooked frozen foods, and flavor enhancers used in the preparation of meals. The progress of this externalization of our diet, including the aforementioned trend, indicates an increase in the consumption of foods and ingredients that are processed for use by the food processing and eating-out/ ready-to-eat meals industries. This also affects, in every respect, the growing demand for processing and food service uses of vegetables.

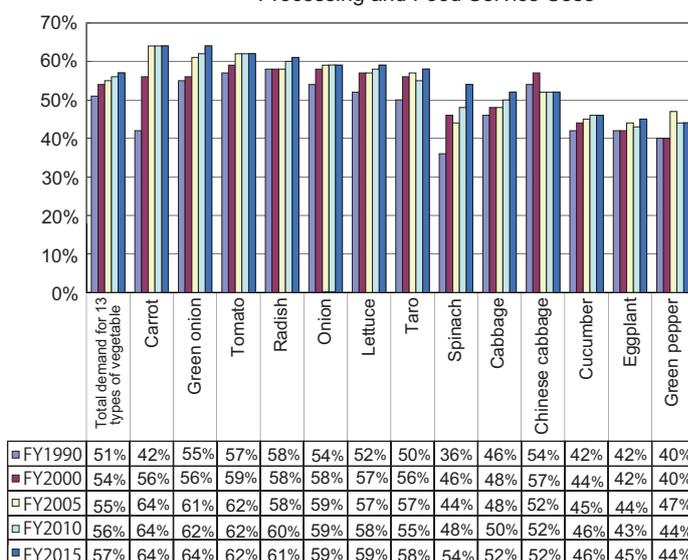
By analyzing the demand for the main vegetables (13 designated vegetables, excluding potatoes) based on their usage, this study clarifies the trends and characteristics of demand originating from processing and food service uses. Estimated figures for 2015 were used as the main reference point of this study. Furthermore, this study also examines important initiatives aimed at optimizing future vegetable production in Japan. With respect to the estimates cited herein, converted quantities for fresh vegetables were utilized.

### 2. Growing Trends for Vegetables for Processing and Food Service Uses

Figure 1 shows changes in the ratio of demand for processing and food service uses to total demand for each vegetable. Overall, the combined demand for all 13 vegetables grew by 1% in 2010 to 57% in 2015, in line with the continued trend of growth observed in previous years regarding vegetables for processing and food service uses.

Tracing the trends for each vegetable reveals that the above-mentioned ratio for carrots, green onions, tomatoes, and radishes exceeded 60%, and was almost 60% in the case of onions, lettuce, and taro. The increased ratios for carrots and tomatoes reflect their extensive use of pastes as ingredients in processed juices. In the case of green onions, the demand from noodle restaurants as a condiment, and a demand for various forms of cut green onions significantly boosted the ratio from its 2010 figure. As for radishes, increased demand was observed from the eating-out and ready-to-eat meals industries, which use it for salads, a sashimi garnish, and in “oden” (a traditional Japanese stew). This increased demand for cut radish and other radish preparations more than compensated for the reduced demand for radish intended for use in pickled dishes. Aside from the fact that onions, lettuce, and cabbage are widely used as basic ingredients in the eating-out and ready-to-eat meals industries, the increased demand for cut vegetables led to a rise in their respective demand ratios for processing and food service uses.

Figure 1. Demand Trends for Main Vegetables for Processing and Food Service Uses



### 3. A Strong Relationship between Imports and the Demand for Vegetables Used for Processing and Food Service Uses

Figure 2 shows the import ratios relating to the demand for vegetables for processing and food service uses. In 2015, the import ratio of all 13 varieties combined fell by 1% from the 2010 level to 29%. Although import volumes of all 13 varieties combined increased from 2010 to 2015, the ratio of imports for processing and food service uses declined, albeit slightly. This fact reflects the progress, to a certain extent, of previous measures adopted to reinforce the capacity of domestic suppliers to meet the demand for locally sourced vegetables for processing and food service uses. However, although not shown in the figures below, the import ratio of household

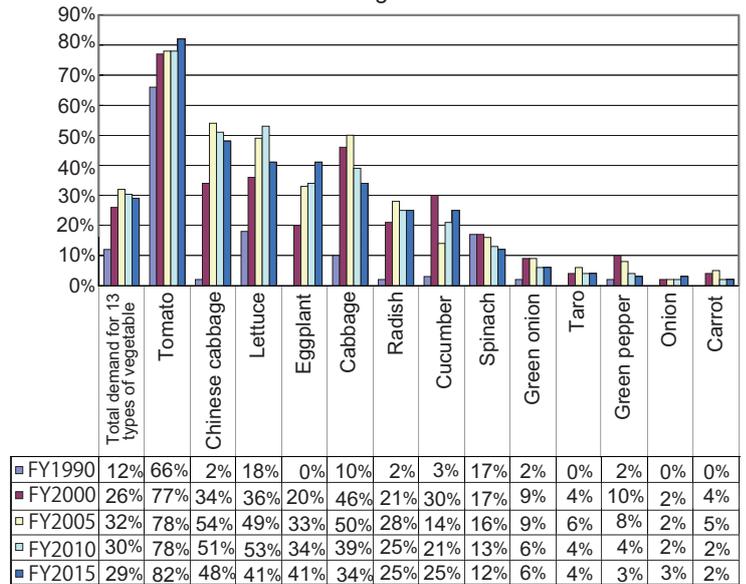
demand in 2015 remained at 2%, the same as in 2005 and 2010, while the ratio of imports for processing and food service uses remained high at almost 30%.

Considering imports of each vegetable separately, the popular use of canned whole tomatoes in the commercial sector, as well as tomato paste used for reconstituted tomato juice and ketchup, caused tomato imports in 2015 to exceed the level of imports in 2010. Consequently, the import ratio of tomatoes increased moreover in 2015.

Relative to 2010, the import ratios for carrots and onions declined in 2015, mainly due to lower imports of fresh vegetables. Particularly in the case of onions, a good harvest in Hokkaido saturated domestic demand and left enough surplus for exports to Taiwan and South Korea. The abundant supply of domestic onions was a key factor in the ratio's decline.

In addition, spinach and green pepper import ratios rose in 2015 compared with 2010 levels, mainly due to increased imports of frozen spinach and fresh paprika widely used in food service industries.

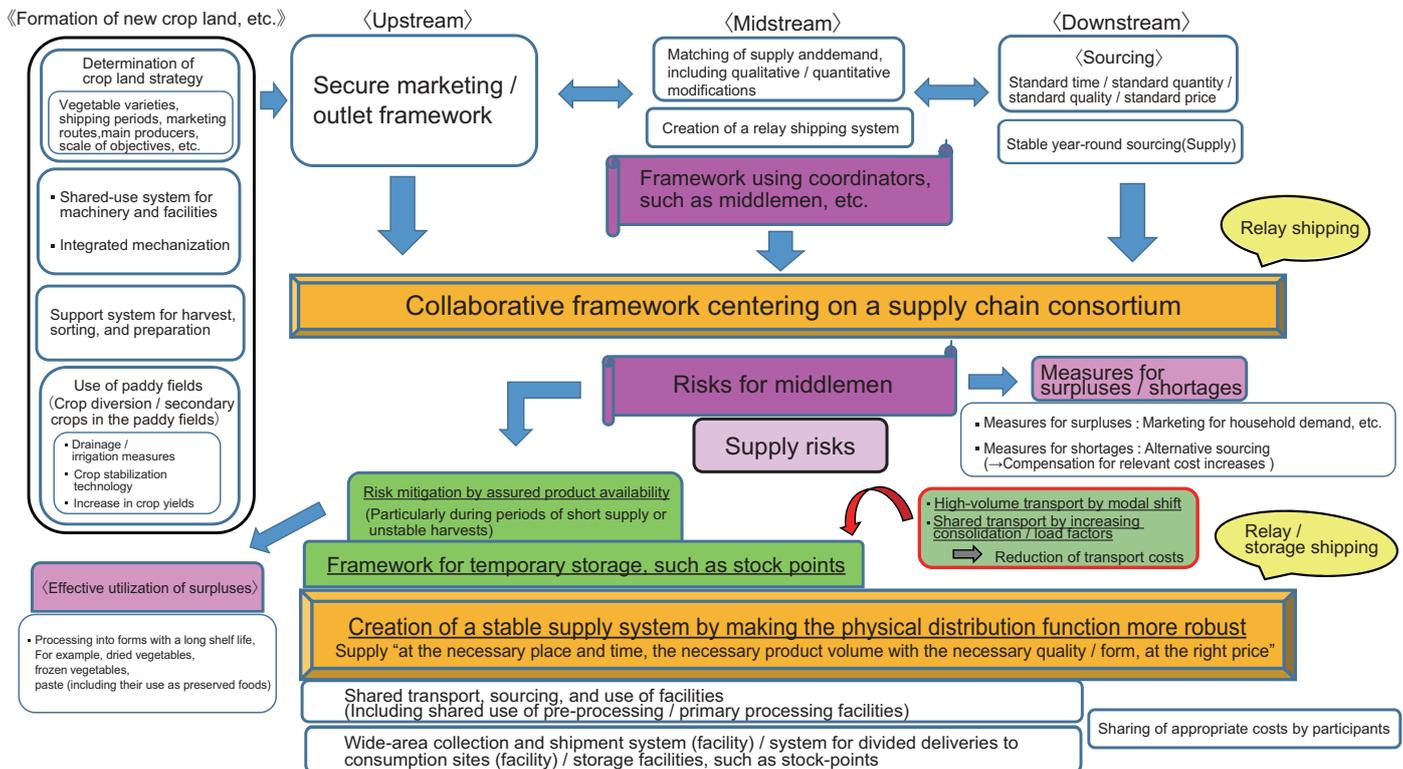
Figure 2. Changes in Import Ratios of Main Vegetables for Processing and Food Service Uses



#### 4. Building a Stable Supply System Based on a More Robust Physical Distribution System

In such an environment, the reinforcement of the ability of domestic producers to meet the demand for vegetables for processing and food service uses becomes a high priority. Figure 3 shows a schematic diagram outlining a system aimed at securing a stable year-round supply of vegetables, emphasizing a more robust physical distribution function using middlemen as coordinators, and linking it with important factors such as the formation of new crop land, for example, use of paddy fields (crop diversion / secondary crops in the paddy fields).

Figure 3. Conceptual Production/Supply Framework for Vegetables for Processing and Food Service Uses



In this context, a stable supply means the ability to supply “at the necessary place and time, the necessary product volume with the necessary quality / form, at the right price.” In this case, one particular point that must be highlighted as a prime characteristic of the demand for vegetables for processing and food service uses is the paramount requirement for standards of time, quantity, quality and price and a stable year-round supply. Compared with the retail sector, the sourcing carried out by food business buyers is inelastic in nature. Consequently, to secure a stable supply in order to fulfill demand, measures must be adopted to ensure “assured product availability” even during periods of poor harvests. For this purpose, a specific portion, not only from current harvests but also products of high quality from past harvests, should be allocated and temporarily stored at stock-points or other locations, and systematically made available to a group comprising producers, middlemen, and buyers. Thus, the risk of “shortages” can be mitigated within the framework of this comprehensive group. From this perspective, to satisfy the year-round demands of these buyers, there is a need to create a system that enables “assured product availability” throughout the year, incorporating a framework for supplying the temporary products stored at stock-points and delivering them via relay shipping. From this viewpoint, this method may be more appropriately referred to as relay/ storage shipping.

Furthermore, when building this framework with more robust physical distribution capabilities, issues of effective utilization of surpluses (e.g., processing into dried/frozen/paste forms with a long shelf life) will have to be addressed, as well as the establishment of a rule-based sharing of storage costs and other costs according to the benefits and responsibilities relative to each participant.

As for the formation of new crop lands, for example, the use of paddy fields (crop diversion/ secondary crops in the paddy fields), the new entrants into vegetable production will make the determination of a crop land strategy essential. This strategy should focus on the relevant vegetable varieties, shipping periods, marketing routes, main producers, and scale of objectives. In order to mitigate producer burdens associated with the cultivation of new crops, a shared-use system for machinery / facilities, as well as a support system for harvest, sorting, and preparation should be made available to them. In addition, the introduction of integrated mechanization essential for labor savings and production scale expansion, as well as drainage measures to increase crop yields and ensure stable harvests, are crucial technological challenges that must be overcome.