

琉球大学学術リポジトリ

沖縄における野菜の市場構造(農学科)

メタデータ	言語: 出版者: 琉球大学農学部 公開日: 2008-02-14 キーワード (Ja): キーワード (En): 作成者: 吉田, 茂, Yoshida, Shigeru メールアドレス: 所属:
URL	http://hdl.handle.net/20.500.12000/3921

Vegetable Market Structure in Okinawa

Shigeru Yoshida*

Summary

Okinawa's vegetable markets consist of the market inside Okinawa and the market outside Okinawa.

The problems pointed out by markets outside Okinawa regarding vegetables grown in Okinawa are; 1) the volume of shipments is unstable and 2) there are variations in qualities of vegetables shipped among agricultural cooperative associations.

Unless efforts are concentrated to maintain stable supplies of vegetables to be shipped out of Okinawa and to improve their qualities, foreign-grown vegetables will be given a ready chance to break into markets for the off-crop season (winter to spring) in the Japanese mainland. It is vegetable producers in Okinawa who suffer serious damage from imports of foreign-grown vegetables.

The instability can be eliminated to some degree through the enthusiastic promotion of production management. And the new pooling system is expected to encourage competition between areas or cooperative associations with the result that improved farming techniques will lead to vegetables of high quality.

The expansion of cultivated area of vegetables to be shipped out of Okinawa has resulted in the shrinkage of cultivated area of vegetables for local distribution. Besides, it should not be overlooked that the above situation has also brought about the transition from the conventional multi-crop small production to mass production of specialized crops in recent years.

It is of course important to devote efforts to stable supplies of vegetables to be shipped out of Okinawa and to improve their qualities, but at the same time it is required to undertake in earnest to produce alternatives to vegetables imported from abroad or incoming from the Japanese mainland. It is for argument that the development of a new breed of vegetables which can be grown in the summer-autumn season and the resumption of the production of the vegetables previously grown for local distribution (for example, Ensai), will reduce the more of other vegetables imported from abroad or coming from the Japanese mainland during the season. Thus Okinawa's self-sufficiency rate in vegetables will be raised.

* Department of Agriculture, College of Agriculture, University of the Ryukyus
Sci. Bull. Agr. Univ. Ryukyus 33 : 79~85 (1986)

1. Introduction

This study clarifies the characteristics and problems of vegetable market structure in Okinawa, which consisting of many islands of various sizes, is located in a subtropical zone and which is far removed from major consumption markets in the Japanese mainland such as Tokyo and Osaka.

2. Backgrounds to Vegetable Market Structure in Okinawa

First of all, it will be required to bear in mind the following natural backgrounds to vegetable market structure in Okinawa.

1) Okinawa is under subtropical and maritime climatic conditions.

The climate of Okinawa offers itself the best growing conditions in Japan of such tropical specialty crops as sugar canes and pineapples. The climate also provides Okinawa with an advantage in the production of fruits, vegetables and flowers and ornamental plants in the winter-spring season (December to May).

On the other hand, the high temperatures and high humidity put Okinawa at a disadvantage in that they cause diseases and insects to occur in many localities; they accelerate the spoilage of agricultural products; they aggravate the wear and tear of farm equipment; and they are unfavorable to the production of fruits, vegetables and flowers and ornamental plants in the summer-autumn season (June to November).

2) Agricultural water supply is unstable.

Okinawa has a heavier precipitation of around 2,100 mm a year in Japan, but with very broad seasonal fluctuations. Most of the precipitation is distributed in the winter-spring season, while rain falls in such a small amount as may sometimes cause drought damage in the summer-autumn season.

3) Typhoons often hit Okinawa.

Typhoons so frequently strike Okinawa that it is referred to as "the Ginza (main street) of Typhoons". As the maximum number of typhoons in annual distribution attacks Okinawa in the summer-autumn season when there is only a fraction of the precipitation, there is a traditional tendency among farmers that typhoons are fairly welcome so long as they are gentle with moderate rainfall. Typhoons, though, cause direct as well as indirect damage to crops due to sea water carried by the wind.

4) Okinawa is very remote from central markets in the Japanese mainland; besides, it comprises many islands of various sizes.

Okinawa is far removed from mass consumption markets in the Japanese mainland (Naha City is about 1,560 km distant from Tokyo, and some 1,200 km from Osaka). In addition, Okinawa consists of many islands of various sizes. These geographical features increase distribution costs relative to the procurement of productive materials and the sale of vegetables.

5) The arable land usage for growing vegetables have increased recently.

The average area of arable land per farm household in Okinawa is expanding every year, reducing a differential to the national average. In 1965, Okinawa's average was equivalent to only 60.4% of the national average (0.64 hectares), but in 1985, increased to 84.6% (1.04 hectares), the gap being narrowed. The expansion of the cultivated land resulted in an increase in the area of fields;

rice paddies are declining.

The greater part of the arable land is used for sugar cane production. Changes in recent years are characterized by an increasing usage of the arable land for growing vegetables, fodder and green manure crops, and flowers and ornamental plants with a decreased usage for rice and pineapple production. Thus an increase of crops with a quicker turnover raised the cropping rate of farm land. The average cropping rate in Okinawa had been lower than the national average before 1981, with 101.1% in Okinawa and 103.2% in the whole country in 1980 respectively, but has exceeded the national average since 1981. The average cropping rate in 1984 was 105.5% in Okinawa compared with 103.8% in the whole country.

3. Characteristics and Problems of Vegetable Market Structure in Okinawa.

The characteristics and problems of vegetable market structure in Okinawa are discussed here.

1) Characteristics and problems of supply and demand of vegetables in Okinawa.

(1) Low self-sufficiency

The Okinawa's annual average self-sufficiency rate during the five years from 1979 through 1983 was 62.7%, which was much lower than the whole country's self-sufficiency rate of 96.6%.

(2) Seasonal fluctuations in the total supply of vegetables: Excessive in the winter-spring season and short in the summer-autumn season.

Okinawa obtains supplies of vegetables primarily from its own sources during the winter-spring season, but primarily from the Japanese mainland and abroad during the summer-autumn season. As a whole, the supply of vegetables is slightly excessive during the winter-spring season, while slightly short during the summer-autumn season. These are seasonal characteristics in Okinawa.

(3) Characteristics and problems of vegetable production

Okinawa is building up itself as a major supplier of vegetables to other prefectures in the winter-spring season, supported by the prefectural government's and the Prefectural Federation of Economic and Agricultural Cooperative Association's efforts to seek new outside markets, the development and wider use of innovational transport technology (transportation in containers) and the expanded transport volume carried by aircraft. Nevertheless, Okinawa still faces the problems as given below.

First, the planted area and harvest are unstable. A second problem is that productivity is falling: the yield per 10 ares is rather decreasing in recent years. The most significant factors in the instability and inefficiency are volatile production of fruit vegetables to be shipped out of Okinawa and the decreasing productivity. A third problem is that vegetable production for local distribution is treated as of less importance because too much interest is paid into the growing of vegetables to be shipped out of Okinawa.

2) Characteristics of vegetable market structure in Okinawa

Vegetables grown in Okinawa are distributed through a wholesale market and other outlets.

(1) Distribution through a wholesale market:

Okinawa has only one outlet for such distribution, Okinawa Prefecture Central Wholesale Market. Opened in April, 1984, the central wholesale market was the first to be opened in Okinawa throughout the pre- and post-war years. It is referred to in this study as the producers' consignment market because producers send their products to the central wholesale market on a consignment

basis.

In the first year of business, the central wholesale market performed about 60% of the initially projected volume of business (the sales were about 7.3 billion yen, and the total dealings roughly 40 thousand tons) partly because there was no well-established system of production and shipment, and middlemen and designated buyers. The results, however, were by no means pessimistic for the first year .

(2) Distribution via other outlets can be classified into three categories as below:

The first category includes an outlet where growers peddle their vegetables (*furiuri*), and an outlet where growers sell their vegetables directly to retailers within the facilities of public or private markets, supermarkets, independent retail stores (*machiyaguwa*), and large customers (hotels and restaurants). These outlets are referred to in this study as the producers' direct selling market because producers sell their vegetables directly to customers.

Public and private markets in Hirara City, Miyako Island and Ishigaki City, Ishigaki Island, as producers' direct selling markets, provide primary outlets for vegetables to be locally distributed.

The second category involves an outlet where producers sell their vegetables at a given place for a limited period of time. This type of outlets is referred to in this study as the producers' negotiated transaction market. This category covers bazaars opened around public and private markets or on the street so that suburban producers can sell vegetables grown by themselves, and also such markets as the Federation of Agricultural Cooperative Association's market in Naha City or the Prefectural Federation of Economic and Agricultural Cooperative Association's central market in Okinawa City, where producers are allowed to use the facilities to sell vegetables grown by themselves.

Suburban vegetable growers regard these markets as most important outlets for intra-prefectural distribution. They are still crowded with wholesalers with delivery service, retailers and consumers although not so lively as they used to be because of the opening of the central wholesale market.

The third category is the U. S. forces special procurement market. Okinawa still has many U. S. military bases, to which vegetables grown in the prefecture are supplied.

The best part of vegetables shipped out of the prefecture go to the Kanto and Kansai districts, primarily to their wholesale markets (in 1984, 41% of the total volume of shipments out of Okinawa went to the Tokyo Metropolitan Central Wholesale Market, and 18% to the Osaka Municipal Central Wholesale Market). It is the Prefectural Federation of Economic and Agricultural Cooperative Association which plays an important role as an intermediary in this trade.

3) Problems of vegetable market structure in Okinawa

(1) Problems of intra-prefectural distribution

Before the opening the Okinawa Prefecture Central Wholesale Market, there were no outlets available to producers who grew vegetables far away from Naha or Okinawa cities, and to suburban growers who just started vegetable production, no matter how much they wanted to sell their products. The markets were dominated by suburban growers (even today so they are). The local wholesale market provided by the Prefectural Federation of Economic and Agricultural Cooperative Association was not equipped with enough big capacity because designated buyers were less influential.

Since a large outlet is now provided by the Okinawa Prefecture Central Wholesale Market,

attempts should be made to form more efficient link between producing districts and consuming districts, with intra-prefectural distribution at the core, by establishing such an effective system as will make smooth shipments to the central wholesale market possible.

(2) Problems of distribution out of Okinawa

The problems pointed out by markets outside Okinawa regarding vegetables grown in Okinawa can be summarized in two points as below.

First, the volume of shipments is unstable. The instability has been ascribed to natural factors. It seems, however, that they can be eliminated to some degree through the enthusiastic promotion of production control techniques.

Secondly, there are variations in qualities of vegetables shipped among agricultural cooperative associations. The Prefectural Federation of Economic and Agricultural Cooperative Association employed an intra-prefectural pooling system, under which proceeds from the sale of vegetables were joined together and proportionally distributed at the same price to agricultural cooperative associations concerned irrespective of the qualities they shipped. Therefore, farmers were less inclined to grow quality products.

In the circumstances, the Prefectural Federation of Economic and Agricultural Cooperative Association has introduced from fiscal year 1985 a new pooling system, under which proceeds from the sale of vegetables are joined together under every different area or agricultural cooperative association. The system is expected to encourage competition between areas or agricultural cooperative associations with the result that improved farming techniques will lead to vegetables of high quality.

Unless efforts are concentrated to maintain stable supplies of vegetables to be shipped out of Okinawa and to improve their qualities, foreign-grown vegetables will be given a ready chance to break into markets for the off-crop season (winter to spring) in the Japanese mainland. It is vegetable producers in Okinawa who suffer serious damage from imports of foreign-grown vegetables.

(3) Low production of vegetables for local distribution

In recent years the production of vegetables to be shipped out of Okinawa is expanding to a very marked degree. Most of them are fruit vegetables. Leaf and stem vegetables, and root vegetables are primarily for local distribution. The expansion of cultivated area of vegetables to be shipped out of Okinawa has resulted in the shrinkage of cultivated area of vegetables for local distribution. Besides, it should not be overlooked that the above situation has also brought about the transition from the conventional multi-crop small production to mass production of specialized crops in recent years.

It is of course important to devote efforts to stable supplies of vegetables to be shipped out of Okinawa and to the improvement of their qualities, but at the same time it is required to undertake in earnest to produce alternatives to vegetables imported from abroad or incoming from the Japanese mainland. This is not to insist on the local production of vegetables imported from abroad or coming in from the Japanese mainland under the Okinawa's unfavorable growing conditions in the summer-autumn season. It is for argument that the development of a new breed of vegetables which can be grown in the summer-autumn season and the resumption of the production of the vegetables previously grown for local distribution (for example, Ensai), will reduce the more of other vegetables imported from abroad or coming from the Japanese mainland during the season.

Thus, Okinawa's self-sufficiency rate in vegetables will be raised.

(4) Problems of air transportation

The problem of air shipment is common to vegetables and flowers and ornamental plants. The largest volumes of their shipments in annual distribution occur in the winter-spring season, so that a particular variety of vegetables (kidney beans, okras, sweet cones, taros, etc.) and flowers and ornamental plants (cut flowers) compete with each other for air consignment. A statistical survey by the Agriculture, Forestry and Fishery Department of the prefectural government shows that in fiscal year 1983 the volume of vegetables shipped by air out of Okinawa amounted to 3,850 tons, corresponding volume of flowers and ornamental plants to 6,898 tons, totalling 10,748 tons. These volumes represented about 34.8% for vegetables and around 96.5% for flowers and ornamental plants, respectively of the total volume of the shipments out of Okinawa.

The transportation of vegetables and flowers and ornamental plants gives rise to many problems, above all, punctual and speedy transport necessary for maintaining freshness, mass transport and cost reduction. Air transport has drawbacks in terms of mass transportation and costs. The prefectural government and the Prefectural Federation of Economic and Agricultural Cooperative Association are now carrying on the research and development of the method of mass transportation with freshness being maintained. These problems have nearly been solved as regards a certain variety of vegetables and flowers and ornamental plants, and in 1982, refrigerated containers were introduced. Fifty-one units (17 in 1982, 28 in 1983 and 6 in 1984) are now placed in service. These containers are instrumental in lessening the congestion of air transport, reducing transportation costs and also establishing a system of stable mass transportation.

References

1. Yoshida, S. 1981. Study on Vegetable Production, Market, and Price Formation in Okinawa, The College of Agriculture, University of the Ryukyus.
2. Adaniya, T. 1984. Function and Mechanism of Price Formation in Okinawa's Vegetable Transaction, Okinawa Kokusai University Nanto Bunka Research Institute, Nanto Bunka 6.
3. University of the Ryukyus, 1985. Agriculture in Okinawa, University of the Ryukyus' Sponsored Foundation.
4. Yoshida, S. 1985. Characteristics and Roles of Producers' Direct Selling Markets of Vegetables-Case Study on Ishigaki City Public Market-, Review of Agricultural Economics 36, The Kyushu Society of Agricultural Economics.
5. Umeki, T. (edited and written), 1986. Agricultural Products Market Structure and Marketing, Fukuoka, Kyushu University Publishing Society.

沖縄における野菜の市場構造

吉 田 茂*

要 約

沖縄県産野菜市場は県内市場と県外市場とからなっている。

沖縄県産野菜に対して県外市場側から指摘された問題点の1つは、出荷量が不安定であることであり、もう1つは、農協間に出荷野菜の品質に格差があることである。

県外出荷野菜の安定供給ならびに品質の向上をめざさないかぎり、本土における野菜の端境期（冬春期）に外国産野菜につけいるすきを与えてしまうことになる。外国産野菜の輸入により大きな打撃を受けるのは沖縄の野菜生産者である。

不安定性は生産管理技術の普及を徹底することにより、ある程度除去可能である。又、最近導入した農協別の販売における共計方式により、地域ごと農協ごとの競争意識が高まれば、生産技術の向上にむすびつき、品質のよい野菜の生産が期待される。

県外出荷野菜の栽培面積の拡大が、県内市場向け野菜の栽培面積の縮小につながっている。さらに、これまでの多品目少量生産から近年の少品目大量生産へと変化してきたことも、みのがしてはならない。

県外出荷野菜の安定生産と品質向上に努力することは、もとより、必要なことである。同時に、輸移入代替野菜の生産にも積極的に取り組む必要がある。具体的には、夏秋期に育成可能な野菜の開発と従来地場流通野菜として生産していた野菜（たとえば、エンサイ）を生産することにより、それだけ輸移入野菜を減らすことができ、ひいては、野菜の自給率を高めることにつながるのである。

* 琉球大学農学部農学科