

The Formation and Maintenance of a Regional Brand: A Case Study of Apple Production in Aomori Prefecture in Modern Japan

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I. Introduction

1. Research Purpose

THE QUALITY of an agricultural food product basically depends on the skill of the producer, even if its quality is more or less affected by the natural and geographic conditions in the production region. Nevertheless, there are many agricultural food products around the world, such as Ceylon tea and Bourgogne wines, which are linked, in merchants' and consumers' minds, to their production places rather than the names of their producers. In this paper, we define "established" regional brand as that which has become a sign, or information as to the production place playing an important role in merchants' and consumers' decision making. Since regional brands produce economic profits, the government as well as actual producers have put their efforts into preventing deceptive product labeling. For instance, the French government promulgated a law concerning the quality of wines in 1905 as a countermeasure against the circulation of wines made from various kinds of grapes, whose labels made them "look as if they had been produced in famous wine-growing regions such as Bourgogne" (Wilson 2009). A question to be asked here is how regional brands have been formed and maintained historically. In business history, and also in its related

research fields, investigations into the food industry and its branding strategies are now in progress globally.¹ In line with this research trend, this study deals with those engaged in the apple-growing industry in Aomori Prefecture, the northernmost prefecture in mainland Japan, focusing mainly on the period between the 1870s and the 1930s. Apples were modern Japan's new import item and Aomori apple-growers developed the business into a large industry catering for the domestic market under the circumstances not necessarily favorable to them. As an attempt of "business history of regional design," this study aims to examine this trial and error process through which the regional brand of "Aomori apples" was formed and maintained despite complicated interests of various parties concerned.

2. Analytical Framework

Investigations into the formation and development of production regions in modern Japan have been implemented continually with regard to the agricultural and manufacturing industries (Abe 1989; Tama 1996; Hashino 2007; Yuzawa 2009; Shirai 2012, 2013, 2016, 2018; Hashino and Ōtsuka 2016, etc.).² Such investigations indicate the necessity to approach the subject from multiple aspects: for instance, individual producers' (and their organizations') work, financing, technology and information gathering and sales strategies; leading figures in the industry and their networks; roles played by the central and local governments and experiment stations; effects of government policies; competition and cooperation with other production regions; coordination of interests and consensus building among concerned parties both within and without the production region; and the balance between economic activity and daily life. The exploration into the formation and maintenance of regional brands along these lines is still under way.

First of all, a crucial point regarding the formation and maintenance of a regional brand is that the product needs to attract merchants and consumers better than other products. Then, it is also necessary to let them remember the product and the place in which it is produced. In addition, it is important to maintain the quality of the product in order not to betray the expectations of merchants and consumers. In this study, the following

1. See, for instance, Jones and Morgan (1994) and Bently, Davis and Ginsburg (2008). *Business History* published a special issue on the history of brand in 2017.

2. Imaizumi (2015) gives a detailed account of recent researches on industrial clusters.

three problems are highlighted in particular: (1) how added value of the products was increased; (2) how the regional brand infiltrated the minds of merchants and consumers; (3) how the regional brand was maintained.

In examining how agents in the production region coped with the three problems abovementioned, this study lays importance on the following two analytical aspects. First, this study deals not only with agents in the production process but also with those in the distribution and consumption processes and, further, with those engaged in the disposal and recycling processes.³ Added value of a product can be obtained by resiliently responding to existent needs, or foreseeing potential needs, of merchants and consumers. Therefore, it is necessary for a study on regional branding to examine, besides productive activities in the production region, what types of products were being sought by agents in the distribution and consumption processes under the economic, technological, political, institutional and cultural conditions of the period and regions in question. In addition, this study draws attention to the disposal and recycling processes, because perishable foods turn into waste with the passage of time. Another reason for drawing attention to the disposal and recycling processes is that the formation of the regional brand was closely connected with the attempt for product standardization, at least during the period in question.⁴ In the case of agricultural products uneven in quality, pre-shipment inspections and packaging standardization have historically contributed to the increase in prices and market shares (Mochida 1970; Shirai 2012; Arimoto 2017). The obverse of this fact is, however, that the standardization process itself produced heaps of products which did not meet the standard. In order to grasp the whole picture of regional branding, therefore, a question needs to be raised as to whether such off-grade products were disposed of and surplus products were left to decay, or they were somehow reused.⁵

The second aspect is to highlight the diversity of agents within

3. In the field of Japanese agricultural history, Fujiwara Tatsushi and Yuzawa Noriko have been implementing comprehensive researches covering the whole production, distribution, consumption and disposal processes.

4. Scranton and Fridenson point out standardization, trust, cooperation and network, that is, themes of this research, as key topics for future business history studies. See Scranton and Fridenson (2017).

5. Matsubara also sheds light on the disposal process of mandarin oranges in his research on regional branding in contemporary Japan. See Matsubara (2017).

the production region. The agents include producers, merchants, their organizations, local governments, agricultural experiment stations, etc. Even though producers, the leading agents in the production region, did take collective actions at times by, for instance, establishing associations and networks, most of them were members of farm families and, therefore, individual and independent agents. Their activities were motivated by non-pecuniary as well as pecuniary interests and they were different in many ways: for instance, economic resources they possessed; experiences; family situations; and priorities in decision making. However, once a regional brand was established and merchants and consumers started to choose the product not by the name of the producer but by the place of production, resulting benefits, such as an increase in price or transaction volume, were enjoyed like public goods by all the producers and merchants concerned, even if the successful branding was achieved by only a small portion of the agents in the region. In other words, even if only a small number of agents in the region damaged the brand image, negative consequences befell all the parties concerned. Therefore, in looking into the process of the formation and maintenance of a regional brand, it is indispensable to examine how agents with different priorities reconciled their conflicting interests and built consensus during the process.

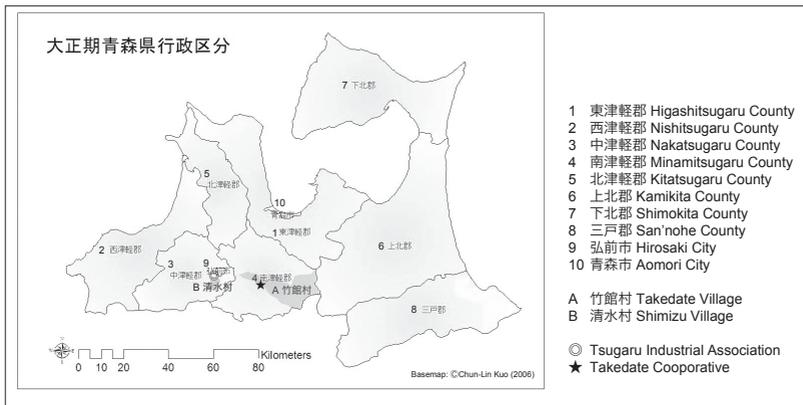
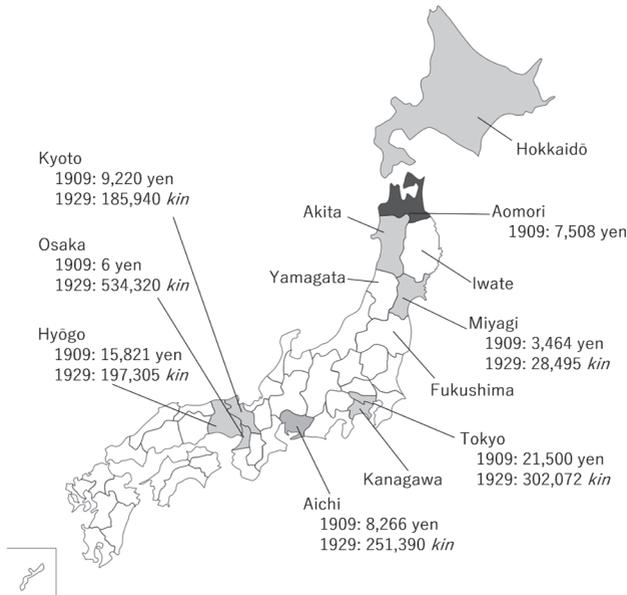
3. Apple Production in Japan and Aomori Prefecture

Finally, a general view on the apple growing industry in Japan and Aomori Prefecture is given in the following. It should be noted that the case of the apple growing industry in Aomori Prefecture is instructive for academic discussions on the formation and maintenance of regional brands. The Tōhoku (northeast) district including Aomori Prefecture is one of the areas in Japan of which a need for economic development has been strong during the modern period (Matsumoto 2015). The need to develop this district derives from its severe natural environment and its distance from the country's large consumption markets. Aomori Prefecture is the northernmost prefecture in mainland Japan and it is freezing cold during the winter months there. Especially, the Tsugaru region, the western part of the prefecture, where apple growing has become widespread, is known for heavy snowfall. An Aomori Prefecture Agricultural Association's official document made in 1909 records that the highest temperature of the year was ninety-three degrees Fahrenheit, the lowest, five and the average, fifty-two. It also relates

that snow began to fall in November and did not disappear until late in March, and that during the period of five months between December and mid-April people spent most of the time in the house (Aomori-ken Nōkai 1909). Although the period during which people can work outside the home is very short, the economic development of Aomori Prefecture has been led by the agricultural sector, which was not in accordance with the central government's general policy to promote industrialization. According to *Aomori-ken Tōkeisho* [Aomori Prefecture Statistical Report], the agricultural sector accounts for seventy percent of the prefecture's total production value of 1893 and the percentage is still fifty as for the year 1937. During the prewar period, rice and silk cocoons, the raw material for the most important export item, were the country's two major agricultural products. With regard to Aomori Prefecture, although the production of silk cocoons was negligible, the rice production value constituted sixty to seventy percent of the total agricultural production value continually between 1905 and 1930. However, the proportion of the Prefecture's rice production to Japan's total rice production volume was as low as one to two percent. Concerning the Tōhoku district as a whole, the production volume per unit area rose rapidly thanks to selective breeding. However, the per unit area production of Aomori Prefecture remained low, ranking forty-second during the 1890s and fortieth during the 1920s among the whole forty-seven prefectures in the country. There was a time when the prefecture's annual rice production dropped by eighty percent on account of a crop failure. According to a document made during the 1930s, in a year when rice harvests were rich around the country, the rice price plummeted, and in a year when harvests were bad, farmers' livelihood was "demolished" (Shima 1979, 174, 184). Under those circumstances, people in Aomori Prefecture, especially those in the Tsugaru region, embarked on the growing of apples, which had been originally imported from abroad.

The Meiji government precipitated the introduction of Western technologies and the Western mode of living. As regards agriculture, it imported seeds and young plants of fruits and vegetables and delivered them through local governments. Among them were apples, which were initially imported mainly from the United States and France. Eventually, the growing of apples spread all around Japan. Table 1 shows production volumes of leading apple-growing prefectures concerning the period during and after the 1890s. In general, Japan is not necessarily a suitable

Figure 1: Shipping Destination Prefectures of Takedate Cooperative's Apples and Aomori Prefecture Map



Sources: Shirai (2012). The Sangyō Kumiai Chūōkai (1929).

Notes: As for the gray colored prefectures in the map, there are records available that corroborate the arrival of Takedate Cooperative's apples. The figures of 1909 designate the yen amounts of apple sales. Those of 1929 designate sales volumes. 1 kin equals 600 g. Incidentally, the Tōhoku district comprises Aomori, Akita, Iwate, Miyagi, Yamagata and Fukushima Prefectures. The basemap of Aomori Prefecture was made by Chun-Lin Kuo.

Table 1: Apple Production by Prefecture

(Unit: 1,000 *kan*)

	Hokkaidō	Aomori	Iwate	Yamagata	Akita	Fukushima	Nagano	Sum	All prefectures in Japan
1895	544	204	283	210	31	46	n/a	1,318	n/a
1896	755	244	167	232	76	41	n/a	1,515	n/a
1897	920	202	166	269	63	42	n/a	1,661	n/a
1898	1,099	465	217	264	71	26	n/a	2,142	n/a
1905	2,527	2,169	98	129	533	22	99	5,577	6,081
1906	1,981	2,272	281	133	484	72	79	5,301	5,669
1907	2,592	2,705	206	133	339	59	242	6,276	6,703
1920	1,562	4,323	95	107	591	61	696	7,435	7,711
1930	7,930	16,793	311	95	427	176	891	26,623	26,812
1940	3,155	48,332	1,458	159	2,262	695	3,086	59,147	59,957
1950	7,828	88,275	3,633	1,194	2,596	1,149	11,267	115,942	116,989

Sources: Shirai (2018). Hatae and Saitō (1977), which is based on *Nōrin-shō Tōkei-hyō* [The Ministry of Agriculture and Forestry Statistical Table].

Notes: 1 *kan* equals 3.75 kg.

country for growing apples, because it is highly humid and plants there are generally susceptible to damage by diseases and insect pests. Therefore, it was because of comparative advantage that leading apple producing prefectures concentrated in the northern part of Japan in the early years of apple growing in the country. As can be seen in the Table, Hokkaidō Prefecture ranks first during the period until 1905 in terms of production volume. Aomori Prefecture takes over the position in 1906 and holds that status thereafter with overwhelming gaps. As will be elucidated later, a crucial factor for Aomori Prefecture to have become the top production region was that it succeeded in controlling insect pests by adopting the so-called *fukurokake* (bagging) method (See Figure 2). The method was spread throughout the region, while producers in other regions gave up growing apples on account of insect pest damage which spread all over the country (Hatae 1978). Considering the development of the apple growing industry in the region, it is of significance that apple producers in Aomori Prefecture took actions to enhance the brand name of “Aomori,” responding to the existing and potential needs of merchants and consumers. It is also of significance that agents who found the method to produce added value did not monopolize but shared it with a wide range of people.

On the basis of the abovementioned analytical framework concerning the formation and maintenance of a regional brand, the first section of

Chapter II examines Japanese consumers' taste for apples. The second section of the Chapter deals with how agents in the production region created added value, drawing attention to each of the production, distribution and recycling processes. The third section explores how the method which created added value was shared within the production region and the quality level of all products in the region was enhanced. In addition, the process in which the regional brand infiltrated the minds of merchants and consumers is also investigated. Chapter III handles the maintenance of the regional brand, focusing on interactions among industry leaders and, in particular, two leaders of different origins, regions and generations who contributed to the propagation of the added value producing method. The final section looks into attempts for interest reconciliation and consensus building made by agents in the production region whose interests became at odds with each other during process of the formation and maintenance of the regional brand.

II. The Formation of the Regional Brand

1. “Red, Glossy, Sweet” Apples – Consumers’ Taste

Although apples are said to have come from a “cold, northern land” in *Ringo no Hitorigoto* [An apple’s monologue], a Japanese popular song which became a hit in 1940, they came, in fact, from foreign countries as abovementioned. According to *Hakurai Kaju Mokuroku* [The catalogue of imported fruits] published by the *Nōshōmu-shō Nōmu-kyoku* (Agriculture Department of the Ministry of Agriculture and Commerce) in 1882, more than a hundred apple breeds had already been imported to Japan by the time of its publication. Among them, those that suited the “Japanese taste” had three common characteristics.

First, although there are three types of apple peels, namely the red, yellow and green types, it is the growing of the red type apples that has spread in Japan as can be exemplified by the popularity of *Kokkō* (Ralls Janet) and *Kōgyoku* (Jonathan), which were two major breeds in the prewar period. Although it seems to be a natural conjecture that these breeds fit Japan’s soil and natural environment, Kikuchi Akio, the first Professor of horticulture at Kyoto Imperial University, presented a different view on this subject in his book published in 1948. In his view, although it was difficult to grow the red type apples on Japanese soil,

consumers “neglected the yellow type” and sought the red type. In order to improve the color of apples, according to Kikuchi, producers worked so hard that they sometimes missed the harvest time (Kikuchi 1948, 46-47). As will be mentioned later, their “hard work” means the bagging of apples. Moreover, examinations of documents and reports regarding markets and industrial exhibitions indicate that gloss was the second and sweetness was the third characteristic that suited the taste of Japanese consumers.⁶

Figure 2: Apple Bagging



Sources: “Kōchingin no fukuro kabuse: Ringo de naru Tsugaru chihō” [Apple bagging, a highly-paid job: The Tsugaru region famous for its apples] in the *Asahi Shinbun* [Asahi Newspaper] dated July 18, 1934.

Notes: The left is a picture from the 1930s. The right photo, taken by the author, shows bagged apples of the present day.

2. The Creation of Added Value

(1) The Bagging of Apples – The Production Process

In examining how agents in the production region – producers and their organizations, more concretely – created added value and delivered red, glossy, sweet apples to consumers, attention should be drawn to the bagging operation in the production process, and pre-shipment inspection and packaging in the distribution process. The practice of apple bagging spread through Aomori Prefecture after 1905. With regard to pre-shipment inspection and packaging, an agricultural cooperative (*sangyō kumiai*) based in Takedate Village, Minami Tsugaru County, was the first to implement such practices in earnest (the Takedate Cooperative, hereafter).

In an attempt to improve the red color and gloss of apples, producers at the time adopted the bagging method. Ever since the introduction of apple growing into Japan, insect pest damage had always been a serious problem

6. See Shirai (2018) for details.

for apple growers not only in Aomori Prefecture but all around the country. In fact, that was among the reasons why many of the producers in large apple production regions gave up growing the fruit. Under such circumstances, Tonosaki Kashichi (1859 - 1924), an innovative farmer in Shimizu Village, Nakatsugaru County, found that the bagging method, which had been traditionally used for the protection of pears from insect pests, was also useful for apples and propagated the method throughout the production region. Eventually, as was mentioned, Aomori Prefecture surpassed Hokkaidō Prefecture in apple production. It should be noted that the bagging method had an effect of improving the color and gloss of apple peels, because it prevented them from being exposed to air and insect pests (Hatae 1978; Shirai 2016). The bagging material was procured as follows.

Initially, traditional Japanese paper, which could be used repeatedly for a couple of years, as well as old newspaper was utilized as the bagging material. Gradually, however, the latter came to be used as the main apple bagging material, although it could be used only once.⁷ According to a document of 1909, old newspaper was procured in large cities around Tokyo and sent to Aomori by train, because local newspaper alone was not enough. In the meantime, bag making became part of the off-season work for farmers in the region who were locked up in the snow during the winter months. There also emerged manufacturers specializing in bag making (Aomori-ken Nōkai 1909, 185-198). The bagging operation was carried out in June and July, each apple being bagged by hand with rush or wire. Although the work is said to have been done mainly by women, in reality, the whole family members were mobilized and even laborers were employed with high wages from regions outside the county including neighboring prefectures. According to a 1926 document, a skillful male laborer bagged 2,000 apples and a skillful female laborer bagged 1,500 to 2,000 apples a day. As regards *Kōgyoku*, which was praised for the beauty of its red skin, it became a common practice to bag twice before harvest (Tanaka and Mizuki 1926, 121, 123). The whole process of the bagging operation including the removing of bags took a large amount of time and labor. An average labor input on apple farm per hectare almost doubled from about 264 to about 500 persons between 1898 and 1934 (Aomori-ken Nōgyō Sōgō Kenkyūsho 1953, 103). It can be assumed that this was

7. It was thanks to Fujiwara Tatsushi's advice that the author's attention was drawn to old newspaper.

largely because of the introduction of the bagging operation.

Producers in the region introduced the bagging operation in an attempt to maximize profit by responding to the consumers' preference for red and glossy apples. In his 1918 apple growing instruction book, Nishitani Jun'ichirō, who worked for the Aomori Prefecture Agricultural Experiment Station and the Minamitsugaru Agricultural Association as an engineer, remarked that although the bagging operation entailed costs, the return "always" more than compensated for them and, therefore, it was worth doing it (Nishitani 1918, 304-305). Incidentally, part of the reason why the bagging practice spread so quickly in Aomori Prefecture was that techniques to keep apple trees small were adopted widely there thanks to researches on the control of apple tree shapes implemented by Tonosaki Kashichi and others. Fortunately, therefore, apple trees in Aomori Prefecture were not too tall for the bagging operation. Whereas, in Hokkaidō Prefecture, the top apple producing prefecture in Japan at the time, the bagging practice did not spread widely because of the American method of apple growing adopted there, which let trees grow naturally. In addition, labor shortage in reclaimed lands was also a hindrance to the introduction of the bagging practice (Aomori-ken Nōrin-bu Ringo-ka 1963, 106).

As has been elucidated, apple producers in Aomori Prefecture tried to fend off insect pests and improve the color and gloss of the fruit through the application of the traditional bagging method. Judging from contemporary research books examining apple growing techniques adopted abroad, the type of bagging method that spread in Aomori Prefecture was not used in Western countries such as France and the United States (Fukuba 1896; Aomori-kenritsu Nōji Shikenjō 1923, 68-69). Although apple bagging was not a common practice all around the world, it was not only in Japan that people attached importance to the color and gloss of apples (Massachusetts State Board of Agriculture 1913). In addition, on the basis of her reading of a passage from George Orwell's *The Road to Wigan Pier* published in 1937, Wilson argues, in relation to the British people's taste for apples, that "glossy" and "standardized" food products became highly valued during the twentieth century (Wilson 2009, 269-270).⁸ She also emphasizes the fact that merchants changed colors of food products such as breads and wines in order to promote their sales. These instances indicate that it was

8. The author thanks Hosoda Eiji for pointing out to pay attention to the relationship with Wilson's work.

not only Japanese consumers that judged the quality of products from their appearances. The taste of a fruit, determined by the balance between sweetness and acidity, can be anticipated, to a certain extent, by its breed. However, before the invention of devices to measure such attributes, or when such devices were expensive, judgements on foods' deliciousness and freshness were made in terms of its color and gloss. Moreover, a 1890 document points out the fact that, in Japan, especially in large cities, fruits were often used at Western style banquets for decorative purposes (Shirai 2018, 77). It can be assumed that the red color and gloss of apples gave an exotic accent to the living space of the country in which brown and orange colors of Japanese persimmons, oranges and pears, Japan's major fruits before the Meiji Restoration, had been dominant.

In addition to good appearance, "standardization" was also highly valued in the transaction of food products. During the Tokugawa period, for instance, feudal domains competed with each other in the supply of straw rice bags full of "white" and uniform rice grains, because uniformity in both the content and packaging was highly evaluated in the Japanese rice market (Takatsuki 2015, 98-105). Moreover, during and after the Meiji period, standardization continued to develop regarding food products such as rice, which had huge domestic demand, and mandarin oranges, which became an export item.⁹ As will be shown, apples dealt with by the Takedate Cooperative, the so-called "Takedate apples," were priced higher than the other apples produced in Aomori Prefecture thanks to the introduction of standardization measures.

(2) Pre-shipment Inspection and Improvement in Packaging – The Distribution Process¹⁰

The Takedate Cooperative was founded in 1907 by Sōma Teiichi (1867 - 1935), a wealthy farmer from a hamlet called Karatake in Takedate Village, Minamitsugaru County, who was respected as a father figure by local people. Although based in Takedate Village, the Cooperative dealt with apples produced in a region covering four villages. Incidentally, it was the first agricultural cooperative in Aomori Prefecture that specialized

9. As for rice, see Mochida (1970) and Arimoto (2017). On the topic of food standardization, the author is planning to publish another article.

10. Although the content of this section is based on Shirai (2012), new findings are added.

in apples. After the enforcement of the Industrial Cooperative Law of 1900, agricultural cooperatives were established around the country. As can be seen from the fact that the names of such cooperatives start with the names of the places, they were based on regional networks.

During the period between its foundation and the end of the 1920s, the size of the Takedate Cooperative continued to be larger than the average. Among agricultural cooperatives dealing with apples, the Takedate Cooperative was the largest in Aomori Prefecture. It can be said that the relatively large size of the Cooperative, which enabled it to provide standardized products constantly, was a key factor for the success of its business. Concerning the period between 1907 and 1937, its maximum membership was 326 and the number reached 443 in 1944. About eighty percent of the apple growing farm families in Takedate Village belonged to the Cooperative around 1910.

In the following, how standardization operations, such as pre-shipment inspection and packaging, were implemented will be explained. The Cooperative's rules for the pre-shipment inspection were revised several times. According to the rules in force in 1917, apples of each breed were classified into four grades after being inspected regarding "quality," "gloss" and "size." What "quality" meant was not clear in the 1917 rules. In later versions of the rules, however, "quality" was more concretely specified in terms of, for instance, "damage," "sunburn," "melanose" and "shape." Experienced apple growers, renowned for their high growing skills in the region, were hired for the inspection and packaging. The container box (about 64 cm long x 30 cm wide x 30 cm high) was made from boards of Japanese cedar or pine, which were about 1.2 centimeters in thickness. On the bottom of the box was spread old newspaper and apples were heaped up in four layers together with sawdust. Then, an inspection certificate was placed and the newspaper was folded, before the lid was nailed down. The container box was tied up with double loop ropes from all three directions (at two locations around the transverse boards). Both on the transverse boards and on the lid were attached graphically designed labels indicating the content, the grades of the products and the names of the producing region and cooperative (See Figure 3). With regard to the first and second grade apples, each product was wrapped up in paraffin paper on which the Cooperative's trademark was printed. A sign signifying the responsible inspector was put on every box (Nōshōmu-

shō Nōmu-kyoku 1922, 43, 46-47; Satō 1941, 10-12). Most of the boxes were sent to large cities in the country such as Tokyo, Osaka and Kyoto, though some of them were shipped to Vladivostok for a certain period of time (See Figure 1). Initially, the Takedate Cooperative had a plan to open its own sales branches. Eventually, it entered into a consignment contract with one influential wholesaler in each city.

Figure 3: One of the Takedate Cooperative's Labels with its Trademark



Sources: Nōshōmu-shō Nōmu-kyoku (1922) (from the National Diet Library Digital Collections).

No evidence has been found so far that directly explains why the Takedate Cooperative introduced its own standardization measures. However, why the Cooperative's apples were highly evaluated by merchants and consumers under the conditions of the transaction system, the state of the market and the transport and information and communication technology at the time can be explained by the two memoirs, cited below, about Sōma published after his death. Document 1 is Kikuchi Akio's recollection of his visit to Mansō, the "country's best retail fruit shop" located in Tokyo. The visit was made around 1907 when Kikuchi was a student of Tokyo Imperial University's Agricultural Department. Document 2 was written by Nishimura Kichibē, a wholesaler in Tokyo with whom the Takedate Cooperative had made a consignment contract.

Document 1

The owner of the shop told me to have a look at apples which had just arrived from the Takedate Cooperative in Aomori Prefecture. While busily polishing apples, he was giving orders to shop-boys. On that occasion, he said that Sōma Teiichi was a person who was

in charge of the running of the Takedate Cooperative and that he was a man of character. The quality of the Cooperative's products, he said, was so surely guaranteed that he took them without opening the lid (Kikuchi 1937, 3-4).

Document 2

I want to talk about Takedate apples and the name of Sōma, because, here in Tokyo, the Takedate Cooperative's apples were called Sōma's apples by wholesalers, brokers and general consumers alike. People who wanted to buy the Takedate Cooperative's apples used to say, "Give me some Sōma, please." They loved those apples, because a large amount of delicious apples were always available with their quality guaranteed by the inspection. That was why Sōma was the symbol of Takedate apples (Nishimura 1937, 83-84).

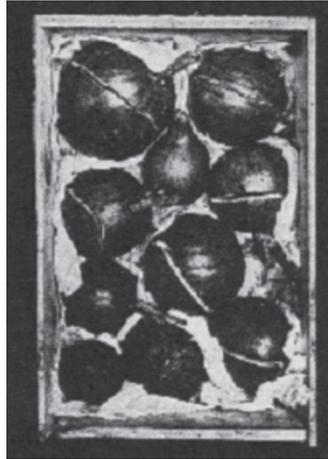
It should be noted here that the Takedate Cooperative's apples had earned trust from wholesalers. The trust concerned both the credibility of transaction and the quality of products. In addition, the trust was confirmed repeatedly. As for the credibility of transaction, it was often the case with fruit and vegetable transactions in general that producers and wholesalers tried to deceive each other. Around the time when the Takedate Cooperative was established in 1907, for instance, transactions between wholesalers and buyers in Tokyo were negotiated transactions and wholesalers were not required to give to producers information about the price at which their products were sold. Therefore, wholesalers held the upper hand in deciding wholesale prices. On the other hand, according to *Sosai Kajitsu Torihiki no Shinkenkyū* [A new research on fruit and vegetable transactions], a 1926 book written by Iioka Kiyoo, an engineer who worked for Tokyo City, some producers put garbage inside high-quality products – a trick called *ameiri* (candy filling) – and others laid damaged products at the bottom of the container – a trick called *tenchi* (heaven and earth) (Iioka 1926). Under those circumstances, producers located near consumption places may have had opportunities to meet merchants face to face and choose reliable ones while gaining information about the market for themselves. On the other hand, such opportunities were only limited for producers remote from consumption places. In

general, they were in a disadvantageous position and more likely to be deceived under the existing market system explained above. As has been shown, there were institutional defects which made it possible for both wholesalers and producers to deceive each other. In fact, according to *Jigyō Hōkokusho* (*Annual Business Report*, hereafter) of its establishment period, the Takedate Cooperative had doubts about wholesale prices determined by wholesalers. However, it did not look into the matter too deeply out of consideration for its business partners' honor and credit. The Cooperative's top priority was to build good relationships with the wholesalers (The Takedate Cooperative 1913-14). In such a situation, the Takedate Cooperative kept providing products whose quality was so "surely guaranteed" that there was no need for "opening the lid." Eventually, the Cooperative earned trust, which was an added value no other apple producers acquired.

It should also be noted that the pre-shipment inspection guaranteed the products' quality. More precisely, those wholesalers and merchants who dealt with the Cooperative's apples trusted the Cooperative's inspection. Basically, the inspection depended on the hands and eyes of inspectors, even though measurement devices were used. It can be assumed, therefore, wholesalers' and retailers' trust in the inspection was complemented by their personal trust in Sōma, the leader of the Takedate Cooperative. In addition, the fact that the size of apples put into the container box was made uniform contributed to the enhancement of their trust in the products. Major markets for apples were Tokyo and Osaka, Japan's two main consumption centers. Initially, apples were transported to those cities by ship. However, after the Japan Railways opened its line between Aomori and Ueno (Tokyo) in 1891, more and more apples were transported by rail. The long-distance transportation made apples in the container box bump into each other, causing damages and decay. Although the bagging practice improved the color and gloss of apples, it made their pulps softer, reduced acidity and thinned their peels. Therefore, bagged apples were more likely to soften and their peels became more easily damaged (Tanaka and Mizuki 1926, 121). Figure 4 is a picture from the 1930s showing the conditions of watermelons which arrived at the Kanda Market in Tokyo. Even in the 1930s, it can be assumed, it was not unusual that fruits and vegetables were packed so badly. Under such circumstances, the Takedate Cooperative's attempt to make uniform the size of apples in the box served

for the prevention of quality deterioration. Incidentally, Yamazaki Iwao, a city official of the Tokyo Municipal Government's General Affairs Division deployed at wholesale markets, remarked that since transport distances were increased and products were delivered to places with large temperature differences, at least ten percent of all the vegetables and fruits sent to markets in Tokyo were abandoned on arrival due to bad packing, a loss of 5.5 million yen a year (Yamazaki 1936, 3-4).

Figure 4: Example of Packaged Fruits and Vegetables



Sources: Yamazaki (1936).

Note: The following remark is added to this picture: "Because fillers were not used for the transportation of these greenhouse watermelons, valuable commodities became worthless."

In addition, standardization of the size of the container box, as well as the size of apples put into it, was also appreciated by wholesalers because of the enhanced transport and transaction efficiency. Under the conditions of the improvement in transport infrastructure, the development of cold storage technology and the population increase after the Russo-Japanese War (1904 - 1905), the trading volume of fruits and vegetables rose in urban areas. However, according to *Kudamono Zasshi* [Fruits magazine] issued in 1909, various kinds of containers, such as oil tins, baskets and wood boxes, were used for the transport of agricultural products and commodities in the containers were also largely different in size and weight. The magazine says, "Markets and wholesalers that received the

freight found ineffable difficulty and extreme inconvenience in handling and selling them” (Hatae and Saitō 1977, 310-311). According to the *Kanpō* [Official gazette], the Ministry of Agriculture and Commerce, in its attempt to protect Japan’s reputation in overseas markets, had been discussing issues such as quality grading and the size of container box since the 1890s with regard to mandarin oranges, which had become an export item. Then, in 1913, regulations for standards were set up with the imposition of fines for violations. On the other hand, concerning fruits and vegetables in general, most of which were produced for domestic markets, the standardization of packing was put on the agenda during the 1920s. In 1935, the *Teikoku Nōkai* (Imperial Japan Agricultural Association), a different organization from agricultural cooperatives, tried to establish the “Standards for Fruits and Vegetables” and conducted, in the same year, a national survey on the actual state. The survey found cases in which there were different standards for the container of the same product within the same prefecture (Teikoku Nōkai, 1938). Even in Aomori Prefecture, various kinds of containers including boxes originally made for the packing of other products, such as fine noodles, were initially used for the packing of apples. It was under those circumstances that the Takedate Cooperative decided to use the same standardized “40-kin (24-kg) boxes” mentioned earlier. The Cooperative classified apples of the same breed into different grades and attached its labels shown in Figure 3 on all sides of the 40-kin box before shipment. Therefore, the buyers were able to recognize at a glance that the apples contained in the box were produced in the Tsugaru region of Aomori Prefecture, the leading apple producing region, and produced, in particular, by the Takedate Cooperative, the quality of whose products were “surely guaranteed.” Incidentally, the 40-kin box was designed in that shape so as to fit smoothly into the 6-ton freight train used commonly at the time. Since the Cooperative’s standards raised transport efficiency, the standards became adopted throughout Aomori Prefecture (Hatae and Saitō 1977, 311).

(3) The Recycling of Off-grade and Surplus Products - The Processing Process

As has been shown, the grading of products based on the pre-shipment inspection was a source of added value. The same process, however, produced a class of apples categorized as “*rettōhin*” (inferior products)

whose quality was too low to be graded. In the 1912 and 1913 *Annual Business Reports* of the Takedate Cooperative, it is said that “there are many low-quality products” which should not be offered for sale with the Takedate Cooperative’s labels on them and “it is difficult to sell inferior products and keep their prices at a certain level without harming the Cooperative’s reputation.” The inspection items mentioned above allowed eatable, or even tasty, apples to be categorized as inferior products. The proportion of such apples, it is said, sometimes reached thirty percent of all apples harvested (Yoshida 2006, 20). Considering the business size of the Cooperative, it can be assumed that a substantial amount of apples were regarded as off-grade products. In addition, in an article published in 1914, in the *Tōō Nippō*, a local newspaper in Aomori Prefecture, Sōma acknowledged that the Takedate Cooperative was holding surplus products. As a solution to that problem, he proposed to promote the apple processing industry and, for that purpose, insisted to launch a prefecture-led project to learn from abroad. In fact, he started up, in 1927, an apple processing factory run by the Takedate Cooperative and the Cooperative actively committed itself to the manufacturing and development of food products, such as boiled cider, jam, butter, candies and syrup, which were made of off-grade and surplus apples. Moreover, while the manufacturing of various kinds of fruit liquor had developed in fruit producing regions around the country as “a way to utilize surplus fruits” since the 1910s (Kazato 1915, 58), the Takedate Cooperative began to produce “apple champagne” in 1928 with support from French companies and engineers. The necessity to develop apple processing business had already been pointed out during the 1890s by Kikuchi Tatee (1846 - 1918), a former samurai of the Hirosaki Domain and Kikuchi Akio’s father. In fact, some preliminary attempts had been made to start the business. However, it was only after the large Cooperative introduced the standardization method and the apple production of Aomori Prefecture made a remarkable increase because of the boom triggered by WWI that the apple processing business was launched in earnest. Even though the Cooperative’s apple processing business did not develop smoothly and was terminated during the 1930s, the significance of the attempt to develop new food products should be stressed, considering that this was a smart attempt to seize a business opportunity at the time when the Western-style food culture was spreading in urban consumption areas.

3. The Sharing of the Quality Enhancing Measures and the Recognition of “Aomori” by Merchants and Consumers

(1) Making Use of the Opportunity – Industrial Exhibitions

The above elucidated measures to produce added value in the production and distribution processes were, as typically exemplified by the bagging method, shared among producers in the whole production region. How those measures spread throughout the region and how apples, a new kind of fruits to Japanese consumers, and “Aomori,” their major producing region, became recognized by merchants and consumers are the next questions. An important point in answering these questions is the fact that apple producers in Aomori Prefecture actively participated in industrial exhibitions, trying to take advantage of the opportunities to promote their products.¹¹

The Meiji government strongly promoted industrial exhibitions as part of its industry promotion policy. Modeled on those in Europe and the United States, they were held both at the national and local levels on different scales. Among them, the most popular and influential ones were the *Naikoku Kangyo Hakurankai* (National Industrial Exhibitions), held five times between 1877 and 1903 in major cities including Tokyo, Kyoto and Osaka. At those National Industrial Exhibition were displayed not only agricultural products but other commodities from around the country and also from abroad. 450 thousand people visited the First National Industrial Exhibition and the number of visitors to the Fifth Exhibition was 5.31 million. Many of them came a long way from rural areas and enjoyed sightseeing around the cities as well (Yamamoto 2005, 140-141). Products displayed at the Exhibitions stimulated demand. In addition, since the Exhibitions had an awards program with judges chosen from both the governments and private sectors, products which won the awards effectively obtained “experts’ endorsement.” Inspection items, results of judgement and judges’ reports were all made public. Therefore, they were useful guidelines for the production of market-oriented commodities (Kiyokawa 1995; Kuni 2005; Hashino 2007). In the case of agricultural products, the application for the participation in the Exhibitions was made mostly by individual producers. However, the exhibition section was allotted to each prefecture and award winners were announced with

11. Concerning the roles of industrial exhibitions, see Shirai (2018) for more details.

the names of prefectures. In the eyes of the audience, therefore, these Exhibitions were the arena of competition between prefectures, that is, between production regions. Given that, it can be generally assumed that when a large number of producers in the same region participated in the Exhibition and many of them won the awards, that gave the region a reputation as a major production region.

In the case of new commodities such as apples whose markets were about to be created, such reputation must have had enormous effects. As a matter of fact, according to reports on the National Industrial Exhibitions which described the audience at the venue: people who saw apples for the first time in their lives made a long line in front of the fruits, some of them raving about them and others suspecting that they were imitations (Dai 4-kai Naikoku Kangyō Hakurankai Jimukyoku 1896, 309); people attracted by the beautiful appearance of apples stopped walking unknowingly in front of the baskets full of cute red apples (Dai 5-kai Naikoku Kangyō Hakurankai Jimukyoku 1904, 34-35). As regards the Third, Fourth and Fifth National Industrial Exhibitions in which apples were displayed and judged, Aomori Prefecture sent the largest number of apples and produced the largest number of award winners. Looking into those who won awards in the National Industrial Exhibitions, most of them were located in Hirosaki City and Shimizu Village, Nakatsugaru County. In addition, many of them were former samurai and members of the *Tsugaru Sangyō-kai* (Tsugaru Industrial Association) (See Table 2). Although Hokkaidō had been the largest apple producing prefecture until 1905 in terms of production volume (See Table 1), national newspapers at the time referred to Aomori Prefecture as the leading apple producer in their articles on the Exhibitions. In addition, Tonosaki Kashichi and Kusumi Tōjirō (1863 - 1934), an innovative farmer in Shimizu Village and former samurai who had won many awards at industrial exhibitions held around the country, took part in the 1903 National Industrial Exhibition with financial support from Aomori Prefecture. They opened an apple sales shop there, which was reported to be a great success.¹² As has been shown, apple producers in Aomori Prefecture took advantage of industrial exhibitions, creating a market for their products as well as establishing the reputation of “Aomori” as a major apple producing region.

12. For apple producers in Aomori Prefecture, such sales shop provided a good opportunity to directly get in touch with the taste of people in consumption areas.

Table 2: Number of Apple Producers who Won Awards at the Third, Fourth and Fifth National Industrial Exhibitions by Prefecture (Unit: person)

Third Exhibition	Total	Hokkai dō	Iwate	Yama gata	Aomori			
					TS-FS	FS	Hirosaki City	SVNC
First Prize	1	1	0	0	0	0	0	0
Second Prize	5	2	0	1	2	0	1	1
Certificate of Merit	9	4	3	0	2	0	1	1
Total	15	7	3	1	4	0	2	2

Fourth Exhibition	Total	Hokkai dō	Iwate	Yama gata	Fukushima	Shiga	Aomori							
							TS-FS	TS	FS	Others	Hirosaki City	SVNC	Others	
Second Prize	5	1	1	0	0	0	1	0	0	2	0	1	2	3
Third Prize	12	1	3	4	0	0	2	2	0	0	1	1	2	4
Certificate of Merit	23	2	6	6	1	1	2	4	1	0	6	0	1	7
Total	40	4	10	10	1	1	5	6	1	2	7	2	5	14

Fifth Exhibition	Total	Hokkai dō	Iwate	Yama gata	Akita	Nagano	Aomori							
							TS-FS	TS-LO	TS	FS	LO	Others	Hirosaki City	SVNC
First Prize	2	0	0	0	1	0	0	0	0	0	1	0	0	1
Second Prize	15	1	3	0	6	0	2	0	0	1	2	0	2	3
Third Prize	27	4	3	1	10	0	3	0	1	2	3	3	3	9
Certificate of Merit	41	3	11	1	11	1	2	1	1	5	4	2	3	9
Total	85	8	17	2	28	1	7	1	1	8	10	5	8	16

Sources: Shirai (2018).

Note: As for Aomori Prefecture, breakdown by region and social position is presented. "TS" stands for the "Tsugaru Sangyōkai [Tsugaru Industrial Association]"; "FS" for "Former Samurai"; "LO" for "Landowner"; "SVNC" for "Shimizu Village, Nakatsugaru County."

As for the Fourth and Fifth Exhibitions, the numbers of apples exhibited are available. The numbers by prefecture are as follows. Hokkaidō (Fourth n/a, Fifth 26). Aomori (266, 146). Akita (20, 107). Iwate (157, 62). Miyagi (5, 1). Yamagata (110, 26). Fukushima (5, 1). Hyōgo (1, 5). Niigata (0, 3). Gunma (2, 0). Shiga (1, 0). Gifu (0, 2). Nagano (0, 7). Fukui (0, 1). Okayama (1, 0). Ehime (3, 0).

Figure 5: Aomori Prefecture Apple Shop Opened at the National Industrial Exhibition



Sources: Tonosaki and Akimoto (1956).

Moreover, the participation in industrial exhibitions gave an impetus to hold competitive apple exhibitions in Aomori Prefecture, which functioned as a mechanism to raise the quality of Aomori apples in general through the spread of the added value producing methods around the whole region. The competitive apple exhibitions in the region were held as part of the activities of the Kaikusha (later Tsugaru Industrial Association), which was established in 1877 by a group of former samurai of the Hirosaki Domain under the leadership of Kikuchi Tatee. Those competitive exhibitions were de facto elimination rounds for larger industrial exhibitions such as the National Industrial Exhibitions. Therefore, both members and non-members of the Tsugaru Industrial Association were encouraged to participate in the events. Among the leading persons who pressed forward with the sharing of the added value producing methods was Kusumi Tōjirō, who was a member of the Tsugaru Industrial Association. He had been implementing researches on how to store and ship apples without damaging their color, gloss and smell. He also had been keen on sharing his research results openly with people both within and without Aomori Prefecture. Before the Fifth National Industrial Exhibition, he explained his methods in details in an article which appeared in the *Tōō Nippō*. Then, shortly before the opening of the Exhibition, he gathered all the Aomori exhibitors in the Tsugaru Industrial Association's building to check if his advice was properly reflected in the products to be displayed. At the venue of the Exhibition, moreover, he and other members of the Tsugaru

Industrial Association conducted a final quality check regarding all the apples displayed in the section for Aomori Prefecture before the judges' inspection. Such activities surely led to the emergence of a large number of award winners at industrial exhibitions.¹³

(2) The Primary Purpose for the Brand Building Attempt¹⁴

At the beginning of this article, it is stated that “brand” is a sign, or information, which affects the decision of merchants and consumers in the distribution process as to the choice of commodities they purchase. Then, whom did those who showed leadership at industrial exhibitions and in the Takedate Cooperative's activities try to impress with the region's brand image? Of course, for those who participated in industrial exhibitions, the target was the general public, that is, consumers. However, considering that there were fruit shops trying to raise their publicity by advertising the fact that they were handling award-winning commodities, agents in the distribution process were also the target (Sembikiya Sōhonten 2009). In fact, the Takedate Cooperative sought to spread its brand image among wholesalers, especially in large consumption areas. As was mentioned above, the Cooperative made a strategic choice to resort to the strong influence of wholesalers in its attempt to develop sales channels under the circumstances in which there were mutual suspicions between producers and wholesalers. Therefore, the Cooperative sought to be chosen by prominent wholesalers and gain support from them. On the other hand, however, the content of Document 2 indicates that retail shops and consumers recognized “Takedate apples” as “Sōma's apples.” During and after the Meiji period, high-class fruit shops, which can hardly be seen in any other countries in the world, were opened in large cities, and Tokyo in particular. Their customers included even noblemen. Among such fruit shops was Sembikiya run by Saitō Yoshimasa. He remarked as follows in an *Asahi Newspaper* article published in 1934: “Although many people eat fruits by their eyes, those who have a taste for fruits eat them by their ears, that is, they hear the reputations of some fruits and seek to taste them.” Even though the customers of high-class fruit shops constituted only a

13. The members of the Takedate Cooperative also sent many apples to large scale expositions and produced many winners (Shirai 2012).

14. The importance of this question was pointed out by Miyamoto Matao and Tanimoto Masayuki.

small portion of the population, there did exist the type of consumers that checked the names of the producer and production region before purchasing the commodity.

III. The Maintenance of the Regional Brand

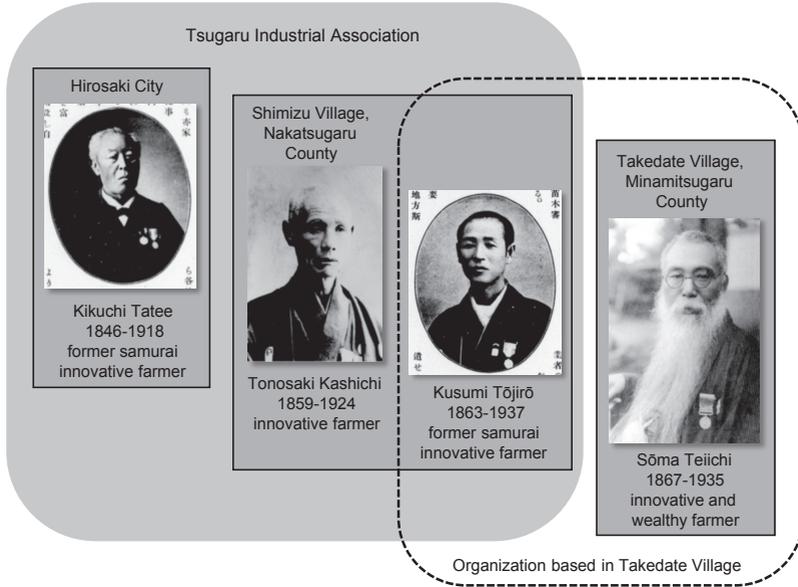
1. Those who Provided, Shared and Conveyed Information - Activities and Words of Former *Samurai* of the Hirosaki Domain and Innovative and Wealthy Farmers

So far, the formation of the regional brand has been elucidated. In the following, how it was maintained will be examined in terms of interactions between industry leaders, their activities and words and interest reconciliation and consensus building among the concerned parties in the production region.

The regional leaders of the apple growing industry, such as Kikuchi Tatee, Tonosaki Kashichi, Kusumi Tōjirō and Sōma Teiichi, had a common characteristic: that is, they all, with the pride as Aomori apple growers, provided knowledge and information and taught techniques and mental attitudes concerning apple growing by word of mouth, through practical teaching and in writing regardless of their origin, generation and where they lived. As is shown in Figure 6, their villages and organizations were the hub of their networks. For example, Sōma, the founder of the Takedate Cooperative, had been in charge of its original association since 1897 and Kusumi was also a member of that association. The Takedate Cooperative established its brand by correcting problems posed in the distribution process in addition to producing high-quality apples in the production process. That was made possible by the knowledge and techniques accumulated and shared within the region. The four persons mentioned above had different strong points. It can be thought, therefore, that such knowledge and techniques were not simply passed on from the seniors to the juniors but rather created and discovered in their interactions. Moreover, it should be stressed that they chose not to monopolize their profit producing methods. That was a key factor for the region to remain a prominent apple growing region. What made them opt for that choice will be investigated in the following by the examination of the activities and words of Kikuchi Tatee, and Sōma Teiichi.

Kikuchi Tatee had served for the Hirosaki Domain as Mountains

Figure 6: Relationships between the Four Leading Figures in the Early Years of the Apple Industry



Sources: Aichi-ken Nōkai (1910) (from the National Diet Library Digital Collections). Satō (1984).

Note: The data of Tonosaki's picture was borrowed from Aomori Apple Association.

and Forests Supervisor since 1869, while enjoying horticulture as a hobby. However, in the course of events during which feudal domains were replaced by prefectures in 1871 and the Conscription Act was promulgated in 1873, Kikuchi and his fellow samurai lost their jobs. In an attempt to sustain their livelihood, the Meiji government encouraged former samurai, called *shizoku*, to seek new careers in the agricultural, commerce and manufacturing industries, but with little success. As for those *shizoku* in Hirosaki City, former samurai families accounted for about 3.2 thousand out of 6.6 thousand houses as of 1885. Most of them were living in destitution (Miyamoto et al. 2002, 94). In such a situation, Kikuchi was fortunate to have been able to find a job at the Tax Section of the Aomori Prefectural Office. There, he happened to read a notification document of the *Kangyōryō* (Industrial Agency) saying that some apple breeds in Western countries could be stored for more than a year and could be eaten both raw and processed. This incident changed his life.

He went to Hokkaidō Prefecture, the largest apple producer at the time, to learn grafting and pruning techniques from Louis Boehmer, a foreign advisor hired by the government. After returning to Aomori Prefecture, Kikuchi grew young apple plants, purchased promising seeds and saplings from around the country and sold them at cost prices. Together with other former samurai of the Hirosaki Domain, in addition, he founded the abovementioned the Tsugaru Industrial Association and became President, making this association into the hub of personal and information exchanges between apple growers. After the abolition of the feudal domains, many former samurai around the country set up associations as footholds on which to live in the new era (Matsuzawa 2016) and among them was Kikuchi's association. This association mobilized both former samurai and farmers beyond the borders of the feudal class system, which must have had positive effects on their apple growing business. In addition, it is said that the abovementioned competitive apple exhibitions hosted by this association were initially held at his private expense. He was a regular reader of a magazine called *Kudamono Zasshi* [The Fruits magazine], and gave five "very promising" apple saplings to each of the magazine's subscribers who wanted them, without receiving any money except for transport expenses. Moreover, he replied politely and in details to questions posted by the readers. He even constructed a kind of library called the *Nōsho Etsuransho* (place for reading agricultural books) (Hatae and Saitō 1977; Saitō and Kanda 1996; Aomori-ken 2018; Aomori-ken Nōgyō Kyōdō Kumiai Chūōkai 2018).

In this way, Kikuchi delivered information as to the apple growing techniques based on his knowledge and experience and shared it with those engaged in the industry both within the region and around the country. His agricultural experience started as a hobby during the Tokugawa period and eventually he laid the foundation for apple growing in this country. Additionally, it should be noted in this regard that although time available for agricultural work in the open air is only limited during the winter months in Aomori Prefecture on account of heavy snow, Kikuchi took advantage of this disadvantageous condition. Between 1877 and around 1900, he went on agricultural inspection tours around the country at his own expense during the off-season. Frequently, he visited industrial exhibitions to absorb new knowledge (Kikuchi 1938, 7). In September, 1895, Kikuchi wrote, "Although twenty-six different agricultural

magazines are delivered to me, these magazines are left in the shelves unopened during and after April due to lack of leisure time.” During the winter months, he presumably spent time, studying at home, or at places both inside and outside the region.

He used to say, “To produce an apple is to produce a man” and “Apple growers should not have selfish desires.” It is not clear whether it was because he did not have selfish desires. However, his activities surely invigorated the apple growing industry not only in his own region but throughout the country. His activities had two aspects. That is, he raised Aomori apples’ competitive power while creating and developing the apple market as a whole. Eventually, apple producers in Aomori Prefecture enjoyed benefits of Kikuchi’s activities from both of these aspects.

Sōma Teiichi, twenty years younger than Kikuchi was born in a wealthy farm family in Karatake hamlet, Takedate Village. During the latter half of the 1880s, that is, before the development of the apple industry there, people in Takedate Village lived from hand to mouth, making charcoal or cutting down large trees in the forest. Some left the village and others became criminals (Kyōdo Kyōiku Kenkyūkai 1932, 76-77). Sōma had grown up in such village. After having learnt politics, economics and English at a university in Tokyo, he returned to the village and started growing apples around the age of thirty. In a *Tōdō Nippō* article published 1924, he explains the reasons why he started growing apples. According to the article, in Karatake hamlet arable land available was scarce relative to the population and the amount of crops naturally harvested was not enough to prevent destitution. Under such circumstances, the article says, Sōma felt a need for producing agricultural products other than rice and wheat to improve the situation. Additionally, in a *Tōdō Nippō* article published in 1917, he explained the reason why he eventually decided to dedicate his life to regional development through agriculture. According to the newspaper, although he had once had political ambitions, he came to think that people with higher education backgrounds tended to overrate careers in politics and underrate those in industrial and agricultural enterprises, which was the cause of the stagnation in rural regions. He insists in the paper: “Now is the time when people with both academic and practical knowledge should come to rural regions, be engaged in practical enterprises, set examples and promote industry.”

A characteristic of Sōma’s activities was his enthusiasm for

organizing apple producers in the region. In 1897, he established a private organization in Karatake hamlet where he resided for the purpose of exchanging information beyond the borders of the hamlet. In 1903, he again established a private organization to exchange information beyond the borders of the village. In 1907, at the age of forty, he founded the Takedate Cooperative which covered four villages. During the 1920s, Sōma in his fifties put his energy into spreading the pre-shipment inspection throughout Aomori Prefecture, which was a key to the establishment of the brand of “Takedate apples.” In this way, Sōma continually extended the range of organization from the hamlet, through village and region, to prefecture levels. The 1920s was a period during which the oversupply of apples became a serious problem. As will be shown, the decade was also a period during which the mode of fruit and vegetable transactions in large consumption cities, to which the Takedate Cooperative’s products were mostly delivered, changed from negotiation to auction. Therefore, the comparison between commodities produced in different regions became more open and competitive. Moreover, inspected apples shipped from Korea became traded at high prices in the market in Kyoto during this period. Therefore, competition between producing regions was becoming more and more intensive (Hatae and Saitō 1977, 700-701). Under such circumstances, the overall enhancement of Aomori apples’ competitiveness certainly brought benefits to Takedate apples’ producers as well because Takedate belonged to Aomori, even though whether Sōma was conscious of this effect when he was trying to improve the overall image of Aomori is unknown.

In addition, as part of his attempt for regional development, Sōma provided places in which people were able to learn and see each other. This is another characteristic of his activities. From 1912 onwards, he held study meetings called the *Doyōkai* (saturday society) for the staff of the Cooperative and children of its members. The meetings were set between one and four o’clock every Saturday afternoon. At those study meetings, Sōma taught economics and his brother taught philosophy and ethics. Other guest lecturers also talked about moral and law in general. For children of the members who were working as farmers after having finished compulsory education, evening classes were offered, in which reading and writing were taught. For students attending the elementary course, the Cooperative’s spirit and principles expressed in its articles

and regulations were lectured. Moreover, speech meetings were held on occasions, which are said to have attracted large audience especially during the off-season. In 1915, Sōma set up a library open to the public, which held hundreds of books regarding, besides agricultural cooperative, self-improvement, ethics, religion, philosophy, education, history, geography, literature, mathematics and so forth. He also furnished the Cooperative's office with a gramophone and other appliances to make it a more comfortable place for communication. Apart from the Cooperative's activities, he made donations regularly to primary schools in the region. Sōma's activities paralleled Kikuchi's in that they both used the free time during the off-season for studying and made books available to the general public. In those days, such learning opportunities were still only limited for people in rural regions.

When Sōma was in his late forties, he said to his son, Teizō, "Although I could have accumulated more wealth, I thought it was more important to build good human relationships, because, by doing so, I could work, live in peace and enjoy life with people in the region" (Sōma 1984, 389). It is recorded that Teiichi's great grandfather, grandfather and father were all prominent contributors to the region's development. Teiichi's words quoted above reflect the Sōma family's precept to lay more importance on "co-existence and co-prosperity" than on pecuniary interest of an individual, or the family. Their deeds were the evidence that the family precept had been surely passed down.

From a social point of view, Kikuchi and Sōma were similar in many ways despite differences in their roles: they both possessed one or more of the following: money, knowledge, techniques, high educational background and human connections. Even though they made the most use of their talents, it is a fact that they were both born into a relatively wealthy social stratum in their regions. Although the true reasons why they did not monopolize their knowledge and methods are unknown, this investigation has shown that they both had a value system, in accordance with which they passionately gave what they possessed to the public and gained benefits which were not only pecuniary. The emergence of persons with such value system have always been crucially important for production regions and their brands to create and maintain themselves.

2. Reconciliation of Interests and Consensus Building – Public Power, Rules of Organizations, Human Relationships within the Community, Ethics and Moral Education

Finally, it should be stressed that agents in the production region were not necessarily united.¹⁵ One example of this concerns the introduction of the pre-shipment inspection at the prefecture level. As was mentioned earlier, because of the enforcement of the 1923 Central Wholesale Market Law, the mode of fruit and vegetable transactions in large cities changed from negotiation to auction. In such a situation, apples produced in Korea were traded at higher prices than Aomori apples in the market in Kyoto between 1928 and 1931. In Korea, pre-shipment inspections had been introduced earlier than in Aomori Prefecture. In addition, the shipping season of Korean apples was earlier than that of Aomori apples. According to a 1931 newspaper article on apple transport containers, Korean apples were transported in “ordinary oil boxes.”¹⁶ It can be said that, in Korea, the standardization process had been proceeding.

In Aomori Prefecture, on the other hand, the Takedate Cooperative had introduced the pre-shipment inspection and standardized the commodities. However, as regards apples shipped from the Prefecture in general, problems, such as a discrepancy between the label on the container and its content and the mixing of defective products, were everyday occurrences. Under such circumstances, organizations of merchants and producers tried individually to conduct the pre-shipment inspection at the prefecture level, but in vain due to the lack of legal force. Therefore, during the latter half of the 1920s, Sōma Teiichi and other leaders of the industry demanded that the inspection should be implemented as a prefectural project. As the tension between the conflicting interests of producers, merchants and bureaucrats of the local government intensified, the final decision as to whether the standardization measure would be implemented as a prefectural project was entrusted to the Prefectural

15. See Hatae and Saitō (1977, 702-750) for details.

16. “Fukugyō nōsanbutsu no shōhinka ni tsuite Teikoku Nōkai gishi Andō Shigeo dan” [On the commercialization of agricultural products produced by farmers during the off-season. An interview with Andō Shigeo, engineer of the Imperial Japan Agricultural Association] in *Chūgai Shōgyō Shinpō* [The Chūgai Commercial Newspaper] dated November 17-20, 1911 (Held by the Kobe Daigaku Keizai Keiei Kenkyūsho [Research Institute for Economics and Business Administration, Kobe University], *Shinbun Kiji Bunko* [Newspaper Clippings Collection], under the heading of *Nōka fukugyō* [Farmers’ side business] 2-090).

Assembly and Prefectural Governor. It has been argued that, in the case of manufactured products, the standardization process did not necessarily proceed smoothly on account of complicated interests of various agents (Hashimoto 2002). In the case of apples, that is, agricultural products, too, opinions on standardization differed widely among agents in the region. Sōma was the key figure in a faction promoting the introduction of the inspection, probably because he knew from his experience with the innovative Takedate Cooperative that commodity standardization would bring good reputation. On the other hand, a faction consisting mainly of merchants opposed the inspection, because they tried to gain profits by adjusting the timing of shipment according to market conditions. They argued that the introduction of the inspection would spoil business chances because the inspection conducted by humans instead of machines would take too much time. In addition, some of the members of the Prefectural Assembly sided with the opposing faction in their attempts to extend the influence of their parties. During the dispute, the inspection method, the procurement of inspectors and financial sources were all put on the agenda, which led the Assembly to turmoil. Eventually, new Governor took over the job, who was of the opinion that the inspection be introduced. He knew from his experience in Nagasaki Prefecture about a case in which pre-shipment inspections of loquats introduced by the use of prefectural power eventually produced positive effects (Saitō and Kanda 1996). The pre-shipment inspection system run by Aomori Prefecture was finally established in 1933, following the precedent in Korea. It is said that thanks to this system “Aomori” regained its reputation.

There was another problem. Although the introduction of the pre-shipment inspection by the Takedate Cooperative was carried out smoothly, Sōma and other executives were concerned about those members who did not keep the rules of the Cooperative while gaining benefits from its activities: that is, the free rider problem at the time. Such type of members had always existed since the establishment of the Cooperative. The 1928 *Annual Business Report* says as follows in this regard:

Document 3

The Cooperative provides its members with all that is needed for their business and living. The storing and sales of their products are conducted by the Cooperative. They don't need to be worried

about anything and they have all the benefits. That is the greatest merit of this Cooperative. However, some of the members take that for granted. On occasions, they ignore the Cooperative's rules, being manipulated by the cajolery of local merchants who are trying to invade the Cooperative's domain. This is against the spirit of co-existence and co-prosperity we, humans, proudly hold. It is deeply regrettable (Mugen Sekinin Takedate Ringo Hanbai Kōbai Shin'yō Riyō Kumiai 1929, 18-19).

Such members are referred to as “short-sighted” in *Annual Business Report* of a different calendar year. One of the highest priority of the Cooperative was always to build reliable, long-term relationships with wholesalers in large consumption cities with whom it had made consignment contracts. The Cooperative's rules stipulated that members who traded with merchants other than the ones allowed by the Cooperative should be expelled. In reality, however, such punishment was not imposed basically. That was probably because the Cooperative's executives and members were close neighbors, even though the Cooperative's members spread over four villages.¹⁷ In addition, it can be conjectured that there was discontent among its members over the distribution of the total sales of the Cooperative's products. The Cooperative paid its members about eighty percent of the expected sales amount in advance. However, some of its members traded with merchants who gave them the proceeds instantly because of the lack of cash needed for everyday business and living. Moreover, under the Cooperative's method to distribute the revenue, there was a possibility that a member who produced higher quality apples did not receive a fair share of the total sales compared with a member who produced inferior quality apples. It is said that some members did express dissatisfaction over this issue (Satō 1941). On the other hand, there are some documents that show that the Shimizumura Cooperative located in Shimizu Village, Nakatsugaru County, whose name was established as a regional brand as good as Takedate's, filed a lawsuit to the Hirosaki Police Station over a deceptive use of its trademark. Supposedly, it was relatively easy for the Cooperative to start a court case against non-members.¹⁸ In

17. It is reported in *Annual Business Report* that the Cooperative was planning to raise a lawsuit over a material procurement trouble with a merchant.

18. The author is planning to detail in another article on the fraudulent use of the

any case, whether or not to impose penalties depended on the attitude of the cooperative's executives. In the case of the Takedate Cooperative led by Sōma, who was respected by the villagers, the Cooperative tried to gain the cooperation of its members by supporting them. At the request of its members, the Takedate Cooperative started a loan business in 1914, establishing a system to give loans preferentially to those members who observed the Cooperative's rules and entrusted large amounts of their harvests to the Cooperative. However, the number of the Cooperative's members dropped continually: 319 persons in 1925; 300 in 1929; and 280 in 1937. This membership decline suggests that there existed members who were able to procure funds and materials required for their business and living and also able to sell their harvests through channels other than those provided by the Cooperative. Presumably, some of them chose to leave the Cooperative (Shirai 2012). As was mentioned above, Sōma put his energy into educational activities, providing members of the Cooperative and people in the region with places to learn. Probably, part of the reason for such activities was that he tried to construct human relationships of "co-existence and co-prosperity" through the cultivation of the moral sense and ethics, faced with the limitation of his efforts to keep the unity of the Cooperative by the rules and economic incentives alone. This supposition can be strengthened by the following remark Sōma made to Shima Yoshichika, an engineer at the Aomori Prefecture Agricultural Experiment Station, in 1927 at the ceremony to celebrate the Takedate Cooperative's twentieth anniversary: "It has been a grave mistake that I have led the Cooperative not by the spirit of the Cooperative but by profits until today" (Shima 1937, 42).

However, the deceptive labeling of production places and merchants' frequent visits to the Cooperative-controlled region were evidence of the establishment of the regional brand. In addition, the appearance of the Cooperative members who traded directly with merchants signified the emergence of the type of members who were able to make business decisions for themselves. In such a situation, the Takedate Cooperative's executives contemplated what should be done to be chosen as an agent to whom apple growers would entrust their products. According to *Aomori-ken Nōgyō Sōgō Kenkyūsho Kenkyū Hōkoku 16* [Aomori Prefecture

Agriculture Research Institute Research Report 16] published in 1957, members of the Takedate *Nōkyō* (Agricultural Cooperative), one of the five agricultural cooperatives into which the Takedate Cooperative had been divided after WWII, had a strong tendency to sell their products to the *Nōkyō* when their prices in the region were low and to sell them to local merchants when their prices were high. This report indicates that the *Nōkyō* allowed its members to choose where to sell their products. On the other hand, the *Nōkyō* provided production guidance, holding explanatory meetings concerning methods and procedures to sort and sell apples (Aomori-ken Nōgyō Sōgō Kenkyūsho 1957, 69-81). The methods to sort apples after the harvest, the destinations of the products and, accordingly, the time and effort required of the producers were all different depending on to whom the products were sent: the *Nōkyō*, merchants, or someone else. As was mentioned earlier, under the circumstances in which interests of the organization's members were different, to increase the number of their choices was a reasonable compromise. In the 1950s, apples were no longer luxury goods, compared with the time when the Takedate Cooperative was established. However, the research report still said that the Takedate *Nōkyō* was based on the "historical foundation" and delivered distinctive products known as "Takedate apples" to large cities in the country. More than half a century had passed since the establishment of the Takedate Cooperative and members of the concerned organizations had changed. However, the Takedate brand, formed long time ago, was still living.¹⁹

IV. Concluding Remarks

This study has examined the formation and maintenance of a regional brand with a case study of an apple producing region in Aomori Prefecture located in the Tōhoku (northeastern) district of Japan, where natural and geographic conditions are very severe. During the winter months in which outdoor work was almost impossible, apple producers there were engaged in the work to increase and maintain the quality of apples; they visited consumption areas and industrial exhibitions for inspection, conducted

19. At present, there is no agricultural cooperative bearing the name of "Takedate." However, at the competitive apple exhibition held yearly in Aomori Prefecture, many of the highly evaluated apples are still produced by growers in the Karateke area, in which the Takedate Cooperative located, and those in the neighboring Hirofuno area.

researches and committed themselves to writing and educational activities. They also devised ways to produce apples which suited the merchants' and consumers' taste, making use of things around them such as old newspaper. Former samurai and innovative and wealthy farmers cooperated with each other and together they created the market for apples, new commodities to Japanese consumers, seizing the opportunity of, for instance, industrial exhibitions. Those apple producers shared their added value increasing methods with other producers in the region, which raised Aomori's reputation as a leading apple producing region. In addition, the agricultural cooperative based in Takedate Village pressed forward with commodity standardization, which resulted in the prevention of problems such as deceptive transaction between wholesalers and producers and product quality deterioration. Such problems were becoming more and more serious because of the transaction system and the transport and information technology development at the time. The Takedate Cooperative's attempts brought about secure transport and transaction, guaranteed quality of its products and increased transport and transaction efficiency. Apple growers in the region raised their reputation and, eventually, earned the trust of merchants and consumers, while their products being higher-priced than the other apples produced in Aomori Prefecture. This process inevitably produced off-grade products. However, making use of such products together with surplus ones, the Cooperative set up an apple processing business. In the early phases of the apple growing industry, the key figures that led the abovementioned activities were those who possessed money, human connections, high educational backgrounds and knowledge. They did not keep their added value increasing methods to themselves but chose to share them with other producers regardless of origin, region and generation. The ethos of those leaders, together with the added value increasing methods, spread through both space and time. It was difficult to reconcile interests and build consensus among the various types of agents in the production region. In times of crisis, however, that heterogeneity may have produced resilient reactions. In this regard, Nara Masashi, who used to work for the Aomori Apple Association as an engineer, points out that, in apple producing regions in Aomori Prefecture, each time problems arose, there have always been people around who were able to give solutions. Of course, apple growers in Aomori Prefecture tried to produce better apples to make their living. Then, how did the establishment of the regional brand

affect the lives of people living there? That should be a subject of future researches, the prospect of which will be given in the following.

It is generally argued that the introduction of commodity crops growing led to labor intensification (Saitō 1991, 33). As regards Aomori Prefecture, newspaper articles during the 1930s pointed out a high number of accidental deaths among infants during the busy harvest season (Shirai 2016). At around the same time, an elementary school teacher said that mothers and sisters of the children did not have time to take care of them. He also remarked that farmers' distress was school children's distress. However, severity was not the only aspect of the lives of people in this region. It is a fact that enjoyable occasions, such as festivals and the time spent socializing, have been cherished. Some argue that a system for "survival" had to be constructed for the very reason that the Tōhoku region was placed in severe geographical conditions (Ōkado et al. 2013). Attention should be drawn to the actual lives of all the people that lived in the region including infants, children, women, the aged, the sick, the handicapped and so on.²⁰ In doing so, their actual experiences in the face of wars, natural disasters and socio-economic changes have to be examined. Moreover, concerning the period dealt with in this investigation, the lives of those who could not afford to start an apple growing business also need to be studied. In future researches, the lives and economic activities of various types of people should be examined in details on a long-term basis from many aspects including comparisons with other regions and industries.

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20. As for infant mortality, see Shirai (2006 and 2016). In Shirai (2006), an analytical examination on this issue is conducted as part of Tomobe Ken'ichi and Suzuki Akihito's risk management studies project based on "Reki-Show Authoring Tools."

Bibliography

- Abe, Takeshi. *Nihon ni okeru sanchi men'orimonogyō no tenkai* [The development of the local cotton-textile industries in Japan]. Tokyo: University of Tokyo Press, 1989.
- Aichi-ken Nōkai [The Aichi Prefecture Agricultural Association]. *Zenkoku tokunōka retsuden* [The biographies of innovative farmers in Japan]. Nagoya: Aichi-ken Nōkai, 1910.
- Aomori-ken [Aomori Prefecture]. *Aomori-ken tōkeisho* [Aomori Prefecture Statistical Report]. Aomori: Aomori Prefecture, each year.
- . “Aomori ringo no hatten ni kōseki o nokoshita daihyōteki na jinbutsu” [Exemplary persons who have contributed to the development of the apple industry in Aomori Prefecture]. Accessed July 31, 2018. <https://www.pref.aomori.lg.jp/sangyo/agri/ringo-rekisi08.html>.
- Aomori-ken Nōgyō Kyōdō Kumiai Chūōkai [The Aomori Prefecture Central Union of Agricultural Cooperatives]. “Aomori ringo no senkusha” [The pioneer of Aomori apple]. Accessed November 21, 2018. <http://www.ja-aomori.or.jp/chuoukai/index.php/grandpoobah/68-person06.html>.
- Aomori-ken Nōgyō Sōgō Kenkyūsho [Aomori Prefecture Agriculture Research Institute]. *Aomori ringo no keizaiteki kenkyū: Tokubetsu kenkyū hōkoku dai 1-gō* [An economic investigation into Aomori apples: The first special research report]. Aomori: Aomori-ken Nōgyō Sōgō Kenkyūsho, 1953.
- . *Aomori-ken Nōgyō sōgō kenkyūsho kenkyū hōkoku (16)* [Aomori Prefecture Agriculture Research Institute research report 16]. Aomori: Aomori-ken Nōgyō Sōgō Kenkyūsho, 1957.
- Aomori-ken Nōkai [The Aomori Prefecture Agricultural Association]. *Aomori-ken tōkikan ni okeru nōka fukugyō chōsa* [Survey on farmers' side works during the winter months]. Aomori: Aomori-ken Nōkai, 1909.
- Aomori-ken Nōrin-bu Ringo-ka [Aomori Prefecture Agriculture Department Apple Section], ed. *Meijiki ringo byōchūgai hassei bōgyoshi* [The prevention of damage caused by disease and insect pest during the Meiji period]. Aomori: Aomori-ken Nōrin-bu Ringo-ka, 1963.
- Aomori-kenritsu Nōji Shikenjō [Aomori Prefecture Agricultural Experiment Station]. *Ringo seisanjigyō ni kansuru chōsa* [Survey on the apple growing business]. Aomori: Aomori-kenritsu Nōji Shikenjō, 1923.
- Arimoto, Yutaka. “Hattentōjō keizai ni okeru nōsanbutsushijō to ryūtsū no kaizen – Kindai Nihon no komeshijō ni okeru beikoku kensa to hyōjunka” [Improvement of agricultural markets and marketing in developing economies: A case study of rice inspection and standardization in pre-war Japan]. *Asia Keizai* [Quarterly Journal of Institute of Developing Economies, Japan External Trade Organization] vol. 58, no. 2 (June 2017): 77-103.
- Bently, Lionel, Jennifer Davis, and Jane C. Ginsburg, eds. *Trade marks and brands: An interdisciplinary critique*. Cambridge: Cambridge University Press, 2008.
- Dai 5-kai Naikoku Kanyō Hakurankai Jimukyoku [Secretariat of the Fifth National Industrial Exhibition]. *Dai 5-kai Naikoku Kanyō Hakurankai shinsa hōkoku: Dai 1-bu kan no 12* [Examination report of the Fifth National Industrial Exhibition: Part 1 volume 12]. Tokyo: Hasegawa Masanao, 1904.
- Dai 4-kai Naikoku Kanyō Hakurankai Jimukyoku [Secretariat of the Fourth National Industrial Exhibition]. *Dai 4-kai (Meiji 28-nen) Naikoku Kanyō Hakurankai shinsa*

- hōkoku: Dai 3-bu jōkan* [Examination report of the Fourth National Industrial Exhibition: Part 3 volume 1]. Tokyo: Dai 4-kai Naikoku Kangyō Hakurankai Jimukyoku, 1896.
- Fukuba, Hayato. *Kajusaibai zensho dai 1* [The complete book of fruit growing: Volume 1]. Tokyo: Hakubunkan, 1896.
- Hashimoto, Takehiko. “*Hyōjun*” *no tetsugaku* [The philosophy of standardization]. Tokyo: Kodansha, 2002.
- Hashino, Tomoko. *Keizaihatten to sanchi, shijō, seido – Meiji kinuorimonogyō no shinka to dainamizumu* [Economic development, industrial districts, markets and organizations: The evolution and dynamics in the silk-weaving industry in the Meiji period]. Kyoto: Minerva Shobo, 2007.
- Hashino, Tomoko, and Keijirō Ōtsuka, eds. *Industrial districts in history and the developing world*. Springer, 2016.
- Hatae, Hisakichi. “Ringo seisan no hattatsu” [The development of apple production]. In *Nihon nōgyō hattatsushi 5* [The development of Japanese agriculture: Volume 5], edited by Nihon Nōgyō Hattatsushi Chōsakai [The Association for the Historical Research on the Development of Japanese Agriculture], 423-534. Tokyo: Chuokoron-sha, 1978.
- Hatae, Hisakichi, and Yasushi Saitō, eds. *Aomori-ken ringo 100-nenshi* [The 100 year history of Aomori apples]. Aomori: Aomori-ken Ringo 100-nen Kinenjigyōkai [The Aomori Prefecture Project Center for the Commemorative Events of the Apple Industry’s 100th Anniversary], 1977.
- Iioka, Kiyoo. *Sosai kajitsu torihiki no shinkenkyū* [A new research on fruit and vegetable transaction]. Tokyo: Seika Dōkōkai [The Fruits and Vegetables Association], 1926.
- Imaizumi, Asuka. “Sangyō shūseki” [Industrial cluster]. In *Keieishigaku no 50-nen* [The 50-year history of business history], edited by Keieishi Gakkai [The Business History Society of Japan], 151-160. Tokyo: Nihon Keizai Hyouronsha, 2015.
- Jones, Geoffrey, and Nicholas Morgan, eds. *Adding value: Brands and marketing in food and drink*. London: Routledge, 1994.
- Kazato, Yatarō, ed. *Dai Nihon yōshu kanzume enkakushi: Fu yōshu, kanzume, nyūseihin tōrokushōhyō* [The history of Western liquor and canned food in Japan with registered trademarks of Western liquor, canned food and dairy products]. Tokyo: Nihon Wayōshu Kanzume Shinbunsha [The Canned Food and Japanese and Western Liquor Newspaper], 1915.
- Kikuchi, Akio. “Sōma Teiichiō no omoide” [Memories of Mr. Teiichi Sōma]. In *Ikyō* [The legacy], edited by Tsushima Mikio, 3-4. Aomori: Sōma Teiichiō Ikyō Kankōkai [The Publishing Committee of “The Legacy” of Mr. Teiichi Sōma], 1937.
- . *Kaju engeigaku jō-kan* [Fruit cultivation: Volume 1]. Tokyo: Yōkendō, 1948.
- , ed. *Mutsu Hirosaki kōchōenshu Kikuchi Tatee ikō* [Posthumous manuscripts of Kikuchi Tatee]. Kyoto: Kikuchi Akio, 1938.
- Kiyokawa, Yukihiko. *Nihon keizai no hatten to gijutsu fukyū* [The development of the Japanese economy and the spread of technology]. Tokyo: Toyo Keizai, 1995.
- Kyōdo Kyōiku Kenkyūkai [The Research Association of Local Education], ed. *Kyōdo kenkyūshitsu jinbutsu no maki* [Researches on local history: People]. Tokyo: Dōbun Shoin, 1932.
- Kuni, Takeyuki. *Hakurankai no jidai: Meiji seifu no hakurankai seisaku* [The age of exhibitions: The Meiji government’s exhibition policy]. Tokyo: Iwata-Shoin, 2005.
- Matsubara, Hideto. “Chiiki kigyōka ni yoru chiikikadai kokufuku no senryakukeisei

- to soshikika: Brand sanchi Mikkabi-chō ni okeru haiki mikan no katsuyō jigyō” [Strategy-making and organizing by regional entrepreneurs: The case of utilization of waste mandarin oranges in Mikkabi-town]. *Hitotsubashi University Institute of Innovation Research Working Paper* vol. 17, no. 4 (March 2017): 1-23.
- Massachusetts State Board of Agriculture. *Apple growing*. 1913.
- Matsumoto, Takenori, ed. *Tōhoku-chihō “kaihatsu” no keifu: Kindai no sangyō shinkō seisaku kara Higashi Nihon Daishinsai made* [The history of “regional development” in the Tōhoku district: From the modern industrial promotion policy to the Great East Japan Earthquake]. Tokyo: Akashi Shoten, 2015.
- Matsuzawa, Yūsaku. *Jiyū Minken Undō – Democracy no yume to zassetsu* [The freedom and people’s rights movement – The failed dream of democracy]. Tokyo: Iwanami Shoten, 2016.
- Miyamoto, Toshiyuki, Kanako Kitahara, Yutaka Hidano, and Haruo Kitahara. “Aomori-ken ni okeru shizoku jusan to Tsugaru ai sangyōka eno kokoromi” [Aspects of “shizoku-jusan” and historical description of “Tsugaru indigo”]. *Hirosaki Daigaku Kyōiku-gakubu Kiyō* [Bulletin of Educational Faculty of Hirosaki University] 87 (March 2002): 89-98.
- Mugen Sekinin Takedate Ringo Hanbai Kōbai Shin’yō Riyō Kumiai [The Unlimited Liability, Takedate Apple Sales, Purchase, Credit, Sharing Association]. *Zaisan, mokuroku, taishaku taishōhyō, jigyō hōkokusho* [List of assets, balance sheet and annual business report], each year.
- Mochida, Keizō. *Beikoku shijō no tenkaikatei* [The development process of the rice market]. Tokyo: University of Tokyo Press, 1970.
- Naikaku Kanpō-kyoku [The Cabinet Official Gazette Bureau]. *Kanpō* [Official gazette], each year.
- Nishimura, Kichibē. “Ringo no kamisama” [The god of apples]. In *Ikyō* [The legacy], edited by Tsushima Mikio, 83-84. Aomori: Sōma Teiichiō Ikyō Kankōkai [The Publishing Committee of “The Legacy” of Mr. Teiichi Sōma], 1937.
- Nishitani, Jun’ichirō. *Jicchi keiei heika saibai kōgi* [The practical lecture of apple growing]. Irie-machi, Shizuoka Prefecture: Nihon Kankitsukai, 1918.
- Nōshōmu-shō Nōmu-kyoku [The Ministry of Agriculture and Commerce, the Department of Agriculture]. *Hakurai kaju mokuroku* [The catalogue of imported fruits]. Tokyo: Nōshōmu-shō Nōmu-kyoku, 1882.
- , ed. *Nōmu kyokuhō dai 25-gō (Engeigyō ni kansuru kumiai jirei sono 1)* [The agricultural department report no. 25 (Examples of agricultural cooperatives 1)]. Tokyo: Dai Nihon Nōkai, 1922.
- Ōkado, Masakatsu, Tomohiro Okada, Atsushi Kawauchi, Hidemichi Kawanishi, and Hiroyuki Takaoka. *Seizon no Tōhokushi: Rekishi kara tou 3·11* [The history of “surviving” in the Tōhoku district: The earthquake of March 11 from historical aspects]. Tokyo: Otsuki Shoten, 2013.
- Saitō, Osamu. “Nōgyō hatten to josei rōdō: Nihon no rekishiteki keiken” [Women’s labor in agricultural development: Japan’s historical experience]. *Keizai Kenkyū* [Hitotsubashi University Economic Studies] vol. 42, no. 1 (January 1991): 31-41.
- Saitō, Yasushi, and Kensaku Kanda. *Ringo o hiraita hitobito* [Pioneers of apple growing]. Tokyo: Tsukuba-Shobo, 1996.
- Sangyō Kumiai Chūōkai [The Center for the Industrial Cooperatives], ed. *Hanbai kumiai keiei jirei: Sono 1 engeihin no bu – Sangyō kumiai chōsashiryō dai 34-shū* [Examples

- of sales cooperatives: Part1 plant growing – Industrial cooperative survey material volume 34]. Tokyo: Sangyō Kumiai Chūōkai, 1929.
- Satō, Kenzō, ed. *Sōma Teiichiō den: Kyōdō Kumiai Undō no senkakusha* [The biography of Mr. Teiichi Sōma: A pioneer of the agricultural association movement]. Hiraka-machi, Aomori Prefecture: Sōma Teiichiō Shōtokukai [The Association for Praising Mr. Teiichi Sōma's Virtue], 1984.
- Satō, Yasaku. *Ringo ni ikiru* [Living with apples]. Aomori: Miyuki Shōkai, 1941.
- Scranton, Philip, and Patrick Fridenson. *Keieishi no saikōsō* [Reimagining business history], translated by Kasuya Makoto and Yago Kazuhiko. Tokyo: Sotensha Shuppan, 2017.
- Sembikiya Sōhonten [Sembikiya-Sōhonten, Ltd.]. *Samurai Benzō mizukuwashi uridashi 175-nen: Sembikiya Sōhontenshi* [The history of Sembikiya-Sōhonten, Ltd.]. Tokyo: Sembikiya-Sōhonten, Ltd., 2009.
- Shima, Yoshichika. “Sōmaō o omou” [Memories of Mr. Sōma]. In *Ikyō* [The legacy], edited by Tsushima Mikio, 21-24. Sōma Teiichiō Ikyō Kankōkai [The Publishing Committee of “The Legacy” of Mr. Teiichi Sōma], 1937.
- Shima, Yūzō, ed. *Fubuki, uminari: Aomori-ken ni okeru seikatsu tsuzurikata sakubun kyōiku jissenshi* [Blizzard and sea rumbling: Practical teaching of spelling and composition in Aomori Prefecture]. Kizukuri-machi, Aomori Prefecture: Nishi Tsugaru Minshū Kyōiku Kenkyūkai [The Nishi Tsugaru Democratic Education Research Association], 1979.
- Shirai, Izumi. “Nyūji shibō no kōzō to Maruyama Hiroshi no Alpha Index: Shinseiji shibō = botai botai o torimaku seikatsu kankyō shihyō no hakken” [The structure of infant mortality and Hiroshi Maruyama's Alpha-index: Discovery of the relationship between neonatal mortality and pregnant women's health]. *Mita Gakkai Zasshi* [Mita Journal of Economics] vol. 99, no. 3 (October 2006): 473(121)-505 (153).
- . “Sangyō kumiai ni yoru seisan-ryūtsū katei no tōsei: Mugen Sekinin Takedate Ringo Seisan Kōbai Hanbai Shin'yō Kumiai no jirei” [How an agricultural cooperative in modern Japan controlled its stakeholders: The case of the Takedate Cooperative]. *Shakai Keizai Shigaku* [Socio-Economic History] vol. 78, no. 2 (August 2012): 173-196.
- . “Nōka keiei to sangyō kumiai no shin'yō jigyō: Mugen Sekinin Takedate Ringo Seisan Kōbai Hanbai Shin'yō Kumiai no jirei” [Credit business of an agricultural cooperative in modern Japan: The case of the Takedate Cooperative]. *Keiei Shigaku* [Japan Business History Review] vol. 48, no. 1 (June 2013): 3-25.
- . “Senzenki Aomori-ken ni okeru “kome to ringo” o jiku to shita nōka keiei to chiiki hatten” [Peasant's multiple farming and regional development in modern Japan: The case of rice and apple in Aomori Prefecture]. *Nōgyōshi Kenkyū* [The Journal of Agricultural History] vol. 50, no. 50 (March 2016): 47-60.
- . “Hakurankai to sanchi brand no keisei – Meijiki no ‘Aomori’ no ringo o jirei ni” [Competitive exhibitions and branding of regional agricultural products: The case of Aomori apples in modern Japan]. *Shakai Keizai Shigaku* [Socio-Economic History] vol. 84, no. 1 (May 2018): 71-94.
- Sōma, Teizō. “Teiichi oyobi sono shūhen hoki” [Sōma Teiichi and people around him, supplement]. In *Sōma Teiichiō den: Kyōdō Kumiai Undō no senkakusha* [The biography of Mr. Teiichi Sōma: A pioneer of the agricultural association movement], edited by Satō Kenzō. Hiraka-machi, Aomori Prefecture: Sōma Teiichiō Shōtokukai [The Association for Praising Mr. Teiichi Sōma's Virtue], 1984.

- Takatsuki, Yasuo. “Kinseiki shijōkeizai no nakano Kumamoto-han – Hōreki kaikakuki o chūshinni” [The Kumamoto Domain in the early modern market economy: During the Hōreki period (1751 – 1764)]. In *Nihon kinsei no ryōgoku chiiki shakai* [Japan’s regional societies during the early modern period], edited by Inaba Tsuguharu and Imamura Naoki, 79-110. Tokyo: Yoshikawa Kobunkan, 2015.
- Tama, Shin’nosuke. *Shusanichi keisei to nōgyō dantai – Senkanki Nihon nōgyō to Keitō Nōkai* [The formation of leading production regions and agricultural associations – Japan’s agricultural industry between the Wars and agricultural associations]. Tokyo: Nōsanyoson Bunka Kyōkai, 1996.
- Tanaka, Minoru, and Jun’ichi Mizuki. *Ringo saibai no jissai* [Apple growing practices]. Horikoshi-mura, Aomori Prefecture: Kitanihon Nōen, 1926.
- Teikoku Nōkai [The Imperial Japan Agricultural Association]. *Seikabutsu hyōjun kikaku* [The standards for fruits and vegetables]. Tokyo: Teikoku Nōkai, 1938.
- Tonosaki, Masayoshi, and Iwagorō Akimoto. *Tonosaki Kashichō den zen* [The biography of Mr. Kashichi Tonosaki]. Hirosaki: Tonosaki Kashichō Kikōhi Hōtokukai, 1956.
- Yamamoto, Mitsumasa. *Edo kenbutsu to Tokyo kankō* [Sightseeing around Edo and Tokyo]. Kyoto: Rinsen Shoten, 2005.
- Yamazaki, Iwao. *Sosai kudamono no nizukuri to hanbai* [The packing and selling of fruits and vegetables]. Tokyo: Nishigahara Kankōkai, 1936.
- Yuzawa, Noriko. *Zairai sangyō to kazoku no chiikishi – Life history kara mita shōkibo kazoku keiei to Yūki tsumugi seisan* [The regional history of families and traditional industries – Small family businesses and the silk fabric production around the Yūki region investigated from the perspective of life history]. Tokyo: Kokon Shoin, 2009.
- Yoshida, Hajime. “Tsugaru no ringoshu (1), (2)” [Apple cider in Tsugaru]. *Nihon Jōzō Kyōkaishi* [The Brewing Society of Japan Bulletin] vol. 101, no. 1 and 2 (2006): 17-22 and 104-109.
- Wilson, Bee. *Shokuhin gisō no rekishi* [Swindled: from poison sweets to counterfeit coffee – the dark history of the food cheats], translated by Takagi Susumu. Tokyo: Hakusuisha, 2009.