

Manila Hemp in World, Regional, National, and Local History

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Hard fiber, such as Manila hemp (*abaca*), has become an important commodity in modern times. It is used as material for strategic goods, such as ship rigging and machinery ropes, everyday goods, such as packaging twine and paper, and clothing, such as hats and dresses. This paper examines this hard fiber from four different historical aspect—namely, world, regional (Southeast Asia), national (the Philippines and Japan), and local. By doing so, we can obtain more insight into how “glocal” modern and contemporary societies have been formed through mutual connections.

Introduction

Synthetic fiber was produced on an industrial scale at the end of the 1950s and soon became popular. Before this time, Manila hemp, sisal, and maguey had played an important role in the industrial world as well as in daily life. These fibers were called “hard fiber” because their external appearance was rough and hard. As seen in the 1922 Washington Naval (Disarmament) Treaty limiting the possession of battleships and aircraft carriers, national strength was indicated by how many of these warships a country possessed. When industrialization advanced in the first part of the 20th century, Manila hemp became an important strategic good, as it was used for making rope for ship rigging and machine pulleys. A raw material in the manufacture of packaging twine, paper, bags, and shoes, Manila hemp also became indispensable in people’s daily lives. Other goods made of Manila hemp include *asa sanada* (hemp *sanada*, more on this later) hats and dresses. People used to call twine, rope, and bags made from hard fiber *asa-himo* (hemp twine), *asa-nawa* (hemp rope), and *asa-bukuro* (hemp bag)—items which soon became familiar, everyday commodities. Since World War II, hard fiber has been used as material for making tea bags and paper money for Japanese and Philippine currencies. Recently, it has been used for filler material and upholstery in the automobile industry. In the near future, hard fiber is expected to be combined with glass fiber to make a useful compound material, and the hard fiber industry is optimistic about its demand. Today 85% of Manila hemp is produced in the Philippines, and 80% is used as material for paper and 15% for rope within the country.

This paper begins with a look at hard fiber from the perspective of world history. Then it focuses on what Manila hemp meant in the history of Southeast Asia and the Philippines. In modern Southeast Asian regions, commercial agricultural products, such as sugar, rubber, tobacco, and coconut, are still

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cultivated on plantations. Hard fiber, represented by *abaca* (Manila hemp), has been produced almost exclusively in the Philippines. Next, an overview is given on the Japanese industries that imported hard fiber and used *sanada*, particularly the rope and paper manufacturing industries as well as the millinery (hat making) industry. Lastly, the paper examines the impact the *sanada* industry had on the Japanese farming communities.

1. Hard Fiber in World History

1-1. Strategic Material

Abaca belongs to the *musaceae* family and is a relative of the fruit-bearing banana plant that grew only in the Philippine Islands. It has been used as material for making fabric and rope in various regions. Spain, which had colonized the Philippines in the latter half of the 16th century, used Manila hemp to manufacture rope for rigging their ships that sailed between Manila and Acapulco, Mexico for the Galleon trade. It became an export commodity in 1812 and later advanced into the world market when Russian hemp became scarce as a result of the Crimean War (1853–56). Russian hemp was made from bark, and it too was made into rope used for rigging ships. However, it was not strong enough in salt water. To solve this problem, the Russians reinforced their hemp rope with tar, which made it stronger but also inflexible and heavy—and rather expensive. Once the excellent quality of Manila hemp came to be known, it dominated the ship-rigging rope market.

In 1809, American steamboat inventor Robert Fulton (1765–1815) was successful in commercializing the use of steam ships and expanding their use by making improvements. The opening of the Suez Canal in 1869 considerably shortened the shipping distance between Europe and Asia. As seen in the Japan Sea Battle during the Russo–Japanese War (1904–05), victory or defeat depended on large-scale combat between war ships. This promoted competition among countries to strengthen their naval powers, which in turn made the Manila hemp rope-manufacturing industry an important war industry. Besides rope for rigging ships, Manila hemp was used for machinery rope as the manufacturing industry was developing. It was also used in the fishing industry for making narrow cord for fishing nets and for fishing garments.

As illustrated in Figure 1, initially, a sharp competition existed between Manila hemp and Mexican sisal hemp (henequen). When sisal production started in Africa and Indonesia, it surpassed Manila hemp in terms of production. In the 1930s, sisal production was more than double the amount of Manila hemp production. However, sisal lacked durability because it absorbed water and decayed easily. While this presented no problem for machinery rope, it was not suited for rope intended for ships, oil wells, or agriculture. Because of its light color, sisal hemp packaging twine was needed widely in places such as department stores. Sisal grew in barren tropical land and did not require much labor even on a large-scale tract of land. It was cost effective since it produced twice as much volume as Manila hemp per hectare and it was easy to extract fiber from the sisal using machinery. The usage of sisal expanded due to improvements made in terms of breeding, cultivation technology, and water resistance (accom-

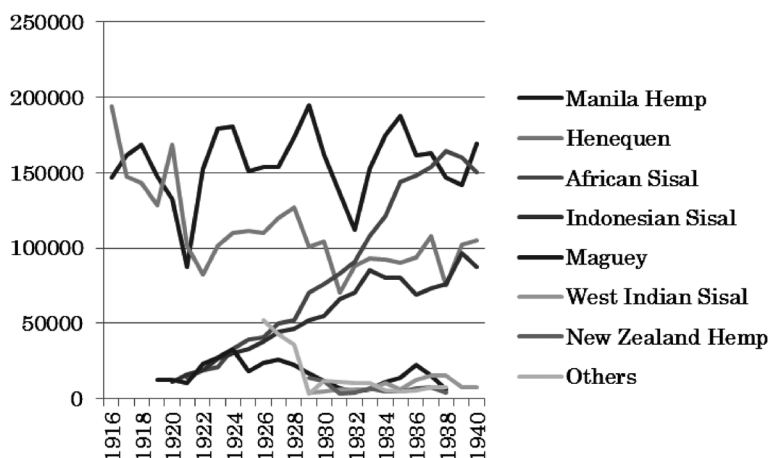


Figure 1. Volume of World Hard Fiber Production (unit British ton)

Source: Furukawa, 1956, p. 505.

plished by treating it with preservatives). As a result, it encroached on the demand for Manila hemp. Sisal eventually surpassed Manila hemp except for making rope for ships and for *sanada* weaving, which required the best quality hemp.

1-2. Everyday Materials

While the best-quality Manila hemp was used for rope and clothing, the lower grade was used to make binding twine that did not require durability. In fact, inexpensive sisal was often a substitute for Manila hemp. Scraps from rope making and *sanada* weaving were used for paper manufacturing. Manila hemp is still being used today to make Japanese and Philippine paper currency notes. In Japan, the main ingredient in paper currency is the fiber from *mitsumata* tree bark (a specialty of Japan), to which leaf fiber from *abaca* leaves is added. *Abaca* was also used to make leather bags and shoes, and sandals, thonged slippers and Western-style slippers because it was stronger than straw products.

1-3. Clothing

Manila hemp fiber has been used in the Philippines in a special type of woven fabric called Philippine *sinamay*. It is hand woven, and designs are incorporated into the fabrics by manipulating warp and weft threads. Sometimes, silk and cotton threads are also woven into the *sinamay* fabric. Among lowland Christian Filipinos, *sinamay* fabric is traditionally used for blouses or ribbons for women and shirts or ties for men. Among the Bagobo people in Davao (southeastern Mindanao Island), *sinamay* is used to make distinctive formal attire: shirts and pants for men and skirts for women. The designs are rather showy, with intricate patterns woven into the fabric along with colorful beads and sometimes coins.

The highest quality of Manila hemp was used for manufacturing *sanada*. Although there was no domestic demand for *sanada* in Japan, it became a typical and popular export commodity particularly to

Europe and the US. Manila hemp, one of the raw materials of *sanada*, was imported into Japan; tying hemp fiber and thread became a popular household handicraft industry supplementing the family income; and *sanada* factories sprouted over the country. Such manufacture of goods for export helped Meiji Japan develop into a more modern, export-oriented country.

Material made from hemp has moisture-wicking properties and keeps the wearer cool by preventing heat and moisture absorption. However, hemp fiber is difficult to weave in the textile manufacturing process and it wrinkles easily. Consequently, hemp fiber clothing has never been mass-produced. Recently, however, hemp has been mixed with various synthetic fibers to mass-produce summer garments and sweaters.

2. Hard Fiber in Southeast Asian History

2-1. Plantation Agriculture

Communication and transportation between Southeast Asia and Europe became active after the Suez Canal opened in 1869 and a regular steamboat route was established. Also during this time, an underwater cable network was laid and developed. As a result of these improvements, the plantation-style industry progressed rapidly, particularly in maritime Southeast Asia. Farm crops, such as coffee, sugarcane, and tea, were being cultivated mainly on Java Island of the Dutch East Indies. In Central Luzon Region and Negros Island in the Spanish Philippines, sugarcane was being produced. When the archipelagos became a US colony, *abaca* plantations were established in the Bicol region of southern Luzon Island and the Davao region of Mindanao Island. In British Malaya and Sumatra Island of the Dutch East Indies, tobacco, coconut, and rubber were being cultivated. In Malaya, tin mines were developed.

These developments in sparsely populated areas of Malaya and Sumatra resulted in food shortages because laborers from outside the localities were brought in to supplement the local labor force, thereby increasing the population and putting a strain on the food supply. Moreover, commercial crops were planted instead of rice which later had to be shipped from areas that cultivated rice for export such as the delta area of mainland Southeast Asia at the lower reaches of the Mekong River of French Indochina, the Chao Phraya River of Siam, and the Irrawaddy River of British Burma.

Foreign migrant laborers came to Malaya from South India to work on the rubber plantations and from South China to work in the tin mines. In the case of Sumatra, laborers came from Java Island. Their food and daily necessities were provided by Indian and Chinese merchants. In the rice-producing areas of mainland Southeast Asia, farmers who migrated from areas around Tonkin and Annam of the delta areas or upper Burma engaged in rice cultivation. Gathering, polishing, and exporting rice were undertaken by the Chinese in Indochina and Siam and by the Indians in Burma.

In the beginning, the trading of export-oriented commercial crops was handled mainly by Britain, where the manufacturing industry, shipping industry, and financial system had developed. Later, China and India joined in the trading activities and migration became active within Southeast Asia. After

World War I, the US became the major export destination. In 1913, a mutual free-trade system was established between the Philippines and the US, its suzerain. Eventually, 80% of the Philippines' exports went to the US and 60% of the Philippines' imports came from the US, making it economically dependent on the US. On the eve of the Great Depression of 1929, the Philippines' three major export crops, sugar, coconut oil, and Manila hemp, made up two-thirds of the total export commodities. Almost 100% of sugar and coconut oil produced were exported to the US. In the same year, in British Malaya, rubber made up 48% and tin made up 20% of the total export, of which 63% of rubber and 57% of tin were exported to the US. The Dutch East Indies was not under a monoculture economy like the Philippines and Malaya. However, three commodities—sugar, rubber, and oil—made up about 50% of total export crops, specifically, sugar from Java, 21%; rubber from Sumatra and Kalimantan, 16%; and oil from Sumatra, 12%. Most of the rubber was exported to the US (Kano, 1995).

As the American economy grew, the plantation industry in maritime Southeast Asia developed. It was centered on Singapore, which had once been a base for the British Eastern Fleet, as a major hub for trade, finance, and labor transport.

As rice cultivation in mainland Southeast Asia progressed, rice was exported to maritime Southeast Asia as well as neighboring countries. The required labor power was brought in from overpopulated areas such as southern China and India as well as Java Island. The Philippines was not involved in the Southeast Asia colonial economy such as those that had been established with Europe and the US or with neighboring colonies in the region. The *abaca* cultivation and Manila hemp industry in the Philippines developed outside this kind of economic system. Thus, the developmental changes that took place in the fields in the Philippines were not directly related to the “intra-Asia trade theory” led by Britain or the “tributary trade system theory” led by the Chinese.

2-2. *Abaca* (Manila hemp), Sisal, and Maguey

In the 1930s, *abaca* cultivation started in the Dutch East Indies; however, most of the *abaca* was still cultivated in the Philippines and its production was stable. The sisal hemp (henequen) produced in Mexico declined after the 1920s, and the overall production of sisal stabilized. The production of sisal in Africa and the Dutch East Indies increased, contributing to the overall increase of production. The production of Philippine maguey did not develop and therefore never stabilized.

3. Hard Fiber in Philippine History

3-1. Plantation Agriculture

Manila hemp was the most important export item after the Philippines became a US possession. In 1904, Manila hemp made up 72% of the total export value. Until the end of World War I in 1918, Manila hemp remained more or less at 40%. After the 1920s, sugar ranked the highest, which was 30% of the total export value, exceeding 60% at one point. In the meantime, the export value of coconut oil and copra increased, reaching 30% combined, and at one point, they exceeded sugar and Manila hemp

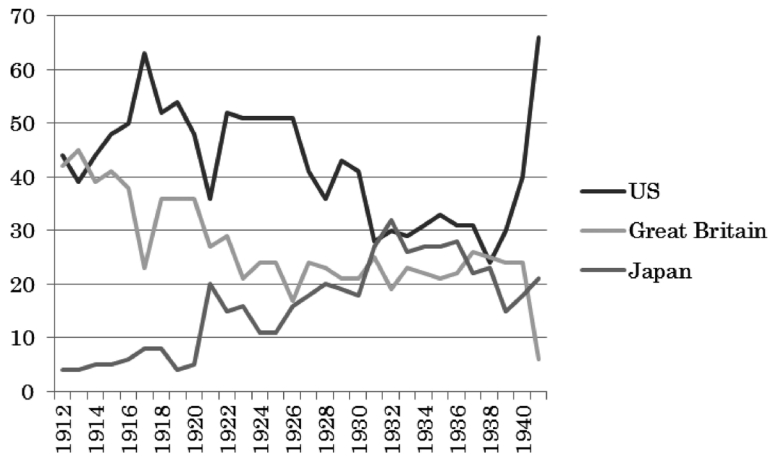


Figure 2. Manila Hemp: Ratio of Importers by Country (value, %)

*In 1922, "Great Britain" included other European countries. The fiscal year 1939 is from January to June. The fiscal year 1940 is from July 1939 to June 1940. Other fiscal years are from January to December.

Sources: From 1912 to 1922, and for 1941, see Furukawa, 1956, p. 512; From 1923 to 1940, see Commonwealth of the Philippines, 1925-41.

export. In the 1930s, the importance of Manila hemp as an export item diminished, and at some point reached less than 10% of the total export value.

The main importer of sugar and coconut oil was the US, at almost 100%. As seen in Figure 2, *abaca* export to the US was 50% in the 1920s and decreased to less than 30% in the 1930s. Export to England held at a steady 20%. As the US decreased its import of *abaca*, Japan compensated for the loss by starting to import *abaca*. Thus, *abaca* importers were divided among three countries, the US, Great Britain*, and Japan.

3-2. *Abaca*-Producing Centers and the Producers

The main producer of *abaca* was the Bicol region of southern Luzon Island until World War I, after which the producing center was moved to Davao on Mindanao Island. Bicol was blessed with a good environment for *abaca* cultivation, one that had high humidity with abundant rainfall all year round. In addition, the soil had good drainage because it was at the foothills of the active Mayon volcano. Bicol also enjoyed a population increase in the 19th century, which in turn added to the labor force. One reason for Bicol's population increase was the sharp decline of the Moro raids which plundered the coasts and took people into slavery. For 50 years, up until the latter part of the 19th century, the cultivation of *abaca* land increased tenfold. By 1920, *abaca* production had steadily increased to around 50% of total production in the Philippines (Owen, 1984, 1999). However, the dominant position enjoyed by Bicol gave way to Davao after the Japanese brought modern plantation management into the Davao region. *Abaca* cultivation in Bicol did not see the emergence of wealthy landlords similar to those in the sugar plantations in Negros; there was no equivalent in Bicol to the "sugar barons" who influenced national policy. In the meantime, the decrease of *abaca*'s importance in the Philippine export

economy made it easier for foreigners, like the Japanese, to enter into the *abaca* cultivation business.

Like Bicol, the Davao region was also blessed with a good environment for *abaca* cultivation. Located at the foothills of the active Apo volcano, Davao had fertile soil. Unlike Bicol, Davao was not on the route of typhoons, the greatest enemy of the *abaca* cultivation. *Abaca* cultivation in Davao was started by retired US soldiers and was later taken over by Japanese immigrants. Initially, the Japanese came to Davao as laborers to pull *abaca* fibers. In spite of the economic ups and downs, such as special procurements during World War I and the postwar depression, by 1930 the Japanese eventually came to own 75,070 hectares of *abaca* land, which was larger than 23 districts of today's Tokyo combined (62,198 hectares). After 1938, the *abaca* production in Davao, most of which was cultivated by the Japanese, accounted for more than half of all *abaca* production in the Philippines. The efficient *abaca* cultivation practices developed by the Japanese were motivated by the demand of the American rope industry, which sought not only inexpensive, good-quality *abaca* but also a dependable supplier. The Japanese population in Davao increased to about 20,000 before the war. The laborers came from the Visayan Islands in the north. With capital, managers, and cultivators all coming from Japan and with the laborers from other parts of the Philippines, the *abaca* industry in the Davao did not directly influence other Southeast Asian countries (Hayase, 1984).

4. Hard Fiber in Japanese History

As can be seen in the Japanese statistical records, Manila hemp import to Japan started in 1887, primarily for rope-making¹. In fiscal year 1936, the total amount of imported hard fiber was 590,000 bales (*hyo*), of which Manila hemp amounted to 480,000 bales (81%) (and other hard fiber, 110,000 bales). Of the total imported hard fiber, 360,000 bales were used for rope making (288,000 bales for fishing, 54,000 bales for ships, and 18,000 bales for unloading equipment); 216,000 bales were used for paper manufacturing (182,000 bales for domestic consumption and 34,000 bales for export); and 14,000 bales were used for *sanada* (Toyo Takushoku Kabushikigaisha and Kainan Sangyo Kabushikigaisha, 1942, p. 4).

Sanada is a fabric woven by warp and weft and made into a flat narrow string. It is said to have been originated by the Sanada *samurai* family in the aftermath of the battle of Sekigahara in 1600. The Sanada family traveled around selling their *sanada* product, advertising it as “strong string made by the Sanadas.”

Since Manila hemp varies in terms of quality, it was strictly classified by grade. The varieties differed depending on the breeds of hemp and their names were given based on the areas in which they were grown. The usage of Manila hemp was roughly divided into three categories, as mentioned above: rope making, paper manufacturing, and *sanada* weaving. *Sanada* weaving required the best-quality fiber—lightweight, long, and durable, with a whitish silk-like sheen. It was used for hat making as

¹ I used the following statistics unless otherwise specified: Naikaku Tokei-kyoku, 1887–1939 and Shoko Daijin Kanbo Tokei-ka, 1926–39.

well as for weaving fabrics. The second-quality hemp was used to make rope for rigging ships, machinery, and fishing nets because it was strong and elastic, did not easily decay under high moisture conditions or shrink under water, and was durable against friction. The lowest-quality hemp or scrap was used for paper manufacturing.

Most Manila hemp was used for rope and paper manufacturing, just as it was in the US and England. Of all the imported Manila hemp, *sanada* weaving had the biggest impact on Japanese modern industry and local societies. First, we shall look into the Manila hemp manufacturing industry in Japan according to how hemp was used.

4-1. The Rope Manufacturing Industry

In fiscal year 1922, there were 152 rope manufacturing factories in Japan: 50 factories produced Manila hemp rope (¥7,800,000 output), 47 produced hemp rope (¥1,600,000), 20 produced cotton rope (¥1,500,000), and 35 produced other products (¥1,500,000). The factories were concentrated in big cities in the prefectures of Tokyo, Kanagawa, Osaka, Hyogo, and Aichi. The cord ropes and twisted yarn produced in these factories included “rigging ropes for the ships; string for fishing nets and fishing gear; ropes for pulleys used in oil wells and machinery in factories; dragnets for machinery freight; and other types of string and cording for other purposes” (Minami-Manshu Tetsudo, 1924, pp. 37–40).

4-2. The Paper Manufacturing Industry

In fiscal year 1923, there were 16 factories that used Manila hemp scrap for paper manufacturing. Traditionally, Japanese paper was made from cotton shreds or *kozo* and *mitsumata* tree bark. Manila hemp scrap was used as a substitute for or combined in a mixture with these materials. Manila hemp scrap was inexpensive and manufacturing was easy. It was made into various kinds of paper: “paper for cigarettes, napkins, thin cosmetic papers such as *sakura-gami* and *kire-shi*, tissue paper, paper for calligraphy, copy paper, etc.” Manila hemp scrap was used to make other products such as *tatami* mat edging, mosquito nets, and bath sponges (in place of traditional dried loofa sponges) (*Ibid.*, pp. 40–42).

4-3. The *Sanada* Hemp Industry

The fiber of Manila hemp used for *sanada* weaving had a nice sheen and was over 182 cm in length. The yield of this high-quality fiber was only four to five percent of the total Manila hemp production. The production of woven string for hat making with *sanada* started in 1871 when the *sanada* industry observed that foreigners wore straw hats and saw this as a business opportunity. In 1874, the products made from *sanada* weaving were exported abroad for the first time. Thereafter, Okayama and Kagawa prefectures, which had previously produced straw, now shifted to *sanada* weaving and became the major *sanada* production centers. Also, *sanada* weaving became an important sideline job for the farmers in the Kansai area. In 1886, their products were exported abroad via Yokohama and Kobe Ports (Ishii, 1916, pp. 242–245).

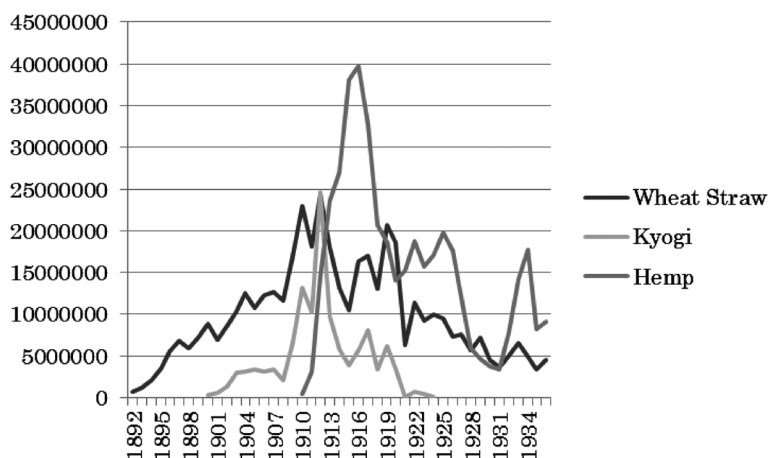


Figure 3. *Sanada* Export Volume (bundle)

Sources: Naikaku Tokei-kyoku ed., 1886–1938; Noshomusho Shomu-kyoku, 1913; Okayama-ken *Sanada Dogyo Kumiai*, 1917.

Since the *sanada* industry followed the fashion trends of the time, it was constantly in search of new designs and styles. One of the new materials incorporated into *sanada* weaving was *kyogi*, a type of wood that is shaved paper-thin. *Kyogi* production started in 1893. It was originally made from *Populus alba* (also known as silver poplar) but later, pine tree and cypress were used. By 1900, *kyogi sanada* exports drastically increased. As seen in Figure 3, *kyogi sanada* exceeded wheat straw *sanada* exports in 1912. However, the following year, hemp *sanada* exceeded both wheat straw and *kyogi sanada*. The Japanese producers took notice of the popularity of Manila hemp hats in Italy and Switzerland and they started production of hemp *sanada* in Japan. Around the time of the World War I, hat making production using hemp *sanada* became active (*Ibid.*, pp. 147–148, 245–247). The production process is summarized as follows:

“The fiber from imported hemp was tied together at each end and wound into a ball by the weavers. The thread was reeled into spools and woven into *sanada*. A roll of one *tan* (10.6 m in length) of cloth was made into one roll; 25 rolls became one bundle and were packed for export. In overseas’ markets, they were made into beautifully colored and decorated ladies’ hats for summer” (*Ibid.*, p. 12).

The beginning of the hemp *sanada* industry can be traced to sometime in October 1906 when a British firm sent an Italian-made trade sample of 13-spool *sanada* weaving to Japan (The sample had three hemp threads twisted into one, reeled into 13 spools, and then woven into fabric)². It was successfully copied in Japan and exported to Europe and the US for the first time in 1908. The export of

² On *Sanada* Machines, see HP of Ishikawa Sen’i Shiryo-kan (Ishikawa Fiber Museum, Toyohashi City, Aichi) accessed 6 September 2013, <http://www.tees.ne.jp/~silk/kannaisyoukai/013.html>.

Japanese *sanada* quickly expanded in the 1910s. Export volume reached 470,000 bundles with a value of ¥340,000 in 1910; in 1911, 3,150,000 bundles with a value of ¥1,640,000; in 1912, 14,400,000 bundles with a value of ¥7,260,000; in 1913, 23,610,000 bundles with a value of ¥10,060,000; and reaching its peak in 1916, 39,780,000 bundles with a value of ¥12,600,000. Accordingly, import of Manila hemp increased drastically after 1912. The hemp imported from the Philippines was 58 to 73% the value of all the imported hemp, including *cannabis sativa*, jute, and Manila hemp. *Cannabis sativa* and jute were imported mainly from China, and most of the Manila hemp came from the Philippines. In contrast to its import value, the import volume of Manila hemp from the Philippines was only 32 to 48% of total imported hemp. It could be surmised that the imported Manila hemp was the best-quality hemp used for *sanada* weaving (Noshomusho, 1913, p. 1). Worldwide, hemp *sanada* was mostly used for millinery purposes.

As of 1920, there were 276 factories that employed 399 male workers and 6,172 female workers and had 311 thread-weaving machines with 587-horse-power engines (Minami-Manshu Tetsudo, 1924, pp. 33–37). Female workers engaged in the preparation process were either between 12 and 15 years old or over 30 years old; those who engaged in weaving *sanada* were between 14 and 30 years old, but most were around 20 years of age. Male workers engaged in the partial finishing processes. One person usually handled five to six machines but some could handle up to 20 machines. Most of these workers commuted and worked from 6:00 a.m. to 6:00 p.m. (with one hour lunch break) and were mostly paid on a piecework basis (Rinji Sangyo Chosa-kyoku, 1919, pp. 174–178).

5. *Sanada* Industry as “Glocal” Industry

The hemp *sanada* industry flourished around the time of World War I, after which wheat straw *sanada* regained its prominence. When we examine the *sanada* industry as a whole, it is important to include all types of *sanada* weaving: hemp, wheat straw, *kyogi*, and the combination of the last two.

The major importers of *sanada* weaving were Europe and the US, where some *sanada* products were further processed and manufactured for export as other finished products. In Japan, the *sanada* industry tried to anticipate the fashion of the importer countries and made efforts to develop new products. In the wheat straw *sanada* industry, the women and children in the local farming areas supported the *sanada* industry at the bottom of the labor structure. In the hemp *sanada* industry, the local farmers, the fishermen, and “the poor” also supported it at the bottom. In this sense, the modern *sanada* industry was a “glocal” industry, which produced *global* goods supported by the *local* labor at the bottom.

5-1. Wheat Straw *Sanada* and *Kyogi Sanada*

Japan’s full-scale export of wheat straw *sanada* began around 1893, and the major importer was England. In 1910 and thereafter, the US, France, and Germany began importing Japanese wheat straw *sanada*, and the volume and value of wheat straw *sanada* export steadily increased until 1912, when hemp *sanada* surpassed it. While hemp *sanada* was produced mainly for export, most of the wheat

straw *sanada* was consumed domestically. In fiscal year 1928, for example, 60% of wheat straw *sanada* was exported and 40% was consumed within Japan.

Okayama prefecture was the biggest producing center and accounted for 60 to 70% of all the production in Japan between 1898 and 1901. After 1908, it produced less than 50% and decreased to only 32% in 1914 and 1915. Okayama was also one of the major *kyogi sanada* producing centers. In 1916, it produced 1,020,000 bundles, which was 18% of all export volume (Okayama-ken, 1917, pp. 11–12, 37–41). In the major producing centers in Japan, there was a saying: “Those who do not engage in *sanada* braiding are not considered to be human.” Accordingly, the old, the young, the poor, and the rich all engaged in *sanada* braiding.

Wheat straw *sanada* braiding was a night sideline job for farmers. The elderly, the women, and the children were all dedicated to *sanada* braiding, just as they had been dedicated to braiding straw slippers in the past. The product reached its peak production in July and August during summer break when school children participated. Production slowed during the busy farming season in October and, since this work was rather low paying, workers turned to more lucrative jobs or whenever there was work available such as railroad construction. Under these conditions, wheat straw *sanada* production declined (*Kobe Shimbun*, October 29, 1926).

Working with *sanada* brought additional income and workers' savings in Okayama were relatively higher compared to those in other prefectures. Even women and children owned savings passbooks. In schools, competitions for wheat straw *sanada* braiding were held, and elementary students from grades one to six, first and second year high school students, and vocational school students all participated. Even grade one pupils could produce one-third of one *tan* in eight hours and were considered capable of supporting themselves in this way. The average production of all the school children was double that of grade one pupils' production (Okayama-ken, 1917, pp. 17–25).

Unlike in Italy where the straw was especially produced, the Japanese wheat straw used for *sanada* braiding was a byproduct of wheat. Consequently, the quality of the Japanese wheat straw was inferior and its cost was only a third of that of the Italian straw. The Italian wheat straw was more pliable, elastic, and glossy, which gave it a translucent beauty (*Kobe Shimbun*, October 28, 1926). The Japanese wheat straw could not be used to make *sanada* for high-class hats because over time, the color changed, the braiding came loose, the quality degenerated, and the material failed to hold its shape. Thus, the Japanese wheat straw *sanada* competed not against the Italian products but rather against those from China which started exporting its own wheat straw *sanada* around 1870. When hemp *sanada* came on the market, the export of wheat straw hit its peak.

The *Kobe Yushin Nippo* reported on June 16, 1925 that Italy had been producing hats for export to the US using wheat straw *sanada* imported from Japan and China. In the US, 10,000,000 hats were sold every summer. The domestically produced ones could not satisfy the demand; therefore, 2,500,000, of which 1,500,000 hats were imported from Italy. Among the European countries, Italian wages were the lowest at 25% less than US wages. At the beginning of the summer, the wholesale price

of a hat sent to New York was US \$0.50, and it was sold for \$4.00.

In 1912, before hemp *sanada* became popular, the total export value of *sanada* for hat making was ¥9,100,000, of which ¥2,790,000 (31%) was exported to the US, ¥2,420,000 (27%) to England, ¥1,690,000 (19%) to France, and ¥1,640,000 (18%) to Germany. During World War I, the export of hemp *sanada* was higher than wheat straw *sanada*. After the war, in 1919 and 1920, this trend reversed, with wheat straw *sanada* exports climbing higher than hemp *sanada*. Wheat straw *sanada* was used mainly for men's hats. After the war, the demand for men's hats rose, pulling with it the export value of wheat straw *sanada*, its primary raw material. In contrast, the ever-changing women fashion trends shifted away from hats, ushering a decline in the demand for hemp *sanada*.

Kyogi sanada was made using the same method of braiding as that of wheat straw *sanada*. A certain level of demand was maintained as evidenced by the following comments: "Sometimes novel design is found." Or, when *kyogi sanada* was mixed with wheat straw: "Sometimes a rare new product can be seen" (Ishii, 1916, pp. 251–253).

5-2. Hemp *Sanada*

While wheat straw *sanada* production was a household handicraft industry, hemp *sanada* production was a household machine industry, usually engaged in by a married couple and their daughter(s). Since hemp *sanada* was produced by machine, it was possible to mass-produce it. Hemp *sanada* maintained its color and had relatively strong durability against dryness, which meant it could be stored for a certain period of time, allowing buyers to speculate in the market. The demand for women's hats however was unstable: When demand for *sanada* for women's hats rose, the supply ran short, but when the fashion declined, the products were overstocked. Sometimes, poor-quality products circulated during a peak fashion trend, making the buyers doubt the reliability of their suppliers (*Kobe Shim-bun*, October 22–November 10, 1926).

In view of this, the Japanese officials feared that *sanada* could not develop as an industry if it were left to the capriciousness of the market. Therefore, the Minister of Agriculture and Commerce conducted a study in January 1913, shortly after the *sanada* export showed a sudden surge. According to the research report, when Japanese hemp *sanada* was first exported to Europe and the US in 1908, its quality was lower than Italian and Swiss hemp *sanada*. By 1912, the Japanese *sanada* industry had almost caught up with the Italian and Swiss products by making rapid manufacturing improvements. In the Chicago market, while the Swiss and Italian products were selling for \$0.65 to 0.75 per 80 yards, the Japanese products were selling for half that price, at \$0.30 to 0.40 for the same quantity. It seemed that the Japanese products would monopolize the market; however, inferior products circulated, resulting in an import ban. In the meantime, the Japanese hemp *sanada* monopolized the London market.

Since millinery styles and women's clothing designs changed according to the seasons and fashions of the times, *sanada* weaving had to meet the demands of constant change. The hemp *sanada* industry needed to pay close attention to weaving methods as well as to the shape of the material it was produc-

ing, otherwise it will be overtaken by wheat straw or *kyogi sanada* material. A big hat required 1.5 *tan* of material. When small hats requiring less material became fashionable, import volume naturally decreased. In Germany and France, the Japanese product had an advantage due to its lower price (Noshomusho, 1913, pp. 14–30).

The above information came from Japanese consulates in Europe, which were reporting on the supply-and-demand situation that fluctuated according to the fashion trends of the time, making it difficult to predict what would come next. As explained in one account, “It has been most difficult to foresee millinery fashion trends. Even the specialists in this field found it difficult to predict the fashions of the year. They could only do so two weeks before the new hats would appear on the market” (Minami-Manshu Tetsudo, 1924, pp. 69–85). For example, in 1924, crepe *sanada* swept across the whole market unimpeded, just as *kikko* (tortoise shell design) *sanada* had done in the past; however, its popularity lasted only one year (*Kobe Shimbun*, October 22–November 10, 1926). The producers tried to introduce new products such as combining Manila hemp, wheat straw, *kyogi*, silk and cotton yarns or mogul thread entwined with gold and silver threads.

After hemp *sanada* became popular, the US and Britain became major importers. In 1923, as a result of the Kanto earthquake, Kobe became the major port for export instead of Yokohama. In the following year, the export value of *sanada* for hat making was almost the same as in 1910, ¥9,170,000, of which ¥2,550,000 (28%) was for the US, ¥2,210,000 (24%) for England, ¥1,840,000 (20%) for France; ¥960,000 (10%) for Germany, and ¥780,000 (9%) for Italy. In 1925, Germany suddenly imported ¥2,500,000.

When the export of hemp *sanada* increased, some manufacturers of wheat straw *sanada* switched to producing hemp *sanada*. This happened especially in the Kanagawa and Tokyo prefectures. By the end of November 1912, the number of families engaged in hemp *sanada* production and the number of machines were as follows: Kanagawa prefecture, 172 families and 9,592 machines; Tokyo prefecture, 162 families and 6,953 machines. In all of Japan, there were a total of 547 families and 27,345 machines. Monthly production was 2,460,000 *tan*. Women workers numbered 13,000 and those who tied hemp fiber numbered 200,000. The farmers and “the poor” who used to braid wheat straw *sanada* as a sideline job switched to hemp fiber tying. They were paid six *sen* (one *yen* is 100 *sen*) for ten *monme* (37.5 g).

Since the machinery had been improved, the production rate per machine increased. Now, one woman worker could handle four or five machines at the same time instead of one worker per one machine as before. However, as a result of the rapid increase in production, *sanada* soon became overproduced (Noshomusho, 1923, pp. 37–56). There were many kinds of tools and machinery for producing hemp thread tying. In fact, in 1916, there were 27 patented hemp thread-tying machines and 66 applications for patents on new devices for winding Manila hemp fiber (Ishii, 1916, pp. 133–138).

The problems pointed out in the 1913 research report, as described above, became much more serious issues. Ishii Hakuyo (*alias* Bunsaku, executive member of *Yorozu Choho* (newspaper)) wrote a

book in order to rectify these problems. The title of the book was *Manira Asa to Asa Sanada* (Manila Hemp and Hemp *Sanada*), published by Asa Sanada Koho-sha. In the preface, Ishii points out that in spite of the fact that hemp *sanada* became an important export item as follows:

This promising and beneficial national industry is still viewed as a speculative enterprise, and therefore, it has been hard to find reliable capitalists who are willing to invest in this enterprise. It is truly regrettable for the country. ...

While the foundation of the industry has not yet been built up, problems are already emerging one after another; they include, among others, inferior products and overproduction. I could not bear to simply remain an idle spectator worrying about the deplorable prospects of this industry (*Ibid.*, pp. 1-2).

In the explanatory notes, Ishii explained why he had twice missed the opportunity to publish his book as follows:

The book was originally written in March 1915 for the purpose of encouraging the hemp thread-tying industry and of preventing unfair practices. However, for some reasons, it was not published. ... [In the fall of the same year] Due to overproduction of hemp *sanada*, the industry reached its lowest slump. In order to remedy this situation, I wanted to recommend production control; however, a certain circumstance again prevented me from publication. A year and a half had passed since the initial writing. An outcry against overproduction has now changed into complaining about a production shortage. Thread tying, which had been forsaken by well-informed people as a hopeless endeavor, is now enjoying the height of popularity (*Ibid.*, p. 1).

In January 1916, there were 764 factories and 59,345 machines, and those who worked at thread tying received five *sen* for 10 *monme* (*Ibid.*, pp. 14-15).

The first step in producing hemp *sanada* was tying and winding Manila hemp fiber thread into a ball called *asa-dama* (hemp ball). Its quality determined its reputation as an export item. Tying and winding scrap fiber or several threads together can cause uneven spots when the hat was dyed; hence, unfavorable criticism would follow. In order to avoid this, the following 16 points were enumerated:

1. Hemp thread should be handle carefully, paying attention not to soil it.
2. Before knotting, selection must be made.
3. Both ends of the hemp thread (beginning and ending) should be carefully cut little by little and knotted together.
4. When tying, do not mix the thread with dark brown color or that which has an uneven

- (splashed) pattern or dirty thread.
5. Do not knot thin, hair-like thread or thread which still has soft bark.
 6. When knotting the thread, do not tie two or three threads together. Instead, only one thread should be knotted.
 7. Thread with a split should be cut off.
 8. Knotting should be cut as short as possible.
 9. Do not knot a good-quality thread with an inferior one.
 10. Thread should not be sprayed with mist or soaked in water.
 11. When winding the thread into a ball, a core paper should be placed in the center.
 12. Winding should be done evenly, like the mesh of a net, with utmost care and should not be lopsided.
 13. Winding should be evenly done, neither too soft nor too hard.
 14. The size of the ball should be that of an orange (*daidai*) and should weigh an average 12 to 13 *monme*.
 15. Knot with utmost care to avoid wastage.
 16. At the end of rolling, make a cross with white cotton thread and place the names of the ones who knotted and the middleman (*Ibid.*, pp. 48–50).

The workers were made to realize that following these instructions faithfully was directly connected to the national benefit and honor, which was in line with the popular slogan of the time: “Enrich the state, strengthen the military and the national resolution.” Even the hemp-knotting workers were expected to follow this directive.

In January 1915, the Department of Agriculture and Commerce sent a notification to the governor of each prefecture. It encouraged the export of products abroad and recommended products and methods for fostering and controlling production. *Sanada* for hat making was included among more than forty recommended products. In June the following year, another notification was sent to each prefecture directing them to encourage their citizens to undertake home-handicraft sideline jobs. The notification included detailed instructions on how to successfully undertake such a job. The hemp *sanada* industry satisfied all the requirements as an export commodity. In order to control illegal items or sub-standard products, the Department of Agriculture and Commerce enforced “Regulation Rules for *Sanada* for Export” beginning August 1, 1915. The items returned from abroad included the following reasons: “inferior quality of seven-spoiled yarn,” “too many joints,” “length shortage,” “width shortage,” “having specks,” “coarse sequence thread,” and “mixed with gassed thread” (Gassed thread is thread that has been burned with gas to flatten the thread and achieve a certain sheen). The government supported the organizing of guilds “for the purpose of removing obstacles and increasing benefits for those who are engaged in production, manufacturing, or marketing important export products.” Eventually, fourteen guilds for hat-making *sanada* export were organized in cities and

prefectures. Zenkoku Sanada Dogyo Kumiai Rengo Kyogikai (National Sanada Guild Union Council) established inspection offices and the guilds in Yokohama organized Torihiki Kaizen Domeikai (Alliance for Improving Transactions). An appendix in the book written by Ishii, has a 33-page index listing names of people engaged in hemp *sanada* production and hemp-thread knotting in Japan (as many as 75 traders are listed on one page). There are 59 pages of importer advertisements (*Ibid.*, pp. 6–8, 78–82, 188–190, 206–207, 219–222). Sanada Kumiai Rengokai (Sanada Guild Union) received ¥18,000 annually from the government as financial aid (*Kobe Shimbun*, June 22, 1924).

Hemp *sanada* had different styles of weaving; some were inferior, others superior. The demand varied depending on the fashions of the time. There were usually two different kinds: regular and special. Some names were given by the way the thread was braided or woven while others came from the number of spools used; for example, Seven Spools, Nine Spools, Eleven Spools, Thirteen Spools, Seventeen Spools, Fifty-One Spools, Fifty-Three Spools, Flow Spools, *Benten* Spools, *Hinode* (Sun Rise) Spools, and *Chidori* (Plover) Spools. In order to determine the requirements for meeting the demand, five organs were published, such as *Asa Sanada Koho* (Hemp *Sanada* Information), and three monthly guild journals, such as *Kanto Rengokai Geppo* (Kanto Union Monthly) (Ishii, 1916, pp. 75, 196–199).

As the hemp industry prospered, the number of traders importing Manila hemp greatly increased. Some traders went directly to the Philippines to seek reliable suppliers who could provide the product cheaply and stably as Manila hemp became scarce. This happened when World War I broke out and Japan declared war against Germany on August 23, 1914 on grounds of the Anglo-Japan Alliance. The Japanese Navy occupied the German island territories located north of the equator in the South Seas. Taking advantage of this opportunity, people began advancing farther to the south for trade or agricultural purposes. This movement catalyzed the “cultivating the South Seas boom.” Some Japanese believed that they might be able to start profitable enterprises in the South Seas that might bring in quick money. Manila hemp cultivation attracted the attention of these would-be entrepreneurs as it one of the most profitable enterprises.

In 1918, there were 164 *abaca* plantations larger than 100 hectares, 69 of which were owned by the Japanese (37 were owned by Americans, 42 by Filipinos, and 16 by others). The total Japanese-owned land was 55,906 hectares, which was 57% of all the land cultivated for *abaca*. Most of the plantations were owned by agricultural companies that had been established during World War I (Hayase, 1984, pp. 155–162). The Japanese population in Davao increased in four years from 710 in 1914 to 6,368 in 1918, according to a Japanese consulate report. At one point, the number reached over 10,000, the males comprising 95% of the population. Some of these Japanese had entered Davao illegally (Hayase, 2014, pp. 22–23).

Export of hemp *sanada* reached its peak in 1916 with 39,780,000 bundles. Thereafter, it began declining, dropping to less than one-tenth or 3,340,000 bundles in 1931. In that same year, the export value of *sanada* for hat making was ¥1,820,000, of which ¥620,000 (34%) was for the US; ¥270,000 (15%) for England; ¥260,000 (14%) for France, and ¥250,000 (14%) for Germany. As of 1930, the major pro-

duction center was Niigata prefecture, which made up 50% of the total amount, followed by Aichi, Kanagawa, and Osaka prefectures (*Hochi Shimbun*, October 10, 1930). The following year in Niigata, the time between November and April was a good time for women and children to engage in hemp weaving as a sideline job because that was the snow season (*Tokyo Asahi Shimbun*, February 20, 1933).

Concluding Remarks

Hard fiber, represented by Manila hemp, was used for strategic materials, daily goods, and clothing, and it influenced people in numerous ways. Manila hemp imported from the Philippines was wound into hemp yarn balls by women, children, and the elderly in farming and fishing villages and by the poor in the cities as sideline jobs. Some members of the families with little cash income earned more than adult men. Considering that the patriarchy was still very strong, this small independence might have inspired some new ideas and influenced the way the household was run. As for the process of thread tying, a few threads taken from the hemp ball were twisted, rolled into 13 spools, and then woven by the thread-tying machines.

Despite its smaller production volume, hemp *sanada* had just as important an impact on people as other types of hemp production. Changing the quality and forms of the yarn, the number of spools, and the method of weaving produced different kinds of *sanada*. Usually, multiple machines were handled by a female worker of age 20 or so. The material for manufacturing was totally dependent on importation, and the products were produced solely for export. The *sanada* industry propelled Japan into its new status as a modern trading nation in the global marketplace.

The problems of inferior products and overproduction were not exclusive to the *sanada* industry but were common to other Japanese products for export—and they were some of the biggest problems Japan had to face. These Japanese products overtook European products, which had become scarce in Asian countries and regions due to World War I. The colonized parts of Asia were under the control of the monoculture economic system and were growing commercial agricultural crops for export to Europe and the US. Consequently, their domestic or light industries were still underdeveloped. In these areas, even poor-quality Japanese-made goods were accepted. Ordinary people who had only small cash incomes sought cheaper goods. Chinese merchants were willing to handle such goods because they brought in a relatively high profit. These circumstances did not give the Japanese incentives to improve their products.

This was not the case with goods exported to Europe and the US. *Sanada* products were usually consumed by the upper echelon of society. Once inferior products were sold, it was fatal to all businesses associated with the *sanada* industry. Along with all other export industries, the *sanada* industry suffered from problems caused by inferior products as well as overproduction. However, the *sanada* industry was exposed to a different market environment compared to other general merchandise exported to Asian regions. To the Japanese export industry, which had an eye on the world market, these were critical problems to be solved. Therefore, both the government and civilian sectors tried to coop-

erate with each other to tackle the problems.

The impact of the *sanada* industry was not limited to Japanese society alone. In Western Europe, importation of less expensive and elaborate *sanada*-weaving materials from Japan offered stylish hats within the reach of women of other economic classes. Right after World War I, high culture was no longer exclusive to the upper classes but began to open up more to the general public. The *sanada* industry rose around that time, adding colorful change to the culture of the new age.

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This paper was presented at the 10th International Conference on Philippine Studies, 6-8 July 2016, Silliman University, Dumaguete City, the Philippines.