

1. Rikuzen Takata City

Rikuzen Takata City is located in south-eastern Iwate Prefecture on the Pacific coast. It was reorganized as a city in 1955 with the consolidation of Takata Town, Kesen Town, and Hirota Town, among other towns. Its population peaked at 30,308 people in 1970, then gradually declined to 23,302 people in 2010¹. The city connects to the neighboring Ofunato City to the north-east by National Highway No. 45 and Sanriku Expressway and is increasingly taking on the characteristics of a commuter town from Ofunato City.

At the Great East Japan Earthquake in 2011, 1555 deaths, 236 missing, and 3341 houses destroyed² were reported. The city center was destroyed together with the city hall, and more than 70% of all households in the city suffered damages³. As well, four out of five stations on the JR Ofunato Line running along the coast inside the city were washed away, and most railroad lines and bridges suffered damages. The results of a GPS survey showed that significant land subsidence had occurred, and a maximum -84cm subsidence was recorded among urban areas⁴. The estimated amount of debris was 116,000 tons⁵.

As the majority of the Rikuzen Takata City limits including the business, administrative, and transportation centers were flooded, new urban and industrial areas were formed from scratch. Most of the former urban areas which had been flooded were designated non-residential areas to be converted into parks, among other things. Collective relocation of community districts to high ground and the restoration of residential areas are also being planned⁶.

¹ Estimated 20,035 people as of February 1, 2012.

² http://mainichi.jp/select/jiken/graph/sinsai_zusetsu/ Iwate Disaster Prevention Information Portal, List of human casualties and building damage as of March 15, 2012, 17:00.

³ http://mainichi.jp/select/jiken/graph/sinsai_zusetsu/ Mainichi.jp, Great East Japan Earthquake, illustrated collection.

⁴ <http://www.gsi.go.jp/sokuchikijun/sokuchikijun40003.html> Geographical Survey Institute, Subsidence investigation of the 2011 Tohoku earthquake.

⁵ <http://www.env.go.jp/jishin/shori120312.pdf> Ministry of the Environment, Progress of disaster waste processing at coastal municipalities (March 12, 2012)

⁶ <http://www.city.rikuzentakata.iwate.jp/kategorie/fukkou/fukkou-keikaku/fukkou-keikaku.html> Reconstruction plans, Rikuzen Takata City.

1-1. Yagisawa Shouten, Co., Ltd.

Yagisawa Shouten with head office in Rikuzen Takata City was established in 1807 and has been operating its brewing business for over 200 years. While the company has been involved in sake brewing for generations, it started to produce soy sauce since the 1940s. Specializing in a high quality product line-up which employs quality materials and traditional production methods, the company has built up a stable business foundation over the course of many years. The tsunami completely destroyed and washed away all of its business bases including its head office building, storehouse, and plants. In addition to buildings, items with very important historical value such as tubs used in the brewing process and machines for wringing out soy sauce were also destroyed.



Photo 1 (Yagisawa Shouten before the disaster)

None of the 39 employees engaged in their duties when the disaster occurred were hurt, although strong shaking destroyed a portion of the storehouse. A roll call was taken in the plant premises and an evacuation was begun in preparation for the tsunami. The executives

who evacuated to high ground were all right, but two personnel died including the sales division manager who participated in rescue operations as a fire corps volunteer, and a trainee who was the son of a Kyushu soy sauce brewery scheduled to complete his training at the end of February 2011. 25 of the 39 employees lost their homes and were forced to live in evacuation shelters. The company president at the time, Mr. Kazuyoshi Kono (born 1944), who was in Tokyo when the disaster occurred had almost given up hope on continuing the business after witnessing the enormous damages. From immediately after the disaster, Mr. Michihiro Kono (born 1973), the current president who was left in charge of the company in the president's absence, received moral and material support from clients inside and outside the prefecture, and from local business owner's networks such as small-and-medium-sized business associations. He calmly proceeded with various procedures such as applying for grace of loan repayments and employment adjustment subsidies. He was introduced to Ando Brewery (located in Kakunodate-machi, Daisen City, Akita Prefecture) and Nichinan Brewery (located in Nikaho City) through an associate who was advising them on brewing technology. After informing them of Yagisawa Shouten's miso and soy sauce production methods, these companies agreed to provide the Original Equipment Manufacturer (OEM) supply. Yagisawa Shouten was able to maintain its connections with former customers and a system was established which allowed them to develop new business. On April 1, 2011, Mr. Michihiro Kono assumed the presidency in place of his father, and with the addition of two new employees, opened a new storehouse and business office at a former sewing plant at neighboring Daito-cho, Ichinoseki City and recommenced business operations in May 2011.



Photo 2 (Mr. Michihiro Kono, president, Yagisawa Shouten, Co., Ltd.)

Rebuilding a miso and soy sauce brewery would require a huge sum of capital and a long period of time until products would be ready for shipment. It was decided for the time being to sell the products which were supplied to them, and also to begin building a brewery to produce dipping sauces and sauces using these supplies as raw materials. Necessary capital was expected to be 23 million yen as brewery facility costs such as for the boiler, line equipment, and boiler installation, and 27 million yen to purchase product raw materials for one year. Yagisawa Shouten at this point was already in a state of insolvency as a result of having lost everything in the disaster and did not have the option of applying for a new bank loan. A civil servant employed by the Miyagi Prefectural government with whom Kono had past dealings introduced him to a community space in Sendai called Itsutsubashi (FiveBridge) which facilitated collaboration between industry, academia, and government. Discovering that capital support for disaster-stricken companies was being considered using a microfinance mechanism, he decided to receive funding. Yagisawa Shouten along with five other companies in Miyagi Prefecture received approval as the first recipients of the “Disaster Site Support Fund” through management by Tokyo-based Music Securities, Inc.

Fund raising for a total 50 million yen began from April 25, 2011 and capital procurement proceeded steadily.

Initially, Yagisawa Shouten planned to build a stand-alone dipping sauce and sauce Plant. After getting it off the ground, the company planned to recommence brewing operations on their own in three to five years time. From June 2011, however, applications began to be accepted for a government-subsidized project to restore and build small-and-medium-sized business group facilities. Deciding to accelerate their schedule to build a soy sauce plant, they applied for this government subsidy and their plan was accepted. Consequently, it was decided that a dipping sauce and sauce plant would be built in addition to the soy sauce plant on the site where an elementary school had been located in Daito-cho, Ichinoseki City, and construction commenced from March 2012. It was estimated that the total project cost to build the soy sauce plant would run as high as 350 million yen. But as these subsidies would not cover all costs, an additional 100 million yen had to be raised through the Disaster Site Support Fund to cover plant construction costs, maintenance costs for production equipment, and immediate funds to purchase raw materials.



Photo 3 (Rikuzen Takata City where everything was destroyed including Yagisawa Shouten's plant and storehouse)

1-2. Reminiscent Future Creation Corporation

The Reminiscent Future Creation Corporation is a community company established on September 23, 2011 by small-and-medium sized business owners in the city for the purpose of restoring industries in Rikuzen Takata City which suffered devastating damage due to the tsunami. The company is represented by Mr. Mitsuru Tamura (born 1947) who operates a driving school and serves as the representative director of the Iwate Association of Small-and-Medium-Sized Businesses and its Kesen district leader. While a certain level of results were achieved in repairing the local infrastructure a half year after the tsunami, the decision to set up the Reminiscent Future Creation Corporation was born from a sense of crisis that the city was making little progress with its industrial recovery and would be unable to stave off the population outflow and decline of the local economy and community. The city's administrative functions had declined significantly as nearly a third of all Rikuzen Takata city employees (113 people) were victimized by the disaster and city hall had been completely destroyed. The city employees who remained were swamped with distributing food and relief supplies and arranging sites for shelters and temporary housing, and had been unable to think about a grand design for post-disaster town reconstruction for at least a few months after the disaster occurred, and were unable to adequately provide advice to business owners and operators.

Takata Driving School (Rikuzen Takata Driving School) operated by Mr. Tamura was spared from tsunami damage as it was located on high ground. The wide level ground used for driving lessons was provided as parking space and night camping grounds for police and firefighters dispatched to the area to conduct rescue activities, and the building was opened to the public as a shelter. Mr. Tamura, who had acquired a trustworthy reputation for his activities to revitalize the local economy through his business activities, received visits by many young business owners. Various people gathered there and information was collected for of period of three to four months after the disaster occurred. Various ideas and opinions were exchanged on restoring the damaged town and rebuilding the economy, such as building a safe city which would never again produce tsunami victims, and establishing an independent distributed energy supply station as a countermeasure to the long-term power supply stoppage that they experienced. In response to Mr. Tamura's calls, specific plans were considered and devised.



Photo 4 (Mr. Tamura, president, Reminiscent Future Creation Corporation)

As a part of a Cabinet Office initiative called the “Local community employment creation project,” it was decided that the internship program to support East Japan Great Earthquake restoration “A trial in Tohoku to take on the challenge and build the future together” would begin from June 10, 2011. Young people gathered mainly from the West Japan area, staying at the Rikuzen Takata Driving School boardinghouse for two weeks to participate in internships at various companies in the city. Socio Engine Associates, a consulting company specializing in social business in Tokyo, provided support and considerable suggestions toward the discovery of various issues and themes such as alternative energies and social entrepreneurship, and the visualization of a grand design for restoration plans which had been discussed on numerous occasions until then. The cooperation of an architect was

requested to provide a drawing for a land use planning proposal, and in response to depopulation and aging, seminars were subsequently held by inviting business people, specialists, and administrative officers with achievements in biomass energy utilization and community building.

In July 2011, the “Rikuzen Takata conference on creating the future for one thousand years” was established mainly by local companies such as Takata Driving School, Yagisawa Shouten, Hashikatsu Shouten, and Hasegawa Kensetsu Co., Ltd. creating a framework for periodically discussing restoration ideas at the Rikuzen Takata Driving School. Although this conference was initially held only for the purpose of proposing a new restoration plan to the city, they came to the conclusion that a company which could create businesses was necessary to swiftly restore the city. The new company was established by eight founders with Mr. Tamura acting as president, and Mr. Hiroaki Machino (president of Socio Engine Associates) acting as vice president.



Photo 5 (Rikuzen Takata City restoration plan drawing)

Among projects to resolve social issues which had been under consideration in the past, projects which particularly led to the creation of employment and new businesses were selected. Eight business projects are being promoted including the Natural capital town project, Reminiscent future shopping mall project, Traditional technology innovation project,

Green service project, Disaster prevention memorial park project, Social services project, ICT project, and the Kesen social entrepreneurship training project. The project to restore the shopping mall has been focused on as a specific activity. Land covering a 4600m² area adjacent to supermarket Maiya's "Taki-no-Satomise" store was rented, and activities are being undertaken to construct and operate a temporary shopping mall where approximately 20 shops will move into. They include eating and drinking establishments, clothing stores, and general goods stores such as cafes, bars, confectionary stores, and sushi shops. The construction of a lodge using pre-cut wood is being planned as lodging for people visiting Rikuzen Takata who are supporting reconstruction and conducting inspections and surveys. Lodging facilities such as hotels and Japanese-style inns in Rikuzen Takata City had been completely destroyed by the tsunami and had yet to be reconstructed as of April 2012 a year after the disaster. Visitors to Rikuzen Takata now have to spend several hours commuting from neighboring inland cities such as Tono City, Ichinoseki City, or Morioka City, so there is a strong need for lodging facilities. However, these buildings required the construction of disaster prevention structures and site preparation of mountainous areas, and as priority was given to building housing for residents victimized by the disaster, there were slim expectations that these buildings would be reconstructed over the next several years. As construction companies were responding to reconstruction demands and were unable to spare the manpower, it was decided that self-built wooden buildings would be used which could easily be constructed without having construction skills. Beginning from these kinds of businesses and gradually increasing earnings and creating jobs, they eventually plan to enter industries such as forest biomass resources, the construction of solar power generation facilities, tourism, and traditional crafts.

2. Kamaishi City

Kamaishi City is situated at the center of Rikuchu Kaigan National Park in south-east Iwate Prefecture and has a typical sawtooth coastline. It was given status as a city in 1937, and its current city limits have been formed after neighboring towns and villages were consolidated in 1955. It is the birthplace of a modern iron and steel industry and thrived as the so-called “company castle town” of Nippon Steel Corporation. Its population at its peak exceeded 90,000 people⁷. The population began to decline when its blast furnace operations shut down in 1989, falling to 39,578 people in 2010. The estimated population after the disaster as of February 1, 2012 was 37,157 people. Main industries in the city include Nippon Steel Corporation’s Kamaishi Works, SMC Corporation’s Kamaishi Plant which manufactures electronic parts, and the fishing and seafood processing industries on Sanriku coast. It is ranked 7th in Iwate Prefecture in terms of overall shipment value of manufactured goods and is top among coastal municipalities⁸.

The Great East Japan Earthquake caused 888 deaths, 158 missing, and 3,648 houses destroyed⁹. The city center facing Kamaishi Bay was buried in a vast pile of debris, and the Unosumai district facing Otsuchi Bay in the north suffered catastrophic damages with everything from the train station and shopping mall being washed away. Approx. one year after the disaster, several buildings in the city center which were not completely destroyed were reconstructed and their business operations have recommenced. However, seafood processing facilities, etc. facing Unosumai district and Kamaishi Bay have had to operate out of temporary buildings. The estimated amount of debris is 762,000 tons, and there are many buildings, etc. which have yet to be demolished. The debris transport rate including these buildings as of March 12, 2012 one year after the earthquake disaster is 50%¹⁰.

In the Kamaishi City Post-Disaster Town Reconstruction Plan¹¹ released on December 22, 2011, the “Scrum Kamaishi Reconstruction Plan” was formulated which consisted of a drastic conversion to a disaster-resistant urban structure focusing on construction of a

⁷ The population is 12,000 when inhabitants not registered as residents are included.

⁸ http://patmap.jp/CITY/RANK_FULL/03/05/FULL_SALES.html patmap municipality information, Iwate Prefecture overall shipment value of manufactured goods, etc. (in units of 1 million yen) (manufacturing industry related data)

⁹ http://mainichi.jp/select/jiken/graph/sinsai_zusetsu/ Iwate disaster prevention information portal, List of human casualties and building damage as of March 15, 2012, 17:00.

¹⁰ <http://www.env.go.jp/jishin/shori120312.pdf> Progress of disaster waste disposal by the Ministry of the Environment and coastal municipalities. (March 12, 2012)

¹¹ <http://www.city.kamaishi.iwate.jp/index.cfm/10,18690,78,447.html> Kamaishi City, regarding the formulation of the Kamaishi City Post-Disaster Town Reconstruction Basic Plan.

bay-entrance breakwater, a storm surge barrier, and upland relocation, as well as reconstruction support and revitalization measures focused on rebuilding of the local infrastructure and local economy.

2-1. Ono Foods Co., Ltd.

Mr. Akio Ono (born 1956), president of Ono Foods Co., Ltd. was first employed at the major supermarket chain JUSCO Co., Ltd. after graduating from university. Returning to his hometown of Ryoishi-cho, Kamaishi City to take over operation of his family's seafood processing business after his father suddenly passed away, he established a business management company in 1988 consisting of 13 employees including part-time workers on the basis of the family's manufacturing and sale of salted dried squid. The establishment coincided with a period when the proportion of cooked rice in school lunches was being increased, and salmon fillets began to sell in high volume just after the company's establishment. As the gyudon (beef-on-rice dish) chain store Yoshinoya added a morning set meal consisting of grilled salmon to their menu, Ono Foods was tasked with the job of cutting the salmon into fillets, grilling them, and shipping 5,000 grilled salmon fillets everyday. Laying a total quality control framework from the raw materials to the final product, the company has grown into a supplier of cooked products with a focus on grilled and boiled fish which takes advantage of the freshness of the raw materials.



Photo 6 (Mr. Akio Ono, president, Ono Foods Co., Ltd.)

Eventually, a new management strategy was needed due to the expansion of low cost product imports from overseas and the intensification of price competition, and a policy to enhance marketing activities toward the consumer was formulated. However, even given a transition to consumer-oriented products, in order to respond to increased selling and administration costs, a drastic revision of management was necessary which included budgeting of projects, thoroughgoing financial management according to project, and a revision of the cost structure. At the same time, Ono Foods acquired know-how relating to the mail-order business, online sales, and customer information management, and attempted to break free from a “small profits and quick returns” business structure that many seafood processing companies subscribed to. They achieved sales of 1.44 billion yen immediately before the disaster and annual turnover was about 1 billion yen in 2006 when the company entered the mail-order business. Although their sales target was 1.5 billion yen until the end of the 5 year plan that they established in 2006, this was a figure that they could have achieved if they had continued operating as usual for the remaining 19 days without being victimized by the disaster on March 11.

Industry sales where products are sold through a wholesaler accounted for about 65% of sales figures, and sales to individual customers accounted for 35% of sales figures. While the gross margin ratio for industry sales was about 23–24%, the gross margin ratio for

mail-order sales to individual customers rose to 55%. The initial financial burden would of course be heavy in the case of the mail-order business, as there would be considerable costs for advertisements etc., but these costs were expected to gradually decrease as repeat customers increased. The number of repeat customers reached around 4700 people as of July 2011.



Photo 7 (Top page of mail-order site “Sanriku Onoya”)

When the disaster occurred, there were two Plant buildings on either side of the head office building at Kamaishi, as well as another Plant in Otsuchi which had just been built at a cost of 270 million yen and began operating on February 25, 2011. Otsuchi Plant, including the building and storehouse, which were located near the ocean of Otsuchi Bay had been completely washed away, and the two plants at Kamaishi that were still remaining suffered heavy damages. Book value of damages to the plants and manufacturing equipment was 380 million yen, and destruction of warehouse stock was 70 million yen, together amounting to 450 million yen. The majority of this amount had been procured for the purpose of enhancing the main-order sales route, and as a result, a large amount of cash was locked-up. Of their 102 employees¹², two died. As all production facilities had been lost and sales was non-functional, all employees¹³ were laid off with the exception of six workers absolutely needed to continue business operations.

Later, it was discovered that one of the two plants at Kamaishi could be reused if repaired,

¹² Of the 102 people, 12 were trainees from China and returned home immediately after the disaster occurred.

¹³ Excluding the Chinese trainees, 90 people remained and 84 of them except for 6 were laid off.

and that several pieces of equipment could be made operable with simple electrical system repairs. They included a tunnel freezer¹⁴ which cost 30 million yen and an air retort¹⁵ which cost 17 million yen. Reconstruction of the Plant was completed by June 20, 2011, approximately 50 employees were re-hired and production and sales recommenced. Although repeat customers of the mail-order business had waited for the reopening of business operations, customers of the industry sales business had switched over to other suppliers. Consequently, a month after recommencing business operations, sales continued to be non-functional. Due to the rise in the exchange rate of the yen after the earthquake disaster, there were dealers who switched to overseas suppliers, and restoring sales in this area required time.

The next issue which became apparent had to do with manufacturing capacity. As production which had formerly been performed at three plants was now being performed at one Plant, production was unable to meet sales recovery levels. In responding to these demands, a day and night two-shift working system was instituted, and production lines were increased by changing the location of equipment. The first public offering for the Government-Subsidized Project for the Restoration and Building of Small-and-Medium Sized Enterprises' Group Facilities was conducted in June 2011. The company applied for this subsidy after preparing a plan to construct a new Plant on the 900m² site of the Plant remains next to the head office which had been demolished and made into a vacant lot. They successfully received approval for their plan. A total budget of 430 million was estimated for the reconstruction which included construction of a new Plant, 106 million yen of which was expected to be covered by public funds. The new Plant which began construction in November 2011 was expected to be completed in April 2012.

¹⁴ A machine in which the belt conveyor from the entrance to the exit is covered with a tunnel within which prepared fish and vegetable dishes are rapidly frozen.

¹⁵ A machine which steam boils fish until the bones are soft.

3. Yamada Town

Yamada Town is a town located along the central coast of Iwate Prefecture facing the Pacific Ocean. It is situated next to Miyako City to the north, and Otsuchi Town to the south. Its main industry is fishing with a focus on aquafarming, making use of the sawtooth shaped coastlines of Yamada Bay and Funakoshi Bay. Small and medium-sized plants can be found scattered among the mountains. The town organization was implemented in 1889, and the neighboring five villages were consolidated in 1955 to form its current city limits. While there were periods in the 1980s when the population exceeded 25,000 people, the population in 2010 was 18,625 people. The population estimate after the earthquake disaster as of February 1, 2012 was 16,758 people.

604 people were killed and 153 people went missing due to the tsunami following the Great East Japan Earthquake. The town suffered devastating damage with 3,167 houses destroyed¹⁶, and fires breaking out immediately after the tsunami. The amount of debris was estimated at 399,000 tons¹⁷.

Yamada Town's basic restoration policy is as follows: after constructing a storm surge barrier which can withstand the height of the Meiji Sanriku Tsunami, emergency shelters, and disaster prevention facilities along the Sanriku Expressway, and while maintaining the present location of existing villages, fishing ports, and related facilities which escaped the disaster, work to ensure safety by raising the levees of affected residential areas, keep new development on hilly land down to a required minimum, and strive for compact urban development with a focus on Yamada Bay and Funakoshi Bay¹⁸.

3-1. Kawahide Co., Ltd.

Kawahide Co., Ltd. started out as a family seaweed processing business in the early Showa period (1926–1950) at Oura District, Yamada Town. The company moved to the current location of its head office in Sakaida-cho, Yamada Town in 1965, and was incorporated in 1967. In addition to seaweed processing, the company expanded its operations to the processing of salmon, salmon roe, abalone, sea cucumbers, scallops, squid, crabs, and sushi toppings, and has to this day been supplying fresh seafood both

¹⁶ http://mainichi.jp/select/jiken/graph/sinsai_zusetsu/ Iwate disaster prevention information portal, List of human casualties and building damage as of March 15, 2012, 17:00.

¹⁷ <http://www.env.go.jp/jishin/shori120312.pdf> Progress of disaster waste disposal by the Ministry of the Environment and coastal municipalities. (March 12, 2012)

¹⁸ http://www.town.yamada.iwate.jp/20_fukkou/index.html Yamada Town, restoration activities.

domestically and overseas. After the current president, Mr. Hidenori Kawabata (born in 1955), took over the business, for approximately 15 years until immediately before the disaster, the company which operated out of two plants with an annual turnover of about one billion yen rapidly grew into a company with an annual turnover of 6.3 billion yen and 250 employees. The number of production bases also increased to four locations in Yamada Town¹⁹, four locations in Miyako City²⁰, one location in Hachinohe City²¹, and four locations in Hokkaido²². While Kawahide proactively developed its business, it is also worth mentioning that the company was thoroughgoing in its taste and quality control. In 1999, it was the first seafood processing facility with local capital to receive HACCP certification, and has introduced world standard sanitary management. The company has dispersed its production bases throughout multiple regions from Hokkaido to Iwate Prefecture in order to maintain the taste and freshness of its products at optimal condition, and to implement reliable traceability. It also introduced the Cell Alive System (CAS) freezing technology as soon as it became available for practical application, establishing a system of freezing and processing fresh raw materials which had just been landed and delivering it to the consumer.

The tsunami accompanying the Great East Japan Earthquake damaged seven of the company's plants (four plants in Yamada Town, two plants in Miyako City, and one plant in Hachinohe City), and killed five employees. Damage to buildings and production equipment amounted to approximately two billion yen, and damage to inventory due to flooding and power failure amounted to one billion yen. At the time, president Kawabata was at Tokyo station on his way to Vietnam on business, and returned to Yamada Town two days later on March 13, 2011. While damage to the Hachinohe Plant was relatively slight, the prospects for the company's main production plants at Yamada Town and Miyako City to recommence operations were not hopeful. As there were no raw materials, processing facilities, or work at the disaster-affected areas, 50 employees were temporarily laid off.

¹⁹ At the location of their head office in Yamada Town, there was a seaweed, salmon, and salmon roe processing plant, and a sanitary plant to process scallops, octopus, abalone, and squid as sushi toppings.

²⁰ There is a plant in Miyako City which mainly processes Pacific Saury, and in the former Niisatomura which was amalgamated into Miyako City, there is Hikime Plant which processes Hokkaido scallops and Chinese sweet shrimp.

²¹ Squid and crab are main products.

²² Scallops and hen clam are mainly processed at 4 locations of Tomakomai City, Abashiri City, Yubetsu Town, and Engaru Town.



(Kawahide's main plant at Yamada Town)

Meanwhile, plants which escaped damage swiftly transitioned to a status of increased production and recommenced supply of consumer-oriented products such as processed seaweed products, soy marinated salmon roe, and toppings for *kaisendon* (bowl of rice topped with sashimi) from July 2011. While we have already mentioned how Kawahide plants were dispersed throughout numerous regions in order to optimize taste and quality control, the distribution of their production bases was also effective in terms of dispersing damage due to the tsunami. It is also easy to imagine how their undertakings to acquire the Hazard Analysis and Critical Control Point (HACCP) certification led to raising the management skills and awareness of executives at each base and was of great benefit to restoration efforts. The company's proposed business plan was accepted for the Government-Subsidized Project for the Restoration and Building of Small-and-Medium Sized Enterprises' Group Facilities after its first public offering in June 2011. Prospects for the procurement of the capital needed for facility investment looked bright, and the company began activities to prepare for the full-scale recommencement of business operations.



(Mr. Hidenori Kawabata, president and representative director, Kawahide Co., Ltd.)

Dried abalone is one of the most well known luxury food items in Chinese cuisine, and it is said that abalone produced in Iwate Prefecture has established a top quality brand-image²³. In particular, dealers in Hong Kong have a saying “When you think of Iwate, you think of abalone, and when you think of abalone, you think of Iwate.” It is no exaggeration to say that it is Kawahide which has played a large role in raising the awareness of Sanriku seafood by increasing the articles it exports such as dried sea cucumber and dried scallops. Reflecting the rise in the value of the yen last year and the accompanying loss of international

²³ Iwate International Association (2009), “Recommencing trade with China on their own. Kawahide Co., Ltd., president and representative director Hidenori Kawabata,” in *Iwate international Exchange*, Volume 68, page 7, March 2009.

competitiveness centered around exported industrial products, Japan's seafood is attracting media attention as it is barely maintaining its competitive advantage relative to other countries. Kawahide, which has been supplying seafood with top level taste and quality standards in the world through a top level sanitary management system in the world is a front runner in this market. The company's next challenge will be none other than to compete on the world stage. In the case of Kawahide, we can see that it has expanded its business areas while continuing to make management improvements. Based on this high growth potential, has provided the local economy with employment and income which includes foreign money. It does not have an image of a typical seafood company in a regional city which is caught in a negative cycle of being protected by various protections and regulations and engaging in low price completion among weak players.

3-2. Gotokumaru Suisan Co., Ltd.

Gotokumaru Suisan Co., Ltd. is a food processing and sales company which was established with 2.5 million yen in capital in Yamada Town in February 2012. The company was founded by five people: Mr. Atsushi Kawaishi, president of Kawaishi Suisan Corporation; Mr. Toshi Kimura of Kimura Shouten Co., Ltd.; Mr. Keizo Mase, managing director of Bihan Processing Center; Mr. Takayuki Sano of Sano Fish Shop; and Mr. Satoshi Masuya of Onamiya. The company was established for the purpose of re-establishing livelihoods that were lost due to the earthquake disaster. Apart from the joint sale of the products that they respectively produce, they are involved in the joint development of new products. Their initial plan is to unify the customer management of each of their companies and engage in internet sales and sales activities at joint direct sales stores. Eventually, they wish to create new jobs in the community using their jointly-owned processing facilities and sales stores as bases of operation.

Founders	Products handled
Kawaishi Suisan Corporation Atsushi Kawaishi, president	Seafood processing, scallop shipment, scallop processing, sea cucumber, abalone, salmon, salmon roe, scallop gratin, etc.
Kimura Shouten Co., Ltd. Toshi Kimura, president	Seafood processing, salted squid, squid sake bottle, Pacific saury in pickled sliced radishes, salmon rolled in kelp
Bihan Processing	Seafood processing, salted squid, salted salmon, salted

Center Keizo Mase, managing director	sea urchin, salmon roe marinated in soy, pressed squid, marinated seasonal salmon
Sano Fish Shop Takayuki Sano	Fresh fish sales, seafood processing, salted salmon, salted salmon roe
Onamiya Satoshi Masuya	Miso production, Matsutake mushroom wholesale

(Founders and their respective business overviews)

The new company's main businesses include the four following projects: new product development and sales which Mr. Kawaishi is in charge of; mail-order sales which Mr. Keizo Mase is in charge of; event sales which Mr. Toshi Kimura is in charge of; and the joint store business which has been adopted as a future agenda.

The development and sales of new products is an attempt to discover new possibilities for local resources through a collaboration of products and techniques made and used by each company. A specific goal of this project is to create a New Year's dish using only ingredients from Yamada Town and transmitting it within and outside the prefecture. In the process of conceiving a recipe for a New Year's dish, menu items which can be sold as a separate item will be successively commercialized and sold. The new product will be named after Oshima Island in Yamada Bay, bearing the name of Oshima's pseudonym "Dutch Island" which is a symbol of Yamada Town, and will be developed as a brand of Gotokumaru Suisan. The selection of ingredients and planning of cooking method was supervised by the high class Japanese inn "Shikitei" located at Tsunagi Onsen Hot Springs in Morioka City, and a sales target of 10 million yen has been set for FY 2013.

For the mail-order business, each company will contribute a list of their customers, the product line-up will be made more substantial, new products will be developed by combining existing ones, and will continue to respond to supporting the restoration of Sanriku's hearty seafood market. In addition to the direct mailing of catalogs to customers, they are also scheduled to embark on mail-order sales over the internet. They expect to achieve a 40 million yen sales target in FY 2013. The goal of event sales will be to travel to large consumption regions such as the Tokyo metropolitan area and transmit the appeal of Yamada Town through product sales. They expect to participate in 20 special events a year and to achieve sales targets of 1 million yen per event for a total of 20 million yen.

With respect to the joint store project, they will establish a joint business base in Yamada Town with the goal of restoring the local "food" based economy by creating jobs, creating a base for tourism, and contributing to local production for local consumption. They aspire to

see the opening of a “seaside station,” a sushi shop, a guest house, and antennae shops. They plan to procure the capital required for construction through the Government-Subsidized Project for the Restoration and Building of Small-and-Medium Sized Enterprises’ Group Facilities. The current status of these 4 projects as of May 2012 is as follows. The seaside station will be positioned as a joint store which will also function as a tourist base for Yamada Town and will sell primarily group products. The sushi shop will offer sushi using Yamada Town ingredients and menu items utilizing processed foods produced by each company. The guest house with a total of 20 rooms is scheduled to be constructed anticipating demand related to reconstruction. Negotiations with a major leasing company are underway. An antennae shop for Yamada Town is planned to be opened in the Tokyo metropolitan area. Annual sales targets of 20 million yen for the seaside station project, 40 million yen for the sushi shop, 20 million yen from the guest house, and 80 million yen from the antennae shop have been established.



(Gotokumaru Suisan)

4. Ofunato City

Ofunato City is located on the Pacific coast in southern Iwate Prefecture and belonged to the old Date clan together with Rikuzen Takata City and Sumita Town. It was organized as a city in 1952, and Ofunato's current city limits were formed in 2001 when Sanriku Town was merged into it. While the city included the two urban areas of Sakari district which was the center of administration and transportation, and Ofunato district which was the center of commercial and service industries and fishing and seafood industries, most of the buildings in Ofunato district were washed away by the tsunami accompanying the Great East Japan Earthquake. Ofunato is one of the preeminent industrial cities in the prefecture for ceramics, wood working, fishing and seafood, and is the location for some large-scale production facilities such as Taiheiyo Cement Corporation's Ofunato Plant, Kita-Nihon Plywood's Ofunato Plant, Ofunato Port, fish markets, and seafood processing plants. Its population peaked at 50,132 people in 1980, and fell to 40,738 people in 2010.

The Great East Japan Earthquake caused extensive tsunami damage to Ofunato-cho district, Massaki-cho, Akasaki-cho, and the former Okirai Sanriku Town, with 340 deaths and 84 people missing. The number of houses destroyed amounted to 3629 houses, and the number of evacuees exceeded 8000 people at one time. Ofunato Station on the JR Ofunato Line, as well as the shopping mall on the east side of the station were completely destroyed, and storm surge barriers and breakwaters continued to collapse. There were also districts which suffered hardly any damage like Yoshihama and Koishihama in the former Sanriku Town which were moved to high ground after the Meiji and Showa era tsunamis. While the disaster produced an estimated 756,000 tons of debris, 30.8% of it has already been disposed of²⁴.

Ofunato City office escaped damage as it was located on the high ground of Sakari-cho district. On March 23, 2011, a special department to promote restoration after the earthquake disaster called the Disaster Recovery Office was set up, and restoration plans and project proposals were considered one after the other. In April 2011, a basic plan for disaster recovery was prepared for Ofunato City, which had a strong characteristic as a restoration project through public participation. Various events were held successively from May to September such as a public workshop, a district council on restoration efforts, and a children's restoration conference. The Ofunato City restoration plan was formulated and announced by the end of October.

²⁴ This was because Taiheiyo Cement Corporation's Ofunato Plant had incinerated the debris or made it into raw materials for cement. This is in stark contrast to Miyako City, Kamaishi City, and Otsuchi Town which produced the same amount of debris but whose processing and disposal ratios remained at 3.1%, 2.0%, and 0.4% respectively.

4-1. Maiya

Maiya Co., Ltd. is a food supermarket chain focused in the coastal area of Iwate Prefecture with head office in Ofunato City. The company has 1,200 employees²⁵ and 96 million yen in capital. Of the 16 supermarkets it had at the time, 6 including the head office were completely destroyed by the tsunami. The continuity of their business was put at risk as the damage was so extensive. Although all employees who were working that day survived, 16 employees who were not working that day did not survive. Within these circumstances, the Ofunato Inter Store which was situated on high ground and escaped damage, parked a station wagon near the entrance and used its head lights to light up the store interior from the evening of the disaster due to power outage. As the cash registers could not be used, the store continued to sell its products at a uniform price such as at 50 yen and 100 yen. They set up prefabricated stores in areas where their stores had been damaged by the disaster and responded to consumer needs. While it goes without saying that the tsunami-affected areas along the Pacific coast suffered extensively, even in inland municipalities which did not suffer direct human casualties or destruction of buildings etc., the distribution of food and living necessities became very difficult due to the paralysis of logistics accompanying the power outage and lack of fuel. For the reason that once the items were sold out there would be no products to line their shelves with from the following day, there was no end to examples of supermarkets and convenience stores limiting the number of items which one person could buy, and stores which closed their doors early.

²⁵ Including part-time workers.



(Mr. Haruo Maiya, representative director and president, Maiya Co., Ltd.)

After the product supply routes of many local supermarkets in the north-east region were cut off, businesses one after another were finding it difficult to continue their operations. In these circumstances, Maiya decided to open its stores and continue to sell its products from the day of the disaster. While it goes without saying that Maiya was motivated by a sense of duty as it was a local supermarket bearing the responsibility of supplying the local food and daily necessities, CGC Japan Co., Ltd., a mass-selling organization to which nationwide small-and-medium-sized supermarkets are affiliated to, backing Maiya up by supporting their supply system was also an important factor²⁶. It can be said that Maiya's decision was grounded on the peace of mind that if they kept their stores open, CGC would deliver the products and respond to consumer needs. A system was in place to ensure that when an earthquake above a certain scale occurred, the head office could engage in procuring "emergency response products" from the maker or wholesaler without waiting for an order from affiliated stores. Just as how potable water, instant noodles, boil-in-the-bag rice, *natto* (fermented soy beans), and milk, among other products are supplied to north-eastern Japan from all over the country, a rearrangement of supply was implemented. There was also cooperation between affiliated stores such as the well-known case of Harashin Narus

²⁶ CGC Japan has a membership of 225 companies as of May 1, 2012. It operates a cooperative purchasing mechanism with annual total membership sales of 4.2276 trillion yen and 3717 total number of stores. Maiya became a member in 1979.

Holdings Co., Ltd., based in Niigata, supplying affiliated stores in Iwate and Fukushima Prefectures with 14,000 bottles of 2 liter bottled water and 19,000 rice balls. As Harashin Narus Holdings had received similar support from nationwide affiliated stores during the 2007 Chuetsu Offshore Earthquake in Niigata Prefecture, the company correspondingly took immediate action. Other supermarket chains such as Oban Co., Ltd. in Tendo City, Yamagata Prefecture, Maeda Co., Ltd. in Mutsu City, Aomori Prefecture, and Takayanagi Co., Ltd. in Daisen City, Akita Prefecture also delivered their own inventory to disaster-stricken affiliated stores. Through CGC, affiliated stores have been meeting with each other frequently, which has played a major role in facilitating the early recommencement of business operations. Information has been shared on past precedents and the series of processes until the recommencement of business operations such as the provision of support through product supply, the ascertainment of employee safety, understanding the damage situation, and restoration of store operations²⁷.

In contrast to Ofunato City where many commercial facilities escaped damage and still remained, in Rikuzen Takata City, supermarkets, large mass retailers, convenience stores, and small-and-medium-sized businesses were completely destroyed. While staple foods and clothes etc. were being distributed as relief goods, the supply of daily foods such as vegetables, condiments, tofu and natto had been suspended. Soon after the disaster, Maiya opened two prefabricated stores at two locations in the city and promptly recommenced the supply of products. Maiya also supplied products to food vans which were having difficulty procuring product supplies, and there was also a period when they were employed as franchisers displaying the Maiya signboard and stickers²⁸. At Rikuzen Takata City, as most of the urban area had been flooded and the formulation of a basic town development plan and land use plan including for residential areas was called for, they were faced with the need to respond with temporary stores. Including the stores that Maiya set up in March 2011, while the idea of a temporary store may produce images of an outer wall made from one thin steel board, the store which was opened at Takekoma-cho, Rikuzen Takata City on August 4, 2011 was a large-scale shopping center approximately 8,000m² including the parking lot. While it looks like a temporary store from the outside, it is no different from existing permanent stores once you get inside. There are orderly laid out showcases equipped with refrigerating and freezing functions, and customers can do their shopping while pushing a shopping cart. This commercial facility accommodates supermarket Maiya's "Taki-no-Sato" store²⁹, the confectionary shop Sanriku Kasho Saito, a mobile phone au shop, a Cleaning

²⁷ Nikkei Marketing Journal, May 23, 2011, page 1.

²⁸ Morioka Times, April 2, 1011.

²⁹ The temporary shopping center which accommodates Maiya's "Taki-no-Sato" store has its head office in Osaka, and the very experienced Daiwa Lease Co., Ltd. performed the

Mama store, and the Takata Kumon School, as well as ATMs for The Bank of Iwate and The Kita-Nippon Bank³⁰.

A few months after the earthquake disaster, with only sales from the 10 stores which were not destroyed by flooding and supported by a hearty consumer appetite, sales figures from the previous year were exceeded. Following the opening of the large temporary store in Rikuzen Takata City, they are proceeding to open new stores focused in the Rikuzen coastal area including in Miyagi Prefecture at several times the speed of a usual year. From 2012, to support the elderly living in temporary homes, the company collaborated with a major telecommunications company to distribute tablet devices to approximately 180 homes in Otsuchi Town, Iwate Prefecture. Orders for approximately 5,000 food items and miscellaneous daily goods were collected, and they launched a delivery service using food vans. In the meantime, they are preparing an emergency system by distributing head office functions and logistics bases inland.

Compared to major companies like Aeon Co., Ltd. and Seven & i Holdings Co., Ltd. which have stores on a nationwide scale, the business size of local supermarkets like Maiya is very small. And if we consider the management resources lost due to the tsunami, it is not difficult to imagine how much support was needed for the continuation and restoration of their business. However, when a company's capital exceeds 50 million yen, it is no longer classified as a small or medium sized business, but as a large business, and cannot benefit from the generous and abundant policy measures provided to small-and-medium-sized enterprises. In moving business bases, there were more than a few cases where swift deployment was difficult due to various issues relating to land use according to the reconstruction plans, as well as restrictions according to the Large-Scale Retail Stores Location Law. By opening their store and continuing to supply food and daily necessities even while suffering extensive damages, Maiya's contributions to the local economy and community are not small. It is not difficult to imagine that its actions inhibited the opportunistic withholding of goods and price gauging, and Maiya's ability to pull in customers created business opportunities for surrounding businesses.

Fortunately, there were no problems in fund raising. As business got on track reflecting a rise in consumption demand, a large amount of revolving funds were generated, and it seems that multi-store expansion utilizing revolving funds is succeeding. Problems have also occurred where, due to restrictions provided by the urban plan and the Large-scale Retail Stores Law, large stores such as supermarkets were opened later than independently

construction of the temporary housing after the Hanshin-Awaji Earthquake. Construction work began on June 4, 2011, work was completed on July 31, and the store opened on August 4 ("Rebuilding local bases" in Nikkei Architecture, August 25, 2011 edition, page 20).

³⁰ Iwate Nippo, August 5, 2011.

operated stores and temporary stores. As a result, the pedestrian traffic in the business region which was initially formed with a focus on the latter types of stores changed due to the opening of large stores thereafter, causing smaller businesses to close down in a very short period of time. When we look at the example of Maiya in Takekoma-cho, Rikuzen Takata City or the supermarket Bihan-Plaza in Yamada Town, there is a greater merit for the consumer, merchants, and local community to first open a food supermarket with the ability to pull in customers and then for privately operated stores to gather around it to form a shopping complex. If there is a legal system that is obstructing the formation of such a shopping complex, then it can be said that the introduction of a special zone system to inhibit the effect of such a legal system is necessary.

4-2. Taiheiyo Cement Corporation, Ofunato Plant

One of the most important industries in Ofunato City is the ceramics industry (cement manufacturing) in which Taiheiyo Cement Corporation's Ofunato Plant plays a major role. It began operating in 1937 as Tohoku Cement Corporation, Ofunato Plant, and later changed its name to Onoda Cement, and then to Chichibu Onoda. It became Taiheiyo Cement, Ofunato Plant from 1998. Although the company employs only 150 workers, it has the largest scale and production volume in the Tohoku region with a site area of 70m². The Plant has three RSP burning kilns³¹ with which it burns cement for delivery after mixing limestone, coal ash, refuse incineration ash, and raw sludge mined at Ofunato quarry. Making use of its location as a coastal Plant, the company bulk loads for delivery most of the cement it produces on a dedicated tanker. Its production volume before the earthquake disaster was 2 million tons a year.

³¹ Of the three kilns, two were damaged by the tsunami.



(Taiheiyo Cement Corporation, Ofunato Plant before the disaster)

The damage was extremely great due to the plant's location near the port. In particular, as the tsunami caused sea water to enter the kiln which was burning at full operation at 1,300 degrees C, a steam explosion accompanied by a mushroom cloud covered the entire town of Ofunato, and the plant facilities were destroyed. While there were those employees who had lost family members, one week after the disaster occurred, all employees began removing the debris covering the plant and cleaning the equipment covered with sediment.

Incineration of the vast quantity of debris created by the tsunami was called for from early on, and incineration tests began from May 17, 2011. At one point, recommencing operations was considered risky and there were reports suggesting the possibility of evacuation. However, there was great demand for reconstruction after the earthquake and tsunami, such as building storm surge barriers and breakwaters, developing land and roads, and constructing buildings³². As it was certain that demand to deal with the debris far exceeded the demand from the Great Hanshin Earthquake which is said to have generated about 5 million tons of debris over a 4 to 5 year period, restoration work through the day and night was mounted with the goal of recommencing operations as soon as possible.

A problem in using debris as raw material for cement was in removing the salt matter

³² It is said there was demand for cement in the reconstruction from earthquake and tsunami damage, as well as a greater potential demand for cement due to the possibility that many road paving works would switch from asphalt to concrete due to a rise in asphalt prices accompanying the rise in fuel prices.

which was caused by the tsunami. If the salt matter is not sufficiently removed, not only will the incinerator be damaged, but will seriously effect product quality such as by oxidizing rebar used in cement structures. Therefore, a state-of-the-art salt removal line was set up on the plant premises, and the company began to receive the debris collected and separated in the city. Incineration activities began from June 2011 with 300 tons of waste processed per day, which by November increased to 500 tons per day. It was estimated that 10 billion yen in capital would be necessary to restore Ofunato Plant, and they announced on August 30, 2011 that they would implement a capital increase through public offering. 33.15 billion yen in funds were raised, 8.7 billion of which was appropriated toward the restoration of Ofunato Plant. In addition, they formed a group with 19 other companies which included local small-and-medium-sized suppliers of raw materials, machinery and equipment companies, and shipping companies, etc. and applied for the second public offering of the Government-Subsidized Project for the Restoration and Building of Small-and-Medium Sized Enterprises' Group Facilities. Their application was accepted and they received public funding support.

By November 2011, the company was able to recommence production of cement, and on December 23 delivered their first batch of cement produced since the earthquake disaster. While the company was finally able to supply their first product in 9 months, the income they earned from the municipality until then for taking charge of debris processing played a role in yielding valuable money needed for restoration works. News of Taiheiyo Cement, Ofunato Plant undertaking debris processing spread to other prefectures. Taiheiyo Cement in Saitama Prefecture, as well as Mitsubishi Materials Corporation considered accepting debris to their plants, and there was also the case of Hachinohe Cement Co., Ltd. the subsidiary of Sumitomo Osaka Cement Co., Ltd. which concluded an agreement to accept debris for a fee. While Ofunato Plant employs about 150 workers during normal periods, it is said that business is brisk with approximately 500 people coming and going who are involved in restoration works, separating and transporting debris, and operating salt removal facilities, etc.

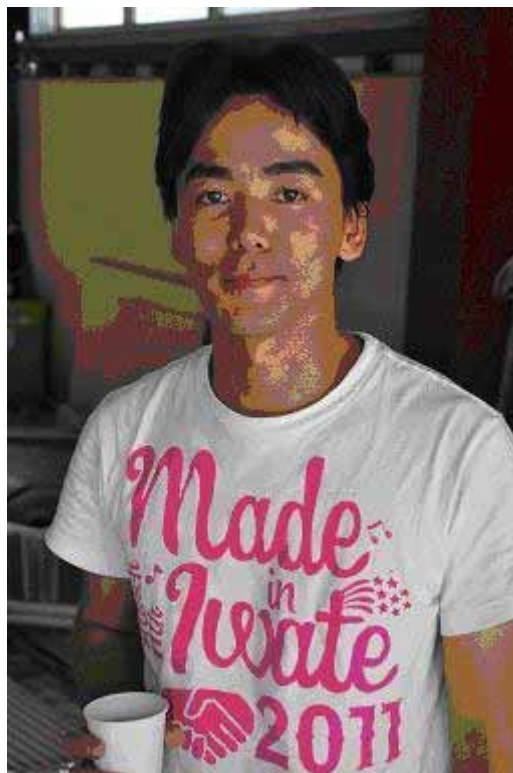
While the company had been incinerating waste which was only produced in Ofunato City and Rikuzen Takata City thus far, from 2012, Taiheiyo Cement, Ofunato Plant started accepting debris produced in Miyako District (Tanohata Village, Iwaizumi Town, and Miyako City) and Yamada Town which was transported by sea from Miyako Port. 800,000 tons³³ of the 4.35 million tons of debris generated within the prefecture is planned to be converted into cement resources, and the company expects to resume operation of all lines which had been stopped due to the disaster by the middle of 2012 and to engage in full-scale

³³ This volume exceeds the total volume of debris produced in Ofunato City as a whole.

production increase. Meanwhile, the fresh concrete made with cement produced at the plant is being transported to various locations in Ofunato City from January 2012 to be used for levee raising of the fishing pier which suffered land subsidence in time for the harvesting of farmed seaweed which begins in March.

4-3. Sanriku Toretate Fish Market

There is a company in Okirai District, Sanriku-cho, Ofunato City called “Sanriku Toretate Fish Market” which conducts direct sales of fresh fish over the internet. Mr. Kenichiro Yagi (born 1977 in Shizuoka Prefecture), after graduating from Kitasato University (which has a campus in Sanriku-cho), founded the company in this area in August 2001 through joint contribution with 5 partners. Okirai District in Sanriku-cho faces the open sea and is a good fishing ground where the Kurile Current and the Japan Current intersect. It is a district blessed with every possible fish species where the main species of fish for sale changes every month. This company developed an internet sales system on its own targeting individual consumers, and has responded to their detailed needs by accepting orders for a single fish or even half of a fish, mixing various fish species, and performing primary processing such as slicing the fish into fillets and opening and drying the fish. Before the earthquake disaster, the company had a nationwide customer network of about 5000 people, about 85% of whom were repeat customers. Although the company sometimes buys its fish from wholesalers who frequent fish markets, as they respond to orders for small lots and many different species, they frequently have producers catch their orders directly.



(Mr. Kenichiro Yagi, representative director of Sanriku Toretate Fish Market)

Another prominent feature of this company is that it is making its operations transparent from catching the seafood, stocking, processing, to sales. The process of buying the seafood, processing it, and at times embarking on a fishing boat to watch the catching of the fish is captured using a digital or video camera and the images and videos are put up on their website. In particular, video of fish that have just been landed is relayed live over the internet and sold to consumers on the spot and delivered into their hands by the following morning. Such sales methods have attracted media attention and have frequently been picked up by TV programs and newspapers.

When the tsunami hit on March 11, 2011, while there were no casualties among the company's employees, the company office and workplace were washed away, and Okirai District itself suffered substantial human casualties and material damages. After witnessing the seashore covered in a vast amount of debris, everyone almost lost hope of resuming the fishing industry. However, it is said that when fishermen whose fishing boats had not been washed away cast their gill nets in the water, they caught a vast quantity of different local fish such as greenling, which were sold in no time over the internet. Among them, Barfin flounder considered to be a so-called "phantom fish" were also caught, and were sold to

consumers watching the live relay for the high price of 30,000 yen per fish³⁴. After resuming fishing, and a system for packing seafood in ice and shipping it out was gradually set up, it is said that prices slumped before long. This was not due to harmful rumors about radioactive materials, but simply because large shipping volumes could not be secured. This was a phenomenon which commonly occurred in primary commodity markets where only a few limited species of fish could be priced, and even these species could not be priced unless lots of a certain quantity could be secured. What rescued these fishermen from their plight was a product called the “Sanriku Restoration Omakase Special Pack” in which seafood landed on the shipping date is packed into a box much like a grab bag and sold directly to consumers for 3,000 yen or 5,000 yen. This product started to take off from around May 2011 and sold 1,000 sets in no time. As a result, they were able to maintain their fishing industry despite facing the difficult circumstances due to price collapse.

The men in this district were able to successively regain their jobs, such as by going out fishing or engaging in the work of removing debris as part of the government’s emergency employment measures. However, as the women who worked at seafood processing facilities stayed in their shelters, cases of women feeling driven to the wall emotionally appeared one after another. Yagi and his partners wanted to provide a place for women of the shore to work with vigor and enthusiasm, and to engage in sales with greater stability by increasing the added value of the seafood rather than simply shipping out the fish as food. Their idea was to offer internet customers so-called “fishermen’s cooking” that fishermen in the region ate at their homes on a daily basis. For example, they thought of putting five or six abalone into curry rice, dissolving sea urchin in soy sauce to spread on squid, and taking only the soup stock from hairy crab and kneading it in wheat flour to make *Hittsumi*³⁵. They wanted consumers to have a hearty, fun, and delicious eating experience.

³⁴ Nikkei Marketing Journal, November 16, 2011, page 1.

³⁵ A local food of the Tohoku region. Wheat flour is kneaded, stretched thin, and put in a soup. Similar to flour dumplings boiled in soup.



(Sanriku Toretate Fish Market head office and workplace)

If all they needed to do was pack the day's catch in ice and deliver it by refrigerated courier service, they would have been able to handle it with some work space and a used ice machine purchased at a bargain price. However, in order to freeze cooked or processed food and deliver the just-made food to the customer without it losing any flavor required commensurate facilities. While they had been conducting direct sales of fresh fish by temporarily outfitting the remains of stores (with only their steel frames remaining), performing full-scale cooking, processing, and freezing would require permanent repairs of facilities, equipping of lines and a kitchen, and freezing equipment, which they discovered would cost upwards of 20 million yen. Yagi and his partners promptly prepared a business plan and applied for the Government-Subsidized Project for the Restoration and Building of Small-and-Medium Sized Business Group Facilities. However, their application was not accepted. While public offerings for this subsidized project were repeated four times, rather than waiting for them to be offered, Yagi decided to solicit funds from nationwide individual investors through the "Disaster Site Support Fund" operated by Music Securities, Inc. On August 4, 2011, a Disaster Site Support Fund briefing session was held at Morioka City, Iwate Prefecture. People who were interested in investment and support for companies victimized by the disaster assembled at this briefing session and Yagi delivered a

presentation on the damage situation, restoration plans, the purpose for funds, and privileges for investors.

They succeeded in raising funds and introduced equipment which enabled them to deliver products to consumers without compromising freshness. This equipment used CAS technology which prevents cell membranes from breaking down due to freezing or defrosting and flavor constituents from leaking out. They were able to commence their frozen food manufacturing and selling business from January 2012. They gathered the capital to perform reconstruction, caught an abundance of seafood to sell, and assembled all the personnel required to perform production and sales.

5. Otsuchi Town

Otsuchi Town is centrally located in Iwate Prefecture south-north along the Pacific coast. The town is subject to the so-called *Remote Area Act*, the *Underpopulated Areas Act*, and the *Mountainous Village Development Act*. The town organization was established in 1889, and its present day town limits were formed after merging Kanazawa Town in 1955. Getting there from the prefectural capital of Morioka City requires traveling north along the seaside through Kamaishi City and takes more than three hours by car. After the population peaked at 21,292 in 1980, the population continued to decline, reaching 15,277 people in 2010.

Due to the tsunami and large-scale fires which occurred with the Great East Japan Earthquake, 803 people died, 479 people went missing, and 3,717 houses were destroyed. As the town hall was washed away and the mayor and government officials ranking above section chief were lost in the tsunami, administrative functions were completely paralyzed. The damage caused by the tsunami was substantial, and confirming the whereabouts of the constituency was very difficult as many people had been evacuated. The town was without a mayor until an election was held on August 28, 2011. The number of evacuees exceeded 9,000 people at its peak, which was nearly 60% of the entire population. The estimated amount of debris rose to 709,000 tons.

Formulation of the reconstruction plans for Otsuchi Town began on December 26, 2011, and Otsuchi was the latest town in Iwate Prefecture to announce their plans. A basic policy was laid out on the three points of tsunami disaster prevention, land use, and the transport system. They engaged in drafting a “multiplex disaster prevention style town development” combining enhanced disaster prevention system and education, construction of a storm surge barrier, building an evacuation route and refuge facilities, ground leveling and relocating to high ground, among other measures. As high ground was limited, safety was ensured such as by filling flooded regions with land, and the plan also included repairing and maintaining main roads such as the Sanriku Expressway and National Route 45.

5-1. Chida Particularity Industrials Corp.

Chida Particularity Industrials Corp. is a metalworking company with head office located in Maesawa-ku, Oshu City, Iwate Prefecture with capital of 90 million and 102 employees. The president, Mr. Fujio Chida (born 1946), founded the company independently in 1979. The company consists of two plants under direct management in Maesawa-ku, Oshu City, and in Otsuchi Town, as well as a subsidiary, Chida Seimitsu Towa K.K., in Towa-cho, Hanamaki City. The company has a proven track record in the processing of low-volume, multiproduct,

high accuracy parts and the processing and production of parts for semiconductor equipment, parts for LCD manufacturing equipment, and automobile-related parts. The company was lured into the coastal region in 1988 and was established within the premises of Nippon Steel Corporation's Kamaishi Works. After repeatedly enhancing and expanding its operations, it opened the Otsuchi Plant seven years later in 1995. The Otsuchi Plant expanded its facilities six times until 2010, integrating Kamaishi Plant in 1997. Otsuchi is the only plant in the Tohoku region (north-east region) to introduce a large five-face processing machine and is positioned as the main plant which handles everything from high accuracy processing to large processing.

The main plant in Maesawa, the Towa Plant in Hanamaki, and even the Otsuchi Plant did not incur any damages, such as the sliding or falling over of equipment. Although the urban area of Otsuchi Town incurred substantial damage due to the tsunami and fires, the plant did not suffer flooding damage as it was located in the mountains. However, the roads were filled with debris, the supply of electricity, water, and gas stopped, gasoline and light oil supplies were extremely scarce, and operations were completely shut down. A young 23 year old male employee died in the disaster. It is said that after the first tsunami wave passed, he and his parents fell victim while heading toward the urban area driving a car. The homes of 26 people — more than half of the 50 employees — were washed away or burned by fire, and there were many employees who lost parents or relatives.



(Mr. Fujio Chida, president and representative director, Chida Particularity Industrials Corp.)

Otsuchi Plant was opened as a shelter for residents victimized by the earthquake disaster. On the day after the disaster on March 12, 2011, prefabricated building materials were brought into the parking lot of the site. Five houses were constructed and citizens with no place to go due to power outage and water supply suspension were welcomed. Utilizing private power generation immediately after the disaster, they generated lighting and pumped up well water, and cooked using a large rice cooker and pot. Until everyone moved to temporary housing at the end of July 2011, 80 people at peak period lived there communally. The company also contributed to restoring the local economy by hiring five new employees who lost their places of work in the disaster. From its outset, Chida Particularity Industrials has been known for encouraging employees to start up new businesses, and ever since the first new company was founded in 1983, it has successively been producing new bosses. The company has supported their independence as entrepreneurs by supplying them with machinery, or as intrapreneurs contracted to perform work for the company. There are also former employees who have set up prefabricated office buildings within the Otsuchi Plant grounds and are operating independent businesses.



5-2. Otsuchi Shogyo Kaihatsu K.K.

Otsuchi Shogyo Kaihatsu K.K. is a real estate company established in February 1990 which operates the shopping center “Seaside Town MAST.” Located in Kozuchi, Otsuchi Town in Iwate Prefecture’s coastal region, this shopping center has the largest floor space

and ability to attract customers. The chairman, Mr. Seiji Fujii, originally operated ten fruit and vegetable markets and stores in Otsuchi Town. Feeling threatened by the advance of major supermarkets and suburban supermarkets, he established Otsuchi Shogyo Kaihatsu with nine town storekeepers and embarked on the management of a shopping center. MAST, which opened in 1993, contains more than 40 stores including clothing stores, book stores, and fast food restaurants. It has pulled in 2,500 customers per day on weekdays and 10,000 people per day on weekends and holidays. While supporting the everyday lives of local citizens by providing products and services, it has been popular as a shopping facility and as a core entity in the local community which has hired employees from Otsuchi Town. It achieved sales of 4.5 billion yen when it first opened, increasing its sales at a constant pace of 100 million yen each year. Its sales peaked at 5.5 billion yen in 2003, then leveled out and followed a decreasing trend. The population of Otsuchi Town was approximately 18,000 people when the shopping center first opened, which decreased to 15,000 immediately before the earthquake disaster — a trend which was reflected in the shopping center's sales performance.

The tsunami struck Otsuchi Town, swallowing wooden houses in urban areas and surged up to the parking lot of MAST situated inland. The first floor was completely flooded and all stores were forced to suspend business operations. Most of the urban area of Otsuchi Town was destroyed by the tsunami and fires. As the public lost the places where they purchased their daily necessities, received services, and ate and drank, the public waited anxiously for the restoration of commercial facilities. In response to the first public offering of the Government-Subsidized Project for the Restoration and Building of Small-and-Medium Sized Enterprises' Group Facilities held in June 2011, the company formulated a reconstruction plan adopting a basic concept to restore livelihoods and occupations. This plan involved restoring the shopping avenue, and in addition to proprietors of existing stores in the shopping center, inviting proprietors of urban area stores who lost their stores to tsunami and fire to open branch stores in their shopping center. Their proposal was accepted and they received the subsidy.



(Seaside Town MAST which recommenced business operations on December 22, 2012)

Seaside Town MAST re-opened for business on December 22, 2012 with the food supermarket Maiya and the home improvement center Homac as key tenants, in addition to 14 restaurants, 10 household goods stores, the Bank of Iwate's Otsuchi Branch, and an internal medicine clinic, among other stores. It not only serves as a place of commerce and public services, but fulfills an important role as a base of interaction for the citizens of Otsuchi Town. In February 2012, the company also received large financing from the Great East Japan Earthquake Restoration Fund called the "Iwate Brimming with Vitality Limited Partnership for Investment" which received joint investment by the Development Bank of Japan Inc. and the Bank of Iwate, Ltd. The shopping center also accepted people who launched new businesses, attesting to the shopping center's importance for the local economy.



(Mr. Seiji Fujii [right], chairman and executive director, Otsuchi Shogyo Kaihatsu K.K. and Mr. Toshiaki Koyama [left], managing director)

Restoration of buildings and facilities required approximately one billion yen and was thought to be difficult unaided. They proceeded with their application for a group subsidy from government and support organizations, applying as a group with 30 tenants in the shopping center, and received 670 million yen in subsidies.

6. Miyako City

Miyako City is located on the Sanriku coast in Iwate Prefecture, and Todogasaki Cape is situated at the eastern-most point of Honshu island. The city was prosperous as a fishing and seafood town from long ago, with a haul of 48,897 tons in 2010 which was 15th nationwide. While their haul significantly decreased in 2011 due to tsunami damage to 35,265 tons ranking them 16th, this exceeded Ofunato City and Kesenuma City. The total population throughout the current city limits was approximately 80,000 at the beginning of the 1970s, then steadily decreased to 59,442 people in 2010. In the past, there was a refining plant for copper ore mined from Taro mine, and the city thrived as a heavy industry city second to Kamaishi City. Presently, industry (manufacturing) is supported by Hirose Electric Co., Ltd. which produces electronic parts, Rasa Industries, Ltd which produces gallium, Co-op Chemical Co., Ltd. which produces chemical fertilizer, and Hokuyo Plywood Co., Ltd. which processes plywood, among others. It started out as Miyako Town in 1889 and was then reorganized as a municipality in 1941 after consolidating three neighboring villages. Later, Taro Town and Niisato Town were consolidated in 2005, and Kawai Town was integrated into the city in 2010, to make Miyako City the largest municipality in Iwate Prefecture.

In the Great East Japan Earthquake, 420 people died and 107 people went missing. Human casualties amounted to 0.9% of the population, and the number of houses destroyed was the most in Iwate Prefecture at 4675 houses. The amount of debris was estimated at 715,000 tons, and total damages amounted to 1.96 trillion yen according to Miyako City estimates. The tsunami wave which hit Miyako City was 10 meters high, and a maximum runup height of 40.5 meters was recorded at Omoe Peninsula. Long-term evacuations and moves following the earthquake disaster continued successively, bringing the population to an estimated 57,865 people as of February 1, 2012.

In June 2011, Miyako City announced a basic restoration policy which involved the reconstruction and creation of stable civic life and the realization of a safe and comfortable living environment. Explanatory sessions were held and opinions were solicited at various locations around the city and a basic plan was formulated on October 31, 2011. The basic plan was for multiplex disaster prevention town development based on the concept of disaster mitigation, promotion of land use to create a sense of security and vitality, and the formation of a transport network resistant to disasters. These policies will be pursued through implementation of priority projects such as residential area reconstruction support, industrial development, and the introduction of renewable energy.

7. Kesenuma City

Kesenuma City is located on the Pacific coast at the north-eastern edge of Miyagi Prefecture. Kesenuma Town consolidated neighboring towns and villages and was organized as a municipality in 1953, and formed its current city limits after integrating Karakuwa Town in 2006 and Motoyoshi Town in 2009. The population peaked at 92,246 people in 1980, falling to 73,494 people in 2010. It belonged to the Sendai Domain until the Edo Period together with cities in southern Iwate Prefecture such as Ofunato City, Rikuzen Takata City, and Ichinoseki City, and has close interactions with these cities. Kesenuma fishing port has been designated as one of thirteen Category Three Fishing Ports established in Honshu island. It functions as a base for coastal fishing and aquaculture on the Sanriku coast, offshore fishing at Sanriku offing, and for deep-sea fishing. It is home to a wide variety of industries from seafood processing to shipbuilding. Its haul of fish in 2010 was 103,609 tons, ranking it 9th in the country.

In the Great East Japan Earthquake, apart from being hit by the tsunami, heavy oil was ignited which leaked out from an oil tank for fishing boats established at the mouth of the bay. This caused a large-scale fire outbreak which consumed the area where seafood processing industries were gathered. Human casualties, at 1,030 dead and 338 missing, were second to Ishinomaki City, and 11,026 houses were destroyed. In addition, significant land subsidence occurred which was centered around the coastal region. A maximum subsidence of 74cm was recorded, making it difficult to reconstruct seafood processing facilities and for fishing boats to come alongside piers. The blow that Kesenuma's major industries suffered was immeasurable. Due to these circumstances, the city's haul of fish in 2011 fell to 28,099 tons, ranking it 20th in the country. There was also significant population outflow which contributed to the population declining to 68,765 people approximately one year after the earthquake disaster as of February 1, 2012.

Kesenuma City's reconstruction plan was formulated on October 7, 2011. Preparations are proceeding to restore flooded urban areas by dividing them into "lowland zones" and "landfill and leveling zones." Residences will be limited and plants will be assembled at lowland zones. In leveling zones, a safe residential district will be secured by raising the ground level several meters. A specific height was also proposed for the construction of a storm surge barrier which would surround the coast with a high wall. Although planned for implementation by 2020, more than a few divergent views have been expressed by the public³⁶.

³⁶ http://www.kahoku.co.jp/spe/spe_sys1078/20111210_01.htm The Kahoku Shimpō,

7-1. Abecho Shoten Co., Ltd.

Abecho Shoten Co., Ltd. was established in Kesenuma City in 1961. After being incorporated in 1968, it proceeded to develop a wide range of business areas associated with the seafood processing industry and tourism industry while benefiting from the Sanriku sea. Before the disaster occurred, group sales amounted to 20 billion yen³⁷, and there were 800 employees³⁸. The seafood division operated nine plants in the four cities and towns of Kesenuma City, Minami-Sanriku Town, Ishinomaki City, and Ofunato City of Iwate Prefecture. The tourism division operated four hotels in Kesenuma City and Minami-Sanriku Town, as well as Osakanaichiba Co., Ltd. (fish market) in Kesenuma City, among other businesses. The current president Yasuhiro Abe (born in 1963) has managed the business from January 2002 for his father who is the founder and current chairman.

The tsunami which followed the earthquake in March 2011 caused catastrophic damage to eight production bases, with the exception of the plant in Minami-Sanriku Town which escaped damage as it was located on high ground. Of the tourist facilities, although the hotels were not directly damaged by the tsunami, they were forced to suspend business operations until essential utilities such as electricity and water were restored. The company's stores which sold seafood at Kesenuma Port were forced to suspend business for four months until re-opening on July 24, 2011. Rather than laying off their 800 employees and having them receive unemployment benefits, the company utilized Japan's education and training grant system to continue their employment, and successively re-deployed them to facilities which resumed operations³⁹.

Inspection and Reconstruction Plans (1) Kesenuma City: puzzlement over the land use proposal

³⁷ Of figures as of 2010, 60% of sales was brought in by the seafood business and 40% by the tourism business.

³⁸ It is the largest among Kesenuma Chamber of Commerce and Industry member companies, and is a representative company of Kesenuma City.

³⁹ Nihon Keizai Shimbun, April 20, 2011, local economy page. As part of the country's emergency employment measures, a system was started in which companies which provided employees with job training would be provided with a certain amount of subsidies. Due to this system, it became possible for employers to continue paying employees almost the same salary compared to before the earthquake disaster even if their workplace was lost.



(Mr. Yasuhiro Abe, representative director, Abecho Shoten Co., Ltd.)

The biggest obstacle to the resumption of Abecho Shoten's business was the serious land subsidence which occurred around Kesenuma's fish market. In order to prevent disorderly construction works in the vicinity, Miyagi Prefecture imposed stringent construction restrictions. This resulted in an on-going situation where no one had any clear idea of when business operations would resume. Consequently, the restoration of business began from their plant in Ofunato City, Iwate Prefecture where construction restrictions had not been imposed. For the time being, the company decided to shift its main base from Kesenuma to Ofunato, invested approximately two billion yen⁴⁰ into resuming production of processed Pacific saury goods from September 2011, developed a new retort soup using shark fin which Kesenuma is famous for, and started production at a pace of 200,000 packs a month. While sales through the market or wholesalers accounted for the majority until then, the company switched to a policy of strengthening direct sales to retail stores by permanently stationing sales staff for supermarkets and department stores in Koto Ward, Tokyo.

⁴⁰ Nihon Keizai Shimbun, morning edition, September 27, 2011, page 13.

Although production capacity of Abecho Shoten's seafood division as of March 2012 recovered to about 60 or 70% by increasing production at the Minami-Sanriku plant and the Ofunato plant, the main plant at Kesenuma is scheduled for reconstruction in the autumn of 2013, and even more time will be required until the plant's restoration and operation. As the majority of the haul landed and processed at Kesenuma until the disaster was shifted over to fishing ports in Choshi City, Shiogama City, or fishing ports in Hokkaido, brands which had been established over the long-term were put in critical situation. As countermeasures, the company is engaged in raising added value and securing new sales channels, as well as providing consumers with data on fishing grounds during direct sales to retail stores⁴¹. Generally speaking, information on fishing grounds has been kept top secret and known only to fishermen. However, due to the leakage of radioactive material from the nuclear accident, an increasing number of consumers have been concerned about where fish are caught. Traceability, including information on fishing grounds which fishermen had no duty or custom to disclose until then, has been increasing in importance. It is said that sashimi bonito which discloses where and on what fishing boat the fish was caught, sold at an approximately 20 to 30% higher price compared to conventional frozen bonito⁴².

Construction restrictions on the Kesenuma plant, which had been the major base for seafood processing, were lifted in September 2011. Construction of a temporary plant promptly began and commenced operations in February 2012. Construction of a new permanent plant exceeding an investment of three billion yen is scheduled to commence within 2012 and is expected to begin operations as early as autumn 2013. The new plant will produce frozen Pacific saury and mackerel products, as well as processed shark fin soup products through a 100–150 worker system, and is expected to exceed pre-earthquake production capacity.

⁴¹ An undertaking started by Abecho Shoten in joint collaboration with the Kesenuma City fishery Kaneshimeichi Co., Ltd. and Ito-Yokado Co., Ltd., sashimi fish began to be sold with the name of the fishing boat indicated on the label. Abecho Shoten received data from fishermen such as the coordinates of where the fish was caught, the sea temperature, and time and date, provided this information to Ito-Yokado, and if requested by customers, all the information would be disclosed (Nikkei Marketing Journal, November 16, 2011, page 1).

⁴² Nihon Keizai Shimbun, March 10, 2012, local economy edition (Tohoku region).

8. Ishinomaki City

Ishinomaki City is located in east Miyagi Prefecture and is the prefecture's second largest city in terms of population. It was given city status in 1933, and after repeatedly integrating neighboring towns and villages, merged six towns in Monou County in 2005 to form its present city limits. From long ago, Ishinomaki has been a land blessed with an abundance of primary goods due to its warm climate, rich fishing grounds, and productive soil. Cold and warm currents collide off the coast of Kinkazan, bringing abundant fish species and hauls for the fishermen. This area is known as one of the three major fishing grounds in the world, and Ishinomaki City flourished as one of Japan's leading fishing cities. The population peaked at 186,000 people in the 1980s, then continued a downward trend similar to other cities and towns in the Sanriku region. There were 160,704 people in 2010 before the earthquake disaster⁴³.

The Great East Japan Earthquake resulted in 3,182 deaths and 557 people missing in Ishinomaki city⁴⁴. 6,163,000 tons of debris was produced — far more than the 4,755,000 tons of debris produced in Iwate Prefecture as a whole. While it is said that 50 million tons of general waste is produced by Japan in one year, this means that debris amounting to 12% of the national volume was produced in Ishinomaki City with a population of only 150,000 people. The debris collection rate including that produced by dismantling is 48%, and the processing and disposal volume remains at the 7.5% level⁴⁵. Population outflow outside the city progressed more than ever after the disaster, bringing the estimated population to 150,039 people as of February 1, 2012. Serious damage was done to the fishing and seafood industry. While the haul was 130,288 tons in 2010, this figure dropped to 38,672 tons in 2011, reducing the city's ranking from 3rd to 14th nationwide⁴⁶. Land subsidence at the port area was significant. The Geographical Survey Institute recorded a 78cm subsidence, and as roads were submerged during high tide, measures such as raising the ground level were indispensable.

Construction restrictions were imposed on urban areas damaged by flooding from immediately after the disaster. In contrast to cities and towns inside and outside the prefecture where similar restrictions were not imposed, restoration of particularly coastal

⁴³ <http://ja.wikipedia.org/wiki/%E7%9F%B3%E5%B7%BB%E5%B8%82> Wikipedia, Ishinomaki City.

⁴⁴ <http://www.pref.miyagi.jp/kikitaisaku/higasinihondaisinsai/higaizyoukyou.htm> Miyagi Prefecture, Earthquake damage and evacuation status (as of March 14, 2012, 17:00.)

⁴⁵ <http://www.reconstruction.go.jp/topics/shinchoku120312.pdf> Ministry of the Environment, Progress of disaster waste disposal by coastal municipalities (March 12, 2012.)

⁴⁶ http://www.maff.go.jp/j/tokei/kouhyou/suisan_ryutu/santi_ryutu/index.html Ministry of Agriculture, Forestry and Fisheries, Producing district seafood distribution survey.

industries such as the seafood processing and shipbuilding industries was delayed. Reconstruction of a disaster-resistant urban infrastructure is progressing which includes policies such as the collective relocation of homes to high ground where there is high ground in the backland, a double defense system by constructing storm surge barriers in lowland areas and leveling the ground for roads, and building evacuation routes and shelters.

8-1. Kinoya Ishinomakisuisan Co., Ltd.

Kinoya Ishinomakisuisan Co., Ltd. was established in November 1957 as an itinerant merchant of whale meat landed at Ishinomaki Port and processed whale meat products sold at inland regions such as Furukawa City and Tome City. Before falling victim to the disaster, the company employed 70 workers⁴⁷ and had sales of approximately 1.5 billion yen. It manufactured and sold canned products such as whale meat *yamatoni* (meat boiled with soy sauce, sugar, and ginger), Kinka mackerel (fresh pack), flounder *engawa* (meat at the base of a fin) boiled in soy sauce, processed whale products such as whale bacon, whale *tatsuta age* (soy sauce and cooking sake flavored meat coated with dogtooth violet starch then deep fried), whale green slated hide, processed young eel and krill products, and fish meal. Whale meat *yamatoni* is a canned product with a 55 year history since the company's establishment. Kinka mackerel⁴⁸ is famous for the company's canning process using the "fresh pack production method" in which ocean-fresh whale meat landed at Ishinomaki Port is processed on the same day by suspending all other normally operating canning lines. It was picked up by nationwide mass media as the "Rolls Royce" of canned foods and gained overwhelming popularity. It is said that once you try it, you can't eat any other canned food item again. The company also produces the largest volume of young eel and whale bacon in Japan, and while its scale is small, its presence is large.

The tsunami which followed the earthquake destroyed Kinoya Ishinomakisuisan's processing plant and office building and washed away approx. one million cans stored in its canned goods warehouse. The canned goods were buried in mud and scattered about on nearby roads, on the premises of the neighboring company, and in the sea. Of their stock of frozen raw materials of whale, mackerel, and Pacific saury and various related products stored in their freezer, approximately 400 million yen worth of stock was disposed of. The company's 11 meter high 1,000 ton tank resembling a whale *yamatoni* can, which is the world's biggest can objet, was washed approximately 300 meters north to the median

⁴⁷ Decreased to 40 people at the end of December 2011.

⁴⁸ Large chub mackerel landed at Ishinomaki Port from September to November every year.

divider of a prefectural road.



(Kinoya Ishinomakisuisan's whale *yamatoni* can objet which was washed away approximately 300 meters by the tsunami)

Until Japan's Self-Defense Forces entered the area and began distributing food, there were many people who survived by eating Kinoya Ishinomakisuisan's canned goods which had been washed away. As a result, people began referring to them as "cans of hope." In response to nationwide calls to use these canned goods in the aid effort, employees and a total 4,000 volunteers began the work of digging the cans up and washing them. As these cans of hope could not be used as products, the company gave them away in return for donations received. The donation activity became a nationwide effort and the donations collected were allocated toward employee living expenses, and a portion was donated to a local school which had become a shelter. While the majority of seafood processing companies on the Ishinomaki coast laid off their employees, Kinoya Ishinomakisuisan maintained its employees and hired two new employees as scheduled in April 2011.



(Kinoya Ishinomakisuisan's "Cans of Hope")

In order to maintain worker employment and continue their business, Kinoya Ishinomakisuisan consigned the production of its canned goods to another company, received supplies of the canned goods, and engaged in sales activities and developing new customers. It consigned the production of canned goods such as their major product, canned whale meat *yamatoni*, to Iwate-Kanzume, Inc. located in Iwate Prefecture. To rebuild the company, Kinoya Ishinomakisuisan drew up a reconstruction plan for the present location of their head processing plant, as well as a plan to build a new processing plant at the neighboring Misato Town, and applied for the public offering of the Government-Subsidized Project for the Restoration and Building of Small-and-Medium Sized Enterprises' Group Facilities. It plans to conduct primary processing including the freezing of seafood landed at Ishinomaki Port at the coastal processing plant, and to distribute the production of canned goods and the storage of raw materials and products to the new processing plant located inland. This is to disperse the risks associated with the tsunami damage, and because there were no prospects for reconstruction due to land use restrictions in the Ishinomaki coastal district. For the new plant in Misato Town, the company was able to receive approximately 1.3 billion yen in subsidies which was $\frac{3}{4}$ of the total estimated construction costs. Acquiring approximately 10,000 m² of town land, they began construction of the canning plant which is expected to be completed in January 2013 and opened for operation from the spring⁴⁹. Their production capacity is expected to be

⁴⁹ Misato Plant is scheduled to be constructed based on the concept of a "showcased plant" where tourists can tour the manufacturing site. As the Misato Plant is favorably located

enhanced by 1.5 times compared to before the disaster.

The vice president of Kinoya Ishinomakisuisan, Takayuki Kimura (born in 1954), launched the general incorporated association “Sanriku Seafood Restoration Project” in June 2011 for the purpose of aiding fishermen victimized by the disaster. This project was designed so that it would not become dependent on government or large capital, and members would be solicited from across the country and the funds collected would be allocated toward the provision of fishing boats and seafood processing facilities. The project would also support the resumption of seafood shipments, and depending on restoration conditions, the seafood ready for shipment would be directly and cheaply sold to members at membership prices. In addition to its characteristic to collect donations to support the victims of the disaster, the project seeks to establish a system of having seafood processors and fishermen work together so that they can sell seafood to members at prices determined by the producers without going through a distribution company. It was a major issue even before the earthquake disaster occurred that wholesale markets would only buy the seafood which the fishermen staked their lives to catch at disappointingly cheap prices.

As of April 30, 2012, membership fees and donations collected by the Sanriku Seafood Restoration Project amounted to 47.26 million yen and the number of members reached 1,872 people. The funds were allocated to cover a portion of the costs for building a seaweed warehouse in December 2011, and to buy equipment for oyster farming in January 2012. As well, alcohol freezing machines costing two million yen each were introduced at six fishing ports in Ishinomaki which allowed seafood to be rapidly frozen without damaging their cellular tissue. By outfitting a system of freezing and packaging ocean-fresh seafood at the port immediately after landing, they were able to deliver products with ocean-fresh taste to people across the country⁵⁰. While this project initially attracted attention for its characteristic of “victims helping victims,” it was unique in that seafood processors tried to improve their circumstances resulting from the stagnation of fish prices which would have been favorable for seafood purchasers. It is also expected to raise the income of those involved in the fishing and seafood industry, and to revitalize the local economy and community.

within about 10–20 minutes traveling distance by car from Matsushima, visitors expect to “stay over at Naruko Hot Springs, then stretch their legs while sightseeing in Matsushima.”

⁵⁰ Nikkei Marketing Journal, January 23, 2012, page 18.

9. Minami-Sanriku Town

Minami-Sanriku Town is located in north-eastern Miyagi Prefecture on the Pacific coast and was created through the merging of Shizugawa Town and Utatsu Town in 2005. As it possesses a typical sawtooth coastline, it is vulnerable to tsunami damage. In the past, the town has suffered major damage from the large tsunami generated by the AD 869 Jogan earthquake, and in modern times, from the 1896 Meiji Sanriku Tsunami, the 1933 Showa Sanriku Tsunami, and the 1960 Chilean Tsunami. After each event, the town engaged in reconstruction activities while enhancing disaster prevention and mitigation measures such as by building breakwaters, storm surge barriers, and floodgates along the coastal region. Its beautiful and calm sea is blessed with an abundance of marine products, there is an active aquafarming industry for oysters and coho salmon, as well as major industries include fishing, seafood processing, and tourism. While the population was nearly 23,000 in the 1970s, a national population census taken before the earthquake disaster in 2010 showed that the population had declined to 17,431 people.

The tsunami following the earthquake resulted in 565 dead and 280 missing⁵¹. During the peak disaster period, over half of the town's population was forced to evacuate. The tsunami struck the central part of town, climbed up a 20–30 meter high hillside and mercilessly engulfed heavy steel building structures as well as houses and stores on high ground. The levees and floodgates which had been built after past tsunami disasters were destroyed due to significant ground subsidence and strong backwash. As public facilities such as the hospital, train station, and the town hall were washed away, the town's resource and information network was disrupted, making restoration activities thereafter extremely difficult. The estimated population has further declined one year after the disaster as of February 1, 2012 to 15,110 people. While an estimated 560,000 tons of debris was produced, the volume of debris processed and disposed as of March 12, 2012 did not exceed 1.8% or 10,000 tons.

As with other municipalities, Minami-Sanriku Town's reconstruction plan was based on the concept of "disaster prevention and mitigation" and consisted of the three elements of outfitting coastal maintenance equipment, securing a safe evacuation route, and promoting relocation to a safe location (high ground). The plan was announced on September 18, 2011. The policy for land use included the following: the relocation of residential zones and public interest zones on high ground; establishing industrial, commercial, and tourism zones on

⁵¹ <http://www.pref.miyagi.jp/kikitaisaku/higasinihondaisinsai/higaizyoukyou.htm> Miyagi Prefecture, status of earthquake damage and evacuation (as of March 14, 2012, 17:00.)

low ground and ensuring safety by establishing breakwaters and storm surge barriers and through ground leveling; and establishing park and green zones between them as a buffer.

9-1. Minami Sanriku Hotel Kanyo

Minami Sanriku Hotel Kanyo is an important business supporting the tourism division of Abecho Shoten which has its head office in Kesenuma City⁵². Noriko Abe (born in 1962) has been involved in the management of the hotel since 1987 as the proprietress. While the hotel had been steadily increasing the number of repeat customers through media coverage of its abundant seafood supplied by the company's seafood division, and its quality hot spring, its circumstances changed dramatically with the earthquake disaster on March 11, 2011. Minami-Sanriku Town where the hotel is located suffered catastrophic damages, producing more than 800 human casualties including deaths and people missing, with half the population forced to live in evacuation shelters. While the hotel itself was not damaged as it was located on high ground, it was flooded to the second floor and became isolated as roads and bridges were cut off and filled with debris.



(Ms. Noriko Abe, proprietress of Minami Sanriku Hotel Kanyo)

When the disaster occurred, there were twenty people in the lobby and over thirty guests inside the hotel. In accordance with regular disaster prevention training procedures, hotel

⁵² Minami Sanriku Hotel Kanyo, which opened in July 1972, initially started off as a business of Asahi Kanko Co., Ltd. established in 1971 as a company affiliated to Abecho Shouten. It acquired its present form after it was merged in 1977.

personnel were stationed on each floor and everyone was evacuated to the hotel parking lot. Anticipating the onslaught of the tsunami, everyone was further guided to higher ground to the day-care center operated by the hotel. From the entrance hall on the 5th floor, people watched stupefied as a large swell swept through Shizugawa Port and engulfed the center of town. Many people sought refuge at the hotel, traveling by car or running there, for the reason that it was a quay on high ground and thought to be safe from the tsunami.

60 users, 120 staff members, and approximately 170 local residents took refuge in the building and were isolated from the town. As utilities such as electricity, gas, and water were lost, employees were instructed to prioritize acquiring essentials such as food, water, and flash lights. Instruction was given to the kitchen to think of a week's worth of meals for the approximately 350 people in the building. There was one 60 ton tank of water, and they confirmed that the propane gas from a small restaurant near the hotel could be used for heating. The hotel asked everyone including the guests for their understanding that the resources would be distributed impartially among everyone. At this point, the majority of the people at the hotel consisted of guests who did not know what had become of their families, evacuated residents, and employees. While there were women who broke down crying, everyone encouraged each other and waited for rescue. The hotel even arranged programs such as a sewing class to raise the morale of victims shut up in their rooms⁵³.

One problem they encountered was that they had no medical supplies such as drugs to lower blood pressure as relief supplies were not supplied to the hotel for the reason that it was not a public shelter. The hotel began moving people who required such medication with the help of police officers. After confirming the safety of moving people to different locations with information provided by the police, they began moving healthy people capable of walking while avoiding debris to shelters with a more abundant supply of rationed goods, and people in poor health to neighboring Tome City based on large area shelter information. On the morning of March 16, 2011, the hotel sent off guests who had been staying there since the disaster occurred, and on March 17 the following day, sent off evacuated residents. Employees were also able to leave the hotel to check on the status of their homes and family members. However, as it was difficult getting around by car due to the debris, there were some employees who walked home to Kesenuma City or Rikuzen Takata City. While the role of the hotel as a shelter came to a conclusion, it was discovered that there were many children who, having to live in inadequate temporary housing, were unable to study properly.

Noriko Abe announced that "local restoration and long-term development will require the strength of our young people" and opened a room at the hotel to begin a study class for local

⁵³ Nihon Keizai Shimbun, December 14, 2011, local economy edition (Tohoku region).

kids free of charge from June 2011. Former school teachers who were retired, etc. and university students working as volunteers took turns helping the children with their studies. They also renovated a building on the hotel premises as an English classroom where staff from an American volunteer organization are teaching English to the children. They have hopes of building a foundation for the town's ability to welcome visitors from around the world to Minami-Sanriku Town to conduct investigative research and tours.

10. Sendai City

Sendai City is the prefectural capital located in the center of Miyagi Prefecture. It is a city designated by ordinance and the largest city in the Tohoku region. From olden times, it prospered as a point of strategic importance for traffic and military due to its geographical advantage as a place where mountain paths and sea routes joined. It was organized as a municipality in 1889, repeatedly integrated neighboring towns and villages, and formed its current city limits in 1988 after integrating Izumi City and Akiu Town. In 1989, it became Japan's 11th city designated by government ordinance and was reorganized into its current five ward system. In 1999, the estimated population exceeded one million people. The population continued to increase before and after the earthquake disaster, reaching 1,053,086 people as of February 1, 2012. The population of the Sendai Urban Area which includes neighboring cities and towns and considered an urban employment area is approximately 1.57 million people. Based on the standard of a 1.5% metropolitan area (an area which includes surrounding municipalities with more than 1.5% rate of people commuting to the central city for school and work), the population of the Sendai metropolitan area rises to approximately 2.29 million people, which is about the same size as Sapporo, Hiroshima, and Fukuoka. The city is surrounded by the Ou Mountains to the west, Matsushima Hills to the north, Natori River to the south, and the Pacific Ocean to the East. The tsunami which followed the Great East Japan Earthquake brought about extensive human casualties and economic damage in Wakabayashi and Miyagino Wards which face Sendai Bay.

In the Great East Japan Earthquake, the city sustained human casualties of 797 dead and 32 missing. Damage to houses included 29,469 houses completely destroyed and 104,150 partially destroyed. While the population of Sendai City is 1.05 million people and the number of houses is said to be around 500,000, this means that 26% of homes were damaged⁵⁴. The height of the tsunami wave was discovered to have reached 10m in the Arahama District, Wakabayashi Ward of Sendai City, where there was a large concentration of deaths and missing people. Based on past tsunami disasters in the region, it was estimated that a maximum wave height of 2–3m would arrive at this district. While an approximately 5m storm surge barrier and a pine grove 50–100m wide had been prepared, the wave was 3 times that size⁵⁵. Significant damage was incurred from Miyagino Ward,

⁵⁴ <http://www.stat.go.jp/info/shinsai/index.htm> The Ministry of Internal Affairs and Communications' Statistics Bureau, information related to the Great East Japan Earthquake.

⁵⁵ <http://www.asahi.com/special/10005/TKY201103170481.html> Asahi Shimbun, 10m

Sendai City, which was being developed as a new base for distribution and commerce, extending to the Sendai Port district which included Shiogama City and Tagajo City. 1.352 million tons of debris was produced, and the city incurred major damages ranking in severity after Ishinomaki, Higashimatsushima, and Kesennuma.

Sendai City's reconstruction plan was finalized on November 30, 2011. The plan set out policies in four areas: the rebuilding of disaster prevention facilities based on a basic concept for disaster mitigation; responding to energy issues etc.; restoration through self-reliance, independence and cooperation, and helping one another; and creating economic and urban vitality to support restoration of the Tohoku region. The reconstruction plan was focused around "the restoration project for a million people" which consisted of ten projects and aimed to create an advanced city with a focus on disaster prevention and the environment during a five year period. Required project costs have been estimated at approximately 150 billion yen⁵⁶.

10-1. Familiar Co., Ltd.

Masayuki Shimada (born 1982) is president and representative director of Familiar Co., Ltd. which has its head office in Sendai Prefecture. He is from Iwamizawa City, Hokkaido. After graduating from university, while being involved in the management of a large-scale family farm, he undertook projects relating to local revitalization and agricultural revitalization. That led to his being entrusted with designing the concept for "Kanaya: A Town of Stones and Art" in Kanaya, Futtsu City, Chiba Prefecture. The success of this project contributed to two million tourists a year visiting the town which developed to the point of opening the Kanaya Art Museum in March 2010. In 2007, he established the resident participation and profit style tourist information center in Kanaya and calligraphy café "Tourist Information Center: Ishi-no-Sha," and in 2008 the local product work shop and sales store "Minori." In a region with a population of 1,500, he achieved big results by successively establishing these companies, got married and settled there.

Tsunami, Marks at Sendai's Arahama District, the world's largest tsunami to hit at an open plain (March 17, 2011).

⁵⁶ http://www.city.sendai.jp/fukko/1201143_2757.html Sendai City, "Sendai City Reconstruction Plans."



(Mr. Masayuki Shimada, president and representative director, Familiar Co., Ltd.)

Later, while operating out of Sapporo City, he was contacted by Mr. Nobuo Hariu the representative of the agricultural production corporation Butai Farm Co., Ltd. based in Sendai City which is ranked first or second in shipment volume in East Japan in 2009. Mr. Shimada moved his base of operations to Sendai in response to Mr. Hariu's requests for help in planning products, building a supply system, and implementing an in-house management system compliant with HACCP standards required by major convenience store chain Seven Eleven Group companies, based on the concept of a "cutting factory in the fields." In addition to the "cutting factory in the fields" project, Mr. Shimada was asked to produce Sendai's "Marche Japon Project" initiated by the Ministry of Agriculture, Forestry and Fisheries in eight major nationwide cities⁵⁷ in autumn 2009. He was entrusted with the operation of Marche, in which over 200 businesses in the agricultural, forestry, and fisheries sectors directly sold their products to consumers by hand at Sendai City's SunMall Ichibancho Shopping Mall. Although he was initially involved in the project by participating

⁵⁷ A public participation-style market (Marche) which began in the autumn of 2009 at eight nationwide cities of Sapporo, Sendai, Niigata, Tokyo (Roppongi, Aoyama and Omotesando, Kinshicho, Kichijoji, Ebisu), Kanagawa (Yokohama, Odawara, Sotetsu Yokohama Station), Nagoya, Osaka (Yodoyabashi, Tenmabashi), and Fukuoka.

on an executive committee with Sendai Television and Butai Farm, the project achieved sales exceeding 100 million yen from the first fiscal year. As the “cutting factory in the fields” project was also making steady headway, he arrived at the decision to manage these businesses by becoming incorporated. He established Familiar Co., Ltd. in June 2010 for the purpose of raising the income of primary producers with these projects as his main businesses⁵⁸. His company created employment for 150 people in the area in the agricultural and restaurant sectors.

Beginning two days after the earthquake disaster and over the next three months, Mr. Shimada used his Marche network to undertake a boiled rice distribution project at shelters where goods could not be transported, from Rikuzen Takata City to the north to Minami-Soma City in the south. Until December 2011, his company provided over 30,000 meals and distributed over 300 tons of relief supplies. With the goal of contributing to victim support, community restoration, and cultivating the will to live, he established two incorporated associations apart from Familiar, the Tagajo Disaster Reconstruction Company and the Tohoku Reconstruction Project. The Tagajo Disaster Reconstruction Company engaged in reclaiming the land, cultivating herbs, and managing farm produce, and generated jobs for fifteen disabled people. The Tohoku Reconstruction Project involved operating the bread factory “Le Temps Riche” and employed seven disabled people in its customer service, sales, and processing departments. His reasons for establishing new corporations was not to distribute the profits to shareholders, but to allocate the profits toward employee incomes and the creation of new jobs. Applying the know-how acquired through these projects, his immediate aim is to create jobs for about 500 disabled people in the Sendai area.

Further aspiring to create employment in the area and build a new agricultural model, he established the “Tohoku Roku Project” to promote agricultural rokuji-sangyoka (6th Industrialization: an operational style in which primary producers expand their business into food processing, distribution and sales). Launching this project in association with six proprietors of local restaurants, construction offices, and real estate agents, their first project is to open “ROKU FARM ATALATA,” a commercial facility which gathers together various facilities such as a vegetable garden, vegetable processing facility, Yamagata soba noodle shop, a bread factory, cafe, gelato shop, and kitchen studio. This commercial facility will be

⁵⁸ Familiar’s main business areas include the following: (1) business development and consulting on perishable food home delivery retail sales, wholesale, and mail-order sales; (2) restaurant management and consulting; (3) consulting on town development and sightseeing area development; (4) consulting on tourism management personnel; (5) tourism planning and product development, the planning, implementation, and sales for experience events; (6) marketing surveys; (7) promotional planning and implementation.

located next to “Aeon Mall Natori” which is the largest shopping mall in the Tohoku region. Construction commenced with a total project cost of 540 million yen procured with only private funds⁵⁹, and scheduled for opening in the summer of 2012⁶⁰. While having local farmers expand their businesses into the food processing and distribution and sales sectors, and collaborating with the tourism sector, the project at the time of opening aspires to create jobs for approximately 100 socially vulnerable groups such as disaster victims, the disabled, and the elderly. In addition, it will cooperate with JTB to produce disaster prevention-themed company training programs and school trips, and envisions its use as a space for community building and interaction for local residents.



(Conceptual drawing of the rokuji-sangyoka-farm, ROKU FARM ATALATA)

This initiative to build an integrated facility for agriculture and commerce, employ disaster victims, and support a rise in income is anticipated to be an effective measure to counter the problems associated with depopulation and the aging of society which many disaster victims are directly confronted by.

⁵⁹ Procured through financing by The Sendai Bank, Ltd.; they did not receive subsidies, etc.

⁶⁰ For project details and progress status, please see the Tohoku ROKU Project website <http://tohoku6pro.jimdo.com/>