Gender in Aquaculture and Fisheries: Engendering Security in Fisheries and Aquaculture
Asian Fisheries Science Special Issue 30S (2017): 103-128

ISSN 0116-6514
https://doi.org/10.33997/j.afs.2017.30.S1.005
Research Paper

Politics and Gender: Case Study of the Saemangeum Reclamation Project, South Korea

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Abstract

The Saemangeum Seawall Project, South Korea, is a major land reclamation scheme for which the outer seawall was constructed between 1991 and 2006 and other reclamation work is still ongoing. The primary goal of reclamation was to create agricultural land and to strengthen the Gunsan area's position as an international centre of trade and industry. The project was implemented for the public good and on publicly owned surface water. The project, however, experienced many problems: women and men fishers lost their means of living, water became polluted, and ecosystems were destroyed. These problems, however, tended to be hidden behind debates about economic values and the logic that attached the greatest priority to economic development. By the development of this large-scale national project, the livelihood foundations of the women and men fishers were removed and yet the national government and administration did not guarantee their livelihoods. Once they had been compensated for their fishing rights, the fishers did not have a place to appeal for their basic livelihood rights. With a focus on the change in the women and men fishers' lives, the present study aims to elucidate the impacts and changes of the tideland reclamation on the fishers' communities and their cultural cohesion, the gender roles and the differences people of different ages experienced from the time of closure of the tide embankment.

Introduction

In Mangyeong, North Jeolla Province, Korea, "Saemangeum" means new fertile soil beyond the Gimje Plain (Kim 2009). The name was given for a new land reclamation project meant to augment the agricultural capacity of the Gimje Plain, a major rice-growing area. "Reclamation" is defined as the

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conversion of natural wetland into land and artificial wetland through mechanical means (Moores et al 2016). President No Tae-Woo announced the Saemangeum Seawall Project in 1987 as a campaign pledge, and the outer seawall stage was implemented from 1991 to 2006. Other work is ongoing and the inner seawalls are yet to be constructed. The project developed on an area of 40,100 ha by constructing 33 km of tide embankment from Gunsan, Gimje, to Buan in North Jeolla Province. The major aims were to enlarge national land including agricultural land, secure water resources, remove flood threats, and stimulate the local economy by improving transportation. Although aiming to increase agricultural land, over time the reclaimed land became used more for other industries, such as manufacturing. Leisure developments are also planned.

In South Korea, reclamation projects have been traced back to the beginning of the 12th century. In the first half of the 20th century, farmland was expanded in the colonized Korean Peninsula in order to solve Japan's food problem and to facilitate the immigration of Japanese people. Until 1945, 30 % of the total area of licensed reclamation (approximately 185,336 ha) was in North Jeolla Province (Oh 2004b). In the latter half of the 20th century, from the end of the Korean War in 1953 through to the 1980s, reclamation works continued with the expressed aim of increasing farmland and increasing food production. From the 1990s, reclamation works were expanded into comprehensive multipurpose development projects, including securing housing estates (Koh 2004). By 2008, more than 60 % of the total area of tideland had been reclaimed and the area reclaimed had more than tripled compared with that of the first half of the century (Ministry of Oceans and Fisheries 2014).

In the 1990s and early 2000s, the Saegmangeum reclamation project was the world's largest coastal reclamation project (Moores 2016). For more than two decades, it generated many conflicts among the government, local people, environmental conservation organizations, researchers and experts, and religious leaders. The conflicts concerned local economic growth, wildlife endangered by the destruction of the tideland ecosystem, and the economic value of marine products. However, no attention was paid to the rights of the women and men fishers to a living, even though the fishers lost their means of livelihood and their way of life (Ii 2014; Ii 2015). The fishers lost their fishing grounds and had to change jobs. They now engage in daily paid work. Recently, elected politicians from the constituency have called upon the national

government to take measures to secure the living of several thousand fishermen and their communities.

Land reclaimed by drainage was called “the third new world.” Even in recent years, despite the fact that fishermen and fisherwomen were losing their livelihood grounds, no fierce resistance confronted large-scale reclamation projects of tideland. This was because the projects had been advanced by the absolute power of the national government with a rosy belief that development would assure bright future progress. More recently, however, the functions and values of tideland have been appreciated anew, and efforts started to return reclaimed land back to tideland. This has been called “reverse reclamation,” and restoration of nature.

From the viewpoint of environmental protection theory, Kumamoto and others recommended that local inhabitants should participate directly in addressing local development problems (Kumamoto 2004, Japan Wetlands Action Network 2001). However, developments such as this tideland reclamation were experienced differently by different types of local inhabitants, e.g., in this case the fishers received a direct blow by losing their place of livelihood.

With a focus on the change in the women and men fishers’ lives, this study aimed to elucidate the impacts and changes of the tideland reclamation on the fishers’ communities and the gender roles within them from 2006, the time of closure of the tide embankment, to 2014.

Materials and Methods

The present study addressed changes that fishermen and fisherwomen experienced in coastal villages affected by the building of the tidal embankment outer seawall. In addition, key literature was reviewed in order to understand the history of land reclamation in South Korea.

The field survey was conducted in five villages of Gusan, Haje, Gimje, Gyehwa, and Buan in North Jeolla Province in the Semangeum areas. One village, J Village, adjacent to Simpo Harbour in Gimje City was the main study site because the changes due to nature, society, culture, and gender roles were

more evident in this village even than in the other villages. J Village is located on the estuarine coast of the Mangyeong River that flows into the Yellow Sea (Fig. 1).

Fig.1 Location of the Saemangeum Tideland

The research materials for this paper were drawn from data using key informant interviews and observation methods, administrative statistics, and materials obtained during three surveys in which the authors stayed for one month each time between September 2006 and March 2014.

The number of residents in J Village in 2013 was 113, living in 57 households. Since 2006, the population and number of households in J Village decreased by about 24 % (Table 1).

Table 1. The Number of residents and households in J Village in 2006 and 2013

Year	Men	Women	Total	Number of households
2006 (A)*	88	97	185	93
2013 (B)	54	59	113	57
A-B (%)	34 (24 %)	38 (24 %)	72 (24 %)	36 (24 %)

*(Kim 2008)

Results

Saemangeum Tideland as the golden fishing grounds and Simpo harbor as a new world for emigrants

Saemangeum tideland extends over a vast area at the estuaries of the Rivers Mangyeong and Dongjin, (Fig.1). Within the Saemangeum tideland, in 1925, a plain of about 32 km^2 of land was reclaimed by Japan. This extended adjacent to Simpo harbor. On this land, rice, wheat and potatoes were grown, as well as strawberries in green houses. In the harbor, fishermen used to sell their catches, including fishes and shellfishes in certain locations. Restaurants began to open in the latter half of the 1970s. In the 1980s, the area became a center of eating places and shops providing sashimi. Until the latter half of the 1990s, the harbor had been prosperous, with a great number of buyers and visitors. Women from the fishing villages also opened stands to sell common orient clam (*Meretrix lusoria* (Röding 1798)) to tourists. The harbor was so crowded with visitors that the nearby roads were congested every day. However, after the start of the construction of the tide embankment, the numbers of visitors to the harbor decreased and, around the wharf, reclamation works were carried out to construct a marine yacht harbor (Fig. 2). In addition, a 4 km road to Gogunsan Islands and expressways are planned to connect the area with surrounding cities.

Until construction works on the tide embankment started, a variety of organisms lived on the tideland. The tideland served as the biggest stopover site in South Korea for migratory birds (Moores et al. 2016) and provided the livelihoods for many local people. The area was selected for reclamation as it was considered to be easier to reclaim because of headlands and islands that could be used during construction.

Pre-reclamation, fish and shellfish caught in the tideland provided cash income for the women and men fishers. The average annual fisheries production was approximately 70,000 t. Prior to the reclamation project in 1991, fishers of Gimje fishing communities of the Saemangeum tideland delivered around 8 t of shellfish to Seoul and Incheon every day. The fishers regarded shellfish as something that would not decrease in abundance, even if a great number of people caught them in quantity every day. Shellfish served as “golden fields”

that provided them with their sole source of cash income.

The reclamation works, however, affected fisheries production and, by 1996, the production had declined by 35 % compared to that of a decade earlier (Jang 2004). Although the prices of a kg of shellfish were lower before the tide embankment works, a fisher's daily production then exceeded 100 kg.

Up until the last major reclamation, when seawater mixed with freshwater and the tideland was exposed for longer daily periods, the areas around Simpo harbor were nutrient rich and provided ideal places for organisms to live and lay eggs. Fishermen who stood on the top of the ecosystem in such an environment could raise their children by working only with a small boat and *goere* (Fig. 3). After retirement, the environment also provided natural welfare facilities for fishers to spend leisure time and earn pocket money.

The tide embankment has two sluice gates, 240 m and 300 m wide respectively. The flow of seawater into the embankment is only 10 % of that before the construction. Around the sluice gates, the salinity is sustained at seawater levels, but the water at other points is less saline due to freshwater influences. As the Mangyeong River was completely desalinated after the completion of the embankment, roach, carp and eel were caught there in quantities. Buyers were interested in the roaches, but no regular markets were found for carp.

Fig. 2. Simpo fishing port (2007) under construction for a yacht harbor (2014)

As the salinity of water in the tideland was reduced, grand jackknife clam (*Solen grandis* (Dunker 1862)), surf clam (*Mactra chinensis* (Philippi, 1846)) and bladder moon shell (*Glossaurax* spp.*)* became scarce, and fishing

then concentrated on common orient clams.

According to statistics from the Ministry of Oceans and Fisheries (2013), the production of yellow croaker (*Pseudosciaena polyactis* (Bleeker 1877) and swimming crab (*Portunus trituberculatus* (Miers 1876)) had recovered since 2007, while the production of shellfish, including common orient clam, Chinese dosinia (*Scapharca* spp.), and grand jackknife clam, had decreased, except for Japanese short necked clam (*Ruditapes philippinarum* (Adams & Reeve 1850)) and half-crenated ark (*Scapharcasub crenata* (Lischke 1869)).

Underlying these trends were complex patterns of change in fishing and production practices. The main bivalve fisheries for common orient clam and jackknife clam are now described, with reference to changing fishing patterns and gear due to the tideland reclamation impacts and other environment changes driven by infrastructure development.

Common orient clam

Common orient clam is an important species in Saemangeum. North Jeolla Province has the highest production of varieties of common orient clam in South Korea. Culture of the clam started around Saemangeum in 1961. Until 2008, the production of this clam in North Jeolla Province accounted for approximately 70 % of the national average annual production, but as of 2012, production had dropped to only about 10 % of the national total. Unlike commons practices such as raising common orient clam by spreading larvae in jointly-owned sea areas and collecting clam jointly with other fishers, the women and men fishers in Saemangeum individually owned fixed areas of sea as their personal fishing grounds for clam for a certain period of time, authorized by a government agency. From their own areas, the fishers could freely collect and sell these naturally occurring clams.

After abalone, common orient clam was the second most valuable shellfish species. From ancient times, varieties were presented to royalty. Their shells were naturally in shades of yellow, but cultured clam tended to have black shells as they buried in black mud. Buyers and the women and men fishers engaged currently in their cultivation, and who do not know the clam's

natural colors, recognize clam with black shells as high in commercial value.

Cultivation is simple. An area of the sea is encircled with fishing nets, and then left alone; the shellfish breeds and grows naturally. On harvest, they are sold for different prices according to size and maturity (Ii 2015).

During the present study period, common orient clam was fished in the tideland by the women and men using either a rake or a special tool called a *geore* (Ii 2015). Before the tide embankment, spawning seasons were designated as closed seasons, but, after, the clam was caught throughout the year. As the number of tourists and buyers declined, however, the prices also declined. In J Village, many more people used rakes and *goere* than people who fished with boats (Ii 2015).

Fig. 3. Common orient clam soup (left), Rake (middle), and *geore* (right)

Before the tide embankment was built, in J Village fishers engaged in the cultivation of common orient clam achieved an average annual production per person of 5 T. Two years after the reclamation works, their catches decreased sharply. The Shellfish Fisheries Association, representing dozens of fishermen who farmed common orient clams, determined catch quotas and the sizes of shellfish of the day and sold them when the prices were high. Duck clam (*Mactra veneriformis* (Reeve 1854)) and common orient clam were stockpiled at the harbor; the duck clam was sent to Incheon, and the common orient clam to Seoul and then marketed nationwide. According to a villager of J Village who belonged to the Association and recorded the production quantities, in those days the village as a whole earned about USD 100,000 every day.

In Saemangeum, catching of clam by dredge net was introduced by the

fishermen who emigrated from Busan in the 1960s after they lost their fishing grounds when the estuary weir was constructed at the Nakdong River. Local Saemangeum people began to practice this catching method in the 1970s.

After construction began on the tide embankment in 1991, dredge netting developed into catching by pump dredgers. In a day, a pump dredger could catch as much as could 30 fishermen and fisherwomen using rakes or *goere* (Kim 2008). On a pump dredger, high pressure water was pumped through a square frame with 200 holes to flush shellfish out of the mud so they can be caught. Though this method produced large numbers, the water pressure could harm them and push mud into the shells, after which they lost their freshness or died, and thus lost value. Another gear innovation was to deploy pump dredgers with outboard motors. In 2002, fishing boats in Gyeohwa and Simpo began catching shrimps and common orient clam using this method.

Since 1990 around Haje, screw boats (modified trawlers) of 6-7 t with inboard engines have been used for catching bladder moon shell, common orient clam and all types of shellfish and fish (Ii 2007).

Grand jackknife clam

Both men and women caught common orient clam and only men caught duck clam and grand jackknife clam. Around Simpo harbor, common orient clam and grand jackknife clam were essential for wedding ceremonies, funerals, and religious services honoring ancestors (Ii 2015). After the tide embankment removed their habitat, grand jackknife clams have been imported from China and North Korea. Ceremonial offerings are now made from common orient clam, pork and seasonings (Ii 2015).

Fig. 4. Grand jackknife clam (left), boiled dishes (middle), and *seoge* (right)

The catching season for grand jackknife clam is from winter to spring (March). When the tide goes out farthest, the fishers walk while pushing a tool called a *seoge* (Ii 2015) (Fig. 4). The catch of jackknife clam plunged in 2006 and, by 2010, the price of one grand jackknife clam increased fivefold (Ii 2015).

Environment changes and fishing

As the cases for common orient clam and grand jackknife clam indicate, environmental changes have affected the behavior of key fishery species, and hence their fisheries. Common orient clam may move 2 km a day. During the seventh tides after full/new moon, it moves into deeper water; during spring tides, it moves to shallow water. In Saemangeum in the 1970s, such tidal behaviors and the changing natural environment caused some fishermen to start clam cultivation, whereas others experimented with catching tools and methods.

From October 2007, shellfish in deeper waters started to die, and the fishers were restricted to working only 3-4 days.mth^{-1}. Coastal seas became more shoal as sediment accumulated, and consequently fishermen changed their large fishing boats for seaweed gathering boats called *nobaegi*, which had flat shallow bottoms and could be operated in water of 1 m. Investing approximately USD 1,000 each, fishermen used outboard motorboats and pump dredgers and developed fishing tools called *taltali* for use in chest deep waters. *Taltali* consisted of a pump of 5-10 hp fixed on an expandable poylstyrene board of 180 cm (length) by 20 cm (width), and 90 cm (height), and a fire hose. This fishing involved delivering water pressure to the river bottom by hose to catch shellfish. Two fishermen worked as a team. One dragged the board on which the pump was fixed, and the other put a net full of shellfish on the board before they removed the shellfish from the net.

In 2010, however, this type of catching was stopped when the quality of water deteriorated. Because of deteriorating water quality and indiscriminate catching, clam as young as 1 year was taken. Common orient clam and duck clam stocks decreased, but more edible cockles and Japanese littleneck clam (*Venerupis philippinarum* (Adams & Reeve 1850)) were caught.

The fishing grounds adjacent to the coast of J Village were reclaimed during Japanese colonialism (1910-1945) causing those who had harvested with

goere to move their harvesting to the tideland near Haje (Fig. 1), 20 minutes away by 1.5-2.5 tons boats. Those who harvested with rakes travelled to the fishing grounds by tractor. In their new grounds, fishers caught duck clam, common orient clam, crenated ribbed ark, and others.

In 2006, J Village had five 3-9 t pump dredgers and nineteen 1-2 t small-sized boats, whereas, in February 2014, it had one 9 t fishing boat and eight 1-3 t fishing boats working both inside and outside the embankment. Until the completion of the tide embankment, when the tide ebbed, 7-8 fisherwomen rode on a boat, each paying boat fares of USD 10. With their family members or friends, they caught about 20-30 $kg.d^{-1}.capita^{-1}$. After the completion of the tide embankment, however, the public recognised that the closure of the sluices may have fouled and polluted the water. The number of tourists dropped sharply and the market for, consumption and prices of shellfish declined.

At spring tides during the study period, the fishers left the harbor around 09:00 hrs and returned around 15:00 hrs. At the neap, they went fishing around noon and come home around 18:00 hrs. Since they had to wait for the ebb, they were able to work each day for 4-5 hours. Until the construction of the tide embankment, clam catching was carried out as a full-time job, but, after the works, it became a side job. During daytime, catches tended to be smaller; large-scale boats, making larger catches, operated during the night. The poorest fishers did not own boats but paid to go to the fishing grounds by tractor. Their catches per person were only about 15 kg. Further, the closure of the water gates prevented the tide from ebbing, so they could not catch shellfish. When the days for which the water gates were open and the tides were out sufficiently for shellfish harvesting were limited to three, fishers were forced to harvest the clam also at night. Fishers who left for work early in the morning went home when they felt too hungry to continue. For example, one woman (53 years old) in J Village worked 15 days average total each month from September 2006 to June 2007, and earned USD 1,640 mth^{-1}, except after December when she could work only 6 days per month and her income dropped to USD 390.

In winter, shellfish burrowed deep into the mud and this led to lower catchability and a decrease in fishers' incomes. The best harvest seasons began in spring. Until 2007, two women, aged 74 and 68 reported that their biggest catches used to be approximately 60 kg $clams.d^{-1}$. The harvests were sold to

buyers at the harbor; payments were made 1-2 days later or on the spot. They each earned about USD 50 d^{-1}, while married couples who were skillful earned USD 300 d^{-1}.

Other fisheries of J Village

In addition to shellfish, people of J Village reported fishing for fleshy prawn (*Penaeus chinensis* (Osbeck 1765)) and white bait in spring, swimming crab in summer, krill for salted and fermented dishes in autumn and Japanese mullet in winter. To catch swimming crab at neap tides, they used drift gill nets (triple nets) operated for 4-5 hrs.d^{-1} from small boats. Striped mullet were lower in commercial value than anchovies and had not been used for food until the 1970s, when the villagers began to catch them to sell to merchants from Gyeongsang Province. The villagers also caught Jeoneo gizzard shads (*Clupanodon punctatus* (Temminck & Schlegel 1846)) to make salted and fermented dishes for their own families. Using 1-2.5 t boats, they caught swimming crabs, Japanese mullet, and white croakers. From 3-3.5 t wooden vessels, villagers used a pump and dredge net to catch common orient clam, duck clam, and purple Washington clam (*Saxidomus purpurata* (Sowerby II 1852)).

Demographics of J Village

In 2006, J Village in Gimje City comprised 37 native households and 56 households of new settlers, which meant that households of new settlers accounted for 60 % of the total 93 households, in which 88 males and 97 females lived. In the 1970s, most of the settlers came to the village after their businesses failed and they were invited by their relatives or friends around the harbor or on hearing that people around Simpo harbor were earning well. At first, the newcomers had to ride on others' boats to fish, but soon they were able to purchase their own boats. Village J does not have a large area of farmland, and, in the 1960s when marine products were of low value, it was the poorest village in Gimje City.

After 1970, household income grew as the number of nurseries of common orient clam increased and the export of clam went into full swing. Villagers engaged in agriculture also gave priority to catching shellfish. From

among 12 fishermen's unions in Gimje City, J Village was the largest in scale of its fishing industry and activity. Seventy-five out of 114 fishermen's union members affiliated with Simpo were fishermen of J Village. In 1970, 114 villagers of J caught shellfish and registered for the Fisheries Cooperative; 53 % of them (76 persons) still lived in the village during the period of the present study. As of September 2013, 111 persons (52 males and 59 females) of 57 households resided in J Village. The number of households and the population had gone down by approximately 40 % compared with the population of the year the tide embankment was completed. None were children under 9 years. Only 3 % of the population were teenagers. Residents in their forties and fifties had also decreased by 8-10 % but the number of people in their 60s and 70s had grown by 10-20 % and accounted for approximately 60 % of the total population, mainly living in households of a couple or 2 people.

Villagers (women and men) in their 50s were occupied as fishers, self-employed, or farmer daily laborers (Fig. 5). Most of the villagers in their 60s were fishers, people without occupation, or people employed by farmers. The villagers in their 70s and 80s were mostly engaged in agriculture, had no occupation or were welfare recipients. The majority of the villagers in J who used to catch shellfishes remained in the village. Some of them were engaged in agriculture, and others were without occupation or were welfare recipients. Farm daily labor and employment in restaurants were solely women's occupations. Most of the men were engaged in agriculture and fishing, whereas many women were jobless, self-employed, or on welfare (Fig. 6).

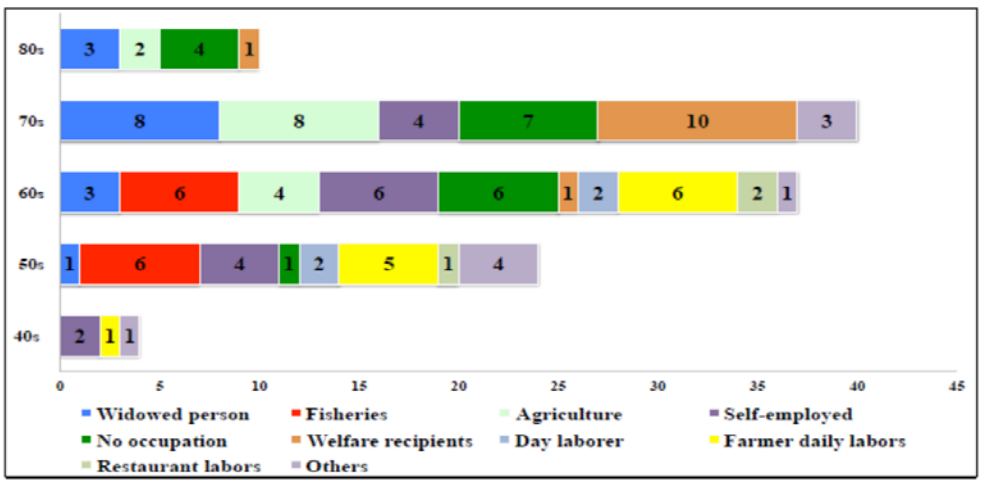

Fig. 5. Age-specific occupations

Although young fishermen abandoned fishing after they received money in compensation for fishing rights, and fishing was illegal after compensation was given, they could not find new jobs. Some purchased 2-4 t pump dredgers from South Jeolla Province at the cost of USD 20-40,000 each and restarted fishing. Six people (married couples and individual women and men) owned nine boats among them (Ii 2015).

Since villagers of J lost the sea that brought them cash income, they were not able now to lead a comfortable life, both financially and mentally. In 2014, villagers cancelled the lunar village festival in February, as no villagers were available to carry the responsibility.

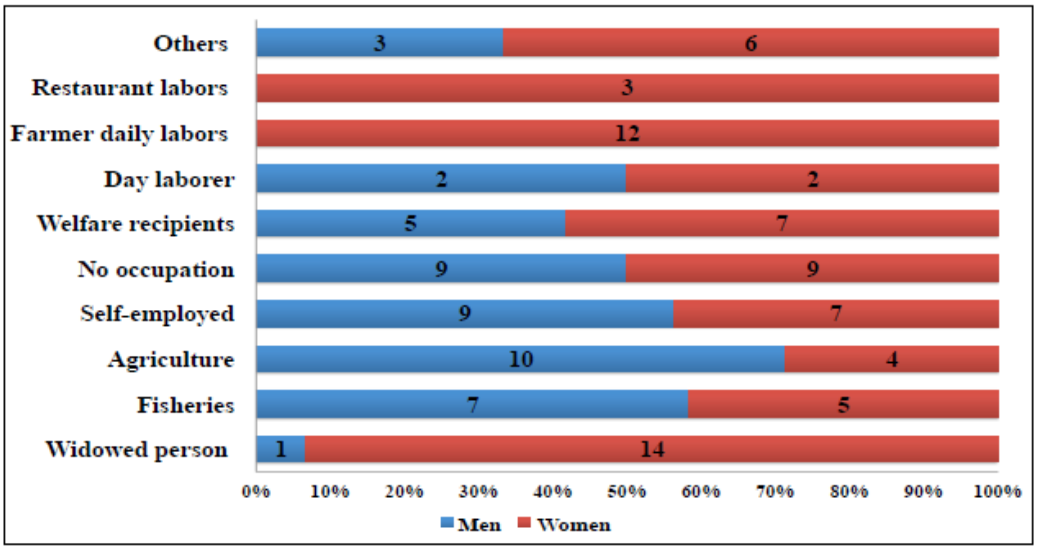

Fig. 6. Gendered occupations after the tidal embankment was constructed (N=113).

Case studies of men and women and local culture

The changes experienced by the people of Village J as a result of the tidal embankment were revealed through interviews.

Mr. S., fisherman with a small-sized boat (68 years, b. 1946)

At the age of four, Mr S. came to K Village with his parents, fleeing the Korean War. Graduating from middle school, he helped his father on a sailboat and learned how to fish. During those years, swimming crabs were so abundant that the fishers chose only bigger ones to take home from out of the

full catch of the boat. Except for a period of military service and job-hunting, during which he lived in Ulsan, Geoje Island, and Seoul, he had fished in K Village. In 1975 after marriage, he moved to J Village and worked on other fishermen's boats. In 1983 he bought a 2 t boat and began fishing with his wife. Over a year, they caught grand jackknife clam with *soege*, common orient clam with *goere*, duck clam with rakes, and swimming crabs, prawns and fishes with gill nets and drift nets, earning USD 80,000 a year after deducting expenses. With techniques learned from his elder brother, Mr. S. became a master in catching grand jackknife clam. He once caught 1,000 grand jackknife clam in 30 minutes where they were abundant. He shared his knowhow with villagers. In October and November, his catch was worth USD 200 a day, whereas in January the daily catch decreased to USD 60-70; in a month he could earn USD 1,000. In winter, cold winds froze the mud in the tideland, so he went to the seashore to catch grand jackknife clam.

In 1991, as a small boat owner, Mr S. received USD 2,500 in compensation for the loss of the fishing ground use right. However, the women and men fishers fished from 2001, when an environmental group filed a suit to object to the reopening of the Saemangeum construction, until to 2006, when the final judgment was given. In 2007, Mr S.'s boat was bought out by the national government. He then helped his brothers in the neighboring village in catching Japanese littleneck clam. When these clams were caught in quantities in 2010, women and men were hired for USD 80 and USD 150 per day respectively. In the Mangyeong River, which was completely desalinated, carp, eel and cubicula clams have been caught since 2012. Abandoning fishing, young people left the village to look for jobs, resulting in the reduction of the population by half and an increase in empty houses.

From 2012, Mr. S. has been taking care of the graves of the ancestors of the residents in Seoul and their farms. Depending on his wife's income and his pension worth USD 300 a month after he lost his job, he grew vegetables in the field near his home for in-house consumption. On 2-3 days in spring, when the tide ebbed, he drove a car to the seashore to collect grand jackknife clam, taking one and a half hours each way to get there. His wife worked by day in the fields cultivating potato, cabbage and onions near the village. At the request of the Rural Water Corporation, he attended weeding activities in the village, which were be carried out by a person from a household for a daily allowance

of USD 55. Joining a team of three members of the Rural Water Corporation, he worked on a three-month shift on the site where three major companies were implementing reclamation works. He watched the speed of cars and earned a daily allowance of USD 55.

Mr. S. said: "*I can fully understand the Policies of Junbuk Provincial Government concerning the reclamation of Saemangeum. Though I think it is highly unlikely that they hear the fishermen's voice, I want to ask them once what they intend to do about the living of the fishermen who lost their fishing grounds. Until construction works on the tide embankment, if you went to the sea, there were abundant fishes and shellfishes. So we didn't fish striped mullets, echinoids, and so on. We did fish Jeoneo gizzard shads, but just for salted and fermented dishes. After the construction, there was nothing to fish, so we lived on fishing striped mullets. As long as there was the sea, I intended to keep on fishing, but now that we cannot continue fishing, I feel uneasy about my life. Without fishing grounds, more and more elderly people are killing time at the senior citizens' community hall. They have almost no cash income, so they are oversensitive to the loss and gain, and quarrel over trifles right away. They tend to have a nasty temper.*"

Mrs. L. fisherwoman catching shellfishes (60 years, b. 1954)

When she married the second son of a family with six sons and daughters in 1974, Mrs. L. and her husband were given a boat for catching surf clam as well as 10 kg of rice and 10 kg of wheat for them to start their new independent life. They rented a house in J Village, and her husband caught grand jackknife clam while employing 7-8 men on his boat. When their youngest child was five years old, she and her husband fished swimming crabs and fleshy prawn. Then they also employed women on their boat and caught common orient and duck clams. Their two daughters and a son were married and living in Gimje City. Until the construction of the tide embankment, they had operated a 2 t boat with 10 people aboard to catch 100-120 kg.day^{-1} of duck clam, and sold them to consignors' counters at the harbor. In 1997, their catch of shellfish was worth USD 30,000, contributing to the expenses for their elder daughter's wedding. Since 2002, they had fished Japanese mullet, fleshy prawn and female swimming crabs in spring, striped mullet in summer, male

swimming crabs, fleshy prawn and gizzard shads in autumn, and grand jackknife clam, common orient clam and duck clam in winter.

As they could not fish after the completion of the embankment, her husband became jobless, and Mrs. L. worked in agriculture as a day laborer with co-workers who were in their fifties and sixties. Sea fishing for 4-5 hours brought about USD 200 day on average, but working in the fields only earned about a half this, even though physically harder. When working at sea, they would take days off for rain and storms, whereas working in the fields was not so affected by weather. If others worked, they could not rest even if they wished. Sometimes, villages would take time off fishing to go on a group tour. Now, they could no longer afford this. In autumn after the rice was harvested, Mrs L. worked planting potatoes in the greenhouses from 04:00-14:00 hrs. If six people worked as a team for 8 hours, the team earned USD 300; four people working together earned USD 200. The wages were divided equally among team members. The more fields they worked in, the more they could earn. So they gathered together to maintain each member's daily allowance of USD 60. With regard to other field work, they worked 250 days annually harvesting cabbage, Chinese cabbage and onions, and earned USD 13-15,000. Women in their seventies made USD 100-200 a day when they caught shellfishes, but working in the fields even for as long as 10 hrs brought them USD 55. Yet, the women had places to work, whereas the men had none. Elderly people who had no income could obtain special allowances of USD 700-800 a month, but those who stopped fishing often suffered cognitive impairment and moved into nursing homes or their children's houses. As a result, the number of empty houses was increasing, and accounted for more than 10 % of all houses.

When Mrs. L. started her work at 03:00 hrs, she comes back home at 13:00 hrs, and then grew vegetables, such as red pepper, sweet potato, potato, bean, Chinese cabbage, radish, and eggplant in her own fields for her own household. Harvested in August and dried by machine, red peppers were sold to villagers. The price of rice was USD 150 for 80 kg, while the prices of black soybean and soybeans were USD 800 and USD 600 for 70 kg, respectively. Thus vegetable fields yielded more than paddy fields, so more and more villagers changed paddies into vegetable fields. However, the income from fishing was 20 times more than that from farming. With a 2 t boat, fishers earned about USD 60,000 a year. Each received only USD 5,400 (almost 10 %

of the annual income) as compensation for the reclamation of Saemanguem. The largest compensation paid was USD 8,400. When engaged in fishing, fishers went to markets every week but at present, however, all the necessary cooking ingredients are raised in their own fields, so they no longer shop. As they were not involved in farming before, they were learning from elderly fellow villagers about the varieties of seasonal vegetables as well as how to plant and look after them. To hold expenditure low, when she had nothing to do, Mrs. L. played Japanese gambling card games with village women in the community hall or took care of her grandchild for her daughter.

Cancellation of the festival of women

Decreasing villagers' incomes were negatively impacting the local economy of the Gimje area. Those who lost their sources of income had become very sensitive to their expenditures. As an example, in 2014 elderly women unilaterally canceled the festival to pray for their families, maritime safety and good catch, which was traditionally held by women in the village over three days in February, according to the lunar calendar. The origin of the festival was uncertain, but previously it had been held every three years (National Folk Museum 2008). Since 2003 when a marine boat accident occurred, however, women as central players had held the festival every year. The reasons the festival was suspended were that women began to regard it as a superstition, most of the younger women who should have been hosting the festival had jobs, and the remaining elderly women alone could not prepare the festival. However, women in their fifties and sixties intended to continue the festival at least in their generation. From preparation to the party after it, all the village women participated in the festival that promoted a sense of unity and solidarity. Although they were rivals in fishing, they helped each other in the perilous sea, and they also assisted each other on occasions such as weddings and funerals. When they did not go fishing, they gathered in the community hall to prepare and have lunch together, or they went on group tours. However, women at the age of 70 and above who were living alone began to receive livelihood assistance from the government, and it became impossible for younger working women to have lunch with them. Such a gap between generations seemed to have caused the discontinuity of the festival. With little cash income, elderly women appeared to be strict about their spending money. A group of village women who were in their fifties and sixties requested an influential politician

representing the constituency to make a room for them to gather in the community hall. These age cohort differences suggest widening gaps between women of different ages.

Fishers livelihoods, development policies and environmental issues

At first, many women and men fishers opposed the reclamation works, but people who had nothing to do with fishing were rallied to demonstrate in favor of the reclamation and the fishers' voice was ignored. The Federation for the Environment Movement also opposed the reclamation but its top priority was to conserve the wildlife.

The J Village fishers' views were expressed through the J Village Emergency Preparedness Committee, and the fishing village cooperative. Neither body was effective nor well informed in representing the fishers, and the two did not hold common views. The former Committee dealt with such matters as liaison with the Rural Water Corporation that was in charge of water quality and opening and closing the water gates.

In addition, the fishers' interests were represented by those who did not support their opposition to the reclamation. Of the chiefs of 12 fishing village cooperatives in Simpo harbor area, only 3 were engaged in fishing. The remaining 9 chiefs were not concerned with fishing and did not sympathize with the fishers whose livelihoods would be badly affected by the reclamation. Each fishing village cooperative was a subordinate organization of the Fisheries Cooperative Association, with a budget that was 90 % subsidized by the national government. The chiefs of the fishing village cooperatives were quasi-public servants who could not act openly for the interests of the women and men fishers they were representing.

Even after the completion of the tide embankment, differences of opinion remained between the chief of the fishing village cooperative of J Village and the Emergency Preparedness Committee. Although compensation for fishing rights had already been made, the Committee planned a demonstration in the expectation of further compensation from the national government. At first the Committee was for the reclamation of Saemangeum, but later it participated in the movement against the reclamation, together with

the Federation for the Environment Movement, and urged the governor of North Jeolla Province to clearly show the grounds for determining the amounts of compensation money. Government authorities assumed that since the Council of the chiefs of the 12 fishing village cooperatives and official organizations constituted the Emergency Preparedness Committee, then the fishers' voice was expressed. However, the chiefs, who had no knowledge of fishing, disapproved of the idea of further protest and the organizations became antagonistic.

The chief of the fishing village cooperative of J Village who had been against the reclamation from the very beginning argued that if the Committee held a demonstration they should demand some measures to secure the livelihoods of fishers. The J Village fishers who did not own boats were not aware of information on compensation and let themselves be led by the Emergency Preparedness Committee's views. They urged the Committee to consult with villagers and develop a consensus, rather than pursue its own opinion. When they realized, however, that the position of the Committee was different from theirs and that they had been used for the Committee's own ends, the fishers of J Village began to act independently.

To hide several problems, including dust caused by the reclamation and dried tidelands damaged by salt, the Rural Water Corporation employed local residents to sow seeds of sea-blite (*Suaeda japonica)* by tractor. Such support employed women and men fishers on construction sites and assisted the Corporation to stifle the fishers' dissatisfaction. However, failing to find new jobs, many of the several thousand women and men who lost their fishing grounds kept fishing, though they were aware that they were considered temporary illegal fishermen. For fear that fishermen would feel resentful toward strict controls, the government tacitly permitted such illegal fishing. Fishermen of J Village said that the reclamation project could not be reversed because it was the national policy which 5 consecutive presidents pushed forward and that what they wanted was to have the government reclaim just an area for present needs and hand the remaining tideland down to the future generations.

Compensation complications

Compensation arrangements were contentious. Since government agencies neither explained to nor discussed with the women and men fishers the

rationale for the amounts and their distribution, J Village's Council of Fishers with Boats did not accept a unilateral proposal. The women and men fishers catching shellfish, however, accepted it only because they could receive as much as USD 10,000. The government insisted that if the fishers did not accept money, the funds would be returned to the national treasury. In the end, the amounts of compensation that the fishers of J Village received varied from USD 1,500 to 8,400 per person, whereas some who had never fished received USD 10,000.

More importantly for the long term, despite the compensation, the women and men fishers were not provided any support in their future livelihoods and authorities did not keep a promise that depreciation would not be deducted from the compensation. In 1991, the fishermen with boats in Saemangeum protested by camping in front of the national assembly building and also talked with congressmen representing the constituency, but the problem was not solved. The fishermen then took their case to court but, after 4 years, lost it.

The amounts to be paid to the women and men fishers who cultivated common orient clam were determined according to the areas of the grounds and annual incomes. As a result, they were larger than the amounts paid to those who had been fishing in public areas of common fishing grounds, including both the fishers who had been catching shellfish and fishermen who had been fishing on boats. The standards used for determining the amounts for the latter fishermen were yearly incomes, the scale of boats (for fishermen on boats), and ages and days working (for fishermen catching shellfish). However, the standards for determining the amounts of compensation for fishermen catching shellfish were not very clear, and all the residents who had applied were considered eligible recipients.

The number of fishermen in Gimje City who were to receive money in compensation should have been about 3,500 but about 7,000 actually received compensation. Using only resident registration, even those who did not live in Gimje City or who had not been engaged in the fishery were included as eligible recipients. The total sum of compensation was fixed and so when more people were eligible, each person's share was less.

To rectify such unclear standards, Gimje City issued licenses for catching shellfish to those who paid USD 3 as a usage fee for the fishing grounds for 1994 and only the people who had licenses for catching shellfish were targeted for compensation. Thus the city limited compensation to only licensees and excluded non-residents.

The fishers became powerless parties with respect to compensation for fishing rights. Firstly, they had no information-gathering ability and legal knowledge and lacked appropriate advisers. In Gimje City, the Ministry of Agriculture and Fishery approved that the Gimje Fisheries Cooperative's use of 2,600 ha of fishing ground, and that the fishing rights belonged to the members of the J fishing village cooperatives, who were also the members of the Gimje Fisheries Cooperative. However, the women and men fishers in the surrounding areas of Haje and Simpo did not have adjacent fishing grounds, so they were not granted such rights. If exclusive access to adjacent fishing grounds were admitted, the fishers from other areas could not fish there. Yet, local women and men fishers in Gimje, Haje and Gyeohwa have used Saemangeum as common fishing grounds since the 1960s. To prevent conflicts among the fishers, the Provincial government of North Jeolla Province determined that adjacent seashores in the North Jeolla Province were common fishing grounds that anyone residing in North Jeolla Province could have accessed. As a result, not only the women and men fishers working in adjacent fishing grounds but also people who had just entered in the register of residents beforehand were able to receive money in compensation. Thus, the fishers who were affected the most by the loss of fishing grounds received smaller amounts of money than their annual incomes.

Even though they were aware that people who were neither the women and men fishers nor residents had received money in compensation, no one could stop this because some were their relatives and some were their neighbors. Fishermen said that it was a problem for the government to coordinate, whereas the government said that it was a problem for the local people to settle. Although they paid attention to themes such as environmental deterioration of tidelands, economic values and conservation, in their concerns over the reclamation the Federation of the Environment Movement and researchers neglected the rights of dispossessed humans (the women and men fishers) to a decent standard of living.

Reclamation politics

The tideland reclamation project was perceived by many as a political issue. Capitalists and conglomerates had the rosy dream that reclamation would secure a vast area of land and the following developments would vitalize a sluggish local economy. For local women and men fishers, it was surely an illusion as they were deprived of their fishing grounds. The fishers who were immediately concerned with using the tideland did not benefit from the development of the reclaimed land. Instead, as the affected parties, they continually felt helpless. The J fishing village cooperative chief said that the fishers did not have sufficient power to oppose national policies and, rather than object, it was wiser to demand the government implement measures to provide them living support.

The fishers of J Village say that the reclamation in Saemangeum was a development project intended to pull in votes from the residents in the Jeonbuk Provincial Government area who had a tendency to support opposition parties. The reclamation project has been underway for more than 20 years, and has survived five presidential elections. Its plans have changed with each change in national government. The project was not initiated with any specific objectives. The project went ahead despite researchers and experts insisting that Saemangeum had more economic value as fishing grounds than as farmland.

On the advice of the chief of H fishing village cooperatives in Gyeonggi-do, where measures to guarantee the women and men fishers' livelihood after the reclamation were taken, the chief of the fishing village cooperatives urged the fishers around Simpo harbor to demand such measures of the government. Without a persuasive leader who could harmonize various opinions, however, J Village ended up with a clash of opinions. Villagers brought their problem to researchers and experts, congressmen, NGOs, and environmental conservation organizations. The top priority of these interest groups, however, was to stop reclamation works and restore the environment to its original condition. The problem of securing the women and men fishers' livelihoods after the reclamation was deferred.

Conclusions

Since it was desalinated through major land reclamation projects starting in 1991, Saemangeum had changed from a lucrative marine fish and shellfish area to a location for freshwater fish. Markets for the freshwater products have still to be developed. Although the original plan for the land reclamation was to open up more agricultural land, industry had tended to take over and tourism is planned. Looking for jobs, young women and men fishers who had worked on the sea left the villages, accelerating the hollowing out and aging of the village populations.

For those who were born in Saemangeum and has spent decades there dependent on the sea before they lost their fishing grounds in the national reclamation project, changing jobs and learning new techniques was hard. The women and men fishers without agricultural land have been absorbed into unskilled, low paid work as day laborers. Those who remained in the villages were forced to be self-sufficient.

Their sense of solidarity and belonging to the same community promoted by mutual aid as well as relationships established beyond generations has been shattered. Thus, just as the tideland is disappearing to become part of the land, so the women and men fishers are becoming exhausted and impoverished.

Development that should have vitalized the local economy affected it adversely. Women and men fishers who constituted the minority and the weak were made acutely aware of how helpless and hopeless they were. Meanwhile, the development project is making progress toward completion, by 2020, of a vast area of land and expressways. In the face of this development, the fishers were social, political, and cultural underdogs. By the development of large-scale national projects, their livelihood foundations were removed but nobody, including the nation and administration, guaranteed the life of the women and men fishers who did not have a place to appeal for their basic life rights.

Acknowledgements

This work was supported by Monbu-Kagaku-Sho (Ministry of Education, Culture and Science, South Korea), and the Miyazaki Arts and Sciences Promotion Foundation, Japan funds from 2011 to 2014. And in this research, thank you for the cooperation of many people including Kim Chairman of the senior citizens association of Ana Village.

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