

# Gageo-do Island Anchovy Fishery, South Korea \*

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## 1 Part I: Static Analysis - Collective action

Gageo-do, the southwesternmost island in South Korea, is located off the coast of the province of Jeollanam-do. The marine life, including seaweed and shellfish, is readily available for the islanders to collect. The anchovies start to shoal up on the island of Gageo-do during the first summer tide in July. Fish migration, plant development, and seasonal availability of flora and fauna all have an impact on how the labor force is dispersed yearly. There are three distinct seasons in terms of product activity: the springtime seaweed and shell collection season, the summertime anchovy fishing season, and the falltime mixed fishing season.

### 1.1 The Commons Dilemma

- In Gageo-do, there are no issues with collective action at the moment. However, the introduction of new technologies that were the result of outside influence rather than indigenous ingenuity, such as the gas lamp, kerosene flare, and current dynamo-powered spotlight for attracting anchovies in Gageo-do, might result in the potential issues. Because of their great usefulness and inexpensive cost, these products were quickly embraced by other fishermen after being exposed to one of them. The new developments have increased the need for experts, which has changed how crew members are recruited and assigned to roles. According to the quantity of money spent, the level of competence, and the labor input to the fishing activities, the mechanism of allocating profits has also been changed. The gap between prosperous and impoverished fishermen grew as a result of the disparity in income levels. The majority of motor boat and net owners currently belong to the community's upper class.

### 1.2 Biophysical Context (IAD)

- **Natural infrastructure:** The southernmost island, Gageo-do, is situated off the Jeollanam-do Province's western coast. One of the regions of Korea with the greatest geographic isolation is this island. A tiny island with a surface area of fourteen square kilometers, Gageo-do is surrounded by at least twenty reefs. The islanders may easily harvest a variety of marine life, including seaweed and shellfish, from the reefs and

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\*This document uses *the Revised Romanization of Korean romanization system*, which was made public by the Ministry of Culture and Tourism of South Korea. The terms from the original text are given in parentheses to prevent misunderstanding.

stony seabed. Near the first summer tide in July, the anchovies begin to shoal up around the island of Gageo-do.

- **Hard human-made infrastructure:** The village homes are closely clustered around the beach due to the cooperative work pattern of the fishermen and the ease of access to the beach and dock, which are the fishermen's primary work locations on the land. The most popular fishing techniques had been hook-and-line fishing, long-line fishing, and dragnet fishing close to the village's beach. All that was needed for these kinds of fishing were tiny wooden boats with a sail and oars and a crew of two to six people. As a result, these fishing operations were performed by connected fishermen from a single home or by two to three families working together. The introduction of motorboats and intense boat lights with different contemporary nylon nets, however, necessitates more investment as well as larger, more skilled labor forces. The fishermen had to unite into vast associations in order to benefit from this new technology.

### 1.3 Attributes of the Community (IAD)

- **Social Infrastructure:** Contrary to the conventional method of fishing, the introduction of motorboats with modern nylon nets requires more investment as well as bigger, more qualified work teams. In order to take use of this new technology, the fisherman had to band together into sizable groups. Seaweed collection and anchovy fishing are examples of community cooperative labor practices that strengthen village cohesion. In a setting that is collectively joyful, people like working together. As participants estimate their portions of the catch, monetary incentives serve to further strengthen this sense of community.
- **Human Infrastructure:** Anchovy and other fishing operations were individual team activities and not communal by nature. Unlike those for gathering seaweed and shells, these fishing methods and techniques have been improved upon on an individual basis. The seasonal availability of flora and fauna, plant growth, and fish migration all affect how the work force is distributed annually. In terms of product activity, there are three different seasons: the spring seaweed and seashell gathering season, the summer anchovy fishing season, and the autumn mixed fishing season.

### 1.4 Rules in Use (IAD)

1. **Position Rules:** The functional division of the crew's roles is set up such that each crew member performs a complimentary set of duties.
  - *The leader* has knowledge of the local marine ecosystem and controls the flow of the water, spots enormous anchovy schools, and sets the pace, lighting, casting, and drawing.
  - *The skipper* assumes all responsibility for the crew's and the boat's safety.
  - *The motor engineer and dynamo operator* are the only mechanics with any knowledge of the boat's machinery.
  - Under the guidance of the leader, *the remaining crew members* offer work for deferentially allocated jobs.

Women work in agriculture and wood gathering from spring to fall, while fishermen are occupied with sea fishing.

2. **Boundary Rules:** The boat owner or borrower puts together the boat crew prior to the start of the summer anchovy fishing season (often in the spring). A crew of eighteen to twenty-five people works on each anchovy fishing boat. The boat owner seeks for potential employees with anchovy fishing expertise and experience when hiring new crew members. All members of the crew, with the exception of the skipper, motor engineer, and dynamo operator, were chosen from the local community.
3. **Choice Rules:** When night strikes and all preparations are finished, the boat departs. Fishing for anchovies is done all across the island. The leader looks out of his boat's bow to see whether he can see a shoal of anchovies before deciding which direction to go. The most common way to find an anchovy shoal is to keep an eye out for fish. He routinely instructs the light guy to turn the 1,000 watt bulb on or off for this reason. If a sizable shoal is seen, the boat moves toward it while playing the dynamo-powered spotlight over the netting area. The school of anchovies then follows the boat and the light. All the pole men, rope men, and net men quickly halt their pace and cast the net into the lake. When the boat comes to a full halt, they start to drag the net inside so that the fish may be removed.
4. **Aggregation Rules:** The village has a wide variety of official and informal institutions that function as a unit of administration, politics, economic distribution, and social control. Higher administrative units like the myeon(myon), gun, and do often provide the orders necessary to establish formal and official organizations. Some of these organizations merely exist in name and are completely inactive. The leaders of certain informal groups, however, are more influential than those of official organizations and are quite active. At the grand village meeting in January, the villagers elect five members to the village development committee (Daedonghoe). The committee's primary responsibility as a consultative group is to advise on and suggest courses of action.
5. **Scope rules:** Instead of the application of the national legislation, the island's social order has primarily been preserved via interwoven consanguineous-affinal relationships and local customs. Filial piety, fraternity, and chastity are seen to be topics of social morality and are concerns of the village as well as the individual, family, and kinship groups. The villagers are certain that if someone violates the standards of behavior, they should be punished by hwajigae and the Deokseogmari(doksokmori), which have been passed down down the generations as sanctioning mechanisms.
6. **Information Rules:** The movement level of people (migration) into or out of the island is relatively stable and the transmission of messages (communication) is quite slow and inconvenient. Since the agricultural products meet only a minute part of islander's food demand and the amount of seaweed collected or fish caught far exceeds the amount annually consumed, the exchange of marine and farm products between island fishermen and mainland farmers is necessary for the basic economic life of the islanders.
7. **Payoff Rules:** A beach in front of the community is where the catch is divided. The process for determining the shares is straightforward. The initial shares of the crew

members plus the additional shares of crew and non-crew members make up the entire number of shares, in principle. Each crew member receives a full share of the original. According to the extent of their efforts or responsibilities played in the fishing operation, the additional shares are distributed among non-crew and crew members in a courteous manner. The non-crew members who made financial investments get close to 60 percent of the overall fish harvest. In actuality, all the non-crew shares go to one individual since a boat owner often owns the net and dynamo jointly and also feeds the crew with night food and drink. The leader, skipper, motor engineer, and dynamo operator get 36.36 percent of the total shares for crew members. As a result, the typical crew fisherman only receives 1.25 percent of the whole catch. Deokseogmari(doksokmori) and hwajigae are typical sanctioning mechanisms for handling breaches of social morality and custom. Deokseogmari(doksokmori) is applied in cases where filial piety and fraternity have been disregarded. The hwajigae is applied to those who commit adultery and incest.

## 1.5 Summary

There are no current difficulties concerning group action in Gageo-do. The introduction of new technologies, however, that were the product of outside influence rather than indigenous innovation, such as the gas lamp, kerosene flare, and contemporary dynamo-powered spotlight for drawing anchovies in Gageo-do, may lead to the possible problems.

## 2 Part II. Dynamic Analysis - Robustness

The only barriers to a more intensive use of marine resources in a broad fishing region are a lack of effective equipment and knowledge since for fisherman, the sea is essentially an unending frontier for them. The islanders are fairly realistic about the viability of a new concept or technical advancement, as seen by the sequence of improvements in anchovy fishing and in other parts of material culture, and they readily accept change in spite of several challenges. Collecting, fishing, farming, and other forms of production won't be enough for the islands to support themselves at the current level of technology as the Gageo-do population grows. The islanders will therefore have to choose from a number of options in order to avoid this situation: they can either leave the island in search of employment on the mainland, they can enhance the current production methods and techniques, or they can look for and create new economic opportunities to complement their current economic endeavors.

## 3 Part III. Case Contributors

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