

# Survey of fishermen attitudes in Japan

M. Takezawa, S. Kubota, Y. Maeno, Y. Yamada & N. Takahashi  
*Department of Civil Engineering, College of Science & Technology,  
Nihon University, Japan*

## Abstract

The coastal zone of Japan of about 34,000 km is dotted with about 3000 fishing harbors. At present, about 270,000 workers in the fishery industry process about 5,300,000 tons of fish annually in Japan. However, fish catches have been decreasing since 1980, and the incomes of fishermen have also been decreasing. The fishermen near the largest cities have access to incomes outside of the fishing industry, but it is not easy to get a side income in the small fisheries of rural areas. As a result, many young people are moving to large cities, and aging people are staying in the small fisheries. In the development of cities in the 20<sup>th</sup> century, many skyscrapers were built in the largest cities, and much of the land was covered by asphalt and concrete. However, in the 21<sup>st</sup> century, many tired city dwellers will be escaping the bustle of the big cities by moving to country towns, and many Japanese hope to retire in fishing villages. However, it is doubtful whether people in fishing villages can accommodate the city dwellers with amicable feelings and adequate and satisfactory infrastructure, such as water supply systems, sewerage, transportation, shopping, and medical services, since city dwellers have become accustomed to urban lifestyles.

*Keywords: fishermen, fishing village, fishery district, fishery community.*

## 1 Introduction

Fishermen in Japan have been supplying various fishes and shells, which are a source of albumin, and as a result, have been contributing to the health and abundant food life of Japanese since old times. However, the catches in Japan are decreasing due to reasons such as over-fishing, the deteriorating sea environment, fishing regulations, and the fishing quota system. In addition, the nation is anxious about the decrease in the number and the increasing age of fishermen, the weak production system for a stable supply of marine products,



and the sustainable utilization of marine resources in the future. This paper describes the results of questionnaire surveys administered to fishermen and residents of fishing villages in Japan. The impressions of city dwellers on fishing villages were assessed by questionnaire and are also described.

## **2 Concept of fishery districts in Japan [1], [2], [3]**

### **2.1 Environments of fishing grounds**

The number of fishery districts on the Japanese Islands was 2,263 in 1998. In the five years before 1998, fishing grounds were altered and abolished as follows: 493 fishery districts with an area of 56,517,449 m<sup>2</sup> abandoned the right to fish, 842 fishery districts with an area of 35,143,106 m<sup>2</sup> were reclaimed, 821 fishery districts with a working volume of 4,035,301 m<sup>3</sup> set up fish reefs, and 752 fishery districts set up beaches. In 1998, the number of fishery districts with seaweed beds was 1,339, with tidal flat was 524, undertaking forestation of protected forests for fish breeding was 143, and undertaking cleaning activities along coastal areas was 1824.

### **2.2 Recreational fishing**

In 1998, 22,325 people worked as recreational fishing guides. About 38,680,600 people visited these areas for recreational fishing using fishing boats and for gathering sea shells.

### **2.3 Festival and event**

Fishery districts holding festivals and events numbered 2,071 in 1998. A typical fishery district holds about 40 option markets, 9 traditional festivals and 7 events each year.

### **2.4 Disposal methods of wastes in fishing communities**

Of the 6,245 fishing communities, 662 (10.6%) had public sewage disposal in 1998. A total of 1,945 fishing communities (31.1%) are connected to flush sewage disposal systems, and 4300 fishing communities (68.9%) are using septic systems with periodic removal of solid waste.

### **2.5 Associated fisheries**

In 2001, there were a total of 2,931 designated fishing ports: 2,220 first class fishing ports used mainly by local fishermen, 497 second class fishing ports used more extensively than the first class fishing ports but less than the third class fishing ports, 113 third class fishing ports used by fishermen from all over the country, and 101 fourth class fishing ports usually located on isolated island or at remote place but which are important for developing fishing grounds or providing shelter to fishing vessels. There were 3,600 cold storage plants with a



combined capacity of 33,238,620 m<sup>3</sup> and 1,338 freezing plants with a combined capacity of 31,845 m<sup>3</sup> per day in 2001.

In 1998, a total of 6,103,983 tons of fish from 985 fish markets were treated. Processed fishery products including fish pastes, dried, salt-dried, salted, smoked and dried, and cured fish were produced at 11,272 factories in 1998.

### 3 Structure of fishery production [1],[2],[3]

The number of fishery establishments by type is shown in Table 1. Types are as follows: (1) total, (2) individual management, (3) company, (4) fishery cooperative, (5) fishery production association, (6) joint management, (7) government, public office, school and experiment station.

The number of fishery household members is shown in Tables 2 and 3.

The number of people engaged in work in the fisheries is shown in Tables 4 and 5, where persons engaged in fishery work are classified as those who engage in marine fishery works for more than 30 days per year. Members of household are classified as fishery households.

Table 1: Number of fishery establishments by type. (Unit: enterprise).

Yr/mo/dy	(1)	(2)	(3)	(4)	(5)	(6)	(7)
1993.11.1	175,929	167,487	2,857	363	224	4,831	117
1995. 1. 1	167,367	158,884	3,062	357	199	4,742	123
1996. 1. 1	163,169	154,660	2,993	398	204	4,789	125
1997. 1. 1	159,897	151,562	2,892	392	196	4,730	125
1998. 1. 1	156,862	148,478	2,841	396	191	4,830	126
1998.11.1	150,586	143,194	3,063	289	159	3,760	121
2000. 1. 1	150,228	141,944	2,892	341	180	4,744	127
2001. 1. 1	145,945	137,705	2,936	334	158	4,687	125

Table 2: Individuals in households involved in the fishery (Unit: person).

Yr/mo/dy	Total	14 years and under	15~39 years	40~59 years	60 years and over
1993.11.1	677,070	103,780	183,010	196,380	193,890
1994.11.1	616,530	90,930	160,770	172,820	192,020
1995.11.1	593,140	85,700	150,870	163,970	192,610
1996.11.1	569,130	83,290	141,580	153,150	191,110
1997.11.1	553,990	79,480	135,340	146,670	192,510
1998.11.1	523,565	70,081	123,089	140,555	189,840
1999.11.1	520,140	70,560	121,000	136,810	191,760
2000.11.1	504,070	66,850	113,890	132,860	190,450



Table 3: Individuals in households employed by fisheries (Unit: person).

Yr/mo/dy	Total	14 years and under	15~39 years	40~59 years	60 years and over
1993.11.1	260,200	48,090	79,260	89,460	43,380
1994.11.1	236,470	42,950	71,230	80,100	42,170
1995.11.1	221,970	39,330	65,050	76,170	41,430
1996.11.1	206,180	36,230	59,580	70,110	40,260
1997.11.1	193,310	33,100	54,630	66,030	39,530
1998.11.1	208,813	34,278	62,016	69,849	42,670
1999.11.1	192,030	29,990	55,370	65,500	41,160
2000.11.1	181,200	28,090	51,060	61,890	40,150

Table 4: Persons engaged in fishery by gender and age (Unit: person).

Yr/mo/dy	Total	Male total	15~39 years	40~59 years	60 years and over	Female total
1993.11.1	342,430	279,220	55,380	130,860	92,980	63,210
1994.11.1	312,890	257,430	49,230	114,440	93,750	55,460
1995.11.1	301,430	247,200	44,800	107,550	94,850	54,230
1996.11.1	287,380	235,040	40,480	99,570	94,990	52,340
1997.11.1	278,200	227,100	36,870	93,950	96,260	51,110
1998.11.1	277,042	230,559	39,066	94,207	97,386	46,443
1999.11.1	269,990	224,400	35,190	90,190	99,010	45,600
2000.11.1	260,200	216,100	32,810	85,580	97,710	44,100

Table 5: Persons engaged in fishery by level of engagement. (Unit: person).

Yr/mo/dy	Total	Only own fishery	Mainly own Fishery	Mainly employed	Only employed
1996.11.1	287,380	205,370	9,960	9,840	62,210
1997.11.1	278,200	200,770	9,600	9,470	58,340
1998.11.1	277,042	194,032	7,670	8,718	66,622
1999.11.1	269,990	192,400	6,950	9,130	61,330
2000.11.1	260,200	186,880	6,870	8,680	57,760

Fishery and aquaculture production is shown in Tables 6 and 7.

Fishery household management in 2000 was as follows: On average, fishery gross income was 4,708,900 yen and fishery expenditures were 2,758,400 yen, leaving an income of 1,950,500 yen. Non-business income of fishery was 1,582,700 yen, annuity income was 992,400 yen, the all other income sources were 966,900 yen while non-fishery income was 3,542,000 yen.



Table 6: Production quantity by type of fishery (Unit: 1000 t).

Year	Total	Marine fisheries	Aqua-culture	Inland water fishery	Inland water aquaculture	Whaling (number of whales)
1992	9,266	7,771	1,306	97	91	164
1993	8,707	7,256	1,274	91	86	175
1994	8,103	6,590	1,344	93	77	129
1995	7,489	6,007	1,315	92	75	174
1996	7,417	5,974	1,274	94	73	174
1997	7,411	5,985	1,273	86	67	151
1998	6,684	5,316	1,227	79	64	158
1999	6,626	5,239	1,253	71	63	178
2000	6,384	5,022	1,231	71	61	188
2001	6,127	4,753	1,256	62	56	166

Table 7: Production value by type of fishery (Unit: million yen).

Year	Total	Marine fisheries	Aqua-culture	Inland water fishery	Inland water aquaculture	Whaling (number of whales)
1992	2,606,342	1,827,215	612,597	68,492	98,038	610
1993	2,488,131	1,716,291	606,910	63,432	101,497	660
1994	2,367,844	1,581,905	626,956	66,826	92,157	620
1995	2,248,850	1,511,186	573,936	70,344	93,383	702
1996	2,194,590	1,462,765	565,376	73,229	93,220	725
1997	2,221,902	1,467,404	598,869	73,694	81,935	691
1998	2,028,445	1,337,903	546,390	66,182	77,969	711
1999	1,986,046	1,316,244	540,577	62,202	67,023	791
2000	1,874,558	1,233,994	527,230	62,285	51,048	733
2001	1,779,641	1,165,065	502,933	64,419	47,224	629

Therefore, the total income was 5,492,500 yen on average, while family expenses were 4,052,700 yen, taxes, public-imposts, and other obligations were 822,600 yen, leaving a surplus 617,200 yen per year for fishery households. As shown above, there is a dependency on the fishery of 35.3%, the ratio of using fishery income to cover family expenditures based on fishery income was 48.1%, and the family expenditure per person was 1,202,600 yen.

#### 4 Attitude survey

A questionnaire was used to survey residents of fishery communities in Japan. A total of 10,000 postcards were distributed through fishery co-operative associations, and 3,095 cards were returned.



The contents of questionnaire are as follows:

(1) Sex. (2) Address. (3) Age. (4) Occupation. (5) Do you think that you will be living in this district in the future? (6) Are you satisfied with your life at the present? (7) Do you have a successor in your occupation? (8) Do you need the assistance of your family in your occupation? (9) Do you think that the young people will be return to this district from the cities? (10) Can you accept people who hope to spend their last years in this district? (11) Is your life better now than in the past? (12) Do you hope that your district is full of vigor? (13) How do you think the natural environment of this district? (14) How do you think the human community of this district? (15) How do you rate the facilities of welfare and education? (16) What is necessary in this district now? The results are as follows:

(1) Sex: male, 75.7%; female, 21.0%; and no answer, 3.3%. (2) Address: Hokkaido, 14.8%; Kagoshima, 6.3%; Fukuoka, 5.1%; Hyogo, 5.1%; Chiba, 4.3%; Nagasaki, 4.0%; and other, 60.4%. (3) Age: 0~20 years old, 0.8%; 21~30 years old, 7.1%; 31~40 years old, 13.3%; 41~50 years old, 28.1%; 51~60 years old, 28.6%; 61~70 years old, 15.3%; 71 years old and over, 5.4%; and no answer, 1.4%. (4) Occupation: fishery, 49.4%; office worker, 16.7%; self-supporting, 4.5%; agriculture, 1.0%; and other, 18.7%. (5) Responses: "yes", 91.0%; "no", 7.7%; and no answer, 1.3%. (6) Responses: "yes", 46.0%; "no", 51.9%; and no answer, 2.1%. (7) Responses: "yes", 29.9%; "no", 66.0%; and no answer, 4.1%. (8) Responses: "yes", 69.6%; "no", 28.6%; and no answer, 1.8%. (9) Responses: "yes", 26.6%; "no", 71.0%; and no answer, 2.4%. (10) Responses: "yes", 76.4%; "no", 19.7%; and no answer, 3.9%. (11) Responses: "yes", 60.3%; "no", 35.9%; and no answer, 3.8%. (12) Responses: "yes", 91.0%; "no", 7.1%; and no answer, 1.9%. (13) Responses: "good", 49.6%; "equivocal", 43.3%; "bad", 6.3%; and no answer, 0.8%. (14) Responses: "good", 29.4%; "equivocal", 62.0%; "bad", 7.4%; and no answer, 1.2%. (15) Responses: "good", 14.3%; "equivocal", 59.9%; "bad", 24.7%; and no answer, 1.1%. (16) Key words to describe what is necessary at fishery districts in Japan include: "jobs for young people outside of the fishery", "stimulation of business", "the tourist industry", "restoration of the environment", "activity of local markets", "support of the administrative office", "completion of an old age pension and a raising of the fish price", "union of fishery cooperative association and integration of fish markets", "access to highway", completion of medical facilities", "passion about fishery", "construction of welfare facilities", "street widening", "increase of tourists", "stable life of fishery – stabilization of fish price", "to outgrow the old conventions", "penalty for the violation of laws and principles of fisheries", "rich social life", "comfortable life in terms of money and peace of mind", "clean up of the sea", "prosperity of aquaculture", conservation of nature", "forestry management", and "forestry conservation".

The following questionnaire was administered to urban residents to assess their attitudes on the fishery.

Following are the contents of questionnaire administered to residents living in metropolitan areas:



(1) Sex. (2) Address. (3) Age. (4) Occupation. (5) Have you visited fishing villages? (6) Where do you want to spend your old age? (7) Do you think the future of fishery is bright? (8) Do you think that fishery is beautiful? (9) Do you think that fishery is enjoyable? (10) Do you feel friendship for people in the fishery? (11) Do you think that people in the fishery are poor? (12) Do you think that fishery work is dangerous? (13) Do you think that fishery work is dirty? (14) Do you think that fishery work is hard? (15) What are some concrete matters for ensuring the fishery an active future? The responses are as follows:

(1) Sex: male, 59 %; and female, 41%. (2) Address: Tokyo, 38.0%; Chiba, 22.0%; Kanagawa, 15.6%; and the other prefectures, 24.4%. (3) Age: 15~20 years old, 10.3%; 21~30 years old, 44.1%; 31~40 years old, 7.1%; 41~50 years old, 13.0%; 51~60 years old, 16.9%; 61~70 years old, 3.9%; and 71 years old and over, 4.8%. (4) Occupation: students, 39.6%; office workers, 24.0%; housewives, 12.3%; and others, 24.1%. (5) Responses: “yes”, 59.7%; “no”, 37.6%; and no answer, 2.7%. (6) Responses: fishing village, 5.2%; farm village, 7.8%; mountain village, 6.5%; large city, 15.6%; middle-sized or small cities, 43.5%; foreign country, 14.3%; and other, 7.1%. (7) Responses: “yes”, 37.7%, “no”, 30.5%, and “neither”, 29.8%. (8) Responses: “yes”, 12.9%; “no”, 51.9%; and “neither”, 35.2%. (9) Responses: “yes”, 37.0%, “no”, 23.4%, and “neither”, 39.6%. (10) Responses: “yes”, 57.8%; “no”, 22.7%; and “neither”, 19.5%. (11) Responses: “yes”, 13.0%; “no”, 49.4%; and “neither”, 37.6%. (12) Responses: “yes”, 81.8%; “no”, 8.4%; and “neither”, 9.8%. (13) Answer “yes”, 19.5%; “no”, 56.5%; “neither”, 24.0%. (14) Responses: “yes”, 87.6%; “no”, 2.6%; and “neither”, 9.8%. (15) Concrete ways to advance the fishery to an active future included the following opinions: “to increase the interchange of residents between city and fishery”, “money and people”, “integration of young people”, acceptance of the outside people”, “construction of shopping center”, “delivery of Internet”, “young people’s ability to act and spirit”, “cooperation of the elderly”, “construction of parks for children”, “reconsideration of town planning of ports and streets”, “abundant fish supply”, “the tourist industry”, “offering fishing experiences for city dwellers”, “construction of sea food restaurants”, “a national plan for enhancing fish catch”, “encouraging regional activity”, “sea pollution prevention”, “abundant resources of the sea”, “traffic networks between cities and fisheries”, “prosperity of industries other than the fishery”, “development of processed fishery products”, “to attract many young people”, “construction of hotels and tourist accommodations”, “to keep a balance in the fishery income”, “developing successors to the fishery”, “posting news relating to seasonal fishes and scenery of the fishery”, “appreciation for city dwellers”.

## 5 The role of Japan fisheries cooperatives

Throughout Japan, about 457,000 fishers (cooperative members) are engaged in fishery production activities, while conserving and fostering fishery resources under the framework of mutually supporting collaboration. These fishers have joined hands to organize the Japan Fisheries Cooperatives. Japan Fisheries Cooperatives serve as core organizations in fishing villages, protecting fishing



grounds, fostering marine resources, and marketing seafood. They also supply fishing materials and other daily commodities that are indispensable to cooperative members. There are 1600 Japan Fisheries Cooperatives along Japanese coastal areas. The Japan Fisheries Cooperatives maintain a home page on the Internet. Contents of the home page include Japan Fisheries Cooperatives news for the coming week, programs, introduction of Japan Fisheries Cooperatives goods, pages for children, gallery of Japan Fisheries Cooperatives, seasonal fishes, seafood center, job-vacancies for fishermen, women and youth liaison conferences of Japan Fisheries Cooperatives, recreational fisheries, and publications. The Fisheries Cooperatives of Akita and Yamagata prefectures have recently reorganized to 4 and 3 generalized branch offices from 12 and 8 Fisheries Cooperatives, respectively.

## **6 Activity of building up forestry owing to fishermen**

Fishermen engaged to coastal fisheries are recently becoming apprehensive about impoverishment of coastal fishing grounds because broad-leaved trees in the mountains are decreasing. Therefore, tree planting campaigns are gaining in popularity in order to recover the rich coastal fishing ground. For example, the Environmental Beautification to Promote Structure of Sea and Beach supports the tree planting campaigns of fishermen. The major activities include “a tree planting campaign for the increase of fishes”, “Forest plan festival for kelp”, “counter plan of salmon and trout reproduction”, “Making forest of beech”, “mountain is the sweetheart of the sea”, “sea, river and mountain are unified”. About 1,000,000 trees were planted through tree planting campaigns in 2001.

## **7 Case studies**

### **7.1 From a letter of a fisherman (67-years-old) living at Amino town, Kyoto Prefecture**

“I am going to be settling in this district in the future. Though I have a successor, I do not get his thinking. I need the assistance of many people around me, in addition to my family. I am thinking and hoping that young people will come back to this district. If people hope to spend the evening of life at this district, we are ready to happily receive them into our community. I think that the present life is higher than former times with respect to the civilized life as usual, but I hope that this district will become more and more lively. Natural environments of this district are very good. Human relations leave something to be not fit nicely, but it is good that several ways of thinking and points of view exit. Welfare and educational facilities are good, though their systems are questionable. The most essential matters are having a flexible head, being a man of action, having a campaign fund and uniting the efforts of a great number of people.”





### **7.2 From an interview with a manager (55 years old) of recreational fishery who is living in Ito City of Shizuoka Prefecture**

“I was a surveyor in the past. I have been managing a recreational boat and working as a fishing guide for 30 years. A school of sardines came to Itoshi and served as bait for bonito and tuna in the past few years. However, the sardines disappeared though anchovies, which are not a bait of bonito and tuna, are schooling this year. Sardines are sold at a high price, but anchovies can not be sold. Recreational fishing guests have been decreasing since 2 or 3 years ago. Services of wet towels and soups are well received by guests. Expense accounts have decreased and families have increased recently. We hope to have a safety port that is capable of mooring our boats during a typhoon. Fishery is very hard work, but it is pleasant to go fishing.”

### **7.3 From an interview with a white-collar worker (48-years-old) intending to be a fisherman reported in the *Asahi Newspaper* on January 5, 2002**

“I was in charge of a business at an electronic company. I went to a solitary island in the Inland Sea in Japan. I hoped for work varying from that of a businessman. I like fishing. I saw a recruitment notice for a fisherman in a newspaper. I was bent on becoming a fisherman though my wife was worry in a change of life. My master was an expert in teaching fishery. He advised me that I try to fish in the same way as him. My master was a good textbook. People of the island were very kind and hospitable. However, we always felt uneasy about the life environment in that human relations of the office and the home were same. I thought that people of this island would hope for us to make a permanent home on the island. People of the island helped us move and saw us off when we returned to the mainland.

### **7.4 From interviews with fishermen (71-years-old and 38-years-old) reported in the *Asahi Newspaper* on July 10, 2003**

They are a father and son pair who are divers belonging to the Huttsu fishing port of Chiba Prefecture. The son succeeded his father and has been diving for 20 years. They are catching clams in Tokyo Bay. The son wears a diving suit and jumps into the sea with a large basket when they arrive at the fishing grounds at 4:00 AM. His father pulls a large basket filled with clams up on board. The son said, “I was very afraid in water because the current was very fast. Though clams have suffered a marked decrease from 10 years ago, they were growing recently. Calm catching by diving requires a hard and fine body. This work is not favored considering the danger.”

### **7.5 From an interview with a fisherman reported in the *Asahi Newspaper* on October 15, 2003**

Kitadaitou Island is located in 360 km east of Okinawa, and this island is 13.5 km in circumference. The population is about 560 persons. This island was



explored 100 years ago, and was built by a unique culture in severe environment. Six fishermen live on Kitadaitou Island. They start work at 5:00 AM and return at noon. They speak, “we haven’t caught more than we eat on our island for a long time. If the sea becomes stormy, fish don’t appear on the table. We can’t live on our island if we fight nature.”

## 8 Conclusions

Fishermen think that fishery communities are good places to live, but they are mindful of their own successors and unstable fishing costs. The Japanese government office concerned with the fishery is considering countermeasures in the development of the fishery community, for example, developing interchanges between cities and fishery communities, new technical innovation of processed fishery products, living aquatic resources protection, fishing resources management, marketing of fishery products, and education activities of fishery. Based on the responses of city dwellers, fishery communities are places where they visit for sightseeing or recreation. If city dwellers hope to live in fishery communities, they need infrastructure such as health facilities, medical facilities, welfare services, convenient shopping, and transportation. However, city dwellers are interested in the natural environment, the livability, the culinary culture and food of fishery communities. The ideal life style of city dwellers is that they have houses in both the city and fishery community, and work in city. On the other hand, people of fishery communities hope that city dwellers will settle down and blend in with the fishery community’s normal routine. If things turn out as planned, the population in the fishery community will increase and prosper. Japanese certainly like fish and elderly people eat fish almost everyday. Fishes are a very important food and energy resource of Japanese. Fishermen in Japan are aging steadily and decreasing in number every year. Young people escape from the fishery communities to work in cities, and the aged people remain in fishery communities. The Japanese Government must protect fishermen to the end with improved policies.

## Acknowledgment

A part of the research was supported by a grant of the Japanese Institute of Technology on Fishing Ports and Communities.

## References

- [1] Statistics and Information Department Ministry of Agriculture, Forestry and Fisheries, *The 77<sup>th</sup> Statistical Yearbook of Ministry of Agriculture, Forestry and Fisheries, Japan, 2000~2001*, pp.470~584, 2003.
- [2] Statistics and Information Department Ministry of Agriculture, Forestry and Fisheries, *The 74<sup>th</sup> Statistical Yearbook of Ministry of Agriculture, Forestry and Fisheries, Japan, 1997~1998*, pp.299~390, 1999.
- [3] Statistics and Information Department Ministry of Agriculture, Forestry and Fisheries, *The 10<sup>th</sup> Census of Fishery*, pp.80~103, 2000.

