Survey Results

1. Marine Fisheries

(1) Fishery Management Entities

A "fishery management entity" is a household or business entity engaged in capturing fish and aquatic plants from the sea or conducting marine aquaculture with intent to sell for the purpose of earning a living or profit during the past year. (However, individual management entities engaged in marine fisheries for less than 30 days during the past year are excluded.)

"Coastal fishing class" is the collective term for classes of "without using fishing vessel", "non-powered fishing vessel", "fishing vessel with outboard motor", "powered fishing vessel of less than 10 tons", "set net," and "marine aquaculture." "Small/mid-scale fishing class" is the collective term for classes of powered fishing vessels of 10 tons and over but less than 1,000 tons. "Large-scale fishing class" is the collective term for classes of powered fishing vessels of 1,000 tons and over.

The total number of fishery management entities nationwide (as of November 1, 2018) was 79,067, decreased 15,440 (16.3%) from 5 years ago.

By fishery class, the number of management entities in coastal fishing class was 74,151, decreased 14,956 (16.8%). Of them, the number of management entities in marine aquaculture class was 13,950, those in coastal fishing class other than marine aquaculture class was 60,201, decreased 994 (6.7%) and 13,962 (18.8%), respectively, from 5 years ago.

Table 1: Number of Fishery Management Entities by Fishery Class

Classification	2013	2018	Increase/decrease from the previous survey (2018/2013)
	Entity	Entity	%
Total	94,507	79,067	△ 16.3
Coastal fishing class	89,107	74,151	△ 16.8
Marine aquaculture class	14,944	13,950	△ 6.7
Other coastal fishing class	74,163	60,201	△ 18.8
Small/mid-scale fishing class	5,344	4,862	△ 9.0
Large-scale fishing class	56	54	△ 3.6

By management organization, the number of individual management entities was 74,526, decreased 14,944 (16.7%) from 5 years ago. In addition, the number of organized management entities was 4,541, decreased 496 (9.8%) from 5 years ago. Of them, however, the number of companies was 2,548, increased 14 (0.6%) from 5 years ago.

Table 2: Numbers of Fishery Management Entities by Management Organization

Classification	2013	2018	Increase/decrease from the previous survey
	Entity	Entity	%
Total	94,507	79,067	△ 16.3
Individual management entity	89,470	74,526	△ 16.7
Organized management entity	5,037	4,541	△ 9.8
Company	2,534	2,548	0.6
Fishery cooperative	211	163	△ 22.7
Fishery production association	110	94	△ 14.5
Joint management	2,147	1,700	△ 20.8
Others	35	36	2.9

Note: Fishery cooperatives include fishery cooperatives and their branches (hereinafter the same).

By engaged-in fishery type, management entities engaged in shellfish/seaweed collecting were the largest in number at 26,097, followed by those engaged in other anglings at 22,070 and other gill nets at 19,033, decreased 6,396 (19.7%), 4,954 (18.3%), and 4,365 (18.7%), respectively, from 5 years ago.

In addition, the number of those engaged in coho salmon culture was 66 and that in sea squirt culture was 856, increased of 48 (266.7%) and 304 (55.1%), respectively, from 5 years ago.

Table 3: Number of Entities by Engaged Fishery Type (Multiple Answers Accepted)

Classification	2013	2018	Increase/decrease from the previous survey (2018/2013)
	Entity	Entity	%
Total (actual)	94,507	79,067	△ 16.3
Trawls			
Distant water trawl	5	3	△ 40.0
Trawl in East China Sea	2	3	50.0
Off-shore trawl (one-boat operation)	223	239	7.2
Off-shore trawl (two-boat operation)	19	25	31.6
Small trawl	10,710	8,857	△ 17.3
Vessel seine	3,348	3,145	△ 6.1
Surrounding nets			
Large and medium surrounding nets			
Skipjack/tuna on distant water (one-boat operation)	17	17	0.0
Skipjack/tuna on off-shore water (one-boat operation)	6	11	83.3
Other surrounding nets (one-boat operation)	51	45	△ 11.8
Surrounding net (two-boat operation)	11	12	9.1
Medium/small surrounding net	514	384	△ 25.3
Gill nets			
Salmon/trout drift gill net	102	42	△ 58.8
Swordfish, etc. drift gill net	45	24	△ 46.7
Other gill nets	23,398	19,033	△ 18.7
Saury stick-held dip net	237	135	△ 43.0
Large set net	467	439	△ 6.0
Salmon set net	1,089	792	△ 27.3
Small set net	5,142	3,869	△ 24.8
Other nets	4,401	3,784	△ 14.0
Long lines			
Tuna long line on distant water	74	63	△ 14.9
Tuna long line on off-shore water	217	176	△ 18.9
Tuna long line on coastal water	451	364	△ 19.3
Other long lines	4,575	3,812	△ 16.7

Classification	2013	2018	Increase/decrease from the previous survey (2018/2013)
	Entity	Entity	%
Anglings			
Skipjack pole-and-line on distant water	20	21	5.0
Skipjack pole-and-line on off-shore water	53	41	△ 22.6
Skipjack pole-and-line on coastal water	537	403	△ 25.0
Squid angling on distant water	2	1	△ 50.0
Squid angling on off-shore water	59	44	△ 25.4
Squid angling on coastal water	7,567	5,782	△ 23.6
Trawling line fishery	7,031	5,409	△ 23.1
Other anglings	27,024	22,070	△ 18.3
Small-scale whaling	4	3	△ 25.0
Diving apparatus fishery	1,642	1,595	△ 2.9
Shellfish/seaweed collecting	32,493	26,097	△ 19.7
Other fisheries	25,081	22,568	△ 10.0
Marine aquacultures			
Fishes culture			
Coho salmon culture	18	66	266.7
Yellow-tails culture	795	643	△ 19.1
Red sea bream culture	830	699	△ 15.8
Bastard halibut culture	120	96	△ 20.0
Bluefin tuna culture	92	96	4.3
Pufferfish culture	…	200	
Other fishes culture	695	464	△ 4.5
Common scallop culture	2,950	3,019	2.3
Oysters culture	2,977	3,021	1.5
Other shellfishes culture	695	635	△ 8.6
Kuruma prawn culture	90	90	0.0
Sea squirts culture	552	856	55.1
Other aquatic animals culture	187	143	△ 23.5
Kelps culture	1,980	1,628	△ 17.8
Seaweeds ("wakame") culture	3,794	3,442	△ 9.3
Lavers ("nori") culture	4,021	3,414	△ 15.1
Other seaweeds culture	744	790	6.2
Pearl culture	722	615	△ 14.8
Mother-of-pearl shell culture	519	405	△ 22.0

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Note: In the 2018 survey, “pufferfish culture” was separated from “other fish culture” and added as a new survey item, whereas the 2013 figure of “other fish culture” includes “pufferfish culture.” In addition, the increase/decrease from the previous survey was calculated based on the total of “pufferfish culture” and “other fish culture” to allow comparison between the 2013 and 2018 figures.

Looking at the management entities by sales amount of catches and harvests, fishery management entities in classes less than 20 million yen were decreased from 5 years ago, but those in classes with the sales amount of 20 million yen or more were increased.

Table 4: Number of Management Entities by Sales Amount of Catches and Harvests

Classification	Total	Less than 1 million yen	1 to 5	5 to 10	10 to 20	20 to 50	50 to 100	100 to 500	500 million to 1 billion yen	1 billion yen or more
Number (entity)										
2013	94,507	31,291	34,044	12,796	7,413	5,465	1,867	1,388	137	106
2018	79,067	23,668	27,760	10,992	6,763	5,848	2,120	1,603	186	127
Increase/decrease rate from the previous survey (%)	△ 16.3	△ 24.4	△ 18.5	△ 14.1	△ 8.8	7.0	13.6	15.5	35.8	19.8
Component ratio (%)										
2013	100.0	33.1	36.0	13.5	7.8	5.8	2.0	1.5	0.1	0.1
2018	100.0	29.9	35.1	13.9	8.6	7.4	2.7	2.0	0.2	0.2

Note: 1. “Less than 1 million yen” includes “no sales amount.”

2. The figures are rounded to the unit used for presentation, and therefore the sum of breakdowns may not equal the total. (Hereinafter the same)

(2) Labor Force

a. Number of Household Members/Executives Engaged in Fishery by Age Group

A “household member engaged in fishery” is a household member of an individual management entity who was engaged in fishery activity during the past year. This includes cases where a household member engaged in fishery activities as a member of joint management or an employee of another fishery management entity.

An “executive engaged in fishery” is a responsible person of an organized management entity who is a manager, an executive, a director, or a substitute for them . Those who only attend executive committee meetings or who are in a managerial position but not an executive, etc. are not included as a responsible person.

The number of household members/executives engaged in fishery was 134,466, of which the number of household members engaged in fishery was 123,685 and the number of executives engaged in fishery was 10,781.

In addition, looking at the household members engaged in fishery by age group, the number of aged 64 or younger was 62,394 accounting for 50.4% of the total, and that of executives engaged in fishery, the number of aged 64 or younger was 7,500 accounting for 69.6% of the total.

Table 5: Number of Household Members/Executives Engaged in Fishery by Age Group

Classification	Total	15 to 29 years old	30 to 39	40 to 49	50 to 59	60 to 64	65 to 69	70 to 74	75 or older
number (people)									
Total	134,466	4,832	9,335	15,612	24,128	15,987	21,239	17,106	26,227
Household member engaged in fishery	123,685	4,488	8,292	13,723	21,355	14,536	19,806	16,159	25,326
Executive engaged in fishery	10,781	344	1,043	1,889	2,773	1,451	1,433	947	901
Component ratio (%)									
Total	100.0	3.6	6.9	11.6	17.9	11.9	15.8	12.7	19.5
Household member engaged in fishery	100.0	3.6	6.7	11.1	17.3	11.8	16.0	13.1	20.5
Executive engaged in fishery	100.0	3.2	9.7	17.5	25.7	13.5	13.3	8.8	8.4

b. Status of responsible persons

A “responsible person” is a manager and a household member who is involved in decision making of management policy of individual management entity, and a manager, an executive, a director, or a substitute for them, in an organized management entity.

Those who only attend executive committee meetings or who are in a managerial position but not an executive, etc. in an organized management entity are not included as a responsible person.

i. Number of responsible persons by age group

The number of responsible persons of fishery management entities was 95,392, of which that of individual management entities was 84,611 and that of organized management entities was 10,781.

In addition, looking at the number of responsible persons by age group, in the individual management entities, the number of aged 65 or older was 44,267 accounting for 52.3% of the total. In contrast, in the organized management entities, the number of aged 64 or younger was 7,500 accounting for 69.6% of the total.

Table 6: Number of Responsible Persons by Age Group

Classification	Total	15 to 29 years old	30 to 39	40 to 49	50 to 59	60 to 64	65 to 69	70 to 74	75 or older
number (people)									
Total	95,392	1,540	5,222	10,719	18,213	12,150	15,942	12,930	18,676
Individual management entity	84,611	1,196	4,179	8,830	15,440	10,699	14,509	11,983	17,775
Organized management entity	10,781	344	1,043	1,889	2,773	1,451	1,433	947	901
Component ratio (%)									
Total	100.0	1.6	5.5	11.2	19.1	12.7	16.7	13.6	19.6
Individual management entity	100.0	1.4	4.9	10.4	18.2	12.6	17.1	14.2	21.0
Organized management entity	100.0	3.2	9.7	17.5	25.7	13.5	13.3	8.8	8.4

ii. Number of responsible persons by managerial position in organized management entities

By managerial position, the number of managers was 5,584 (51.8%), that of responsible persons for land work 3,875 (35.9%), and that of masters of the vessel 3,587 (33.3%).

In addition, looking at the average age by managerial position, managers was 59.0, responsible persons for land work was 59.9 and masters of the vessel was 55.3.

Table 7: Number of Responsible Persons by Managerial Position in Organized Management Entities (Multiple Answers Accepted)

Classification	Total (actual)	Manager	Responsible person for fishery work at sea					Responsible person for land work
			Chief fisherman	Master of the vessel	Chief engineer	Head of aquaculture site	Others	
Number (people)	10,781	5,584	1,663	3,587	839	798	2,892	3,875
Percentage (%)	100.0	51.8	15.4	33.3	7.8	7.4	26.8	35.9
Average age	-	59.0	57.5	55.3	54.9	53.5	53.7	59.9

c. Number of Persons Mainly Engaged in Fishery by Employment Status

A "person mainly engaged in fishery" is a person aged 15 years or older and was engaged in fishery work at sea for 30 days or more during the past year.
"Engaged in own fishery only" refers to household members of individual management entities who engaged only in their own fishery and were not in joint management fishery nor were hired in fishery.
"Hired in fishery" refers to a person who was hired in fishery for the purpose of gaining pay and compensation during the past year and includes a person who is hired in fishery while operating their own fishery.

The number of persons mainly engaged in fishery was 151,701 decreased 29,284 (16.2%) from 5 years ago.

Looking at the number of persons by employment status, those who engaged in own fishery only were 86,943, executives engaged in fishery were 8,726 and hired in fishery were 56,032.

Table 8: Number of Persons Mainly Engaged in Fishery by Employment Status

Classification	2013		2018		Increase/decrease from the previous survey (2018/2013)
	people		people		%
Persons mainly engaged in Fishery	180,985		151,701		△ 16.2
Engaged in own fishery only	109,247		86,943		△ 20.4
New fishery worker	615		469		△ 23.7
Executive engaged in fishery	…	71,738	8,726	64,758	△ 9.6
Hired in fishery	71,738		56,032		

Note: In the 2018 survey, "executives engaged in fishery" was separated from "hired in fishery" and added as a new survey item, whereas the 2013 figure of "hired in fishery" includes "executives engaged in fishery." In addition, the increase/decrease from the previous survey was calculated based on the total of "executives engaged in fishery" and "hired in fishery" to allow comparison between the 2013 and 2018 figures.

(3) Fishing Vessels

The total number of fishing vessels, including fishing vessels with outboard motor and non-powered fishing vessels, was 132,201 decreased 20,797 (13.6%) from 5 years ago.

Of them, the number of powered fishing vessels was 69,920. By fishery type with the highest sales amount, angling was the largest in number at 16,590, followed by gill net at 8,789 and trawl at 7,183.

Table 9: Number of Fishing Vessels by Type of Vessel and by Fishery Type with the Highest Sales Amount

Classification	Number of fishing vessels		
	2013	2018	Increase/decrease from the previous survey (2018/2013)
	Vessel	Vessel	%
Total (by type of fishing vessel)	152,998	132,201	△ 13.6
Non-powered fishing vessel	3,779	3,080	△ 18.5
Fishing vessel with outboard motor	67,572	59,201	△ 12.4
Powered fishing vessel	81,647	69,920	△ 14.4
(By fishery type with the highest sales amount)	81,647	69,920	△ 14.4
Trawl	8,611	7,183	△ 16.6
Vessel seine	5,173	4,815	△ 6.9
Surrounding net	1,832	1,727	△ 5.7
Gill net	10,987	8,789	△ 20.0
Saury stick-held dip net	166	131	△ 21.1
Large set net	1,230	1,180	△ 4.1
Salmon set net	883	660	△ 25.3
Small set net	3,026	2,385	△ 21.2
Other nets	1,446	1,207	△ 16.5
Long line	3,133	2,569	△ 18.0
Angling	20,793	16,590	△ 20.2
Small-scale whaling	5	4	△ 20.0
Diving apparatus fishery	786	650	△ 17.3
Shellfish/seaweed collecting	3,689	2,959	△ 19.8
Other fisheries	5,523	5,105	△ 7.6
Marine aquacultures			
Coho salmon culture	60	90	50.0
Yellow-tails culture	1,819	1,716	△ 5.7
Red sea bream culture	1,219	1,132	△ 7.1
Bastard halibut culture	36	24	△ 33.3
Bluefin tuna culture	292	346	18.5
Pufferfish culture	… } 615	305 } 494	△ 19.7
Other fishes culture	615 }	189 }	
Common scallop culture	2,455	2,401	△ 2.2
Oysters culture	1,964	2,111	7.5
Other shellfishes culture	142	139	△ 2.1
Kuruma prawn culture	5	4	△ 20.0
Sea squirts culture	40	118	195.0
Other aquatic animals	24	21	△ 12.5
Kelps culture	122	74	△ 39.3
Seaweeds ("wakame")	733	727	△ 0.8
Lavers ("nori") culture	3,494	3,241	△ 7.2
Other seaweeds culture	423	493	16.5
Pearl culture	840	771	△ 8.2
Mother-of-pearl shell	81	64	△ 21.0

Note: In the 2018 survey, “pufferfish culture” was separated from “other fish culture” and added as a new survey item, whereas the 2013 figure of “other fish culture” includes “pufferfish culture.” In addition, the increase/decrease from the previous survey was calculated based on the total of “pufferfish culture” and “other fish culture” to allow comparison between the 2013 and 2018 figures.

(4) Individual Management Entities

a. Number of Fishery Management Entities by Full-Time/Part-Time Status

Looking at 74,526 individual management entities by full-time/part-time status, the number of those with full-time status was 38,298 and those with part-time status 36,228 decreased 6,200 (13.9%) and 8,744 (19.4%) respectively from 5 years ago.

Table 10: Number of Fishery Management Entities by Full-Time/Part-Time Status

Classification	2013	2018	Component ratio		Increase/decrease from the previous survey (2018/2013)
			2013	2018	
	Entity	Entity	%	%	%
Total	89,470	74,526	100.0	100.0	△ 16.7
Full-time	44,498	38,298	49.7	51.4	△ 13.9
Part-time	44,972	36,228	50.3	48.6	△ 19.4
Part-time type 1	24,940	19,664	27.9	26.4	△ 21.2
Part-time type 2	20,032	16,564	22.4	22.2	△ 17.3

b. Number of Management Entities with Successors by Class of Management Entities

"Successor" refers to "a person who is scheduled to become the manager of the own fishery in the future among the persons aged 15 years or older and engaged in fishery during the past year." It includes a person who is scheduled to become the manager of their own fishery in the future regardless of members of household.

"Class of management entity" is classified to large set nets, salmon set nets, small set nets, and marine aquaculture by major engaged-in fishery type. Other management entities are classified by type of fishing vessels used or total tonnage of used powered fishing vessels.

"Other aquaculture" includes coho salmon culture, other fish culture, other shellfish culture, kuruma prawn culture, sea squirt culture, other aquatic animal culture, other seaweed culture, pearl culture, and mother-of-pearl shell culture.

Among 74,526 individual management entities, the number of those with successors of their own fishery was 12,699, accounting for 17.0% of the total, which was 0.5 points higher from 5 years ago.

Looking at the number of management entities with successors by stratum of management entity, the percentage of management entities with successors was high for those engaged in yellow-tail culture, large set net and salmon set net in the coastal fishing stratum at 43.7%, 41.5% and 40.5% respectively.

Table 11: Number of Management Entities with Successors by Stratum of Management Entity

Classification	2013			2018		
		Successor exists	Percentage of management entities that have a successor		Successor exists	Percentage of management entities that have a successor
	Entity	Entity	%	Entity	Entity	%
Total	89,470	14,803	16.5	74,526	12,699	17.0
(Coastal fishing stratum)						
Marine fisheries using fishing vessels						
Using non-powered fishing vessel only	95	9	9.5	47	5	10.6
Fishing vessel with outboard motor	20,630	2,227	10.8	17,287	1,904	11.0
Using powered fishing vessel (total of less than 10 tons)	45,612	5,927	13.0	36,488	4,713	12.9
Large set net	81	28	34.6	82	34	41.5
Salmon set net	391	116	29.7	148	60	40.5
Small set net	2,444	567	23.2	1,969	510	25.9
Strutum without using fishing vessel	3,025	232	7.7	2,590	228	8.8
Marine aquacultures						
Yellow-tails culture	353	159	45.0	279	122	43.7
Red sea bream culture	398	126	31.7	297	94	31.6
Bastard halibut culture	33	10	30.3	24	7	29.2
Pufferfish culture	…	…	nc	84	32	38.1
Bluefin tuna culture	13	7	53.8	3	-	-
Common scallop culture	2,385	934	39.2	2,390	948	39.7
Oysters culture	1,839	541	29.4	1,880	568	30.2
Kelps culture	1,004	253	25.2	912	255	28.0
Seaweeds ("wakame") culture	1,984	606	30.5	1,813	495	27.3
Lavers ("nori") culture	3,415	1,093	32.0	2,864	1,019	35.6
Other aquacultures	1,992	449	22.5	1,960	416	21.2
(Small/mid-scale fishing class)						
Using powered fishing vessel (total of 10 tons or more and less than 1,000 tons)	3,776	1,519	40.2	3,408	1,288	37.8
(Large-scale fishing stratum)						
Using powered fishing vessel (total of 1,000 tons or more)	-	-	-	1	1	100.0

Note: In the 2018 survey, “pufferfish culture” was separated from “other fish culture” and added as a new survey item, whereas the 2013 figure of “other aquaculture,” which also includes “other fish culture,” includes “pufferfish culture.”

(5) Resource Management/Fishing Ground Improvement Activities

a. Number of Fishery Zones by Number of Activities

(A “fishery zone of the Community Survey for Marine Fisheries” referred to a fishery zone located within the zone range provided in the articles of incorporation of the fishery cooperative among 2,182 fishery zones nationwide.)

The number of fishery zones which were survey target of the Community Survey for Marine Fisheries (as of November 1, 2018) was 2,066, and number of those that conducted activities for the purpose of resource management/fishing ground improvement was 1,821.

Looking at the number of fishery zones implemented resource management activities by major fishing area, the fishery zones conducted 4 or more activities was high for Hokkaido Pacific Ocean, North (50.0%), Pacific Ocean, North (47.4%), and Hokkaido Japan Sea, North (44.4%).

Table 12: Number of Fishery Zones by Number of Resource Management Activities

Unit: Zone

Classification	Total	Number of activities in which resource management was implemented					Resource management was not implemented
		Sub-total	1	2	3	4 or more	
Actual							
Nationwide	2,066	1,821	532	470	283	536	245
Hokkaido Pacific Ocean, North	74	71	6	19	9	37	3
Pacific Ocean, North	156	137	27	19	17	74	19
Pacific Ocean, Middle	349	310	89	74	76	71	39
Pacific Ocean, South	181	138	39	44	11	44	43
Hokkaido Japan Sea, North	63	59	12	10	9	28	4
Japan Sea, North	138	130	32	32	14	52	8
Japan Sea, West	161	141	46	35	24	36	20
East China Sea	505	459	144	134	76	105	46
Seto Inland Sea	439	376	137	103	47	89	63
Component ratio (%)							
Nationwide	100.0	88.1	25.8	22.7	13.7	25.9	11.9
Hokkaido Pacific Ocean, North	100.0	95.9	8.1	25.7	12.2	50.0	4.1
Pacific Ocean, North	100.0	87.8	17.3	12.2	10.9	47.4	12.2
Pacific Ocean, Middle	100.0	88.8	25.5	21.2	21.8	20.3	11.2
Pacific Ocean, South	100.0	76.2	21.5	24.3	6.1	24.3	23.8
Hokkaido Japan Sea, North	100.0	93.7	19.0	15.9	14.3	44.4	6.3
Japan Sea, North	100.0	94.2	23.2	23.2	10.1	37.7	5.8
Japan Sea, West	100.0	87.6	28.6	21.7	14.9	22.4	12.4
East China Sea	100.0	90.9	28.5	26.5	15.0	20.8	9.1
Seto Inland Sea	100.0	85.6	31.2	23.5	10.7	20.3	14.4

b. Number of Activities by Management Type

The number of activities for resource management and fishing ground improvement conducted by fishery cooperatives was 5,476 nationwide. By management type, the number was the largest for regulation on fishing periods at 2,555 (46.7%), followed by regulation on the size of catches (captures/harvests) at 2,197 (40.1%) and breeding of fishery resources at 1,930 (35.2%).

Table 13: Number of Activities by Content of Management
(Nationwide)

Classification	Number of activities	Component ratio
	Activity	%
Total (actual)	5,476	100.0
Setting quotas (captures/harvests)	872	15.9
Breeding of fishery resources	1,930	35.2
Other managements of fishery resources	681	12.4
Preservation of fishing grounds	1,025	18.7
Maintenance and managementof seaweed beds and tidal flats	379	6.9
Activities not using chemicals, etc.	168	3.1
Development of fishing grounds	431	7.9
Rules on the use of fishing grounds	1,135	20.7
Other preservations/managements of fishing grounds	482	8.8
Regulation on fishing methods (aquaculture methods)	768	14.0
Regulation on using fishing vessels	539	9.8
Regulation on fishing tools	1,447	26.4
Regulation on fishing periods	2,555	46.7
Regulation on number of fishing days and operating hours	1,807	33.0
Regulation on the size of catches (captures/harvests)	2,197	40.1
Regulation on the quantity of catches (captures/harvests)	797	14.6
Other managements of catches	373	6.8

c. Total Number of Activities by Major Fish Type Targeted for Management

Looking at the conducted fisheries management by major fish type, the number was the largest for bastard halibut at 1,013, followed by abalones at 765 and red sea bream at 710.

Table 14: Total Number of Activities by Major Fish Type Targeted for Management

Unit: Activity

Classification	Nationwide	Hokkaido Pacific Ocean, North	Pacific Ocean, North	Pacific Ocean, Middle	Pacific Ocean, South	Hokkaido Japan Sea, North	Japan Sea, North	Japan Sea, West	East China Sea	Seto Inland Sea
Total (actual)	5,476	340	564	821	462	253	416	410	1,219	991
Bastard halibut	1,013	17	144	115	46	26	145	158	152	210
Abalones	765	3	120	157	64	27	74	72	161	87
Red sea bream	710	-	15	103	67	-	73	95	161	196
Flounders	582	40	88	51	10	28	89	52	52	172
Squids	496	27	60	33	23	10	45	60	153	85
Other sea breams	442	6	14	64	34	-	36	74	97	117
Octopuses	439	29	69	24	26	18	31	29	63	150
Top shell	435	-	-	108	32	-	50	77	120	48
Sea cucumbers	402	21	28	48	12	49	58	22	98	66
Sea urchins	333	25	65	10	23	35	7	14	130	24
Swimming crabs	289	-	9	33	3	-	9	8	48	179
Shortnecked clams	286	3	10	95	6	1	4	3	67	97
Spiny lobster	279	-	4	131	74	-	-	-	55	15
Salmons, trouts	245	70	66	-	1	52	45	5	1	5
Kelps	153	63	45	2	1	31	3	-	1	7

(6) Fishery Community Revitalization Activities

a. Assembly/Meeting, etc. Holding Status in Fishery Zones

The number of fishery zones that held assemblies/meetings, etc. related to fishery cooperatives was 1,468 nationwide. By major fishing area, the number was the largest for East China Sea at 377, followed by Seto Inland Sea at 289.

In addition, looking at the number of fishery zone by agenda (excluding “other”), the number was the largest for change of specific demarcated fishery rights/common fishery rights at 687 zones (46.8%), followed by social events/ceremonies of local zones (festivals, events, etc.) at 611 (41.6%).

Table 15: Number of Fishery Zones by Agenda of Assemblies/Meetings, etc.

Unit: Zone

Classification	Number of fishery zones in which assembly/ meeting, etc. were held (actual)	Agenda of assemblies/meetings, etc.(multiple answers accepted)							
		Change of specific demarcated fishery right/ common fishery right	Entry of company	Waiver of fishery right	Compensation for fishery-related loss	Management of common property facility of local area	Preservation of natural environment	Social event/ ceremony of local area (festival, event, etc.)	Others
Actual									
Nationwide	1,468	687	19	35	111	166	244	611	931
Hokkaido Pacific Ocean, North	63	42	-	1	2	4	7	31	28
Pacific Ocean, North	117	52	-	5	10	14	16	43	81
Pacific Ocean, Middle	221	82	2	1	11	31	41	95	150
Pacific Ocean, South	128	49	2	3	10	17	22	39	74
Hokkaido Japan Sea, North	45	25	-	-	3	3	2	23	28
Japan Sea, North	110	27	3	1	7	17	17	49	87
Japan Sea, West	118	47	-	1	-	3	7	15	79
East China Sea	377	226	3	12	21	41	65	172	243
Seto Inland Sea	289	137	9	11	47	36	67	144	161
Percentage (%)									
Nationwide	100.0	46.8	1.3	2.4	7.6	11.3	16.6	41.6	63.4
Hokkaido Pacific Ocean, North	100.0	66.7	-	1.6	3.2	6.3	11.1	49.2	44.4
Pacific Ocean, North	100.0	44.4	-	4.3	8.5	12.0	13.7	36.8	69.2
Pacific Ocean, Middle	100.0	37.1	0.9	0.5	5.0	14.0	18.6	43.0	67.9
Pacific Ocean, South	100.0	38.3	1.6	2.3	7.8	13.3	17.2	30.5	57.8
Hokkaido Japan Sea, North	100.0	55.6	-	-	6.7	6.7	4.4	51.1	62.2
Japan Sea, North	100.0	24.5	2.7	0.9	6.4	15.5	15.5	44.5	79.1
Japan Sea, West	100.0	39.8	-	0.8	-	2.5	5.9	12.7	66.9
East China Sea	100.0	59.9	0.8	3.2	5.6	10.9	17.2	45.6	64.5
Seto Inland Sea	100.0	47.4	3.1	3.8	16.3	12.5	23.2	49.8	55.7

b. Number of Fishery Zones by Activity Related to Fishery Cooperatives

The number of fishery zones that conducted activation activities involving fishery cooperatives was 1,520 nationwide. By major fishing area, the number was the largest for East China Sea at 390, followed by Seto Inland Sea at 337.

In addition, looking at the number of fishery zones by activity conducted, it was the largest for activities to clean waste (on beach, at sea, bottom of the sea) at 1,336 (87.9%), followed by holding of various events at 564 (37.1%) and activities to secure new fishery workers/successors at 453 (29.8%).

Table 16: Number of Fishery Zones by Activity Involving Fishery Cooperative

Unit: Zone

Classification	Number of fishery zones in which activities involving fishery cooperatives were conducted (actual)	Relevant activity (multiple answers accepted)					
		Activity to secure new fishery workers/ successors	Activity to clean waste (on beach, at sea, bottom of the sea)	Activity for the sixth industrializati on	Activity of blue tourism	Preservation of fishery-related traditional festival/ culture/art	Holding of various events
Actual							
Nationwide	1,520	453	1,336	167	71	416	564
Hokkaido Pacific Ocean, North	50	10	42	4	2	13	27
Pacific Ocean, North	99	50	70	20	12	23	45
Pacific Ocean, Middle	252	40	226	29	10	69	84
Pacific Ocean, South	129	40	113	8	6	40	38
Hokkaido Japan Sea, North	34	14	29	2	3	7	25
Japan Sea, North	100	32	88	9	3	18	54
Japan Sea, West	129	38	121	14	2	28	27
East China Sea	390	154	332	43	23	135	146
Seto Inland Sea	337	75	315	38	10	83	118
Percentage (%)							
Nationwide	100.0	29.8	87.9	11.0	4.7	27.4	37.1
Hokkaido Pacific Ocean, North	100.0	20.0	84.0	8.0	4.0	26.0	54.0
Pacific Ocean, North	100.0	50.5	70.7	20.2	12.1	23.2	45.5
Pacific Ocean, Middle	100.0	15.9	89.7	11.5	4.0	27.4	33.3
Pacific Ocean, South	100.0	31.0	87.6	6.2	4.7	31.0	29.5
Hokkaido Japan Sea, North	100.0	41.2	85.3	5.9	8.8	20.6	73.5
Japan Sea, North	100.0	32.0	88.0	9.0	3.0	18.0	54.0
Japan Sea, West	100.0	29.5	93.8	10.9	1.6	21.7	20.9
East China Sea	100.0	39.5	85.1	11.0	5.9	34.6	37.4
Seto Inland Sea	100.0	22.3	93.5	11.3	3.0	24.6	35.0

c. Exchange Activities with Urban Areas Related to Fishery Cooperatives and Fisherman's Market Operated by Fishery Cooperatives

The number of fishery zones that conducted exchange activities with urban areas related to fishery cooperatives nationwide was 320 for fishery experience and 377 for fishery food promotion activity, and the total number of participants was 132,028 and 381,723, respectively. In addition, the number of fishery zones with fisherman's markets operated by fishery cooperatives was 316 nationwide, and the number of facilities was 343. The annual total number of users was 13,145,300.

Table 17: Exchange Activities with Urban Areas and Activities for Fisherman's Markets

Classification	Exchange activity with urban area				Fisherman's market		
	Fishery experience		Fishery food promotion activity				
	Number of fishery zones in which activities were conducted	Annual total number of participants	Number of fishery zones in which activities were conducted	Annual total number of participants	Number of fishery zones with fisherman's market	Number of facilities	Annual total number of users
	Zone	People	Zone	People	Zone	Facility	People
Nationwide	320	132,028	377	381,723	316	343	13,145,300
Hokkaido Pacific Ocean, North	10	2,943	21	1,953	12	12	279,900
Pacific Ocean, North	37	3,268	36	23,596	13	14	77,900
Pacific Ocean, Middle	46	82,810	52	64,729	57	62	1,486,600
Pacific Ocean, South	15	3,051	21	6,915	13	13	3,693,300
Hokkaido Japan Sea, North	15	4,673	19	1,597	20	21	1,249,100
Japan Sea, North	25	2,006	23	138,349	14	14	726,000
Japan Sea, West	18	2,229	21	5,743	20	22	311,900
East China Sea	69	11,756	81	46,103	92	100	3,475,000
Seto Inland Sea	85	19,292	103	92,738	75	85	1,845,600

2. Inland Water Fisheries

(1) Lake Fishery Management Entities (organized management entity or individual management entity that operated on a lake for 30 days or more during the past year)

A "lake fishery management entity"is a household (individual management entity) or business entity (organized management entity) that engaged in capture or aquaculture of aquatic animals and plants on lake in order to sell products to gain profit during the past year.

It should be noted that the survey targets important lakes for fishery production in regions. This survey targeted a total of 58 lakes in 19 prefectures.

The number of lake fishery management entities nationwide (as of 1 November 2018) was 1,930 decreased 336 (14.8%) from 5 years ago.

Looking at the number of lake fishery management entities by management organization, the individual management entities was 1,848 decreased 314 (14.5%) from 5 years ago. In addition, the number of organized management entities was 82 decreased 22 (21.2%) from 5 years ago.

Table 18: Number of Lake Fishery Management Entities by Management Organization

Classification	2013	2018	Increase/decrease from the previous survey (2018/2013)
	Entity	Entity	%
Total	2,266	1,930	△ 14.8
Individual management entity	2,162	1,848	△ 14.5
Organized management entity	104	82	△ 21.2
Company	42	34	△ 19.0
Fishery cooperative	4	4	0.0
Fishery production association	5	4	△ 20.0
Joint management	53	40	△ 24.5
(Reference)			
Grand total	2,484	2,133	△ 14.1

Note: The "grand total" includes individual management entities that operated on a lake for 29 or fewer days per year.

By engaged-in fishery type, management entities engaged in shellfish/seaweed collecting were the largest in number at 993, followed by those engaged in gill nets at 533 and trawl/vessel seine at 370 decreased 107 (9.7%), 255 (32.4%), and 101 (21.4%), respectively, from 5 years ago.

Table 19: Number of Lake Fishery Management Entities by Engaged-in Fishery Type (Multiple Answers Accepted)

Classification	2013	2018	Increase/decrease from the previous survey (2018/2013)
	Entity	Entity	%
Total (actual)	2,266	1,930	△ 14.8
Net fisheries			
Sub-total (actual)	1,363	994	△ 27.1
Trawl, vessel seine	471	370	△ 21.4
Gill net	788	533	△ 32.4
Set net	476	340	△ 28.6
Cast net	123	96	△ 22.0
Other net fisheries	122	65	△ 46.7
Other fisheries			
Sub-total (actual)	1,487	1,361	△ 8.5
Angling, long line	246	237	△ 3.7
Shellfish/seaweed collecting	1,100	993	△ 9.7
Cages	268	203	△ 24.3
Other fisheries	238	162	△ 31.9
Aquacultures			
Sub-total (actual)	80	58	△ 27.5
Fishes aquaculture	35	32	△ 8.6
Other aquacultures	45	26	△ 42.2

(2) On-Lake Fishery Worker

"On-lake fishery worker" refers to a person who engaged in fishery work on lake during the past year, including persons who worked temporarily to perform a specific task (excluding land work).

The number of persons who engaged in fishery work on lake during the past year was 3,194 decreased 924 (22.4%) from 5 years ago.

Looking at the on-lake workers by age group, the number decreased in each group except for the group of 75 or older from 5 years ago. In addition, the percentage of aged 64 or younger was 48.9% of the total.

Table 20: Number of On-Lake Fishery Workers by Age Group

Classification	Total	15 to 29 years old	30 to 39	40 to 49	50 to 59	60 to 64	65 to 69	70 to 74	75 or older
Actual number (person)									
2013	4,118	133	314	508	763	662	587	545	606
2018	3,194	87	216	339	524	395	551	471	611
Increase/decrease rate from the previous survey (%)	△ 22.4	△ 34.6	△ 31.2	△ 33.3	△ 31.3	△ 40.3	△ 6.1	△ 13.6	0.8
Component ratio (%)									
2013	100.0	3.2	7.6	12.3	18.5	16.1	14.3	13.2	14.7
2018	100.0	2.7	6.8	10.6	16.4	12.4	17.3	14.7	19.1

(3) Individual Management Entities (Lake Fisheries)

a. Number of Fishery Management Entities by Full-Time/Part-Time Status

Looking at the number of fishery management entities by full-time/part-time status, the individual management entities with full-time status was 627 and those with part-time status 1,221 decreased 25 (3.8%) and 289 (19.1%), respectively from 5 years ago.

Table 21: Number of Fishery Management Entities by Full-Time/Part-Time Status

Classification	2013	2018	Component ratio		Increase/decrease from the previous survey (2018/2013)
			2013	2018	
	Entity	Entity	%	%	%
Total	2,162	1,848	100.0	100.0	△ 14.5
Full-time	652	627	30.2	33.9	△ 3.8
Part-time	1,510	1,221	69.8	66.1	△ 19.1
Part-time type 1	678	524	31.4	28.4	△ 22.7
Part-time type 2	832	697	38.5	37.7	△ 16.2

b. Number of Management Entities with Successors by Fishery Type

Among 1,848 individual management entities of the lake fishery management entities, the number of those with successors of their own fishery was 436, accounting for 23.6% of the total individual management entities, which was 0.7 points lower from 5 years ago.

Looking at the management entities by fishery type with the highest sales amount, the percentage of management entities with successors was high for those engaged in other aquacultures, fish culture and shellfish/seaweed collecting at 75.0%, 35.0% and 34.3%, respectively.

Table 22: Number of Management Entities with Successors by Fishery Type

Classification	2013			2018		
		Successor exists	Percentage of management entities that have a successor		Successor exists	Percentage of management entities that have a successor
	Entity	Entity	%	Entity	Entity	%
Total	2,162	525	24.3	1,848	436	23.6
Net fisheries						
Trawl, vessel seine	353	35	9.9	274	28	10.2
Gill net	346	24	6.9	260	24	9.2
Set net	201	21	10.4	141	18	12.8
Cast net	36	-	-	38	5	13.2
Other net fisheries	21	2	9.5	15	3	20.0
Other fisheries						
Angling, long line	42	3	7.1	58	7	12.1
Shellfish/seaweed collecting	1,005	412	41.0	927	318	34.3
Cages	39	2	5.1	58	7	12.1
Other fisheries	68	6	8.8	41	7	17.1
Aquacultures						
Fishes culture	25	7	28.0	20	7	35.0
Other aquacultures	26	13	50.0	16	12	75.0

(4) Inland Water Aquaculture Management Entities

("Inland water aquaculture management entity" refers to a household or business entity that conducts aquaculture in inland water for sale to gain profit during the past year.)

The number of inland water aquaculture management entities nationwide (as of November 1, 2018) was 2,704 decreased 425 (13.6%) from 5 years ago.

Looking at the number of inland water aquaculture management by management organization, the individual management entities were 1,868 decreased 436 (18.9%) from 5 years ago. In contrast, the organized management entities were 836 increased 11 (1.3%) from 5 years ago. Of them, the number of companies were 597 increased 43 (7.8%) from 5 years ago.

Table 23: Number of Inland Water Aquaculture Management Entities by Management Organization

Classification	2013	2018	Increase/decrease from the previous survey (2018/2013)
	Entity	Entity	%
Total	3,129	2,704	△ 13.6
Individual management entity	2,304	1,868	△ 18.9
Organized management entity	825	836	1.3
Company	554	597	7.8
Fishery cooperative	81	71	△ 12.3
Fishery production association	69	54	△ 21.7
Joint management	52	49	△ 5.8
Others	69	65	△ 5.8

Looking at the aquaculture management entities by engaged aquaculture type, management entities engaged in other trout culture for food were the largest in number at 558, followed by those engaged in nishikigoi carp culture for display at 536 and other culture for food at 417.

Table 24: Number of Aquaculture Management Entities by Engaged Aquaculture Type (Multiple Answers Accepted)

Classification	2013	2018	Increase/decrease from the previous survey (2018/2013)
	Entity	Entity	%
Total (actual)	3,129	2,704	△ 13.6
For food			
Rainbow trout	387	325	△ 16.0
Other trouts	675	558	△ 17.3
Sweet fish	186	154	△ 17.2
Common carp	189	137	△ 27.5
Crucian carp	180	129	△ 28.3
Eel	384	407	6.0
Soft-shelled turtle	61	54	△ 11.5
Saltwater fishes	28	31	10.7
Others	481	417	△ 13.3
For seed			
Trouts	197	183	△ 7.1
Sweet fish	74	62	△ 16.2
Common carp	47	27	△ 42.6
Others	103	43	△ 58.3
For display			
Nishikigoi carp	591	536	△ 9.3
Others	406	332	△ 18.2
Pearl	15	10	△ 33.3

Note: 1. “Saltwater fish” includes bastard halibut, puffer fish and oyster.
2. “For food, other” includes silver carp, grass carp, sturgeon, honmoroko, catfish, pond-snail, weatherfish, etc.
3. “For seed, other” includes seeds of “others for food,” saltwater, softshell turtle, crucian carp, etc.
4. “For display, other” includes goldfish, killifish, and red-eared turtle, etc.

(5) Aquaculture Workers

An “aquaculture worker” is a person who engaged in aquaculture work during the past year, including persons who worked temporarily to perform a specific task.

The number of persons who engaged in aquaculture work during the past year was 9,438, decreased 1,110 (10.5%) from 5 years ago.

Looking at the aquaculture workers by age group, the number decreased in each group except for the groups of age 65-69 and 70-74, from 5 years ago. In addition, those aged 64 or younger accounted for 62.9% of the total.

Table 25: Number of Aquaculture Workers by Age Group

Classification	Total	15 to 29 years old	30 to 39	40 to 49	50 to 59	60 to 64	65 to 69	70 to 74	75 or older
Number (person)									
2013	10,548	802	1,256	1,448	1,974	1,626	1,324	1,038	1,080
2018	9,438	717	1,167	1,416	1,545	1,095	1,417	1,039	1,042
Increase/decrease rate from the previous survey (%)	△ 10.5	△ 10.6	△ 7.1	△ 2.2	△ 21.7	△ 32.7	7.0	0.1	△ 3.5
Component ratio (%)									
2013	100.0	7.6	11.9	13.7	18.7	15.4	12.6	9.8	10.2
2018	100.0	7.6	12.4	15.0	16.4	11.6	15.0	11.0	11.0

(6) Individual Management Entities (Aquaculture)

a. Number of Fishery Management Entities by Full-Time/Part-Time Status

Looking at the aquaculture management entities by full-time/part-time status, the number of individual management entities with full-time status was 575 and those with part-time status 1,293 decreased 113 (16.4%) and 323 (20.0%) respectively from 5 years ago.

Table 26: Number of Aquaculture Management Entities by Full-Time/Part-Time Status

Classification	2013	2018	Component ratio		Increase/decrease from the previous survey (2018/2013)
			2013	2018	
	Entity	Entity	%	%	%
Total	2,304	1,868	100.0	100.0	△ 18.9
Full-time	688	575	29.9	30.8	△ 16.4
Part-time	1,616	1,293	70.1	69.2	△ 20.0
Part-time type 1	586	466	25.4	24.9	△ 20.5
Part-time type 2	1,030	827	44.7	44.3	△ 19.7

b. Number of Management Entities with Successors by Aquaculture Type

There were 1,868 individual management entities of aquaculture management entities. Among them, the number of those with successors of their own fishery were 396 accounting for 21.2% of the total individual management entities, which was 0.2 points lower from 5 years ago.

Looking at the management entities by aquaculture type with the highest sales amount, the percentage of management entities with successors was high for those engaged in aquaculture of saltwater fish for food, eel for food and rainbow trout for food at 70.6%, 46.4%, and 31.9%, respectively.

Table 27: Number of Management Entities with Successors by Aquaculture Type

Classification	2013			2018		
		Successor exists	Percentage of management entities that have a successor		Successor exists	Percentage of management entities that have a successor
	Entity	Entity	%	Entity	Entity	%
Total	2,304	494	21.4	1,868	396	21.2
For food						
Rainbow trout	145	43	29.7	116	37	31.9
Other trouts	359	64	17.8	279	47	16.8
Sweet fish	62	19	30.6	51	12	23.5
Common carp	108	25	23.1	75	23	30.7
Crucian carp	130	17	13.1	99	17	17.2
Eel	231	107	46.3	194	90	46.4
Soft-shelled turtle	35	2	5.7	26	3	11.5
Saltwater fishes	18	12	66.7	17	12	70.6
Others	330	73	22.1	277	43	15.5
For seed						
Trouts	17	3	17.6	14	3	21.4
Sweet fish	6	2	33.3	2	-	-
Common carp	14	2	14.3	6	1	16.7
Others	40	9	22.5	4	-	-
For display						
Nishikigoi carp	497	66	13.3	458	63	13.8
Others	311	50	16.1	249	44	17.7
Pearl	1	-	-	1	1	100.0

3 Distribution and Processing

(1) Fish Markets

"Fish market" refers to a market where fishery products are directly landed by a fishing vessel, and a market that engaged in initial-stage trade after receiving fishery products from production areas via ground transportation even if fishery products are not landed directory, during the past year.

The number of fish markets nationwide (as of January 1, 2019) was 803 decreased 56 (6.5%) from 5 years ago.

In addition, a total of 5.04 million tons of fishery products with a monetary value of 2.6347 trillion yen was handled.

Table 28: Number of Fish Markets, Yearly Handled Volume and Monetary Value

Classification	Unit	2013	2018	Increase/decrease from the previous survey (2018/2013)
				%
Number of fish markets	Market	859	803	△ 6.5
Yearly handled volume	10,000 t	587	504	△ 14.1
Yearly handled monetary value	100 million yen	27,626	26,347	△ 4.6

(2) Cold Storage/Refrigerating Plants

"Cold storage/refrigerating plant" refers to a business entity that owns cold storage/refrigerating facilities with over 10 horsepower on land, and that froze or refrigerated fishery products during the past year.

The number of cold storage/refrigerating plants nationwide was 4,904 (as of January 1, 2019) and the number of workers was 141,546 decreased 453 (8.5%) and 9,013 (6.0%), respectively, from 5 years ago.

Among the workers, the number of foreigners were 14,016 increased 3,862 (38.0%) from 5 years ago.

Table 29: Number of Cold Storage/Refrigerating Plants and Number of Workers

Classification	Unit	2013	2018	Component ratio		Increase/decrease from the previous survey (2018/2013)
				2013	2018	
				%	%	%
Number of cold storage/refrigeration plants	Plant	5,357	4,904	-	-	△ 8.5
Number of Workers						
Total	People	150,559	141,546	100.0	100.0	△ 6.0
Male	〃	68,916	67,148	45.8	47.4	△ 2.6
Female	〃	81,643	74,398	54.2	52.6	△ 8.9
Foreigner (included)	〃	10,154	14,016	6.7	9.9	38.0

(3) Fishery Processing Plants

"Fishery processing plant" refers to a business entity that processed aquatic animals and plants for the purpose of sales during the past year.

The number of fishery processing plants nationwide (as of January 1, 2019) was 7,289 decreased 1,225 (14.4%) from 5 years ago.

Looking at the fishery processing plants by type of engaged processing, the number was the largest for others (baked or dried products, fish powder for food, etc.) of other processed foods at 1,790 plants, followed by salted dried products at 1,645 and frozen fresh fishery products at 1,400 decreased 856 (32.4%), 277 (14.4%), and 180 (11.4%), respectively, from 5 years ago.

In addition, that for oils and fats was 27, kelp tsukudani 312, and smoked products 215 increased 4 (17.4%), 26 (9.1%), and 9 (4.4%), respectively, from 5 years ago.

Table 30: Number of Fishery Processing Plants by Type of Engaged Processing

(Multiple Answers Accepted)

Classification	2013	2018	Increase/decrease from the previous survey (2018/2013)
	Plant	Plant	%
Total (actual)	8,514	7,289	△ 14.4
Frozen fresh fishery products	1,580	1,400	△ 11.4
Canned and bottled products	155	161	3.9
Roasted/flavored laver	355	312	△ 12.1
Agar	42	30	△ 28.6
Oils and fats	23	27	17.4
Fish paste			
Steamed fish pastes ("Kamaboko")	1,413	1,130	△ 20.0
Fish ham/sausages	34	26	△ 23.5
Frozen foods	883	919	4.1
Natural dried products	742	550	△ 25.9
Salted dried products	1,922	1,645	△ 14.4
Boiled and dried products	1,280	1,049	△ 18.0
Salt-preserved products	842	770	△ 8.6
Smoked products	206	215	4.4
Dried bonito	641	528	△ 17.6
Other processed foods			
Fermented squid	288	246	△ 14.6
Pickled fishery products	558	574	2.9
Kelp tsukudani	286	312	9.1
Dried/roasted/fried products (squid products)	201	187	△ 7.0
Others (baked or dried products, fish powder for food, etc.)	2,646	1,790	△ 32.4
Feeding stuff and fertilizer	141	114	△ 19.1

Looking at the production volume by processing type, the volume was the largest for frozen fresh fishery products at 1,397,203 tons, followed by steamed fish pastes ("Kamaboko") at 448,861 tons and feed and fertilizer at 401,354 tons increased 14,599 tons (1.1%) for frozen fresh fishery products and 9,715 tons (2.5%) for feeding stuff and fertilizer but decreased 18,454 tons (3.9%) for kamaboko from 5 years ago.

Table 31: Production Volume by Processing Type

Classification	Unit	2013	2018	Increase/decrease from the previous survey (2018/2013)
				%
Frozen fresh fishery products	t	1,382,604	1,397,203	1.1
Canned and bottled products	〃	125,630	104,258	△ 17.0
Roasted/flavored laver	1,000 sheets	7,003,728	6,558,385	△ 6.4
Agar	t	565	751	32.9
Oils and fats	〃	27,144	50,125	84.7
Fish paste				
Steamed fish pastes ("Kamaboko")	t	467,315	448,861	△ 3.9
Fish ham/sausages	〃	61,123	60,709	△ 0.7
Frozen foods	〃	256,935	255,888	△ 0.4
Natural dried products	〃	13,466	7,051	△ 47.6
Salted dried products	〃	166,714	139,569	△ 16.3
Boiled and dried products	〃	64,316	59,031	△ 8.2
Salt-preserved products	〃	197,845	181,630	△ 8.2
Smoked products	〃	8,178	6,843	△ 16.3
Dried bonito	〃	90,623	79,595	△ 12.2
Other processed foods				
Fermented squid	t	19,082	12,055	△ 36.8
Pickled fishery products	〃	52,182	53,808	3.1
Kelp tsukudani	〃	37,359	31,729	△ 15.1
Dried/roasted/fried products (squid products)	〃	29,250	18,873	△ 35.5
Others (baked or dried products, fish powder for food, etc.)	〃	251,535	231,163	△ 8.1
Feeding stuff and fertilizer	〃	391,639	401,354	2.5

The number of workers in fishery processing plants was 171,354 decreased 16,881 (9.0%) from 5 years ago.

Among the workers, the number of foreigner was 17,336 increased 3,878 (28.8%) from 5 years ago.

Table 32: Number of Workers in Fishery Processing Plants

Classification	2013	2018	Component ratio		Increase/decrease from the previous survey (2018/2013)
			2013	2018	
	People	People	%	%	%
Total	188,235	171,354	100.0	100.0	△ 9.0
Male	72,057	68,357	38.3	39.9	△ 5.1
Female	116,178	102,997	61.7	60.1	△ 11.3
Foreigner	13,458	17,336	7.1	10.1	28.8

Outline of the Three Prefectures affected by the Earthquake

This section summarizes the structure of marine fisheries in the areas affected by the Great East Japan Earthquake based on the survey results of the 2018 Census of Fisheries. It reveals the status of management entities, etc. in the three prefectures affected by the earthquake (Iwate, Miyagi, and Fukushima prefectures) that had a great damage by tsunami.

1. Three prefectures affected by the earthquake

The number of fishery management entities in the three prefectures affected by the earthquake were 6,109 increased 419 (7.4%) from 5 years ago.

The number of persons who engaged in fishery work at sea was 14,548, increased 721 (5.2%) from 5 years ago.

The number of fishing vessels was 11,553 increased 1,077 (10.3%) from 5 years ago.

The number of fish markets was 29 increased 4 (16.0%) from 5 years ago. A total of 458,399 tons of fishery products with a monetary value of 179,821.22 million yen was handled increased 344 tons (0.1%) and 16,211.38 million yen (9.9%), respectively, from 5 years ago.

The number of cold storage/refrigerating plants was 401 increased 10 (2.6%) from 5 years ago, and the number of workers was 12,809 increased 1,841 (16.8%) from 5 years ago. In addition, the cold storage capability was 755,183 tons increased 36,350 tons (5.1%) from 5 years ago.

The number of fishery processing plants was 528 decreased 6 (1.1%) from 5 years ago, but the number of workers was 15,420 increased 693 (4.7%) from 5 years ago. The production volume of frozen fresh fishery products, for which the production volume was the largest, was 244,674 tons increased 34,245 tons (16.3%) from 5 years ago.

Table 33: Main Survey Results in Census of Fisheries (Total of Three Earthquake-Stricken Prefectures)

Classification	Unit	2008	2013	2018	Increase/decrease from the previous survey (2013/2008)	Increase/decrease from the previous survey (2018/2013)
					%	%
Fishery management entity	Entity	10,062	5,690	6,109	△ 43.5	7.4
Individual management entity	〃	9,780	5,469	5,885	△ 44.1	7.6
Organized management entity	〃	282	221	224	△ 21.6	1.4
Corporation, joint management, etc.	〃	241	136	174	△ 43.6	27.9
Fishery cooperative, etc.	〃	41	85	50	107.3	△ 41.2
Fishery worker at sea	People	21,598	13,827	14,548	△ 36.0	5.2
Individual management entity	〃	16,465	8,409	10,624	△ 48.9	26.3
Organized management entity	〃	5,133	5,418	3,924	5.6	△ 27.6
Corporation, joint management, etc.	〃	4,288	2,893	3,002	△ 32.5	3.8
Fishery cooperative, etc.	〃	845	2,525	922	198.8	△ 63.5
Fishing vessel	Vessel	18,002	10,476	11,553	△ 41.8	10.3
Fish market	Market	37	25	29	△ 32.4	16.0
Marine product volume handled	t	706,889	458,055	458,399	△ 35.2	0.1
Marine product value handled	10,000 yen	20,850,410	16,360,984	17,982,122	△ 21.5	9.9
Cold storage/refrigerating plant	Plant	555	391	401	△ 29.5	2.6
Worker	People	18,600	10,968	12,809	△ 41.0	16.8
Cold storage capability	t	967,936	718,833	755,183	△ 25.7	5.1
Fishery processing plant	Plant	752	534	528	△ 29.0	△ 1.1
Worker	People	21,861	14,727	15,420	△ 32.6	4.7
Production volume (frozen fresh fishery products)	t	379,436	210,429	244,674	△ 44.5	16.3

2. Iwate Prefecture

The number of fishery management entities in Iwate Prefecture was 3,406 increased 41 (1.2%) from 5 years ago.

The number of persons who engaged in fishery work at sea was 6,187 increased 14 (0.2%) from 5 years ago.

The number of fishing vessels was 5,791 increased 51 (0.9%) from 5 years ago. Looking at the number of fishing vessels by fishery type for top sales amount of the fishing vessel used, that for oyster culture was 165 increased 86 (108.9%) from 5 years ago, seaweed (“wakame”) culture 143, decreased 52 (26.7%) from 5 years ago, and the large set net 156 increased 7 (4.7%) from 5 years ago.

The number of fish markets was 14, which was the same as 5 years ago. The volume of fishery products handled was 113,826 tons decreased 22,343 tons (16.4%) from 5 years ago, but the monetary value of fishery products handled was 40,127.09 million yen increased 2,528.15 million yen (6.7%) from 5 years ago.

The number of cold storage/refrigerating plants was 128 decreased 17 (11.7%) from 5 years ago, and the number of workers was 3,430 decreased 394 (10.3%) from 5 years ago, but the cold storage capability was 172,902 tons increased 28,252 tons (19.5%) from 5 years ago.

The number of fishery processing plants was 135 decreased 19 (12.3%) from 5 years ago, and the number of workers was 3,377 decreased 925 (21.5%) from 5 years ago. The production volume of frozen fresh fishery products, for which the production volume was the largest, was 72,829 tons decreased 17,234 tons (19.1%) from 5 years ago.

Table 34: Main Survey Results in Census of Fisheries (Iwate Prefecture)

Classification	Unit	2008	2013	2018	Increase/decrease from the previous survey (2013/2008)	Increase/decrease from the previous survey (2018/2013)
					%	%
Fishery management entity	Entity	5,313	3,365	3,406	△ 36.7	1.2
Individual management entity	〃	5,204	3,278	3,317	△ 37.0	1.2
Organized management entity	〃	109	87	89	△ 20.2	2.3
Corporation, joint management, etc.	〃	77	54	55	△ 29.9	1.9
Fishery cooperative, etc.	〃	32	33	34	3.1	3.0
Fishery worker at sea	People	9,545	6,173	6,187	△ 35.3	0.2
Individual management entity	〃	7,434	4,004	4,564	△ 46.1	14.0
Organized management entity	〃	2,111	2,169	1,623	2.7	△ 25.2
Corporation, joint management, etc.	〃	1,306	967	847	△ 26.0	△ 12.4
Fishery cooperative, etc.	〃	805	1,202	776	49.3	△ 35.4
Fishing vessel	Vessel	8,964	5,740	5,791	△ 36.0	0.9
(By fishery type for top sales amount)						
Oyster culture	〃	376	79	165	△ 79.0	108.9
Seaweeds ("wakame") culture	〃	317	195	143	△ 38.5	△ 26.7
Large set net	〃	185	149	156	△ 19.5	4.7
Fish market	Market	14	14	14	0.0	0.0
Marine product volume handled	t	186,999	136,169	113,826	△ 27.2	△ 16.4
Marine product value handled	10,000 yen	4,542,668	3,759,894	4,012,709	△ 17.2	6.7
Cold storage/refrigerating plant	Plant	176	145	128	△ 17.6	△ 11.7
Worker	People	4,940	3,824	3,430	△ 22.6	△ 10.3
Cold storage capability	t	168,428	144,650	172,902	△ 14.1	19.5
Fishery processing plant	Plant	178	154	135	△ 13.5	△ 12.3
Worker	People	5,314	4,302	3,377	△ 19.0	△ 21.5
Production volume (frozen fresh fishery products)	t	108,241	90,063	72,829	△ 16.8	△ 19.1

3. Miyagi Prefecture

The number of fishery management entities in Miyagi Prefecture was 2,326 increased 15 (0.6%) from 5 years ago.

The number of persons who engaged in fishery work at sea was 7,255 increased 10 (0.1%) from 5 years ago.

The number of fishing vessels was 5,318 increased 614 (13.1%) from 5 years ago. Looking at the number of fishing vessels by fishery type for top sales amount of the fishing vessel used, that for oyster culture was 241 increased 73 (43.5%) from 5 years ago, that for common scallop culture 119 increased 15 (14.4%) from 5 years ago, and that for large set net 39 increased 1 (2.6%) from 5 years ago.

The number of fish markets was 10, which was the same as 5 years ago. A total of 334,686 tons of fishery products with a monetary value of 136,597.00 million yen was handled increased 16,871 tons (5.3%) and 11,235.76 million yen (9.0%), respectively, from 5 years ago.

The number of cold storage/refrigerating plants was 208 increased 25 (13.7%) from 5 years ago, and the number of workers was 7,601 increased 2,237 (41.7%) from 5 years ago. In addition, the cold storage capability was 503,434 tons increased 9,251 tons (1.9%) from 5 years ago.

The number of fishery processing plants was 291 decreased 2 (0.7%) from 5 years ago, but the number of workers was 9,964 increased 1,320 (15.3%) from 5 years ago. The production volume of frozen fresh fishery products, for which the production volume was the largest, was 162,391 tons increased 48,884 tons (43.1%) from 5 years ago.

Table 35: Main Survey Results in Census of Fisheries (Miyagi Prefecture)

Classification	Unit	2008	2013	2018	Increase/decrease from the previous survey (2013/2008)	Increase/decrease from the previous survey (2018/2013)
					%	%
Fishery management entity	Entity	4,006	2,311	2,326	△ 42.3	0.6
Individual management entity	〃	3,860	2,191	2,214	△ 43.2	1.0
Organized management entity	〃	146	120	112	△ 17.8	△ 6.7
Corporation, joint management, etc.	〃	140	68	96	△ 51.4	41.2
Fishery cooperative, etc.	〃	6	52	16	766.7	△ 69.2
Fishery worker at sea	People	10,280	7,245	7,255	△ 29.5	0.1
Individual management entity	〃	7,804	4,405	5,284	△ 43.6	20.0
Organized management entity	〃	2,476	2,840	1,971	14.7	△ 30.6
Corporation, joint management, etc.	〃	2,455	1,517	1,825	△ 38.2	20.3
Fishery cooperative, etc.	〃	21	1,323	146	6200.0	△ 89.0
Fishing vessel	Vessel	8,173	4,704	5,318	△ 42.4	13.1
(By fishery type for top sales amount)						
Oyster culture	〃	538	168	241	△ 68.8	43.5
Common scallop culture	〃	315	104	119	△ 67.0	14.4
Large set net	〃	46	38	39	△ 17.4	2.6
Fish market	Market	11	10	10	△ 9.1	0.0
Marine product volume handled	t	469,595	317,815	334,686	△ 32.3	5.3
Marine product value handled	10,000 yen	14,938,994	12,536,124	13,659,700	△ 16.1	9.0
Cold storage/refrigerating plant	Plant	268	183	208	△ 31.7	13.7
Worker	People	10,956	5,364	7,601	△ 51.0	41.7
Cold storage capability	t	689,749	494,183	503,434	△ 28.4	1.9
Fishery processing plant	Plant	439	293	291	△ 33.3	△ 0.7
Worker	People	14,015	8,644	9,964	△ 38.3	15.3
Production volume (frozen fresh fishery products)	t	255,757	113,507	162,391	△ 55.6	43.1

4. Fukushima Prefecture

The number of fishery management entities in Fukushima Prefecture was 377 increased 363 (2,592.9%) from 5 years ago.

The number of persons who engaged in fishery work at sea was 1,106 increased 697 (170.4%) from 5 years ago.

The number of fishing vessels was 444 increased 412 (1,287.5%) from 5 years ago.

The number of fish markets was 5 increased 4 (400.0%) from 5 years ago. A total of 9,887 tons of fishery products with a monetary value of 3,097.13 million yen was handled increased 5,816 tons (142.9%) and 2,447.47 million yen (376.7%), respectively, from 5 years ago.

The number of cold storage/refrigerating plants was 65 increased 2 (3.2%) from 5 years ago, but the number of workers was 1,778 decreased 2 (0.1%) from 5 years ago. In addition, the cold storage capability was 78,847 tons increased 1,153 tons (1.4%) from 5 years ago.

The number of fishery processing plants was 102 increased 15 (17.2%) from 5 years ago, and the number of workers was 2,079, which was also increased 298 (16.7%) from 5 years ago. The production volume of frozen fresh fishery products, for which the production volume was the largest, was 9,454 tons increased 2,595 tons (37.8%) from 5 years ago.

Table 36: Main Survey Results in Census of Fisheries (Fukushima Prefecture)

Classification	Unit	2008	2013	2018	Increase/decrease from the previous survey (2013/2008)	Increase/decrease from the previous survey (2018/2013)
					%	%
Fishery management entity	Entity	743	14	377	△ 98.1	2592.9
Individual management entity	〃	716	-	354	-	nc
Organized management entity	〃	27	14	23	△ 48.1	64.3
Corporation, joint management, etc.	〃	24	14	23	△ 41.7	64.3
Fishery cooperative, etc.	〃	3	-	-	-	nc
Fishery worker at sea	People	1,773	409	1,106	△ 76.9	170.4
Individual management entity	〃	1,227	-	776	-	nc
Organized management entity	〃	546	409	330	△ 25.1	△ 19.3
Corporation, joint management, etc.	〃	527	409	330	△ 22.4	△ 19.3
Fishery cooperative, etc.	〃	19	-	-	-	nc
Fishing vessel	Vessel	865	32	444	△ 96.3	1287.5
Fish market	Market	12	1	5	△ 91.7	400.0
Marine product volume handled	t	50,295	4,071	9,887	△ 91.9	142.9
Marine product value handled	10,000 yen	1,368,748	64,966	309,713	△ 95.3	376.7
Cold storage/refrigerating plant	Plant	111	63	65	△ 43.2	3.2
Worker	People	2,704	1,780	1,778	△ 34.2	△ 0.1
Cold storage capability	t	109,759	80,000	78,847	△ 27.1	△ 1.4
Fishery processing plant	Plant	135	87	102	△ 35.6	17.2
Worker	People	2,532	1,781	2,079	△ 29.7	16.7
Production volume (frozen fresh fishery products)	t	15,438	6,859	9,454	△ 55.6	37.8