

Supplementary Information

Tables

Table S1. The weights of total fish landing at Jeju fishing harbors from January to December 2018

	Mackerel	Hairtail	Small Yellow Croaker	Anchovy	Red Tilefish	Red-banded Lobster	Brown Croaker
Purse Seine	2,703,193	15,844	0	1,763	0	0	28
Longline	8,405	630,236	133	14,465	7,114	0	1,955
Gill Net	47,016	95,295	612,017	11,502	29,513	0	20,716
Squid Jigging	10,198	102,726	374	28,501	4,553	0	2,793
Trawl	32	1,398	3,791	0	6,724	231,488	25,354

(unit: kg)

Table S2. Fish landing data at for the waters surrounding Jeju Island

Sale date	Seller location	Fish species	Fish state	Fishing vessel type	Weight (kg)
2019-09-01	Jeju fishery union	Hairtail	Refrigerated	Squid Jigging	92
2019-09-01	Jeju fishery union	Hairtail	Refrigerated	Squid Jigging	12
2019-09-01	Jeju fishery union	Hairtail	Refrigerated	Small Purse Seine	20
2019-09-01	Jeju fishery union	Hairtail	Refrigerated	Longline	50
2019-09-01	Jeju fishery union	Squid	Refrigerated	Small Purse Seine	400
2019-09-01	Jeju fishery union	Small Yellow Croaker	Refrigerated	Gill Net	195
2019-09-01	Jeju fishery union	Small Yellow Croaker	Refrigerated	Gill Net	60
2019-09-01	Hanlim fishery union	Red Tilefish	Alive	Squid Jigging	10
2019-09-01	Hanlim fishery union	Red Tilefish	Alive	Squid Jigging	10
2019-09-01	Hanlim fishery union	Mackerel	Refrigerated	Gill Net	1,120
2019-09-01	Hanlim fishery union	Mackerel	Refrigerated	Longline	10
2019-09-01	Hanlim fishery union	Mackerel	Refrigerated	Squid Jigging	50
2019-09-02	Seoguipo fishery union	Sea eel	Alive	Squid Jigging	10
2019-09-02	Seoguipo fishery union	Red Tilefish	Refrigerated	Squid Jigging	19

2019-09-02	Seoguipo fishery union	Red Tilefish	Refrigerated	Squid Jigging	4
2019-09-02	Seoguipo fishery union	Red Tilefish	Refrigerated	Gill Net	72
2019-09-02	Seoguipo fishery union	Red Tilefish	Refrigerated	Gill Net	13

Table S3. Example showing analysis results of allocating fishing status to a vessel during a fishing trip

Fishing Status	Start Time	End Time	Hairtail	Brown Croaker	Mackere l
At Fishing Harbor (Fish Landing)	2018-01-01 00:00	2018-01-05 16:25	112	5	32
Navigation	2018-01-05 16:25	2018-01-05 19:00			
1st Fishing Activity	2018-01-05 19:00	2018-01-06 07:00			
Non-fishing Activity	2018-01-06 07:00	2018-01-07 19:00			
2nd Fishing Activity	2018-01-07 19:00	2018-01-08 07:00			
Non-fishing Activity	2018-01-08 07:00	2018-01-07 19:00			
3rd Fishing Activity	2018-01-07 19:00	2018-01-06 07:00			
Non-fishing Activity	2018-01-06 07:00	2018-01-08 09:30			
At Fishing Harbor (Fish Landing)	2018-01-08 09:30	2018-01-12 15:11	130	12	25

Table S4. Speed profiles for different fishing activities

Fishing ship type	Fishing activity speed
Purse Seine	1~4 knots
Longline	1~3 knots
Gillnet	1~4 knots
Squid Jigging	0~2 knots
Trawl fishing	3~4 knots