İSTANBUL & MARMARA, AEGEAN, MEDITERRANEAN, BLACK SEA REGIONS
CHAMBER OF SHIPPING
40 .years

MARITIME SECTOR REPORT

İstanbul 2022

TURKISH CHAMBER OF SHIPPING

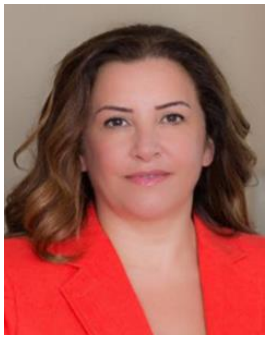
ISTANBUL & MARMARA, AEGEAN, MEDITERRANEAN, BLACKSEA REGIONS

MARITIME SECTOR REPORT

ISTANBUL - 2022

TURKISH CHAMBER OF SHIPPING
THE BOARD OF DIRECTORS

TAMER KIRAN
Chairman of the Board of Directors



ŞADAN KAPTANOĞLU
Vice Chairman of the Board of Directors

RECEP DÜZGİT
Vice Chairman of the Board of Directors

FARUK MİRAS
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FOREWORD

As the IMEAK Chamber of Shipping, the umbrella organization of maritime industry in Turkey, we carry out our activities with the determination and effort to grow our sector, increase its contribution to our country's economy and ensure its competitiveness with the global maritime industry.

The Maritime Sector Report, which we have we have prepared within this framework, aims to set forth the developments in the maritime sector both in Turkey and in the world and the level it has reached as of 2021 by examining from various aspects.

The most important progress in 2021 was a rapid recovery in global trade as a result of the success of vaccination programs after 2020, which was lost as a result of the Covid-19 pandemic. In this period, the Turkish economy grew by 11%.

As of January 1, 2022, we monitor that Turkey maintains its 15th place in the world fleet rankings. Despite the fact that our country's place in the fleet ranking has not changed, it is remarkable that the total fleet has increased from 28.9 million DWT to 30.7 million DWT.

Again, compared to 2020, Turkey's export shipments increased from 81 million tons to 153 million tons in 2021, while import shipments increased from 173 million tons to 232 million tons. Foreign trade cargo handling, which was 437 million in 2020, increased by 9.6% to 479 million tons.

Another important development for our industry is the export of ships, yachts and sub-industry products, which was 1.375 billion USD in 2020, increased by 18.3% to 1.626 billion USD in 2021.

We are pleased to provide access to the most up-to-date data and accurate information about the maritime industry with this report, which is regularly prepared every year as a result of considerable efforts.

With our belief that the maritime industry's contribution to the country's economy will continue to increase in the coming years, I would like to thank those who contributed to the preparation of our report and wish the report to be beneficial for our industry and our community.

Tamer KIRAN

Turkish Chamber of Shipping

Chairman of the Board of Directors

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ABBREVIATIONS

AIS	: Automatic Identification System
ASP	: Application Service Provider
BOT	: Build-Operate-Transfer
BSEC	: Black Sea Economic Cooperation
CGT	: Compensated Gross Ton
DWT	: Deadweight Tonnage
EEEF	: Europe Environmental Education Foundation
EU	: European Union
GT	: Gross Tonnage
IMO	: International Maritime Organization
ISL	: Institute of Shipping Economics and Logistics
LHD	: Multi-Purpose Amphibious Assault Ship
LRIT	: Long Range Identification and Tracking
LST	: Landing Ship Tank
MOSHIP	: Submarine Rescue Mother Ship
MTA	: General Directorate of Mineral Research and Exploration
NATO	: North Atlantic Treaty Organization
OECD	: Organisation for Economic Co-operation and Development
SME's	: Small and Medium-Sized Enterprises
STOVL	: Short Take Off and Vertical Landing
TEU	: Twenty-Foot Equivalent Unit
TRNDC	: Turkey's National LRIT Data Center
TSVTS	: The Turkish Straits Vessel Traffic Service
TURCEV	: The Environmental Education Foundation of Turkey
UNESCO	: United Nations Educational, Scientific and Cultural Organization
US	: United States
USD	: United States dollar
VTMIS	: Vessel Traffic Management and Information System
VTS	: Vessel Traffic Services
YTKB	: New Type Patrol Boat

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CHAPTER I

THE DEVELOPMENT OF THE TURKISH SHIPPING

1. THE DEVELOPMENT OF TURKISH SHIPPING

1.1. The Turkish Merchant Fleet

A detailed analysis of the Turkish merchant fleet has been made under the Turkish National Ship Registry and Turkish International Ship Registry. The values which were established for individual ship groups have been evaluated by number, tonnage and also by being imported or built in Turkey.

In the analysis, ships of size 1000 GT or higher have been taken into consideration. Age and tonnage ranges have also been evaluated in their respective tables.

Number and tonnage values are as of 31 December 2021.

1.2. The Analysis of the Turkish Merchant Fleet by Number and Tonnage

A general analysis of the merchant fleet has been made according to number, tonnage, and place of build. Table 1 shows that Turkish merchant fleet consists of 475 ships of which 250 (4.5 million DWT) have been imported and 225 (1.3 million DWT) have been built in Turkey.

475 ships are distributed by type as follows; 23.8% dry cargo ships, 12.2% chemical tankers, 10.3% service ships, 9.9% container ships, 7.0% bulk carrier ships and 36.8% other types.

By DWT the fleet consists of; 26.2% bulk carriers, 21.6% oil tankers, 17.7% container ships, 11.4% chemical tankers, 10.3% dry cargo ships, and 12.8% other types.

By DWT, 4.8% of our fleet is registered in the National Ship Registry, 95.2% of the fleet is registered in the International Ship Registry. By GT, 7.1% of our fleet is registered in the National Ship Registry, 92.9% of the fleet is registered in the International Ship Registry. (Table 2)

The fleet registered in the International Ship Registry (5.5 Million DWT) is composed of; bulk carriers (27.2%), oil tankers (22.5%), container ships (16.2%), chemical tankers (11.5%), dry cargo vessels (10.1%), and other types (12.5%). (Table 2)

Table 2 shows Turkish merchant fleet which consists of 475 ships. 13.5% of the total fleet (64 ships) is registered in the National Ship Registry and 86.5% of the total fleet (411 ships) is registered in the International Ship Registry.

The majority of the fleet registered in the National Ship Registry (279.808 DWT) is composed of container ships (48.0%), dry cargo ships (14.8%), chemical tankers (8.1%), service ships (7.1%), bulk carrier ships (6.7%) and other types (15.3%). (Table 2)

Table 1. The General Examination of the Turkish Merchant Fleet by Number and Tonnage According to Import and Build (1000 GT and Over)

Ship Types	Count				DWT				GT			
	Import	Build	Total	%	Import	Build	Total	%	Import	Build	Total	%
Dry Cargo	31	82	113	23.8	195,412	408,555	603,967	10.3	136,188	260,678	396,866	7.9
Bulk Carrier	30	3	33	7.0	1,417,730	119,368	1,537,098	26.2	806,668	73,531	880,199	17.4
Container	35	12	47	9.9	829,166	206,278	1,035,444	17.7	668,579	160,576	829,155	16.4
Dry Cargo/Container	4	4	8	1.7	12,369	26,763	39,132	0.7	8,066	17,837	25,903	0.5
Chemical Tankers	31	27	58	12.2	465,834	199,925	665,759	11.4	298,485	133,566	432,051	8.5
LPG Tankers	5	0	5	1.1	27,804	0	27,804	0.5	25,574	0	25,574	0.5
LNG Tankers	1	0	1	0.2	93,513	0	93,513	1.6	108,919	0	108,919	2.2
Asphalt Tankers	1	3	4	0.8	6,603	54,850	61,453	1.0	5,832	43,630	49,462	1.0
Ro-Ro Ships	10	0	10	2.1	122,276	0	122,276	2.1	274,681	0	274,681	5.4
Ro-Ro Ferry/Passenger	9	11	20	4.2	28,495	2,283	30,778	0.5	48,363	27,265	75,628	1.5
Ferry Boats	1	27	28	5.9	0	23,014	23,014	0.4	1,815	35,438	37,253	0.7
Train Ferries	0	6	6	1.3	0	2,960	2,960	0.1	0	9,835	9,835	0.2
Passenger and Cargo Ships	8	4	12	2.5	4,078	2,221	6,299	0.1	33,411	15,092	48,503	1.0
Fishing Boats	2	0	2	0.4	3876	0	3876	0.1	3,591	0	3,591	0.1
Scientific Research Vessel	4	1	5	1.1	4,480	0	4,480	0.1	20,931	4,789	25,720	0.5
Harbour Ferries	1	0	1	0.2	0	0	0	0.0	1,043	0	1,043	0.0
Harbour Car Ferries	0	4	4	0.8	0	1,264	1,264	0.0	0	4,874	4,874	0.1
Tugs	1	0	1	0.2	0	0	0	0.0	1,565	0	1,565	0.0
Service Ships	34	15	49	10.3	122,470	45,221	167,691	2.9	316,044	85,349	401,393	8.0
Oil Tankers	11	12	23	4.9	1,076,621	190,478	1,267,099	21.6	580,844	101,446	682,290	13.5
Train Ferries/Ro-Ro	1	0	1	0.2	6,266	0	6,266	0.1	15,195	0	15,195	0.3
Dry Cargo/Ro-Ro	11	1	12	2.5	124,901	17,183	142,084	2.4	336,188	60,465	396,653	7.8
Marine Vehicles	19	13	32	6.7	8,000	7,331	15,331	0.2	227,974	102,940	330,914	6.5
Grand Total	**250**	**225**	**475**	**100**	**4,549,894**	**1,307,694**	**5,857,588**	**100**	**3,919,956**	**1,137,311**	**5,057,267**	**100**

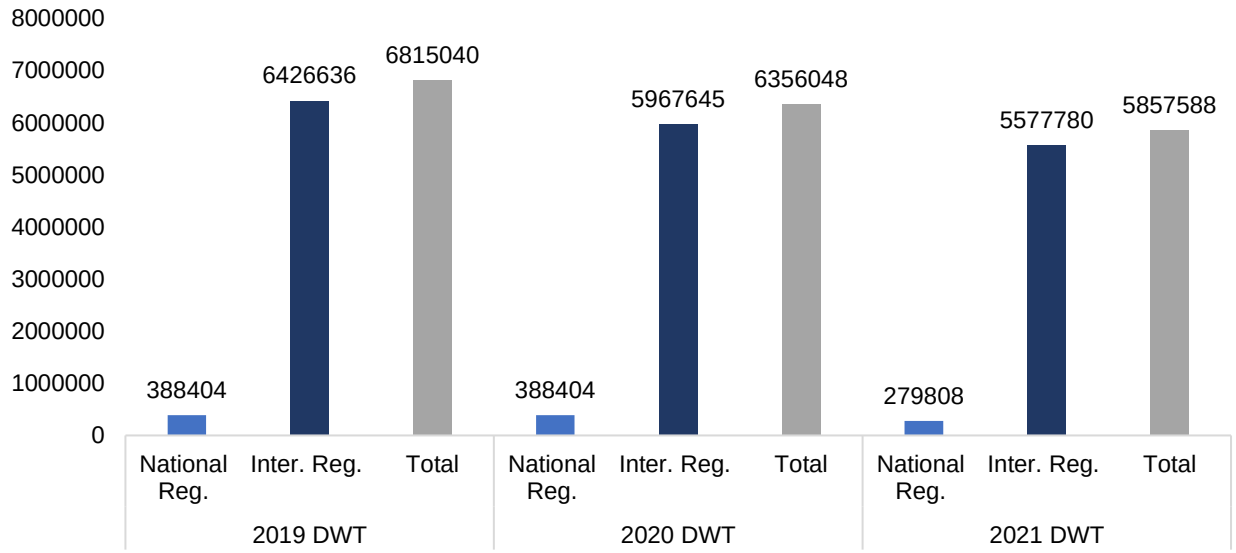
Source: Turkish Chamber of Shipping Statistics

Table 2. The General Examination of the Turkish Merchant Fleet by National and International Registries (1000 GT and Over)

Ship Types	Count				DWT				GT			
	National Reg.	Inter. Reg.	Total	%	National Reg.	Inter. Reg.	Total	%	National Reg.	Inter. Reg.	Total	%
Dry Cargo	8	105	113	23.8	41,441	562,526	603,967	10.3	27,922	368,944	396,866	7.9
Bulk Carrier	1	32	33	7.0	18,640	1,518,458	1,537,098	26.2	11,529	868,670	880,199	17.4
Container	4	43	47	9.9	134,264	901,180	1,035,444	17.7	105,777	723,378	829,155	16.4
Dry Cargo/Container	1	7	8	1.7	2,356	36,776	39,132	0.7	1,720	24,183	25,903	0.5
Chemical Tankers	4	54	58	12.2	22,621	643,138	665,759	11.4	15,318	416,733	432,051	8.5
LPG Tankers	0	5	5	1.1	0	27,804	27,804	0.5	0	25,574	25,574	0.5
LNG Tankers	0	1	1	0.2	0	93,513	93,513	1.6	0	108,919	108,919	2.2
Asphalt Tankers	0	4	4	0.8	0	61,453	61,453	1.0	0	49,462	49,462	1.0
Ro-Ro Ships	0	10	10	2.1	0	122,276	122,276	2.1	0	274,681	274,681	5.4
Ro-Ro Ferry/Passenger	2	18	20	4.2	0	30,778	30,778	0.5	10,681	64,947	75,628	1.5
Ferry Boats	1	27	28	5.9	2,314	20,700	23,014	0.4	1,596	35,658	37,253	0.7
Train Ferries	6	0	6	1.3	2,960	0	2,960	0.1	9,835	0	9,835	0.2
Passenger and Cargo Ships	4	8	12	2.5	3,761	2,538	6,299	0.1	18,303	30,200	48,503	1.0
Fishing Boats	0	2	2	0.4	0	3876	3876	0.1	0	3,591	3,591	0.1
Scientific Research Vessel	0	5	5	1.1	0	4,480	4,480	0.1	0	25,720	25,720	0.5
Harbour Ferries	0	1	1	0.2	0	0	0	0.0	0	1,043	1,043	0.0
Harbour Car Ferries	0	4	4	0.8	0	1,264	1,264	0.0	0	4,874	4,874	0.1
Tugs	1	0	1	0.2	0	0	0	0.0	1,565	0	1,565	0.0
Service Ships	14	35	49	10.3	19,774	147,917	167,691	2.9	59,495	341,898	401,393	8.0
Oil Tankers	3	20	23	4.9	10,868	1,256,231	1,267,099	21.6	5,940	676,350	682,290	13.5
Train Ferries/Ro-Ro	0	1	1	0.2	0	6,266	6,266	0.1	0	15,195	15,195	0.3
Dry Cargo/Ro-Ro	2	10	12	2.5	13,478	128,606	142,084	2.4	52,408	344,245	396,653	7.8
Marine Vehicles	13	19	32	6.7	7,331	8,000	15,331	0.2	37,780	293,134	330,914	6.5
Grand Total	**64**	**411**	**475**	**100**	**279,808**	**5,577,780**	**5,857,588**	**100**	**359,869**	**4,697,399**	**5,057,267**	**100**

Source: Turkish Chamber of Shipping Statistics

Graph 1. Examination of Registries (1000 GT and Over)



Source: Turkish Chamber of Shipping Statistics

Table 3. Examination of Registries (DWT) 2019-2020-2021 (1000 GT and Over)

Ship Types	2019 DWT			2020 DWT			2021 DWT			2020-2021 DWT % Change
	National Reg.	Inter. Reg.	Total	National Reg.	Inter. Reg.	Total	National Reg.	Inter. Reg.	Total	
Dry Cargo	42,007	697,397	739,404	42,007	664,523	706,530	41,441	562,526	603,967	-14.5%
Bulk Carrier	116,655	2,354,822	2,471,477	116,655	1,792,514	1,909,169	18,640	1,518,458	1,537,098	-19.5%
Container	156,278	884,751	1,041,029	156,278	858,308	1,014,586	134,264	901,180	1,035,444	2.1%
Dry Cargo/Container	2,356	60,479	62,835	2,356	55,631	57,987	2,356	36,776	39,132	-32.5%
Chemical Tankers	9,497	521,685	531,182	9,497	620,584	630,081	22,621	643,138	665,759	5.7%
LPG Tankers	0	27,804	27,804	0	27,804	27,804	0	27,804	27,804	0.0%
LNG Tankers	0	0	0	0	0	0	0	93,513	93,513	-
Asphalt Tankers	2,770	54,850	57,620	2,770	54,850	57,620	0	61,453	61,453	6.7%
Ro-Ro Ships	0	195,680	195,680	0	135,903	135,903	0	122,276	122,276	-10.0%
Ro-Ro Ferry/Passenger	1,500	26,290	27,790	1,500	32,265	33,765	0	30,778	30,778	-8.8%
Ferry Boats	2,314	19,872	22,186	2,314	19,873	22,186	2,314	20,700	23,014	3.7%
Train Ferries	2,960	0	2,960	2,960	0	2,960	2,960	0	2,960	0.0%
Passenger and Cargo Ships	3,761	3,466	7,227	3,761	3,466	7,227	3,761	2,538	6,299	-12.8%
Fishing Boats	0	569	569	0	569	569	0	3,876	3,876	581.2%
Scientific Research Vessel	0	7,780	7,780	0	7,780	7,780	0	4,480	4,480	-42.4%
Harbour Ferries	0	0	0	0	0	0	0	0	0	-
Harbour Car Ferries	0	1,974	1,974	0	1,974	1,974	0	1,264	1,264	-36.0%
Tugs	0	0	0	0	0	0	0	0	0	-
Service Ships	19,774	66,680	86,454	19,774	133,623	153,397	19,774	147,917	167,691	9.3%
Oil Tankers	10,868	1,412,612	1,423,480	10,868	1,416,636	1,427,504	10,868	1,256,231	1,267,099	-11.2%
Train Ferries/Ro-Ro	0	6,266	6,266	0	6,266	6,266	0	6,266	6,266	0.0%
Dry Cargo/Ro-Ro	11,978	75,659	87,637	11,978	127,076	139,054	13,478	128,606	142,084	2.2%
Marine Vehicles	5,686	8,000	13,686	5,686	8,000	13,686	7,331	8,000	15,331	12.0%
Grand Total	**388,404**	**6,426,636**	**6,815,040**	**388,404**	**5,967,645**	**6,356,048**	**279,808**	**5,577,780**	**5,857,588**	**-7.8%**

Source: Turkish Chamber of Shipping Statistics

1.3. The Age Profile of the Turkish Merchant Fleet

Table 4 shows the age profile of the Turkish Merchant Fleet with respect to different ship types. The Merchant Fleet of ships with size 1.000 GT and above consists of 475 ships. The average age of these ships is 23.8 as of 31.12.2021.

The average age of dry cargo ships is 28, which makes 23.8% of the fleet. The average age of bulk carriers is 17 and makes up 7.0% of the total fleet. The average age of containers is 17, which is 9.9% of the fleet. The average age of chemical tankers is 19, which is 12.2% of the fleet. The average age of oil tankers is 18, which is 4.9% of the fleet.

Table 4. The Average Profile of the Turkish Merchant Fleet (1000 GT and Over)

Ship Types	Number	Tonnage (DWT)	Tonnage (GT)	Average Age
Dry Cargo	113	603,967	396,866	28
Bulk Carrier	33	1,537,098	880,199	17
Container	47	1,035,444	829,155	17
Dry Cargo/Container	8	39,132	25,903	25
Chemical Tankers	58	665,759	432,051	19
LPG Tankers	5	27,804	25,574	24
LNG Tankers	1	93,513	108,919	0
Asphalt Tankers	4	61,453	49,462	7
Ro-Ro Ships	10	122,276	274,681	18
Ro-Ro Ferry/Passenger	20	30,778	75,628	22
Ferry Boats	28	23,014	37,253	25
Train Ferries	6	2,960	9,835	48
Passenger and Cargo Ships	12	6,299	48,503	23
Fishing Boats	2	3,876	3,591	40
Scientific Research Vessel	5	4,480	25,720	27
Harbour Ferries	1	0	1,043	69
Harbour Car Ferries	4	1,264	4,874	28
Tugs	1	0	1,565	37
Service Ships	49	167,691	401,393	30
Oil Tankers	23	1,267,099	682,290	18
Train Ferries/Ro-Ro	1	6,266	15,195	35
Dry Cargo/Ro-Ro	12	142,084	396,653	14
Marine Vehicles	32	15,331	330,914	29
Grand Total	**475**	**5,857,588**	**5,057,267**	**23.8**

Source: Turkish Chamber of Shipping Statistics

Table 5 shows the Turkish Merchant Fleet grouped by different age and tonnage ranges. Turkish Merchant Fleet consists of 475 ships with a total of 5,857,588 DWT.

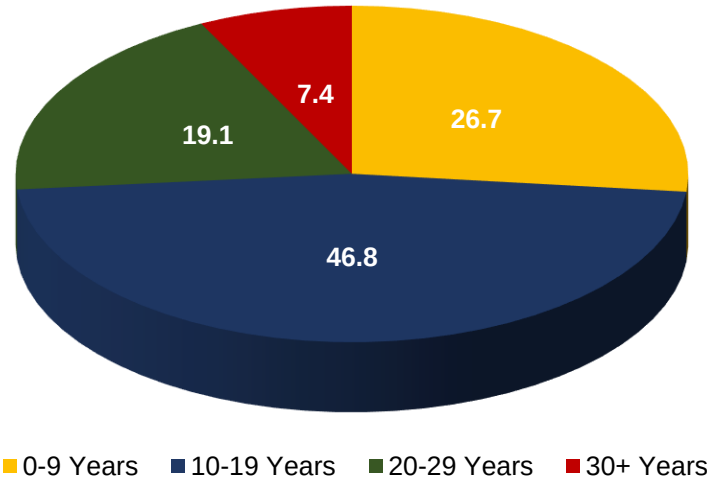
- 71 ships with total size 1,563,089 DWT are in the 0-9 age range,
- 157 ships with total size 2,739,877 DWT are in the 10-19 age range,
- 92 ships with total size 1,117,220 DWT are in the 20-29 age range,
- 155 ships with total size 437,402 DWT are of age 30 or older.

Table 5. Turkish Merchant Fleet Distribution by Tonnage and Age Groups (1000 GT and Over)

Divisions Of Tonnage	0-9 Years			10-19 Years			20-29 Years			30+ Years			Total	
	NO	DWT	%	NO	DWT	%	NO	DWT	%	NO	DWT	%	NO	DWT
0-149	24	0	0.0%	22	0	0.0%	2	0	0.0%	42	0	0.0%	90	0
150-1499	1	1,223	0.1%	7	4,409	0.2%	5	3,059	0.3%	17	11,583	2.7%	30	20,274
1500-5999	10	40,860	2.6%	39	150,151	5.5%	39	142,052	12.7%	78	257,235	58.8%	166	590,298
6000-9999	5	35,852	2.3%	20	145,211	5.3%	16	127,959	11.5%	13	94,531	21.6%	54	403,553
10000-34999	18	315,601	20.2%	46	866,213	31.6%	20	356,739	31.9%	5	74,053	16.9%	89	1,612,606
35000-52999	6	249,518	16.0%	10	429,568	15.7%	9	415,240	37.2%	0	0	0.0%	25	1,094,326
53000-79999	1	61,619	3.9%	7	446,218	16.3%	1	72,171	6.5%	0	0	0.0%	9	580,008
80000-119999	1	93,513	6.0%	3	247,564	9.0%	0	0	0.0%	0	0	0.0%	4	341,077
120000+	5	764,903	48.9%	3	450,543	16.4%	0	0	0.0%	0	0	0.0%	8	1,215,446
Grand Total	**71**	**1,563,089**	100%	**157**	**2,739,877**	100%	**92**	**1,117,220**	100%	**155**	**437,402**	100%	**475**	**5,857,588**

Source: Turkish Chamber of Shipping Statistics

Graph 2. Turkish Merchant Fleet Distribution by Age Groups (DWT/%)



Source: Turkish Chamber of Shipping Statistics

The graph shows the age groups of the Turkish merchant fleet. 26.7% of the fleet is in the 0-9 age range, 46.8% of the fleet is in the 10-19 age range, 19.1% of the fleet is in the 20-29 age range and 7.4% is 30 years old or over.

The tables of different ship types below show the age profile of the Turkish merchant fleet and are organized according to size and age.

Table 6 shows the Dry Cargo segment (113 ships) which has a total size of 603,967 DWT.

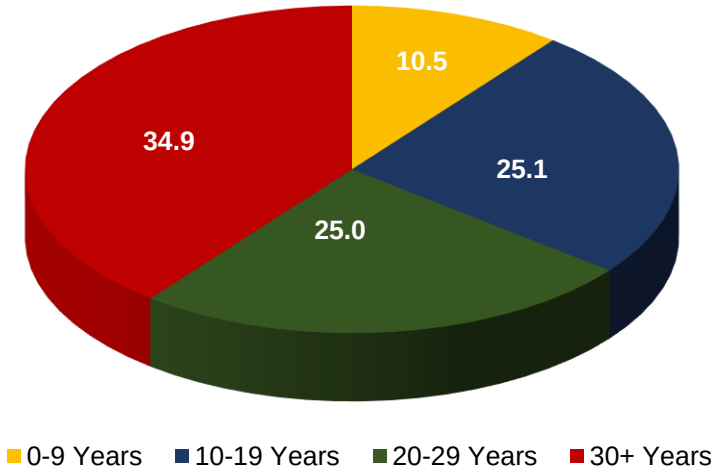
- 9 ships of size 63,688 DWT are in the 0-9 age range,
- 25 ships of size 151,301 DWT are in the 10-19 age range,
- 24 ships of size 150,755 DWT are in the 20-29 age range,
- 55 ships of size 238,223 DWT are 30 years or older.

Table 6. Dry Cargo Ships by Tonnage and Age Groups (1000 GT and Over)

Divisions Of Tonnage	0-9 Years			10-19 Years			20-29 Years			30+ Years			Total	
	NO	DWT	%	NO	DWT	%	NO	DWT	%	NO	DWT	%	NO	DWT
150-1499	0	0	0.0%	0	0	0.0%	0	0	0.0%	0	0	0.0%	0	0
1500-5999	6	29,584	46.4%	14	56,587	37.4%	21	79,469	52.7%	46	162,191	68.1%	87	327,831
6000-9999	1	6,240	9.8%	9	62,734	41.5%	1	9,190	6.1%	7	48,651	20.4%	18	126,815
10000-34999	2	27,864	43.8%	2	31,980	21.1%	1	12,231	8.1%	2	27,381	11.5%	7	99,456
35000-52999	0	0	0.0%	0	0	0.0%	1	49,865	33.1%	0	0	0.0%	1	49,865
53000-79999	0	0	0.0%	0	0	0.0%	0	0	0.0%	0	0	0.0%	0	0
80000-119999	0	0	0.0%	0	0	0.0%	0	0	0.0%	0	0	0.0%	0	0
120000+	0	0	0.0%	0	0	0.0%	0	0	0.0%	0	0	0.0%	0	0
Grand Total	**9**	**63,688**	100%	**25**	**151,301**	100%	**24**	**150,755**	100%	**55**	**238,223**	100%	**113**	**603,967**

Source: Turkish Chamber of Shipping Statistics

Graph 3. Age Distribution of Dry Cargo Segment (DWT/%)



Source: Turkish Chamber of Shipping Statistics

10.5% of Dry Cargo Ships are in the 0-9 age range; 21.7% are in the 10-19 age range; 28.3% are in the 20-29 age range and 39.5% are 30 years or older.

Table 7 shows the Bulk Carrier Segment (33 ships) with a total size of 1,537,098 DWT.

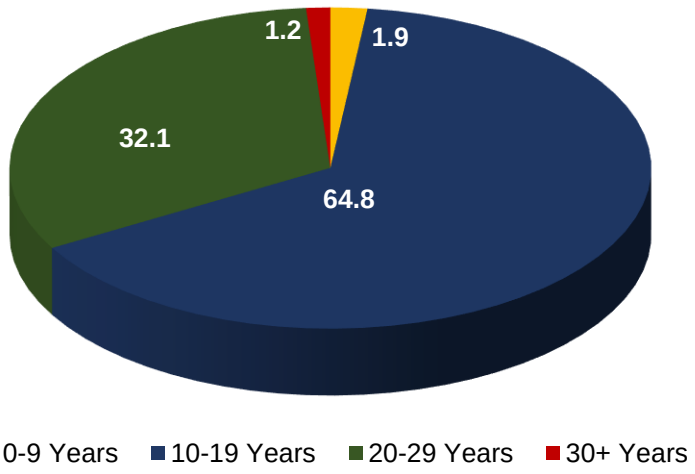
- 1 ships of size 28,467 DWT are in the 0-9 age range,
- 19 ships of size 996,700 DWT are in the 10-19 age range,
- 12 ships of size 493,291 DWT are in the 20-29 age range,
- 1 ships of size 18,640 DWT are 30 years or older.

Table 7. Bulk Carrier Ships by Tonnage and Age Groups (1000 GT and Over)

Divisions Of Tonnage	0-9 Years			10-19 Years			20-29 Years			30+ Years			Total	
	NO	DWT	%	NO	DWT	%	NO	DWT	%	NO	DWT	%	NO	DWT
0-999	0	0	0.0%	0	0	0.0%	1	4,468	0.9%	0	0	0.0%	1	4,468
10000-39999 (Handysize)	1	28,467	100.0%	6	147,343	14.8%	4	129,386	26.2%	1	18,640	100.0%	12	323,836
40000-49999 (Handymax)	0	0	0.0%	0	0	0.0%	4	182,892	37.1%	0	0	0.0%	4	182,892
50000-59999 (Supramax)	0	0	0.0%	7	377,955	37.9%	2	104,374	21.2%	0	0	0.0%	9	482,329
60000-84999 (Panamax)	0	0	0.0%	6	471,402	47.3%	1	72,171	14.6%	0	0	0.0%	7	543,573
85000-149999 (Capesize)	0	0	0.0%	0	0	0.0%	0	0	0.0%	0	0	0.0%	0	0
150000+ (Capesize)	0	0	0.0%	0	0	0.0%	0	0	0.0%	0	0	0.0%	0	0
Grand Total	**1**	**28,467**	100%	**19**	**996,700**	100%	**12**	**493,291**	100%	**1**	**18,640**	100%	**33**	**1,537,098**

Source: Turkish Chamber of Shipping Statistics

Graph 4. Age Distribution of Bulk Carriers (DWT)



Source: Turkish Chamber of Shipping Statistics

1.9% of the bulk carriers are in the 0-9 age range; 64.8% are in the 10-19 age range; 32.1% are in the 20-29 age range and 1.2% are 30 years or older.

Table 8 shows Oil Tankers Segment (23 ships) with a total size of 1,267,099 DWT

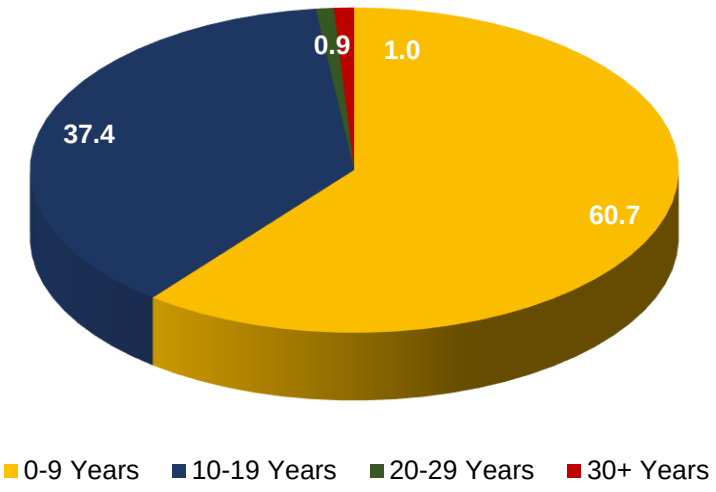
- 7 ships of size 768,499 DWT are in the 0-9 age range,
- 9 ships of size 474,498 DWT are in the 10-19 age range,
- 3 ships of size 11,497 DWT are in the 20-29 age range,
- 4 ships of size 12,605 DWT are 30 years or older.

Table 8. Oil Tankers by Tonnage and Age Groups (1000 GT and Over)

Divisions Of Tonnage	0-9 Years			10-19 Years			20-29 Years			30+ Years			Total	
	NO	DWT	%	NO	DWT	%	NO	DWT	%	NO	DWT	%	NO	DWT
0-4999	2	3,596	0.5%	5	16,836	3.5%	3	11,497	100.0%	4	12,605	100.0%	14	44,534
5000-7499	0	0	0.0%	1	7,119	1.5%	0	0	0.0%	0	0	0.0%	1	7,119
7500-9999	0	0	0.0%	0	0	0.0%	0	0	0.0%	0	0	0.0%	0	0
10000-39999 (Handysize)	0	0	0.0%	0	0	0.0%	0	0	0.0%	0	0	0.0%	0	0
40000-59999 (Handymax)	0	0	0.0%	0	0	0.0%	0	0	0.0%	0	0	0.0%	0	0
60000-79999 (Panamax)	0	0	0.0%	0	0	0.0%	0	0	0.0%	0	0	0.0%	0	0
80000-119999 (Aframax)	0	0	0.0%	0	0	0.0%	0	0	0.0%	0	0	0.0%	0	0
120000-199999 (Suezmax)	5	764,903	99.5%	3	450,543	95.0%	0	0	0.0%	0	0	0.0%	8	1,215,446
200000-324999 (VLCC)	0	0	0.0%	0	0	0.0%	0	0	0.0%	0	0	0.0%	0	0
325000+ (ULCC)	0	0	0.0%	0	0	0.0%	0	0	0.0%	0	0	0.0%	0	0
Grand Total	**7**	**768,499**	100%	**9**	**474,498**	100%	**3**	**11,497**	100%	**4**	**12,605**	100%	**23**	**1,267,099**

Source: Turkish Chamber of Shipping Statistics

Graph 5. Age Distribution of Oil Tankers (DWT/%)



Source: Turkish Chamber of Shipping Statistics

60.7% of the oil tankers are in the 0-9 age range; 37.4% are in the 10-19 age range; 0.9% are in the 20-29 age range and 1.0% are 30 years old or older.

Table 9 shows the average age of the chemical tankers (58 ships) with a total size of 665,759 DWT.

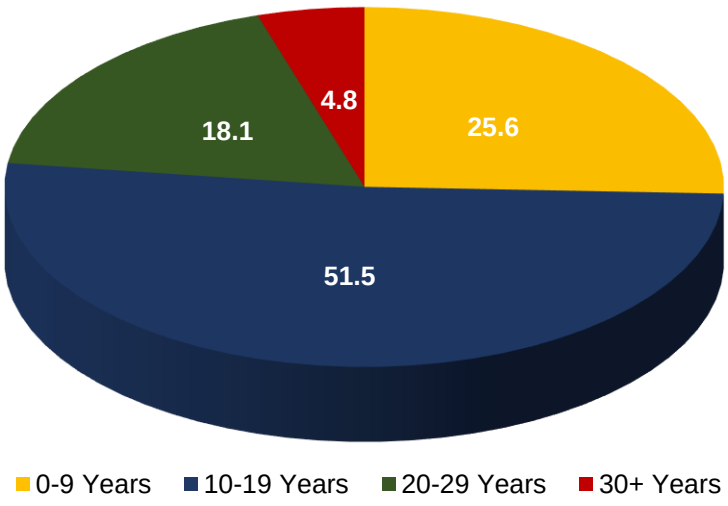
- 8 ships of size 170,210 DWT are in the 0-9 age range,
- 26 ships of size 342,546 DWT are in the 10-19 age range,
- 18 ships of size 120,251 DWT are in the 20-29 age range,
- 6 ships of size 32,752 DWT are 30 years or older.

Table 9. Chemical Tankers by Tonnage and Age Groups (1000 GT and Over)

Divisions Of Tonnage	0-9 Years			10-19 Years			20-29 Years			30+ Years			Total	
	NO	DWT	%	NO	DWT	%	NO	DWT	%	NO	DWT	%	NO	DWT
0-4999	0	0	0.0%	7	28,258	8.2%	6	21,367	17.8%	3	9,154	27.9%	16	58,779
5000-7499	2	13,124	7.7%	6	37,213	10.9%	5	31,384	26.1%	1	6,400	19.5%	14	88,121
7500-9999	1	8,488	5.0%	0	0	0.0%	4	35,087	29.1%	2	17,198	52.6%	7	60,773
10000-39999 (Handysize)	3	47,076	27.7%	12	230,819	67.4%	3	32,413	27.0%	0	0	0.0%	18	310,308
40000-59999 (Handymax)	2	101,522	59.6%	1	46,256	13.5%	0	0	0.0%	0	0	0.0%	3	147,778
60000-79999 (Panamax)	0	0	0.0%	0	0	0.0%	0	0	0.0%	0	0	0.0%	0	0
80000-119999 (Aframax)	0	0	0.0%	0	0	0.0%	0	0	0.0%	0	0	0.0%	0	0
120000-199999 (Suezmax)	0	0	0.0%	0	0	0.0%	0	0	0.0%	0	0	0.0%	0	0
200000-324999 (VLCC)	0	0	0.0%	0	0	0.0%	0	0	0.0%	0	0	0.0%	0	0
325000+ (ULCC)	0	0	0.0%	0	0	0.0%	0	0	0.0%	0	0	0.0%	0	0
Grand Total	**8**	**170,210**	100%	**26**	**342,546**	100%	**18**	**120,251**	100%	**6**	**32,752**	100%	**58**	**665,759**

Source: Turkish Chamber of Shipping Statistics

Graph 6. Age Distribution of Chemical Tankers (DWT)



Source: Turkish Chamber of Shipping Statistics

25.6% of chemical tankers are in the 0-9 age range; 51.5% are in the 10-19 age range; 18.1% are in the 20-29 age range and 4.8% are 30 years or older.

Table 10 shows the average age of the Container Ships (47 ships) with a total size of 1,035,444 DWT.

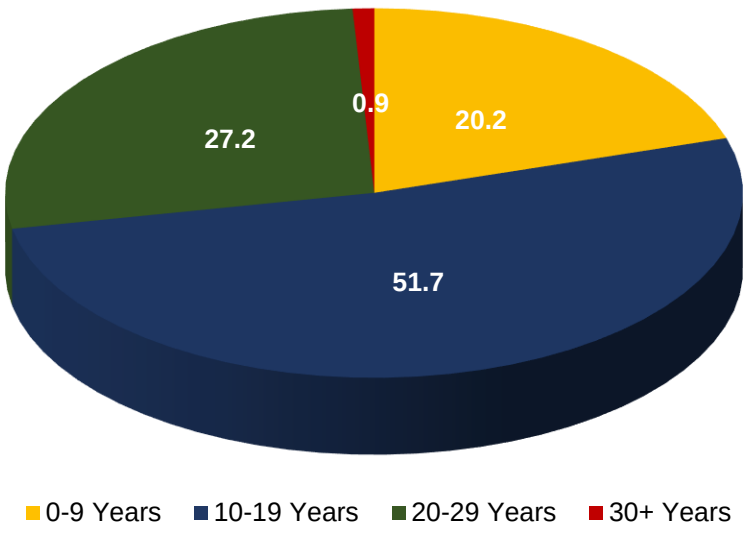
- 6 ships of size 209,278 DWT are in the 0-9 age range,
- 2 ships of size 535,019 DWT are in the 10-19 age range,
- 17 ships of size 281,381 DWT are in the 20-29 age range,
- 1 ship of size 9,766 DWT are 30 years or older.

Table 10. Container Ships by Tonnage and Age Groups (1000 GT and Over)

Divisions Of Tonnage	0-9 Years			10-19 Years			20-29 Years			30+ Years			Total	
	NO	DWT	%	NO	DWT	%	NO	DWT	%	NO	DWT	%	NO	DWT
150-1499	0	0	0.0%	0	0	0.0%	0	0	0.0%	0	0	0.0%	0	0
1500-5999	0	0	0.0%	1	3,301	0.6%	0	0	0.0%	0	0	0.0%	1	3,301
6000-9999	0	0	0.0%	0	0	0.0%	3	20,563	7.3%	1	9,766	100.0%	4	30,329
10000-34999	2	61,282	29.3%	19	418,796	78.3%	13	221,561	78.7%	0	0	0.0%	34	701,639
35000-52999	4	147,996	70.7%	3	112,922	21.1%	1	39,257	14.0%	0	0	0.0%	8	300,175
53000-79999	0	0	0.0%	0	0	0.0%	0	0	0.0%	0	0	0.0%	0	0
80000-119999	0	0	0.0%	0	0	0.0%	0	0	0.0%	0	0	0.0%	0	0
120000+	0	0	0.0%	0	0	0.0%	0	0	0.0%	0	0	0.0%	0	0
Grand Total	**6**	**209,278**	100%	**23**	**535,019**	100%	**17**	**281,381**	100%	**1**	**9,766**	100%	**47**	**1,035,444**

Source: Turkish Chamber of Shipping Statistics

Graph 7. Age Distribution of the Container Ships (DWT)



Source: Turkish Chamber of Shipping Statistics

20.2% of Container ships are in the 0-9 age range; 51.7% are in the 10-19 age range; 27.2% are in the 20-29 age range and 0.9% are 30 years or older.

Table 11 shows the average age of the Ro-Ro Ships, (10 ships) with a total size of 122,276 DWT.

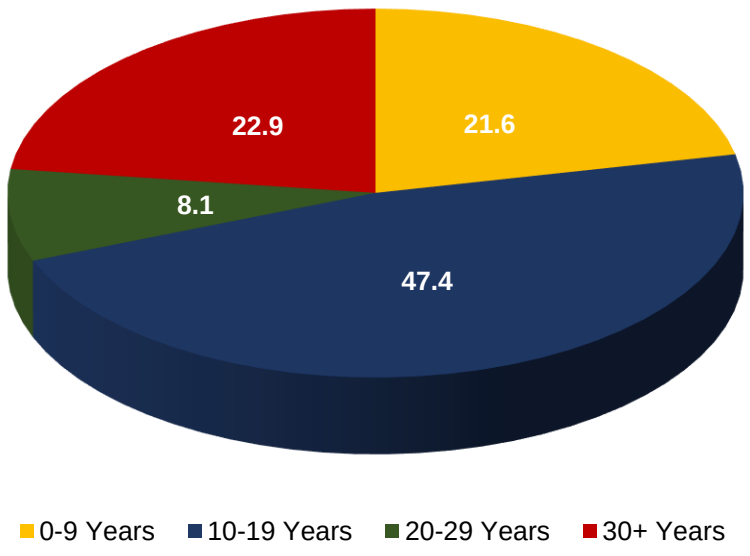
- 2 ships of size 26,462 DWT are in the 0-9 age range,
- 5 ships of size 57,917 DWT are in the 10-19 age range,
- 1 ship of size 9,865 DWT are in the 20-29 age range,
- 2 ships of size 28,032 DWT are 30 years or older.

Table 11. Ro-Ro Ships by Tonnage and Age Groups (1000 GT and Over)

Divisions Of Tonnage	0-9 Years			10-19 Years			20-29 Years			30+ Years			Total	
	NO	DWT	%	NO	DWT	%	NO	DWT	%	NO	DWT	%	NO	DWT
150-1499	0	0	0.0%	0	0	0.0%	0	0	0.0%	0	0	0.0%	0	0
1500-5999	0	0	0.0%	0	0	0.0%	0	0	0.0%	0	0	0.0%	0	0
6000-9999	0	0	0.0%	2	19,730	34.1%	1	9,865	100.0%	0	0	0.0%	3	29,595
10000-34999	2	26,462	100.0%	3	38,187	65.9%	0	0	0.0%	2	28,032	100.0%	7	92,681
35000-52999	0	0	0.0%	0	0	0.0%	0	0	0.0%	0	0	0.0%	0	0
53000-79999	0	0	0.0%	0	0	0.0%	0	0	0.0%	0	0	0.0%	0	0
80000-119999	0	0	0.0%	0	0	0.0%	0	0	0.0%	0	0	0.0%	0	0
120000+	0	0	0.0%	0	0	0.0%	0	0	0.0%	0	0	0.0%	0	0
Grand Total	**2**	**26,462**	100%	**5**	**57,917**	100%	**1**	**9,865**	100%	**2**	**28,032**	100%	**10**	**12,276**

Source: Turkish Chamber of Shipping Statistics

Graph 8. Age Distribution of the Ro-Ro Ships (DWT/%)



Source: Turkish Chamber of Shipping Statistics

21.6% of Ro-Ro Ships are in the 0-9 age range; 47.4% are in the 10-19 age range; 8.1% are in the 20-29 age range and 22.9% are 30 years old or older.

1.4. Turkish Merchant Fleet by Number and Tonnage (1000 DWT and Over)[1]

Table 12 shows the numerical and tonnage values of ships which are 1000 DWT and over and are suitable for international transportation.

Table 13 shows that the Turkish merchant fleet consists of 444 ships. 14.4% of the total fleet (64 ships) is registered in National Ship Registry and 85.6% of the total fleet (380 ships) in the International Ship Registry. The total DWT and GT values of the ships over 1000 DWT are 5,995,839 DWT and 4,454,412 GT respectively. 6 classes make up the majority of this capacity. Bulk carriers lead with 25.7%, oil tankers follow with 21.7%, containers with 17.3%, chemical tankers with 11.1%, dry cargo with 10.9% and service ships with 3.2%. These 6 classes make up 89.9% of the total fleet based on DWT.

1.2% of the bulk carrier ships are registered in the National Ship Registry, and the rest 98.8% are registered in the International Ship Registry with a total weight of 1,537,098 DWT for the bulk carrier segment.

1.7% of the oil tankers are registered in the National Ship Registry, and the rest 98.3% are registered in the International Ship Registry with a total weight of 1,302,528 DWT for the oil tankers segment.

13.0% of the container ships are registered in the National Ship Registry, and the rest 87.0% are registered in the International Ship Registry with a total weight of 1,035,444 DWT for the container ship segment.

3.4% of the chemical tankers are registered in the National Ship Registry, and the rest 96.6% are registered in the International Ship Registry with a total weight of 665,759 DWT for the chemical tankers segment.

8.7% of the dry cargo ships are registered in the National Ship Registry, and the rest 91.3% are registered in the International Ship Registry with a total weight of 654,993 DWT for the dry cargo ship segment.

17.5% of the service ships are registered in the National Ship Registry, and the rest 82.5% are registered in the International Ship Registry with a total weight of 193,130 DWT for the service ships segment.

[1] Accepted International Seaborne Transportation Tonnage

Table 12. The General Examination of the Turkish Merchant Fleet by Number and Tonnage According to Import and Build (1000 DWT and Over)

Ship Types	Count				DWT				GT			
	Import	Build	Total	%	Import	Build	Total	%	Import	Build	Total	%
Dry Cargo	36	110	146	32.9	202,956	452,037	654,993	10.9	140,583	284,498	425,081	9.5
Bulk Carrier	30	3	33	7.4	1,417,730	119,368	1,537,098	25.7	806,668	73,531	880,199	19.8
Container	35	12	47	10.6	829,166	206,278	1,035,444	17.3	668,579	160,576	829,155	18.6
Dry Cargo/Container	4	4	8	1.8	12,369	26,763	39,132	0.7	8,066	17,837	25,903	0.6
Chemical Tankers	31	27	58	13.1	465,834	199,925	665,759	11.1	298,485	133,566	432,051	9.7
LPG Tankers	5	0	5	1.1	27,804	0	27,804	0.4	25,574	0	25,574	0.5
LNG Tankers	1	0	1	0.2	93,513	0	93,513	1.6	108,919	0	108,919	2.5
Asphalt Tankers	1	3	4	0.8	6,603	54,850	61,453	1.0	5,832	43,630	49,462	1.1
Water Barges	0	1	1	0.2	0	1,027	1,027	0.0	0	488	488	0.0
Ro-Ro Ships	10	0	10	2.3	122,276	0	122,276	2.0	274,681	0	274,681	6.2
Ro-Ro Ferry/Passenger	7	2	9	2.0	28,038	2,921	30,959	0.5	43,336	4,459	47,795	1.0
Ferry Boats	0	10	10	2.3	0	18,555	18,555	0.3	0	14,280	14,280	0.3
Train Ferries	0	2	2	0.5	0	2,600	2,600	0.0	0	2,466	2,466	0.1
Passenger and Cargo Ships	2	1	3	0.7	31,182	1,700	32,882	0.6	5,132	10,583	15,715	0.4
Fishing Boats	1	0	1	0.2	3,307	0	3,307	0.1	2,184	0	2,184	0.1
Scientific Research Vessel	2	0	2	0.5	4,480	0	4,480	0.1	14,197	0	14,197	0.3
Service Ships	21	16	37	8.3	132,144	60,986	193,130	3.2	112,072	64,957	177,029	4.0
Oil Tankers	18	29	47	10.6	1,086,613	215,915	1,302,528	21.7	587,108	116,471	703,579	15.8
Train Ferries/Ro-Ro	1	0	1	0.2	6,266	0	6,266	0.1	15,195	0	15,195	0.3
Dry Cargo/Ro-Ro	11	2	13	2.9	124,901	19,106	144,007	2.4	336,188	61,463	397,651	8.9
Marine Vehicles	1	5	6	1.4	8,000	10,626	18,626	0.3	6,926	5,882	12,808	0.3
Grand Total	**217**	**227**	**444**	**100**	**4,603,182**	**1,392,657**	**5,995,839**	**100**	**3,459,725**	**994,687**	**4,454,412**	**100**

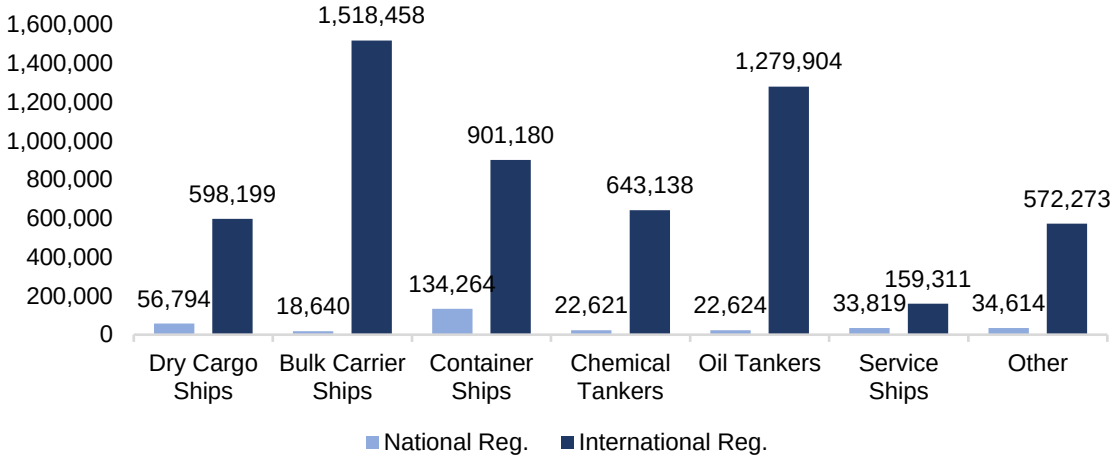
Source: Turkish Chamber of Shipping Statistics

Table 13. The General Examination of the Turkish Merchant Fleet by National and International Registries (1000 DWT and Over)

Ship Types	Count				DWT				GT			
	National Reg.	Inter. Reg.	Total	%	National Reg.	Inter. Reg.	Total	%	National Reg.	Inter. Reg.	Total	%
Dry Cargo	19	127	146	32.9	56,794	598,199	654,993	10.9	36,502	388,579	425,081	9.5
Bulk Carrier	1	32	33	7.4	18,640	1,518,458	1,537,098	25.7	11,529	868,670	880,199	19.8
Container	4	43	47	10.6	134,264	901,180	1,035,444	17.3	105,777	723,378	829,155	18.6
Dry Cargo/Container	1	7	8	1.8	2,356	36,776	39,132	0.7	1,720	24,183	25,903	0.6
Chemical Tankers	4	54	58	13.1	22,621	643,138	665,759	11.1	15,318	416,733	432,051	9.7
LPG Tankers	0	5	5	1.1	0	27,804	27,804	0.4	0	25,574	25,574	0.5
LNG Tankers	0	1	1	0.2	0	93,513	93,513	1.6	0	108,919	108,919	2.5
Asphalt Tankers	0	4	4	0.8	0	61,453	61,453	1.0	0	49,462	49,462	1.1
Water Barges	0	1	1	0.2	0	1,027	1,027	0.0	0	488	488	0.0
Ro-Ro Ships	0	10	10	2.3	0	122,276	122,276	2.0	0	274,681	274,681	6.2
Ro-Ro Ferry/Passenger	0	9	9	2.0	0	30,959	30,959	0.5	0	47,795	47,795	1.0
Ferry Boats	1	9	10	2.3	2,314	16,241	18,555	0.3	1,596	12,684	14,280	0.3
Train Ferries	2	0	2	0.5	2,600	0	2,600	0.0	2,466	0	2,466	0.1
Passenger and Cargo Ships	2	1	3	0.7	3,240	29,642	32,882	0.6	15,284	431	15,715	0.4
Fishing Boats	0	1	1	0.2	0	3,307	3,307	0.1	0	2,184	2,184	0.1
Scientific Research Vessel	0	2	2	0.5	0	4,480	4,480	0.1	0	14,197	14,197	0.3
Service Ships	12	25	37	8.3	33,819	159,311	193,130	3.2	24,892	152,137	177,029	4.0
Oil Tankers	11	36	47	10.6	22,624	1,279,904	1,302,528	21.7	13,193	690,386	703,579	15.8
Train Ferries/Ro-Ro	0	1	1	0.2	0	6,266	6,266	0.1	0	15,195	15,195	0.3
Dry Cargo/Ro-Ro	2	11	13	2.9	13,478	130,529	144,007	2.4	52,408	345,243	397,651	8.9
Marine Vehicles	5	1	6	1.4	10,626	8,000	18,626	0.3	5,882	6,926	12,808	0.3
Grand Total	**64**	**380**	**444**	**100**	**323,376**	**5,672,463**	**5,995,839**	**100**	**286,567**	**4,167,845**	**4,454,412**	**100**

Source: Turkish Chamber of Shipping Statistics

Graph 9. Turkish Fleet According to Registries, 1000 DWT and Over



Source: Turkish Chamber of Shipping Statistics

Table 14 shows the age profile of the Turkish Merchant Fleet with respect to different ship types. The Merchant Fleet of ships with size 1000 DWT and above consists of 444 ships. The average age of these ships is 24.9 as of 31.12.2021.

Table 14. The Average Age Profile of the Turkish Merchant Fleet (1000 DWT and Over)

Ship Types	Number	Tonnage (DWT)	Tonnage (GT)	Average Age
Dry Cargo	146	654,993	425,081	32
Bulk Carrier	33	1,537,098	880,199	17
Container	47	1,035,444	829,155	17
Dry Cargo/Container	8	39,132	25,903	25
Chemical Tankers	58	665,759	432,051	19
LPG Tankers	5	27,804	25,574	24
LNG Tankers	1	93,513	108,919	0
Asphalt Tankers	4	61,453	49,462	7
Water Barges	1	1,027	488	52
Ro-Ro Ships	10	122,276	274,681	18
Ro-Ro Ferry/Passenger	9	30,959	47,795	38
Ferry Boats	10	18,555	14,280	30
Train Ferries	2	2,600	2,466	48
Passenger and Cargo Ships	3	32,882	15,715	51
Fishing Boats	1	3,307	2,184	33
Scientific Research Vessel	2	4,480	14,197	37
Service Ships	37	193,130	177,029	30
Oil Tankers	47	1,302,528	703,579	19
Train Ferries/Ro-Ro	1	6,266	15,195	35
Dry Cargo/Ro-Ro	13	144,007	397,651	16
Marine Vehicles	6	18,626	12,808	17
Grand Total	**444**	**5,995,839**	**4,454,412**	**24.9**

Source: Turkish Chamber of Shipping Statistics

Table 15 shows the Turkish Merchant Fleet grouped by different age and tonnage ranges. Turkish Merchant Fleet consists of 444 ships with a total of 5,995,839 DWT.

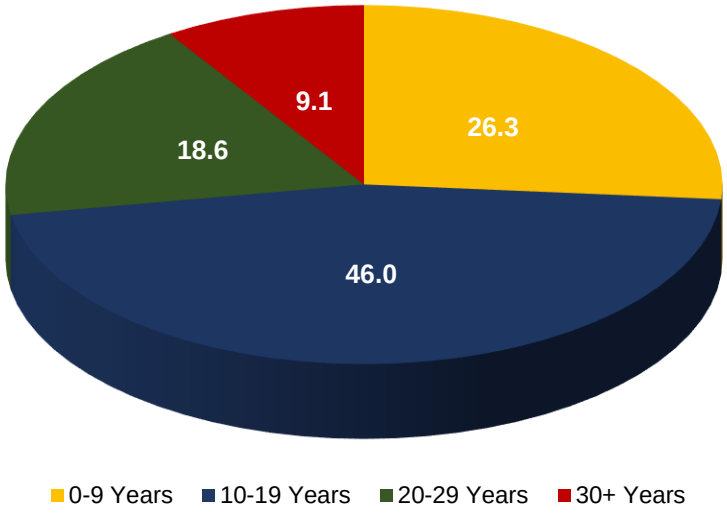
- 56 ships with total size 1,577,922 DWT are in the 0-9 age range,
- 138 ships with total size 2,755,369 DWT are in the 10-19 age range,
- 89 ships with total size 1,114,968 DWT are in the 20-29 age range,
- 161 ships with total size 547,580 DWT are of age 30 or older.

Table 15. Turkish Merchant Fleet Distribution by Tonnage and Age Groups (1000 DWT and Over)

Divisions Of Tonnage	0-9 Years			10-19 Years			20-29 Years			30+ Years			Total	
	NO	DWT	%	NO	DWT	%	NO	DWT	%	NO	DWT	%	NO	DWT
150-1499	3	3.482	0.2%	4	5,311	0.2%	3	3,909	0.4%	42	53,201	9.7%	52	65,903
1500-5999	17	53.433	3.4%	44	158,489	5.8%	41	145,202	13.0%	100	296,153	54.1%	202	653,277
6000-9999	5	35.852	2.3%	21	151,463	5.5%	15	121,707	10.9%	13	94,531	17.3%	54	403,553
10000-34999	18	315.602	20.0%	46	866,213	31.4%	20	356,739	32.0%	6	103,695	18.9%	90	1,642,249
35000-52999	6	249.518	15.8%	10	429,568	15.6%	9	415,240	37.2%	0	0	0.0%	25	1,094,326
53000-79999	1	61.619	3.9%	7	446,218	16.2%	1	72,171	6.5%	0	0	0.0%	9	580,008
80000-119999	1	93.513	5.9%	3	247,564	9.0%	0	0	0.0%	0	0	0.0%	4	341,077
120000+	5	764.903	48.5%	3	450,543	16.3%	0	0	0.0%	0	0	0.0%	8	1,215,446
Grand Total	**56**	**1.577.922**	100%	**138**	**2,755,369**	100%	**89**	**1,114,968**	100%	**161**	**547,580**	100%	**444**	**5,995,839**

Source: Turkish Chamber of Shipping Statistics

Graph 10. Turkish Merchant Fleet Distribution by Age Groups (DWT/%)



Source: Turkish Chamber of Shipping Statistics

The graph shows the age groups of the Turkish merchant fleet. 26.3% of the fleet is in the 0-9 age range, 46.0% of the fleet is in the 10-19 age range, 18.6% of the fleet is in the 20-29 age range and 9.1% is 30 years old or over.

1.5. The Position of the Turkish Merchant Fleet within the World Fleet

As of January 1st 2022, accounting only for ships with size 1000 GT and above, Turkish fleet under foreign flag is 25.5 million DWT, whereas the total fleet under both Turkish and foreign flag amounts to 30.6 million DWT.

On the other hand, the ratio distribution of the fleet regarding the flags of registration is as follows: 16.8% percent of these ships are registered under the Turkish flag and 83.2% are registered under the foreign flags.

Table 16. Turkish Ships under the National Flag and Foreign Flags (1000 GT and Over)

Years	National Flag			Foreign Flag			Total Fleet Controlled		Years DWT Change %
	No	1000 DWT	%	No	1000 DWT	%	No	1000 DWT	
1999	448	8,697	90.5	69	915	9.5	517	9,612	
2000	456	8,269	90.6	96	855	9.4	552	9,124	-5.1
2001	445	7,321	82.0	107	1,607	18.0	552	8,928	-2.1
2002	451	7,815	83.8	117	1,514	16.2	568	9,329	4.5
2003	432	7,045	79.9	147	1,772	20.1	579	8,817	-5.5
2004	408	6,556	75.2	163	2,159	24.8	571	8,715	-1.2
2005	420	6,427	70.2	237	2,725	29.8	657	9,152	5.0
2006	432	6,844	65.5	353	3,609	34.5	785	10,453	14.2
2007	446	6,464	58.2	424	4,650	41.8	870	11,114	6.3
2008	490	6,592	50.0	513	6,591	50.0	1,003	13,183	18.6
2009	520	6,736	43.9	636	8,592	56.1	1,156	15,328	16.3
2010	560	7,246	42.1	665	9,954	57.9	1,225	17,201	12.2
2011	547	7,797	39.7	672	11,863	60.3	1,219	19,660	14.3
2012	523	8,479	37.6	642	14,093	62.4	1,165	22,572	14.8
2013	627	9,488	31.3	842	20,838	68.7	1,469	30,326	34.4
2014	599	8,580	28.2	890	21,846	71.8	1,489	30,427	0.3
2015	564	8,297	30.2	834	19,209	69.8	1,398	27,507	-9.6
2016	551	8,272	28.4	984	20,879	71.6	1,535	29,151	6.0
2017	525	7,800	26.7	1,022	21,465	73.3	1,547	29,265	0.4
2018	483	7,288	25.5	1,028	21,323	74.5	1,511	28,611	-2.2
2019	457	6,831	23.9	1,027	21,758	76.1	1,484	28,589	-0.1
2020	410	6,194	21.1	1,074	23,157	78.9	1,484	29,352	2.7
2021	384	5,432	18.8	1,108	23,497	81.2	1,492	28,929	-1.4
2022	**353**	**5,157**	16.8	**1,164**	**25,523**	83.2	**1,517**	**30,680**	6.1

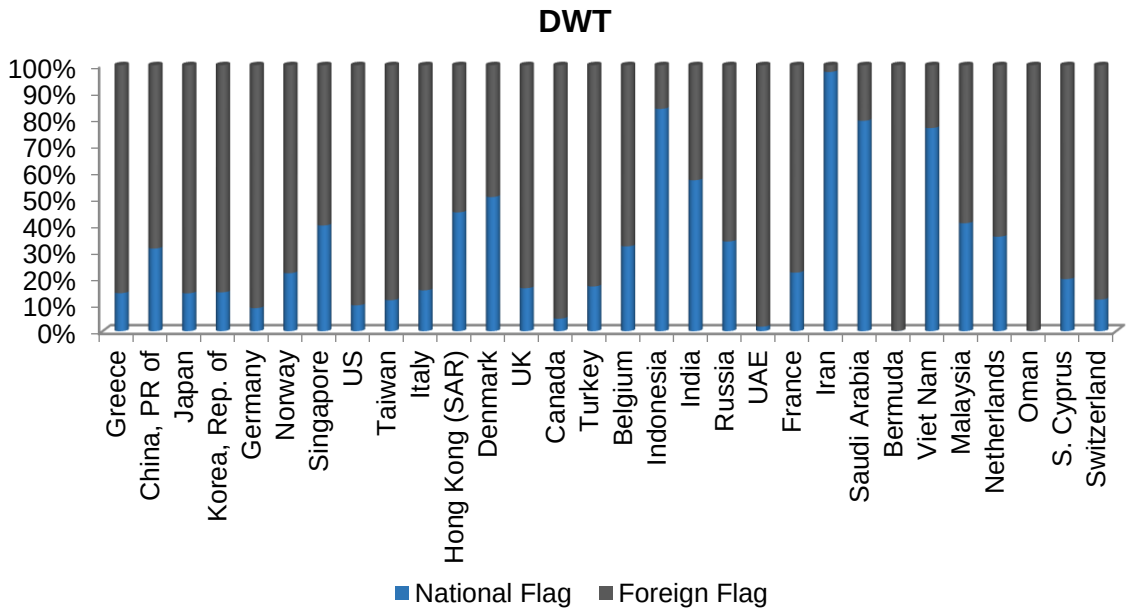
Source: ISL January-February 2022

Table 17. Total Fleet of the 30 Countries by National and Foreign Flags (01 January 2020)
(1000 GT and Over)

Country of Control (DWT-Rank 2022)		National Flag				Foreign Flag				Total Fleet				Foreign Flag DWT Share (%)
		No	1000 DWT	1000 TEU	Age	No	1000 DWT	1000 TEU	Age	No	1000 DWT	1000 TEU	Age	
1	Greece	628	59,094	41	15.9	4,501	354,510	2,140	12.4	5,129	413,605	2,181	12.8	85.7
2	China, PR of	4,448	108,233	968	12.8	3,256	240,193	3,250	12.8	7,704	348,426	4,217	12.8	68.9
3	Japan	870	35,898	251	12.3	3,369	216,380	1,929	8.2	4,239	252,278	2,180	9.0	85.8
4	Korea, Rep. of	739	13,713	258	17.9	911	80,216	703	11.2	1,650	93,929	961	14.2	85.4
5	Germany	157	6,850	532	18.6	2,155	72,334	3,101	13.7	2,312	79,183	3,632	14.0	91.3
6	Norway	663	17,022	85	16.0	1,059	61,059	419	14.5	1,722	78,081	504	15.1	78.2
7	Singapore	668	24,035	272	10.6	783	36,486	654	14.9	1,451	60,521	926	12.9	60.3
8	US	197	5,684	85	23.7	966	52,895	195	14.3	1,163	58,579	280	15.9	90.3
9	Taiwan	133	6,490	182	15.7	838	49,267	1,181	12.4	971	55,757	1,363	12.9	88.4
10	Italy	383	7,523	68	20.7	726	41,504	2,088	14.0	1,109	49,027	2,157	16.3	84.7
11	Hong Kong (SAR)	404	21,877	23	11.0	688	27,121	38	19.3	1,092	48,997	61	16.2	55.4
12	Denmark	377	21,917	1.342	14.5	450	21,564	1,171	13.8	827	43,481	2,513	14.2	49.6
13	UK	172	6,795	179	14.1	659	35,280	937	12.8	831	42,075	1,116	13.0	83.9
14	Canada	129	1,577	5	23.7	415	31,947	1,176	12.1	544	33,525	1,181	14.8	95.3
15	Turkey	353	5,157	73	23.4	1,164	25,523	191	20.6	1,517	30,680	264	21.2	83.2
16	Belgium	76	8,938	9	10.6	169	19,107	39	10.5	245	28,044	48	10.5	68.1
17	Indonesia	2,088	22,070	193	24.1	115	4,347	58	18.9	2,203	26,418	251	23.9	16.5
18	India	641	14,590	18	15.5	179	11,130	4	15.7	820	25,719	23	15.5	43.3
19	Russia	1,246	7,909	122	29.5	314	15,548	36	21.5	1,560	23,458	157	27.9	66.3
20	UAE	51	397	7	15.0	626	23,009	182	19.8	677	23,406	189	19.5	98.3
21	France	123	4,171	329	14.2	251	14,779	1,125	12.6	374	18,950	1,455	13.1	78.0
22	Iran	214	18,443	157	20.3	5	489	-	27.4	219	18,932	157	20.4	2.6
23	Saudi Arabia	106	13,542	8	15.2	38	3,584	0	15.0	144	17,125	8	15.2	20.9
24	Bermuda	1	13	-	13.3	90	15,047	40	8.0	91	15,060	40	8.0	99.9
25	Viet Nam	859	10,469	46	15.0	152	3,245	4	20.6	1,011	13,714	50	15.8	23.7
26	Malaysia	211	5,273	32	18.1	152	7,726	2	14.6	363	13,000	34	16.6	59.4
27	Netherlands	536	4,533	189	14.3	363	8,232	54	14.5	899	12,766	243	14.4	64.5
28	Oman	4	6	-	15.3	63	9,325	7	11.0	67	9,330	7	11.2	99.9
29	S. Cyprus	53	1,750	8	18.0	165	7,197	25	16.3	218	8,947	33	16.7	80.4
30	Switzerland	17	912	-	8.2	147	6,771	4	13.3	164	7,682	4	12.7	88.1
Total 30 Countries		**16,547**	**454,881**	**5,482**	**17.0**	**24,769**	**1,495,814**	**20,753**	**13.3**	**41,316**	**1,950,695**	**26,235**	**14.8**	**76.7**
Others		**2,667**	**37,092**	**248**	**24.3**	**2,545**	**73,318**	**361**	**22.0**	**5,212**	**110,410**	**609**	**23.2**	**66.4**
Subtotal		**19,214**	**491,973**	**5,730**	**18.0**	**27,314**	**1,569,131**	**21,114**	**141**	**46,528**	**2,061,104**	**26,844**	**15.7**	**76.1**
Unknown										**762**	**25,607**	**76**	**23.3**	
World Total										**47,290**	**2,086,712**	**26,920**	**15.8**	

Source: ISL January-February 2022

Graph 11. By Country of Domicile as of 1 January 2022 (1000 GT and Over)

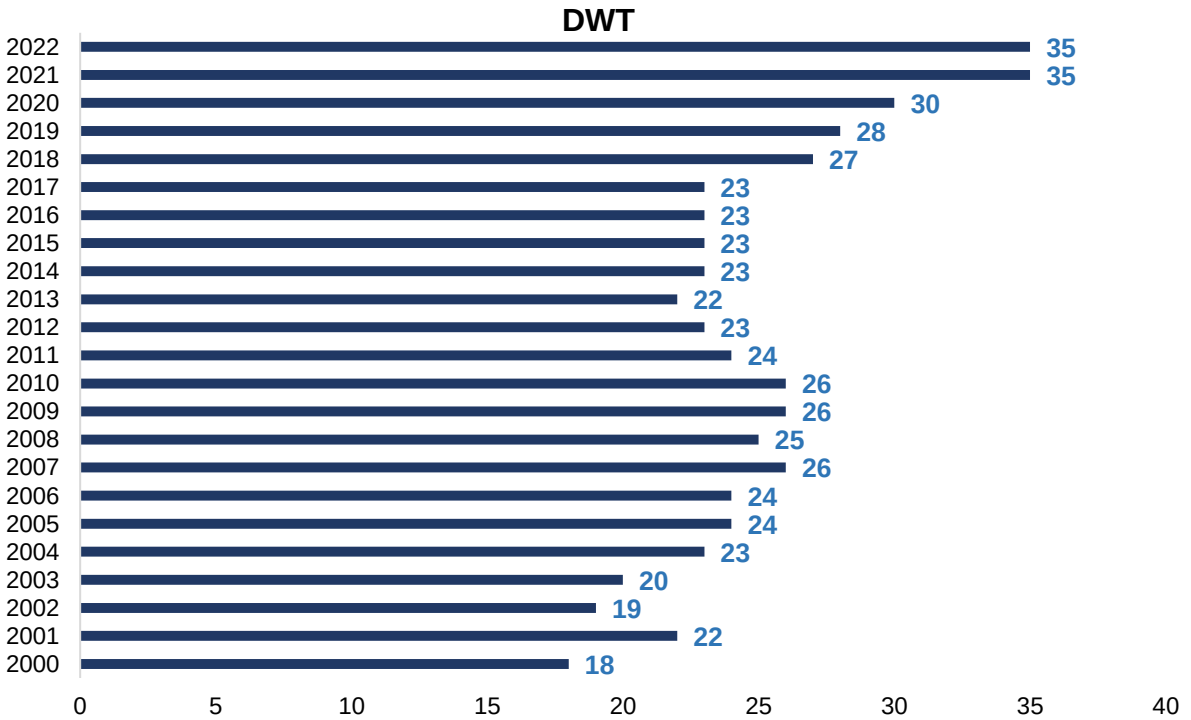


Source: ISL January-February 2022

The World fleet (300 GT and over) consists of 58,228 ships with a total size of 2,096,245.000 DWT based in 155 countries as of 01.01.2022. Turkish merchant fleet is positioned 35th in the world as shown in the Table.

Panama leads with a share of 16.3%, Liberia is second with 15.6% and Marshall Island is third with share of 13.4% of the total registry.

Graph 12. World Merchant Fleet Ranking by Turkish Flag (300 GT and Over)



Source: ISL January-February 2022

Table 18. World Merchant Fleet Ranking by Flag as of 1 January 2022 (300 GT and Over)

DWT Rank 2022	Flag	January 1st, 2021				January 1st, 2022				Total DWT Share %	Years DWT Change %
		No Of Ships	1000 GT	1000 DWT	1000 TEU	No Of Ships	1000 GT	1000 DWT	1000 TEU		
1	Panama	6,612	220,525	335,293	3,822	6,657	225,013	342,619	3,858	16.3	2.2
2	Liberia	3,777	181,077	293,571	4,115	4,128	201,796	326,858	4,702	15.6	11.3
3	Marshall Islands	3,539	161,532	265,598	1,205	3,768	171,344	281,531	1,241	13.4	6.0
4	Hong Kong (SAR)	2,556	129,348	204,717	3,642	2,501	130,851	207,596	3,680	9.9	1.4
5	Singapore	2,331	87,755	131,596	2,472	2,281	86,074	127,160	2,549	6.1	-3.4
6	Malta	1,976	80,903	115,067	2,116	1,900	82,097	113,641	2,243	5.4	-1.2
7	China, PR of	4,734	64,922	101,691	986	5,203	69,405	108,995	970	5.2	7.2
8	Greece	876	37,561	64,739	42	855	36,540	62,133	41	3.0	-4.0
9	Bahamas	1,091	53,233	61,270	188	1,078	52,851	59,858	185	2.9	-2.3
10	Japan	2,689	27,937	38,229	250	2,809	28,805	38,889	257	1.9	1.7
11	S. Cyprus	863	22,138	33,069	471	847	21,935	32,776	447	1.6	-0.9
12	UK	579	22,126	31,844	388	546	21,350	30,248	412	1.4	-5.0
13	Denmark	548	22,235	24,916	1,539	556	22,902	26,190	1,478	1.2	5.1
14	Portugal	608	16,491	22,686	939	702	19,077	25,807	1,117	1.2	13.8
15	Indonesia	3,523	17,225	24,475	229	3,603	17,647	25,044	200	1.2	2.3
16	Norway	905	17,018	21,423	82	946	16,836	20,735	87	1.0	-3.2
17	Iran	461	11,388	20,112	158	476	11,273	19,873	158	0.9	-1.2
18	India	899	9,511	16,152	55	905	9,467	15,948	61	0.8	-1.3
19	Korea, Rep. of	1,040	11,912	15,206	227	1,070	11,859	15,005	259	0.7	-1.3
20	Saudi Arabia	124	7,516	13,532	8	124	7,600	13,745	8	0.7	1.6
21	Viet Nam	1,419	5,751	9,442	42	1,443	6,816	11,370	46	0.5	20.4
22	Belgium	98	5,817	9,522	28	92	5,729	9,522	10	0.5	0.0
23	Italy	631	13,848	10,751	109	606	13,452	9,420	101	0.4	-12.4
24	Russia	1,583	7,209	9,181	116	1,610	7,435	9,399	136	0.4	2.4
25	US	364	7,574	8,346	251	364	7,744	8,562	271	0.4	2.6
26	France	220	6,672	7,551	287	226	7,637	8,174	360	0.4	8.2
27	Bermuda	135	10,296	7,678	44	126	10,220	7,539	52	0.4	-1.8
28	Germany	233	7,029	7,456	566	219	6,575	6,939	537	0.3	-6.9
29	Taiwan	204	4,592	7,009	176	208	4,408	6,596	184	0.3	-5.9
30	Antigua & Barbuda	643	4,832	6,336	329	605	4,668	6,144	307	0.3	-3.0
31	Cayman Islands	136	4,407	6,615	5	122	3,830	5,998	21	0.3	-9.3
32	Philippines	1,084	4,095	6,004	50	1,111	4,059	5,937	49	0.3	-1.1
33	Malaysia	432	5,522	6,620	29	446	5,239	5,924	36	0.3	-10.5
34	Netherlands	752	5,674	5,966	230	729	5,600	5,785	215	0.3	-3.0
35	**Turkey**	**702**	**4,456**	**5,955**	**91**	**679**	**4,351**	**5,726**	**89**	**0.3**	**-3.8**
36	Thailand	562	3,574	5,898	30	553	3,165	5,226	30	0.2	-11.4
37	Kuwait	46	2,555	4,483	1	47	2,721	4,807	1	0.2	7.2
38	Bangladesh	360	2,101	3,567	4	396	2,492	4,191	10	0.2	17.5
39	Brazil	119	2,597	4,209	63	115	2,544	4,128	64	0.2	-1.9
40	Cameroon	63	1,171	2,038	4	84	2,186	3,969	2	0.2	94.8
155	**Total**	**56,899**	**1,359,675**	**2,033,626**	**25,858**	**58,228**	**1,404,509**	**2,096,245**	**26,932**	**100.0**	

Source: ISL January-February 2022

1.6. Comparison of the Turkish Merchant Fleet with the Neighbouring Countries

The capacity of the merchant fleet of Turkey and the neighbouring countries are shown in the following Table (19).

Greece is in the 1st place being among the largest merchant fleets of the world. Southern Cyprus is 2nd, Iran is 3rd, Russia 4th and Turkey is in 5th place.

In addition to the national flags, when ships 1000 GT and over operating under foreign flags are added to the home registry, Turkey rises to 30.6 million DWT, Greece to 413.6 million DWT, Russia to 23.4 million DWT and Iran to 18.9 million DWT.

Table 19. Turkish Merchant Fleet and the Neighbouring Countries (300 GT and Over)

World DWT Rank	Country	No Of Ships	1000 DWT	World DWT %	Years DWT Change %
8	**Greece**	855	62,133	3.0	-4.0
11	**S. Cyprus**	847	32,776	1.6	-0.9
17	**Iran**	476	19,873	0.9	-1.2
24	**Russia**	1,610	9,399	0.4	2.4
35	**Turkey**	**679**	**5,726**	**0.3**	**-3.8**
54	**Egypt**	102	1,511	0.1	-2.6
93	**Ukraine**	102	312	0.0	-0.2
105	**Bulgaria**	26	118	0.0	-9.3
118	**Syria**	9	56	0.0	-23.7
125	**Romania**	15	37	0.0	0.0
147	**Georgia**	3	2	0.0	-97.0

Source: ISL January-February 2022

CHAPTER II

DEVELOPMENTS IN SEABORNE TRADE

2. DEVELOPMENTS IN SEABORNE TRADE

2.1. Developments in the Transportation of Foreign Trade Cargoes

2021 is a projection. Trends calculated using an average of the 11-year period up to and including the current year, or a compound average growth rate over the period.

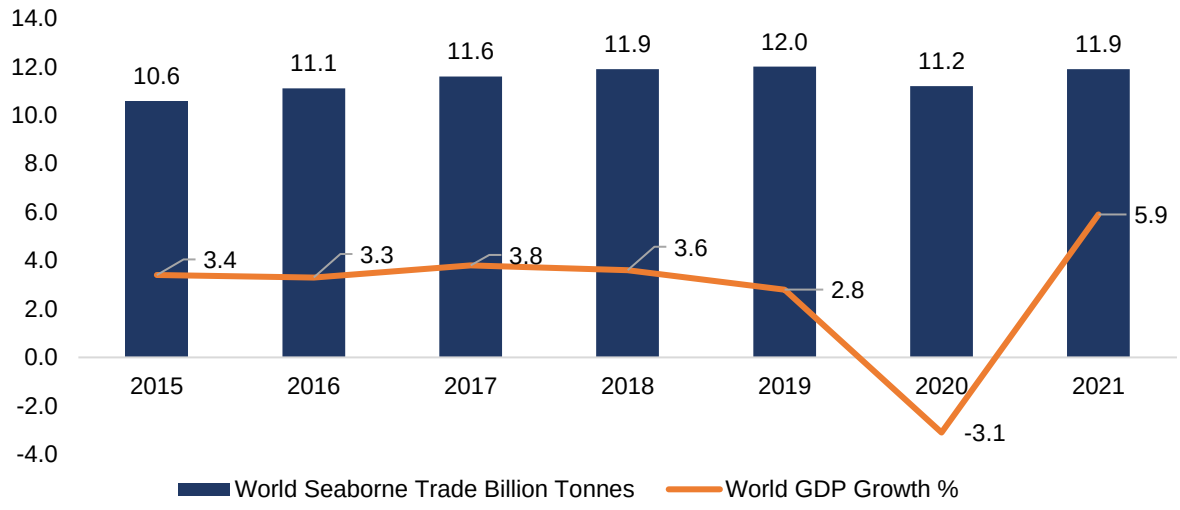
Global seaborne trade is estimated to have returned close to 2019 levels in 2021, rebounding by 3.2% to 12.0bn tonnes after the impacts of Covid-19 in 2020. In 2022, latest projections were for c.3.5% growth as the global economic post-Covid rebound continued.

Table 20. World Total Trade and World Seaborne Trade

Years	World Total Trade (all modes) Billion Tonnes	World Seaborne Trade Billion Tonnes	Seaborn Trade as % Total
2011	11.50	9.50	82.0
2012	11.80	9.90	84.0
2013	12.20	10.20	83.0
2014	12.50	10.50	84.0
2015	12.70	10.60	85.0
2016	12.90	11.10	86.0
2017	13.50	11.60	86.0
2018	13.90	11.90	86.0
2019	14.10	12.00	85.0
2020	13.30	11.20	87.0
2021	14.10	11.90	85.0

Source: Clarksons Research Feb.2022

Graph 13. Global Seaborn Trade Growth



Source: Clarksons Research Feb.2022

Table 21. Turkish Foreign Trade Transportation by Modes, (%)

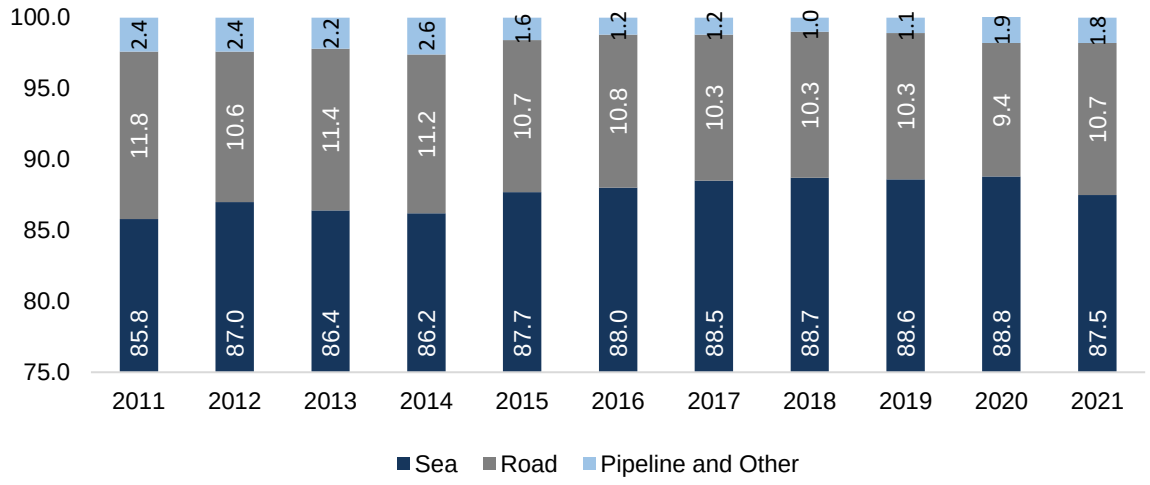
Years	Sea	Road	Pipeline and Other	Rail	Air
2011	85.8	11.8	1.2	0.8	0.4
2012	87	10.6	1.4	0.6	0.4
2013	86.4	11.4	1.3	0.5	0.4
2014	86.2	11.2	1.7	0.4	0.5
2015	87.7	10.7	0.7	0.5	0.4
2016	88	10.8	0.4	0.5	0.3
2017	88.5	10.3	0.5	0.4	0.3
2018	88.7	10.3	0.2	0.4	0.4
2019	88.6	10.3	0.3	0.4	0.4
2020	88.8	9.4	1.1	0.6	0.2
2021	87.5	10.7	0.9	0.7	0.2

Source: Turkstat

87.5% of Turkey's foreign trade is being realised by maritime transportation. The progress between the years of 2011-2021 is shown in the Table below by the modes of transportation.

59% of the volume of Turkey's foreign trade transportation has been carried by sea; 24% has been carried by road; 0.9% has been carried by rail; 9.2% has been carried by air and 7.8% has been carried by other transportation modes.

Graph 14. Foreign Trade Transportation by Modes (%)



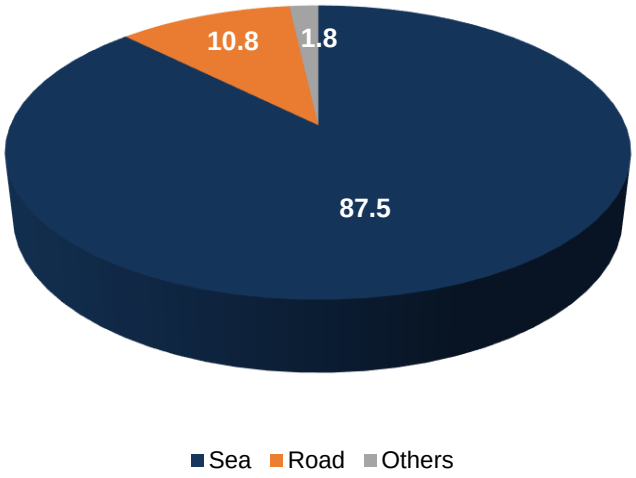
Source: Turkstat

Table 22. Foreign Trade Transportation by Modes (tons) and ($)

Modes	Export Quantity (%)	Import Quantity (%)	Seaborn Trade Quantity (%)	Export Value US $ (%)	Import Value US $ (%)	Seaborn Trade Value US $ (%)
Sea	80.9	92.6	87.5	59.4	58.0	58.6
Road	17.8	5.3	10.8	30.5	18.0	23.7
Air	0.5	0.1	0.2	8.3	9.6	9.2
Rail	0.8	0.6	0.7	0.7	1.1	0.9
Pipeline and Other	0.1	1.4	0.9	1.05	13.3	7.8

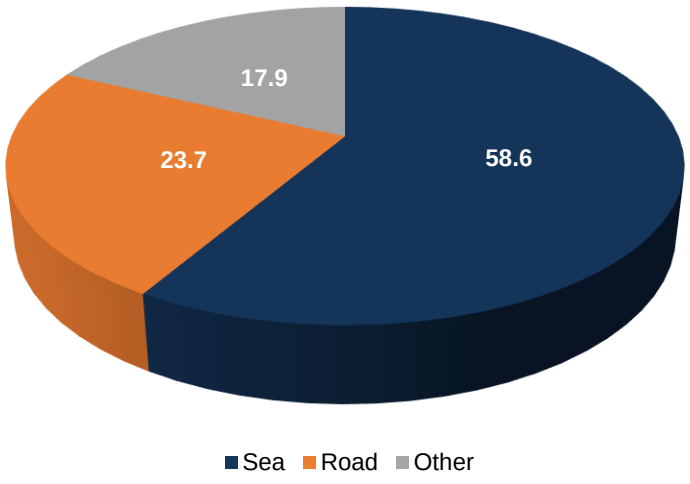
Source: Turkstat

Graph 15. Seaborn Trade Quantity (%)



Source: Turkstat

Graph 16. Seaborn Trade Value (US $/ %)



Source: Turkstat

2.2. Developments of Seaborne Trade

The progress of Turkey's seaborne trade has been examined under two headings; maritime cabotage and international transportation.

2.3. Cabotage Transportation

According to the Turkish Maritime Cabotage Law No. 815, the maritime transportation carried out by Turkish ships, being loaded at the harbors and seaports of Turkey and discharged at the harbors and seaports of Turkey, is defined as maritime cabotage.

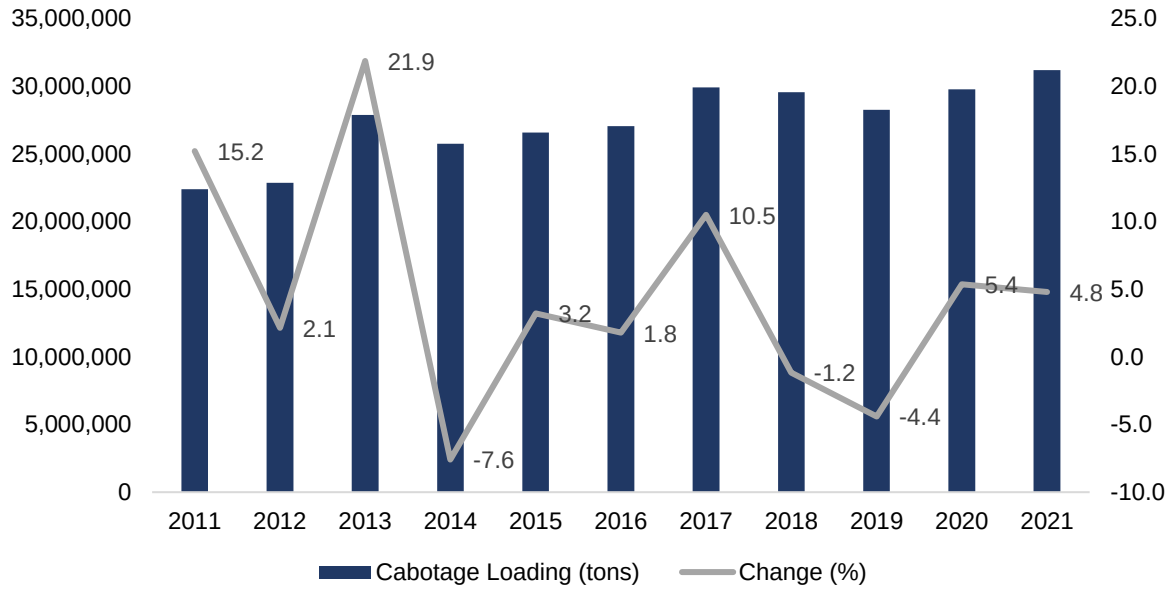
The number of cargoes carried bulk and partially between 2011-2021 in Turkish ports and wharves on ton basis is presented in Table 23.

Table 23. 2011-2021 Cabotage Transportation

Years	Cabotage Loading (tons)	Change (%)
2011	22,389,570	15.2
2012	22,869,458	2.1
2013	27,868,157	21.9
2014	25,753,831	-7.6
2015	26,578,284	3.2
2016	27,050,225	1.8
2017	29,898,010	10.5
2018	29,550,554	-1.2
2019	28,251,017	-4.4
2020	29,763,556	5.4
2021	31,184,349	4.8

Source: Republic of Turkey Ministry of Transport and Infrastructure

Graph 17. Rate of Change in Cabotage Transportation Between 2011-2021 (%)



Source: Republic of Turkey Ministry of Transport and Infrastructure

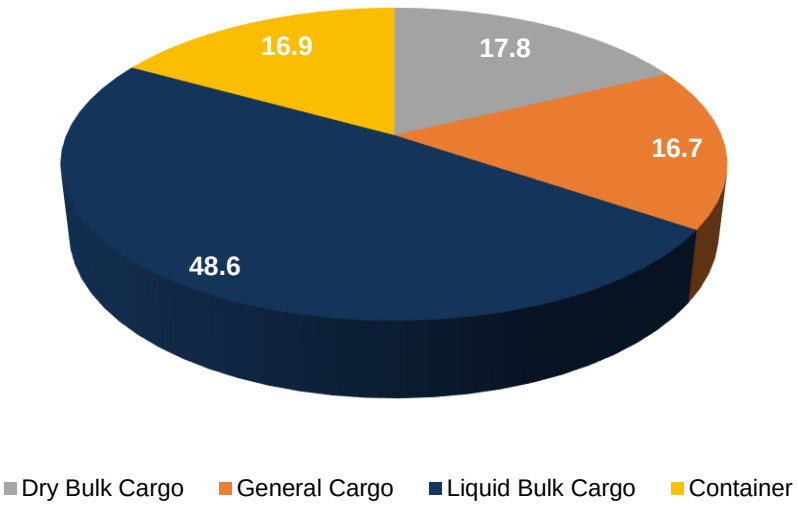
The total cabotage transportation in 2021 is 31,184,349 tons cabotage transportation increased about 39% between the years of 2011-2021.

Table 24. Cabotage Transportation by the Types of Cargoes in 2021 (mtons)

Cargo Types	Catotage Loading	Cabotage Unloading	Total	%
Dry Bulk Cargo	5,536,373	5,457,987	10,994,360	17.8
General Cargo	5,182,575	5,178,685	10,361,260	16.7
Liquid Bulk Cargo	15,274,990	14,796,656	30,071,646	48.6
Container	5,174,230	5,275,115	10,449,345	16.9
Vehicle	16,181	8,330	24,511	0.0
Total	**31,184,349**	**30,716,773**	**61,901,122**	**100.0**

Source: Republic of Turkey Ministry of Transport and Infrastructure

Graph 18. 2021 Cabotage Transportation (Loading-Unloading) by the Types of Cargoes (%)



Source: Republic of Turkey Ministry of Transport and Infrastructure

Table shows the cabotage transportation by cargo types. The first four cargo types are liquid bulk cargo (48.6%), dry bulk cargo (17.8%), general cargo (16.7%) and container (16.9%).

The ports with the largest shares in cabotage handling in 2021 are Kocaeli Port (18%), Aliağa Port (16.9%) and Iskenderun Port (12%).

Table 25. 2021 Cabotage Transportation in Ports

Port Authority	Cabotage Loadıng	Cabotage Unloadıng	Total	%
Kocaeli	5,116,604	6,048,505	11,165,109	18.00
Aliağa	7,328,616	3,151,709	10,480,325	16.90
İskenderun	5,452,644	1,951,095	7,403,739	12.00
Tekirdağ	1,734,112	3,508,164	5,242,276	8.50
Botaş	2,459,081	1,052,990	3,512,071	5.70
Gemlik	1,343,371	1,336,348	2,679,719	4.30
Antalya	732,777	1,906,698	2,639,475	4.30
Ambarlı	909,761	1,464,254	2,374,015	3.80
Karadeniz Ereğli	562,083	1,596,676	2,158,759	3.50
Samsun	786,874	1,281,205	2,068,079	3.30
Mersin	550,358	1,426,300	1,976,658	3.20
İstanbul	36,046	1,780,608	1,816,654	2.90
Karabiga	457,265	797,707	1,254,972	2.00
İzmir	332,800	850,130	1,182,930	1.90
Marmara Adası	913,204	2,301	915,505	1.50
Tuzla	390,932	310,556	701,488	1.10
Çanakkale	403,250	290,197	693,447	1.10
Bandıma	354,999	285,107	640,106	1.00
Ünye	398,503	162,841	561,344	0.90
Rize	3,500	417,980	421,480	0.70
Tirebolu	0	381,396	381,396	0.60
Hopa	336,225	26,898	363,123	0.60
Zonguldak	107,830	185,442	293,272	0.50
Yalova	53,845	230,978	284,823	0.50
Trabzon	149,427	132,245	281,672	0.50
İnebolu	194,403	0	194,403	0.30
Bartın	36,806	42,175	78,981	0.10
Göcek	0	32,245	32,245	0.10
Dikili	31,420	30	31,450	0.10
Çeşme	0	25,806	25,806	0.04
Fatsa	0	12,706	12,706	0.02
Marmaris	0	11,292	11,292	0.02
Taşucu	0	9,953	9,953	0.02
Güllük	4,113	26	4,139	0.01
Amasra	2,500	0	2,500	0.00
Erdek	1,000	1,000	2,000	0.00
Kefken	0	1,410	1,410	0.00
Bozcaada	0	695	695	0.00
Silivri	0	655	655	0.00
Karasu	0	450	450	0.00
Alanya	0	0	0	0.00
Ayvalık	0	0	0	0.00
Giresun	0	0	0	0.00
Sürmene	0	0	0	0.00
Total	**31,184,349**	**30,716,773**	**61,901,122**	**100.00**

Source: Republic of Turkey Ministry of Transport and Infrastructure

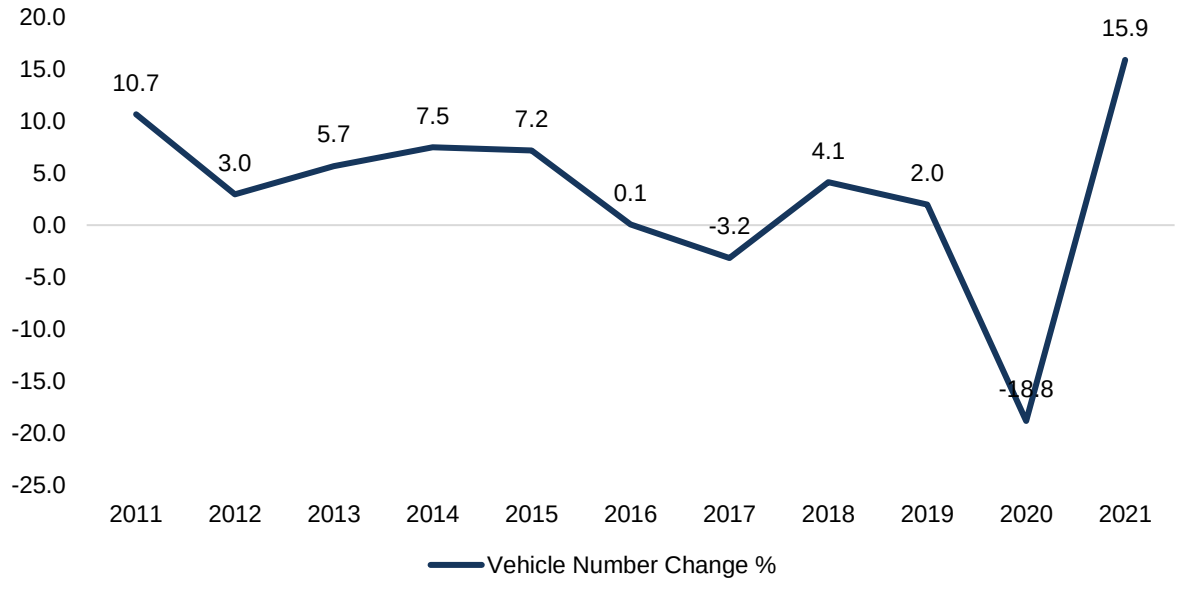
Table 26. 2011-2021 Cabotage Transportation Vehicle Number

Years	Vehicle Number	Vehicle Number Change %	Vehicle (Number x Mile)	Vehicle (Number x Mile) Change %
2010	9,400,735	0.9	83,607,444	1.2
2011	10,402,917	10.7	83,283,519	-0.4
2012	10,710,645	3.0	77,785,568	-7.1
2013	11,318,561	5.7	85,096,902	8.6
2014	12,166,505	7.5	89,322,962	4.7
2015	13,042,399	7.2	95,505,115	6.5
2016	13,050,241	0.1	92,267,227	-3.4
2017	12,638,289	-3.2	95,185,009	3.2
2018	13,159,820	4.1	92,868,442	-2.4
2019	13,420,802	2.0	92,289,144	-0.6
2020	10,892,467	-18.8	70,059,483	-24.1
2021	12,619,473	15.9	80,295,012	14.6

Source: Republic of Turkey Ministry of Transport and Infrastructure

In table 26, the changes in cabotage transportation of vehicles between the years 2011 and 2021 are being shown. The number of carried vehicles increased 21.3% in total between 2011 and 2021.

Graph 19. 2011-2021 Cabotage Transportation Vehicle Number Change (%)



Source: Republic of Turkey Ministry of Transport and Infrastructure

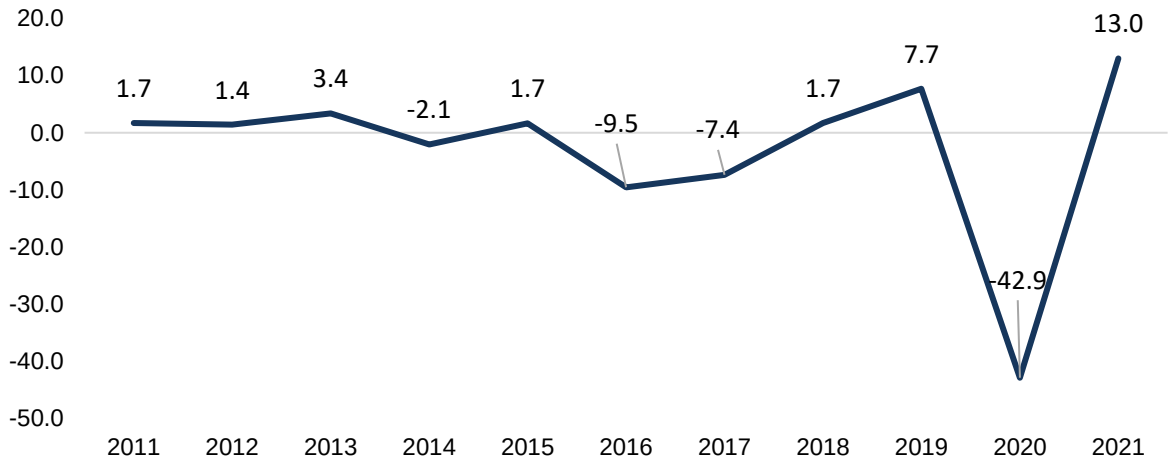
In table 27, the changes in cabotage transportation of passengers between the years 2011 and 2021 are being shown. The number of passenger carried decreased 38% in total between 2011 and 2021.

Table 27. 2011-2021 Cabotage Transportation Passenger Number

Years	Passenger Number	Annual Change (%)	Passenger (Number x Mile)	Annual Change (%)
2011	156,842,003	1.7	854,909,150	0.8
2012	159,076,921	1.4	787,572,051	-8.6
2013	164,426,997	3.4	900,226,869	12.5
2014	161,048,004	-2.1	974,923,011	7.7
2015	163,723,544	1.7	992,592,392	1.8
2016	148,101,589	-9.5	1,112,255,126	10.8
2017	137,195,691	-7.4	1,138,826,307	2.4
2018	139,556,332	1.7	1,134,349,263	-0.4
2019	150,312,216	7.7	1,218,893,742	7.5
2020	85,866,238	-42.9	650,022,306	-46.7
2021	97,045,463	13.0	751,019,255	15.5

Source: Republic of Turkey Ministry of Transport and Infrastructure

Graph 20. 2011-2021 Cabotage Transportation Passenger Number (%)



Source: Republic of Turkey Ministry of Transport and Infrastructure

2.4. Developments in International Sea Transportation

International sea transportation includes all transit cargoes that are loaded and unloaded in the harbors of Turkey, and Turkish exports and imports goods.

Table 28. Share of Turkish Flagged Vessels Within International Shipping (Tons), 2011-2021

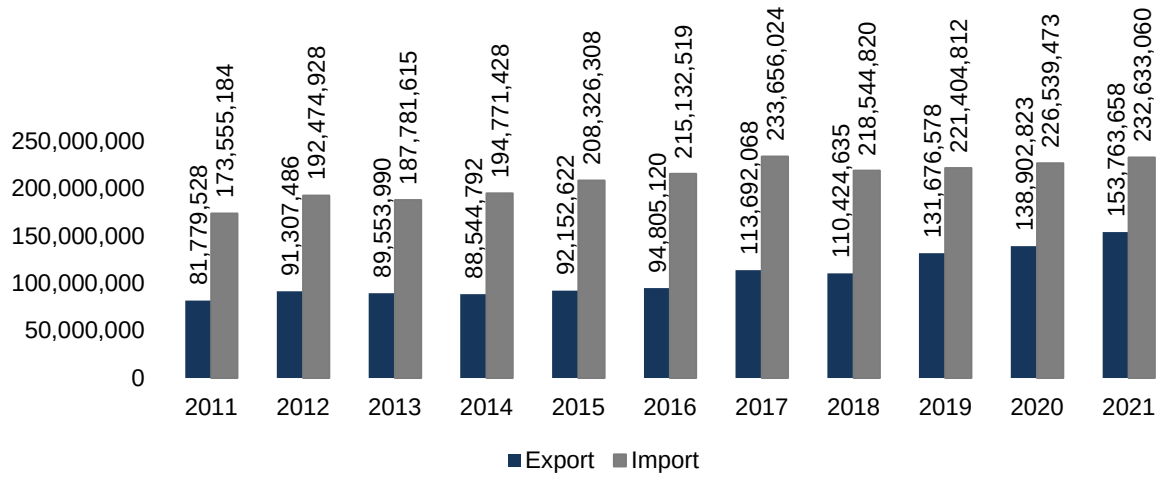
Years	Seaborne Trade Total	Export	Import	Turkish Flag	Turkish Flag (%)	Foreign Flag (%)
2011	255,334,712	81,779,528	173,555,184	42,396,010	17	83
2012	283,782,414	91,307,486	192,474,928	38,712,247	14	86
2013	277,335,605	89,553,990	187,781,615	34,610,534	12	88
2014	283,316,220	88,544,792	194,771,428	33,624,322	12	88
2015	300,478,930	92,152,622	208,326,308	36,479,586	12	88
2016	309,937,639	94,805,120	215,132,519	38,623,279	12	88
2017	347,348,092	113,692,068	233,656,024	36,815,820	11	89
2018	328,969,455	110,424,635	218,544,820	35,510,231	11	89
2019	353,081,390	131,676,578	221,404,812	27,895,737	8	92
2020	365,442,296	138,902,823	226,539,473	29,679,160	8	92
2021	386,396,718	153,763,658	232,633,060	29,999,196	8	92

Source: Republic of Turkey Ministry of Transport and Infrastructure

Compared with the previous year, export shipments increased to 153 million tons, import shipments increased to 232 million tons in 2021. The share of Turkish flag vessels transporting foreign trade cargoes has been realized as 8% on average.

As a whole, the share of the Turkish flag vessels transporting foreign trade cargoes between 2011-2021 has been realized as 11% on the average.

Graph 21. Development of the Seaborne Trade (Tons)



Source: Republic of Turkey Ministry of Transport and Infrastructure

The transportation of foreign trade cargoes by Turkish flag vessels includes 7% of the total of 232 million tonnes imports and 10% of the total of 153 million tonnes exports.

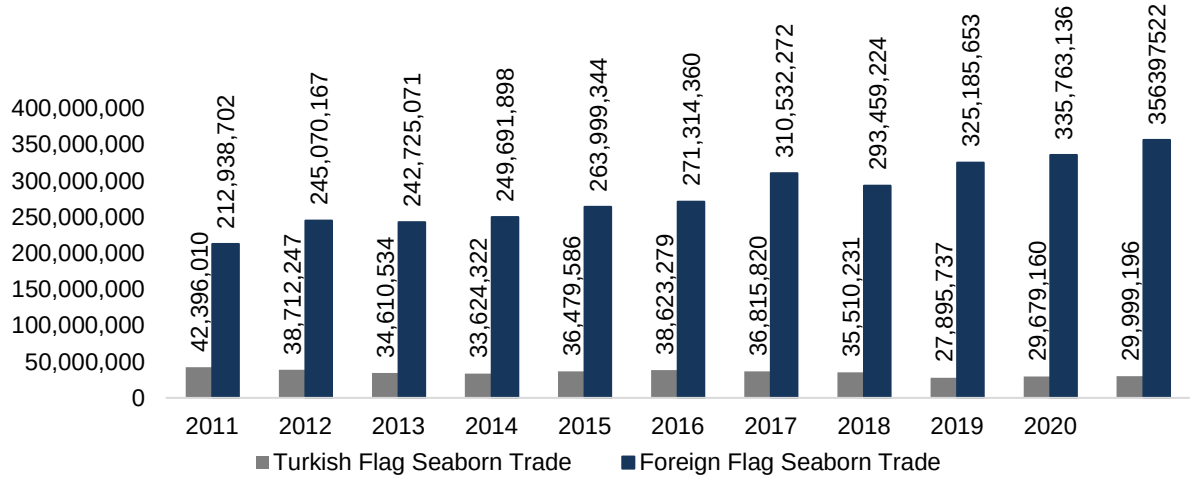
Table 29. Foreign Trade Transportation by Flags (Tons)

Years	Turkish Flag					Foreign Flag				
	Import	%	Export	%	Seaborn Trade	Import	%	Export	%	Seaborn Trade
2011	30,122,065	17.0	12,273,945	15.0	42,396,010	143,433,119	83.0	69,505,583	85.0	212,938,702
2012	26,476,350	14.0	12,235,897	13.0	38,712,247	165,998,578	86.0	79,071,589	87.0	245,070,167
2013	22,949,887	12.0	11,660,647	13.0	34,610,534	164,831,728	88.0	77,893,343	87.0	242,725,071
2014	20,880,367	11.0	12,743,955	14.0	33,624,322	173,891,061	89.0	75,800,837	86.0	249,691,898
2015	22,724,776	11.0	13,754,810	15.0	36,479,586	185,601,532	89.0	78,397,812	85.0	263,999,344
2016	23,350,424	11.0	15,272,855	16.0	38,623,279	191,782,095	89.0	79,532,265	84.0	271,314,360
2017	21,677,485	9.0	15,138,335	13.0	36,815,820	211,978,539	91.0	98,553,733	87.0	310,532,272
2018	19,850,109	9.0	15,660,122	14.0	35,510,231	198,694,711	91.0	94,764,513	86.0	293,459,224
2019	13,763,576	6.0	14,132,161	11.0	27,895,737	207,641,236	94.0	117,544,417	89.0	325,185,653
2020	16,098,249	7.0	13,580,911	10.0	29,679,160	210,441,224	93.0	125,321,912	90.0	335,763,136
2021	15,257,051	7.0	14,742,145	10.0	29,999,196	217,376,009	93.0	139,021,513	90.0	356,397,522

Source: Republic of Turkey Ministry of Transport and Infrastructure

A comparison between 2011 and 2021 of the transportation of foreign trade cargoes reveals that the total amount increased from 255 million tons in 2011 to 386 million tonnes in 2021. Import goods increased from 173 million tons to 232 million tons, whereas export goods increased from 81 million tons to 153 million tons.

Graph 22. Turkish/Foreign Flag Shares (Tons)



Source: Republic of Turkey Ministry of Transport and Infrastructure

The share of Turkish flag vessels in total foreign trade transportation increased to 14 million tons for exports and decreased to 15 million tons for imports in 2021 when compared to 12 and 30 million tons respectively in 2011.

The share of foreign flag vessels in total foreign trade transportation, increased to 139 million tons for exports and also increased to 217 million tons for imports in 2021, when compared with the 69 and 143 million tons in 2011.

2.5. Developments in Foreign Trade Transportation by Types of Cargoes

The major shipping segments of the 153 million tons exports and 62 million tons transit loading goods in 2021, are 38% Dry Bulk Cargo, 36% Container, 15% General Cargo, 7% Liquid Bulk Cargo and 4% Vehicles.

Table 30. Export and Transit Loading by Cargo Types

Cargo Types	Turkish Flag Export	Foreign Flag Export	Total Export	Export (%)	Transit Loading	Total
Dry Bulk Cargo	2,984,142	55,417,024	58,401,166	38%	44,495	58,445,661
General Cargo	1,658,293	21,236,373	22,894,666	15%	56,569	22,951,235
Liquid Cargo	471,128	10,689,290	11,160,418	7%	48,022,625	59,183,043
Container	4,921,128	49,941,210	54,862,338	36%	14,479,842	69,342,180
Vehicle	4,707,454	1,737,616	6,445,070	4%	0	6,445,070
Total	**14,742,145**	**139,021,513**	**153,763,658**	**100%**	**62,603,531**	**216,367,189**

Source: Republic of Turkey Ministry of Transport and Infrastructure

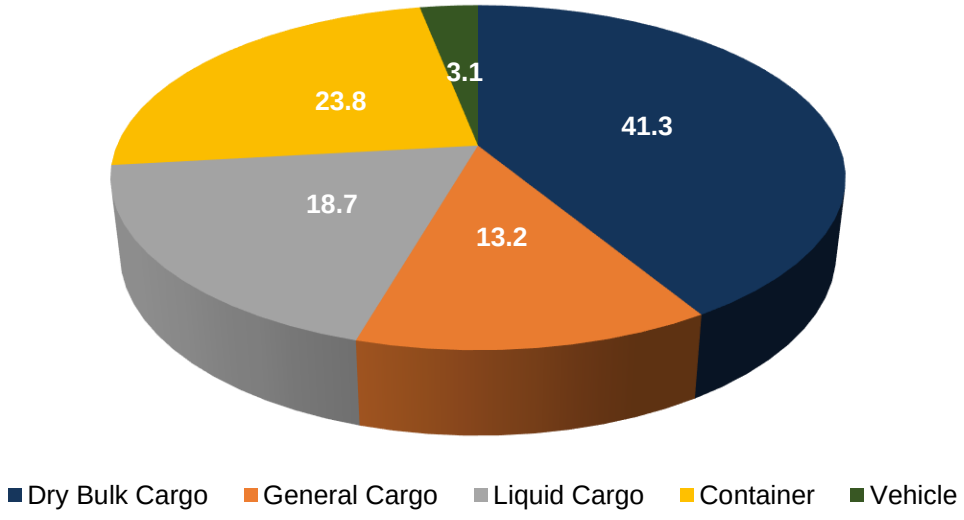
Major shipping segments of the 232 million tons imports and 15 million tons transit unloading goods in 2021 are 43% Dry Bulk Cargo, 26% Liquid Bulk Cargo, 16% Container, 12% General Cargo and 2% vehicles.

Table 31. Import and Transit Unloading by Cargo Types

Cargo Types	Turkish Flag Import	Foreign Flag Import	Total Import	Import (%)	Transit Unloading	Total
Dry Bulk Cargo	3,524,542	97,615,911	101,140,453	43%	48,581	101,189,034
General Cargo	1,366,812	26,699,557	28,066,369	12%	83,263	28,149,632
Liquid Cargo	3,369,865	57,699,660	61,069,525	26%	207,162	61,276,687
Container	2,538,711	34,462,977	37,001,688	16%	15,066,407	52,068,095
Vehicle	4,457,121	897,904	5,355,025	2%	0	5,355,025
Total	**15,257,051**	**217,376,009**	**232,633,060**	**100%**	**15,405,413**	**248,038,473**

Source: Republic of Turkey Ministry of Transport and Infrastructure

Graph 23. Seaborn Trade the Types of Cargoes (Export Import)



Source: Republic of Turkey Ministry of Transport and Infrastructure

2.6. The Progress in Seaborne Trade by Country Groups

In 2021, 83 million tons of exports and 78 million tons of imports, totally transit (loading-unloading) 52 million tons of transportation have been realized to the OECD countries. Table shows the export and import values to the OECD countries.

Table 32. Seaborne Export and Import, Transit Handling of Turkey and OECD Countries in 2021

OECD Country	Export	Import	Seaborn Trade	Transit Loading	Transit Unloading	Total Transit
U.S.	12,260,290	14,334,614	26,594,904	313,756	189,030	502,786
Italy	14,177,761	8,285,644	22,463,405	39,068,682	251,855	39,320,537
Isreal	10,831,833	6,510,486	17,342,319	716,025	654,070	1,370,095
Greece	6,965,275	9,715,471	16,680,746	699,720	891,847	1,591,567
Spain	13,522,729	3,096,629	16,619,358	2,164,160	632,463	2,796,623
Colombia	642,569	13,921,351	14,563,920	0	0	0
Belgium	6,663,621	5,006,550	11,670,171	399,354	461,835	861,189
Holland	3,282,671	4,896,779	8,179,450	147,040	75,882	222,922
U.A.B.	3,378,137	3,271,520	6,649,657	1,162,359	91,171	1,253,530
France	2,712,788	2,758,760	5,471,548	186,312	31,864	218,176
Australia	103,905	5,186,255	5,290,160	11,602	20,497	32,099
Norway	190,299	3,408,744	3,599,043	28	0	28
Canada	1,715,133	1,767,508	3,482,641	685,746	86,518	772,264
S.Korea	1,068,359	2,157,020	3,225,379	316,129	594,364	910,493
Portugal	2,010,133	451,924	2,462,057	1,599,340	128,301	1,727,641
Germany	948,610	1,489,085	2,437,695	47,209	82,831	130,040
Denmark	275,555	1,318,050	1,593,605	0	4,000	4,000
Finland	51,279	1,174,965	1,226,244	0	0	0
Lithuanian	48,552	1,133,883	1,182,435	0	10,923	10,923
Poland	412,104	626,798	1,038,902	0	2,134	2,134
Sweden	458,281	455,741	914,022	0	0	0
Slovenia	349,104	356,989	706,093	78,679	58,543	137,222
Latvia	5,009	602,880	607,889	0	0	0
Japan	30,242	517,749	547,991	6,741	50,348	57,089
Estonia	67,300	376,677	443,977	0	0	0
Mexico	252,270	108,226	360,496	3,128	969	4,097
Chile	277,298	33,277	310,575	0	0	0
Ireland	199,301	53,044	252,345	181,252	330	181,582
Iceland	89,396	2,500	91,896	0	0	0
Puerto Rico	21,154	5,955	27,109	0	0	0
Slovakia	4,600	0	4,600	0	0	0
Hungary	1,030	0	1,030	0	465	465
New Zealand	0	226	226	0	165	165
Luxembourg	62	0	62	0	0	0
Total	**83,016,650**	**93,025,300**	**176,041,950**	**47,787,262**	**4,320,405**	**52,107,667**

Source: Republic of Turkey Ministry of Transport and Infrastructure

In 2021, the seaborne trade volume between Turkey and the OECD countries was 228 million metric tons of which 176 million metric tons were import-exports while 52 million metric tons were transit cargoes.

In the year 2021, 59 million tons of exports and 49 million tons of imports or totally 109 million tons of seaborne transportation have been realized to the EU countries.

Table 33. Seaborne Trade (Export-Import) to EU Countries and Transit Loading /Unloading (Tons)

EU Countries	Export	Import	Seaborn Trade	Transit Loading	Transit Unloading	Total Transit
Italy	14,177,761	8,285,644	22,463,405	39,068,682	251,855	39,320,537
Greece	6,965,275	9,715,471	16,680,746	699,720	891,847	1,591,567
Spain	13,522,729	3,096,629	16,619,358	2,164,160	632,463	2,796,623
Belgium	6,663,621	5,006,550	11,670,171	399,354	461,835	861,189
Holland	3,282,671	4,896,779	8,179,450	147,040	75,882	222,922
Romania	4,113,940	3,014,550	7,128,490	880,871	843,845	1,724,716
France	2,712,788	2,758,760	5,471,548	186,312	31,864	218,176
Malta	1,813,378	2,194,152	4,007,530	165,901	31,429	197,330
Bulgaria	1,220,748	2,096,484	3,317,232	618,524	755,146	1,373,670
Portugal	2,010,133	451,924	2,462,057	1,599,340	128,301	1,727,641
Germany	948,610	1,489,085	2,437,695	47,209	82,831	130,040
Denmark	275,555	1,318,050	1,593,605	0	4,000	4,000
Finland	51,279	1,174,965	1,226,244	0	0	0
Latvia	48,552	1,133,883	1,182,435	0	10,923	10,923
Polland	412,104	626,798	1,038,902	0	2,134	2,134
Crotia	314,766	686,658	1,001,424	278,087	0	278,087
Sweden	458,281	455,741	914,022	0	0	0
Slovenia	349,104	356,989	706,093	78,679	58,543	137,222
Letonya	5,009	602,880	607,889	0	0	0
Estonia	67,300	376,677	443,977	0	0	0
Ireland	199,301	53,044	252,345	181,252	330	181,582
Slovakia	4,600	0	4,600	0	0	0
Hungary	1,030	0	1,030	0	465	465
Luxembourg	62	0	62	0	0	0
Total	**59,618,597**	**49,791,713**	**109,410,310**	**46,515,131**	**4,263,693**	**50,778,824**

Source: Republic of Turkey Ministry of Transport and Infrastructure

In 2021, 23 million tons of exports and 82 million tons of imports, totally 105 million tons seaborne transportation have been realized to the BSEC countries.

Table 34. Seaborne Trade to BSEC Countries (Tons)

BSEC Countries	Export	Import	Seaborn Trade	Transit Loading	Transit Unloading	Total Transit
Russian	3,018,100	53,872,530	56,890,630	724,157	1,688,252	2,412,409
Greece	6,965,275	9,715,471	16,680,746	699,720	891,847	1,591,567
Ukraine	4,096,529	12,136,007	16,232,536	2,270,891	1,577,616	3,848,507
Romania	4,113,940	3,014,550	7,128,490	880,871	843,845	1,724,716
Bulgaria	1,220,748	2,096,484	3,317,232	618,524	755,146	1,373,670
Moldova	2,174,749	330,249	2,504,998	0	0	0
Georgia	871,492	1,220,812	2,092,304	879,353	332,171	1,211,524
Albania	568,595	73,683	642,278	33,430	11,606	45,036
Azerbaijan	19,437	67,183	86,620	0	0	0
Serbia	2,237	0	2,237	0	0	0
Total	**23,051,102**	**82,526,969**	**105,578,071**	**6,106,946**	**6,100,483**	**12,207,429**

Source: Republic of Turkey Ministry of Transport and Infrastructure

2.7. World Container Fleet by Country of Domicile

The “country of domicile” examination (including container ships of 1000 GT and over) shows that at the beginning of 2021, 23,613,000 TEU of the container capacity was not registered in the country of domicile of the owner but flagged out.

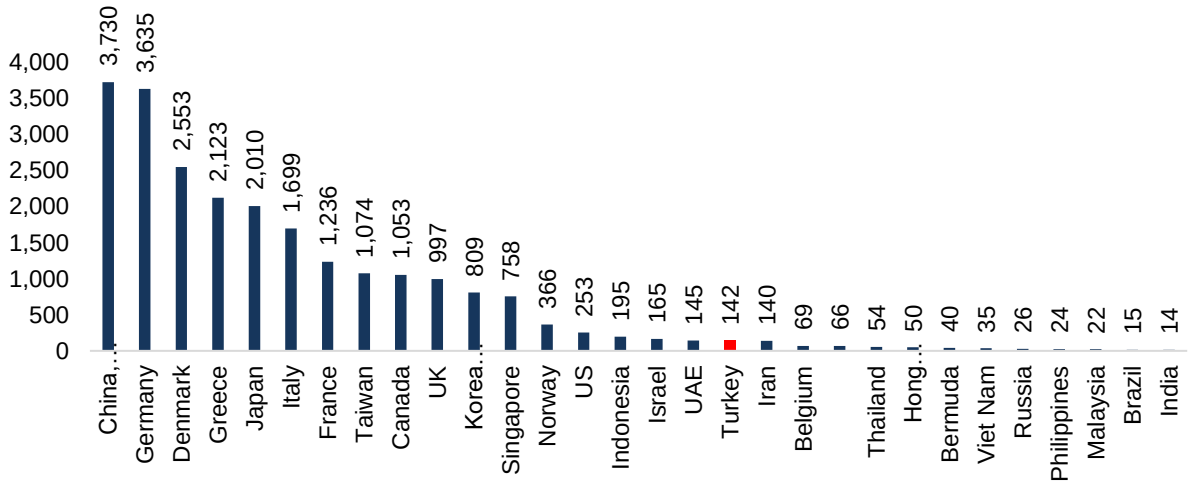
Table 35. World Full Container Fleet by Country of Domicile (1000 GT and over) 2021

TEU Rank	Country of Control	National Flag			Foreign Flag			Total Fleet			
		No	1000 DWT	1000 TEU	No	1000 DWT	1000 TEU	No	1000 DWT	1000 TEU	Foreign Flag %
1	China, PR of	341	10,745	789	428	32,680	2,942	769	43,425	3,730	1,5
2	Germany	74	6,423	546	928	38,218	3,089	1,002	44,641	3,635	-3.7
3	Denmark	141	15,417	1,414	207	14,088	1,138	348	29,505	2,553	0.6
4	Greece	5	429	38	484	25,553	2,084	489	25,981	2,123	4.0
5	Japan	25	2,457	238	300	20,016	1,772	325	22,473	2,010	0.2
6	Italy				236	20,224	1,699	236	20,224	1,699	11.7
7	France	29	3,121	284	121	11,046	952	150	14,168	1,236	5.1
8	Taiwan	46	2,189	174	217	10,888	900	263	13,077	1,074	7.2
9	Canada	1	15	1	125	12,076	1,052	126	12,090	1,053	15.6
10	UK	16	1,477	125	180	10,737	872	196	12,214	997	10.1
11	Korea Rep of	90	2,765	222	105	6,523	587	195	9,288	809	45.0
12	Singapore	95	3,304	254	124	5,965	505	219	9,269	758	-8.8
13	Norway	1	3	0	73	4,403	366	74	4,406	366	0.1
14	US	27	865	65	61	2,510	188	88	3,375	253	2,9
15	Indonesia	214	2,457	168	15	359	27	229	2,816	195	10.0
16	Israel	6	310	26	32	1,733	139	38	2,043	165	7.0
17	UAE	3	66	5	70	1,868	140	73	1,934	145	14.7
18	Turkey	36	810	58	45	1,095	84	81	1,904	142	-32.8
19	Iran	29	1,661	140				29	1,661	140	62.2
20	Belgium	7	332	27	15	540	42	22	872	69	-6.9
21	Netherlands	31	342	27	32	478	38	63	820	66	-11.2
22	Thailand	27	337	26	22	370	28	49	707	54	-4.7
23	Hong Kong	13	247	18	27	444	32	40	691	50	2.2
24	Bermuda				4	467	40	4	467	40	
25	Viet Nam	40	438	32	4	43	3	44	480	35	4.5
26	Russia	17	122	11	9	211	16	26	333	26	4.6
28	Philippines	25	334	24	3	12	1	28	346	24	10,8
27	Malaysia	40	255	20	3	32	2	43	288	22	-2.0
29	Brazil	6	216	15				6	216	15	22.0
30	India	8	192	14				8	192	14	
Total 30 countries		**1393**	**57,327**	**4,760**	**3,870**	**222,580**	**18,738**	**5,263**	**279,907**	**23,498**	**3.4**
Others		**50**	**547**	**41**	**60**	**606**	**48**	**110**	**1,154**	**88**	**4.5**
Unknown								**22**	**341**	**27**	
World Total								**5.395**	**281,402**	**23,613**	**3**

Source: ISL 2022

With respect to the owner countries, Chine shipowners control by far the largest part of the world container fleet, namely 3.7 million TEU (769 container vessels) followed by Germany 3.6 million TEU (1002 container vessels) and Denmark 2.5 million TEU (348 container vessels).

Graph 24. World Full Container Fleet by Country of Domicile (1000 GT and over) 2021 (1000 TEU)



Source: ISL January-February 2021

TEU based container transportations in 2021 realized as follows in their respective subgroups; exports became 4.6 million TEU, imports 4.7 million TEU, cabotage loading-unloading 831,986 TEU and transit 2.3 million TEU.

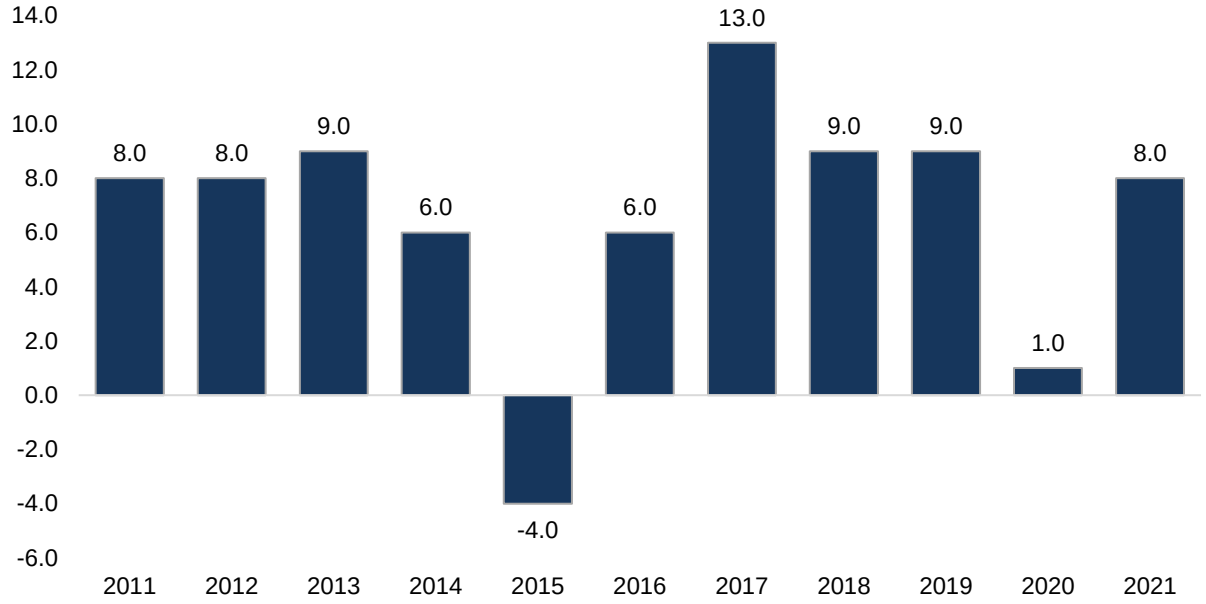
Transportation volume of Turkey's container transports by seaway was 6.2 million TEU in 2011; in 2021 it became 11.7 million TEU, at the same period imports cargoes increased to 4.7 million TEU from 2.7 million TEU and the exports cargoes increased to 4.7 million TEU when compared with 2.6 million TEU in 2010.

Table 36. Container Handling 2010-2020 (TEU)

Years	LOADING (TEU)			UNLOADING (TEU)			SEA BORN TRADE (TEU)			
	Cabotage	Export	Total	Cabotage	Import	Total	Export + Import	Transit Handling	Total	Change (%)
2011	154,338	2,690,889	2,845,227	305,256	2,770,190	3,075,446	5,461,079	757,171	6,218,250	8
2012	236,905	2,879,122	3,116,027	235,440	2,942,562	3,178,001	5,821,683	898,368	6,720,051	8
2013	274,589	3,165,653	3,440,242	269,908	3,199,969	3,469,877	6,365,622	989,815	7,355,437	9
2014	266,997	3,488,008	3,755,005	260,067	3,581,811	3,841,878	7,069,819	754,238	7,824,057	6
2015	305,882	3,394,508	3,700,390	300,182	3,454,345	3,754,527	6,848,854	691,481	7,540,335	-4
2016	365,517	3,543,804	3,909,321	372,795	3,607,086	3,979,881	7,150,890	872,772	8,023,662	6
2017	467,384	3,866,874	4,334,258	468,137	3,975,205	4,443,341	7,842,079	1,232,937	9,075,015	13
2018	453,030	4,160,124	4,613,154	482,631	4,259,029	4,741,661	8,419,153	1,489,184	9,908,337	9
2019	359,958	4,594,647	4,954,605	393,309	4,540,201	4,933,510	9,134,849	1,703,722	10,838,571	9
2020	370,088	4,618,225	4,988,313	361,264	4,480,472	4,841,736	9,098,697	1,796,601	10,895,298	1
2021	410,755	4,677,414	5,088,169	421,232	4,744,227	5,165,459	9,421,640	2,337,843	11,759,483	8

Source: Republic of Turkey Ministry of Transport and Infrastructure

Graph 25. Yearly Change of Foreign Trade Between 2011-2021(TEU %)



Source: Republic of Turkey Ministry of Transport and Infrastructure

Table 37. Port Authority Handled Container (TEU)

Port Authority	Export	İöport	Cabotahe Handling	Transit Handling	Total Handling
Ambarlı	960,224	1,008,855	152,806	765,923	2,887,807
Mersin	950,273	916,304	40,283	41,836	1,948,695
Kocaeli	834,113	813,391	66,555	86,584	1,800,642
Tekirdağ	202,622	167,162	182,509	891,742	1,444,035
Aliağa	670,723	579,411	19,707	5,680	1,275,521
Gemlik	368,223	350,619	123,033	1,245	843,119
İskenderun	353,341	346,881	6,775	3,591	710,587
İzmir	213,567	194,235	28,584	0	436,385
Antalya	26,993	37,698	44,717	0	109,408
Samsun	27,752	47,039	31,491	0	106,282
İstanbul	9,967	18,508	13,111	0	41,586
Bandırma	0	222	12,965	0	13,187
Trabzon	381	114	5,206	0	5,701
Marmara A.	0	0	2,214	0	2,214
Karabiga	0	0	1,399	0	1,399
Karasu	29	35	0	0	65
Karadeniz Ereğli	18	0	0	0	18
Total	**4,618,225**	**4,480,472**	**731,352**	**1,796,601**	**11,626,650**

Source: Republic of Turkey Ministry of Transport and Infrastructure

Table 38. Seaborne Export and Import, Transit Handling of Turkey and Country 2021 TEU

Country	Export	Import	Seaborn Trade	Transit Loading	Transit Unloading	Transit Handling	Total Handling
Greece	426,142	662,403	1,088,545	42,934	67,996	110,930	1,199,475
Israel	367,754	711,051	1,078,805	18,683	55,257	73,941	1,152,745
Egypt	481,801	525,572	1,007,373	79,459	63,248	142,706	1,150,079
Spain	493,897	198,008	691,905	56,305	45,641	101,946	793,851
Italy	329,023	221,930	550,953	60,550	19,334	79,885	630,837
Belgium	349,473	181,061	530,533	28,753	40,880	69,633	600,166
Libya	117,803	212,507	330,310	12,105	6,054	18,159	348,469
Saudi Arabia	170,087	152,831	322,918	80,782	86,036	166,818	489,736
U.S.	130,041	191,287	321,328	6,994	20,469	27,463	348,790
Malta	79,400	209,578	288,979	2,444	2,285	4,729	293,708
U.K.	201,156	86,586	287,742	15,804	6,952	22,756	310,498
Chine	129,555	145,751	275,305	50,422	129,219	179,641	454,947
Russia	123,916	121,010	244,926	55,543	115,512	171,055	415,981
Morocco	165,129	63,942	229,070	32,565	5,317	37,882	266,952
Lebanon	62,341	165,511	227,852	19,509	5,474	24,983	252,835
Singapore	148,645	55,792	204,437	39,400	22,587	61,988	266,425
Korea Rep.of	95,361	93,087	188,447	30,589	47,123	77,712	266,159
Georgia	57,450	108,716	166,166	70,613	25,648	96,261	262,427
Algeria	45,534	100,260	145,794	29,103	859	29,962	175,756
U.A.E.	114,563	29,034	143,597	69,648	22,209	91,857	235,454
Other	588,346	508,312	1,096,658	343,109	404,430	747,539	1,844,196
Grand Total	**4,677,414**	**4,744,227**	**9,421,640**	**1,145,313**	**1,192,530**	**2,337,843**	**11,759,484**

Source: Republic of Turkey Ministry of Transport and Infrastructure

As of 2021, the countries which Turkey performed foreign trade with / conducted transit container transportation are as follows: Greece, Israel and Egypt. The data of the foreign trade/transit container transportation of top 20 countries are shown in the Table 38.

2.8. Vehicle Transportation Through Ro-Ro Lines

Ro-Ro lines of Turkey in 2021 are shown below. Table 39 above shows the amounts of the transported full vehicles (export and import) in the years 2021.

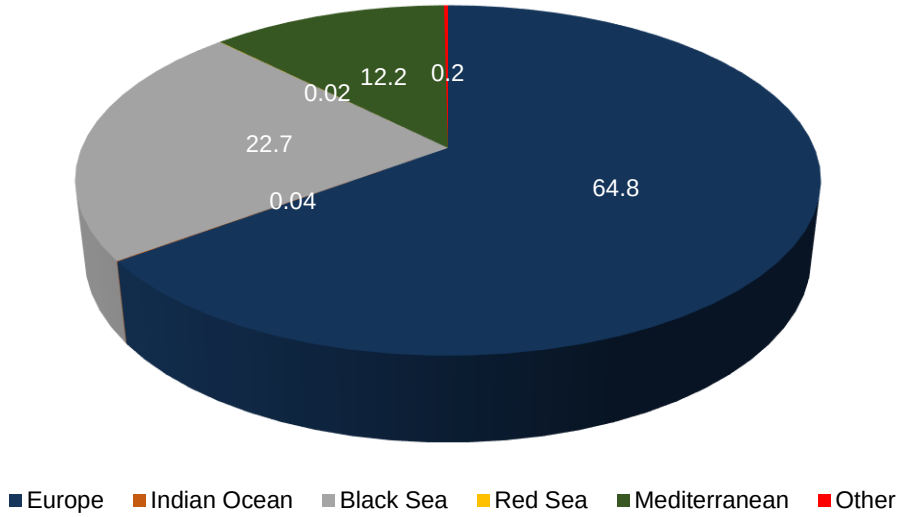
Table 39. Ro-Ro Lines Transported Vehicles 2021

Region	Lines	Incoming Vehicle	Outbond Vehicle	Total Transported Vehicle
Europe	Tuzla (Pendik) - Trieste	100,834	101,864	202,698
	Yalova - Sete	44,063	39,471	83,534
	Çeşme - Trieste	30,007	31,645	61,652
	Mersin - Trieste	21,309	20,829	42,138
	Yalova - Lavrio - Trieste	7,702	8,136	15,838
	İzmir - Tarragona	7,046	8,176	15,222
	Yalova - Bari	1,735	3,767	5,502
	Tuzla (Pendik) - Patras	2,265	1,549	3,814
	Çeşme - Sakız Adası	307	1,366	1,673
	Kocaeli - Zeebrugge	0	974	974
	Tuzla (Pendik) - Bari	232	597	829
	Gemlik - Salerno	441	0	441
	Yalova - Patras	366	0	366
	Kocaeli - Bremerhaven	0	120	120
	Total Europe Ro-Ro Lines	**216,307**	**218,494**	**434,801**
Black Sea	Samsun - Tuapse	18,949	30,013	48,962
	Karasu - Chornomorsk	20,454	23,828	44,282
	Samsun - Novorossiysk	10,081	15,815	25,896
	Zonguldak - Chornomorsk	7,370	8,648	16,018
	İstanbul (Haydarpaşa) - Chornomorsk	5,091	6,902	11,993
	Samsun - Temrük	1,790	1,961	3,751
	Samsun - Kavkaz	592	526	1,118
	Karasu - Köstence	26	145	171
	Total Black Sea Ro-Ro Lines	**64,353**	**87,838**	**152,191**
Mediterranean	Mersin - Gazimağusa	17,642	17,477	35,119
	Taşucu - Tripoli (Lübnan)	10,286	10,459	20,745
	Taşucu - Girne	9,694	10,679	20,373
	Mersin - Hayfa	2,253	2,549	4,802
	Mersin - Girne	436	261	697
	Taşucu - Gazimağusa	324	16	340
	Total Mediterrenean Ro-Ro Lines	40,635	41,441	82,076
Indian Ocean	İskenderun - Darüsselam	0	163	163
	İskenderun - Mombasa	0	111	111
	Total Indian Oceanı Ro-Ro Lines	**0**	**274**	**274**
Redsea	İskenderun - Cidde	76	83	159
Other Ro-Ro Lines		**732**	**643**	**1,375**
Grand Total		**322.103**	**348,773**	**670,876**

Source: Republic of Turkey Ministry of Transport and Infrastructure

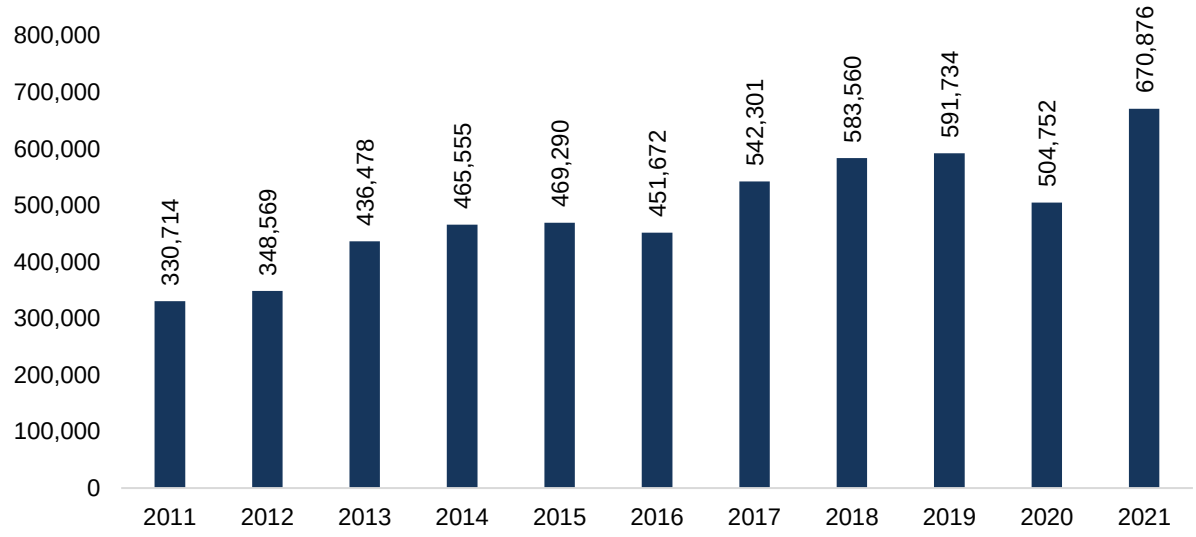
In the 14 European lines 434,801 vehicles have been transported in 2021. (65%)
In the 8 Black Sea lines 152,191 vehicles have been transported in 2021. (23%)
In the 6 Mediterranean lines 82,076 vehicles have been transported in 2021. (12%)

Graph 26. Ro-Ro Lines Transported Vehicles (2021)



Source: Republic of Turkey Ministry of Transport and Infrastructure

Graph 27. Ro-Ro Lines Transported Vehicles (2011-2021)



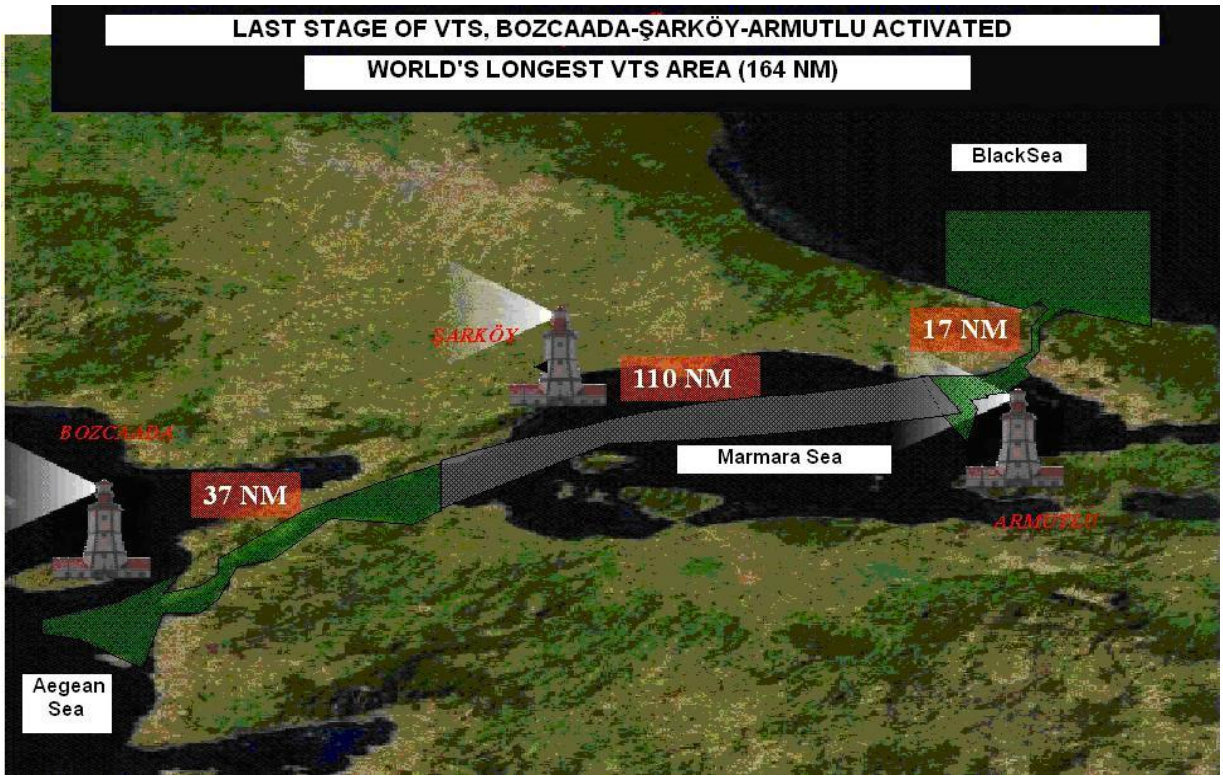
Source: Republic of Turkey Ministry of Transport and Infrastructure

CHAPTER III

THE TURKISH STRAITS AND MARITIME TRAFFIC SYSTEMS

3. THE TURKISH STRAITS AND MARITIME TRAFFIC SYSTEMS

3.1. The Turkish Straits



The region consisting of the Turkish Straits, called İstanbul and Çanakkale Straits and the Sea of Marmara, is one of the regions that has the highest concentration of maritime traffic in the World.

Turkish Straits consist of the İstanbul Strait 17 nm in length, 110 nm the vessels navigating area in Marmara Sea and Çanakkale Strait in length 37 nm. Total length of the Turkish Straits is 164 nm and it is opened to international maritime vessel traffic under the Turkish governmental control.

This 164 nm long seaway, starting from the north entrance of İstanbul Strait and ending at the south exit of Çanakkale Strait, is a region that should be given high importance both from geomorphological and hydrographical aspects, especially for having 12 sharp turning points with 45º in front of İstanbul Strait-Kandilli and 80º in front of Yeniköy and with complex currents which reach to a relative speed of 7- 8 knots.

The Strait of İstanbul is unique as it runs through the city of İstanbul with more than 15 million inhabitants. The shoreline of İstanbul is densely populated. Vessels approach frequently as close as 50 meters to these inhabited areas. Excluding the vessel traffic, the local traffic such as leisure crafts and fishing vessels, daily domestic vessel movement alone in the Strait of İstanbul is more than 2500. More than 2.5 million people are daily in a movement at sea crossing from one side to another in İstanbul. İstanbul is a city with 3000 years of history. It is declared as a “world heritage city” by UNESCO.

Besides their geopolitical and strategical importance, the Turkish Straits are highly congested with international maritime traffic due to being the only waterway between the Black Sea and The Mediterranean without any alternative.

The number of vessels that passed through the Turkish Straits between the years 2006-2021 are shown in Table below.

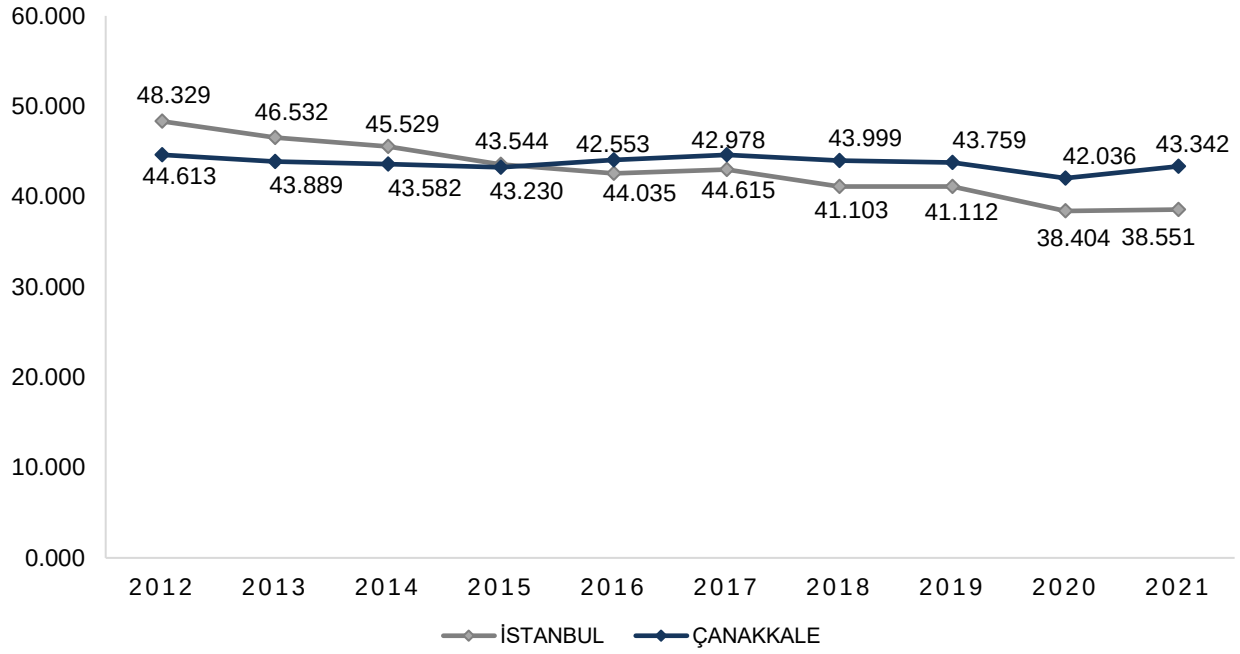
Table 40. Ships Passing Through the Turkish Straits (2006-2021)

Years	Istanbul			Canakkale		
	Number Of Vessels	GT	Number Of Vessels Change	Number Of Vessels	GT	Number Of Vessels Change
2006	54,880	475,796,880	-	48,915	595,826,240	-
2007	56,606	484,867,696	3.1%	49,913	611,885,819	2.0%
2008	54,396	515,639,614	-3.9%	48,978	657,396,892	-1.9%
2009	51,422	514,656,446	-5.5%	49,453	667,412,661	1.0%
2010	50,871	505,615,881	-1.1%	46,686	672,843,533	-5.6%
2011	49,798	523,543,509	-2.1%	45,379	705,412,518	-2.8%
2012	48,329	550,526,579	-2.9%	44,613	735,728,537	-1.7%
2013	46,532	551,771,780	-3.7%	43,889	745,567,671	-1.6%
2014	45,529	582,468,334	-2.2%	43,582	761,631,756	-0.7%
2015	43,544	565,216,784	-4.4%	43,230	777,989,382	-0.8%
2016	42,553	565,282,287	-2.3%	44,035	772,922,682	1.9%
2017	42,978	599,324,748	1.0%	44,615	823,460,636	1.3%
2018	41,103	613,088,166	-4.4%	43,999	849,140,218	-1.4%
2019	41,112	638,892,062	0.0%	43,759	872,312,222	-0.5%
2020	38,404	619,758,776	-6.6%	42,036	858,844,972	-3.9%
2021	38,551	631,920,375	0.4%	43,342	898,473,519	3.1%

Source: Republic of Turkey Ministry of Transport and Infrastructure and İMEAK Chamber of Shipping Calculations

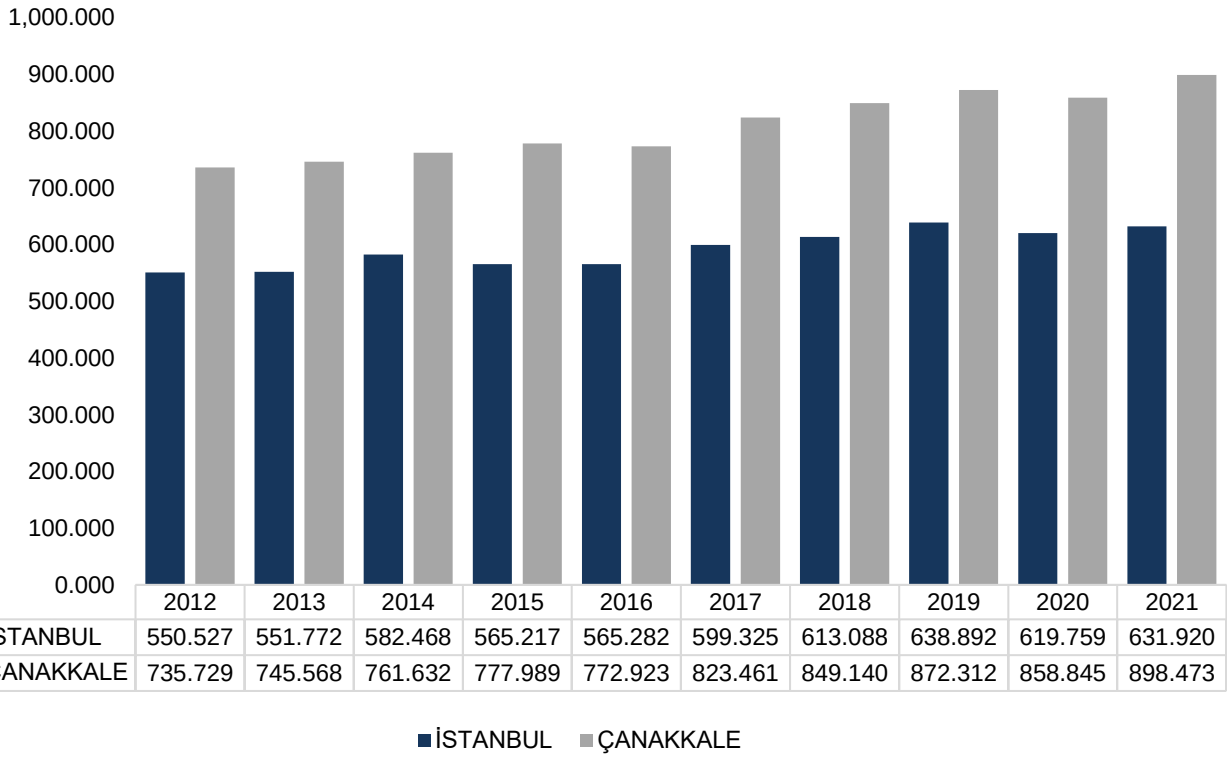
In the year 2021, 38,551 ships in total have passed through the İstanbul Strait with a monthly average of 3,213 ships; 43,342 ships in total have passed through the Çanakkale Strait with a monthly average of 3,612 ships.

Graph 28. Number of Ships Passing Through the Turkish Straits (2012-2021)



Source: Republic of Turkey Ministry of Transport and Infrastructure

Graph 29. 2012-2021 Ships Passing Through the Turkish Straits GT (1,000 GT)



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
İSTANBUL	550.527	551.772	582.468	565.217	565.282	599.325	613.088	638.892	619.759	631.920
ÇANAKKALE	735.729	745.568	761.632	777.989	772.923	823.461	849.140	872.312	858.845	898.473

Source: Republic of Turkey Ministry of Transport and Infrastructure

A significant part of the ships passing through the Turkish Straits carries toxic, hazardous and explosive substances (such as crude oil, ammonia, liquefied gas, radioactive substances, hazardous wastes). Especially in the 1990s, parallel to the increase in the oil flow to the ports in the Black Sea, the number of ships carrying dangerous goods and oil from the Turkish Straits also increased.

Table 41. Dangerous Passing Through the Turkish Straits

Years	Istanbul			Canakkale		
	Number Of Vessels	GT	Number Of Vessels Change	Number Of Vessels	GT	Number Of Vessels Change
2006	54,880	475,796,880	-	48,915	595,826,240	-
2007	56,606	484,867,696	3.1%	49,913	611,885,819	2.0%
2008	54,396	515,639,614	-3.9%	48,978	657,396,892	-1.9%
2009	51,422	514,656,446	-5.5%	49,453	667,412,661	1.0%
2010	50,871	505,615,881	-1.1%	46,686	672,843,533	-5.6%
2011	49,798	523,543,509	-2.1%	45,379	705,412,518	-2.8%
2012	48,329	550,526,579	-2.9%	44,613	735,728,537	-1.7%
2013	46,532	551,771,780	-3.7%	43,889	745,567,671	-1.6%
2014	45,529	582,468,334	-2.2%	43,582	761,631,756	-0.7%
2015	43,544	565,216,784	-4.4%	43,230	777,989,382	-0.8%
2016	42,553	565,282,287	-2.3%	44,035	772,922,682	1.9%
2017	42,978	599,324,748	1.0%	44,615	823,460,636	1.3%
2018	41,103	613,088,166	-4.4%	43,999	849,140,218	-1.4%
2019	41,112	638,892,062	0.0%	43,759	872,312,222	-0.5%
2020	38,404	619,758,776	-6.6%	42,036	858,844,972	-3.9%
2021	38,551	631,920,375	0.4%	43,342	898,473,519	3.1%

Source: Republic of Turkey Ministry of Transport and Infrastructure

The statistics of ships passing through İstanbul and Çanakkale Straits, according to length, piloting and on country basis are shown in the following tables.

Table 42. The Monthly Statistics of Vessels Passed İstanbul Strait According to Their Length and Pilot Request

Months	Number Of Vessels	Total Gross Tonnage	With Pilot	Sp1 Given	Non Call In Vessels	LOA Longer Than 200 M	Lower Than 500 GT	Total Tankers			Towaged
								TTA	LPG/LNG	TCH	
January	3,079	48,323,936	2,030	3,072	1,915	360	19	405	45	211	5
February	2,909	46,850,178	1,919	2,896	1,857	376	21	391	40	200	4
March	3,330	53,991,973	2,138	3,306	2,159	423	29	493	50	224	3
April	3,323	50,194,427	2,133	3,305	2,043	390	42	443	32	190	5
May	3,266	53,003,645	2,126	3,249	2,051	411	20	462	33	195	8
June	3,170	50,801,918	2,049	3,150	2,006	387	42	427	44	209	6
July	3,081	51,040,781	1,993	3,053	1,989	400	39	427	42	217	7
August	3,377	57,300,969	2,267	3,355	2,179	530	38	436	38	187	6
September	3,203	54,526,445	2,179	3,190	2,078	489	30	405	39	197	8
October	3,312	57,362,242	2,241	3,293	2,170	546	33	414	32	271	5
November	3,225	53,407,584	2,125	3,210	2,080	490	34	384	29	303	7
December	3,276	55,116,277	2,157	3,261	2,127	504	27	398	38	297	11
Total	**38,551**	**631,920,375**	**25,357**	**38,340**	**24,654**	**5,306**	**374**	**5,085**	**462**	**2,701**	**75**

Source: Republic of Turkey Ministry of Transport and Infrastructure

Table 43. The Monthly Statistics of Vessels Passed Çanakkale Strait According to Their Length and Pilot Request

Months	Number Of Vessels	Total Gross Tonnage	With Pilot	Sp1 Given	Non Call In Vessels	LOA Longer Than 200 M	Lower Than 500 GT	Total Tankers			Towaged
								TTA	LPG/LNG	TCH	
January	3,378	69,099,838	1,699	3,365	1,935	561	38	434	65	279	9
February	3,214	67,402,239	1,642	3,193	1,854	564	38	400	58	229	10
March	3,763	77,486,648	1,922	3,726	2,174	658	64	522	68	275	9
April	3,677	73,152,803	1,925	3,638	2,018	600	56	456	45	283	9
May	3,752	76,186,355	1,900	3,704	2,078	618	99	473	39	268	16
June	3,567	72,030,919	1,979	3,518	1,986	595	88	439	43	263	14
July	3,487	72,155,567	1,975	3,435	1,955	598	81	420	46	260	7
August	3,685	77,723,833	2,239	3,637	2,137	736	75	427	46	262	11
September	3,782	78,832,594	2,400	3,744	2,150	719	81	387	53	283	16
October	3,802	81,532,894	2,157	3,753	2,173	783	84	423	49	312	5
November	3,566	73,883,407	1,899	3,534	2,071	689	65	400	46	341	12
December	3,669	78,986,422	1,969	3,649	2,137	734	51	415	69	330	13
Total	**43,342**	**898,473,519**	**23,706**	**42,896**	**24,668**	**7,855**	**820**	**5,196**	**627**	**3,385**	**131**

Source: Republic of Turkey Ministry of Transport and Infrastructure

Table 44. (2017-2021) Statistics of Vessels Passed İstanbul Strait According to Their Ship Type

Ship Types	2017	2018	2019	2020	2021
General Cargo Ship	21,163	19,269	18,637	16,864	16,891
Bulk Carrier	8,206	8,501	8,811	8,592	8,684
Other Tanker, TTA	6,212	6,014	5,934	5,252	5,085
Container Ship	2,659	2,561	2,642	2,633	2,735
Chemical Tanker, TCH	1,878	1,950	2,462	2,653	2,701
Livestock Carrier	544	508	530	555	566
Liquefied Petroleum Gas LPG	742	623	561	530	462
Roll on Roll of Vessel	396	245	266	222	268
Passenger Ship	336	367	250	74	217
Tug	262	384	270	175	214
Naval	237	176	178	205	190
Refrigerated Cargo Carrier	46	34	59	52	48
Cement Carrier	6	12	9	18	46
Vehicle Carrier	45	88	113	87	18
Barge / Barge Carrier	18	3	9	15	13
Ferry	1	1	2	1	2
Other	227	367	379	476	411

Source: Republic of Turkey Ministry of Transport and Infrastructure

Table 45. 2017-2021 Statistics of Vessels Passed Çanakkale Strait According to Their Ship Type

Ship Types	2017	2018	2019	2020	2021
General Cargo Ship	16,485	15,764	14,771	14,197	14,713
Bulk Carrier	8,585	8,916	9,204	9,170	9,349
Container Ship	4,957	5,123	5,238	5,219	5,502
Other Tanker, TTA	6,145	6,181	6,178	5,644	5,196
Chemical Tanker, TCH	2,599	2,368	2,996	3,057	3,385
Roll on Roll of Vessel	2,479	2,243	1,957	1,649	1,974
Livestock Carrier	627	601	592	593	607
Liquefied Petroleum Gas Tanker, LPG	652	595	539	542	498
Vehicle Carrier	576	670	644	498	448
Tug	365	398	365	306	341
Naval	271	217	216	211	206
Barge / Barge Carrier	89	57	75	109	179
Liquefied Natural Gas Tanker, LNG	82	103	130	129	129
Refrigerated Cargo Carrier	113	67	83	76	71
Cement Carrier	6	14	10	17	45
Passenger Ship	49	55	101	26	43
Ferry	24	30	26	26	29
Other	511	597	634	567	627

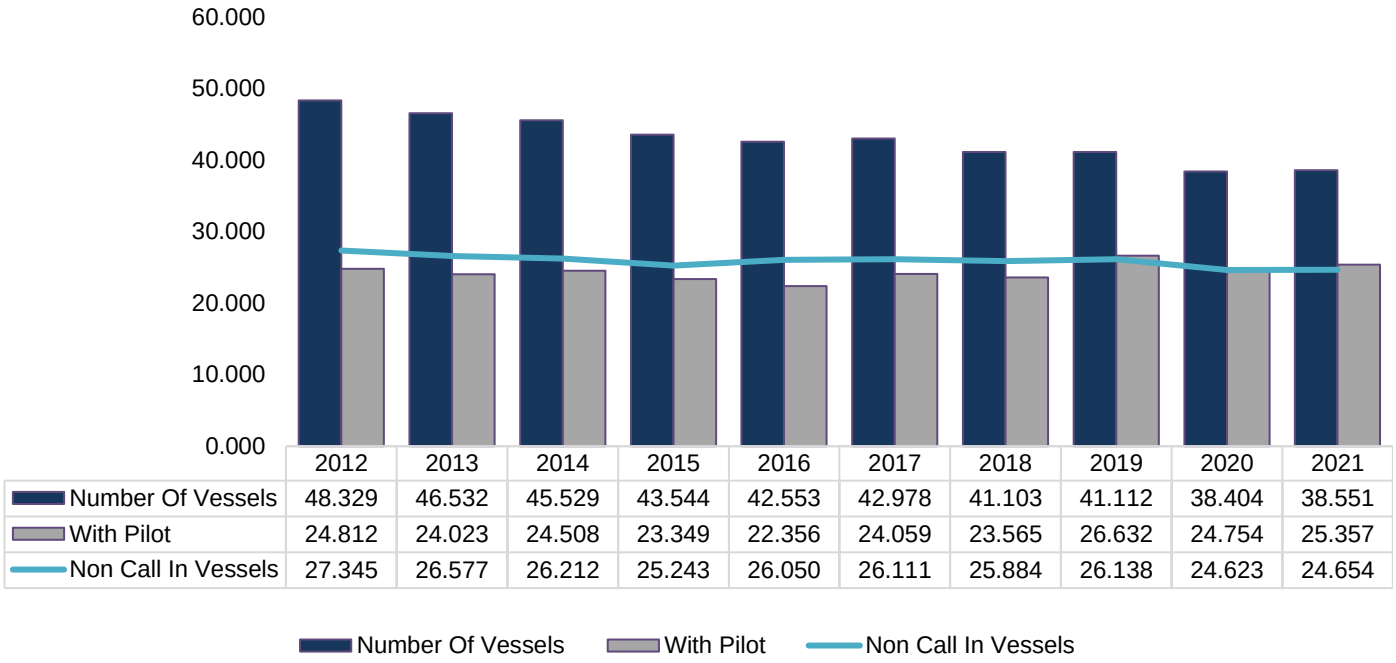
Source: Republic of Turkey Ministry of Transport and Infrastructure

Table 46. 2006-2021 Years of Vessels Passed İstanbul Strait According to Their Length and Pilot Request

Years	Number Of Vessels	Total Gross Tonnage	With Pılot	Sp1 Given	Non Call In Vessels	LOA Longer Than 200 M	Lower Than 500 GT	Total Tankers			Towaged
								TTA	LPG/LNG	TCH	
2006	54,880	475,796,880	26,589	53,324	31,880	3,653	2,176	7,659	814	1,680	111
2007	56,606	484,867,696	26,685	55,132	31,826	3,653	2,138	7,204	800	2,050	105
2008	54,396	515,639,614	27,001	53,232	31,762	3,911	1,800	6,564	764	1,975	119
2009	51,422	514,656,446	24,977	50,712	32,297	3,871	1,128	6,557	866	1,876	122
2010	50,871	505,615,881	26,035	50,020	28,668	3,623	1,377	6,464	1,099	1,711	115
2011	49,798	523,543,509	26,011	49,179	27,938	3,800	1,046	6,216	1,227	1,660	93
2012	48,329	550,526,579	24,812	47,638	27,345	3,866	1,064	5,913	1,336	1,779	98
2013	46,532	551,771,780	24,023	45,616	26,577	3,801	1,192	5,685	1,741	1,580	87
2014	45,529	582,468,334	24,508	44,928	26,212	4,295	928	5,587	1,540	1,618	90
2015	43,544	565,216,784	23,349	43,039	25,243	3,930	879	5,825	1,232	1,576	71
2016	42,553	565,282,287	22,356	42,132	26,050	3,873	522	6,033	989	1,681	73
2017	42,978	599,324,748	24,059	42,700	26,111	4,005	436	6,212	742	1,878	88
2018	41,103	613,088,166	23,565	40,844	25,884	4,106	508	6,014	623	1,950	116
2019	41,112	638,892,062	26,632	40,870	26,138	4,400	333	5,934	561	2,462	89
2020	38,404	619,758,776	24,754	38,175	24,623	4,952	374	5,252	530	2,653	67
2021	38,551	631,920,375	25,357	38,340	24,654	5,306	374	5,085	462	2,701	75

Source: Republic of Turkey Ministry of Transport and Infrastructure

Graph 30. The Statistics Summary of Vessels Passed İstanbul Strait Number of Vessel, with Pilot and Non Call in Vessel



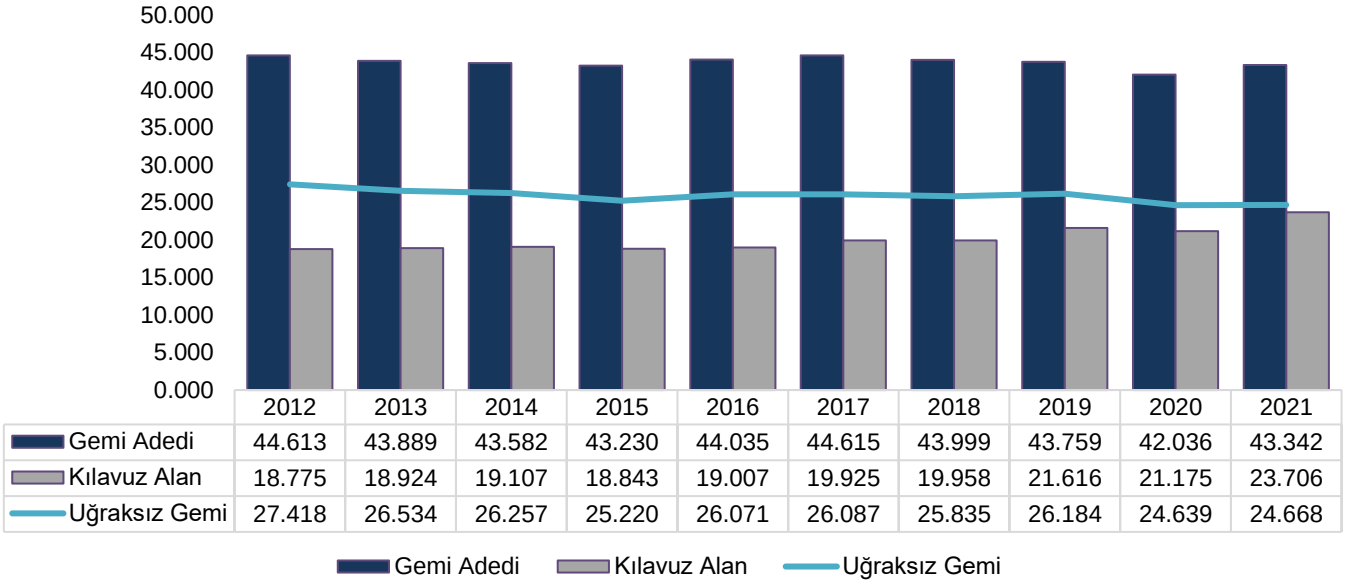
Source: Republic of Turkey Ministry of Transport and Infrastructure

Table 47. 2006-2020 Years of Vessels Passed Çanakkale Strait According to Their Length and Pilot Request

Years	Number of Vessels	Total Gross Tonnage	With Pılot	Sp1 Given	Non Call In Vessels	LOA Longer Than 200 M	Lower Than 500 GT	Total Tankers			Towaged
								TTA	LPG/LNG	TCH	
2006	48,915	595,826,240	16,871	48,264	32,061	4,845	1,404	7,204	798	1,565	131
2007	49,913	611,885,819	16,885	48,802	31,981	4,945	1,873	6,527	754	1,990	138
2008	48,978	657,396,892	18,334	48,565	31,981	5,223	844	5,990	777	1,991	162
2009	49,453	667,412,661	18,588	49,210	32,559	5,176	615	6,293	842	2,432	146
2010	46,686	672,843,533	18,678	46,469	28,768	5,098	598	6,017	902	2,333	138
2011	45,379	705,412,518	18,920	45,196	27,983	5,494	572	5,661	974	2,183	159
2012	44,613	735,728,537	18,775	44,416	27,418	5,919	519	5,656	1,038	2,304	134
2013	43,889	745,567,671	18,924	43,579	26,534	5,824	448	5,822	1,380	2,097	123
2014	43,582	761,631,756	19,107	43,238	26,257	5,902	512	5,875	1,206	2,169	116
2015	43,230	777,989,382	18,843	42,755	25,220	5,842	581	6,009	1,036	2,479	122
2016	44,035	772,922,682	19,007	43,543	26,071	5,665	661	6,041	881	2,559	139
2017	44,615	823,460,636	19,925	43,888	26,087	6,197	755	6,145	734	2,599	149
2018	43,999	849,140,218	19,958	43,513	25,835	6,612	732	6,181	698	2,368	156
2019	43,759	872,312,222	21,616	43,321	26,184	7,010	714	6,178	669	2,996	138
2020	42,036	858,844,972	21,175	41,581	24,639	7,430	779	5,644	671	3,057	126

Source: Republic of Turkey Ministry of Transport and Infrastructure

Graph 31. The Statistics Summary of Vessels Passed Çanakkale Strait Number of Vessel, with Pilot and Non Call in Vessel



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Gemi Adedi	44.613	43.889	43.582	43.230	44.035	44.615	43.999	43.759	42.036	43.342
Kılavuz Alan	18.775	18.924	19.107	18.843	19.007	19.925	19.958	21.616	21.175	23.706
Uğraksız Gemi	27.418	26.534	26.257	25.220	26.071	26.087	25.835	26.184	24.639	24.668

Source: Republic of Turkey Ministry of Transport and Infrastructure

3.2. Turkish Straits Vessel Traffic Services

Turkish Straits VTS, comprised of the Straits of İstanbul and Çanakkale and the Sea of Marmara, has been established in order to enhance maritime safety, minimize the risks of the possible threats and protect the marine environment in line with national legislation and the international regulations, by using the latest technology on 30th December 2003 and now it serves the safe navigation to 44000 vessels yearly.

Upgrade of Turkish Straits Vessel Traffic Services System

In order to continue to operate the mentioned system in an optimum way and without interruption; a need has appeared for the renewal and betterment of the software and hardware of sub system of data processing and also with the purpose of adding to the system the necessary applications, additional equipments, operational and management characteristics, plans have been made for adjudication concerning the said work. Modernization process is going on.

Vessel Traffic Management and Information System (VTMIS) Project

Within the scope of the Project for Vessel Traffic Management and Information System (VTMIS) the installation of which is continued by the related Ministry, it is planned that Regional Vessel Traffic Services (VTS) will be built in order to increase the navigation safety in İzmit, İzmir, Iskenderun and Mersin regions, in which vessel traffic is intense and risky.

Regional VTS Systems; it is aimed to increase the sea traffic safety and efficiency and to monitor, arrange, organize and manage the vessel traffic movements in interaction with vessels with a view to protect the sea environment as well as to provide one or more of the services of information, navigation assistance and traffic organization in some or all of the

regional VTS areas. Regional VTS Systems consist of 24 Traffic Monitoring Stations and 3 Vessel Traffic Services Centers.

The main components of the system are, x-band microwave radars, closed circuit tv cameras, automatic weather stations, VHF/direction finder stations, VHF/ MF/ HF/ Inmarsat-C communication equipment's, record and replay units and Automatic Identification System base stations.

In these new VTS's, in addition to the existing TSVTS there will be some improved features such as, port management and information module which will be established in order to monitor and manage all the movements of the vessels and cargoes in the territorial waters of Turkey.

Automatic Identification System (AIS)

As another safety and security arrangement, AIS based traffic monitoring and management system covering all Turkish coastal waters and beyond provides a complete picture of traffic in Turkey's surrounding seas with all the pertinent details and contains several additional searches, backtracking and viewing functions was established on 9th July 2007.

System provides opportunity to monitor all vessels and marine vehicles having AIS transponder within the coverage area and also to obtain detailed information, a number of goals, such as increasing navigation safety and maritime security through our coasts; to make contribution to Search and Rescue activities; to prevent maritime accidents and to intervene maritime accidents immediately; to cooperate with other institutions concerning illegal migration and violations of fishing boats in foreign territorial waters and prevention of illegal fishing activities are aimed. The centre of this system which covers all over the Turkish coasts with 27 Coastal Base Station is in Ankara and thereby the moves of all ships are monitored momentary.

Upgrade of AIS

In order to continue to operate the mentioned system in an optimum way and without interruption; a need has appeared for the renewal and betterment of the software and hardware of sub system of data processing and also with the purpose of adding to the system the necessary applications, additional equipments, operational and management characteristics, plans have been made for adjudication concerning the said work. Upgrading process is going on.

Long Range Identification and Tracking (LRIT) System

Turkey has invested significant amount of effort, time and financial resources to ensure the timely implementation of its National LRIT Data Centre. Moreover, Turkey actively participated in all Ad Hoc LRIT Group meetings and followed all LRIT related developments with great interest and desire. Turkey's National LRIT Data Centre is established and Application Service Provider (ASP) of Turkey is provided by TURKSAT A.S, which is the National Satellite Company of Turkey. Turkey's National LRIT Data Center (TRNDC) has passed the developmental and integration test phases conducted by IMO satisfactorily to participate into the LRIT production environment on 8 March 2010.

İstanbul Local Traffic Control Centre

In order to enhance maritime safety and security in the boundaries of Harbour Master of İstanbul and in order to monitor the local traffic in the Strait of İstanbul, a Local Traffic Control Centre was established at the end of 2018.

CHAPTER IV

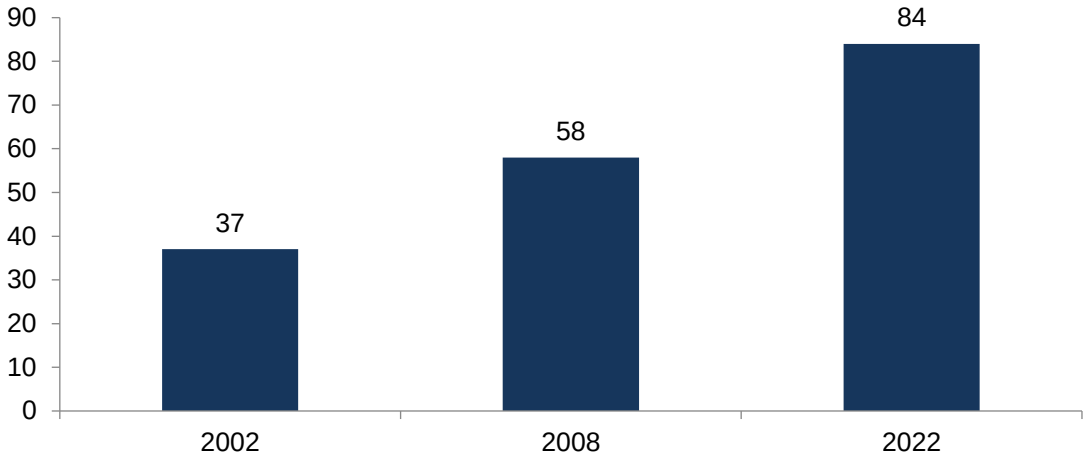
SHIPBUILDING INDUSTRY

4. SHIPBUILDING INDUSTRY

4.1. General Outlook of the Turkish Shipbuilding Industry

The shipyards, according to the facility definition in the local regulations, the under operation raised up to 84 as of March 2021 while it was only 37 in 2002. The quantity of shipyards under construction are 10 and 15 areas that are defined as shipyard investment areas of the same date mentioned above. The Covid-19 pandemic, within the the Global Economic Crisis, affected the Shipbuilding Sector adversely as well as many other sectors. The decrease in the order books caused a downfall both in employment and new investments, so most of the shipyards cancelled or postponed their modernization projects.

Graph 32. 2002 / 2021 Shipyards Under Operation



Source: Ministry of Transport and Infrastrucure 03/2022

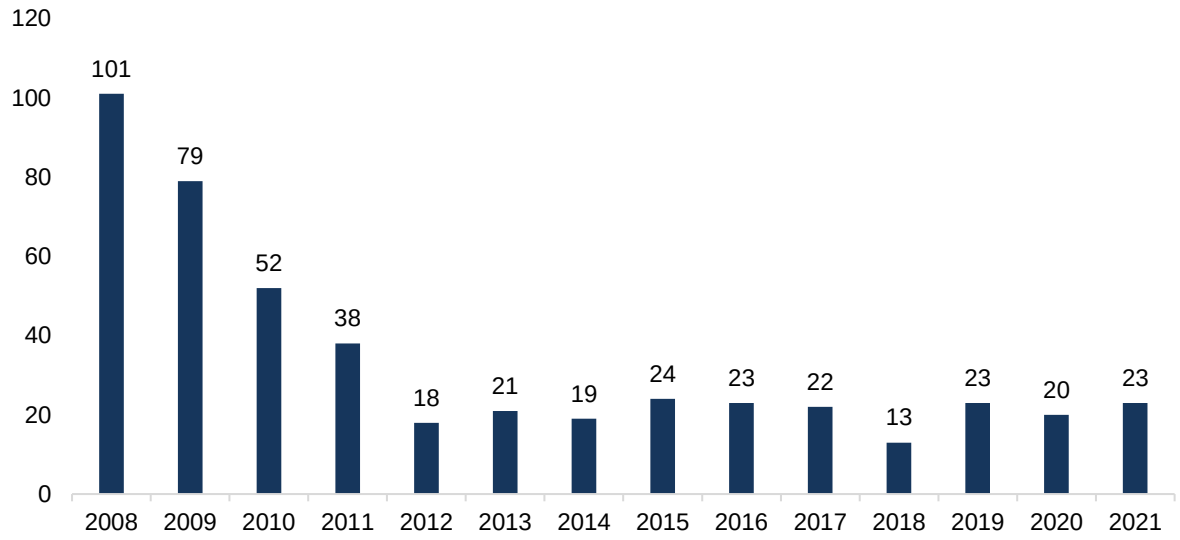
Shipbuilding industry is a branch of heavy industry which provides;

- Progress in sub-industry
- Increase in employment and the population of the neighbourhood
- Rising the standards of quality of sub-industry
- Increase of qualified productive power
- Progress in growth and strength of regional trade
- Rising the living circumstances and the cultural level of labour
- Employment in ratio 1 to 7 including sub-industry.

In 2021, 23 ships DWT of 100.793 tons have been delivered.

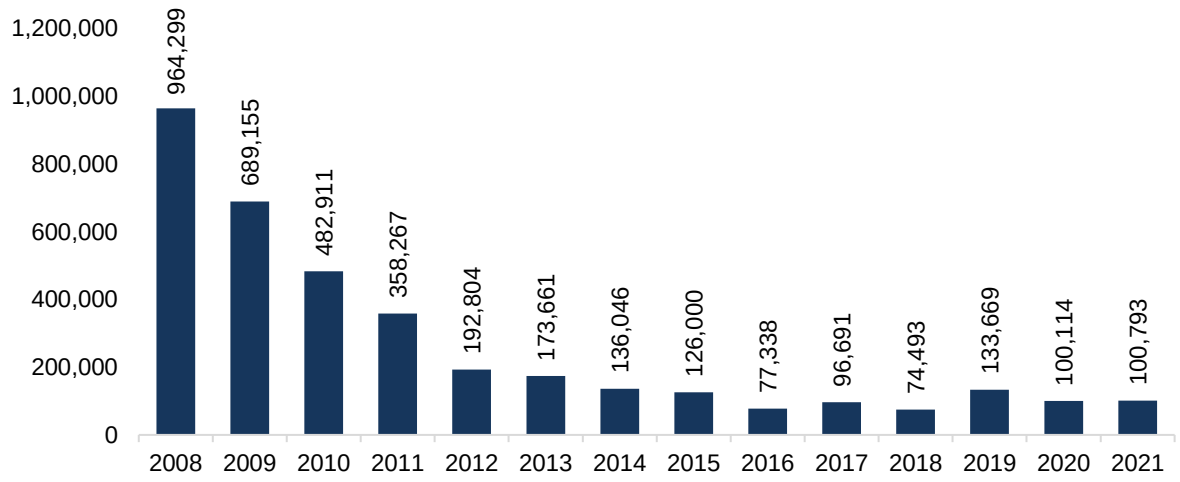
Some of the operative shipyards in Turkey continue the modernization and extension operations but on the other hand, due to the global economic crisis, some of them suspend or cancel their modernization or extension projects because of the sanctions applied by the banks on the shipyards.

Graph 33. Number of Ships Delivered Between 2008-2021



Source: Clarkson Research Services 03/2021

Graph 34. DWT of Ships Delivered Between 2008-2021



Source: Clarkson Research Services 01/2021

The short-term shipbuilding market outlook appears positive, with stronger newbuilding interest having emerged and many yards now holding significant forward orderbook cover. However, some impacts could be seen from stronger newbuild pricing and ongoing uncertainty around fuelling and technology choices. Nevertheless, looking ahead, shipping's Fuelling Transition is likely to drive significant fleet renewal and ordering volumes into the longer-term.

Having faced a range of Covid -19 related imapacts for much of 2020, the shipbuilding market has improved significantly into 2021. In the first eight months of the year, 1,060 vessels (c.1,000+ GT) of 85.6 m dwt and 63.7 m GT were reported ordered globally, the strongest start to a year since 2014. On an annualised basis, contracting is equivalent to more than double the 2020 level in dwt and GT terms, driven mainly by the dramatic surge in containership contracting since Q4 2020.

In Jan -Aug 2021, global shipyard output reached 1,020 ships (c.1,000+ GT) of 60.7 m DWT and 22.6 m CGT. Delivery volumes recovered quickly from Covid-19 related impacts, and in

2021 output is forecast to remain relatively steady y- o -y in dwt terms and rise 13% in CGT terms. Delivery ‘slippage’ of vessels has declined in the year so far, with ‘non-delivery’ of the start -2021 orderbook currently at just 12%.

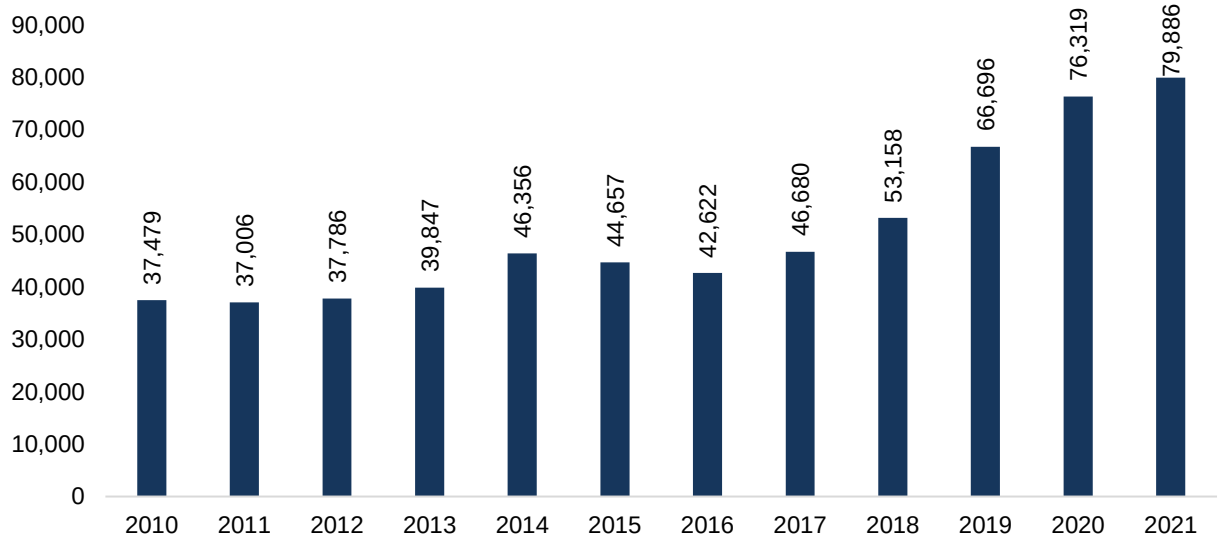
During the Covid-19 pandemic in 2020, it is evaluated that a total of 388 ship orders of 23.0 million DWT (1,000 GT and above) were taken in the first eight months and a 49% decrease was observed in the DWT scale compared to the previous year in the world. Deliveries were also affected, particularly in the first half of the year, due to travel disruptions, equipment supply problems, shipyard closures and financial stress on shipbuilders.

It has been reported that 827 ships of 59.7 million DWT (1,000GT and above) were delivered in the January-August 2020 period, showing a 13% decline compared to the same period of the previous year, but still close to 2018 levels.

According the report which was published by the General Directorate of Shipyards and Coastal Structures, the figures for the first quarter of 2020 in our country;

- An average of 33% loss of workforce is experienced,
- 85% of the design / production re-scheduling obligation has arisen,
- The activity intensity of shipyards has decreased by 54% on average,
- Shipyards' contracts for March have mainly decreased by more than 30%,
- It is determined that our shipyards are experiencing supply and liquidity problems.

Graph 35. Employee Numbers in Turkish Shipyards by 2021

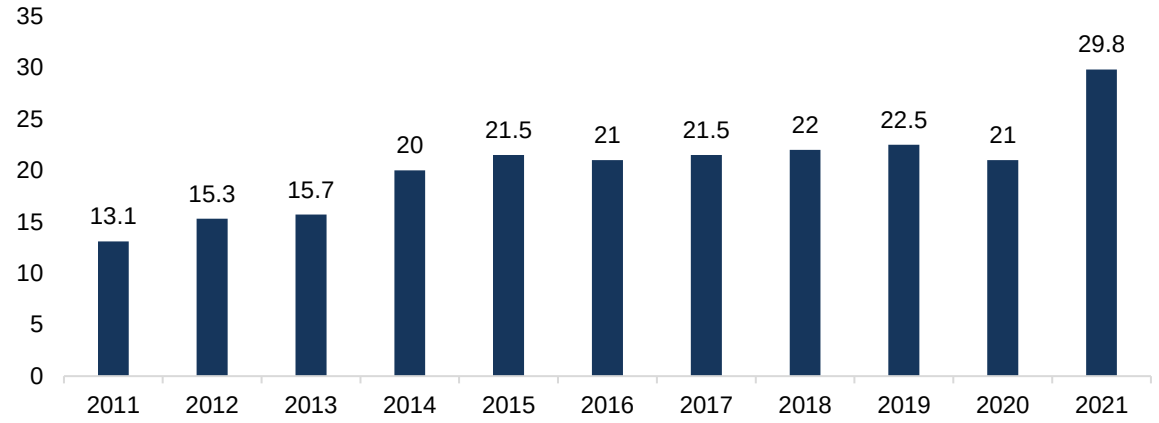


Source: Ministry of Transport and Infrastrucure 08/2020

Most of the ships constructed in Turkish shipyards are built for export. Especially between 2002-2009, almost the total amount of these ships were exported to the EU member countries.

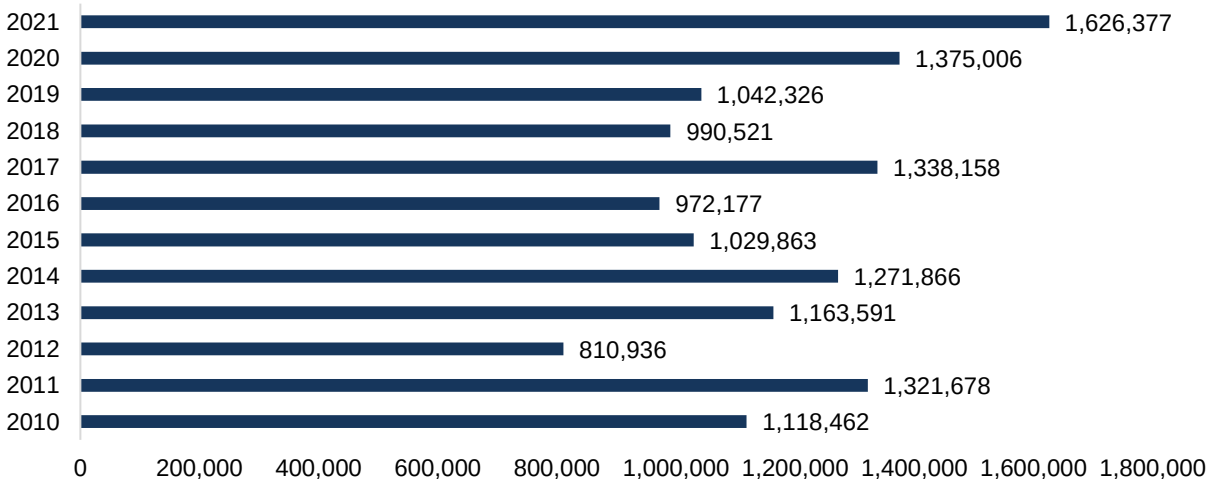
By the end of 2012, orders in our yards were decreased to 0.5 million DWT. Due to the lack of new orders, the shipyards are now mostly concerned, with repair and maintenance facilities. In 2013, in Turkish shipyards 15,755,206 DWT of repair and maintenance had been done. As of 2014, it was approximate 20,000,000 DWT and in 2020 21,000,000 DWT. In 2021, it raised up to 23,500,000 DWT.

Graph 36. Repair and Maintenance Facilities According to Years 2011-2021



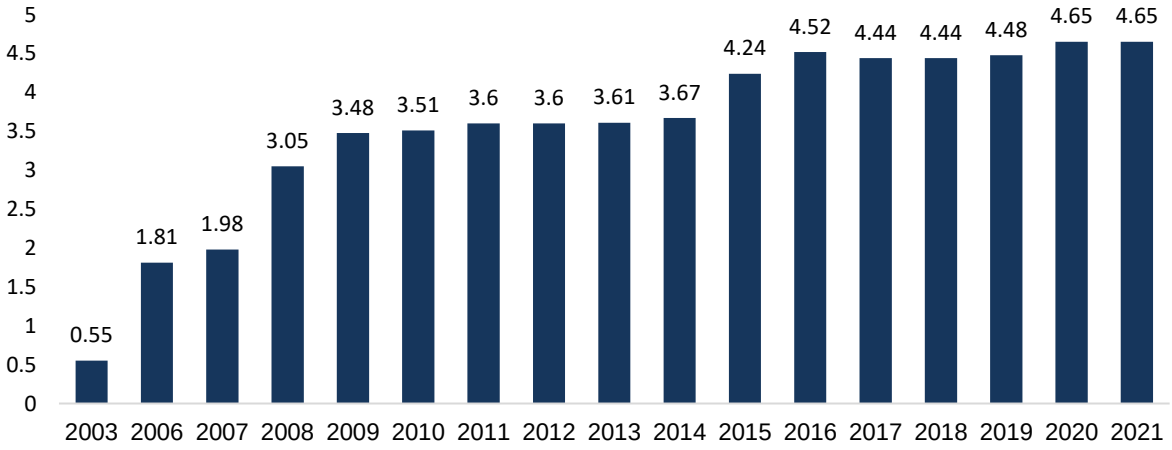
Source: GİSBİR Turkish Shipbuilders Association 03/2022

Graph 37. Export Figures of Turkish Shipbuilding Industry (2010-2021)



Source: Ship and Yacht Exporters Association (e-birlik.net)

Graph 38. Shipyards Project Capacities Between 2003-2021 (Million DWT)



Source: Ministry of Transport and Infrastrucure 01/2021

In 2002, our shipyard's capacity was 550,000 DWT. In 2020 it has reached up to 4.65 million DWT which means a growth more over 6 times than 2002.

As of March 2020, 32 floating docks and 10 dry docks are operative in Turkey

Table 48. Floating and Dry Docks in Turkey

NO	City	Operator	Floating /Dry Dock	Dimensions	Lifting Capacity (Tons)
1	İstanbul	Dentaş İnşa ve Onarım SAN. ve A.Ş.	Floating Dock	128x30 m	5,000
2	İstanbul	Gisan Gemi İnşa SAN. ve A.Ş.	Floating Dock	167x34 m	9,000
3	İstanbul	Çeksan Gemi İnşa Çelik Kons. SAN. ve TİC. A.Ş.	Floating Dock	130x29 m	7,000
4	İstanbul	Yardımcı Gemi İnşa A.Ş.	Floating Dock	155x36 m	8,500
5	İstanbul	Kuzeystar Shipyard	Floating Dock	217,5x14,81 m	80,000
6	İstanbul	Kuzeystar Shipyard	Floating Dock	197x39,6 m	45,000
7	İstanbul	Torlak Denizcilik SAN. ve TİC. A.Ş.	Floating Dock	67x28,4 m	7,500
8	İstanbul	İstanbul Denizcilik Gemi İnşa SAN. ve TİC. A.Ş.	Floating Dock	93x28 m	4,200
9	İstanbul	Snr Gemi İnşa Sanayi A.Ş.	Floating Dock	129x38 m	8,600
10	İstanbul	Desan Deniz İnşaat Sanayi A.Ş.	Floating Dock	172x36 m	19,000
11	İstanbul	Desan Deniz İnşaat Sanayi A.Ş.	Floating Dock	232x52	49,500
12	İstanbul	Desan 5442 Nolu Parsel	Floating Dock	178x36 m	19,000
13	İstanbul	Gemak Gemi İnşaat Sanayi ve TİC.A.Ş.	Floating Dock	233x45 m	28,000
14	İstanbul	Gemak Gemi İnşaat Sanayi ve TİC.A.Ş.	Floating Dock	170x33 m	9,000
15	İstanbul	Hidrodinamik Gemi SAN. ve TiİC. A.Ş.	Floating Dock	115x22 m	2,750
16	İstanbul	Gemsan Gemi ve Gemi İşletmeciliği SAN. ve TİC. LTD. ŞTİ.	Floating Dock	220x45 m	20,000
17	İstanbul	Çindemir Makine Gemi Onarım ve Tersanecilik A.Ş.	Floating Dock	123x28 m	5,000
18	İstanbul	Erkal Uluslararası Nakliyat ve Ticaret A.Ş.	Floating Dock	350x80 m	100,000
19	İstanbul	Torgem Gemi İnşaat San. ve TİC. A.Ş.	Floating Dock	53x20 m	2,500
20	İstanbul	Turquoıse Yat SAN. Aş	Floating Dock	66x27 m	2,500
21	İstanbul	Tersan Tersanecilik ve Taşımacılık SAN. ve TİC. A.Ş.	Floating Dock	130x30 m	7,100
22	Yalova	Beşiktaş Gemi	Floating Dock	230x37 m	22,000
23	Yalova	Beşiktaş Gemi	Floating Dock	382x66 m	70,000
24	Yalova	Tersan Tersanecilik SAN. ve TİC. A.Ş.	Floating Dock	178x35 m	9,000
25	Yalova	Tersan Tersanecilik SAN. ve TİC. A.Ş.	Floating Dock	253x60,9 m	11,370
26	Yalova	Doğruyol Tersanecilik SAN. ve TİC. A.Ş.	Floating Dock	123x30 m	5,500
27	Yalova	Hat-San Gemi İnşaa Bakım-Onarım Demir Nak. SAN. ve TiİC. A.Ş.	Floating Dock	180x30 m	10,000
28	Yalova	Sanmar Tersanesi	Floating Dock	84x34 m	3,500
29	Yalova	Sefine Denizcilik Tersanesi SAN ve TİC. A.Ş.	Floating Dock	240x57 m	11,227
30	Yalova	Yaşarsan Gemi İnşaat San. ve TİC. LTD. ŞTİ.	Floating Dock	183x33	10,000
31	Kocaeli	Uzmar Gemi İnşaat SAN. ve TİC. A.Ş.	Floating Dock	68x38 m	2,000
32	Kastamonu	İnebolu Denizcilik SAN. ve TİC. A.Ş.	Floating Dock	118x29 m	4,500
Total Capacity: 598,247 Tonnes					

Source: Ministry of Transport and Infrastrucure 03/2022

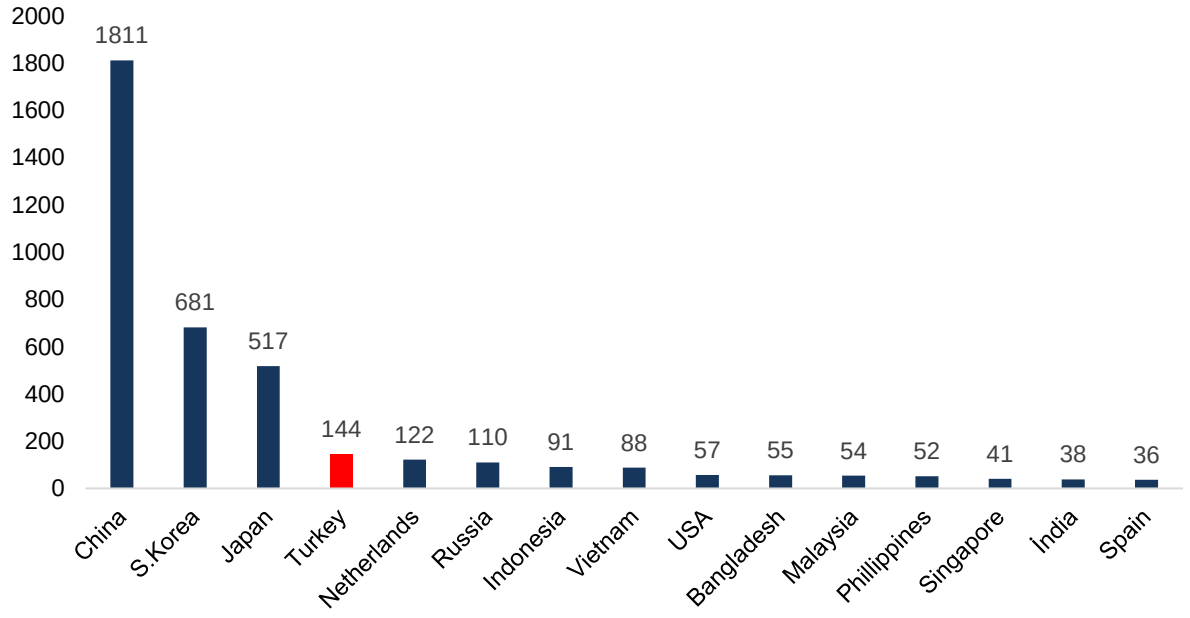
Table 49. Floating and Dry Docks in Turkey

NO	City	Operator	Dimensions
1	İstanbul	İstanbul Şehir Hatları (Haliç)	109x22,5
2	İstanbul	İstanbul Şehir Hatları (Haliç)	81,5x17
3	İstanbul	İstanbul Şehir Hatları (Haliç)	151x16
4	İstanbul	Ursa Gemicilik Bakım Onarım Tersanecilik SAN. TİC. A.Ş.	56x14 m
5	İstanbul	İstanbul Tersane Komutanlığı (Pendik Tersanesi)	300X69
6	İstanbul	Tuzla Gemi Endüstrisi A.Ş.	300x53 m
7	İstanbul	Sedef Gemi İnşaatı A.Ş.	315x50 m
8	İstanbul	Deniz Endüstrisi A.Ş.	210x37 m
9	Yalova	Sefine Denizcilik Tersanecilik Turizm San. ve TİC. A.Ş.	240x40 m
10	Yalova	Beşiktaş Gemi (A-10)	235x40x6,5 m

Source: Ministry of Transport and Infrastrucure 01/2021

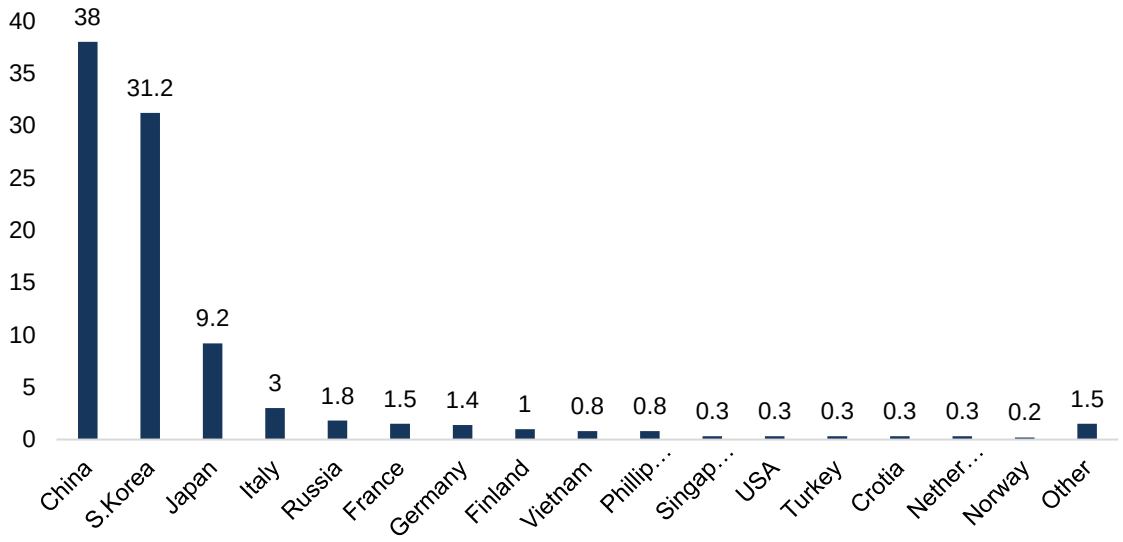
According to quantity, Turkish shipyards are in the 4th place in the world ranking according to quantity.

Graph 39. Orderbook by Builder Country (Quantity)



Source: Clarkson Research Services 03/2022

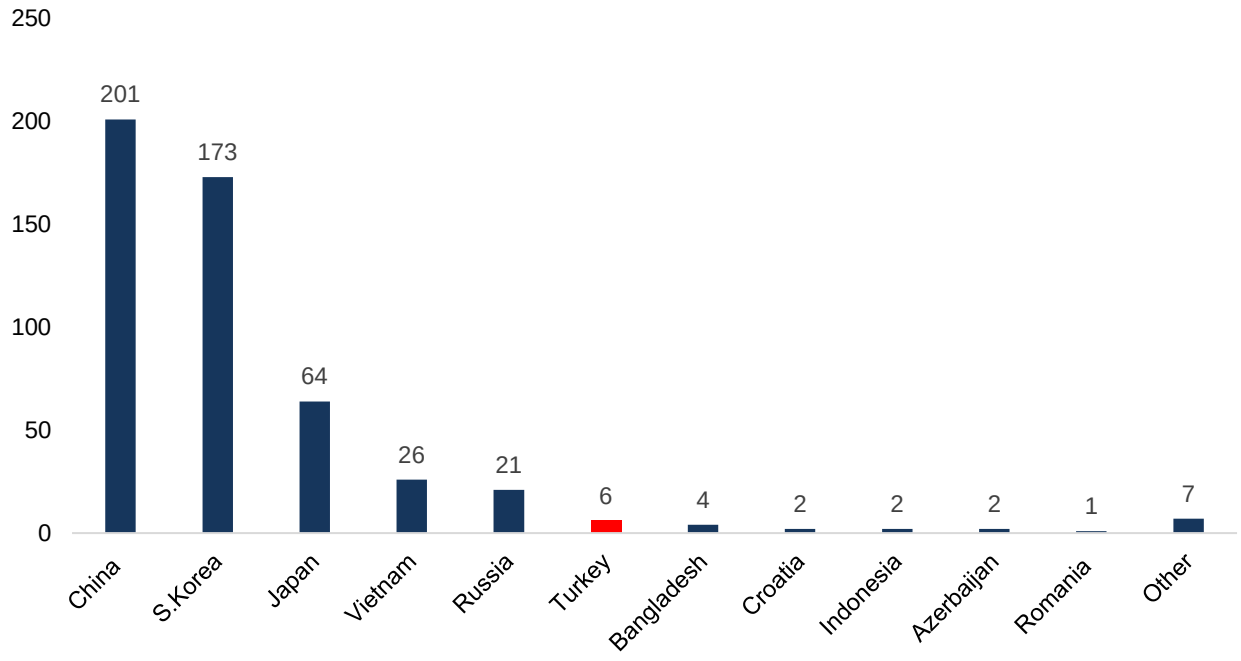
Graph 40. Orderbook by Builder Country (Tonnage - Million CGT)



Kaynak: Clarkson Research Services 03/2022

Our shipyards have a good reputation in building of small and medium tonnage chemical tankers. By March 2022, Turkey was in the 6th place according to quantity among the countries which take tanker orders.

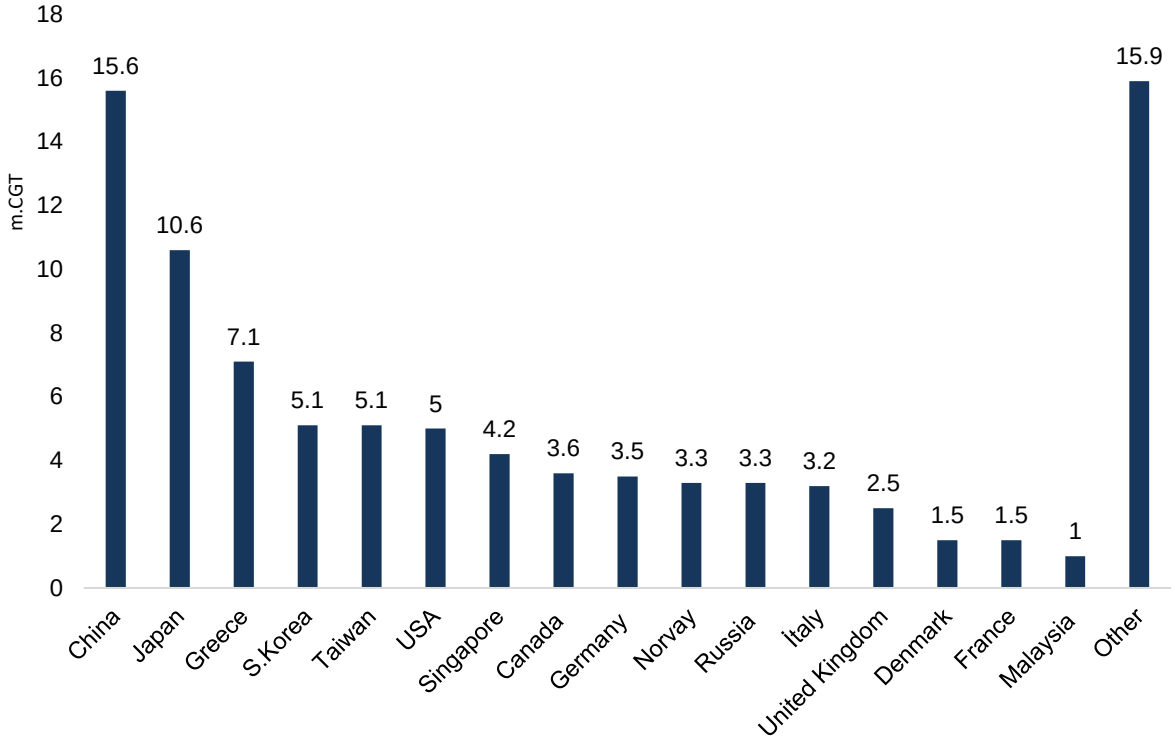
Graph 41. Tanker Orders by Builder Country (Quantity)



Source: Clarkson Research Services 01/2021

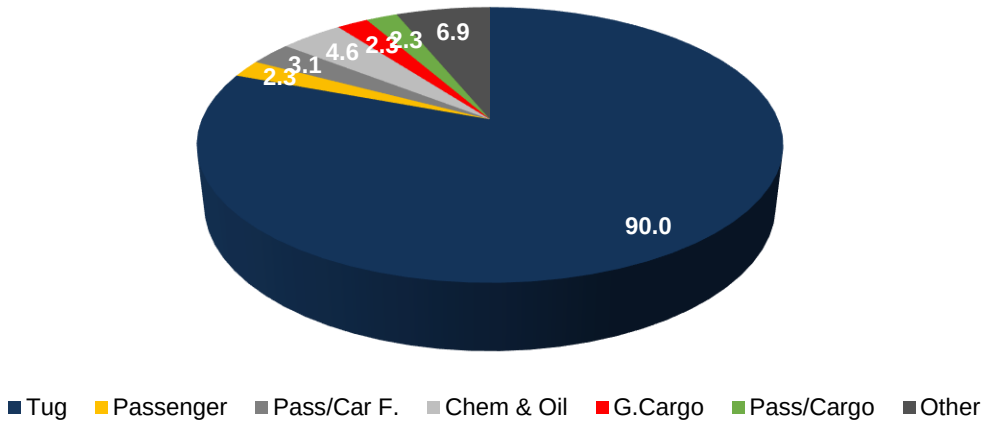
Turkish shipowners worldwide orders consist of 112 ships about 1,575 million DWT as of March 2022.

Graph 42. Orderbook by Owner Country



Source: Clarkson Research Services 03/20212

Graph 43. Distribution of Orders According to Shiptype in Turkish Shipyards



Source: Clarkson Research Services 03/2022

4.2. Defence Industry Projects

Projects about the defence industry have gained a great accelaration within the last few years. Especially with the significiant achivements of the MİLGEM Project, Turkish shipyards have started to take orders from abroad for the naval shipbuilding projects in which high ratio of local industry participation exists. It is known that there are approximately 162 countries which have the naval forces around the World. Turkey is one of the 10 countries which has the ability of designing, building and maintaining a naval ship. The progress in the field of defence industry projects, that was mostly foreign-dependent in the past, can be clearly seen correspondingly

with the level that Turkish Shipbuilding industry has been reached now. Today Turkey's naval needs are provided by the Shipyards of its own country.

Naval platform projects in the defence industry[2];

1. **MİLGEM (National Ship)**

Within the scope of the Project, corvette type navy ship has been realized using national resources for the first time, and thereby, external dependence in ship design, shipbuilding and system integration has been reduced and through the integration of military shipbuilding with private sector ship design, shipbuilding means and capabilities, the private industry has been provided with the necessary know-how, experience and infrastructure.

Around 70% of local industry participation was realized in our project and more than 50 domestic companies have been provided with business opportunities within the scope of the entire project.

Our source of pride, TCG-HEYBELIADA in 2011, TCG-BÜYÜKADA in 2013, TCG-BURGAZADA in 2018 and TCG-KINALIADA in 2019 were launched and started to serving for the Turkish Navy.

There are ongoing works within the MİLGEM Project that to procure 5. Ship of MİLGEM that will be, unlike the first four corvette class ships, it will be frigate class. Conctract for the procurement of the 5. Ship which is the first ship in this concept has been signed between SSB and STM A.Ş. as of 27th of September 2019, the Project calender has been launched.

2. **Multi-Purpose Amphibious Assault Ship (LHD)**

The Multipurpose Amphibious Assault Ship (LHD) will be utilized in the Aegean, Black Sea and the Mediterranean operational areas, and if necessary, the Indian Ocean (north of the Arabian Peninsula and west of India) and the Atlantic Ocean (west of Europe and northwest of Africa).

The Multipurpose Amphibious Assault Ship, the TCG ANADOLU, can transport one amphibious battalion as well as carrying the necessary combat and support vehicles to the crisis regions without the support of the main base, taking part in landing operations with the landing vehicles it carries in its well-deck and providing the opportunity for the heaviest NATO helicopters in its inventory together with the tilt-rotor Osprey aircrafts to take part in day and night operations with its flight deck.

Additionally, the TCG ANADOLU on which tactical aircraft capable of Short Take Off and Vertical Landing (STOVL) like F-35B can deploy will be able to transform the regional force projection (transfer) capability of the Republic of Turkey into a medium-scale global force projection capability. The TCG ANADOLU will have an infirmary/hospital including an operating room, x-ray equipment, dental treatment units, intensive care and infection rooms with a

[2] Based on the information of Presidency of The Republic of Turkey Presidency of Defence Industries web site. (https://www.ssb.gov.tr/WebSite/contentlist.aspx?PageID=88&LangID=2

capacity of at least 30beds and will be able to serve as a hospital vessel in humanitarian operations.

The Multi-Purpose Amphibious Assault Ship is planned to be built with a total/full displacement of 27,436 tons, 231 meters in length and will be the largest naval platform in the inventory of our Armed Forces.

3. Amphibious Ship (LST)

The main mission of the Landing Ship Tank (LST) is amphibious operations, vehicles, and equipment with unit transport and fire support. In addition to contributing to operations and logistics missions with advanced communications, electronic and command control facilities, the vessels are equipped with facilities and capabilities to carry out natural disaster relief missions when necessary.

The LST amphibious ships, built as a mono hull, displacement type with all-steel construction, have full personnel protection against nuclear, biological and chemical attacks, as well as a helicopter platform to allow the landing and take-off of a 15-ton general purpose helicopter.

While the construction of the first ship, the TCG-BAYRAKTAR, was realized with 70.68% domestic industry participation, the share of SME's in domestic industry participation was approximately 48%.

The second vessel in the program, the" TCG SANCAKTAR", is planned to be delivered to the Turkish Naval Forces in 2017 upon the completion of sea acceptance tests.

4. Submarine Rescue Mother Ship (MOSHIP)

The building of the TCG ALEMDAR Submarine Rescue Mother Ship (MOSHIP) started in 2011 and it has the most advanced technologies in the world.

MOSHIP will provide life support to the personnel of a damaged submarine with the National and NATO deep water rescue vehicles and will enable the rescue of submarine personnel up to 600-meter depth as well as undertaking surface ship rescue missions, underwater operations and wreckage removal work.

Despite the fact that its main mission is to save the crew from a sinking submarine, our ship is equipped to detect very deep underwater vehicles (submarines, airplanes, ships) and can save all personnel by providing life support up to 72 hours and 600-meter depth.

5. Coast Guard Search & Rescue Boat

Coast Guard Search and Rescue Boats are designed to carry out important missions such as:

1. Search and rescue missions under turbulent weather conditions on our surrounding seas.
2. Prevention of sea smuggling and illegal immigration.
3. Conducting inspections for environmental and marine pollution and preventing illegal aquaculture fishing.

Another goal of the project is to provide private sector shipyards with design competence and building capability in the field of military shipbuilding.

6. New Type Patrol Boat (YTKB)

With regard to the requirements of the Naval Forces Command, 16 boats are to be procured to meet the mission, surveillance, patrol and naval defense mission (DSH) functions on the straits, bases, harbor approach waters and areas close to the shores as well as contributing to base and port defense mission functions.

Within the scope of the Project, preliminary and final deliveries of all New Type Patrol Boats have been completed. Contracting activities will continue until March 2018.

7. New Type Submarıne Project

Within the scope of the Project, based on the need of Turkish Naval Force, to meet Submarine Operation Concept criterion, it is aimed to construct 6 submarine with air independent propulsion system with maximum participation of Turkish industry at Gölcük Shipyard Command. These submarines will be equipped with modern command systems, due to the ability of submergence for a longer period than its peers will give our Turkish Naval Force a great advantage in terms of Submarine Operation Concept.

Construction of the first 4 submarine has begun. At the begining of 2022 the first submarine, at the begining of 2027 the last submarine are planned to be delivered to Turkish Naval Force.

Using the products of our local companies for the first time on submarine platform is supported in the scope of the Project, within this framework our industry has been ensured to take part in many fields including submarine design capability.

8. Barbaros Class Frigate Half-Life Modernization Project

Within the scope of the Project, current war systems will be replaced by the new and advanced systems developed locally and nationally by Aselsan – Havelsan Partnership in accordance with the requirements of the necessities of the time for the 4 BARBAROS Class Frigate registered in the Turkish Naval Force’s inventory.

It is planned to use weapons and sensor systems developed before or for the first time in our country, and within this scope, foreign source dependency in terms of combat systems can be reduced to a minimum in the Project scope.

The modernization of the first ship will be completed and the ship will commence service in first quarter of 2022.

9. Preveze Class Submarine Half-Life Modernization Project

Within the scope of the Project, current war systems will be replaced by the new systems developed locally and nationally by STM, Aselsan and Havelsan Partnership in accordance with the requirements of the necessities of the time for the 4 PREVEZE class submarine registered in the invertory of Turkish Naval Force.

It is planned to use weapons and sensor systems developed for the first time in our country, and within this scope, foreign source dependency in terms of combat systems can be reduced to a minimum in the Project scope.

The modernization of the first submarine will be completed and the submarine will commence service in 2023.

10. Seismic Research Vessel

ORUÇ REİS Seismic Research Vessel, which was delivered to General Directorate of Mineral Research and Exploration (MTA) in 2017, has the ability to conduct 2-dimensional and 8x8 configurations of 3-dimensional seismic research. ORUÇ REİS has advanced technological equipment that can conduct geophysical, geological, geotechnical, bathymetric, hydrographic, oceanographic and hydroacoustic research and carry out sampling studies.

Considering the strategic dimension of seismic, natural gas and oil research, the national research ship, which is critical in terms of protecting our rights on natural resources, and conducting research on economic assets in our seas, was acquired with ORUÇ REİS.

11. Control Boat Project

Based on the needs of the Turkish Coast Guard Command and Directorate General of Security, it is aimed to supply 122 Control Boats in order to provide safety and security at coastal seas, strategic facilities, ports and terminals to fight against smuggling, as well as the irregular immigration, support search/rescue activities in the regions where migration incidents are intensified.

In the Control Boat Project, which aims to realize more than 50% of Small and Medium Enterprises' share, the maximum number of marine platforms will be provided on a project basis and will be made available to the needed authorities.

The construction activities of the Control Boat, which is designed with national facilities as a V-section, single hull sliding-type boat, will be continued, and the temporary acceptance of the first boat will be made with the operational boat acceptance test in 2022, and then the project will continue with the mass production activities and their temporary acceptance.

12. Turkish Type Assault Boat Project

With this project, a domestic and national approach will be put forward, starting from the design, which is the first phase, until the production of assault boats is completed, with the experience gained from the projects carried out in our defence industry sector under the responsibility of the Defense Industry Presidency.

In this context, the design of a Turkish Type Assault Boat, which will be equipped with effective weapons and sensors as well as high speed and manoeuvrability, will be completed.

4.3. Yacht and Boat Building Industry

Yacht and boat building is one of the most important sectors with its high accretion value, high export ratio and it provides employment. This industry is the combination of the sectors in yards dealing with ironing, painting, electric-electronic, textile, decoration etc.

Yacht and boat building industry is quite different from the shipbuilding because of its concept, scope and technology. In shipbuilding industry long term investments and big coastal areas are needed for production, but in boat & yacht building, relatively less investments, areas and time are needed. Boat&yacht building comparatively does not need very big investments but has a big accretion value.

Turkey; with its beautiful coasts, cultural and historical resources, has a great market potential not only for yachts but also especially for mega-yacht tourism. Inclusion of mega-yacht mooring places to the projects, which are planning to be constructed in Ataköy and Zeytinburnu, will be a great prestige and income for our marine tourism.

To summarize the advantages of our boat&yacht building industry, the main positive aspects are;

- Educated and competent labour
- Production quality in accordance with international standards
- Reasonable costs
- Adequate sub industry with quality
- Technology basis production
- Closeness to theinternational markets
- Appropriate climate
- Our country’s potential in boat&yacht building

Main disadvantages are;

- Heavy taxes of special consumption, value added and motor vehicle collected from boats.
- Long bureaucratic procedures during the registering operations.

Turkey was in the third place in global order book by the total length of 3594 meters at the end of 2017. By 2019, moved to fourth place with the total length of 3000 meters. And in the February 2020, Turkey back in the 3rd position in world ranking of order and under construction of yachts with 3071 meters of length. By 2021, Turkey keeping its position in the 3rd position with the total length of 3497 meters.

Table 50. Top Builder of Superyacht Projects on Order in 2022

Rank	Country	Total GT	Number Of Projects	Avarage GT
1	İtaly	184,845	523	353
2	Germany	103,371	20	5,169
3	Netherlands	95,552	75	1,274
4	Turkey	44,022	91	484
5	Norway	20,439	2	10,22

Source: Boat International (2022 Global Order Book)

4.4. Sub-Industry

In parallel with to the improvements of the recent years, theTurkish sub-industry is in progress, but still some of the items are imported by the shipyards due to the lack of production. Sub-industry which is 20% percent of the ship's price, is one of the most important branches in the shipbuilding industry. It has the highest employment value in sub-sectors. Main problem of sub-industry in Turkey is to be made by local and small enterprises which cause problems about standardizing and approving the products.

Turkish sub-industry regarded as one of the best in supplying anchor, chain, bollard, electric cables, and hydraulic units, but in electronic equipment especially in navigational systems, due to their producers are a few worldwide, sector needs to obtain them from the import resources. Steel sheet production in Turkey can also meet onlythe small amount of the requests.

Turkish Sub-industry is able to produce;

- Anchor, chain, bollard, locking equipments
- Windlass and equipments
- Valves and Central heating Systems
- Electric Panels and Tables
- Fire Fighting Systems
- Pumps
- Isolation Equipments
- Pipes
- Refrigerated Units
- Hatch Covers
- Diesel generator
- Boiler
- Carpenter and furnishings
- Paint

Main items imported in sub-industry can be summarized as;

- Sheet steel/iron and profiles
- Holland profiles
- Telecommunication systems
- Rudder Systems
- Bow /Stern thrusters.

Sub-industry creates employment as 1 to 3. In 2002 employment in sub-industry was 30.000 people and it raised to 103.500 but unfortunately due to the global economic crisis it decreased to 57.537 by the end of 2009. By August 2020, employement in the sub-industry declared to be 97.250 persons.

CHAPTER V

SHIP RECYCLING INDUTSRY

5. SHIP RECYCLING INDUTSRY

Aliağa region, located in the city of İzmir, is in the leading position for ship breaking and recyling activities with 23 operative facilities. Ship Recylcling Industry is a part of maritime sector that finds itself between the withdrawal of ships which have completed their economic lives and the replacement of them with the ones based on new technologies, environmentally friendly, high operating efficient, reducing the risks of marine operations.

When scrap steel was recovered it's estimated that,

- Energy saving ratio is 74%, raw material resources preserved by 90%
- 40% less water consumption
- 76% less sewage pollution
- 86% less air pollution
- 97% less mine residue

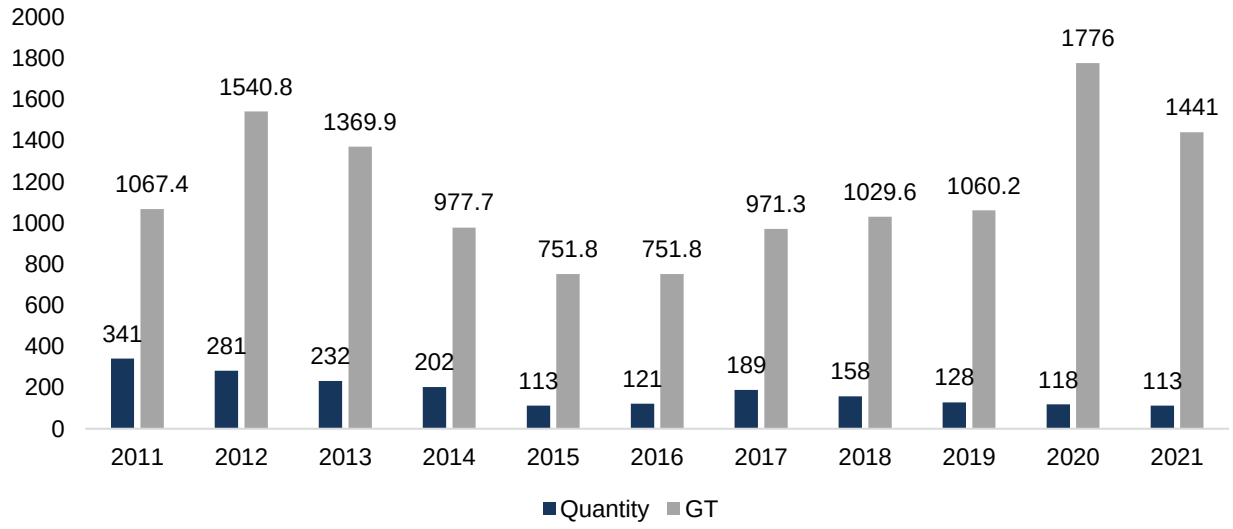
observed.

Generally a ship's useful economic life period ranges between 20-35 years.

The main advantages of Turkey's ship recycling industry which has a prestigious place in World ranking can be summarize as follows:

- Qualified labour force and closeness to the Europe Market
- Within the Mediterranean basin Turkey is the only country with ship recycling industry
- Turkey is the only OECD Member country which has ship recycling industry
- There is a demand in the country for the goods obtained by recycling
- Entrepreneur being of Turkish bussinessman and skilled workers
- Advantages by the Basel Agreement as an OECD member country
- Position in EU Ship Recyclers' List with the most number of facilities

Graph 44. Turkey's Ship Recycling Values by the Year



Source: Ministry of Transport and Infrastrucure 03/2022

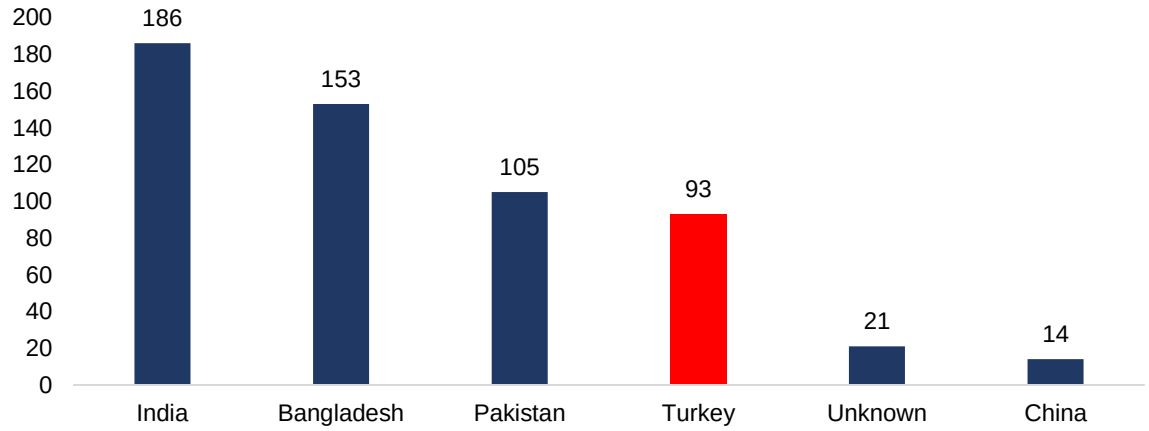
Ship Recycling Industry makes positive impact to the dynamics within the maritime sector. By balancing the fleet tonnage it also effects the freight index. Provides new orders for shipbuilding industry. As a labor-intensive sector, Turkish ship recycling industry with the technical supports and advertising activities to raise international recognition, provides direct emplyoment

opportinity to 1400 persons and several times more by being a supplier and sub-contractor of iron-steel industry as of 2020.

By the EU Ship Recycling Regulation (EU SRR) which has came into force on 31 December 2018, its forbidden that EU flag vessels can not be recycled in the facilities that isn't in the list of "European List of Ship Recycling Facilities." At first Turkey entered the above mentioned list with 3 facility then it raised up to 8 in 2020.

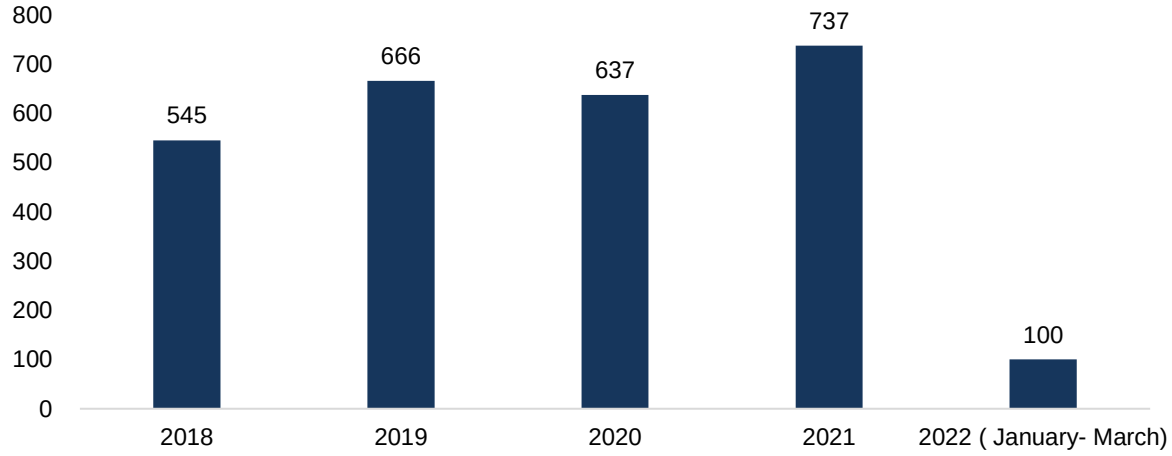
Accoardind to global data, Turkey is in the 4th place in ranking according to quantity by the end of 2021.

Graph 45. Global Ship Recycling According to Quantity (Quantity)



Source: Clarksons Research Services Limited

Graph 46. Recycled Ship Numbers by Years



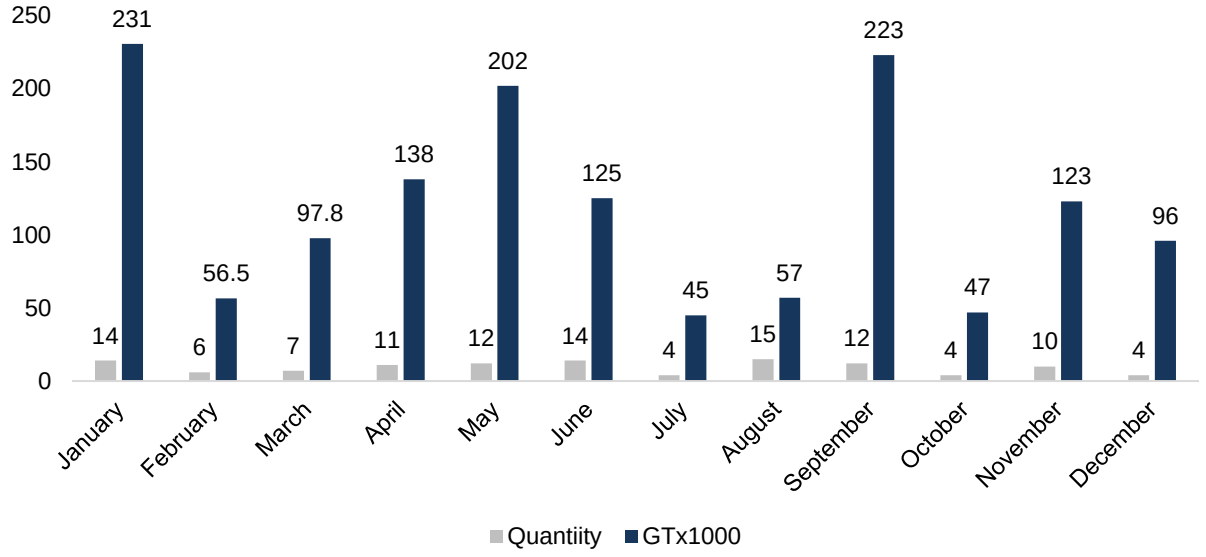
Source: Clarksons Research Services Limited

Like all other participants in the maritime sector, ship recycling has also effected from the Covid-19 global pandemic. In parallel to hygine and social distance precautions, employee numbers in ship recylcing industry reduced and it's estimated that the related sectors employees declined by half when compared to the pre-pandemic period.

In the first three months of the year 26 ships had been recycled. During this period scrap material needs of the iron-steel factories among the region have been supplied. When its compared to the same preiod of the previous year 202,000 tons of decrease was observed.

By the end of 2021, Turkey's ship recycling facilities achieved to recycle 113 ships with the tonnage of 1,441 GT.

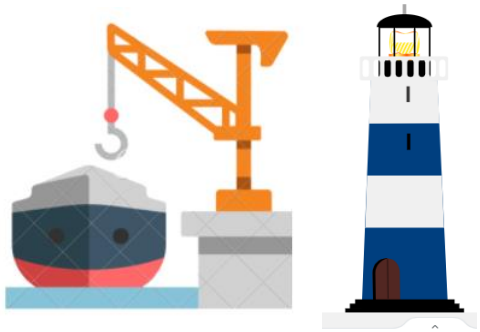
Graph 47. Ship Recycling by Months in Turkey During 2021

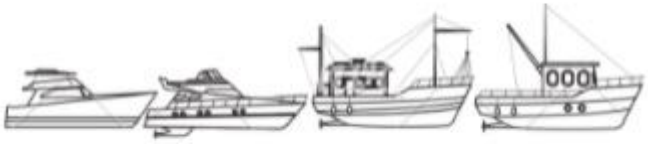


Source: Ministry of Transport and Infrastrucure 03/2022

CHAPTER VI

COASTAL STRUCTURES





6. COASTAL STRUCTURES

6.1. General Situation of Coastal Structures in Our Country

As of September 2021, there are a total of 951 coastal structures in our country, which have different functions and are active, including port and pier facility, marina / marina / berthing area, shipyard, boat building site, dockyard, fishing shore structure and ship dismantling facility. In recent years, there have been great changes and developments in the said coastal structures and especially in our ports.

In the emergence of this development in our coasts; Certain economic developments and industrial demands and some legal regulations have had a significant impact. Especially after 1997, with the opening of private port investments on the coasts, there was a demand explosion in this area. In the process up to the present, apart from the privatized public ports, there has also been the expansion of port areas with new port areas and expansion projects of piers in industrial zones on the seaside such as Kocaeli, İskenderun and Aliağa.

In 2010, a Transport Coastal Structures Master Plan study was carried out. It has revealed the port needs analysis on the coasts of our country and the 3 main port projects (Filyos, Çandarlı, Mersin) planned by the Ministry of Transport and Infrastructure at the point of basic recommendations.

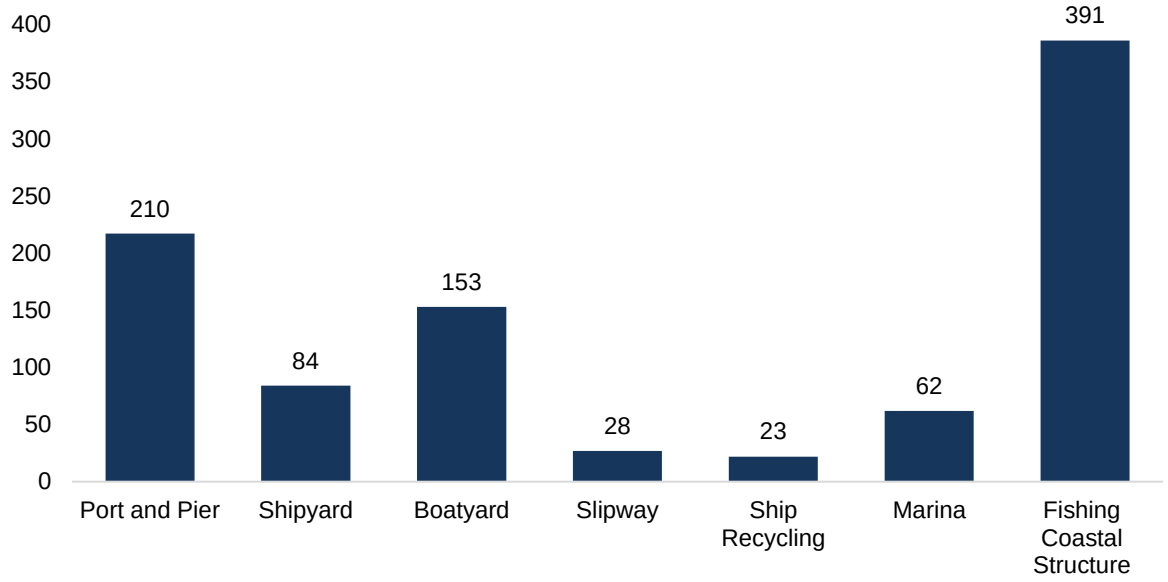
On the other hand, in order to determine the situation for the fishermen's shelters in our country and to complete the technical deficiencies that our fishing shelters need, the "Fisherman's Shelters Needs Analysis Study" was prepared by the Ministry and an inventory was made.

The increasing tourism potential of our country and the policies created to increase the share of yacht tourism in the Mediterranean basin increase the number of marinas.

In the maritime sector, marinas / marinas are built by the Ministry of Transport and Infrastructure with the Build-Operate-Transfer Model, and many marina / marina projects are being prepared by private sector investors.

As of 2021, applications have been made to the General Directorate of Shipyards and Coastal Structures for 23 marina/yacht berthing projects, and it is anticipated that approximately 6000 additional boat mooring capacity will be gained with the implementation of the projects.

Graph 48. Existing Coastal Structures in Our Country



Source: Ministry of Transport and Infrastructure (2021), Reached Accessed Turkey Report

In order to protect our coasts and ensure their effective use, primarily; The Ministry of Transport and Infrastructure has started work to enable the pipeline and buoy systems, which are densely located in Samsun- Kirazlık, Ambarlı, Antalya, Mersin and Tekirdağ regions to handle fuel products, to be handled with separate pipelines over a common platform/terminal system. Study-project studies for the region continue

The studies carried out were also shared with the relevant institutions, and the support of the Ministry of Environment and Urbanization, the Ministry of Treasury and Finance and the Ministry of Commerce was received in this regard. In order to make the people of our country love the sea more and to enable our people to benefit more from the sea, a "Study of Safe Shelters and Mooring Systems on Our Coasts" was carried out, especially on the Aegean and Mediterranean coasts where the occupancy rate of marinas is high, and then for the whole of our country, and as a result, private boat owners It is aimed to solve the biggest problem of binding, which is the problem.

To create the legal infrastructure for the solution of some of the shelter and mooring needs in our country and to facilitate the process, the definition of "vault systems" has been made in the legislation. It has been decreed that the procedures and principles regarding the implementation of these systems will be determined by the work of the Ministry of Environment and Urbanization and the Ministry of Transport and Infrastructure. In this direction, especially in the coastal areas and bays where boat traffic is intense, without hindering the use of the coast for public benefit, in accordance with the safety of navigation, life, property and environment, without being subject to private property, open to public use, providing the necessary criteria in terms of navigational safety and maritime safety. We continue to work on legislation for its operation and operation.

6.1.1. Ports

6.1.1.1. Port Investment Projects in Turkey

The North Aegean Çandarlı Port is planned as a transfer center in the combined transportation chain arising from the potential traffic between Europe and the Middle East. The foundation of Çandarlı Port, planned as Turkey's largest and Europe's 10th largest container port, was laid on 15.05.2011 and work started.

First stage;

- 1st stage 1 Million TEU/Year,
- 2nd stage 2 Million TEU/Year,
- 3rd stage 1 Million TEU/Year,

It is aimed to reach a total capacity of 4 million TEU/Year.

In project scope;

- 480 m stone filled breakwater,
- 1,020 m of which is steel piled breakwater,
- A total of 1,500 m of breakwater has been manufactured,
  As of 31.01.2014, its provisional acceptance has been made.

Work is underway to bid for the 1st Stage of the 2,200 m long and 1,000 m wide berth to be built with the Build-Operate-Transfer Model (BOT).

Filyos Port Project is aimed at realizing a port complex that will provide combined transportation services on the north-south axis in the Western Black Sea region, and is also a Regional Development Project due to the Industrial Zone activities planned to be established in its back area. It will create an important acceleration in the development and development of the Western Black Sea provinces. The threat faced by the Straits due to increased ship traffic will decrease.

It will serve various types of cargo such as ore, container and fuel oil and will have a capacity of 25 million tons/year. Infrastructure Construction of the Port was completed at the end of 2020.

In project scope;

- 2450 m long main breakwater,
- 1370 m long secondary breakwater,
- 3000 m long (-14 m and -19 m deep) docks,

Approximately 20 million m³ of dredging, backyard filling and fortification works are included. The construction period of the mentioned construction is foreseen as 4 years.

Infrastructure constructions will be carried out with the general budget possibilities. It is aimed to realize loading-unloading and equipment supply for superstructure facilities (hangar, warehouse, business buildings, loading-unloading buildings, etc.). In addition, studies have been initiated for the rail-road connection of the port.

Port and Coastal Structures with Ongoing Survey Projects:

- Kanal Istanbul Survey Project and Consultancy Work
- Karacaali Pier Survey Project Works
- Karacabey Bayramdere Malkara Coastal Fortification and Coastal Erosion Prevention Spurs EIA and Zoning Plan Study
- Esenköy Coastal Fortification and Sand Trap Spur Survey Project Works
- Mersin Erdemli Kızkalesi Pier Survey and Project Works
- Terme Sakarlı Coastal Fortification Survey Project Works
- Çıldır Lake Berths Survey Project Works
- Rize Fener Boğaz Neighborhood Fill Plan and Fortification Survey Project Works
- Rize İslampaşa Neighborhood Fill Plan and Fortification Survey Project Works
- Karasu Maden Stream Outlet Spurs Survey-Design Works
- Doğanyurt Coastal Fortification Survey and Project Works
- Kozlu Beach Coastal Structures Survey and Project Works
- Atatürk Dam Lake Ferry Berths Survey Project Works
- Antalya Float Facilities Transformation Survey Project Work
- Marmara Island Transportation Port Survey Project Works
- Karabiga Port and Fisherman's Shelter Survey Project Works
- Filyos Coastal Fortification Survey and Project Works
- Ephesus Ancient City Canal Exit Structures Survey Project Work
- Dikili Salhane Locality Small Boat Berthing Site Survey Project Works
- Kumluca Adrasan Housing Project Project Works
- Kumluca Mavikent-Karaöz Shelter Survey Project Works
- Demre Çayağzı Shelter Survey Project Works
- İstanbul Yenikapı Cruise Port Survey Project Works
- Demre Cruise Port Survey Project Works
- Mersin Çamlıbel Water Sports and Boat Berth Construction Survey Project Works
- Türkler Shelter Survey Project Works
- Iyidere Coastal Fortification Survey Project Works
- Gallipoli Piri Reis Beach Arrangement
- Van Yüzüncü Yıl University Boat Shelter Survey Project Works
- Ephesus Ancient City Canal Exit Structures Survey Project Works
- Van Police Department Police Boats and Boats Shelter and Berthing Area
- Rize City Hospital Sea Fill Area Survey Project Works
- Bartın Amasra Castle Walls Protection Structure Survey Project Works
- Mersin Çamlıbel Coastal Arrangement Survey Project Works
- Antalya Aksu Stream West Coast Spurs Survey Project Works

Port and Coastal Structures whose Survey Projects were Completed in 2021

- Alaplı Stream Outlet Spurs Survey Project Works
- Yesilyurt Lighthouse Survey Project Works
- Çanakkale Güzelyalı Marine PEM Directorate Housing Site Survey Project Works

- Erdek Pasa Port Balikli Village Pier
- Karacaali Pier EIA, Zoning Plan, Feasibility Study and Final Project Preparation (For existing facility)
- Gallipoli Piri Reis Beach Arrangement EIA and Development Plan Preparation
- Doğanyurt Coastal Fortification Survey and Project Works
- Samsun Terme Sakarlı Coastal Fortification Survey Project Work
- Kozlu Beach Coastal Structures (Etude Project)

Survey Project Studies Carried out within the Scope of the 2021 Protocol

- SG Didim Port Breakwater and Pier Pier Construction Survey Project Works
- SG Çeşme Breakwater and Police Station Construction Survey Project Works
- Coast Guard Iskenderun Group Command Survey Project Works
- Coast Guard Van Lake Group Commands Survey Project Works
- Edremit SG Patrol Commands Survey Project Works

6.1.1.2. Current Status of Ports

The number of ships calling at our ports in 2021 decreased by 4.9% increased to 2020 and reached 51,199. The number of foreign flagged ships calling at our ports increased by 7.4% compared to the previous year, and the number of Turkish flagged ships decreased by 0.7%.

Table 51. Total Number of Calling Vessel, 2019-2021

Months	2019			2020			2021		
	Turkish Flag	Foreign Flag	Total	Turkish Flag	Foreign Flag	Total	Turkish Flag	Foreign Flag	Total
January	1,251	2,574	3,825	1,388	2,913	4,301	1,212	2,796	4,008
February	1,214	2,300	3,514	1,323	2,613	3,936	1,097	2,713	3,810
March	1,550	2,834	4,384	1,319	2,679	3,998	1,182	3,022	4,204
April	1,659	2,854	4,513	1,028	2,571	3,599	1,274	3,108	4,382
May	1,882	2,996	4,878	1,058	2,559	3,617	1,354	3,005	4,359
June	2,003	2,754	4,757	1,216	2,707	3,923	1,340	3,015	4,355
July	2,154	3,090	5,244	1,273	2,802	4,075	1,291	2,913	4,204
August	2,279	2,973	5,252	1,299	2,810	4,109	1,418	3,205	4,623
September	2,120	2,994	5,114	1,329	2,865	4,194	1,274	3,137	4,411
October	1,866	3,261	5,127	1,416	3,092	4,508	1,244	3,114	4,358
November	1,575	2,804	4,379	1,252	2,916	4,168	1,244	3,001	4,245
December	1,438	2,877	4,315	1,321	3,072	4,393	1,190	3,050	4,240
Total	**20,991**	**34,311**	**55,302**	**15,222**	**33,599**	**48,821**	**15,120**	**36,079**	**51,199**

Source: Republic of Turkey Ministry of Transport and Infrastructure

Table 52. Calling Vessel Statistics at Turkish Ports According to the Harbour Masters Area of Jurisdiction

Harbour Master	2019 Total		2020 Total		2021 Total	
	NO. of Ship	Gross Tonnage	NO. of Ship	Gross Tonnage	NO. of Ship	Gross Tonnage
Alanya	69	977,669	20	707,498	19	733,388
Aliağa	5,135	94,156,168	5.356	102,687,486	5783	109,543,467
Amasra	11	11,285	5	4,963	2	1,985
Ambarlı	3,815	96,853,881	3,455	87,045,737	3,453	84,542,039
Anamur	0	0	0	0	1	2,491
Antalya	524	6,233,438	703	7,986,149	748	8,598,254
Ayancık	0	0	0	0	0	0
Ayvalık	830	271,832	62	20,571	15	5,881
Bandıma	1,279	6,325,516	1,059	5,695,379	1,040	5,479,378
Bartın	348	1,181,935	505	1,756,059	512	1,745,879
Bodrum	2,021	770,512	125	31,196	5	70,458
Botaş	914	45,480,079	1,256	46,427,640	1,183	44,188,601

Harbour Master	2019 Total		2020 Total		2021 Total	
	NO. of Ship	Gross Tonnage	NO. of Ship	Gross Tonnage	NO. of Ship	Gross Tonnage
Bozcaada	37	88,562	10	101,339	8	22,838
Cide	0	0	0	0	0	0
Çanakkale	489	3,113,413	457	3,303,032	468	3,364,611
Çeşme	1,946	7,661,991	522	5,312,005	505	4,877,177
Datça	1	1,809	0	0	0	0
Dikili	134	492,392	121	435,420	134	420,434
Edremit	120	58,200	0	0	0	0
Enez	0	0	0	0	0	0
Erdek	24	15,135	9	5,540	56	15,594
Fatsa	34	87,510	38	109,107	37	95,076
Fethiye	474	424,143	73	439,936	73	516,702
Finike	2	29,966	0	0	1	2,659
Foça	0	0	0	0	0	0
Gemlik	3,490	61,173,351	3,308	59,116,408	3504	60,977,094
Gerze	0	0	0	0	0	0
Giresun	100	752,295	150	780,920	154	992,953
Göcek	49	121,649	3	5,994	14	27,972
Gökçeada	0	0	0	0	0	0
Görele	0	0	0	0	0	0
Güllük	910	4,792,159	387	4,114,934	531	5,682,217
Hopa	208	562,154	193	702,131	146	487,989
İğneada	56	92,610	9	13,322	1	6,074
İnebolu	134	333,949	102	324,455	95	321,547
İskenderun	4,259	76,837,289	4,052	76,327,130	4,634	80,686,077
İstanbul	746	7,555,755	654	5,162,848	538	6,227,847
İzmir	1,551	23,089,612	1,660	24,797,800	1530	22,619,154
Karabiga	891	8,813,115	902	9,536,036	940	9,449,840
Karadeniz Ereğli	708	7,485,391	825	8,281,576	883	9,532,736
Karasu	299	2,444,740	394	5,136,976	477	6,115,714
Karataş	1	51,821	0	0	0	0
Kaş	514	77,604	5	804	8	10,259
Kefken	0	0	0	0	0	0
Kemer	0	0	0	0	0	0

Harbour Master	2019 Total		2020 Total		2021 Total	
	NO. of Ship	Gross Tonnage	NO. of Ship	Gross Tonnage	NO. of Ship	Gross Tonnage
Kocaeli	8,714	142,553,602	8,976	146,524,596	9,554	154,977,812
Kuşadası	671	6,363,275	6	77,451	33	1,071,672
Manavgat	0	0	0	0	0	0
Marmara Adası	712	1,082,360	656	1,061,429	791	1,113,540
Marmaris	536	1,608,012	53	115,809	39	2,005,793
Mersin	3,874	81,345,719	3,903	78,899,280	4,122	80,798,905
Mudanya	0	0	0	0	0	0
Ordu	0	0	0	0	0	0
Pazar	0	0	0	0	0	0
Rize	177	560,667	168	558,418	155	530,841
Samsun	2,437	13,815,080	2,830	16,558,339	2,711	16,880,372
Silivri	0	0	7	10,801	2	2,793
Sinop	1	2,457	1	1,949	0	0
Sürmene	6	1,024	5	3,228	3	682
Şile	5	4,232	0	0	0	0
Taşucu	770	5,512,119	723	5,608,135	790	6,309,202
Tekirdağ	2,555	49,645,202	2,541	53,368,023	2712	63,031,782
Tirebolu	70	527,291	53	475,437	50	406,370
Trabzon	501	2,627,649	428	2,633,595	407	2,669,160
Tuzla	698	15,477,393	617	12,871,512	779	15,152,458
Ünye	309	891,478	335	976,017	284	839,965
Vakfıkebir	0	0	0	0	0	0
Yalova	528	7,638,921	472	6,915,714	565	8,847,130
Zonguldak	615	8,191,154	627	7,851,526	704	7,615,241
Total	**55,302**	**796,266,565**	**48,821**	**790,881,650**	**51,199**	**829,618,101**

Source: Republic of Turkey Ministry of Transport and Infrastructure, İMEAK Chamber of Shipping Images

According to the data of the Ministry of Transport and Infrastructure, Maritime Affairs and Communications, 526,306,784 tons of cargo were handled in our country's ports and piers in 2021.

Of the total cargo handled in 2021;

- 29.2% (153,763,658 tons) of export,
- 44.2% (232,633,060 tons) of import,
- 11.8% (61,901,122 tons) of cabotage,
- 14.8% (78,008,944 tons) of it was realized as transit.

Table 53. Cargo Handling Figures at Turkish Port, 2017-2021

Mode of Transport	Flag	2017	2018	2019	2020	2021
Export	Turkish Flag	15,138,335	15,660,122	14,132,161	13,580,911	14,742,145
	Foreign Flag	98,553,733	94,764,513	117,544,417	125,321,912	139,021,513
	Total	113,692,068	110,424,635	131,676,578	138,902,823	153,763,658
Import	Turkish Flag	21,677,485	19,850,109	13,763,576	16,098,249	15,257,051
	Foreign Flag	211,978,539	198,694,711	207,641,236	210,441,223	217,376,009
	Total	233,656,024	218,544,820	221,404,812	226,539,472	232,633,060
Cabotage	Turkish Flag	29,898,010	29,550,554	28,251,017	29,763,556	31,184,349
	Foreign Flag	30,498,069	30,005,291	27,861,707	29,033,828	30,716,773
	Total	60,396,079	59,555,845	56,112,724	58,797,384	61,901,122
Transit	Turkish Flag	55,544,396	63,081,077	64,960,731	60,490,257	62,603,531
	Foreign Flag	7,885,329	8,547,183	10,013,567	11,912,715	15,405,413
	Total	63,429,725	71,628,260	74,974,298	72,402,972	78,008,944
Total	**Turkish Flag**	**199,134,474**	**203,056,266**	**224,888,326**	**229,156,636**	**247,551,538**
	Foreign Flag	**272,039,422**	**257,097,294**	**259,280,086**	**267,486,015**	**278,755,246**
	Total	**471,173,896**	**460,153,560**	**484,168,412**	**496,642,651**	**526,306,784**

Source: Republic of Turkey Ministry of Transport and Infrastructure, İMEAK Chamber of Shipping Images

Table 54. Cargo Handling Statistics at Turkish Ports According to the Harbour Masters Area of Jurisdiction

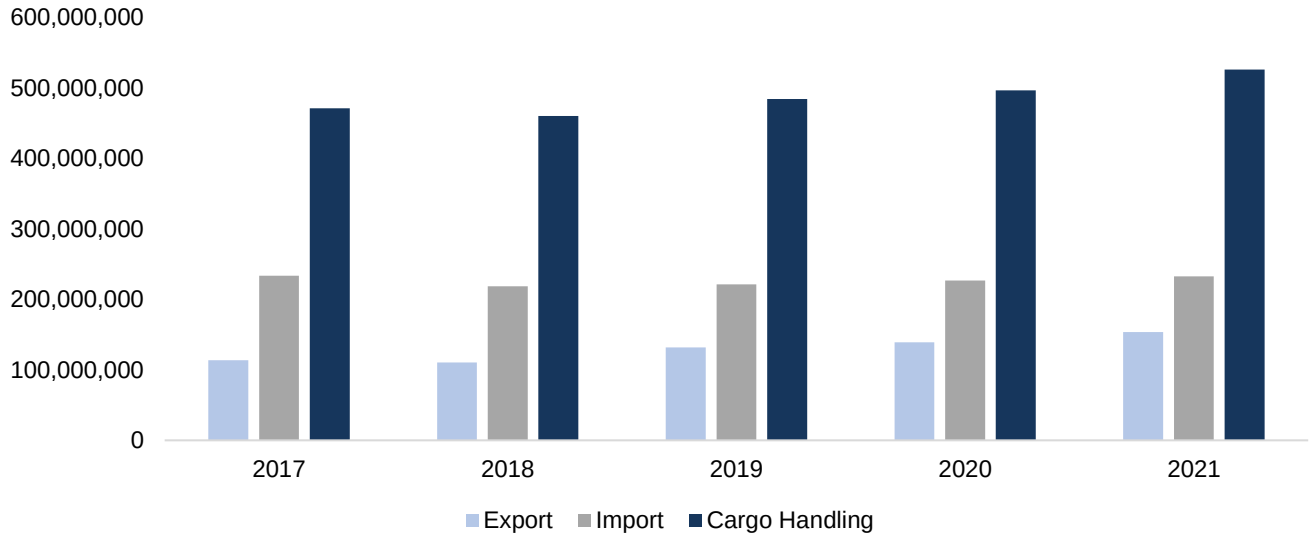
Harbour Master	2019			2020			2021		
	Total Loading	Total Unloading	Cargo Handling	Total Loading	Total Unloading	Cargo Handling	Total Loading	Total Unloading	Cargo Handling
Alanya	0	168,546	168,546	0	180,278	180,278	0	160,087	160,087
Aliağa	26,580,514	39,218,548	65,799,062	27,558,357	41,387,644	68,946,001	29,425,210	44,464,667	73,889,877
Amasra	11,105	2,199	13,304	2,770	0	2,770	2,500	0	2,500
Ambarlı	17,124,537	17,524,947	34,649,484	15,385,143	16,510,191	31,895,334	15,052,407	16,924,930	31,977,337
Antalya	2,703,303	2,670,887	5,374,190	3,571,347	1,952,306	5,523,653	4,050,242	2,763,694	6,813,936
Ayvalık	2,985	0	2,985	1,295	25	1,320	1,928	0	1,928
Bandıma	1,861,585	4,397,234	6,258,819	1,629,584	4,031,579	5,661,163	2,056,855	3,780,571	5,837,426
Bartın	828,898	529,930	1,358,828	987,080	996,955	1,984,035	906,217	1,075,009	1,981,226
Bodrum	27	0	27	0	0	0	0	0	0
Botaş	58,737,775	8,207,269	66,945,044	56,079,629	10,763,372	66,843,001	54,603,343	8,611,620	63,214,963
Bozcaada	0	9,775	9,775	0	0	0	0	695	695
Çanakkale	3,712,163	452,877	4,165,040	4,114,606	596,442	4,711,048	3,891,741	598,772	4,490,513
Çeşme	801,868	751,980	1,553,848	654,088	582,316	1,236,404	794,007	730,189	1,524,196
Dikili	503,359	15,912	519,271	451,759	46,258	498,017	501,901	15,107	517,008
Erdek	0	6,507	6,507	0	2,191	2,191	1,000	1,000	2,000
Fatsa	55,510	50,625	106,135	68,593	57,875	126,468	91,974	29,317	121,291
Gemlik	6,942,080	6,966,272	13,908,352	7,530,873	6,760,998	14,291,871	9,222,262	6,759,127	15,981,389
Giresun	301,589	491,022	792,611	387,647	429,876	817,523	464,517	620,503	1,085,020
Göcek	0	106,703	106,703	0	7,950	7,950	0	32,245	32,245
Güllük	6,692,927	4,181	6,697,108	5,761,436	1,048	5,762,484	8,157,273	87,784	8,245,057
Hopa	275,787	664,609	940,396	443,121	488,446	931,567	368,675	289,525	658,200
İğneada	71,200	24	71,224	12,450	0	12,450	0	0	0
İnebolu	373,782	84,008	457,790	237,118	98,925	336,043	235,547	71,665	307,212
İskenderun	22,157,001	40,010,712	62,167,713	22,969,022	38,000,214	60,969,236	26,743,950	41,067,560	67,811,510
İstanbul	247,145	3,165,276	3,412,421	300,185	1,858,138	2,158,323	256,828	2,347,694	2,604,522
İzmir	4,597,807	4,628,675	9,226,482	4,743,600	4,646,412	9,390,012	4,511,022	4,527,223	9,038,245
Karabiga	2,514,431	10,455,557	12,969,988	2,657,749	11,271,861	13,929,610	2,622,428	11,308,281	13,930,709
Karadeniz Ereğli	1,380,109	7,891,366	9,271,475	1,884,931	8,793,317	10,678,248	2,308,196	9,182,808	11,491,004
Karasu	378,290	994,978	1,373,268	398,918	983,246	1,382,164	759,901	1,280,805	2,040,706
Kefken	0	0	0	0	0	0	0	1,410	1,410
Kocaeli	27,342,422	44,853,993	72,196,415	29,375,494	47,142,131	76,517,625	32,055,045	49,280,098	81,335,143

Harbour Master	2019			2020			2021		
	Total Loading	Total Unloading	Cargo Handling	Total Loading	Total Unloading	Cargo Handling	Total Loading	Total Unloading	Cargo Handling
Marmara Adası	1,611,051	3,216	1,614,267	1,519,441	1,982	1,521,423	1,661,412	2,301	1,663,713
Marmaris	74	20,969	21,043	50	48,235	48,285	0	11,292	11,292
Mersin	16,416,220	19,957,483	36,373,703	16,810,414	20,942,019	37,752,433	18,930,528	20,811,161	39,741,689
Rize	131,431	546,037	677,468	87,500	561,504	649,004	83,470	552,306	635,776
Samsun	2,705,440	8,445,556	11,150,996	3,674,088	9,321,752	12,995,840	3,930,027	9,247,048	13,177,075
Silivri	0	0	0	0	10,500	10,500	0	655	655
Sürmene	0	0	0	0	990	990	34	0	34
Şile	5,320	0	5,320	0	0	0	0	0	0
Taşucu	3,320,327	374,307	3,694,634	3,714,877	576,755	4,291,632	3,721,701	425,913	4,147,614
Tekirdağ	8,880,791	21,053,186	29,933,977	10,134,526	22,121,784	32,256,310	13,913,418	24,881,385	38,794,803
Tirebolu	900	481,807	482,707	0	426,240	426,240	0	381,396	381,396
Trabzon	263,539	2,238,940	2,502,479	242,451	2,088,276	2,330,727	178,611	2,095,316	2,273,927
Tuzla	2,063,806	432,943	2,496,749	2,233,830	2,242,081	4,475,911	2,739,257	2,938,537	5,677,794
Ünye	918,651	226,168	1,144,819	1,135,117	208,480	1,343,597	834,361	269,677	1,104,038
Yalova	890,263	696,885	1,587,148	910,616	1,465,340	2,375,956	1,178,091	2,035,251	3,213,342
Zonguldak	1,482,314	10,477,977	11,960,291	1,486,931	9,880,083	11,367,014	1,295,659	9,090,622	10,386,281
Grand Total	**224,888,326**	**259,280,086**	**484,168,412**	**229,156,636**	**267,486,015**	**496,642,651**	**247,551,538**	**278,755,246**	**526,306,784**

Source: Republic of Turkey Ministry of Transport and Infrastructure, İMEAK Chamber of Shipping Images

In 2021, compared to 2020, the amount of cargo handled at our ports increased by 6% (29,664,133 tons).

Graph 49. Cargo Handling by Years, 2017-2021



Source: Republic of Turkey Ministry of Transport and Infrastructure

In 2021, the amount of containers screened at the ports and piers of our country was 15,761,299 TEU.

Container handling;

- 39.5% (6,233,481 TEU) export,
- 40.3% (6,357,989 TEU) import,
- 5.3% (831,986 TEU) of cabotage,
- 14.8% (2,337,843 TEU) was realized as transit.

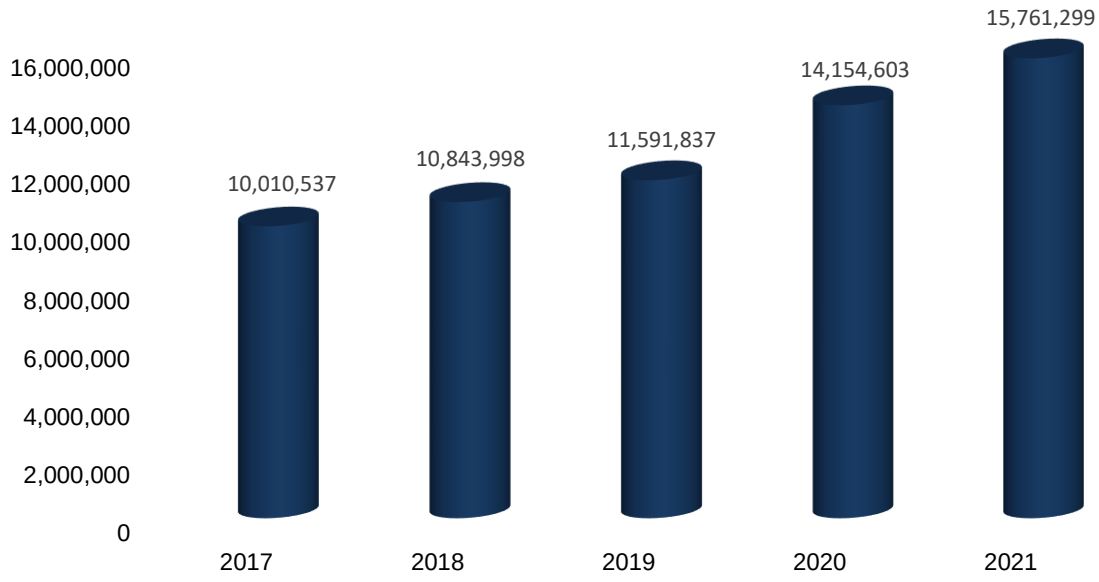
Table 55. Container Handling Figures at Turkish Ports (TEU), 2017-2021

Mode of Transport	2017	2018	2019	2020	2021
Export	3,866,874	4,160,124	4,594,647	5,904,017	6,233,481
Import	3,975,205	4,259,029	4,540,201	5,722,633	6,357,989
Cabotage	935,521	935,661	753,267	731,352	831,986
Transit	1,232,937	1,489,184	1,703,722	1,796,601	2,337,843
Grand Total	**10,010,537**	**10,843,998**	**11,591,837**	**14,154,603**	**15,761,299**

Source: Republic of Turkey Ministry of Transport and Infrastructure, İMEAK Chamber of Shipping Images

In 2021, compared to 2020, the amount of containers handled at our ports increased by 11.4% (1,606,696 TEU).

Graph 50. Container Handling Figures at Turkish Ports (TEU), 2017-2021



Source: Republic of Turkey Ministry of Transport and Infrastructure

6.1.1.3. General Developments in World Ports

In 2021, Shangai port is still the port that handles the most containers with 47 million TEU. It is still the top 3 ports that handled the most containers in 2021 compared to the previous year.

Table 56. Most Container Handling Ports in the World (mteu)

Bölge/Liman	2016	2017	2018	2019	2020	2021
Busan	19.50	20.50	21.60	22.00	21.80	22.50
Colombo	5.70	6.20	7.00	7.20	6.90	
Guangzhou	18.60	20.10	21.60	22.80	23.20	24.20
Hong Kong	19.60	20.80	19.60	18.40	18.00	17.90
Kaohsiung	10.50	10.30	10.40	10.40	9.60	9.90
Keelung	1.40	1.60	1.50	1.50	1.50	1.60
Kobe	2.80	2.90	2.90	2.90	2.60	
Manila	4.50	4.80	5.10	5.30	4.40	
Nagoya	2.70	2.80	2.90	2.80	2.50	
Ningbo	21.60	24.60	26.40	27.50	28.70	31.10
Osaka	2.20	2.30	2.40	2.50	2.10	
Port Klang	13.20	12.00	12.30	13.60	13.20	13.80
Qingdao	18.00	18.30	19.30	21.00	22.00	23.70
Shanghai	37.10	40.20	42.00	43.30	43.50	47.00
Shenzhen	24.10	25.30	25.70	25.80	26.60	28.80
Singapore	30.90	33.70	36.60	37.20	36.90	37.50
Tanjung Priok	5.50	6.90	7.80	7.70	6.90	
Tianjin	14.50	15.00	16.00	17.30	18.40	20.30
Tokyo	4.70	5.00	5.10	4.90	4.60	4.50
Yokohama	2.80	2.90	3.00	3.00	2.70	
Asya	**397.8**	**424.5**	**445.8**	**459.1**	**458.2**	**489.7**
% yıllık değişim	*2%*	*7%*	*5%*	*3%*	*0%*	*7%*
Algeciras	4.80	4.40	4.80	5.10	5.10	4.80
Antwerp	10.00	10.50	11.10	11.90	12.00	
Barcelona	2.20	3.00	3.40	3.30	3.00	
Bremen/Bremerhaven	5.50	5.50	5.50	4.90	4.80	
Felixstowe	4.10	4.30	3.90	3.60	3.50	

Bölge/Liman	2016	2017	2018	2019	2020	2021
Genoa	2.40	2.70	2.70	2.70	2.50	
Hamburg	8.90	8.80	8.70	9.30	8.50	
La Spezia	1.30	1.50	1.50	1.40	1.10	
Le Havre	2.50	2.90	2.90	2.80	2.40	
Marseilles/Fos	1.30	1.40	1.40	1.50	1.30	
Rotterdam	12.40	13.70	14.50	14.80	14.30	
Southampton	2.00	2.00	2.00	1.90	1.80	
Kuzeybatı ve Orta Avrupa	**134.8**	**143.1**	**150.2**	**150.5**	**146.0**	**154.0**
% yıllık değişim	*3%*	*6%*	*5%*	*0%*	*-3%*	*5%*
Charleston	2.00	2.20	2.30	2.40	2.30	2.80
Hampton Roads	2.70	2.80	2.90	2.90	2.80	
Long Beach	6.80	7.50	8.10	7.60	8.10	9.40
Los Angeles	8.90	9.30	9.50	9.30	9.20	
Montreal	1.40	1.50	1.70	1.70	1.60	
New York/New Jersey	6.30	6.70	7.20	7.50	7.60	
Oakland	2.40	2.40	2.50	2.50	2.50	2.40
Seattle-Tacoma	3.60	3.70	3.80	3.80	3.30	3.70
Vancouver	2.90	3.30	3.40	3.40	3.50	3.60
Kuzey Amerika	**61.7**	**64.9**	**68.3**	**69.6**	**69.9**	**79.9**
% yıllık değişim	*1%*	*5%*	*5%*	*2%*	*0%*	*14%*
Dubai	14.80	15.40	15.00	14.10	13.50	
Jawaharlal Nehru	4.50	4.70	5.10	5.10	4.50	5.60
Mundra	4.80	4.20	4.40	4.80	5.70	
Ortadoğu ve Hint Altkıtası	**64.8**	**68.3**	**70.4**	**73.2**	**70.5**	**74.5**
% yıllık değişim	*2%*	*5%*	*3%*	*4%*	*-4%*	*6%*
Buenos Aires	1.40	1.50	1.80	1.50	1.40	
San Juan	1.30	1.20	1.40	1.50	1.50	
Santos	3.60	3.90	4.10	4.20	4.20	
Merkez ve Güney Amerika	**42.8**	**44.5**	**46.8**	**46.0**	**44.8**	**49.5**
% yıllık değişim	*-1%*	*4%*	*5%*	*-2%*	*-3%*	*10%*

Bölge/Liman	2016	2017	2018	2019	2020	2021
Sydney	2.40	2.50	2.60	2.60	2.50	
Melbourne	2.70	2.80	3.00	3.00	1.30	
Okyanusya	**11.6**	**12.0**	**12.9**	**12.6**	**12.5**	**12.5**
% yıllık değişim	*0%*	*3%*	*7%*	*-2%*	*-1%*	*0%*
Bölge/Liman	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
Cape Town	0.90	0.90	0.90	0.90	0.80	
Durban	2.60	2.70	3.00	2.80	2.60	
Mombasa	1.10	1.20	1.30	1.40	1.50	
Afrika	**14.6**	**15.9**	**17.1**	**16.7**	**16.5**	**17.2**
% yıllık değişim	*-2%*	*9%*	*8%*	*-2%*	*-2%*	*4%*

Kaynak: Clarksons Research, İMEAK Chamber of Shipping Images

6.1.2. Shipyard

The history of shipyards in our country dates back to the Seljuk period. The progress of the Turks towards the west during the Seljuk period begins with Emir Çaka Bey's establishment of the first shipyard in 1081 and the construction of the first Turkish navy of 50 pieces. The most important facility built in the maritime field during the Seljuk period is the Alaiye (Alanya) shipyard. This shipyard, which was built in 1227, is still standing, even though it has been nearly eight centuries since its construction.

The processes that started with the Gallipoli shipyard in 1390 and the Golden Horn shipyard in 1455 have continued until these days in accordance with the changing technologies.

When comparing the active shipyards and shipbreaking facilities in our country for the years 2003 and 2021;

- In 2003, there were 37 shipyards and 550,000 DWT project capacity.
- It is seen that 84 shipyards and 4.65 million DWT project capacity have been reached in 2021.

Figure 1. Distribution of Active Shipyard and Ship Dismantling Facilities by Province

Source: Ministry of Transport and Infrastructure. (2021), Reaching Accessing Turkey Report

6.1.3. Ship Recycling Industry

Ship recycling industry; The withdrawal of ships that have completed their economic life and the replacement of new ships, finds its place in a natural technological process that is safer and more environmentally friendly, has more operational efficiency, and reduces maritime risks.

Ship recycling is among the industry types that protect the environment, and it is also called the "green industry", which plays an active role in protecting the ecological balance.

Since 1976, shipbreaking activities have been carried out only in İzmir Province, Aliağa district, and 22 private enterprises operate on the 1,300-meter coastline. In addition, MKE Ship Breaking Facility is located in the same region.

6.1.4. Marina, Boat Manufacturing and Rickshaw Place

The total number of yachts sailing in the Mediterranean basin has reached approximately 1 million today, and there are significant increases every year. France, Spain and Italy constitute 75% of the Mediterranean basin marina capacities. However, the limited number of new investment areas in these countries, the pollution of the Western Mediterranean and the increase in operator fees have made the Eastern Mediterranean countries attractive.

It is aimed to meet the targets foreseen for the tourism coastal structures that have been completed by the public and private sectors, and to meet the required capacity in addition to the marinas that are still in operation. In line with this purpose, it is of great importance to establish the compulsory infrastructure for yacht tourism with public facilities, the BOT model and private sector dynamics, and to determine the privileged role of our country in the region

in terms of tourism. Currently, there are 62 marinas operated by the public and private sectors in our country. Our current mooring capacity at sea is 18,545 yachts, and it is aimed to reach 30,000 yacht mooring capacity in 2023 with the marinas under construction and planned.

As of September 2021, there are a total of 708 boat manufacturing sites, 153 of which are on the coasts, and a total of 158 boatyards, 28 of which are on the coasts.

38 of these structures have tourism operation or investment certificates.

Table 57. Tourism Coastal Structures with Operation Permit by the Ministry of Culture and Tourism

Tourism Operation Certificate	Marina	28
	Boatyard	5
Tourism Investment Certificate	Yacht Harbor / Dock / Pier	4
	Cruise Ship Port	1
	Slipway	-
Grand Total		**38**

Source: Ministry of Culture and Tourism (2020), Tourism Statistics

It is aimed to put into operation the production zones determined in 7 different places by the Ministry of Transport and Infrastructure in order to cluster the boat manufacturing sites that have zoning problems and are scattered.

- İzmir Çaltıdere Boat Manufacturing Site (Preliminary permit contract has been signed. Renewal of the EIA Not Required letter continues. Infrastructure will be done by the Ministry of Transport and Infrastructure.)

- Fethiye Karaot Boat Manufacturing and Dockyard (An application has been made to the General Directorate of Conservation of Natural Assets by the relevant cooperative for the approval of the zoning plan.)

- Bodrum Ören Boat Manufacturing and Dockyard (Preliminary permit contract has been signed and construction permits have been obtained.

- Marmaris Bozburun Boat Manufacturing and Dockyard (The proposal plan will be submitted for approval after the geological survey report.)

- Manavgat Boat Manufacturing and Towing Area (Preliminary permit contract was signed, plan approval process was started in February 2016. The Ministry of Culture and Tourism wants the project to be moved to an unsuitable alternative area.)

- Bartın Tekkeönü Boat Manufacturing and Dockyard (The General Layout Plan has been approved by the Ministry. The site allocation process has been initiated through the relevant governorship.)

- Bartın Kurucaşile Boat Manufacturing and Dockyard (Allocation to the cooperative has been deemed appropriate. However, the cooperative has not been established yet.

With the Build-Operate-Transfer model, 1 Golden Horn Yacht Harbor and Complex project was completed until 2003, while the number of marinas that continue to operate has been increased to 10, with the construction being completed today. The contribution of these projects, which were built without using public resources, to the economy is approximately 1 Billion TL.

Tourism Facilities Opened to Operation by Tendering with the Build-Operate-Transfer Model:

- Mugla Turgutreis Marina
- Aydin Didim Marina
- Izmir Çesme Marina
- Izmir Sığacık Marina
- Yalova Marina
- Mersin Marina
- Antalya Alanya Marina
- Antalya Kaş Marina
- Mersin Kumkuyu Marina
- Muğla Oren Marina
- Bodrum Passenger Pier

Facilities Continuing to Be Tendered with the Build-Operate-Transfer Model:

- Antalya Gazipasa Marina
- Muğla Datça Yacht Harbor
- Haliç Marina and Complex
- Tekirdağ Marina
- Yenifoça Marina

Yacht Ports with Ongoing Survey Projects:

- Özdere Marina
- Urla Çeşmealtı Marina
- Istanbul Silivri Marina
- Samsun Kurupelit Marina
- Istanbul Yenikapı Cruise Yacht Harbor

Projects to be Tendered with the Build-Operate-Transfer Model

- Çeşme Sifne Marina
- Balıkesir Avşa Island Türkeli Marina
- Demre Marina
- Çanakkale Lapseki Yacht Harbor

Transportation and Seaway Facilities for which the Construction Tender for 2021 has been prepared:

- Coastal Structures and Döngelli Creek Spurs Construction

Coastal Structures Tendered for Construction in 2021

- Giresun Fisherman's Shelter (DOKAP)
- Antalya Fisherman's Shelter Amateur Seaway Berthing Area Construction

- Tarlaağzı Fisherman's Shelter Repair Construction

6.1.5. Fishermen's Shelters

While there were 178 fishermen's shelters in our country in 2003, this number has reached 385. 207 fishermen's shelters have been completed in 18 years.

Fishing Shelters Under Construction:

- Giresun Fisherman's Shelter (DOKAP)

Fishermen's Shelters with Continuing Survey-Project Works:

As of 2021, the survey project works of 38 fishermen's shelters are continuing.

- Anadolu Feneri Fisherman's Shelter Survey Project Works
- Garipçe Village Fishermen's Shelter Survey Project Works
- Anadolu Kavağı Fisherman's Shelter Survey Project Works
- Körfez Atalar Fisherman's Shelter Survey Project Works
- Tütünçiftlik Fishing Shelter Survey Project Works
- Keşan Yayla Fishing Shelter and Coastal Fortification Survey Project Works
- Development of Güzelbahçe Waterside Fisherman's Shelter
- Extension of the Narlıdere Fisherman's Shelter Breakwater
- Ahmetbeyli Fisherman's Shelter Survey Project Works
- Doğanbey - Preparing a Conservation Plan for Payamlı Fisherman's Shelter
- Gülpınar Fishing Shelter Survey Project Works
- Erdek Ilhanlar Honey. Bar. Beach Arrangement Sand Trap Spur
- Koruköy Fishing Shelter Survey and Project Works
- Çanakkale Lapseki Şevketiye Fisherman's Shelter Survey Project Works
- Gazipaşa Stop by-Yeşilöz Fishermen's Shelter Survey Project Works
- Tirebolu Yalıköy Dockyard Sand Holder Spur Zoning Plan and EIA Works
- Yomra Fisherman's Shelter Survey Project Works İnebolu Fisherman's Shelter Survey-Project Works
- Kilitbahir Honey. Bar. Survey Project Works
- Adana Karataş Fishing Shelter Development Construction and Karataş Pier Survey Project Works
- Tatvan Central Fishermen's Shelter Construction Survey Project Works
- Taşucu Fisherman's Shelter Development Construction Survey Project Works
- Egirdir Bal.Bar. Preparation of Zoning Plan
- Sarıidris Bal.Bar. Preparation of Zoning Plan
- Çatalca Yalıköy Fisherman's Shelter Survey Project Works
- Tatvan Beach Pier Renovation and Et. Project. Work.
- Karabiga Port and BB Survey Project Work
- Kartal BB Survey Project Works
- Selimpaşa BB Survey Project Works
- Igneada BB Survey Project Works
- Boğaziçi BB Survey Project Works

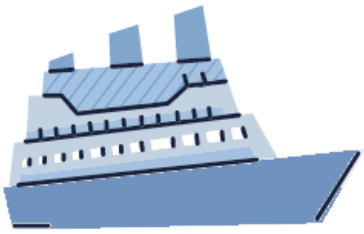
- Çardak BB Survey Project Works
- İskenderun BB Survey Project Works
- Erciş Beach Houses BB Survey Project Works
- Fatsa BB Breakwater Extension and Capacity Increase Cons. Survey Project Works
- Trabzon Akyazı BB Survey Project Works
- Alaplı BB Spur Addition Survey Project Works

Fishermen's Shelters whose Survey Projects were Completed in 2021

- Akcaabat Akçakale Fisherman's Shelter
- Giresun Fishing Shelter
- Tekkeönü Fisherman's Shelter
- Seferihisar- Akarca Fisherman's Shelter
- Gulbahce Fisherman's Shelter
- Mined Fisherman's Shelter Breakwater Renovation and Pier Addition
- Gure Fishing Shelter
- Hatay Arsuz Fishermen's Shelter
- Altinoluk Fisherman's Shelter
- Kumyaka Fishing Shelter Survey Project Work
- Bayramdere Fishing Shelter Survey Project (For Existing Facility)
- Mudanya Güzelyalı Fisherman's Shelter and Marina Development Plan, EIA, Geotechnical Report, Hydrographic and Oceanographic Report Preparation.
- Karaduvar Fisherman's Shelter Breakwater Extension and Supply Construction Survey Project Works
- Rize Pazar Fisherman's Shelter Expansion Demand Survey Project Works

CHAPTER VII

MARINE TOURISM



7. MARINE TOURISM

Marine Tourism consists of Yachting Tourism, Marina Administrations, Cruise Tourism and Ferryboat Administrations, Underwater Diving and Water Sports.

With over 8,333 kilometers of coastline along the four seas, Turkey is a treasure chest of coves, inlets, bays and beaches at which yachtsmen can choose a different and private anchorage each night.

The sailing paradise of Turkey is also home to the Blue Voyage. This idyllic cruise means sailing with the winds, into coves and over the seas and becoming one with nature. For lovers of the active life, sailing in clear waters provides great opportunities for swimming, fishing, skiing, surfing and diving.

Sailing in Turkey also allows tourists to experience a truly enriching cultural exchange with the hospi Table and gracious people of the coastal villages and towns. The tempered winds which generally blow from the west and northwest make the long summers ideal for yachting and seem to encourage an appreciation of nature. From some of the turquoise coasts unpoint and sheltered bays mountain peaks rising to almost 3,000 meters above sea level can be seen.

In Turkey modern facilities and comfort have not overshadowed ancient hospitality and the slower pace of life.

Marine tourism revenue is 20% percentage in the General Tourism

Place: GOCEK in Fethiye (12 Islands)

As from the 1970's, taking in to consideration, firstly the contributions made to the Turkish economy by the yacht tourism and then by the other sea tourism elements, it has been decided to establish a "Maritime Tourism Working Group", administered by the Chairman of the Executive Committee of the Turkish Chamber of Shipping, also participated by the Chairmen of our Chamber's Professional Committees and Branches.

The Maritime Tourism Working Group established at the Turkish Chamber of Shipping began to perform its activities on 20 December 2000, after being approved by the Board of Directors

of our Chamber. Maritime Tourism Working Group consists of the Chairmen of the Head Office, Antalya, Bodrum, Fethiye, İzmir Marmaris, and İskenderun Branches and also the Chairmen of All Kinds of Passenger Transportation, Yacht Administrations, Daily Pleasure Boat Administrations, Marina Administrations, Chairmen of the Professional Committees of Underwater and Water Sports Professional Committees, the Representative of the Cruise Tourism, Maritime Tourism Ankara Representative of the Board of Directors. Maritime Tourism Working Group represents actively the Maritime Tourism in the name of the Turkish Chamber of Shipping.

The most prominent success of the Maritime Tourism Working Group has become to define and to establish the concept of "Maritime Tourism" which has not been mentioned sufficiently in the Shipping Sector and also at various platforms and especially almost not mentioned at all in the public sector.

7.1. Yacht Tourism

Yacht building industry in Turkey, is located mostly in Istanbul region and also in some parts of the Black Sea, Marmara Sea, Aegean Sea and the Mediterranean Region. The yachts, which are built in Aegean and the Mediterranean regions, are usually exported to Germany and Greece.

Table 58. Yachting Companies Licenced by the Ministry of Culture and Tourism

Years	Number of Business			Number of Yacht			Number of Bed		
	Domestic	Foreign	Total	Domestic	Foreign	Total	Domestic	Foreign	Total
2002	96	10	106	725	369	1,094	6,774	2,457	9,231
2003	97	9	106	725	333	1,058	6,905	2,329	9,234
2004	83	8	91	699	294	993	6,377	2,110	8,487
2005	76	10	86	723	345	1,068	6,394	2,486	8,880
2006	60	11	71	666	395	1,061	5,398	2,764	8,162
2007	58	11	69	845	381	1,226	6,764	2,748	9,512
2008	61	15	76	990	431	1,421	8,051	3,116	11,167
2009	53	18	71	943	433	1,376	7,443	3,191	10,634
2010	59	17	76	521	438	959	4,851	3,240	8,091
2011	308	18	326	992	868	1,860	10,292	7,199	17,491
2012	944	10	954	1,246	829	2,075	13,203	6,567	19,770
2013	857	26	883	1,529	871	2,400	15,312	6,911	22,223
2014	857	27	884	1,529	838	2,367	15,312	6,674	21,986
2015	857	27	884	1,529	826	2,355	15,312	6,626	21,938
2016	1,140	24	1,167	1,537	608	2,145	15,994	5,100	21,094
2017	1,150	20	1,170	1,557	312	1,869	16,153	2,532	18,658
2018	1,159	18	1,177	1,572	251	1,823	16,150	2,043	18,193
2019	1,344	11	1,355	1,819	160	1,979	17,917	1,219	19,136
2020	1,451	-	1,451	1,947	-	1,947	18,576	-	18,576

Source: Ministry of Culter & Tourism

Table 59. Marine Tourisim Facility & Vesells With Tourism Administration Certificate (2021)

Marine Tourism Facility				
Mooring Capacity Number Of Facility	Number of Facility	Yacht Capacity		
		Sea	Land	Total
Business Tourism Documantation of Yacht Harbour	28	9,308	3,157	12,465
Business Tourism DocumAntation of Yacht Slipway	6	40	859	899
Investment Tourism Documantation of Yacht Harbour	6	1,842	438	2,280
Grand Total	**40**	**11,190**	**4,454**	**15,644**

Marine Tourism Vessels	Number of Business	Number of Yacht	Number of Beds
Business Tourism Documantation of Turkish Flag Yacht	1,451	1,947	18,576
Investment Tourism Documantation of Turkish Flag Yacht	1	1	26
Grand Total	**1,452**	**1,948**	**18,592**

Marine Tourism Vessels	Number of Business	Number of Vessels	Passenger Capacity
Business Tourism Documantation of One a Day Trip	2,093	2,662	136,744

Marine Tourism Vessels	Number of Business	Number of Vessels	Passenger Capacity
Business Tourism Documantation of Restaurant Ship	39	39	14,861/10,724

Source: Ministry of Culter & Tourism (31.12.2019)

7.2. Blue Voyage

“Blue Voyage" is the most authentic mode of travel of Turkey. The Gullet Tourism, other than bareboat concept, is a travel and vacation type that is derived from Blue Voyage tradition and peculiar to Turkey, which can be considered fully Turkish style. This is a type of yacht tourism performed with the vessels having permanent crew or multi-property yachts, which became famous at the classical, ultra-luxury or international races and then adapted to tourism, or in some exceptional cases, performed with yachts adapted from classical design basically.

Almost 75-80% of the yacht fleet consists of traditional wooden or classical vessels sailing on the waters of Aegean and The Mediterranean for hundreds of years. The blue voyage has made an evolution in terms of boat building technologies by adapting tradition to tourism.

Since the 60’s Turkey protects sustain in the building of these traditional boats in many areas on our coasts.

In the 60’s the sponge fisherman used to use the same boats for fishing purposes. The first blue cruises that were done by the Fisherman of Halicarnassus and his friends, the esteemed intellectuals of the time, went on cruises where there was no electricity no bathroom and kitchen

It is known we have the famous ‘Blue Cruises’ in our country. This is a concept that began in the 60’s with our famous story teller and philosopher / author ‘Fisherman of Halicarnassus’ Sailing with a crew on the turquoise waters of Turkey would be a memorable experience. Together with 3 or 4 crew members, blue cruises are proven to be the most comfort Table and joy full way to explore our bays.

Blue Voyage Routes on the Aegean Routes

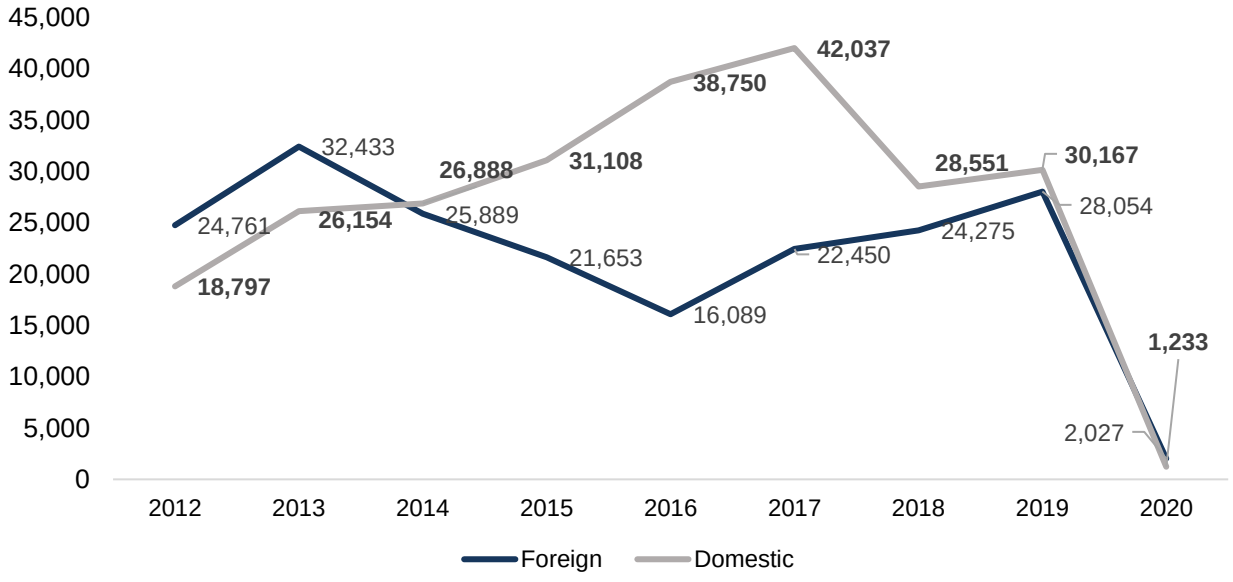
And this is how it became now: Convenience and pleasure on the boat, they come in 3 different shapes: Gulets with her broad rounded stern, favorite of the blue cruise, ideal for relaxation.

Blue Voyage Routes on the Mediterraean Routes

Tirhandils are traditional boat type with a single mast pointed stern and fairly large hull. Once, favorite of the sponge divers due to uncluttered space on deck

Mirror sterns are expecially favorite with the flat stern allowing space for two extra cabins at the rear.

Graph 51. Distribution of the Yachtsmen and the Crew Members of the Flag Q Yacths (for Commercial + Private use) Arrived in Turkish Ports by Years



Source: Ministry of Transport and Infrastructure

The route of the Blue Voyage from Kuşadası down to Antalya covers and area of 350 sea miles. This route is shortened or lengthened according to the wish of the guests from aboard. By choosing the most convenient cruise itinerary, one will experience the beauty of the Turkish cuisine and the congeniality of the traditional Turkish hospitality.

The best period to join the Blue Voyage is between April and November.

Table 60. Distribution of the Yachtsmen and the Crew Members of the Flag Q Yachts Arrived in Turkish Ports by their Nationalities and Years 2020

Nationality	Yachtsmen		Crew Member		Total	
	Commercial	Private	Commercial	Private	Commercial	Private
Germany	21	29	26	30	47	59
Austria	1	1	2	2	3	3
Belgium	2	3	-	4	2	7
Denmark	3	-	1	2	4	2
Finland	2	-	-	5	2	5
France	32	41	25	49	57	90
Netherlands	6	13	-	12	6	25
U.Kingdom	24	48	58	79	82	127
Ireland	-	1	3	3	3	4
Spain	7	8	6	3	13	11
Sweden	-	12	1	5	1	17
Italy	14	28	29	24	43	52
Luxembourg	-	-	-	-	-	-
Portugal	1	2	1	-	2	2
Greece	15	13	27	18	42	31
Czech Rep.	1	-	-	1	1	1
Switzerland	3	7	1	2	4	9
Iceland	-	-	-	-	-	-
Hungary	-	2	2	1	2	3
Norway	-	-	-	-	-	-
U.S.A	10	12	3	13	13	25
Australia	3	15	4	21	7	36
Japan	3	-	-	-	3	-
Canada	7	9	1	6	8	15
Mexico	-	4	-	2	-	6
New Zealand	-	4	4	11	4	15
Serbia	1	2	1	5	2	7
Malta	1	1	1	-	2	1
Israel	2	46	2	19	4	65
Others	159	310	191	392	350	702
T. Foreign	**318**	**611**	**389**	**709**	**707**	**1 320**
Turkey	216	318	295	404	511	722
Grand Total	**534**	**929**	**684**	**1,113**	**1,218**	**2,042**

Source: Ministery of Culture &Tourism

Five Blue Voyage Routes in Anatolia

Horizons drenched in a thousand shades of blue, hot golden beaches, the sound of the surf splashing against the broadside of the boat, and the sharp iodine smell of the sea-here are five summer routes in Anatolia.

Bodrum-Gökova

The most important stop on this route, which starts in the coves near Bodrum, is the island of Kara Ada. The island is known for its therapeutic hot water springs, and it is possible to have mud bath in its natural pools. Mersincik Harbour, in the Gulf of Gökova, is ideal for swimming—its waters are very clear. The coves of Büyük and Küçük Çatı present alternative options. Tuzla Cove, which cuts roughly three miles eastward into Koyun Point, resembles a lake, while Karacasöğüt is a well-protected cove surrounded by pine-forested hills. İngiliz Harbor is famous for its sunset. Sedir Island, one of the greatest spots on the route, is known for its deserted beaches. The island is peppered with the ruins of the ancient town of Kedreai. It is said that the Egyptian princess Cleopatra bathed in the small cove in the northwest of this olive tree-covered island. At dusk, the boats stop for the night in Akbük Harbor, whose sea is as clear as an aquarium. The next morning, after laying anchor in Çamaltı Cove and hiking over land for roughly half an hour, one reaches the ancient ruins of Keramos. Later, lunch is had at Çökertme Cove. After following a route that visits.

Orak Island, Çiftlik, and Bitez, the ships return to Bodrum.

Places: Bodrum in Turkey

The Blue Voyage can be taken as a day trip or with accommodation. The cabin charter tours range from three to eight days. Experts recommend one week as the ideal duration for a Blue Voyage.

Datça-Bozburun

The boats take off from Datça Harbor and follow the path of the coves buried like so many

treasures in the peninsula. After a stop for breakfast, the boat moves on to the Gulf of Hisarönü. Dişlice Island, at the entrance of Bencik Harbor, conceals small beaches on its shores. Orhaniye, our first stop on the Bozburun Peninsula, shines like a blue bead amid lush green forests. The walls on the island located in the middle of the cove were used as watchtowers during the Byzantine era. Kızkumu, one of the most favored beaches in the region, is a shallow sandbar that stretches out to the sea like an extended tongue. Selimiye, which boats reach after a dance with blue and green, is a small fishermen's village filled with seafood restaurants. After Bozburun-the center of the peninsula-the boats pass by Simi Island and reach Bozukkale. There are the ruins of the ancient city of Loryma in this cove, which is surrounded by steep hills. The next stop is Serçe Harbor, which has many sunken ships off its shores. After here, optionally, a route that visits Çiftlik, Kadırga, and Turunç respectively can be followed.
All Blue Voyage vessels that hold permits to carry passengers for touristic purposes must comply to standards set by the Ministry of Cultur and Tourism. No voyages take place in weather and sea conditions seen as unfit by the Port Authorities, Coast Guard, and Meteorological Service.

Marmaris-Fethiye

Starting in Marmaris, which is one of the most important Blue Voyage centers in Anatolia, this route first stops by Ekincik Cove. İztuzu Beach-one of the most important habitats of the loggerhead (carettacaretta) sea turtle-is the port of entrance to Dalyan, which resembles a giant marine labyrinth. By boarding smaller boats here, you can go all the way out to Lake Köyceğiz.

Places: Göcek in Turkey

The Kaunus Rock Tombs, with their marvelous panorama, are among the places worth seeing in the area. Dişibilmez Point and Manastır Point are two important stops before Göcek. It is known that ships were built on Tersane ("Shipyard") Island, located off the shores of Göcek, during the Byzantine era. Scattered among the olive trees of the shore of this bowl-shaped island are numerous ruins of houses. After such a pleasant day, the boats stop in Göcek for the night. The next day, the boats set out to the Ölüdeniz (the Blue Lagoon), gliding on the Mediterranean like white swans. It is forbidden to lay anchor in Ölüdeniz, a lagoon that resembles a giant lake with its clear, tranquil waters. It is possible to moor off its shores and go to the beach via boat. On

Gemiler (“Ships”) Island in the Gulf of Fethiye, there are ruins of an ancient church from the Byzantine era.

Capacity ranges from eight to twenty-five on cabin charter tours.

Antalya-Kaş

This route, which has received great interest in recent years, joins two important Mediterranean harbors. The Yediburunlar region, which falls between the two places, is unaccommodating of overnight stays due to generally having choppy seas. The true privilege of this route is that it includes the area of Kekova, which can be considered the most beautiful place along the Antalya-Kaş route. Continuing off the shores of Üçağız, which is studded with the ruins of the ancient harbor disguised amid carob trees, the voyage enters a brand-new, dreamlike realm in the Sunken City: ancient avenues shimmering beneath clear, turquoise-colored waters; elegant columns; ruins of buildings; stairs disappearing into the depths beneath; and fields of amphorae… The boats are floating above a mysterious Lycian town that is thought to have been plunged into the seas due to an earthquake in the second century BC. The journey continues, passing by rock tombs, monks’ cells, and tiny coves, until Simena. The first long leg of the journey from here has a view of Kastelorizo (Meis) Island.

Places: Karolas-Kaş in Antalya

Antalya-Finike

The coves on this route promise a lovely voyage along which natural and historical beauties are intertwined. Starting in Antalya, which is one of the most important centers of tourism in the Mediterranean, the journey stops by a modern Anatolian marina in Kemer.

Places: Kaputaj Beach in Antalya

The ancient Lycian town of Phaselis is reached right after Asar Point. Established as a triple-harbored seaside town by sailors from Rhodes in the seventh century BC, Phaselis was famed in Roman times-its golden age-for its high-quality perfumes. As you wander the ancient streets connecting the harbors, your senses are delighted by a combination of the sound of the surf and the scent of the pines. Just a little ahead are Çıralı, Olimpos Beach, and Yanartaş, which are quite memorably beautiful. The name of the piece of land stretching northward from Taşlık Point is Çavuş Harbor. To the west of the bay, which is surrounded by green hills, there is a beach, and immediately behind it a plain. Finike, a protected harbor, is four miles northeast of Bunda Point.

Blue Voyage tours in Anatolia start in May and run through the end of October. Demand is at its most concentrated in the high season of July and August.

7.3. Statistics of the Yachts & Capacity of the Registered Yachting Facilities

Most of Turkey's marinas are located on the Southern Aegean and Mediterranean coasts. These well-equipped ports contain all the services and provisions any yacht would require. Table below shows the yacht marinas registered by the Ministry of Tourism.

Table 61. Marine Tourisim Facility with Tourism Administration Certificate (2021)

NO	Port Name	City of	Capacity	
			At Sea	On Shore
1	Setur Kuşadası Yacht Port	Kuşadası/AYDIN	310	-
2	Ataköy Yacht Port	Ataköy/İSTANBUL	1,040	60
3	G-Marina Kemer	Kemer/ANTALYA	150	150
4	Marmaris Yacht Port	Marmaris/MUĞLA	676	122
5	Club Marinas	Göcek/MUĞLA	195	-
6	Setur Antalya Marinas	ANTALYA	200	150
7	Kumlubükü Yacht Club	Marmaris/MUĞLA	10	-
8	D-MarinTurgutreis Yacht Port	Bodrum/MUĞLA	455	100
9	Ece Marina	Fethiye/MUĞLA	230	-
10	Milta Bodrum Yacht Port	Bodrum/MUĞLA	425	50
11	My Marina Ekincik	Marmaris/MUĞLA	67	15
12	D-Marin Didim Marinas	Didim/AYDIN	576	600
13	D-Marin Port Göcek Marinas	Fethiye/MUĞLA	379	-
14	Alaçatı Yat limanı	Çeşme/İZMİR	260	100
15	Marintürk Göcek Village Port	Göcek-Fethiye/MUĞLA	116	200
16	SETUR Yalova Yacht Port	YALOVA	240	80
17	Alanya Yacht Port	Alanya/ANTALYA	287	160
18	Teos Marinas	Seferihisar/İZMİR	480	80
19	Port lasos	Milas/MUĞLA	100	-
20	Skopea Marinas	Fethiye/MUĞLA	80	-
21	Marmaris Adaköy Marinas	Marmaris/MUĞLA	33	-
22	I&C Çeşme Yacht Port	Çeşme/İZMİR	377	100
23	West İstanbul Marinas	Beylikdüzü/İSTANBUL	600	370
24	SETUR Ayvalık Marinas	Ayvalık/BALIKESİR	200	150
25	Mersin Yacht Port	MERSİN	500	500
26	Güllük Yat Marin	Milas/MUĞLA	270	-
27	Gökova Ören Marinas	Milas/MUĞLA	416	130
28	Yalıkavak Marinas	Bodrum/MUĞLA	710	40
Total			**9,382**	**3,157**
General Total			**12,539**	

Source: Ministery of Culture &Tourism

Table 62. Business Tourism Documantaton of Yacht Slipway

NO	Port Name	City of	Capacity	
			At Sea	On Shore
1	Yat Lift Yacht Slipwa	Bodrum/MUĞLA		400
2	Ağanlar Yacht Slipway	Bodrum/MUĞLA	-	200
3	Neta Marinas Yacht Slipway	Bodrum/MUĞLA		21
4	Ege Yacht Slipway	Milas/MUĞLA		50
5	Albatros Yacht Slipway	Marmaris/MUĞLA	40	48
Total			**40**	**719**
General Total			**759**	

Source: Ministery of Culture &Tourism

Table 63. Yacht Harbour Investment Tourism Documantation

NO	Port Name	City of	Capacity	
			At Sea	On Shore
1	Meersea Körmen Yacht Port	Datça/MUĞLA	246	56
2	Ataport Yacht Port	Zeytinburnu/İSTANBUL	1,000	100
3	Mandalya Dock	Milas/MUĞLA	50	-
4	Tümsağ Kumkuyu Yacht Port	Erdemli/MERSİN	200	200
Total			**1,496**	**356**
General Total			**1,852**	

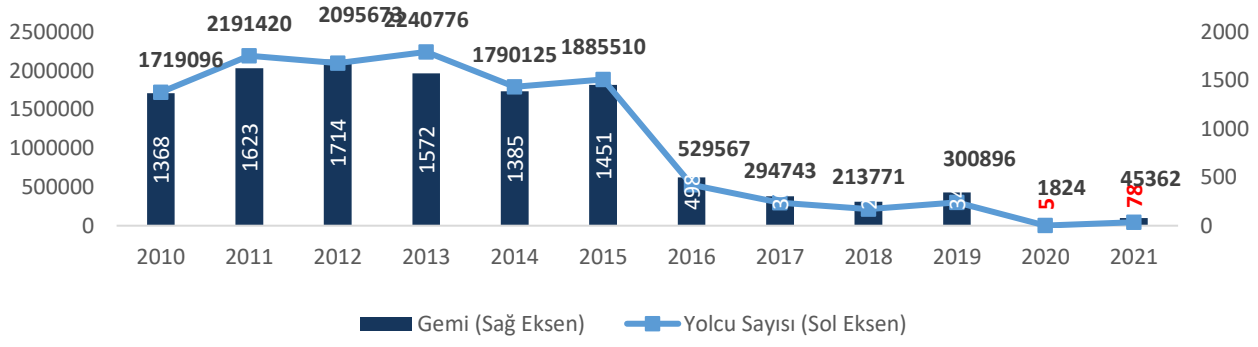
Source: Ministery of Culture &Tourism

7.4. Cruise Tourism in Turkey

Cruise Tourism, which is one of the new industries in shipping sector, has emerged as a result of the rising demands of people for cruising with more modern ships. Worldcruise tourism has been developing with a great acceleration with more ships and increasing capacities. Cruise industry today offers a market of 25 Billion USD. Turkey is located in a suitable region for crusing sector, which is the Mediterranean Basin.

World Cruise Companies Arrival-Departure Port of Istanbul, Izmir, Antalya, (Turn-Around Port) as reported by declaring Al Development Program.

Graph 52. Statistics of Cruises and Passengers Arrived at Turkish Ports Between 2010-2021



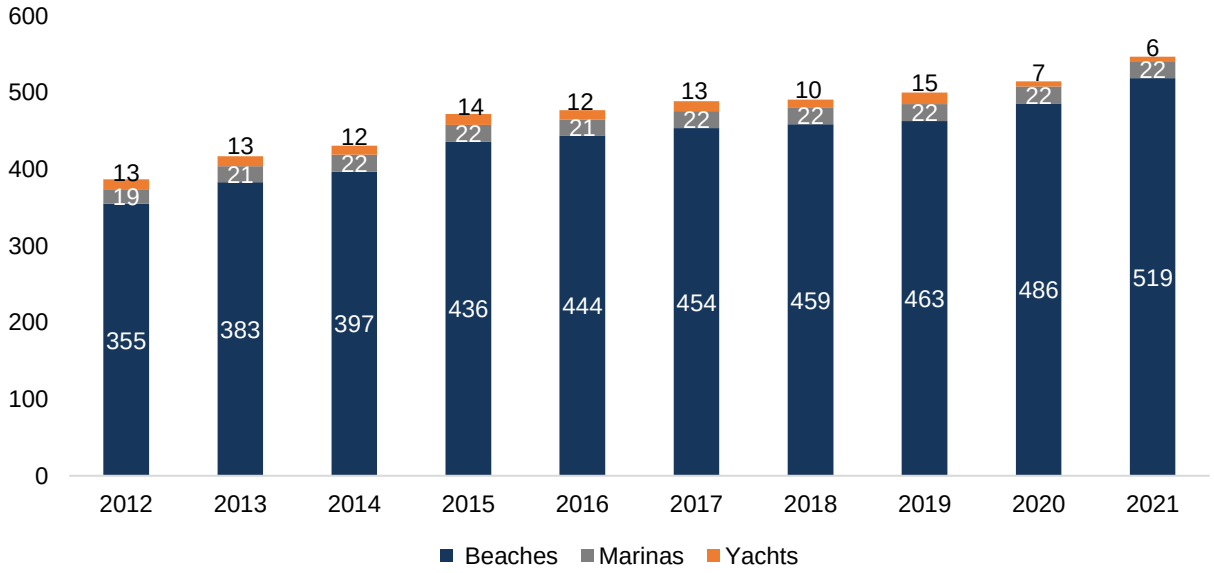
Source: Ministery of Culture &Tourism

In order to open İstanbul, one of the most important touristic centers of Turkey, to Cruise and Mega Yacht Tourism Services, great effort sare being exerted to develop the ports of Galataport, Yenikapı and Ataköy Marinas.

7.5. Blue Flag Compaign

The Blue Flag Campaign is one of the four projects executed under the co-ordination of the Europe Environmental Education Foundation (EEEF). The Environmental Education Foundation of Turkey (TURCEV) designates which beaches and marinas have the right to display a Blue Flag, which is judged on the basis of cleanliness of water, environmental concerns, security, safety and services.

Figure 2. Blue Flag Data



Source: Foundation for Environmental Education of Turkey

Nominees are evaluated by a national, then a European jury, after which the successful ones are awarded the Blue Flag for one year. The sea-water analysis is performed every 15 days during the high season by the local department of the Ministry of Health, and funded by the Ministry of Tourism, and taking into account the physical, pH and microbiological parameters[3].

7.6. Underwater Diving

In the seas of Turkey, divers can discover a fascinating submerged world, from underwater caverns to sunken ships and even the remains of ancient cities. The only areas prohibited to diving are military zones and areas under protection. Diving for scientific research is also prohibited.

Above the water and diving off the coast of our country engaged in tourism business we have around 800 certified and authorized.

[3] Source: Ministry of Culture and Tourism

7.7. Equipped Diving Rules

Forbidden Zones

All kinds of diving excluding scientific studies in military forbidden zones as well as regions in which there are Cultural and Natural Wealth Required to be protected underwater according to Official Gazette dated 19.08.1989 and numbered 20257 issuing 35th article of Decision of Board of Ministers, according to Cultural and Natural Wealth Protection Law Number 863.

Certificate

Equipped divers for sportive purposes should have the proficiency certificate (diving card) issued by Underwater Sports Federation. But certificates issued by educational organizations under international standards, are also valid. These certificates can be upgraded to proficiency certificate (diving card) by applying to the Federation. Sportive diving authorizations, technical specifications and certificates are issued in compliance with the principles determined and accepted by Youth and Sports General Directorate, Underwater Sports Life Guarding and Water Ski Federation. As regards to sportive diving for foreign divers, they should be a member of International Underwater Sports Federation or national organizations or have a certificate issued by authorized organizations or institutions of their countries.

Responsibility

Diving and life security of the divers belong to divers themselves, but during training all the responsibility is with the lecturer. When diving in Turkey, taking guide skin diver is obligatory. Foreign divers should take guide skin diver during diving. Also, protection of cultural and natural wealth, maintaining of property and life security of divers during diving, are under the responsibility and obligation of guide skin diver. However, existing problems and personal mistakes of divers who violate rules is not within the scope of responsibility of guide skin diver.

Material

There is no limit for equipment during sportive diving. Balance vest (life vest, BC), tube pressure monitor, depth monitor and time hour usage is obligatory. Usage of lifting balloon or similar materials is forbidden.

Decompressed dives are completely forbidden. High pressurized tube filling compressor in land or in ships, which requires permission from corresponding authorities, can be present during diving. Agency, club, establishment, hotel, holiday village, school etc. who organize diving, as well as ships should provide first aid material in stock. Underwater photographing and video cameras and all kinds of related materials can be used during diving.

Material Maintenance

Tourism agencies, yacht operators, organizations and institutions as well as underwater clubs organizing sportive diving should perform periodic test and maintenance of diving materials (such as tube regulator, balance vest) used and owned by skin divers. These tests can be performed at civil skin diving firms, agencies or organizations authorized by Ministry of Industry and Commerce.

Ships To Be Used During Dives

During underwater diving, using Turkish flag ships is a must. However, if permission is taken for foreign groups who wish to dive from their own boats, they can be used as well.

Diving Permission

Equipped sportive diving is subject to permission. City Tourism Directorate or authorized body should be informed by clubs, organizations or institutions in order to organize diving to regions excluding forbidden zones. This information is submitted to Regional Coast Guard by correspondent authority.

All kinds of equipped sportive diving are subject to permission for foreign divers. Authorities who issue these permissions are City Tourism Directorate or authorized bodies. One copy of permission forms issued is submitted to Harbor Master and one copy is submitted to Regional Coast Guard by the issuing authority. One copy of the permission should be kept by organizers at all times and should be shown to authorities during controls. Taking permission and submitting information is not obligatory during training and diving with double person system.

CHAPTER VIII

TURKISH FISHING SECTOR

8. TURKISH FISHING SECTOR

Turkey has a rich water products potential. The seas around Anatolia has variant and distinct ecological characteristics. The area of natural lakes is 178,000 km², and the area of dams is 3,442 km².

Our Seas have 500 fish species. Turkey has a share of 0.04% in the total world water production. 60-80% of Turkey's water products consist of pelajic fish. Pelajic fishes are mainly anchovy (Engraulis encrasicholus) and pilchard (sardina pilcharolus). Other important pelajic species are horse mackerel (Trachurus trachurus), çaça (sprattus sprattus), tirsi (Alosa alosa), chup mackerel (scomber japonicus), mackerel(scomber scombrus), blue fish (Pamatomus saltatrix), atlantic bonito (Sarda sarda) and blue fine tuna (Thunnus thynnus). Major deep sea fishes are hake (Merluccius merluccius), whitting (merlangius merlangus euxinus), stripped mullet (Mullus barbartus) and red mullet (Mullus surmelatus). Amongst the flat fishes, (Scophthalmidae-Soleidae), sea bass (Dicentrarchus labrax), hani (Serranidae), species shrimp (Penaeidae) and species squid (Loliginidae and Ommastrephidae) can be considered.

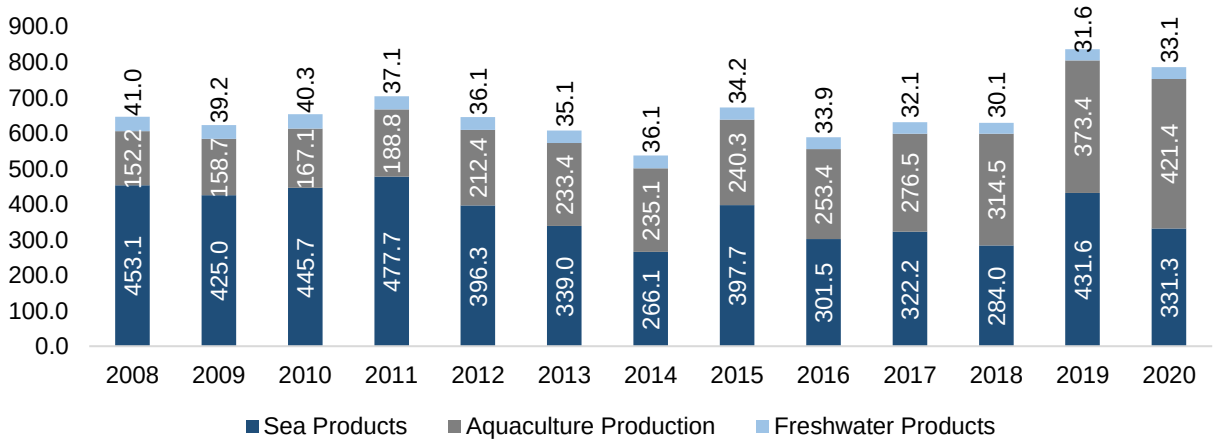
Annual fish production of Turkey is 1 million tons. 80% of fish production comes from sea, 10% from inland water production, and 10% from farming production.

Production of water products, specially in 1970's, showed a rapid development as a result of low interest credits provided by the State and by customs tax exemptions and increase both in the number of fishing vessels and in the strenght of catch. The production of fish products realized approximately as 180,000 tons has increased above 700,000 tons.

Fishery production decreased by 6.1% in 2020 with respect to the previous year and occured as 785 thousand 811 tonnes. The total fishery production was composed of catched sea fish by 37.1%, catched other sea products by 5%, catched inland water products by 4.2% and aquaculture products by 53.6%.

While the production made by capture was 364 thousand 400 tonnes, aquaculture production occurred as 421 thousand 411 tonnes. The capture of marine production decreased by 23.2%, capture of inland water production increased by 4.8% with respect to the previous year.

Graph 53. Fishery Production (2011-2020) (Tohussand Tonnes)



Source: Ministry of Agriculture and Forestry

The quantity of the capture of sea fish occured 291 thousand 910 tonnes. When examined the distribution of the capture of sea fish, the highest amount of fish is anchovy with 171 thousand 253 tonnes. Sprat with 26 thousand 804 tonnes and atlantic bonito with 22 thousand 743 tonnes followed the anchovy.

Table 64. Fisheries Statistics by the Years

Years	Sea Products (Tonnes)	Aquaculture Production (Tonnes)	Freshwater Products (Tonnes)
2008	453,113	152,186	41,011
2009	425,046	158,729	39,187
2010	445,680	167,141	40,259
2011	477,658	188,790	37,097
2012	396,322	212,410	36,120
2013	339,047	233,394	35,074
2014	266,078	235,133	36,134
2015	397,731	240,334	34,176
2016	301,464	253,395	33,856
2017	322,173	276,502	32,145
2018	283,955	314,537	30,139
2019	431,572	373,356	31,596
2020	331,281	421,411	33,119

Source: Ministry of Agriculture and Forestry

Changes in fish species; Anchovy production which is one of the important types of sea fish was about 229 thousand tons, showing an increase of 11.88%. The catch of this number used for domestic consumption was about 116 thousand tons and increased by 1.23% and the amount sent to fish meal factories was 113 thousand tons, with an increase of 25.41%. Sprat production with 57 thousand tons has a ratio with 14.27% after anchovy.

The production showed an increase for atlantic bonito by 33.61%, whiting by 21.64%, sprat by 6.81% grey mullet by 4.42% while it decreased for horse mackerel by 29.36%, scad by 23.31% and pilchard by 8.15%.

Other sea products production increased by 3.63% with respect to the previous year. Striped venus, of the other sea products, has the highest ratio of 58.52%.

Table 65. Quantity of Caught Sea Fish

Type of Fish	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Leer Fish	586	349	334	174	109	187	212	182	190	142
Greater Amberjack	31	43	54	9	9	7	9	8	18	10
Albacore	1,396	62	71	0	53	25	44	38	4	16
Hake-Eurepean Hake	921	893	676	642	706	784	1,011	1,019	1,270	1,149
Red Mullet	1,861	2,453	2,055	1,426	1,255	1,454	1,406	1,399	1,719	1,604
Goldon Banded	428	337	89	35	25	79	69	50	42	36
Sprat	87,141	12,092	9,764	41,648	76,996	50,225	33,950	20,057	38,078	26,804
Seabream	766	918	944	606	481	495	590	544	558	584
Common Sole	829	792	694	411	328	352	486	432	421	458
John Dory	67	69	62	45	46	47	48	52	61	50
Common Seabream	70	51	71	36	31	25	29	45	32	35
Angler Fish	193	199	205	190	166	176	185	220	242	208
Shore Rockling	15	9	14	12	7	10	12	16	30	37
Frigate Mackerel	2,552	907	863	562	476	407	474	367	462	1,070
Meagre	31	57	17	18	20	24	10	56	69	67
Silverside	1,473	936	886	447	327	517	489	592	499	452
Anchovy	228,491	163,982	179,615	96,440	193,492	102,595	158,094	96,452	262,544	171,253
Painted Comber	34	40	37	45	17	18	12	11	7	12
Eurepean Barracude	228	213	370	125	171	116	96	75	69	94
Black Skorpion Fish	196	367	192	202	143	139	306	208	154	108
Annular Bream	196	129	107	59	75	84	87	46	54	54
Horse Mackerel	18,073	24,625	21,818	12,213	14,290	8,860	8,066	14,222	13,180	7,495
Scad	6,937	6,321	6,606	4,110	2,373	2,289	4,919	6,456	6,325	4,855
Brown Mearge	7	6	3	8	5	5	3	4	2	1
Picarel	878	903	766	350	332	329	286	255	218	179
Turbot***	166	203	209	198	239	221	167	139	272	412
Two Banded Bream	153	195	123	148	109	125	211	128	118	79
Gobies	96	148	67	43	39	51	3	13	63	32
Grey Mullet	2,514	4,010	2,505	1,721	1,783	1,826	2,314	1,592	2,182	1,416
Angelshark	16	13	17	8	1	3	1	0	0	0
Sword Fish**	190	80	97	56	35	77	441	427	414	402
Red Gurnard	212	272	220	66	54	54	57	44	46	29
Trigla Lineata	55	37	27	7	3	4	8	7	5	3
Chup Mackerel	3,127	2,183	2,574	1,695	1,210	1,602	2,043	1,504	2,334	2,239
Topeshark	370	183	111	109	78	22	23	21	13	5
Bogue	2,114	1,422	2,226	2,208	2,208	2,795	3,175	3,559	2,865	2,599
Waker	397	312	261	192	167	231	33	111	243	248
Seabas	317	424	187	111	139	132	135	151	156	135
Small-Scalled	84	28	51	20	17	28	20	41	23	13
Blue Fish	3,122	7,390	5,225	8,386	4,136	9,574	1,936	5,767	1,214	3,722
Saddled Seabream	113	139	114	128	59	90	92	64	68	65
Striped Bream	636	1,091	990	789	896	980	1,172	1,063	1,011	948
Whiting	9,455	7,367	9,397	9,555	13,158	11,541	8,248	6,814	8,941	9,364
European Coger	1	4	2	0	1	3	0	-	-	0
Conger Eel	196	113	123	144	83	124	152	182	74	75

Type of Fish	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Croaker	24	14	26	91	29	31	27	25	25	20
Dusky Grouper	34	23	20	13	17	11	3	3	0	1
Bluefin Tuna*	528	536	551	555	1,091	1,324	1,515	1,284	1,771	2,252
Little Tunny	1,437	1,645	1,386	682	326	184	480	617	450	341
Piper	15	14	9	8	12	3	3	2	5	5
Atlantic Bonito	10,019	35,764	13,158	19,032	4,573	39,460	7,578	30,920	1,578	22,743
Large-Eye Dentex	54	55	34	19	28	33	9	8	6	28
Flounder	47	27	81	6	10	9	7	6	8	6
Pilchard	34,709	28,248	23,919	18,077	16,693	18,162	23,426	18,854	19,119	21,265
Black Sea Bream	24	49	26	27	22	51	20	52	39	41
Saupe	167	150	203	145	189	128	145	120	155	95
Dentex	83	81	60	55	59	54	47	69	69	70
Sharpsnout Seabream	14	9	6	4	1	2	2	2	5	1
Striped Red	3,877	3,767	2,333	3,617	3,476	3,047	2,074	2,915	2,342	2,775
Twaite Shad	2,582	1,699	1,541	2,094	2,035	1,642	1,576	1,605	1,965	2,612
Blue Spatled Bream	47	20	31	22	8	14	17	26	11	26
Mackerel	147	201	119	47	103	62	728	369	186	173
Thornback Ray	401	275	299	196	169	116	183	83	9	4
Gar Fish	317	232	205	334	314	268	253	264	185	367
Saury	319	283	191	219	103	131	153	139	144	180
Other	673	178	135	419	159	266	308	227	363	352
Total	**432,246**	**315,637**	**295,168**	**231,058**	**345,765**	**263,725**	**269,676**	**222,024**	**374,726**	**291,910**

*As from 2011 figure of bluefin tuna is the administrative register data of Ministry of Agriculture and Foresrty.
**As from 2017 figure of sword fish is the administrative register data of Ministry of Agriculture and Forestry.
***As from 2019 figure of turbot is the administrative register data of Ministry of Agriculture and Forestry.
Source: Data on sea products is compiled by the Monthly Large Scale Fishermen and Sesonal Small Scale Fishermen Catch Survey

Table 66. Quantity of Caught Other Sea (Crustaceas, Molluscas)

Type of Fish	2012	2013	2014	2015	2016	2017	2018	2019	2020
Octopus	361	284	254	215	246	163	224	293	311
Spiny Lobster	9	12	1	3	1	5	2	1	1
Norway Lobster	6	6	1	0	0	1	2	2	7
Sea Snail	9,596	8,655	7,004	8,795	10,354	9,194	9,672	11,646	8,461
Common Lobster	8	7	1	4	2	2	5	2	3
Oystre	-	11	0	0	-	-	-	-	-
Long Finned Squid	531	491	410	367	389	422	524	620	631
Speckled Shrimp	255	238	54	40	50	54	46	64	27
Green Tiger Prawn	641	452	470	490	720	729	759	580	552
Caramote Prawn	384	354	272	279	252	208	219	204	172
Giant Gamba Prawn	2,158	1,364	1,120	1,423	1,669	1,383	299	438	939
Deep Water Rose Prawn	1,601	1,620	2,502	1,764	1,810	2,357	3,213	3,852	3,515
Carpet Shell	15	83	9	5	5	-	1	14	57
Striped Venus	61,225	28,030	21,828	37,404	20,932	34,941	44,533	36,613	21,824
Mediterranean Mussel	2,093	887	49	192	78	536	604	1,170	1,035
Bearded Horse Mussel	-	-	155	48	-	-	-	-	3
Warty Venus	-	-	-	-	-	-	-	-	-
Cuttle Fish	1,396	1,244	697	745	925	986	1,042	940	961
Common Shore Crab	22	7	5	5	6	1	15	5	4
Great Scallop	-	3	0	1	-	-	-	-	0
Blue Crab	2	1	2	1	2	9	11	5	3
Sea Cucumber*	-	-	-	-	-	-	-	-	829
Other	383	131	189	185	300	1,506	762	399	38
Total	**80,686**	**43,879**	**35,019**	**51,966**	**37,739**	**52,496**	**61,931**	**56,846**	**39,371**

Source: Data on administrative register of Ministry of Agriculture and Forestry

Aquaculture production occurred as 293 thousand 175 tonnes at the seas, 128 thousand 236 tonnes at the inland waters in 2020. While the most important type produced at the inland waters is trout as 127 thousand 905 tonnes, the most important types produced at the sea are sea bass as 148 thousand 907 tonnes and sea bream as 109 thousand 749 tonnes.

Table 67. Agriculture Production

Type of Fish	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Inland Water	-	-	-	-	-	-	-	-	-	-
Trout (Rainbow Trout)	100,239	111,335	122,873	107,533	100,411	99,712	101,761	103,192	113,678	126,101
Trout (Salmo sp.)*	-	-	-	450	755	1,585	1,944	1,695	2,375	1,804
Carp	207	222	146	157	206	196	233	212	203	173
Sturgeon*	-	-	-	17	28	6	13	2	-	14
Tilapia*	-	-	-	32	12	58	8	12	6	13
European Catfish**	-	-	-	-	-	-	8	5	121	92
Frog*	-	-	-	50	43	44	43	49	43	39
Marine Water	-	-	-	-	-	-	-	-	-	-
Trout (Rainbow Trout)	7,697	3,234	5,186	4,812	6,187	4,643	4,972	9,235	9,411	18,182
Trout (Salmo sp.)*	-	-	-	798	685	1,073	980	375	281	507
Sea Bream	32,187	30,743	35,701	41,873	51,844	58,254	61,090	76,680	99,730	109,749
Sea Bass	47,013	65,512	67,913	74,653	75,164	80,847	99,971	116,915	137,419	148,907
Common Seabream*	-	-	-	106	143	225	20	2	5	1
Bluespotted Seabream**	-	-	-	-	-	-	122	74	74	-
Redbanded Seabream**	-	-	-	-	-	-	66	1	-	-
Corb*	-	-	-	39	61	20	125	30	47	26
Meagre*	-	-	-	3,281	2,801	2,463	697	1,486	3,375	7,428
Dentex*	-	-	-	113	132	43	51	24	27	-
Sharpsnout Seabream*	-	-	-	8	59	2	-	-	-	-
Blue Spatled Bream*	-	-	-	75	90	61	107	70	66	-
Bluefin Tuna*	-	-	-	1,136	1,710	3,834	3,802	3,571	2,327	4,338
Mussel	5	-	-	-	3	329	489	907	4,168	4,037
Other	1,442	1,364	1,575	-	-	-	-	-	-	-
Total	**188,790**	**212,410**	**233,394**	**235,133**	**240,334**	**253,395**	**276,502**	**314,537**	**373,356**	**421,411**

*It was compiled starting from 2014. **It was compiled starting from 2017.
Source: Data on Administrative Register of Ministry of Agriculture and Forestry

37.6% of the amount of aquaculture production took place at the inland waters and 62.4% at the seas.Within all the production of marine products by capture, East Black Sea Region was the first by the ratio of 49%. The regions West Black Sea by 24.2%, Aegean by 14.8%, Marmara by 7.7% and Mediterranean by 4.3% followed this region.

8.1. Fishing Fleet and Catching Water Products

Our fleet is using high-tech equipments and our fishing reserves are more than our yearly fishing capacity.

At present, we have 18,008 (202 year) registered fishing boats.

The fishing technology in Turkey is considered to be efficient. Seaborn fishing is being done by artisanal fishing (extension meshes, drag side meshes, pareketa, fish trap) and industrial fishing (Purserseine-trawler)

The types of fishing, common in Turkey are short distance fishing and shore fishing (medium distance fishing). The ocean type (off-shore) fishing is in the beginning process. As of end of 2018, there are 128 fisherman shelters, 44 smaller type of fisherman shelters and 58 slips.

Corporate bodies and persons should have fishing certificates according to Water Products Law Number 1380. The Ministry of Agriculture may restrict the certificates in order to protect of fishing potential. There are 18,024 certificated fishing vessels in Turkey and 1,010 are of big sizes. Dredging and encircle fishing is done by the fishing vessels longer then 12 meters. The Black Sea Region has the major share in fishing sector in Turkey with 1,640 km coast line: there are 202 fisherman shelters and slips. In İstanbul, there are 44 shore facilities, consisting of 8 ports, 26 fisherman shelters, and 10 slips.

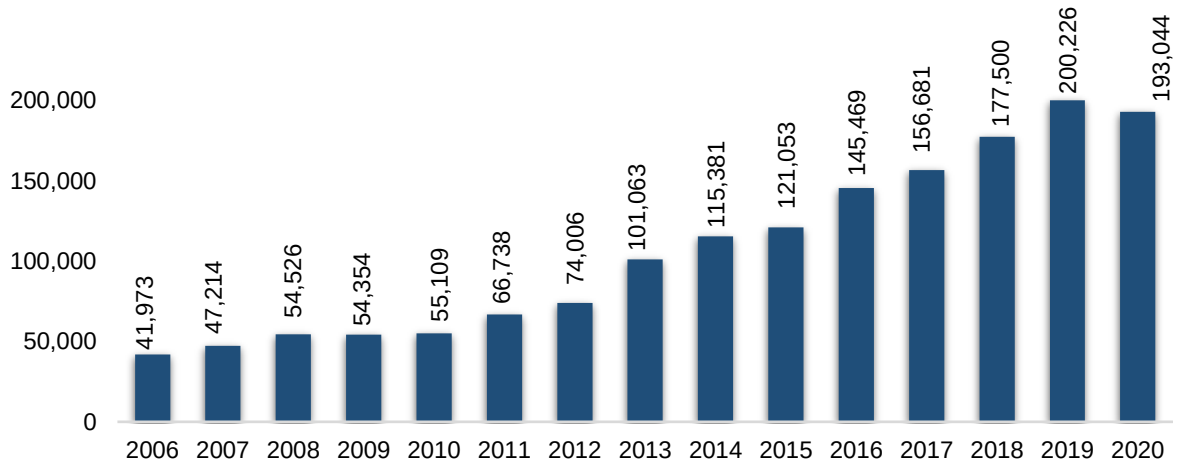
Fishing vessels in Turkey are generally small vessels, which are suitable for shore fishing. There are 18,008 fishing vessels in total and 83% of these boats consists of vessels of 5 -12 meters which perform shore fishing.

Production distribution of large scale fishermen, collected through survey and having vessels bigger than 10 meters, which have an important share in capture production and small scale fishermen, collected through survey, having vessels equal to or less than 10 meters.

8.2. Foreign Trade in Water Products Exports & Imports

In the previous years, major part of Turkish export water products consisted of frozen fish; but currently it consists of canned fish. Export of canned-fish, is mostly realized to Germany, England, Belgium, Spain, Italy and France. Export to Far East is also developing and some of the main markets are Japan and Hong Kong. Today, most of our exports in water products is realized to Japan by 28%.

Graph 54. Exports of Water Production (2006-2020) Amount (Tonnes)

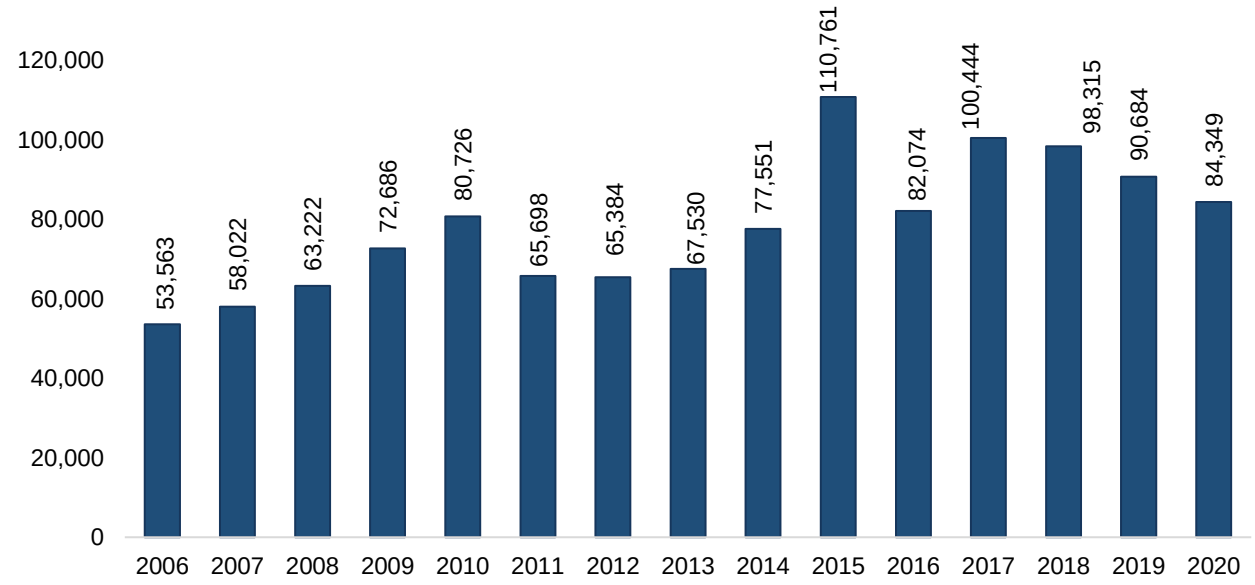


Source: Ministry of Agriculture and Forestry

Imports

Export of seafood includes crustaceans, molluscs, and cephalopods, which may be frozen, preserved, or chilled. The EU is Turkey's primary market for fish and seafood exports, but exports are increasing to Russia, the Middle East and even the Far East and the US. Turkey also has a tuna ranching industry which catches and fattens tuna for the Japanese market.

Graph 55. Imports of Water Products (2006-2020) (Amount (Tonnes))



Source: Ministry of Agriculture and Forestry

Turkish imports include frozen mackerel and other small pelagic fish, salmonids, and cephalopods. Imports of fishmeal and fish oil are also significant due to the large requirement for fish feed, of which fishmeal and fish oil are the main components.

8.3. Water Products Processing Industry

Technological improvements and changes are applied in water treatment industry and new water products from our own resources are treated and supplied to the market. A major amount of water products is supplied for fresh consumption, 4% for fish flour and oil, and 10% for water products treatment and utilization facilities.

Various products such as frozen inland and sea products, pre-cooked crayfish, tuna, anchovy, pilchard, canned horse mackerel, salted/corned anchovy, smoked trout, snakefish, salmon fish are produced by treatment industry using different sources. Facilities treating and utilizing water products are increasing, and studies are carried in order to comply with the provisions of Water Products Law No: 1380, Water Products Regulation and European Union Directives.

SOURCES

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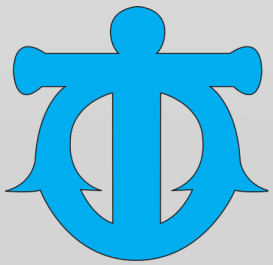

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