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Report Highlights:

Over the last couple decades, with smaller catch volumes resulting from decades of overfishing, the Turkish seafood sector pivoted and ramped up investments in aquaculture production. These investments have paid dividends with Turkiye now the world's largest producer and exporter of seabass and seabream. Additionally, in the last few years, Turkiye has started producing and marketing Turkish salmon, which has become popular around the world. Surprisingly, even with this increase in aquaculture production, seafood consumption in Turkiye is still only one-third the world average. As eating habits change and as economic conditions improve, consumption is expected to grow, which could open new opportunities for high-value U.S. fish and seafood products.

I. Introduction

Partially surrounded by seas and endowed with an abundance of lakes, dams, and rivers, Turkiye has significant potential for catching and raising fish. The country is surrounded by seas on three sides, the Black Sea to the north, the Mediterranean Sea on the south, and flanked on its west side by both the Aegean Sea and the Sea of Marmara. The extensive coastline measures a little more than 8,300 kilometers (5,200 miles). Turkiye also has hundreds of natural lakes, dams, manmade ponds, as well as several dozen large rivers. See maps 1 and 2.

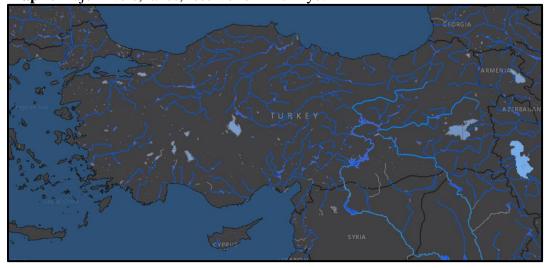
Turkiye's sea and inland water resources cover an area almost as big as the amount of agricultural land in the country. However, due to years of overfishing in the surrounding seas, the size of the annual catch varies from year-to-year and is not even enough to meet the modest consumption demands of the Turkish population.

Map 1. Surrounding seas of Turkiye.



Source: CIA World Factbook.

Map 2. Major rivers, lakes, reservoirs in Turkiye.



Source: Foreign Agriculture Service, USDA.

According to market sources, because of overfishing that started as early as the 1970s, the amount and kinds of fish in both the sea and inland bodies of freshwater dwindled. With fewer fish available, catch volumes have shrunk amid growing consumer demand for fish and other seafood products. The limited availability of sea-caught fish has contributed to higher fish and seafood prices.

Over the last couple decades, as the volumes of sea-caught fish has declined, Turkiye has ramped up its aquaculture industry. The country has made significant investments into large and sophisticated vertically integrated aquaculture operations with capacity to produce fish feed, farm and process fish, and to ship the finished product to domestic or foreign buyers. These aquaculture operations have largely specialized in producing several fish species, black mussels, as well as a few other sea animals.

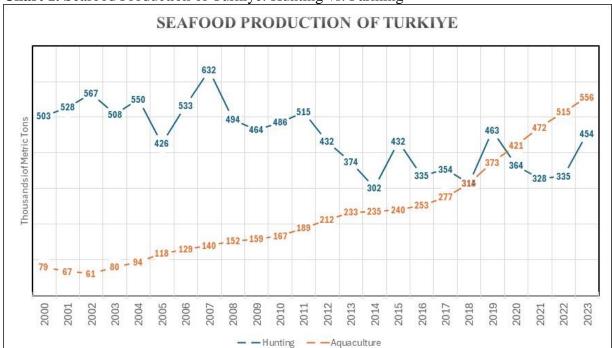


Chart 1. Seafood Production of Turkiye: Hunting vs. Farming

Source: Turkish Statistical Institute (TurkStat).



II. Production

Up until mid-1990s, fish and seafood production in Turkiye had almost exclusively been limited to fishing. Around that time, aquaculture production started with the introduction of simple fish farms and has since continued to expand and become more sophisticated in the ensuing years. By the 2020s, the volume of aquaculture production surpassed the amount that was being caught in the surrounding seas. In 2023, Turkiye's seafood production, most of which was fish, reached a little more than 1.0 million metric tons, 55 percent of which was aquaculture. See table 1.

Fishing

As of 2022, about three-quarters of Turkiye's caught fish came from the Black Sea. For this period, the most hunted species was *anchovy*, representing about half of all caught fish that year. *Atlantic bonito* and *pilchard* (sardines), respectively accounted for 20 and 7 percent of total all fish caught.

According to market sources, the Turkish fishing fleet does not consist of very large or sophisticated vessels compared to those of other developed fishing nations like Norway or the United States. From Post's perspective, there appears to be little incentive to invest in better or larger vessels since the stock of available fish in the seas is limited and not increasing.

Aquaculture

In the early 2000s when sea-based aquaculture was still in its infancy, operations were mostly small, simple, and located close to shore. As the industry advanced in the ensuing decades, and because of environmental reasons, these operations with their cages and barges moved into the deeper sea. The systems to run these offshore operations were initially imported until the local manufacturing sector started to produce some of the equipment and supplies. Newer

Photo 1. Fish stand at a hypermarket in Istanbul, Turkiye.



state-of-the-art technology, however, is still being imported. As of 2023, there were a little more than 550 sea-based aquaculture facilities in Turkiye.

The majority of Turkish aquaculture production is made up of two fish species, <u>seabass</u> and <u>seabream</u>. In fact, Turkiye has become the world's biggest producer and exporter of these two species. More recently, aquaculture producers have started raising <u>Turkish salmon</u>, which is a variety of rainbow trout (Oncorhynchus mykiss) that very closely resembles Atlantic salmon. The fish fries are raised at inland fresh-water facilities and are later transferred to cages in Black Sea. Turkish salmon has become very popular both in Turkiye and abroad. In 2019, like trademarks such as Norwegian salmon or Alaskan salmon, the name <u>Turkish salmon</u> was trademarked for rainbow trout that is farmed in Black Sea waters of Turkiye.

Inland aquaculture production is mostly done in lakes and reservoirs, or in closed systems with river water. The production is done in many parts of the country as lakes, reservoirs and rivers are widely

dispersed (see Map 2). Few freshwater species are produced in Turkiye while the most produced species is *rainbow trout*. There are 1,829 inland-based aquaculture facilities in Turkiye as of 2023.

Table 1. Seafood production in Turkiye.

Metric	•	Catching	,		Aquaculture Farming					
Tons	Sea	Inland	Total	Sea	Inland	Total	PRODUCTION			
2013	339,047	35,074	374,121	110,375	123,019	233,394	607,515			
2014	266,078	36,134	302,212	126,894	108,239	235,133	537,345			
2015	397,731	34,176	431,907	138,879	101,455	240,334	672,241			
2016	301,464	33,856	335,320	151,794	101,601	253,395	588,715			
2017	322,173	32,145	354,318	172,492	104,010	276,502	630,820			
2018	283,955	30,139	314,094	209,370	105,167	314,537	628,631			
2019	431,572	31,596	463,168	256,930	116,426	373,356	836,524			
2020	331,281	33,119	364,400	293,175	128,236	421,411	785,811			
2021	295,018	33,140	328,158	335,644	136,042	471,686	799,844			
2022	301,747	33,256	335,003	368,742	146,063	514,805	849,808			
2023	420,527	33,532	454,059	399,529	156,758	556,287	1,010,346			

Source: Turkish Statistical Institute (TurkStat)

According to Federation of European Aquaculture Producers (<u>FEAP</u>), Turkiye is the largest freshwater aquaculture producer in Europe and the second largest sea and freshwater producer in Europe (after Norway).

III. Consumption

In 2022, per capita seafood consumption in Turkiye was 7.3 kilogram (kg), which is considerably lower than the world average of 21.3 kg and the EU average of 24.6 kg. Per capita consumption in Turkiye, which varies from year-to-year, is lower than the global average because of traditional consumption patterns, high prices, available supplies, and a preference for meat.

Generally speaking, Turkish people traditionally do not eat seafood as part of their diets, especially those living inland away from seaside. According to one study, per capita consumption is about 1 kg in the east and southeast regions of Turkiye, both of which do not have coastlines.¹ Some consumers avoid certain seafood for religious reasons.

Photo 2. Processed seafood fridge at a hypermarket in Istanbul, Turkiye.



¹ Saygi, H and Sagun, O (2021). "Consumption of fishery products in Turkey's coastal regions" *British Food Journal*.

High seafood prices, which are partly due to scarce supplies resulting from overfishing in past years, contribute to low levels of consumption. In general, for middle- and lower-income consumers, fish and seafood are seen as being overly pricy. The most expensive seafood products are shellfish like prawns, shrimp, lobster and crabs. Shellfish is considered as a luxury product and is mostly consumed by high-income consumers dining out at premium seafood restaurants.

Turkish consumers culturally prefer red meat and poultry over fish and seafood products. World-famous Turkish kebabs are made of lamb, veal, and chicken. However, as the price of red meat and poultry soared higher in 2022, this encouraged consumption of more seafood by Turkish consumers. As a result, seafood consumption climbed nearly 11 percent year-on-year because of record-high meat and poultry prices. See table 2.

Turkiye uses domestic and imported fish and fish by-products not for human consumption to produce feed for fish farms.

Table 2. Human seafood consumption in Turkiye

	Human (Consumption					
	Total (MT)	Per Capita (kg)					
2013	479,708	6.3					
2014	420,361	5.5					
2015	479,741	6.1					
2016	426,085	5.5					
2017	441,573	5.5					
2018	498,959	6.1					
2019	514,640	6.3					
2020	559,932	6.8					
2021	554,284	6.6					
2022	620,229	7.3					

Photo 3. Seabass produced in one of the Turkish fish farms in the Aegean Sea at a supermarket in Istanbul.



Source: TurkStat

MT: Metric tons. kg: kilograms.

IV. Trade

Turkiye both exports and imports seafood. In 2023, Turkiye was a net importer of seafood, one-third of which was cheaper small fish, like sardines, fish flour, and fish fat that are used as ingredients in making fish feed for aquaculture operations in Turkiye. If these feed ingredient imports are excluded, Turkiye becomes a net exporter of seafood for human consumption. Every year, about 25-30 percent of Turkiye's total seafood production – both caught and farmed – is exported.

Turkiye's imports and exports of seafood are both increasing. The main reason for this is the continued expansion of the aquaculture industry. Imports are growing because Turkiey needs to import fish and fish by-products to make fish feed. Exports of seafood are likewise increasing because a sizeable share of the fish produced in fish farms is exported to countries abroad, with the main customers being Russia, European Union, United States, and Israel. Looking ahead, when economic conditions improve in

Turkiye, there may be export opportunities for high-value U.S. seafood products, such as lobsters, scallops, oysters, crabs, etc.

Turkiye has <u>free trade agreements</u> (FTA) with EU and European Free Trade Association (<u>EFTA</u>) (Norway, Iceland, Liechtenstein, Switzerland) countries and <u>22 other countries</u>. However, for seafood products, there is no tariff rate difference between FTA and non-FTA countries. See table 3. In 2023, Morrocco, Norway, Oman, and India were the top four suppliers by volume. Imports from the United States were miniscule and were mostly made up of ingredients for fish feed. See table 4. Logistical costs, mainly due to long distance shipping by plane or ship, makes it harder for U.S. fish and seafood products to compete on price with other products on the Turkish market.

Table 3. Custom tariff rates of some selected seafood items when being imported to Turkiye

	Percentage		Additional	EU/EFTA/FTA	Additional
HS Code	Product	Tariff rate	Financial Liability	Tariff rate	Financial Liability
030612	Lobsters, frozen	37.50	17.50	37.50	17.50
030632	Lavagantes, fresh/chilled	37.50	17.50	37.50	17.50
030722	Vieiras (Scallops), frozen	37.50	17.50	37.50	17.50
030617	Shrimps & Prawns, frozen, other than cold water	37.50	0.00	37.50	0.00
030312	Pacific Salmon, frozen, nesoi	30.00	23.00	30.00	23.00
03048100	Pacific Salmon filets, frozen	30.00	19.00	30.00	19.00
030214	Atlantic Salmon, fresh/chilled	30.00	14.00	30.00	14.00
030354	Mackerel, frozen	30.00	23.00	30.00	23.00
030353	Sardines, frozen	30.00	23.00	30.00	23.00
030343	Skipjack tuna Skipjack tuna	0.00	0.00	0.00	0.00
150420	Fish Fats And Oils And Their Fractions (Other Than Liver Oils), Whether Or Not Refined	15.60	0.00	15.60	0.00
230120	Flours, Meals And Pellets, Of Fish Or Of Crustaceans, Molluscs Or Other Aquatic				
	Invertebrates, Unfit For Human Consumption	0.00	0.00	0.00	0.00
051191	Products, Including Dead Animals, Of Fish Or Crustaceans, Molluscs Or Other Aquatic Invertebrates, Unfit For Human Consumption,				
	Nesoi	0.00	0.00	0.00	0.00

Table 4. Seafood imports of Turkiye, Countries: Top 10 and USA

Metric tons	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Morocco*	42,856	56,260	68,674	78,668	82,002	125,480	109,235	112,450	133,362	101,338
Norway**	51,355	66,506	40,642	53,042	57,427	55,819	52,624	62,222	66,679	65,252
Oman	0	46	44	354	1,659	7,571	11,773	25,636	24,505	31,283
India	3,335	2,331	1,232	2,620	3,631	3,662	2,532	2,823	3,826	26,904
Chile	10,403	12,256	9,844	4,239	11,273	13,719	20,429	12,744	16,760	21,701
Guinea	132	23	17	11	26	32	1	5,098	10,585	20,137
Spain	7,188	3,799	7,733	12,563	9,075	8,759	9,461	17,796	17,022	14,407
Seychelles	2,085	4,659	3,088	6,166	5,553	5,254	5,925	13,648	9,383	11,073
Malaysia	59	16	8	5	1	4	364	4,142	8,256	7,939
Georgia	19,422	34,778	45,106	11,803	25,909	34,491	34,377	10,635	32,399	6,516
Others	54,568	63,194	57,804	96,443	88,136	82,142	71,549	55,286	74,595	42,285
United States	7,124	3,753	1,074	333	733	257	105	132	166	159
Total	198,527	247,621	235,266	266,247	285,425	337,190	318,375	322,612	397,538	348,994

Source: Trade Data Monitor, LLC.

^{*} According to market sources, imports from Morocco are mostly ingredients for fish feed.

^{**} By value, Norway is the number one supplier to Turkiye since it sells higher-value products than Morocco.

Table 5. Seafood imports of Turkiye, Species: Top 10

Metric tons	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Flours, Meals And Pellets, Unfit For Human Consumption	73,559	86,699	106,839	123,618	128,199	178,068	154,307	147,367	198,988	157,276
Fish Fats And Oils	42,802	46,631	43,417	40,046	56,776	66,163	75,978	69,166	81,302	84,188
Sardines	2,511	6,842	9,529	12,742	15,421	14,913	17,241	18,553	22,632	26,323
Skipjack tuna	14,199	13,952	15,419	17,882	18,072	17,798	20,339	24,658	26,632	26,093
Mackerel, Frozen	25,079	44,210	22,978	37,103	29,371	26,701	22,084	36,432	29,505	16,964
Atlantic Salmon, Fresh Or Chilled	6,048	8,190	4,010	5,010	4,589	5,157	3,837	5,437	5,341	5,185
Bigeye Tunas Excluding Fillets, Livers & Roes, Frozen	705	1,246	1,637	2,201	1,682	1,256	1,692	2,212	1,594	4,855
Shrimps And Prawns, Frozen, Other Than Cold-Water	2,412	1,847	887	1,253	1,779	2,101	1,158	1,878	4,672	4,794
Yellowfin Tunas, Excluding Fillets, Livers And Roes, Frozen	2,102	4,058	4,820	5,023	2,370	1,304	2,805	2,490	1,868	3,958
Lulas and sépias, frozen	0	0	0	3,288	3,186	3,164	1,911	2,823	5,241	3,702
Others	29,110	33,946	25,730	18,081	23,980	20,565	17,023	11,596	19,763	15,656
Total	198,527	247,621	235,266	266,247	285,425	337,190	318,375	322,612	397,538	348,994

Source: Trade Data Monitor, LLC

Table 6. Seafood imports of Turkiye from the USA, Species: Top 10

Metric tons	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Products, Including Dead Animals, Of Fish Or Crustaceans, Molluscs, Unfit For Human Consumption, Nesoi	57	59	66	79	63	39	40	64	106	65
Lavagantes (Homarus spp.), live, fresh or chilled	0	0	0	18	2	4	15	34	37	33
Fish, Frozen, Nesoi	51	154	12	62	24	36	21	0	3	24
Fish Fats And Oils And Their Fractions	319	102	160	146	119	118	10	9	3	13
Vieiras (Scallops), including the North American one, frozer	0	0	0	6	3	12	4	2	8	11
Ornamental Fish, Live, Other Than Freshwater	1	4	13	1	0	0	1	1	0	6
Pacific Salmon, Frozen, Nesoi	23	4	8	4	5	6	2	1	0	3
Lobsters (Homarus Spp.), Including In Shell, Cooked By Steaming Or By Boiling In Water, Frozen	0	0	0	3	1	3	1	5	3	1
Shrimps And Prawns, Frozen, Other Than Cold-Water	143	0	0	0	0	0	0	5	1	1
Gadidae, Macrouridae, Melanonidae, Merlucciidae, Moridae and Muraenolepididae, other than Alaska Pollock (Theragra chalcogramma)	0	0	0	0	0	0	0	3	3	1
Others*	6,530	3,430	815	14	516	39	11	8	2	1
Total	7,124	3,753	1,074	333	733	257	105	132	166	159

Source: Trade Data Monitor, LLC

Table 7. Seafood exports of Turkiye, Countries: Top 10

Metric tons	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Russia	10,729	8,711	8,908	10,511	14,740	19,282	29,284	42,098	46,971	61,735
Italy	13,623	17,269	21,939	19,997	20,489	32,241	25,165	32,451	30,274	36,652
Netherlands	16,127	18,848	23,555	21,930	22,065	23,497	20,797	18,851	19,163	21,143
Greece	2,050	1,950	4,162	7,829	14,361	17,443	18,323	19,183	20,007	20,522
United Kingdom	5,821	7,270	8,338	9,468	9,592	9,969	10,588	18,188	18,929	18,443
Germany	11,029	11,485	14,696	12,482	10,778	12,344	12,595	13,162	12,468	12,392
Spain	7,879	7,074	6,089	8,000	11,234	11,133	10,184	13,051	11,912	11,840
United States	2,623	3,361	3,263	4,331	5,485	6,529	5,536	7,673	7,091	9,050
France	3,547	3,347	5,471	5,452	5,118	8,101	8,940	5,079	7,046	8,630
Israel	811	1,440	3,664	3,776	4,011	5,266	7,399	8,314	7,993	7,794
Other	58,442	50,094	59,034	61,728	77,909	81,836	81,159	76,628	90,793	80,979
Total	132,681	130,849	159,119	165,504	195,782	227,641	229,970	254,678	272,647	289,180

Source: Trade Data Monitor, LLC

^{* 2014, 2015, 2016 &}quot;Other" was Herrings (Clupea Harengus, Clupea Pallasii), Frozen which increased the total in those year, demand for herring diminished in later years (also for other origins).

Table 8. Seafood exports of Turkiye to world, Species: Top 10

Metric tons	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Seabream, Fresh Or Chilled	24,185	29,097	41,962	43,226	48,971	55,086	54,861	62,081	53,070	56,995
Trout, Frozen	11,324	9,324	11,667	11,973	13,379	16,529	21,438	33,464	49,805	54,723
Seabass, Fresh Or Chilled	21,753	25,020	26,454	31,938	41,181	46,938	43,175	44,671	40,860	44,388
Fish Fillets, Fresh Or Chilled, Nesoi	5,055	6,271	7,844	7,476	9,571	11,461	10,510	13,841	15,865	17,261
Trout, Fresh Or Chilled, Exc Fillets, Liver, Roe	3,253	3,540	4,228	4,700	5,173	4,181	8,464	9,735	9,110	16,351
Fish, Frozen, Nesoi	8,035	6,760	5,650	6,955	7,026	9,157	11,358	13,049	12,286	16,279
Fish Fillets, Frozen, Nesoi	4,921	7,162	8,649	9,533	8,727	10,210	11,884	13,942	16,006	15,356
Fish, Prepared Or Preserved, Nesoi, Including Products										
Containing Meat Of Crustaceans, Molluscs, Etc., And Fish	3,563	4,291	3,832	5,999	9,160	5,547	6,066	9,111	11,136	7,547
Balls, Cakes And Puddings										
Fish Fats And Oils And Their Fractions (Other Than Liver Oils),	12,232	6.451	9,938	3,576	10,241	7,297	16,967	6,896	13,326	7,082
Whether Or Not Refined, But Not Chemically Modified	12,202	0,401	3,330	3,370	10,241	1,231	10,307	0,030	10,020	7,002
Coral And Similar Materials, Molluscs, Crustaceans,										
Echinoderms And Cuttlebone Shells, Unworked Or Simply	957	575	559	806	733	8,764	651	5,187	3,982	7,072
Prepared, Not Cut To Shape, Powder And Waste										
Other	37,403	32,358	38,336	39,322	41,620	52,471	44,596	42,701	47,201	46,126
Total	132,681	130,849	159,119	165,504	195,782	227,641	229,970	254,678	272,647	289,180

Source: Trade Data Monitor, LLC

Table 9. Seafood exports of Turkiye to the USA, Species: Top 10

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Metrictons	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Seabass (Dicentrarchus Spp.), Fresh Or Chilled	1,939	2,284	1,716	2,628	3,756	4,340	3,192	4,278	3,585	4,313
Trout Fillets, Frozen	0	0	0	0	7	0	52	437	694	1,610
Fish Fillets, Frozen, Nesoi	16	103	295	138	96	328	323	928	952	1,104
Seabass (Dicentrarchus Spp.), Frozen	15	68	50	37	64	152	416	741	647	798
Seabream (Sparidae), Fresh Or Chilled	231	250	210	264	441	548	293	385	323	347
Fish Fillets, Fresh Or Chilled, Nesoi	31	73	90	130	151	206	61	194	196	225
Fish, Frozen, Nesoi	19	18	30	7	32	228	568	186	204	151
Fish, Prepared Or Preserved, Nesoi, Including Products Containing Meat Of Crustaceans, Molluscs, Etc., And Fish Balls, Cakes And Puddings	48	76	84	84	90	107	116	144	169	142
Other edible fish byproducts, frozen	0	0	0	0	0	0	0	0	0	83
Trout, Frozen	17	52	52	70	35	53	88	19	71	54
Other	307	437	736	973	813	567	427	361	250	223
Total	2,623	3,361	3,263	4,331	5,485	6,529	5,536	7,673	7,091	9,050

Source: Trade Data Monitor, LLC

IV. Further Information

Turkish importers, agents, or distribution companies typically attend large trade shows such as <u>Anuga</u> in Germany, <u>Sial</u> in France, <u>Gulfood</u> in Dubai and <u>Seafood Expo Global</u> in Spain. Food trade shows in Turkiye can be helpful to visit before deciding to enter the market and promoting a product. <u>Seafood Expo Euroasia</u>, <u>Future Fish EuroAsia</u>, <u>Anfas Food Product</u>, <u>World Food Istanbul</u>, <u>CNR Food Istanbul</u>, <u>Sirha Istanbul</u>, and <u>F Istanbul</u> are good shows to visit and excellent opportunities to meet importers.

Entering the Turkish market often requires a long-term perspective and persistence, as building trust is important. Correct and thorough market analysis must be done before entry. Turkiye is a large country and has a very diverse set of consumers, retailers, HRI, and food processing operations. Please also refer to FAS

Photo 4. Red mullets and calamari in a hypermarket in Istanbul, Turkiye.



Turkiye's <u>Exporter Guide</u>, <u>Retail Food</u> and <u>Food Service reports</u> for more information about the market and macro-economic situation. Please review other FAS <u>reports</u> and contact our office with any questions.

Office of Agricultural Affairs	Office of Agricultural Affairs
United States Department of Agriculture	United States Department of Agriculture
U.S. Embassy Ankara	U.S. Consulate General Istanbul
1480 Sokak No:1, 06530	Ucsehitler Sokak No:2, Istinye, 34460
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Attachments:

No Attachments.