

**ИССЛЕДОВАНИЕ СЕКТОРА СУДОСТРОЕНИЯ  
И СУДОРЕМОНТА ТУРЦИИ КАК ЧАСТИ МОРСКОГО  
ТРАНСПОРТНОГО БИЗНЕС КЛАСТЕРА ЧЕРНОГО И МРАМОРНОГО МОРЯ**

**SHIP REPAIR AND SHIPBUILDING SECTOR OF TURKEY  
AS A PART OF THE BLACK SEA AND THE MARMARA SEA MARITIME  
TRANSPORT BUSINESS CLUSTER**

*Статья посвящена изучению промышленного сектора судоремонта и судостроения Турции в контексте морского транспорта делового района Черного и Мраморного морей. Представлены основные характеристики сектора, крупнейшие турецкие участники для основных регионов их деятельности. Кратко рассмотрены основные международные судоремонтные и судостроительные географические центры в регионе Черного и Мраморного морей. Публикация предназначена для специалистов, рассматривающих пути перехода собственного морского бизнеса на более высокий уровень развития и планирующих новые стратегии для своих предприятий. Представлены основные аспекты новых правил Европейского союза, Украины, США и некоторых других странах в отношении украинского кризиса, которые влияют на ведение морского бизнеса не только в рассматриваемом секторе, но и во всем мире. Представленная информация будет полезной для топ-менеджмента профильных компаний, научных, исследовательских и образовательных организаций. Приведены некоторые статистические данные для использования в маркетинговых подразделениях соответствующих верфей и транспортных организаций. Представлена новая информация для морских колледжей и университетов, преподавателей экономики морского транспорта, а также для научных транспортных, судоремонтных и судостроительных предприятий.*

*The purpose of this article is to study the ship repair and shipbuilding sector of Turkey in the context of the Black Sea and Marmara maritime transport business cluster. This article shows the main characters of the sector, the biggest Turkish players and the main Turkish regions of the activities. It also briefly describes the main international ship repair and shipbuilding geographical centers in the Black Sea and Marmara region. This paper information will help appropriate professionals to navigate their maritime business to the higher income and to plan the strategy of their enterprises. In addition, the top managers of the interested companies, research and scientific organizations shall take into the account the new regulations of the European Union, Ukraine, the United States and some other countries regarding Ukrainian crisis, which influences on the maritime business not only in the region, but also in the whole world. There are some article statistical figures to think about and to use by the marketing departments of the relevant shipyards and transport governmental organizations. The article will be useful for the maritime colleges and universities lecturers in economics of the maritime transport as well as for the scientific transport, ship repair and shipbuilding research institutes.*

*Ключевые слова: судоремонт, судостроение, морские перевозки, Черное море, Мраморное море, морской бизнес, верфи.*

*Key words: Ship repair, shipbuilding, maritime transport, Black Sea and Marmara Sea shipbuilding and ship repair, Tuzla and Yalova ship repair, maritime business, shipyards.*

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**Introduction**

The Black Sea and Marmara maritime transport business cluster mainly consists of the regional ports within their port fleets, shipping companies, operating sea transport lines in the region and the ship repair and shipbuilding companies which service them.

The main ship repair and shipbuilding clusters within the main floating and dry docks are situated in the following countries:

- 1) Turkey;
- 2) Ukraine;
- 3) Bulgaria;
- 4) Romania;
- 5) and Russia.

The biggest Ukrainian shipyards are situated in the following cities: Nikolayev, Odessa, Kherson, Izmail and Mariupol.

The biggest Russian Black Sea shipyard is situated in Novorossiysk.

After the referendum in the Republic of Crimea and the city of Sevastopol in March 2014 the Russian Federation got former Ukrainian shipyards in Kerch, Theodosia and Sevastopol [12].

Bulgarian ship repair services are principally available in the ports of Varna and Rousse [1] – [3].

The main Romanian shipyards are located in Mangalia, Constanta and Galati [3] – [6].

Turks in the areas of Tuzla and Yalova, covering dozens of the ship repair, shipbuilding, service, agent, and manufacturing companies, have made the biggest ship repair and shipbuilding regional cluster. The main advantage of this cluster is its geographical position, very close to Bosphorus. So, all vessels, going to Romania, Bulgaria, Georgia, Russia, Ukraine and etc. have to pass by the enterprises, located in Yalova and Tuzla.

#### **Turkish ship repair and shipbuilding cluster in Yalova and Tuzla (Istanbul) is the biggest player at the regional market**

There are more than 70 shipyards in Turkey and 44 of them are located in a rather small square in Yalova and Tuzla (Istanbul) which are very close to Bosphorus shipping lines [7]. There are few companies, situated in Izmit, which is on the half way to the both parts of the cluster, i.e. Tuzla and Yalova. Beside the shipyards, the local shipbuilding and ship repair cluster includes dozens of satellite companies, dealing with accompanying services and goods.

Yalova companies and Istanbul-Tuzla companies were summarized by me in one cluster in this article because they are rather close to each other, and you may get each of them in 2,5 hours by bus. Of course, Tuzla's part is the biggest one.

The epicenter of shipbuilding activities in Turkey is Tuzla Bay, situated some 50 km east of Istanbul. The largest yards are located in the Tuzla area, with the largest yard having annual maximum construction capacity of 650 000 dwt. (SAHINÇELIK SAN. A.S.).

Because Tuzla area could no longer offer suitable places to set up new yards, some entrepreneurs have focused on nearby inland locations, such as Yalova-Altinova and Izmit. In particular, some enterprises in these nearby facilities specialize in the manufacture of individual hull blocks that are then transported to other shipyards, where they are assembled.

Yalova project is located at a 1.35 million m<sup>2</sup> site in a former swampy area located on the seaward edge of the shore of Marmara Sea, in Yalova town, where there were plans to build not only shipyards, but social facilities and a sub-industrial zone. In 2011 investment in the projects had reached at least USD 365 million.

The area is considered to be well located, as it is on the crossroads of Istanbul, Bursa and Izmit, as well as close to a number of industrial areas. When completed, the Hersek bridge project will connect Gebze and Altinova, which will facilitate collaborate with industrial firms in Tuzla.

The Yalova-Altinova Shipyard Region, which will consist of 50 shipyards (38 of which belong to Yalova-Altinova Shipyard Enterprise Co.), is a national project that is funded by private equity capital, without the use of public sector funds [7].

If we start to comparison the number of profile companies in other countries of the Black Sea region, we may find that, in the average, the number of shipyards in the biggest ports is 3 shipyards with slipway or dock per one ship repair and shipbuilding regional port cluster.

In Yalova-Tuzla-Istanbul cluster we have more than 40 shipyards. It is 13 times more than in the other regional clusters in the Black Sea area.

The cluster's companies as well as Turkish shipyards are considered to be highly ranked in the world in the production of small tonnage chemical/oil tankers (up to 10 thousand dwt), and this is certainly supported by the order book held by Turkish yards, which in January 2011 showed 62 orders for this class of vessel, second only to the 74 orders held by yards in China [7].

Tuzla and Yalova witnessed a "golden era" between the years 2005 and 2008 [11], when the Turkish shipbuilding sector grew by 360 percent, while the world's average growth was 89 percent.

Furthermore, Turkey jumped from the global rank of 23rd to eighth in terms of shipbuilding capacity, but the sector's rapid growth caused some problems -- shipbuilders began making agreements with subcontractors, shifting the workload to get more orders, which resulted in decreased safety. Tuzla started to appear more in the media because of successive worker deaths rather than because of its "golden era." Between the years 1992 and 2010, 135 dockworkers were killed in occupational accidents, causing Tuzla to be thought of as a "death area." [8].

### Ship repair and shipbuilding in Turkey

Turkey is a natural bridge between Europe, Central Asia and Middle East. Due to its geographical position it is the crossroads of three continents, located at the center of a transportation network extending to the Atlantic Ocean with Gibraltar Strait, to Arabian Peninsula and the Indian Ocean with the Sues Canal, to Eurasia and Far East with the Mediterranean-Black Sea links through Turkish Straits. That situation reflects the importance of the country in terms of cabotage, international and transit transport, and ship repair, and shipbuilding [9].

Due to the presence of the Turkish Straits, connecting the Mediterranean and the Black Sea, maritime traffic is intense in Turkey's internal waters and territorial sea, which help Turks to attract perspective customers for the ship repair and shipbuilding. The straits are considered a waterway of strategic and economic importance.

The principal ship repair and shipbuilding clusters of Turkey are located in the cities as shown in the Fig. 1 by big red points; the biggest yards are situated close to the straits.



Fig. 1. Locations of the principal shipyards in Turkey

Table 1 summarized quantity of the biggest shipyards in Turkey in 2011.

Table 1

**Turkey Operating Shipyards May 2011 [7]**

Province/Region	Number of Shipyards
Istanbul (Tuzla)	27
Yalova	19
Zonguldak	8
Izmit	6
Canakkale	2
Trabzon	2
Ordu	1
Samsun	1
Kastamonu	1
Sakarya	1
Hatay	1
Adana	1
<b>Total</b>	<b>70</b>

To find out the potential of the shipbuilding and ship repair sectors in Turkey we have to study them in comparison to other maritime and marine activities of the country.

Table 2 summarizes them accordingly.

Table 2

**Indicators of relevant marine and maritime activities in Turkey [10]**

Function/activity	GVA (EUR, billion)	Employment (*1000)	Number of enterprises	Further indicators	Source & Reference year
<b>0. Other sectors</b>					
0.1 Shipbuilding and ship repair	0,490	34,491	1,802	----	EUROSTAT (2009)
0.2 Water projects	0,290	15,530	304	----	EUROSTAT (2009)
<b>1. Maritime transport</b>					
1.1 Deep-sea shipping	0,168	8,919	----	----	EUROSTAT (2009)
1.2 Short-sea shipping (incl. Ro-Ro)	0,578	30,723	----	----	EUROSTAT (2009)
1.3 Passenger ferry services	0,377	11,210	----	----	EUROSTAT (2009)
1.4 Inland waterway transport	0	0	----	----	EUROSTAT (2009)
<b>2. Food, nutrition, health and eco-system services</b>					
2.1 Fishing for human consumption	0,593	37,750	----	----	TUIK (2011)
2.2 Fishing for animal feeding	----	Not separately available	----	----	----
2.3 Marine aquaculture	0,126	8,000	----	----	TUIK (2011)
2.4 Blue biotechnology	n.a.	n.a.	----	----	----
2.5 Agriculture on saline soils	-	-	----	----	----
<b>3. Energy and raw materials</b>					
3.1 Offshore oil and gas	0	0	0	----	Testing phase
3.2 Offshore wind	0	0	0	----	Not applicable
3.3 Ocean renewable energy	0	0	0	----	Not applicable
3.4 Carbon capture and storage	0	0	0	----	Not applicable
3.5 Aggregates mining (sand, gravel, etc.)	0	0	0	----	Not applicable
3.6 Marine minerals mining	0	0	0	----	Not applicable
3.7 Securing fresh water supply (desalination)	0	0	0	----	Not applicable
<b>4. Leisure, working and living</b>					
4.1 Coastal tourism	1,599	125,182	8,830	----	EUROSTAT (2009)
4.2 Yachting and marinas	n.a.	n.a.	----	----	----
4.3 Cruise tourism	0,089	2,647	----	----	EUROSTAT (2009)
<b>5. Coastal protection</b>					
5.1 Protection against flooding and erosion	n.a.	n.a.	----	----	Not applicable
5.2 Preventing salt water intrusion	n.a.	n.a.	----	----	Not applicable
5.3 Protection of habitats	n.a.	n.a.	----	----	----
<b>6. Maritime monitoring and surveillance</b>					
6.1 Traceability and security of goods supply chains	n.a.	n.a.	----	----	----
6.2 Prevent and protect against illegal movement of people and goods	0,08	5,00	----	----	----
6.3 Environmental monitoring	----	----	----	----	----

**Note:** EUROSTAT data on GVA and employment do not exist for all maritime activities. We have calculated the average GVA per job for the 7 activities for which we have Eurostat data for both GVA and employment: 15.700 EUR. Then we applied it to the other MEAs for which we could collect employment data from other international or national sources.

Example : Activity 2.1 "Fishing for human consumption"

Employment 37.750 (source : TÜİK – Turkish Statistical Institute)

GVA:  $37,75 \times 15,7 = 593$  million EUR = 0,593 billion EUR

### Conclusions

Ship repair and shipbuilding sector in Turkey is one of the biggest parts of the Black Sea and Marmara maritime transport business cluster.

The Turkish sector has a big potential for the development in the future as well.

Table 3 combines three lists, by ranking order, of the 7 largest, 7 fastest growing and 7 most future potential marine and maritime activities.

Shipbuilding and ship repair is the third largest maritime activity and is ranked 2nd in the list of the most future potential activities by the European Commission European Networking Group for Integrated Maritime Policy (EUNETMAR).

Even if it is not among the 7 fastest growing because of a very negative score linked to the strong impact of the world crisis on the sector, this activity has been included among the 6 most promising and relevant maritime activities [10].

Table 3

**Sets of top-7 activities ranking in order of size/growth/future potential [10]**

Top-7 current size	Top-7 recent growth	Top-7 future potential
Coastal tourism	Marine aquaculture	Marine aquaculture
Fishing for human consumption	Cruise tourism	Shipbuilding and ship repair
<b>Shipbuilding and ship repair</b>	<b>Water projects</b>	<b>Coastal tourism</b>
Short-sea shipping (incl. Ro-Ro)	Deep-sea shipping	Yachting and marinas
Water projects	Passenger ferry services	Cruise tourism
Passenger ferry services	Fishing for human consumption	Water projects
Deep-sea shipping	Short-sea shipping	Offshore oil and gas

The sector is of strategic importance for the Turkish government and considered as one of the most promising sectors in Turkey and as a pillar of the regional development [10].

The main reasons of the regional and global growth of the Turkish ship repair and shipbuilding sector are the excellent geographical position, young working population, outsourcing between the shipbuilding and ship repair clusters members and smooth government support of the sector companies.

Moreover, recent Regulations of the European Union, Ukraine, the United States and some other countries regarding Russia, Crimea and Sevastopol make Turkey more attractive for International Maritime Business in comparison with the competitors in Russia, including companies in Crimea and Sevastopol [13].

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