



Israeli Maritime Strategic Assessment 2015

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Israel's Maritime Strategic Assessment: 2015 Annual Report

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1. Executive Summary

1. The last year has seen heightened international interest in the strategic and security aspects of the global maritime domain. The US and Russia published major maritime strategy documents in 2015 while China included a significant maritime portion in its strategy white paper. Global focal points of interest included China's assertive behavior in the South China Sea which contributed to a broad acceleration of a maritime arms race in Asia; assertive Russian policy in the Black Sea, the Eastern Mediterranean and the Arctic; and the refugee crisis in the Mediterranean. Global trade – which is conducted mostly through the seas – continued to grow this year, though at a slower pace due to the slowdown in the Chinese economy.

2. Political instability in the Arab World (Syria, Libya, Yemen, and to a lesser extent Egypt) continued to affect the security situation in the Eastern Mediterranean and the Red Sea. The last year has seen a dramatic increase in Russian naval activity, an unprecedented influx of seaborne refugees from Arab countries to Greece and Italy, several attacks by Islamic militants on naval and commercial vessels in Egypt, and a US and UK-backed, Saudi-led, naval blockade on Yemen. Continued political instability, coupled with the economic slowdown in China, is expected to lead to a slower pace in investment in critical infrastructure such as port facilities, in most Eastern Mediterranean countries. Nevertheless, this year, Egypt completed the expansion of the Suez Canal, increasing its potential volume of shipping.

3. The expansion of areas with limited governance along the shores of the Eastern Mediterranean is expected to further weaken environmental controls. As it is, the United Nations Environment Program (UNEP) has estimated that annual land-based pollution in the Mediterranean includes 650 million tons of sewage, 129,000 tons of mineral oil, 60,000 tons of mercury, 3,800 tons of lead and 36,000 tons of phosphates. At present, 70% of the wastewater dumped into the Mediterranean is untreated.

4. Non-state actors emerged as a growing security concern in the region. While much of the fighting occurs on the ground or via aerial bombings,

they pose an asymmetric threat on the seas, and have already demonstrated their capacity to attack naval platforms.

5. Parts of the East Mediterranean sea are subject to contradicting sovereignty claims, over zones of exclusive economic interests (EEZ). Most profound are the ongoing disagreements between Israel and Lebanon, and between Turkey and Cyprus. The recent gas discoveries in the Mediterranean are expected to exacerbate existing conflicts over delineation of maritime borders in the region.

6. Two of the leading fleets in the region – Israel and Egypt – announced major naval procurement projects this year. Israel's stated intention is to support the protection of its off-shore gas assets while Egypt's seem to serve Cairo's regional power projection aspirations.

7. The Israeli public has shown unprecedented interest in various aspects of the sea in recent years, including plans to deepen and expand the volume of its existing merchant ports, the contested agreement on the extraction of offshore gas discoveries, the expansion of its naval fleet with field and submarine platforms, and two committees which dealt with aspects of Israeli maritime planning. These trends are expected to continue in the coming years.

2. Global Trends

The last few years have seen continued international interest in the strategic and security aspects of the global maritime domain. This is largely the result of both the rise of China as a global power, widely manifesting itself on the seas, and the American response to this challenge to its post-cold war hegemony. Other factors that have contributed to this trend have been the assertive Russian policy in the Ukraine and in Syria, renewed competition in the Arctic, and the refugee crisis in the Mediterranean.

Both the United States and Russia published major maritime strategy documents in 2015, while China included an ambitious maritime component in its military strategy white paper published in 2015.¹ Chinese construction of artificial islands in the South China Sea created significant tensions with the United States

Global trade, 80% of which continues to rely on international maritime shipping, is expected to rise 3.3% in 2015.² Indeed, the global volume of maritime trade in 2013 has reached an all-time record of 9.55Bn tons.³

2.1. The Rise of China

China's economic power has been growing at a remarkable pace over the past two decades, at an average of 10% between 1991 and 2011. Even following the economic downturn it has experienced during the last few years, economic growth for 2015 is expected to be approximately 4%.⁴ This growth in economic power has fueled its political and military ambitions.

Recent Chinese military strategy white papers have revealed new perspectives regarding its usage of naval power. Besides its traditional approach of employing its naval forces in protecting its territorial waters and off-shore "access-denial" defense, the Chinese 2013 and 2015 white papers emphasized the need for China to develop blue-water capabilities and become a maritime power. These desired capabilities include safeguarding national maritime interests, protecting strategic sea lines of communication,

protecting overseas interests, and participating in international maritime cooperation efforts. These assignments, summarized under the concept of "open sea defense", extend the role of the Chinese navy beyond its immediate vicinity.⁵ Additionally, in 2013, Chinese authorities announced the Maritime Silk Road initiative, emphasizing the importance of sea lanes and trading routes with Europe. This announcement came after a decade of establishing Chinese trading ports throughout the Indian Ocean and the Arabian Sea.⁶

Concurrently, with the development of new strategic concepts, the Chinese navy has also shifted the emphasis of its modernization efforts. Over the past decade (2005-2015) the Chinese Navy nearly doubled the size of its high-seas fleet,⁷ adding new capabilities such as expeditionary amphibious assault vessels, an aircraft carrier, as well as nuclear-powered attack and ballistic missile submarines.⁸ The navy has also continued its enlargement at a fast pace, with 60 new vessels being laid-down in 2014.⁹

This emphasis on Chinese presence in the high seas has recently been demonstrated by the journey of a Chinese nuclear-powered submarine to the Persian Gulf.¹⁰ In another incident, a Chinese naval flotilla traveled to the Bering Sea, off the coast of Alaska, passing within the territorial waters of some American-owned islands.¹¹

Closer to home, Chinese naval forces have become especially aggressive in asserting their claims for sovereignty over large portions of the South and East China Seas, also referred to as the "Near Seas". Since 2012 Chinese Coast Guard and naval vessels have been patrolling the territorial waters of the Senkaku Islands, claimed by Japan, preventing access of Filipino vessels to the Scarborough Reef¹² and extensively patrolling the Spratly Islands.¹³ Additionally, Chinese authorities have been dredging and artificially expanding small islands and reefs in the Spratly region, turning them into substantial islands which can be used as permanent bases for Chinese naval and law enforcement forces.¹⁴ According to the Chinese claims, these islands generate both territorial waters and economic zones, giving China legal jurisdiction over substantial portions of the South China Sea. Most recently, the Chinese Navy has been warding off American and Philippines

surveillance aircraft from the vicinity of these islands, claiming them to be Chinese territory.¹⁵

2.2. The American Response

The United States operates the world's largest military fleet. Its naval strategy emphasizes the need to maintain forward deployment of its naval assets throughout the world, in order to guarantee its freedom of access to global commons and to protect the free flow of global commerce.¹⁶ US global deployment is affected by ongoing events, as well as by its need to counter challenges by the Russian and Chinese navies. The American response to the rise of Chinese power and its growing assertiveness has been the "pivot to Asia" policy, announced by the Obama administration in October 2011.¹⁷ The emphasis of this policy has been on strengthening bilateral relations with regional partners, and encouraging the creation of regional cooperation in order to counter possible security challenges. As part of this policy, the US enhanced military cooperation with local allies, such as the Philippines and Japan, and sought to expand its military presence in the region. More recently, the US Navy has proposed "freedom of navigation" patrols in close proximity to the Chinese artificial islands in the South China Sea, challenging their claim for territorial water rights.¹⁸ These proposals are part of the American strategy of maintaining open access to distant regions of the ocean and countering Chinese "area denial" strategy. Similar practices have also been implemented by other nations, such as Australia and Japan, exercising their freedom of navigation in the region.¹⁹

In 2014, the US and Philippines signed an Enhanced Defense Cooperation Agreement, enabling the stationing of US troops and military facilities in the Philippines for the first time since the expulsion of US forces in 1992.²⁰ However, implementation of this agreement has been delayed due to local political opposition.²¹ Meanwhile, the number and frequency of port calls by US Navy vessels in the Philippines has increased.²²

The American administration also encouraged Japan to take a more active role in regional security.²³ This was exemplified by an amendment to the bilateral security agreement between the US and Japan, as well as by its

support for the amendment of the Japanese constitution. This amendment allows the Japanese Defense Forces to take a more active role in international security, even without a direct threat to Japan.²⁴

2.3. Russian assertiveness

Following years of decline in the American presence in the Black Sea and the Mediterranean, Russia has in recent years been asserting its position in the region. The establishment of a permanent Russian naval presence in the Mediterranean in 2013, and the conquest and annexation of Crimea in 2014 are reminiscent of the past glory of the Soviet navy. The annexation of Crimea has enabled the Russian navy to strengthen its positions and assert its dominance over the Black Sea. Similarly, its naval presence in the Mediterranean has enabled Russian support to the Syrian regime, culminating in the deployment of Russian aircraft and troops to Latakia in September 2015.²⁵ Since then, Russian aircraft have been actively participating in combat activities against the Syrian rebel forces.²⁶

Russia has also been contesting American dominance in the Arctic where contested claims over the continental shelf may grant Russia restricted sovereignty rights over half of the Arctic Sea. Climate changes in the Arctic have opened the way for an economic contest between coastal states over fishing rights, trade routes, bases and oil and gas exploration.²⁷ Russia is already searching for natural resources, establishing new ports and Coast Guard positions, and charting the way for a new trading route between East Asia and Europe through the region.²⁸

Furthermore, Russia seeks to establish close relations with China, which include military cooperation and joint maneuvers. Since 2012, Russian and Chinese naval forces have been conducting joint annual maneuvers in the Pacific, Japan and the Yellow Seas.²⁹ In addition, following Russian annexation of the Crimea, Chinese naval vessels visited the new Russian port, and conducted joint naval maneuvers in the Mediterranean for the first time.³⁰

3. Major trends in the Eastern Mediterranean and Red Sea

Political instability in the Arab world (Syria, Libya, Yemen, and to a lesser extent Egypt) continued to drive the main developments in the Eastern Mediterranean and the Red Sea. These included a dramatic increase in Russian naval activity, an unprecedented influx of seaborne refugees from Arab countries to Greece and Italy, as well as several unprecedented attacks by jihadists on naval and commercial vessels.

The Arab spring brought about turmoil and destabilization throughout the Middle East. Syria and Libya, the only remaining Russian allies in the region, have become dysfunctional states, ravaged by civil wars and without effective central government. The Libyan territory is divided between two rival governments and five different regional militias, attacking each other and fighting over control of the country's natural resources. The Syrian government controls approximately 25% of its territory, while the Kurds, ISIS, and other rebel groups fight each other as well as the government over control of the country.

The loss of Libya and the ongoing threat to Russia's strategic position in the Mediterranean are among the main reasons behind the current Russian intervention in Syria. Russia has been supporting the Assad regime with weapons and advisers in order to maintain its influence and access to the Mediterranean port of Tartus. In the most recent and dramatic development, Russia has stationed its own combat aircraft in Syria, and has begun bombing attacks against rebel-held villages and towns.

Yemen has experienced Houthi rebellions and Al-Qaeda-inspired Islamic radical militias since the early 2000s. However, events of the Arab Spring have further destabilized this country, bringing about the deposition of its autocratic president and a resurgence in the Houthi insurrection. Recent Houthi successes in overrunning the country and driving out the central government have brought about coordinated efforts by local Arab countries to quash the Houthis and regain control over Yemen. The GCC countries initiated a naval and aerial campaign which was soon followed by commitment of ground troops, in order to drive back the Houthis and

reinstall the Yemeni central government. This concerted campaign is partly due to Yemen's strategic position on the Red Sea, and also a result of the Houthi alliance and affiliation with Iran.

Egypt has also gone through several dramatic regime changes as a consequence of the Arab Spring. Although stability and governance were largely maintained, Islamic radicals have gained greater independence in distant parts of the country. This is most strongly seen in Northern Sinai where Islamic radical affiliated with ISIS have been waging armed rebellion against the central government for the past two years. This rebellion was partly made possible by the influx of advanced armaments and knowledge from the civil wars in Libya and Syria.

These focal points of conflict also have effects and implications on the naval domain and its security environment. Local instability and ongoing civil wars have affected the influx of refugees who take to the sea from Turkey, Libya and Tunisia in search of better living conditions in Europe. This influx has brought about the current refugee crisis of 2015. The presence of well-armed and organized Islamic radical forces in an environment where the central government is weak or failing also has implications for the safety and security of merchant marine traffic through the Mediterranean. Missile attacks against merchant vessels in Egypt and Libya,³¹ as well as attacks against Egyptian naval vessels³² signify new challenges brought about by the current situation in the Eastern Mediterranean. These issues and challenges will be further elaborated in this report.

4. The Superpowers in the Mediterranean

The Mediterranean has historically been an arena of contest among the European powers. Situated on the southern flank of the European land mass, it has always been a major trading route with both Asia and Africa. Safeguarding these naval trading routes and securing freedom of access to different regions of the world's oceans has been in the interest of the great naval powers. Over the last decade, the rise of Chinese power has positioned it as the major rival to American dominance of the oceans?, shifting the US naval emphasis towards the Far East. However, the resurgence of Russian naval power and the growing Chinese interest in the Mediterranean have brought about an increase in overall superpower naval activity in the region.

4.1. The American presence

American naval presence in the Mediterranean stems mainly from the need to protect trading sea-lanes between Asia and the Persian Gulf and North America. Middle Eastern crude oil exports account for 26% of all American oil consumption,³³ while about 50% of American trade with East Asia passes through the Suez Canal and the Mediterranean. Furthermore, the US has an interest in supporting its European allies by providing naval security on their southern flank.

US naval operations in Europe and the Mediterranean is coordinated by EUCOM and the Sixth Fleet, which commands the naval theatre of operations of Europe, Africa and parts of the Atlantic Ocean. However, following the demise of the Soviet Union and the shift in American interest towards the Persian Gulf and East Asia, American naval presence in the Mediterranean has been considerably downsized. Over the last decade, the Sixth Fleet had only one permanent asset in the region, a command, control, and intelligence-gathering ship stationed in Italy, with no aircraft carrier group being stationed in the Mediterranean for long.³⁴ Only recently has the US Navy deployed four air defense missile destroyers in Spain, to serve as a permanent asset for the Sixth Fleet.³⁵ These forward-deployed vessels

maintain a presence in the Mediterranean as well as in West Africa, where threats of piracy have lately been growing.

Despite this lack of permanent deployment, during Operation Odyssey Dawn against Libya in March 2011, the US Navy swiftly deployed an amphibious assault group with a light helicopter carrier (LHD) and two amphibious landing ships, plus two missile destroyers and three submarines.³⁶ Similarly, during the Syrian chemical weapons crisis in August 2013, the US navy deployed five missile destroyers as well as an amphibious assault ship.³⁷ During the Crimean crisis in 2014, the US Navy deployed an aircraft carrier group which was rerouted through the Mediterranean and was made to linger for an expanded period.³⁸ Furthermore, since the Russian annexation of Crimea, the US Navy has maintained a nearly continuous presence of destroyers in the Aegean Sea and the Black Sea, in order to react to possible future Russian moves.³⁹ Therefore, while the spread of US naval assets enables worldwide power-projection, the lack of permanent presence in the Mediterranean restricts the ability of US Navy to react quickly to evolving events.

4.2. The Chinese presence

Chinese naval interests in the Mediterranean stem mainly from its growing hunger for energy resources and its newly developed interest in protecting its sea lines of communication and its global economic investments.

Over the past decade Chinese companies and government agencies have invested substantially in natural materials, energy, and infrastructure sectors around the globe, with 14% of these investments in Middle Eastern countries. Furthermore, oil exports from the Middle East accounted for 60% of Chinese energy consumption in 2011.⁴⁰ Most of these exports came from joint venture oilfields developed exclusively by Chinese oil companies. Table 01 summarizes Chinese investments and energy imports from the region. Additionally, China owns some of the largest merchant marine shipping companies in the world,⁴¹ and two of these companies bought major commercial transshipment hubs in the Mediterranean – Alexandria and Piraeus.

However, following the outbreak of the 'Arab Spring' and the deposition of Muammar Kadafi's regime, the Chinese government had to evacuate its citizens from Libya and oil exports from this country have dropped by 75%. Similarly, ongoing civil wars in both Syria and Southern Sudan have dramatically reduced oil exports from these countries.⁴² Such disruption in oil exports represents a significant threat to Chinese interests and investments in the region. Following the conclusion of the Iranian nuclear agreement and the future lifting of sanctions, Chinese interests in the Iranian oil and gas sectors have also become a significant contributor to its regional presence. Additionally, against the backdrop of the rise of piracy activity off the coast of Somalia, the Chinese Navy has had a growing interest in maintaining and safeguarding international sea trading routes in the Red Sea.

Table 01: Chinese investments and energy imports from the Middle East

Country	Chinese investments (\$Bn) ⁴³	Energy Imports in 2011 (percentage on national consumption) ⁴⁴
Iran	10.7	11%
Saudi Arabia	17.7	20%
Iraq	15.3	8%
Libya	14.2	3%
Algeria	9.3	
Egypt	8.5	
Turkey	7.5	
Sudan	3.8	8%
Syria	3.7	3%

In December 2008 the Chinese government announced the first ever deployment of a naval flotilla to conduct anti-piracy operations in the Gulf of Aden.⁴⁵ Since then the Chinese Navy has been maintaining a constant presence of an anti-piracy flotilla comprised of 2-3 vessels in the area. Chinese naval warships first crossed the Suez Canal and visited ports in Egypt and Italy in June 2002, during a circumnavigation voyage around the world.⁴⁶ However, since its deployment in the Gulf of Aden, the Chinese flotilla has conducted "port calls" in the Mediterranean in 2010 (Egypt, Italy and Greece)⁴⁷, 2011 (Crete and Greece), 2012 (Israel and Turkey), 2013 (Malta, France, Portugal and Greece)⁴⁸ and 2014 (Cyprus). In May 2015, Chinese warships visited the Russian Black Sea port of Novorossiysk, and

conducted a joint military naval exercise with the Russian fleet in the Mediterranean.⁴⁹

Apart from diplomatic missions and "port calls", Chinese warships have so far conducted three operational deployments in the Mediterranean. On February 2011, the Chinese navy deployed a missile frigate to escort the evacuation of 35,000 Chinese nationals from Libya. Furthermore, in January 2014, a Chinese missile frigate was deployed to Cyprus, to escort the transfer of Syrian chemical weapons on their way to being destroyed by the OPCW in Italy.⁵⁰ Additionally, a Chinese missile frigate was dispatched to the Port of Aden on April 2015, to evacuate Chinese and foreign nationals from war-torn Yemen.⁵¹

In all of these cases, Chinese vessels employed were drawn from the anti-piracy flotilla deployed in the Gulf of Aden. Therefore, this Chinese deployment can be considered a power projection tool to protect Chinese interests in the region.

4.3. The Russian presence

Russian interests in the Mediterranean stem from its location as a corridor leading into the Black Sea, as well as its position at the southern flank of Europe, and the NATO alliance. The Black Sea serves as a major hub for Russian exports of both crude oil and grain. Due to its warm water, which enables year-round naval activity, the Black Sea is also considered of strategic importance to the Russian navy. However, its enclosed geographical characteristics and narrow outlet into the Mediterranean makes the Russian Black Sea fleet vulnerable in times of conflict. Therefore, both the Soviet Union and the Russian federation have sought to maintain a permanent presence in the Mediterranean.

Over the last decade, Russia renewed its interest in the Mediterranean as a means of maintaining its relations with its remaining clients in the region (Libya and Syria), as well as safeguarding its trade routes and filling the vacuum created by the dwindling US presence in the region. In October 2008 a navy flotilla headed by Russia's only aircraft carrier made a "port call" in Libya on its way to a military exercise in Venezuela,⁵² and conducted

flight exercises off the coast of Greece.⁵³ Since 2008, the Russian navy has also deployed a rotational anti-piracy flotilla in the Gulf of Aden.⁵⁴ Russia has also maintained a nominal but permanent presence in the Syrian port of Tartus.

Following the outbreak of the Syrian civil war, the Russian Navy also deployed a flotilla off the coast of Syria in November 2011,⁵⁵ and in June 2013 announced the creation of a permanent Mediterranean task force, fashioned after the cold-war era Soviet Navy's Fifth Squadron.⁵⁶ The task force includes 10 vessels on rotation from the Black Sea and northern fleets, including a destroyer, 2-3 frigates, as well as supply and landing vessels.⁵⁷ Throughout 2013, vessels from this task force made rare "port calls" to Israel, Lebanon, Egypt, Greece, and Malta.⁵⁸ Since its creation, the Russian task force has conducted joint naval exercises with the navies of Italy (2013),⁵⁹ Israel and Cyprus (2014),⁶⁰ as well as with the Egyptian Navy (2015).⁶¹ Furthermore, the task force hosted annual deployments of Russia's aircraft carrier in the region.⁶² These deployments coincided with Russian–American tensions over the Syrian civil war, and the Crimean crisis. The Russian task force also participated in the escort, evacuation, and destruction of Syrian chemical weapons in January 2014, in cooperation with NATO members and the OPCW.⁶³

These intensive activities establish the continuous presence of the Russian navy in the Eastern Mediterranean. The Russian-Cypriot agreement, signed in February 2015,⁶⁴ grants the Russian navy basing rights for both ships and aircraft in Cyprus, establishing the option for a permanent Russian presence in the region. Most recently, Russia has significantly intensified its involvement in the Syrian civil war, with the deployment of over 50 aircraft, 2000 troops as well as air defense assets.⁶⁵ Russian troops are located at two bases in northern Syria and have been working on upgrading and enlarging their naval base in Tartus. In a dramatic shift, Russian aircraft have begun conducting bombing sorties against rebel targets in northern Syria, assisting the ground offensive headed by Hezbollah and the Syrian army.⁶⁶ Russian warships in the Caspian Sea have launched cruise missiles to strike rebel targets in Syria, 1500km away.⁶⁷

The Mediterranean task force, together with the Russian anti-piracy flotilla in the Gulf of Aden, creates a solid basis for Russian power-projection in the region. The Crimean annexation and the ongoing crisis in Ukraine has heightened tensions between the US and Russia. These tensions will probably lead to increased presence of the US and Russian Navies in the Eastern Mediterranean.

4.4. Other navies

Beside the great superpowers, other nations are also involved in the Mediterranean on a regular basis. For the most part, these are European nations, with the exception of India. The British Royal navy has a long history of presence and dominance in the Mediterranean, and although the days of the British Empire are long gone, it still considers itself a global power. The Royal Navy regularly contributes vessels to multi-national task forces, such as CTF-150 and CTF-151 in the Gulf of Aden, as well as to the NATO Standing Response Force in the Mediterranean. Additionally, the navy's Response Force Task Group - consisting of amphibious assault vessels, as well as destroyers and frigates - holds annual deployment exercises in the Mediterranean. These exercises maintain British naval presence in the region, and enable quick power projection in times of crisis. Furthermore, the UK also maintains permanent bases in Gibraltar and Cyprus, which may be used to support power projection operations in the region. The Royal Navy was one of the main contributors to NATO's Unified Protector operation against the Kadafi regime in Libya, as well as the current EU Frontex's Triton operation to control Italy's and Greece's sea border and save the lives of illegal immigrants from Africa.⁶⁸ The German Naval involvement is substantially smaller, with regular contribution to international maritime task forces, such as in Lebanon (following UNSC Resolution 1701) and off the Somali coast. Furthermore, the German navy also contributed ships for the EU Triton operation dealing with the migrant crisis in the Mediterranean.⁶⁹

The Indian navy maintains a permanent presence in the Gulf of Aden, which can be used as a basis for operational activity in the region. Indian ventures into the Mediterranean are occasional, occurring recently in 2009 and 2012.

These ventures included several vessels which made multiple "port calls" and conducted joint exercises with local navies.⁷⁰

Iranian naval presence in the Red Sea began in 2009 with anti-piracy patrols in the Gulf of Aden, following an attack on an Iranian merchant vessel by Somali pirates. Since then the Iranian navy has maintained its presence in the Gulf of Aden, making occasional port calls in Eritrea and Port Sudan.⁷¹ In 2011, two vessels of the Iranian Navy made a historic voyage through the Suez Canal and visited the Syrian port of Latakia,⁷² while making a port call en-route at the Saudi Arabian port of Jeddah.⁷³ A similar voyage was repeated in 2012.⁷⁴ These voyages represent Iranian diplomacy and interests in the Mediterranean. However, they do not constitute a real operational capability, having to rely on the goodwill of Saudi Arabia and Egypt which are suspicious of Iranian intentions. Iranian involvement in the Yemeni civil war and its support for the Houthi rebels brought about a crisis as Iranian ships tried to break through the Saudi and Egyptian imposed blockade of Yemeni ports.⁷⁵ Table 02 summarizes foreign navy activities in the Eastern Mediterranean and the Red Sea regions.

Table 02: Comparing types of tasks performed by international powers in the Mediterranean

	Mediterranean				Red Sea
	Port calls	Joint exercises	Operational deployment	Permanent presence	Operational deployment
USA	O	R	R		R
Russia	R	O	O	R	O
China	R		O		R
UK	R	R	R	R	R
Germany	In		O		O
India	In	In			R
Iran	In				O

R – Regularly

O – Occasionally

In – Infrequently

4.5. International task forces

Following the September 11th attacks, the US and its allies established several international task forces to patrol major sea lanes, protect commercial naval transportation against piracy and terrorist attacks, and inspect ships for illegal arms trade and weapons of mass destruction. In the Mediterranean, NATO established "Operation Active Endeavour" which patrolled the shipping lanes while inspecting ships and curbing illegal arms trade.⁷⁶ Similarly, in the Gulf of Aden and the Horn of Africa, the US Centre Command established the Combined Maritime Forces (CMF) as a coordinating organ of multi-national naval cooperation. Three distinct combined task forces (CTF) were set up under CMF: CTF-150 was charged with counter terrorism operations in the Gulf of Aden, CTF-152 is responsible for maritime security in the Persian Gulf, while CTF-151 was established in 2009 as a multi-national response to the growing threat of piracy in the Gulf of Aden and off the Somalia coast.⁷⁷ Participation in these task forces is voluntary but includes like-minded nations, such as the major NATO members as well as some of their local allies. Other nations, such as Russia, China, India and Iran, conduct their own anti-piracy operations independently, but in coordination with these task forces.

Following the Israeli-Hezbollah War in Lebanon in 2006, UN Security Council resolution 1701 established a maritime task force attached to UNIFIL. This force is charged with patrolling the territorial waters of Lebanon, in order to preserve its sovereignty and intercept illegal arms shipments. Since 2011 this task force has been led by a Brazilian commander and consists of seven ships. Currently the task force includes vessels from Greece, Turkey, Germany, Brazil, Bangladesh and Indonesia.⁷⁸

In March 2011, following the escalation of the Libyan civil war, NATO forces conducted operation Unified Protector against the Kadafi regime forces. Initially an American-led operation, it involved the deployment of naval vessels from numerous nations including France, the UK, Belgium, the Netherlands, Spain and Turkey. This intervention included a naval arms embargo on Libya, guided missile launches against land-based targets, and

air strikes.⁷⁹ Although the operation ended in October 2011, the UN arms embargo on Libya remains in force due to the resumption of the civil war.⁸⁰

During the Syrian chemical weapons crisis in 2013-2014, following the UN Security Council Resolution 2118, a special UN-OPCW mission was sent to Syria to supervise the destruction of its chemical weapons. In order to assist this mission, an international naval task force, headed by Norway and Denmark was charged with transporting dangerous priority grade chemical materials out of Syria. This task force included warships from Russia, China, Norway and Denmark, which escorted the chemical weapon materials out of Syria.⁸¹ These materials were then transferred in Italy to US and British Navy vessels, for destruction at sea or in the UK.⁸²

Following the influx of illegal migrants entering Europe through the Mediterranean, the EU initiated a joint maritime patrol operation in 2014, named "Triton".⁸³ Triton included vessels from Germany, UK and Croatia, assisting the Italian navy and coastguard in patrolling the sea and helping migrants from capsized vessels. In June 2015, the EU established a joint task force - EUNAVFOR Med - in order to curb the illegal migration to Europe by seizing the boats and apprehending the smugglers and owners of these vessels.⁸⁴

5. Regional Navies

5.1. Eastern Mediterranean Navies

Because of the enclosed character of the Mediterranean and the lack of direct access to the ocean, most of the coastal countries in the Eastern Mediterranean have developed small littoral navies whose main tasks include protecting territorial water and national fishery industries in the respective Exclusive Economic Zones (EEZ), as well as preventing terror attacks, piracy, and smuggling, and curbing illegal migration. However, some nations with regional aspirations have developed more sophisticated capabilities, while the naval capabilities of others have been decimated by the upsurge of civil wars following the 'Arab Spring'. Furthermore, old rivalries between some nations have been a driving force behind some regional arms-races.

Armed naval vessels are commonly distinguished into patrol and combat roles. Navies also employ a variety of non-armed technical and auxiliary vessels, as well as submarines. Patrol ships are smaller and lighter in armament, and are designed to maintain law and order and perform policing duties in the littoral waters and EEZ. Off-shore patrol capability is essential in order to patrol the extended EEZ. Combat vessels are designed to augment patrol duties with precise firepower and additional capabilities which will enable them to project power, safeguard national interest and fulfill a variety of specific missions (see vessel categories in Appendix A). All types of combat vessels can perform combat duties in the littoral waters and the EEZ. However, only larger combat vessels are able to perform combat duties on the high seas, beyond the range of the EEZ. These different distinctions between ship's roles will be used to assess the capabilities of the various regional navies.

The following tables compare the different categories of naval assets in each of the regional Eastern Mediterranean navies. Each navy will be discussed in further detail below.

Table 03: Comparison of armed naval vessels in the Eastern Mediterranean⁸⁵

	Turkey	Greece	Israel	Egypt	Syria	Lebanon	Cyprus	Libya
Small PBs	37		18	12	9	37	5	
Large patrol craft	26	12	28	44		4	9	14
Off-shore patrol	82	18		33	4			1
MFPBs	26	17	10	30	22			
Corvettes	8		3	6				2
Frigates	17	13		6				
Submarines	14	8	4	4				
Expeditionary Amphibious vessels	5	5		2				

Table 04: Comparison of land-based naval assets in the Eastern Mediterranean

	Turkey	Greece	Israel	Egypt	Syria	Lebanon	Cyprus	Libya
Radar surveillance	√	√	√	√	√	√	√	
MP aircraft	10	8	3	4			1	
ASW helicopters	20	19	5	15	10			
Coastal-defense missile batteries				20	10			

5.1.1. Israel

Surrounded by hostile neighbors, Israel is like an island with 99% of its trade conducted through the sea. The protection and safeguarding of its sea lanes is seen as a one of the primary goals of its naval forces. Additionally, its coastal shore of 273km contains some of the nation's most strategically important installations, such as power plants, ports, water desalination plants, and communications centers, as well as approximately 70% of the Israeli population. Furthermore, the Israeli EEZ which covers an area of 25,140km² has recently been the site of large discoveries of natural gas.⁸⁶ Therefore, Israel's naval interests extend beyond the sphere of littoral protection, to safeguarding its naval trading routes and economic assets. Over the past two decades, the surface fleet of the Israeli navy has been reduced by 50%, with stronger emphasis placed on patrol vessels and submarines. These submarines are considered of vital strategic importance in Israel's national security doctrine.

Currently, the Israeli navy's submarine force includes four modified Type 212 diesel-electric attack submarines. Two additional submarines are due to join the Israeli navy by 2017. These submarines, which have a range of 8,000nmi and mission endurance of 84 days, are armed with torpedoes and anti-ship missiles. According to foreign sources, these submarines are also capable of launching nuclear-capable cruise-missiles.⁸⁷

The Israeli Navy's surface fleet includes three corvettes and ten Missile Fast Patrol Boats (MFPBs). Recently, the Israeli Ministry of Defense announced a contract with the German government to supply Israel with four new corvettes by 2020.⁸⁸ Additionally, Israel's patrol fleet includes 28 large patrol craft, as well as 18 armed small PBs. The navy's land-based assets include a networked system of maritime surveillance radars, as well as three maritime patrol (MP) aircraft and five maritime patrol and anti submarine warfare (ASW) helicopters.

The current order of battle of the Israeli navy is mostly designed towards patrolling of its territorial waters and protecting its assets in the EEZ. However, even after the latest contract with Germany, its combat capabilities on the high seas are still rudimentary.

5.1.2. Turkey

One of the biggest and most ancient nations in the region, Turkey has an old naval tradition as well as a coastline of approximately 7,100km which covers the Mediterranean, the Black Sea, and the Sea of Marmara. Turkey's Mediterranean EEZ covers an area of only 72,200km², due to its proximity to Cyprus. Straddling the Bosphorus and Dardanelle Straits, Turkey has always held an important strategic position in the region and has often been involved in maritime conflicts with both Russia and Greece. Therefore, Turkey's naval interests include the need to maintain a balance of power with both these nations. Furthermore, as a member of the NATO alliance, Turkey perceives of its naval interests far beyond its littoral waters and contributes ships regularly to NATO task forces in the Mediterranean and the Gulf of Aden. For the past two decades Turkey has been upgrading its navy with new vessels, some of which have been purchased second-hand from the US Navy.

The Turkish Navy's submarine force includes 14 Type 209 diesel-electric attack submarines in two variants (1200/ 1400). These submarines, with a range of 8,000nmi and mission endurance of 50 days, are armed with both torpedoes and anti-ship missiles. Additionally, the Turkish navy has ordered six advanced Type 214 submarines from Germany, with deliveries beginning in 2017.⁸⁹ These submarines have longer endurance of 84 days.

The Turkish Navy's surface fleet includes 17 frigates, 8 corvettes and 26 MFPBs. The Turkish navy's MILGEM project includes the purchase of an additional six corvettes and four frigates by 2020 from local manufacturers.⁹⁰ The navy also operates five strategic amphibious warfare ships which form the basis for Turkey's amphibious power projection. Additionally, the Turkish Navy and Coast Guard operate 82 off-shore patrol vessels, as well as 26 large patrol vessels and 37 armed small PBs. The navy's land-based assets include a networked system of maritime surveillance radars, as well as 12 MP aircraft and 22 ASW helicopters.

The current Turkish order of battle is amply suited for patrol and combat operations in its littoral waters and EEZ. Furthermore, Turkey's large fleet of frigates and corvettes, together with its amphibious capability allow for combat operations on the high seas, as well as power projections towards other parts of the Mediterranean.

5.1.3. *Greece*

With over a thousand islands under its domain, the Greek coastline is approximately 13,700km, and its EEZ covers an area of 397,140km². Being an island nation, Greece has a lively naval tradition and a thriving commercial fleet. Greece's naval interests are derived from its age-old rivalry with Turkey, the need to maintain and protect its sovereignty over the distant islands, as well as from the interests of its large fishing industry. Greece also contributes regularly to the NATO task force in the Mediterranean. Most of the Hellenic Navy's vessels were purchased in the 1990s, and no new surface vessels have been inducted over the last decade.

The Hellenic Navy's submarine force includes seven Type 209 diesel-electric attack submarines. These submarines, with a range of 8,000nmi and mission

endurance of 50 days, are armed with both torpedoes and anti-ship missiles. Additionally, the navy has ordered four Type 214 submarines to be built locally in Greek shipyards, of which one has already entered service.⁹¹ These submarines have longer endurance of 84 days.

The Hellenic Navy's surface fleet includes 13 missile frigates and 17 MFPBs. The Hellenic Navy also operates five strategic amphibious warfare ships which form the basis for Greece's amphibious power projection.⁹²

In addition, the Hellenic Navy and Coast Guard operate 18 offshore patrol vessels and 12 large PBs, while the Coast Guard also operates more than 100 small unarmed PBs.⁹³ The navy's land-based assets include a networked system of maritime surveillance radars, as well as eight MP aircraft and 19 ASW helicopters.

Given the large size of its EEZ, the current composition of the Greek navy is better geared towards combat operation and power projection in international waters, than towards patrolling and safeguarding its littoral waters and EEZ. These shortcomings have become more palpable during the current migrant crisis.

5.1.4. *Egypt*

One of the most ancient nations in the world, Egypt has a long naval tradition, as well as a 2,450km coastline which stretches along both the Mediterranean and the Red Sea. The Egyptian Mediterranean EEZ covers an area of 169,120km² and includes several well-established oil and gas fields. Furthermore, Egypt's status as a regional leader in the Arab world, and its long-standing rivalry with Israel drive much of its naval procurement policies. Over the last two decades, the Egyptian Navy has purchased some second-hand vessels from the US and European partners, but its fleet has been gradually aging. However, since the Arab Spring the Egyptian government has signed several significant contracts in an effort to refurbish its naval power.

The Egyptian navy's submarine force still includes some four 1950s diesel-electric Romeo-class submarines, although their operational status is

doubtful. The Navy has recently ordered four Type 209 diesel-electric submarines from Germany, with the first two scheduled to arrive in 2016.⁹⁴

The Egyptian Navy's surface fleet includes six missile frigates, six missile corvettes, and 30 MFPBs. Recently, the Egyptian government signed a contract with France which includes an immediate sale of one FERMM missile frigate, and an order of four missile corvettes, to be constructed locally in Egypt.⁹⁵

In September 2015, France announced a contract to supply Egypt with two Mistral class Landing Helicopter Dock (LHD) vessels which were previously contracted and built for the Russian Navy.⁹⁶ These two ships are intended to enter service with the Egyptian Navy in 2016, and will form the basis of an Egyptian amphibious power projection capability.

Moreover, the Egyptian Navy's patrol fleet includes 33 off-shore patrol vessels, 44 large patrol craft and 12 small armed PBs, as well as approximately 50 unarmed PBs. The navy's land-based assets include a networked system of maritime surveillance radars, 20 batteries of coastal defense missiles, as well as four MP aircraft and 15 ASW helicopters.⁹⁷ The current order of battle of the Egyptian Navy emphasizes patrol and combat missions in the littoral waters and EEZ. Even with the conclusion of its current procurement contracts, its power projection capability will remain rudimentary; however, it will gain significant amphibious and high seas capabilities.

5.1.5. *Syria*

The Syrian coastline stretches over 193km, and its EEZ covers an area of 10,190km². Based exclusively on outdated Russian armaments, the Syrian Navy has not received any significant new vessels since the 1980s. This navy represents a classic example of a modest littoral fleet. However, the recent civil war may have diminished even those modest capabilities.

Before the outbreak of the Syrian civil war, the Syrian Navy included 22 MFPBs, four off-shore patrol vessels, as well as nine small PBs. The navy's land-based assets included a networked system of maritime surveillance

radars, ten coastal defense missile batteries, as well as ten ASW helicopters.⁹⁸ Reports during the civil war indicated that advanced systems of Russian coastal defense missiles have been destroyed, probably by Israel.⁹⁹ However, it is unclear whether other assets of the Syrian Navy are still operational.

The order of battle of the Syrian Navy presented here indicates ample patrol and combat capabilities within littoral waters and EEZ. However, this navy lacks any capability beyond its EEZ. Furthermore, following the ongoing civil war, the status and operability of the Syrian Navy remain unknown.

5.1.6. Lebanon

The Lebanese coastline stretches over 225km, while its EEZ covers an area of 19,270km². Due to its proximity to the recent Cypriot and Israeli gas discoveries, this EEZ may also contain some significant gas discoveries. However, the Lebanese civil war of the 1970s and 1980s totally wrecked the Lebanese Army and Navy, and these capabilities have not been restored since. The predominance of Hezbollah militia in Lebanon over the last decade has prevented any major arm deals with Western nations.

Currently, the Lebanese Navy includes 40 unarmed patrol vessels, of which only 3 are large patrol craft while the others are small PBs.¹⁰⁰ The navy's land-based assets include networked coastal surveillance radars, contributed by Germany. Therefore, while capable of patrolling its territorial waters, the Lebanese Navy lacks any capability in its EEZ or beyond.

5.1.7. Libya

The Libyan coastline stretches over approximately 2,770km, and its EEZ covers an area of 355,590km². Libya also has a large fishing industry. However, following the Libyan civil war and the 2011 NATO operation against the Kadafi regime, its navy was all but decimated. Presently, the Libyan Navy includes 2 corvettes, a single off-shore patrol vessel, as well as 14 large patrol craft.¹⁰¹ However, with the resumption of civil war in Libya in 2013, the operational status of these vessels remains doubtful. Currently, the Libyan military is divided between two competing governments, which

frequently attack and sabotage each other's assets and installations.¹⁰² At present it is unclear who controls the Libyan Navy and which vessels are operated by each government. However, it is quite clear that the navy is unable to patrol its own territorial waters, let alone conduct operations in its EEZ and beyond.

5.1.8. Cyprus

The Republic of Cyprus, covering the southern half of the island, has a coastline of approximately 650km, while its EEZ covers an area of 80,410km² and includes some newly-found reserves of natural gas. Despite its large EEZ, the recent history of Cyprus as a British colony and later as being partly under Turkish rule has significantly restricted the nature of its navy. Currently, the Navy and Maritime Police of Cyprus include nine large patrol craft and five small PBs, all of which are unarmed.¹⁰³ The navy's land-based assets include a networked system of maritime surveillance radars, as well as one MP aircraft and five search and rescue helicopters. The assets of the Cypriot navy are barely sufficient to patrol its littoral waters.

5.2. Non-state actors

In several regions of the Eastern Mediterranean, the sovereignty of nation states has been undermined, and local armed militias have established effective control over significant parts of the country. This phenomenon of "failed states" has given rise to non-state actors which control substantial military assets and can potentially threaten the freedom of navigation of commercial vessels. Originally comprising Hezbollah in Lebanon and Hamas in the Gaza Strip, non-state actors have taken hold in additional countries following the eruption of the Arab Spring. The ongoing civil wars in Libya, Syria and Yemen, as well as the destabilization of the Egyptian Sinai has provided an opportunity for local radical Islamic militias, which were previously identified with al-Qaeda and are currently affiliated with ISIS, to seize control over military installations and even maritime ports.

Most of these groups are armed with light weapons and anti-tank missiles. However, some groups also operate small boats which may be armed with

explosives or small caliber guns. These boats can be used to attack commercial and military vessels, as well as maritime installations. In one of the most famous incidents, the US Navy destroyer USS Cole was hit by an explosive-laden speed boat at the Yemeni port of Aden in October 2000.¹⁰⁴ More recently, Islamic rebels in Libya have used small boats to attack oil installations of the Tobruk-based government of Libya.¹⁰⁵ In November 2014, Islamic militants attempted to hijack an Egyptian navy vessel, killing several crew members.¹⁰⁶

More often, these groups use shore-based missiles to attack civilian and military vessels which pass close to the coast. During the Second Lebanon War in 2006, an Israeli corvette was struck by a Hezbollah-operated Chinese-model anti-ship missile (C-801). Recent information indicates that the arsenal of shore based missiles controlled by Hezbollah has been significantly enhanced and upgraded.¹⁰⁷ A similar attempt was carried out by Hamas in Gaza in August 2011.¹⁰⁸ Egyptian Islamic militants associated with ISIS have mounted several attacks on commercial vessels in the Suez Canal during 2013.¹⁰⁹ In July 2015, ISIS-affiliated militants succeeded in destroying an Egyptian patrol vessel with an anti-tank missile in Northern Sinai.¹¹⁰

Hamas and Hezbollah, which are the most institutionalized and best financed of these non-state actors, operate naval commando units which specialize in underwater infiltration. These units present a specific threat to coastal and maritime installations.¹¹¹

5.3. Comparative perspective

The discovery of off-shore gas in the Eastern Mediterranean in the early 2000s has ignited several conflicts over the demarcation of EEZs and excavation rights for natural resources between Turkey, Cyprus, Israel and Lebanon (to be further discussed in later sections). These ongoing conflicts emphasize the need to compare the capabilities of these nations to patrol and protect their interests in their respective EEZs, as well as project power and pursue their claims beyond their respective borders. Figure 01 presents a comparison of patrol and combat capabilities in the EEZ, for the Eastern

Mediterranean region. The chart shows that Turkey has by far the largest fleet, well capable of protecting its economic interests. However, this Turkish capability is divided between the Mediterranean and the Black Sea. The Egyptian capability is almost twice as great as that of Greece, while the Greek EEZ is almost double the size of the Egyptian's. However, like Turkey, Egypt also has to spread its forces between the Mediterranean and the Red Sea. Israel and Syria possess very small forces, but have relatively smaller EEZs. Cyprus and Lebanon stand out as having no capabilities to protect their respective EEZs. This problem is clearly prominent with regard to Turkish gas explorations in the Cypriot EEZ (described in later sections). Therefore, it may be summarized that Turkey and Egypt have ample capability, while the capabilities of Greece, Israel and Syria are thinly stretched, and Lebanon and Cyprus have none.

Figure 01: Comparing patrol / combat capabilities in the EEZ among Eastern Mediterranean navies.

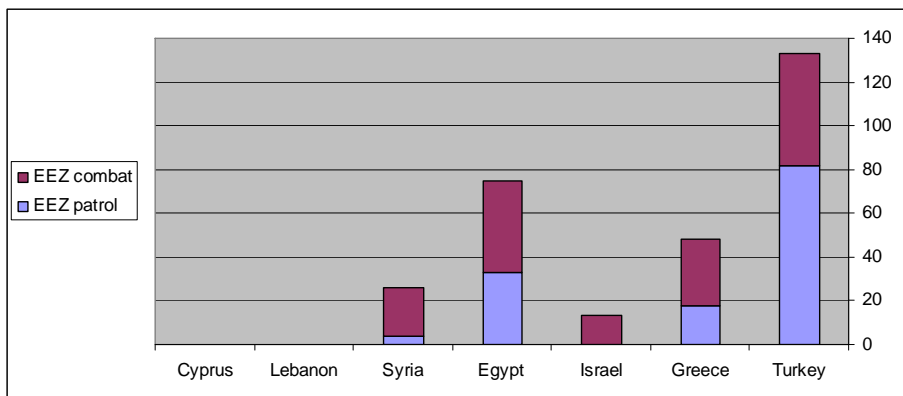
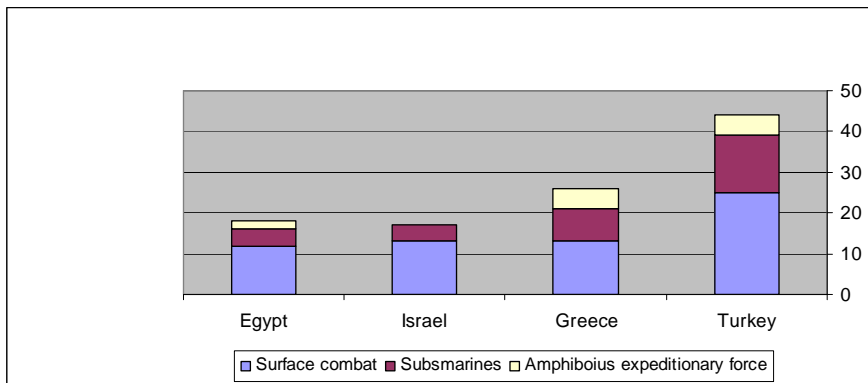


Figure 02 presents a comparison of power projection capabilities beyond the EEZ, through patrol and combat operations on the high seas. The chart shows that only four regional nations possess such capability, with Israel, Egypt and Greece presenting very similar sized fleets. The Turkish fleet is by far the largest, with twice as many high seas vessels as those other nations. Therefore, it can be surmised that with the exception of Turkey, these remaining nations possess some rudimentary power projection capabilities.

Additionally, Greece and Turkey are the only nations in the Eastern Mediterranean which possess an amphibious power projection capability, which allows them to inject a substantial ground expeditionary force into areas of conflict beyond their economic zones.

Figure 02: Comparing High Seas power projection capabilities among Eastern Mediterranean navies



5.4. Red Sea navies

Since the days of the Roman Empire, the Red Sea has served as the major thoroughfare for naval trade between Europe and South Asia. Today, about a third of the world's naval traffic passes through this body of water. However, the countries bordering this sea do not have a rich seafaring tradition. Most of these nations gained their independence in the second half of the twentieth century, and are for the most part still engaged in border conflicts with their immediate neighbors. These countries formed small littoral navies which are designed to protect their territorial waters and local fishing industries. The following table summarizes the composition of these navies by categories. Two countries stand out from this table – Egypt which has been reviewed under the Mediterranean section, and Saudi Arabia which will be described below.

Table 05: Comparison of categories of vessels in the Red Sea navies

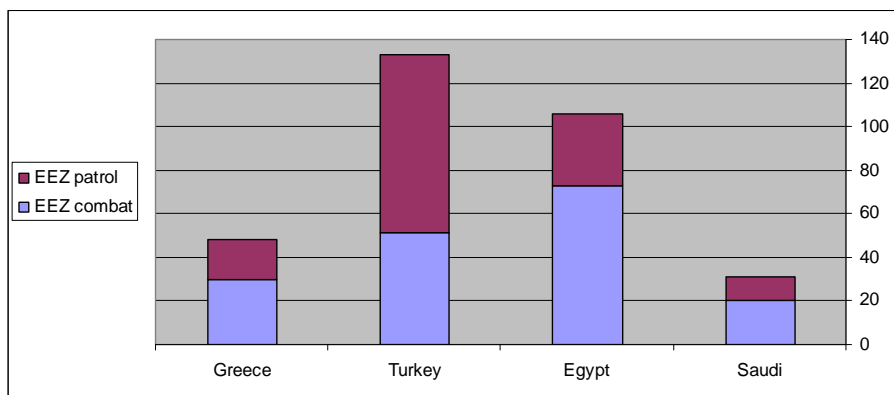
	Saudi Arabia	Egypt	Israel	Eritrea	Jordan	Sudan	Yemen
Small PBs	40	12	18	5	14	15	10
Large Patrol	25	44	20	6	3		15
Off-shore Patrol	11	33					5
MFPBs	9	28	10	5			
Corvettes	4	6	3				
Frigates	4	6					
Destroyers	3						

5.4.1. Saudi Arabia

The Saudi coastline of approximately 2,650km stretches along both the Red Sea and the Persian Gulf, while its Red Sea EEZ covers an area of 186,390km². Saudi naval interests include protection of its oil industry and trading routes, as well as safeguarding its leadership role and influence in the region. Specifically, the Saudi regime is in fierce rivalry with Iran over hegemony in the Persian Gulf. This rivalry guides some of the Saudi naval buildup, which is divided between the Red Sea and the Persian Gulf. Over the last decade, the Saudi Navy has not purchased any new vessels, while the majority of its fleet is based on vessels acquired in the 1980s.

Presently, the Saudi Navy's surface fleet includes three missile destroyers, four frigates, four corvettes, and nine MFPBs. The navy's patrol fleet includes 11 off-shore patrol vessels, 25 large patrol craft, 40 armed small PBs, as well as approximately 150 unarmed PBs. The navy's land-based assets include four coastal defense missile batteries, as well as 27 ASW and search and rescue helicopters.¹¹² The Saudi fleet is therefore characterized as highly capable of patrolling its littoral waters, but less suited for patrolling its EEZ or for combat missions on the high seas. The inadequacy of the Saudi fleet is clearly demonstrated by comparing its combat and patrol capabilities in the EEZ to other regional nations with similarly-sized EEZs. Figure 03 compares the Saudi EEZ capability with those of Egypt, Turkey and Greece. The chart clearly shows that the Saudi fleet is far smaller than even the relatively small Hellenic surface fleet.

Figure 03: Saudi Arabia patrol and combat capabilities in the EEZ, in comparison with other regional fleets



Other Red Sea navies are far more rudimentary, due to the unstable status of these countries. Yemen is ravaged by civil war, while Sudan and Eritrea have been largely preoccupied in land-locked conflicts. The navies of all three countries consist of small fleets of patrol crafts which are inadequate to secure their own territorial waters. The Eritrean navy includes five MFPBs, six large patrol craft, as well as seven armed small PBs. The Sudanese Navy includes only 15 armed small PBs, whose operational status is doubtful. While the Yemeni Navy includes five off-shore patrol vessels, 15 large patrol craft, ten armed small PBs, as well as some 30 unarmed PBs.¹¹³ Furthermore, due to the ongoing Yemeni civil war, the government has lost effective control over its military arsenal. Rival factions and radical elements now control some of these assets, including naval vessels which may be used to disrupt commercial traffic in the Red Sea.

Therefore, it may be surmised that Saudi Arabia and Egypt are the only Red Sea nations with any substantial combat capabilities, and even these nations have only rudimentary capability beyond their respective EEZs. The limitations of these capabilities were demonstrated in the recent Yemeni civil war, when a Saudi-led coalition of neighboring countries attempted to impose a naval blockade on Yemeni rebels. An Iranian attempt to break this blockade was only thwarted by the deployment of a US carrier strike group to the region.¹¹⁴

Israel and Jordan, although operating small commercial ports (Eilat and Aqaba), have no substantial claims in the Red Sea. Both nations maintain only a small force of PBs, mainly for customs and border protection. However, due to national security concerns regarding weapons smuggling to the Palestinian Authority, the Israeli navy sometimes uses its Eilat base for forward deployment of larger vessels for its Mediterranean fleet. Such deployments are intended to intercept and inspect commercial vessels suspected of transporting illegal arms shipments through the Red Sea. The most renowned of these operations included the capture of Karina-A in January 2002, and the Klos-C in March 2014.¹¹⁵

6. International Law of the Sea

The United Nations Convention of the Law of the Sea (UNCLOS-concluded in 1982) is the most recent and extensive international treaty which codifies international law and conduct with regard to international bodies of water. The Convention defines the rights and responsibilities of nations with respect to their use of the world's seas and oceans and the management of marine natural resources. As of 2015, 167 countries have joined this convention, Palestine being the most recent signatory in January 2015.¹¹⁶ However, several nations including the USA, Turkey, Israel and Syria are not members of this treaty. The convention seeks to balance between the rights of coastal states, which border on a specific body of water, and the rights of all other states to enjoy the 'freedom of the sea', enshrined in customary international law.

The convention defines several distinct zones of the sea, each with its own distinct rights and obligations to the coastal states and naval powers. The limits of each of these zones are measured as a distance from a specifically defined baseline.¹¹⁷

Two of these zones (*internal* and *territorial waters*) ascribe full sovereignty and enforcement powers to the coastal state. Another zone – *high seas* or *international waters* - ascribe full freedoms and rights to all states and naval powers. However, two of the defined zones ascribe some sovereignty and enforcement powers to the coastal state, while preserving some of the rights and freedoms of other naval powers. The *contiguous zone* extends for 24nmi (45km) from the coastal baseline, and grants the coastal state sovereignty and enforcement rights in four distinct realms: customs, taxation, pollution and immigration. The *exclusive economic zone* (EEZ) extends to 200nmi (370km) from the coastal baseline and grants the coastal state exclusive sovereign rights over economic exploitation of resources, as well as enforcement powers with regard to pollution and environmental protection. However, all other naval powers are granted freedom of navigation and overflight within these zones for peaceful purposes. Each state has the right to unilaterally declare the location of its maritime boundaries unilaterally.

However, cases of overlap and boundary disputes have to be resolved in bilateral agreements or through internationally recognized tribunals. Although UNCLOS is an international treaty, some of its articles (especially with regard to the EEZ) have been deemed by the ICJ to have become part of customary international law which obliges all nations.¹¹⁸

Of all the concepts codified in the convention, the EEZ is the most radical one as it infringes on the freedom of the high seas and grants significant authority to coastal states over large tracts of previously open sea. This is especially acute in semi-enclosed areas, like the Mediterranean basin, where no area of high seas remain due to the creation of EEZs. Some controversy has arisen as to the enforcement capability of the coastal state vs. the ability of foreign navies to operate within EEZs. The convention specifically specifies that the coastal state has the authority to enforce its laws and regulations regarding economic exploitation and environmental protection of the EEZ. Such enforcement includes a request of prior notification, boarding inspections, and detention of foreign vessels which are suspected of violating these rules.¹¹⁹ However, state practice has evolved to strengthen the rights of coastal states, with some countries now requesting prior consent before conducting surveys, maritime research, or military exercises within their EEZs.¹²⁰ Furthermore, the interdiction and search of commercial vessels on grounds of self-defense and security interests have become a common practice in recent years in international waters.¹²¹ These practices further restrict the freedom of navigation and allow the coastal state to enact more stringent measures in its EEZ. Another important issue concerns the protection of economic installations in the EEZ. Such installations may not be armed, because the convention forbids building installations for military purposes, but armed vessels may patrol its vicinity. The state has the authority to restrict freedom of navigation in designated safety zones surrounding its artificial islands and installations. Such a zone has traditionally been restricted to 500m. However, the US Navy has recently enacted a 5km restricted zone around its naval vessels, where prior notification is requested before passing.¹²² Such a measure may increase reaction time and allow better protection for such installations.

6.1. Legal application for the Mediterranean

The Mediterranean, being a semi-enclosed sea, represents a special case under the convention, as the naval zones of neighboring countries overlap, and there is no area of the sea which can be designated as "high seas". Therefore, the whole area of the Mediterranean falls under the jurisdiction of its respective coastal states. Furthermore, some of the Eastern Mediterranean nations (Israel, Syria and Turkey) are not parties to the UNCLOS. Therefore, maritime boundary disputes with these nations have to be settled through bilateral agreements, according to applicable international norms.

The following tables provide some basic details about the maritime boundaries of Mediterranean and Red Sea coastal states:¹²³

Maritime boundaries in the Eastern Mediterranean have long been disputed. However, beyond laying claim to their territorial waters, the countries of the region were largely content with maintaining the freedom of the sea which allowed common access to shared fishing grounds. The discovery of oil and gas reserves in the eastern Mediterranean in the late 1990s changed the situation drastically and emphasized the need to delineate respective economic zones.¹²⁴

Table 06: Summary of terrestrial and maritime territorial regions of the Mediterranean countries

Country	Landmass area (km ²)	Population (millions)	Med Coastline (km)	Med Territorial waters (km ²)	Med EEZ area (km ²)
Greece	130,650	10.77	17,400*	114,507	397,140
Turkey	769,630	79.42	3,300	26,000	72,200
Syria	183,630	17.06	193	3,866	10,190
Lebanon	10,230	6.18	225	4,701	16,265
Israel	20,330	8.05	273	4,124	25,140
Egypt	995,450	88.5	1,050	56,980	169,124
Libya	1,759,540	6.4	1,770	53,242	355,604
Cyprus	9,241	1.19	782	13,679	98,100
Gaza Strip (Palestine)	360	1.87	40	450	2,590

* including 10,000km² islands' coastlines

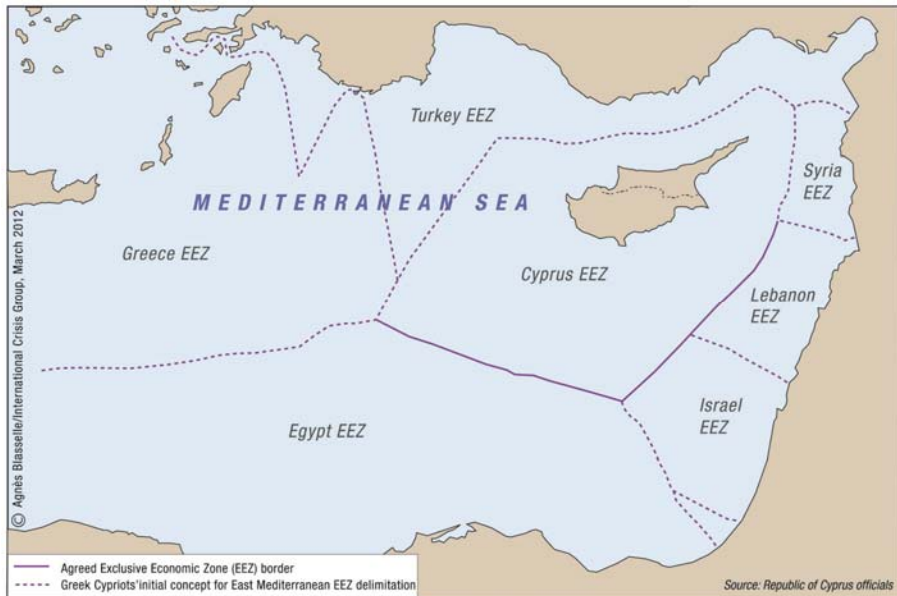
Table 07: Summary of terrestrial and maritime territorial regions of the Red Sea countries

Country	Landmass area (km ²)	Population (millions)	Coastline (km)	Territorial waters (km ²)	EEZ area (km ²)
Egypt	995,450	88.5	1,400	23,180	91,280
Israel	20,330	8.05	15	31	--
Jordan	89,342	8.0	29	93	--
Saudi Arabia	2,149,690	20.77	2,650	69,756	186,390
Yemen	528,076	25.4	815	24,900	35,860
Sudan	1,886,068	40.24	850	23,250	68,150
Eritrea	117,600	6.4	1,100	54,880	78,380
Djibouti	23,200	0.8	314	2,237	7,037
Somalia	637,657	10.4	3,025	50,065	831,060

Apart from Greece and Turkey, all Eastern Mediterranean nations proclaimed a 12nmi territorial waters zone. However, most of these countries did not proclaim an adjacent contiguous zone, with the exception of Egypt and Syria.

Due to their ongoing territorial conflict in the Aegean, both Turkey and Greece claimed only 6nmi territorial waters in that region, while proclaiming 12nmi in the Mediterranean. The Greek-Turkish dispute concerns overlapping claims for territorial waters and continental shelf in the Aegean and Eastern Mediterranean. This conflict stems from Greek sovereignty over several islands which are adjacent to the Turkish mainland. Most of these islands were acquired by Greece following WWI and WWII, and are still considered by Turkey to be part of its rightful territory. Extending the territorial waters of these islands to 12nmi will create a continuous belt of Greek territorial waters which will block the free passage of Turkish vessels. Therefore, Turkey has publicly warned Greece not to extend its territorial waters beyond 6nmi, so as not to threaten its freedom of passage. Turkey, which is not a party to UNCLOS, also claims that inhabited islands cannot generate the same claims to continental shelf as neighboring continental states. Both Turkey and Greece refrained from making claims to continental shelves or EEZs in this region. However, several incidents flared up in the 1980s and 1990s, over oil and gas explorations in this region.¹²⁵

Figure 04: Status of maritime EEZ boundaries in the Eastern Mediterranean

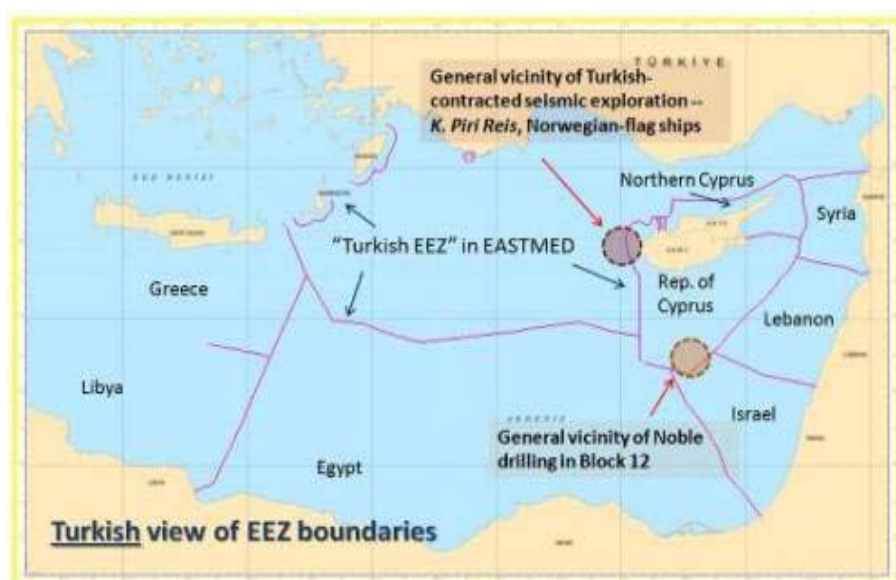


Proclamations regarding sovereignty rights over respective continental shelves in the Eastern Mediterranean were made by Israel (1953), Libya (1955), Egypt (1958), and Syria (1963). In the Red Sea, proclamations were made by Saudi Arabia (1949), Yemen (1967) and Sudan (1970).¹²⁶ Other nations, although not issuing specific proclamations, were granted such rights automatically by the 1958 convention regarding the continental shelf. However, these proclamations were mostly general, and did not delineate specific boundaries.

EEZ proclamations in the Eastern Mediterranean were issued following the discovery of oil and gas reserves by Egypt (1990), Cyprus (2004), Lebanon (2010) and Israel (2011). These declarations were based on bilateral agreements signed between Cyprus and Egypt (2003), Lebanon (2007) and Israel (2010).¹²⁷ However, these agreements were opposed by Turkey, which has registered successive objections to these proclamations with the UN. The Turkish-Cypriot dispute concerns Turkey's claim of a continental shelf in the Mediterranean which challenges the ability of inhabited islands to generate

rights for EEZ or continental shelf. The Turkish objection to the Cypriot declaration in 2004 delineated its own claim over the western half of Cyprus's continental shelf, as well as parts of the continental shelf of the Greek islands of Rhodes, Karpathos, and Crete. This claim does not correspond to the principles of UNCLOS, to which Turkey is not a party. To emphasize its claim, Turkey signed a bilateral agreement with the government of the Turkish Republic of Northern Cyprus which delineates the boundaries of the Turkish-Cypriot continental shelf according to its view.¹²⁸ In 2013 Turkey also initiated survey explorations for gas and oil, in direct challenge of the Cypriot declaration.¹²⁹

Figure 05: Turkish claims for EEZ boundaries in the Eastern Mediterranean

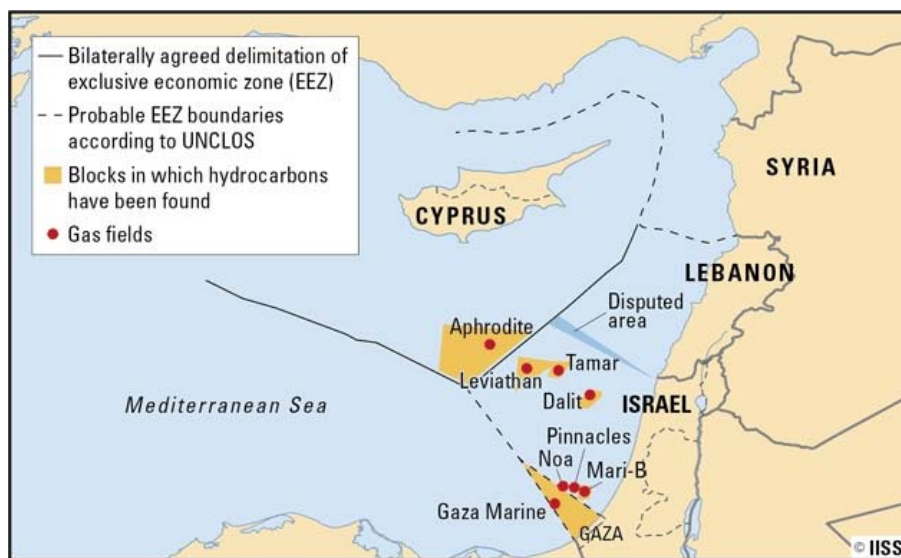


6.2. Israeli maritime boundaries

Israel never formally declared the establishment of an EEZ. However, it did release official proclamations demarcating the northern and western boundaries of its economic zone.¹³⁰ These boundaries were based on bilateral agreements made by Cyprus: Cyprus – Egypt, Cyprus – Lebanon, and Cyprus – Israel. However, as these agreements do not demarcate the northern and

southern borders of Israel, disputes have arisen regarding the borders of Israel's EEZ with Egypt and Lebanon. The Israeli – Lebanese dispute resulted from a discrepancy between the bilateral Lebanese-Cypriot agreement and the official Lebanese proclamation. Several attempts have been made by Norwegian and American mediators to try and resolve this dispute, but so far to no avail.¹³¹ Hezbollah officials have threatened to attack Israeli gas installations.¹³² However, so far this dispute has not had any direct implication on gas explorations on either side.

Figure 06: Israeli EEZ boundary disputes and the location of proven off-shore gas fields



Furthermore, Israel also needs to settle its maritime borders with Gaza. During the 1994 Gaza and Jericho accords, a special economic zone was set up extending 20nmi off the coast of Gaza. This zone granted the Palestinians exclusive economic rights but maintained security authority under Israeli jurisdiction. The zone included the Gaza Marine gas field, discovered in 1999. However, these accords were intermediate and based on Palestinians inability to enjoy full sovereign rights as granted under UNCLOS. Moreover, following the outbreak of the Second Intifada, the fishing zone was initially revoked, and then restricted to 12nmi under the Bertini commitments.¹³³ Consecutively, the IDF issued additional decrees, limiting

freedom of access to 6nmi in 2006, and 3nmi in 2009.¹³⁴ These restrictions stand in contradiction to the articles of the convention. In January 2015, the Palestinian Authority ratified UNCLOS and became its 167th member. It is reasonable to assume that the Palestinians will now file claims for full sovereignty and economic rights as ascribed by the convention.

7. Oil and gas explorations in the Eastern Mediterranean

The oil and gas offshore industry in the Eastern Mediterranean has been substantially developed since initial discoveries in the 1990s. However, this region still remains underdeveloped with significant opportunities for additional explorations and discoveries. The 2010 USGS geological survey identified two substantial basins in the Eastern Mediterranean region. The Nile Delta basin is estimated to contain means of 1.8 billion barrels of recoverable oil, 223 trillion cubic feet (tcf) of recoverable gas, and 6 billion barrels of natural gas liquids.¹³⁵ The Levant basin is estimated to contain a mean of 1.7 billion barrels of recoverable oil and 122tcf of recoverable gas.¹³⁶ Additional potential resources were identified in the Ionian and Aegean seas. Following the outbreak of the Arab Spring, some traditional sources of energy supply, such as Syria, Libya and Egypt decreased their production, or ceased it completely. However, the regional turmoil also opened the way for alternative suppliers, such as the Kurdish region of Iraq.¹³⁷

The following section will describe the energy needs and exploration activities of the coastal states in the Eastern Mediterranean region.

7.1.1. *Israel*

Israel has traditionally been an importer of energy resources. However, since the discovery of offshore gas fields, the Israel Electric Corporation (IEC) has been switching production to natural gas. Currently natural gas accounts for 40% of the electricity production.¹³⁸ The first offshore gas fields were discovered in 1999 off the coast of southern Israel. Mari-B and Noa are located 25km and 40km west of Israel, within its contiguous zone, and were connected by pipeline to the Israeli shore. Between 2004 and 2014, these fields supplied 30 billion cubic meters (bcm) of natural gas to the IEC and to a few select clients.¹³⁹

Tamar gas field, discovered in 2009, 90km off the coast in the Israeli EEZ, has been estimated to hold 14tcf of natural gas. This field was connected to the Israeli coast in 2013 by pipeline via the Mari-B field, and is now its sole source of natural gas supply.¹⁴⁰ Further Israeli discoveries include the Leviathan gas field which was discovered in 2010 about 130km off the coast of Haifa, and is estimated to contain 19tcf of natural gas, as well as much smaller fields of Dalit, Karish and Tanin.¹⁴¹ These fields will have to be developed before production may commence.

The gas production license allows Nobel Energy and its Israeli partners to sell up to 40% of the discovered gas to foreign countries, but reserves 60% of the gas for domestic consumption in order to guarantee energy security in the near future. During 2013-2014 Noble Energy negotiated gas supply contracts with Egypt, Jordan, and the Palestinian Authority.¹⁴² In a recent development, the Israeli government has agreed to the immediate export of 20bcm of gas to Israel's neighboring countries. Nobel Energy has concluded a deal to export Israeli gas to the Spanish Egyptian Gas Company's LNG facility in Damietta, Egypt.¹⁴³ However, this deal still awaits final government authorization and is further restricted by the lack of a physical link between the Israeli and Egyptian pipelines.

Possible alternatives for gas export include refrigeration and liquefaction (LNG) in an off-shore facility or vessel (FLNG/FSRU), and transportation via specialized tankers. Alternatively, pipeline connection options are being discussed with Cyprus, and Turkey. These alternatives are far more expensive than utilizing local pipeline infrastructure which connects Israel, Egypt, Jordan, and the Palestinian Authority. Therefore, these may become economically nonviable as the prices of energy continue to drop.

All these alternatives necessitate vital facilities and infrastructure which are relatively exposed to security threats, even when placed within Israeli territorial waters. Therefore, issues of maritime security and protection of facilities within the EEZ have gained significant importance in Israeli security discourse. The recent Israeli contract with Germany - for the supply of four corvettes - should be seen in light of these concerns. However, the availability of surplus gas resources also creates opportunities for the Israeli

diplomatic effort to leverage its regional position through the means of "pipeline diplomacy".

7.1.2. *Cyprus*

The discovery of gas in the Israeli EEZ fueled hopes for similar discoveries on the Cypriot side as well. In 2010, the Republic of Cyprus (ROC) granted an exploration license to Noble Energy and its Israeli partners in Block 12 of the Cypriot EEZ, which is adjacent to the Israeli fields of Leviathan and Tamar. This exploration yielded the discovery of gas in 2011 in the Aphrodite field, located just 21km west of Leviathan, which is estimated to hold 5-8tcf of natural gas.¹⁴⁴ However, despite this first successful discovery, additional exploration licenses in other blocks which were granted in 2012 did not produce any positive results, and explorations were subsequently terminated.¹⁴⁵

Meanwhile, Turkey has been challenging the legitimacy and authority of ROC in granting these licenses, claiming that the profits of these discoveries should be shared by all Cypriots. In 2013, acting on behalf of the Turkish Republic of Northern Cyprus (TRNC), Turkey initiated its own explorations in the Cypriot EEZ which include a survey vessel, accompanied by Turkish navy's frigates.¹⁴⁶ This action gave rise to condemnations from ROC, Israel and EU, as well as exasperating tensions between Greece and Turkey.¹⁴⁷

In order to facilitate the export of gas from Cyprus, Nobel and its partners have been examining several possibilities, including the construction of a LNG facility in Cyprus, or the laying of an underwater pipeline. The leaders of Cyprus, Greece and Egypt met in 2014 and 2015, to discuss economic cooperation in their respective EEZs.¹⁴⁸ Both Greece and Egypt are potential markets for the Cypriot gas.¹⁴⁹

7.1.3. *Egypt*

Egypt has been a major energy exporter in the Eastern Mediterranean region throughout the 2000s.¹⁵⁰ Egypt has several mature offshore oil and gas fields in the Nile Delta, as well as along its Red Sea coasts. However, recurring sabotage in its gas infrastructure, together with growth in domestic consumption has dramatically altered this situation. Between 2010 and 2014 Egyptian crude oil production has declined by 10%, while natural gas production has declined by 12%.¹⁵¹ Meanwhile, while oil consumption has increased by 4.5%, domestic gas consumption has risen substantially by 21%.¹⁵² Furthermore, in 2014 both oil and gas consumption surpassed local production, forcing Egypt to import energy resources.¹⁵³

Since the rise to power of President Abdel Fattah al-Sisi, the Egyptian government has identified the need to develop additional energy resources. New exploration licenses were issued, as well as additional contracts for further development of existing fields.¹⁵⁴ However, Egypt has also initiated the construction of LNG import terminals, in order to prepare for the import of natural gas.¹⁵⁵ The recent large gas field discoveries by ENI in Zohr significantly increase Egyptian proven gas reserves.¹⁵⁶ However, given its distance from shore and the need to develop an appropriate infrastructure, it will be several years before these fields become operational. Their production may not be sufficient to overcome Egypt's own needs for energy. Therefore, it can be expected that in the coming years Egypt will not return to exporting energy. The current Egyptian need for energy, and lack of surplus might pose an opportunity for Israeli pipeline diplomacy.

7.1.4. *Greece*

Recent geological surveys have shown substantial potential for oil and gas discoveries in Greek EEZ waters.¹⁵⁷ However, Greece has only three mature oil and gas fields developed in the 1970s, which are now largely depleted.¹⁵⁸ Domestic production accounts for less than 0.5% of Greek energy demands.¹⁵⁹ Therefore, Greece imports its energy resources by pipeline through Turkey, or by LNG tankers from Algeria and Nigeria. This

dependency on Turkish pipelines further restricts Greek response in the ongoing conflict with Turkey.

The Greek economic crisis has further emphasized the importance of energy resources as a source for additional income. The government has recently issued new tenders and received bids for off-shore explorations in its Mediterranean EEZ.¹⁶⁰ However, these explorations will require several years to mature, and will not assist the ailing Greek economy in the near future.

7.1.5. Turkey

Lacking any substantial energy resources of its own, Turkey has traditionally been a major importer of both oil and gas, mostly from Russia, Iran, Iraq and Azerbaijan. Since the 1980s several pipelines have been constructed, which connect Turkey to the oil and gas fields of the Caspian Sea and Russia, while also transferring gas to other customers in Southern and Eastern Europe. In 2014 Turkey's gas consumption amounted to 47bcm, which comprised 35% of its total energy consumption.¹⁶¹ Turkish energy explorations have yielded several working oil and gas fields, with a modest off-shore gas field in the Black Sea. However, domestic production accounts for 8% of its oil and only 2% of its gas consumption.¹⁶² In an attempt to increase its domestic consumption, Turkey has recently initiated additional exploration activities in the Mediterranean and the Black Sea.¹⁶³ Furthermore, taking advantage of its effective control over parts of Cyprus, Turkey has initiated explorations in the Cypriot EEZ on behalf of the TRNC. Such activity also serves to challenge the authority and legitimacy of the Republic of Cyprus.

7.1.6. Gaza Marine

Following the establishment of the Palestinian Authority and the delineation of the Palestinian Maritime Zone in the Paris economic accords of 1995, a license for gas exploration within the zone was granted to BG group which managed a significant share of the Egyptian oil and gas industry. In 2000 BG made a significant discovery of 1.4tcf of natural gas at the Gaza Marine field, which is located 20nmi off the coast of the Gaza Strip. Repeated rounds of negotiation were conducted between 2001 and 2007 to conclude

the sale of Gaza marine gas to the IEC or allow its export to Egypt.¹⁶⁴ However, due to the ongoing conflict between Israel and the Palestinians, none of these deals materialized. In 2007, BG Group withdrew from further negotiations with the government of Israel, and subsequently closed its offices in Israel. However, BG still maintains 90% ownership in Gaza Marine, together with the Consolidated Contractors Company and the Palestine Investment Fund.¹⁶⁵ During the 2013-2014 Israeli Palestinian negotiations, a proposal was floated to utilize Gaza Marine to power the Palestinian Power Generation Company's facility in Gaza. Although negotiations did not conclude in an agreement, this idea is still being discussed among Palestinians. The Palestinian Authority has a dire need for additional energy resources to operate its power plants in the West Bank and Gaza. An agreement was reached with Nobel Energy to supply Israeli gas for the West Bank's power plants. An internal debate has developed regarding the use of Israeli vs. Palestinian gas.¹⁶⁶

8. Naval transportation

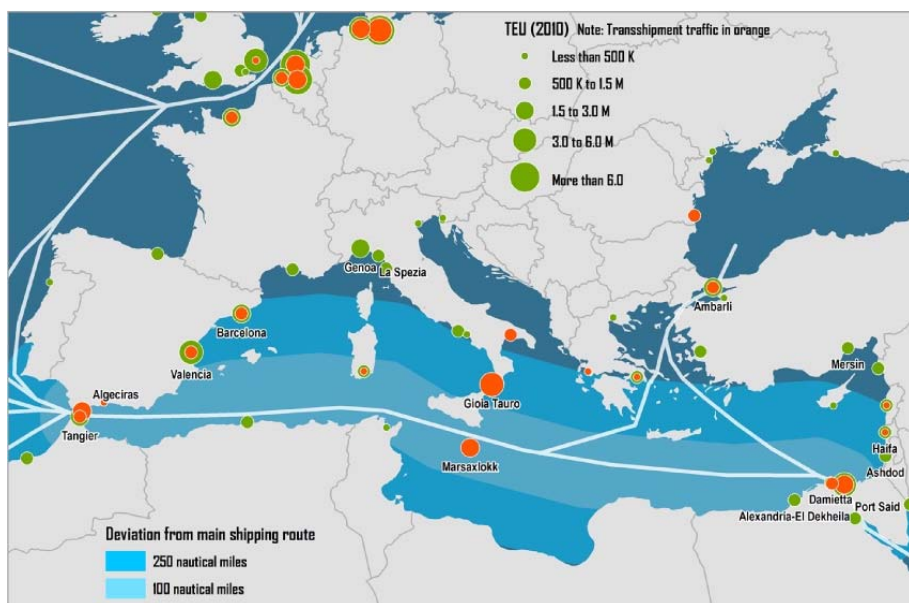
The sea has traditionally served as a medium for quick transportation of people and material between distant locations. Until the invention of motorized vehicles, ships were the only reliable alternative for transporting goods and people across great distances. Even today, shipping is the most efficient way of transporting large volumes of cargo and materials across distances and between continents. The globalization of the world's economy has heightened the importance of naval trade and sea lines of communication. However, this growing importance has also emphasized the vulnerability of these trade routes to different types of threats, including terrorism, piracy, and regional conflicts. Additionally, as a medium for transportation, the sea may also facilitate mass waves of migration between countries and continents which do not share a common border. Different physical and social pressures - such as climate conditions, civil wars, or repressive regimes - may create large waves of migrations which will utilize the sea as a route for seeking better living conditions.

8.1. Cargo transportation

The Mediterranean is a major route for cargo transportation from South and East Asia towards Europe and North America. The Panama and Suez Canals compete closely for cargo traffic between Asia and North America, with 50% of the North American East Coast traffic passing through the Suez Canal and the Mediterranean.¹⁶⁷ The recently concluded project to enlarge the Suez Canal will double its capacity and will significantly shorten transit time. Currently, about 130 regular long-distance cargo shipping services pass through the Mediterranean on regular basis.¹⁶⁸ The major cargo shipping companies which operate these services include American President Lines (APL), China Ocean Shipping Container Line (COSCO), China Shipping Container Lines (CSCL), CMA-CGM, Hapag-Lloyd, Maersk, Mediterranean Shipping Company (MSC), United Arab Shipping Company (UASC), and YangMing Marine Transport. Over 800 million tons of cargo passed through the Suez Canal in 2014, representing 8% of the global naval trade volume.¹⁶⁹ As a large part of the world's commercial traffic is containerized, TEU¹⁷⁰ has

become a widely acceptable unit for measuring the volume of naval cargo traffic and port capacity. Cargo traffic through the Mediterranean in 2014 was estimated at 42 million (M) TEU, with the larger part transiting on to other destinations. Intra-Mediterranean traffic in 2014 was 15M TEU, most of which is based on transshipment¹⁷¹ of cargo onto local feeder services.¹⁷²

Figure 07: Main Mediterranean trading routes and the trade volume of major trans-shipment ports



Several Mediterranean ports are currently competing for a larger share in the region's transshipment activities. These transshipment hubs are located in close proximity to the major trading routes through the Straits of Gibraltar or the Black Sea. In 2013, the major Mediterranean transshipment hubs included Valencia and Algeciras in Spain (4.3M TEU); Ambarli in Turkey (3.4M TEU); Piraeus in Greece (3.2M TEU); Port Said East in Egypt (3.12M TEU); Gioia Tauro in Italy (3.1M TEU); Tanger Med in Morocco (3.1M TEU) and Marsaxlokk in Malta (2.75M TEU).¹⁷³

Cargo traffic to and from Eastern Mediterranean countries is relatively modest, revealing their marginal share in the global trade which passes through the region. Three of these local countries house transshipment hubs

which facilitate global traffic. These include Egypt and Turkey with 7.1M TEU each, and Greece with 3.2M TEU in 2013.¹⁷⁴ The traffic volume of other regional countries is significantly smaller with Israel at 2.5M TEU, Lebanon at 1.17M TEU, Syria at 0.8M TEU, Libya at 0.44M TEU and Cyprus at 0.3M TEU.¹⁷⁵

Although a significant share of the global trade traffic passes through the Red Sea, local trade traffic is extremely low. The Saudi Red Sea port of Jeddah serves as the local transshipment hub, with activity volume of 4.6M TEU in 2013. However, the trade traffic of other regional countries was significantly smaller with 0.8M TEU to Yemen, 0.76M TEU to Jordan, 0.74M TEU to Djibouti, and 0.54M TEU to Sudan.¹⁷⁶

Israel's foreign trade is conducted almost exclusively by sea (99%), with 70 million tons of commodities which passed through Israeli ports in 2014.¹⁷⁷ Israel operates five major commercial ports, four on the Mediterranean and the Red Sea city of Eilat. Israel has two major commercial ports in the Mediterranean – Haifa and Ashdod. These ports currently have the capacity to handle cargo ships of up to 10,000TEU. However, both have initiated upgrade projects which will expand their docking space and will enable them to handle 18,000TEU cargo vessels. In 2014 both these commercial ports handled 45 million tons of cargo, including 2.5M TEU. Israel also operates two energy ports at Hadera and Ashkelon, which together received 27 million tons of oil and coal in 2014.¹⁷⁸

The Red Sea port of Eilat is significantly smaller and can handle vessels with up to 8,500 TEU. It serves mainly for the import of automobiles from Asia, and the export of natural minerals. Cargo traffic through Eilat in 2014 amounted to 2.3 million tons.¹⁷⁹

The Port of Haifa has also been serving as a transshipment center for Israel's merchant vessels, and more recently also for the international cargo carrier MSC.¹⁸⁰ However, the volume of this activity has been relatively small, amounting to approximately 200K TEU annually in 2010-2013, with a sharp drop to 127K TEU in 2014.¹⁸¹ However, Israel's distance from the major trading routes, as well as its unique international political status, are

preventing its ports from becoming significant players in the regional transshipment competition.

A recently announced government project to build an overland train connection between Eilat and the Israeli Mediterranean coast was partly justified by the wish to create an alternative to the Suez Canal and to turn Israeli ports into regional cargo hubs.¹⁸² However, an economic and efficiency analysis of such an alternative reveals that it will be costlier, more time consuming, and less efficient per TEU than the Suez Canal.¹⁸³ Therefore, while a train connection will improve cargo transportation within Israel, it cannot realistically be expected to compete for international transshipment business.

9. Piracy

Globalization of world's economy in the last few decades has increased the importance of commercial naval trade and the need to safeguard vital naval trading routes. One of the most significant dangers to the safety of these sea lanes is the growing phenomenon of naval piracy against unarmed commercial vessels.

Piracy in the Gulf of Aden began to emerge in the early 2000s, following the ongoing unrest and lack of central government in Somalia. A substantial increase in the volume and intensity of these attacks occurred between 2006 and 2008, with the number of attacks rising from dozen to about 200 annually.¹⁸⁴ These attacks threatened to disrupt commercial naval traffic through one of the world's busiest sea lanes.

The international task force CTF-150 was established in 2002 as part of the joint "war on terror". Its initial focus was on combating terrorism and intercepting illegal arms shipments off the Horn of Africa. However, against the backdrop of the increase in pirate attacks, and following UN Security Council Resolution 1851,¹⁸⁵ the task force began to focus on anti-piracy operations, and established a dedicated maritime patrol zone in the Gulf of Aden.¹⁸⁶ This task force, led by the US and its European NATO partners, has been escorting commercial cargo vessels, as well as initiating preemptive operations against suspected pirate locations. Other nations, such as Russia, China and Iran have also been conducting anti-piracy operations, independent of NATO allies. Table 08 shows a significant decline in attempted and successful pirate attacks in the Gulf of Aden in recent years, which coincide with successful preemptive activities by international forces.

Table 08: Piracy activities in the Gulf of Aden

	2007	2008	2009	2010	2011	2012	2013	2014
Number of attacks	42	111	163	174	176	35	7	2
Ships pirated	11	42	46	47	25	4	0	0
preemptive actions	0	0	14	65	28	16	10	1

Source: EU NAVFOR Somalia: <http://eunavfor.eu/key-facts-and-figures/>

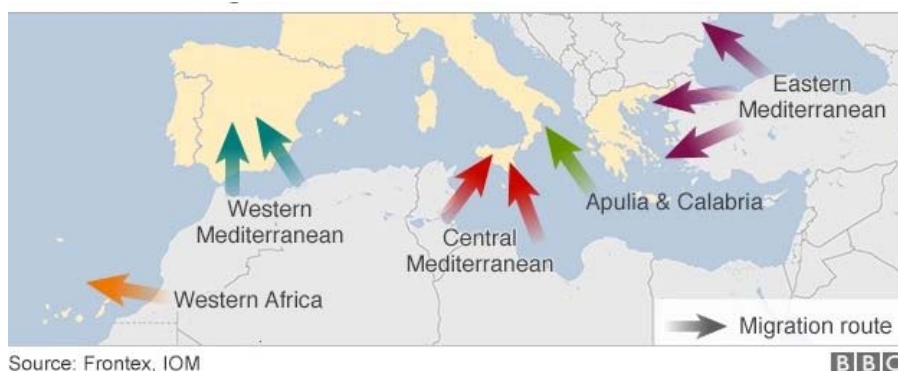
Since 2013 no successful pirating incident has occurred and the number of attempted attacks has become negligible.¹⁸⁷ Local Somali operatives reported fear of international warships as a major cause for their cessation of piracy.¹⁸⁸

The success of international activities against piracy can serve as a good example for the positive impact of joint action, given the political will and availability of resources. However, although the threat of piracy has been temporarily removed, the ongoing conflicts in Yemen and Sudan may represent a future threat to commercial naval transportation.

10. Immigration

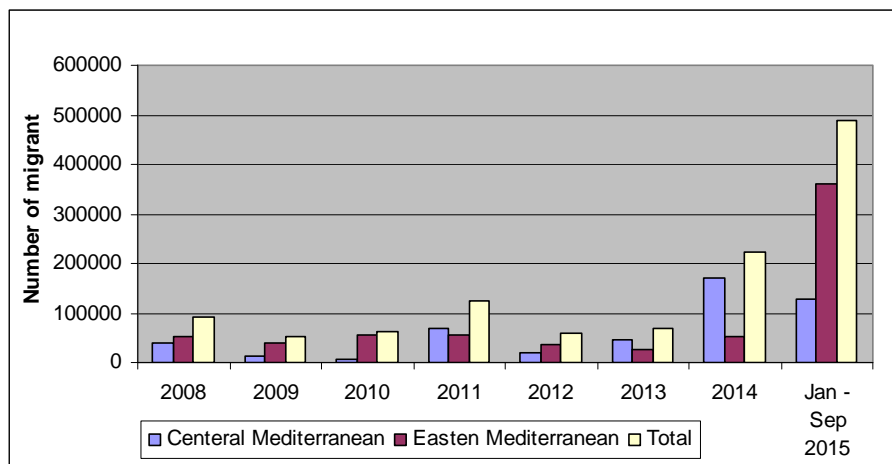
The Mediterranean has always been an associable route for people's migration from Asia and Africa to Europe. However, since the outbreak of the Arab Spring and the civil wars which have destabilized some of the Mediterranean coastal countries, the movement of illegal migrants across the eastern Mediterranean has more than doubled.

Figure 08: Mediterranean migrant routes



Three major immigration routes across the Mediterranean have been identified by the European border control agency – Frontex. These routes include 1) the Western Mediterranean, from Morocco and Algeria to Spain; 2) the Central Mediterranean, from Libya, Tunisia and Egypt to southern Italy; and 3) the Eastern Mediterranean, from Egypt and Turkey to Greece. On the central route, the distance between the Libyan coast and Sicily is about 500km, while from Tunisia it's about 220km. This is a substantial distance at sea in a small haphazard fishing boat, making the voyage very dangerous. On the eastern route the distance between the Turkish coast and some of the Greek islands is about 20km. Figure 09 presents the annual number of immigrants who have arrived to the European coasts through the Central and Eastern Mediterranean routes since 2008, as well as their combined total.

Figure 09: *Illegal seaborne migrant influx into Europe 2008-2015*



The figure clearly shows 2011 and 2014 to have been record years in the influx of migrants. The chart also shows that the number of migrants in the first seven months of 2015 had already surpassed last year's record. Furthermore, although in 2014 the vast majority of immigrants came from North Africa, in 2015 they are coming mainly from West Asia through Turkey. This change may be due to the deteriorating situation in Syria and Iraq, following the advances of ISIS in these regions.

Member states in the European Union (EU) have sole responsibility for patrolling and protecting their borders. However, the EU established the Frontex agency in 2005 in order to coordinate the joint efforts of its member states in patrolling the outer borders of the union. Frontex does not have substantial manpower, and relies mainly on assets and employees of national border control agencies.

Frontex has initially coordinated a joint border patrol task force in Greece since 2008.

In 2011, at Italy's behest, Frontex deployed two maritime patrol aircraft to Malta to provide early detection for ships carrying migrants. In October 2013, following the precarious state of migrant boats and the drowning of

dozens of people, Italy initiated an independent search and rescue operation called "Mare Nostrum".¹⁸⁹ However, as migrant flow increased and costs rose, Italy appealed for help from the EU. In October 2014, Frontex initiated operation "Triton", which began as border control mission but soon turned to search and rescue as its main goal.¹⁹⁰ Triton included vessels from Germany, UK and Croatia, assisting the Italian navy and coastguard in patrolling the sea and rescuing migrants from capsized vessels. In June 2015, the EU established the EUNAVFOR Med force in order to curb the illegal migration to Europe by seizing the boats and apprehending the smugglers and boat owners.¹⁹¹ The inability of the EU thus far to deal with the growing numbers of seaborne migrants stands in direct contradiction to the successful campaign against piracy, representing lack of political will and adequate resources.

11. Aquaculture, Mari-culture and Environmental concerns

Besides being a route for trade and a medium of transportation, the sea has traditionally been a significant source of food for coastal nations. Fish, crustaceans and algae have been a central part of human diet for generations. However, in recent decades the growing sophistication and mechanization of commercial fishing have significantly depleted the ocean biomass and reduced the diversity and quantity of fishery catches. This global phenomenon is also found in the Mediterranean, where the total volume of fishing industry capture dropped by 16% between 1995 and 2010.¹⁹² However, significant changes can be seen in maritime fishery capture among the coastal countries in the Eastern Mediterranean, as is shown in the following table. The table clearly shows that while countries like Israel, Cyprus and Greece lost nearly half of their fishing produce between 1995 and 2010, other countries such as Egypt, Syria and Libya have significantly increased the volume of their fishing capture.

Table 09: Annual marine fishery capture (in thousand tons)¹⁹³

	1990	1995	2000	2010	Percentage of change
Turkey	341.9	586.0	460.5	445.7	-25%
Greece	111.3	139.5	90.8	68.8	-51%
Cyprus	2.6	2.5	2.2	1.4	-44%
Syria	1.6	2.0	2.6	3.0	50%
Lebanon	1.4	4.0	3.6	3.5	-12%
Israel	4.0	3.6	4.0	2.1	-42%
Egypt	35.4	43.7	54.9	77.4	77%
Libya	24.0	34.0	49.1	50.0	47%

Concurrently, over the past several decades, commercial implementation of the fish rearing industry - or *aquaculture* – has been significantly developed by some Mediterranean coastal countries. In order to supply the growing local demand for food resources and against the backdrop of depleting fishery yields, these countries developed intensive aquaculture which largely utilizes land-based fresh- and brackish- water sources. Table 10 reveals that three countries –Turkey, Egypt and Lebanon – have dramatically increased

their inland aquaculture production over the past two decades. However, the volume of Lebanese aquaculture is still relatively small. Israeli aquaculture, although not showing significant changes over the years, accounts for 25% of its domestic fish consumption (75,000 tons).¹⁹⁴

Table 10: Annual inland-water aquaculture production (in thousand tons)¹⁹⁵

	1990	1995	2000	2010	Percentage of change
Turkey	4.3	13.1	43.4	78.6	1830%
Greece	2.3	2.0	3.0	3.2	40%
Cyprus	0.07	0.1	0.07	0.05	-30%
Syria	2.7	5.9	6.8	8.6	320%
Lebanon	0.08	0.3	0.8	1.1	1375%
Israel	14.5	15.2	17.2	17.8	23%
Egypt	61.9	71.8	340.0	919.5	1482%

Furthermore, recent developments in maritime aquaculture technologies and the lack of sufficient freshwater resources have caused some of these countries to shift part of their production to sea-based fish farming. Table 11 shows that both Turkey and Greece have made substantial use of maritime aquaculture, and increased their production significantly over the past two decades. Additionally, both Israel and Cyprus have increased the volume of their maritime aquaculture, but their overall production remains relatively small. Other coastal countries in the region have not adopted maritime aquaculture in any significant form.

Table 11: Annual maritime aquaculture production (in thousand tons)¹⁹⁶

	1990	1995	2000	2010	Percentage of change
Turkey	1.4	8.5	35.6	89.2	6372%
Greece	5.3	29.9	91.2	117.1	2210%
Cyprus	0.05	0.35	1.8	4.0	8000%
Israel	0.08	0.9	2.9	2.6 (2013)	3250%

Israeli maritime aquaculture began in the 1980s with the placement of fish cages in the Bay of Eilat. At the height of their activity these farms produced 2,600 tons of fish annually, providing roughly 4% of domestic fish consumption. In 2008, these fish cages were relocated to the Port of Ashdod by government decree, following protracted protests by conservation organizations. Additionally, a small experimental fish farm was established

in the open sea, 11km off the coast of Ashdod. Currently, these two locations produce 2,000 tons of fish annually.¹⁹⁷ The Ministry of Agriculture is in the process of approving the construction of large off-shore farms which will expand marine aquaculture production to 20,000 tons.¹⁹⁸ However, the local Israeli fishing industry faces fierce competition from cheap imports of fish products, which currently supply over 60% of local demand. Therefore, the chance of expanded off-shore aquaculture - which is both labor-intensive and costly - seems relatively slim.

11.1. Environmental pollution

The Mediterranean is home to over 17,000 species of organisms, fish, and mammals, including dolphins, turtles, sharks and seals. This biodiversity is unevenly dispersed, with richer diversity in the western Mediterranean basin, compared with the eastern basin. The eastern Mediterranean basin includes diverse species of fish and mammals, including 35 types of sharks, 3 types of turtles, two types of dolphins, as well as the unique "monk" seals.¹⁹⁹ This maritime environment is under constant threat from different sources which include human waste and pollution, biological invasions, harmful algal blooms, as well as unsustainable fishing and aquaculture.

Figure 10: Pollution hot spots along the Mediterranean coast



Source: HCMR based on UNEP/WHO, 2003.

Human wastes and pollution refers to harmful materials that are dumped in the sea as a result of human activities. These may emanate from both land-based and sea-based sources. The United Nations Environment Program (UNEP) has estimated that annual land-based pollution in the Mediterranean includes 650 million tons of sewage, 129,000 tons of mineral oil, 60,000 tons of mercury, 3,800 tons of lead and 36,000 tons of phosphates. In addition, 70% of the wastewater dumped into the Mediterranean is untreated.²⁰⁰

Figure 11: Major tanker oil spills 1990-2005



Source: UNEP – WCMC, 2004.

Sea-based pollution is mainly caused by petroleum slips and spills from more than 220,000 vessels which cross the Mediterranean each year. As part of their routine operations (such as de-ballasting, tank-washing, maintenance and refuel), these vessels discard some 250,000 tons of oil annually. Furthermore, maritime accidents of oil tankers in and around the Mediterranean between 1990 and 2005, have caused the spillage of over 80,000 tons of petroleum.²⁰¹

Biological invasions refer to foreign species that have been introduced into the native environment and have successfully created a large alien

population which may endanger the stability of local ecosystem. Following the opening of the Suez Canal, many species from the Indian Ocean migrated through the Red Sea and into the Eastern Mediterranean region. Some of these species have endangered or even successfully eliminated many of the local species, thereby reducing biodiversity. Recent studies have shown that 54% of the annual fishery catch in Israel are invading species, while the volume of local species has been reduced by 40%.²⁰²

Unsustainable fishing practices also pose a threat to the environment. Intensive trawler fishing yield inadvertent catches of multiple species of fish with no commercial value. Such intensive fishing greatly reduces the biodiversity of the sea, without any apparent commercial justification. Trawler fishery also greatly diminishes the population of naval mammals, as dolphins, seals and sharks drown and die as a result of entanglement in these trawler nets. Table 12 compares annual fishery capture in the Mediterranean by continental sub-regions over the past two decades. The table shows that since 1995 the total annual fishery capture in the Mediterranean has dropped by 16%. However, the table also reveals that the annual fishery capture of European countries over this period has plummeted more sharply, while the annual capture of African countries has actually risen.

Table 12: Annual fishing capture in the Mediterranean by sub-regions (thousand tons)²⁰³

	1990	1995	2000	2010	Percentage of change
African	273.4	306.2	346.8	351.6	15%
Asian	364.4	603.6	477.5	497.9	-18%
European	752.9	796.7	695.2	585.6	-27%
Total Med	1,392.9	1,709.4	1,519.6	1,435.1	-16%

The sharper decline in European fishery capture can be attributed to the depletion of biodiversity, while the increase in African productivity may be attributed to larger fishing fleets or to greater respect for sovereignty over exclusive fishing areas. Nevertheless, despite these contradicting trends, the threat of over-fishing is still prevalent throughout the region.

Off-shore installations, such as oil-drilling rigs and fish farms, also pose a substantial risk for the maritime environment. Fish farms destabilize the

natural ecosystem by creating an artificial source of food, which attracts local predators and creates potential hotspots for conflict between humans and marine life. A 2013 event of shark attack against the Israeli fish farm off the coast of Ashdod is an example of such potential conflict.²⁰⁴ Furthermore, chemicals and hormones which are used in the production process in the fish farms are being released into the open sea, possibly affecting environmental conditions around these farms.

Oil and gas drilling rigs also pose a threat for environmental pollution from possible malfunction which will cause a substantial spillage of petroleum, similar to that caused by a tanker accident. However, the permanent location of the rig, as well as the vast oil capacity of the underground reservoir, might result in far more extensive environmental damage than a regular tanker leakage. The explosion of the BP oil rig in the Gulf of Mexico in April 2010 and the ensuing extensive oil leakage serve as a dramatic reminder of the environmental dangers of off-shore drilling.²⁰⁵

Twenty-two Mediterranean countries including Israel are signatories of the amended 1995 Barcelona Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean. This convention includes specific protocols for control and management of different aspects of environmental protection under the umbrella of UNEP's regional seas program.²⁰⁶ However, following the events of the Arab Spring and the demise of central government in three of the Eastern Mediterranean countries, the efficient implementation of these protocols seems less likely.

11.2. Israel's maritime environmental issues

As a signatory of the Barcelona convention, Israel has enacted several laws for the protection of its maritime environment. These laws deal mostly with the prevention of dumping and pollution of the sea from land-based and seaborne sources. However, authority over the management and supervision of the naval environment is widely dispersed among 11 governmental agencies, with scarce human and financial resources dedicated to this task.²⁰⁷ Furthermore, dumping of sewage into the sea is prevalent, although supervised and partially regulated by a specific inter-departmental

government committee.²⁰⁸ Additionally, land-based pollution from industrial sources is still very common in Israel,²⁰⁹ as well as sea-based pollution in and around the major Israeli

ports.²¹⁰ Israeli desalination facilities and off-shore gas rigs produce large quantities of by-product extracts, which are regularly dumped back into the sea, possibly affecting the maritime environment.²¹¹ Moreover, these gas rigs are a potential source of a significant problem of oil pollution. Israel has only very limited capability to contain and deal effectively with major oil spills from gas rigs or passing oil tankers.²¹²

These different pollution sources pose a serious threat to the marine environment, as well as a substantial danger to Israel's drinking water supply, which is now significantly dependent on desalination of water from the Mediterranean.

11.3. Israel's desalination project

Israel has been operating small-scale water desalination facilities in Eilat and the Negev since 1965.²¹³ However, following a significant draught period in the 1990s, the government decided in 1999 to begin large-scale water desalination in the Mediterranean and opened its first contest for a desalination facility in 2000.²¹⁴ Currently there are four active desalination facilities along the Mediterranean coast - at Ashkelon, Palmachim, Soreq, and Hadera - with another facility at Ashdod about to become active during 2015. These facilities supply 60% of the current national water consumption.²¹⁵ This massive use of water desalination has significantly freed the Israeli population from its dependency on natural water sources. However, such dependency on the sea as a source of drinking water can be significantly endangered by water pollution and oil spills, which are prevalent in the Eastern Mediterranean region.

12. Strategic importance of Israel's coastal region

Israel's coastal region is the most densely populated area in the country; 70% of the Israeli population lives within 15km of the coastline. However, the coastal region also houses some of the most important and critical infrastructure in Israel. The following table lists some of these strategically important facilities - from the domains of transportation, communication, energy, military and water supply - which are located within 15km of the coastline.

Table 13: Types of important facilities along the Israeli coastal region

Domain	Type of facilities
Transportation	Main commercial ports and marinas, major highways, main rail tracks
Communication	International phone and internet cable connection, nationwide communication cables network.
Energy	Power plants, oil terminals, oil distilleries, gas terminals, gas distribution facility.
Water	Water desalination facilities.
Military	IDF headquarters, military, naval and air force bases.

This table clearly reveals the significance and vulnerability of the Israeli coastal region, and therefore emphasizes the need to protect this region from possible naval-borne attacks by foreign navies, as well as from attacks by non-state organizations.

Figure 12: Map of critical infrastructure along the Israeli coastline



13. Regulation of the maritime environment by Israeli government agencies

The Israeli legal regime for the management and supervision of its rights and usage of the sea is derived from two fundamental laws: the underwater domain law (1953) which delineated Israel's claim to the continental shelf; and the territorial waters law of 1956 which established Israel's jurisdiction over its territorial waters. Additional legislation which was later enacted with the intent of protection and preservation of the sea, referred only to these territorial waters. Israel has so far refrained from joining the UNCLOS convention, or enactment of laws which would expand its judicial jurisdiction beyond its territorial waters. Therefore, Israeli governmental agencies and planning institutions deal almost exclusively with managing its territorial waters, with little attention to regulating its economic waters.

Table 14: Authority of government agencies over the maritime domain

Regulatory authority	Jurisdiction
Ministry of Environmental Protection	Protection of the maritime environment, prevention of sea contamination, supervision and monitoring of quality of sea-waters.
Ministry of the Interior	Responsible for construction planning, permits, and regulation in Israeli territory, including its territorial waters.
Ministry of Agriculture and Rural Development	Responsible for management and regulation of Israel's fishing and aqua-culture industry, including zoning, licensing, supervision and regulation.
Ministry of Infrastructure, Energy and Water	Responsible for licensing, regulation, management and supervision of off-shore oil and gas industry in Israel's territorial and economic waters.
Shipping and Ports Authority	Responsible for the regulation and management of Israeli ports and shipping industry.
Inter-departmental committee for dumping waste into the sea	Regulating and granting of permits for dumping waste into the ocean. Also regulates the quality of sea-water in order to supervise its pollution levels.
Committee for the protection of the coastal environment	Regulated the implementation of the Protection of the Coastal Environment Law of 200. Authorizes construction projects in and around the coastal strip.
National parks and nature preservations authority	Responsible for declaring, managing, and regulating activities in nature reserves and environmental sensitive areas in Israel, including maritime nature reserves.

In 2013, the Israeli Ministry of Interior initiated a holistic planning process as part of the EU project for implementing an Integrated Maritime Policy in the Mediterranean (IMP-MED). An inter-departmental committee was established to formulate guidelines for the development of an integrated policy for the maritime environment, which will be based on maritime spatial planning. The first phase of a planning policy paper was completed in 2014 with the assistance and funding of the EU.²¹⁶ Concurrently, the Ministry of Justice issued a draft of "Areas of the Sea" law, which sought to delineate and define the limited implementation of some articles of Israeli law to the Israeli economic waters. However, both these processes seem to be currently frozen, due to legal objections to the implied acknowledgement and implementation of the UNCLOS convention tacitly embedded within these propositions.

In parallel with the moribund official planning process, the Israeli Institute of Technology (Technion), in cooperation with the School of Marine Sciences at Haifa University have been working on an alternative policy planning paper for the Israeli maritime environment. Estimated to be concluded by the beginning of 2016, this paper will present a broad picture of the regulatory and planning status of the Israeli maritime environment.²¹⁷

13.1. Designated areas

Prior to the 2000s, the Israel Nature and Parks Authority, which is responsible for the implementation of the Flora Preservation Law of 1956, proclaimed only six maritime natural reserves covering less than 1% of Israel's territorial waters. However, in recent years the authority has drafted proposals for expanding of existing reserves and the declaration of additional ones. These new reserves are expected to cover approximately 10% of Israel's territorial waters, and protect the natural habitat and breeding grounds of local fishery. These areas are intended to enable protection and reproduction for local species. Unfortunately, only one of these reserves has been approved so far.

The Ministry of Agriculture and Rural Development has mapped the different uses of Israel's territorial waters, and is allocating suitable locations for off-shore fish farms.²¹⁸

The Ministry of Energy and Water has, over the years, issued several large-area exploration licenses, some of which have since been split into several sub-units.²¹⁹ In 2012, the ministry decided to freeze all future explorations in Israeli waters, and is currently conducting public hearings regarding the risks and benefits of such explorations.

13.2. Artificial islands

Israeli authorities have long been interested in the construction of artificial islands off the coast of Israel, in order to alleviate the pressures of land usage from the coastal region (where approximately 70% of the Israeli population resides). An additional reason was the need to evacuate dangerous-materials facilities from population centers and place them in safer locations but still in close proximity to the sea. An Israeli-Dutch joint steering committee investigated the feasibility of constructing artificial islands off the Israeli coast in 1999-2000, and determined that such island were feasible, but would have significant implications for the maritime environment. In 2007, the National Planning Committee adopted a policy planning paper for the construction of artificial islands and infrastructure, which recommended the construction of small artificial islands which would house vital infrastructure facilities such as oil and gas terminals.²²⁰ In 2012, the Israeli government ordered the formation of an intra-governmental steering committee to explore the feasibility of constructing clusters of small artificial islands which would house several facilities for the treatment of dangerous materials, such as gas, oil, and ammonia.²²¹ Currently, the Ministry of Interior is in the process of approving National Planning Program No.37 which deals with the layout and spatial planning of the national oil and gas transportation infrastructure in Israel. The program also includes a maritime aspect, whereby off-shore permanent platforms will be constructed within Israeli territorial waters. These platforms will house facilities for the reception treatment and storage of natural gas from the off-shore Israeli gas fields, before it is transported to Israel via dedicated pipelines.²²²

14. Conclusions: Risks and Opportunities for Israel in the Maritime Domain

1. The Joint Comprehensive Plan of Action between Iran and P5+EU was perceived by the Israeli government as paving the way for an Iranian military nuclear capability in a decade. Israeli officials also suggested that Iran might not fully comply with the agreement and seek such capability even earlier. Under these circumstances, Israel would have to retain and expand its maritime reach including some discussion on possible coordination (for example, in case of an emergency), with other regional actors. The plan further suggests enhancement of monitoring capabilities from naval platforms and calls for planning in the navy of its role in future Israeli deterrence posture. In addition, the Iranian challenge requires Israel to develop infrastructure that will facilitate its naval activity in the Red Sea, as well as ease the deployment of naval platforms between the Mediterranean and Red Sea fronts. The expected added expenditure to enhance naval capabilities vis-à-vis the Iranian front suggests that Israel should include a naval component within its request for compensation from the American administration.
2. The close ties between Israel and Egypt similarly suggest that in the short and medium range, the Egyptian Navy will not threaten Israel. Similarly, the demise of the Syrian Navy due to the ongoing civil war has diminished the immediate traditional sea-borne threat posed to the Israeli Navy.
3. Yet Hezbollah continues to pose a shore-based threat to naval platforms and energy facilities with its land-sea arsenal. Jihadist attacks on Egyptian naval targets and on ships in the Suez Canal suggest that non-state actors have the potential to constrain, and possibly threaten, Israeli maritime assets and freedom of action. Israel should develop an operational response for such threats. An important consideration should be the size and survivability of naval platforms that operate in the northern front. In addition, such a response could benefit from enhanced cooperation with regional actors.
4. Increased Russian deployment in the eastern Mediterranean most likely restricts the Israeli Navy activities there, or at the least, makes them more susceptible to surveillance. Russian use of cruise missiles from naval

platforms in the Caspian Sea further demonstrates Russia's capabilities and intentions to include an active naval component in its activities in the region. Furthermore, Russian buildup of a permanent infrastructure on Syrian land, beyond the existing facility in Tartus, suggests that Russian presence in the region is not short term. Israel should therefore include a naval element in its coordination effort with Moscow, much like the coordination it has with respect to aerial activities there.

5. The United States has generally taken a back-seat in regional issues, including a decline in its presence in the eastern Mediterranean. Faced with a committed Russian force, this may put Israel at a disadvantage. Israel may want to consider encouraging the US to restore its maritime presence or, as noted, coordinate better with the Russians. Israeli decision makers should bear in mind the possible tension that might arise between American and Russian interests in the region.

6. Weakened governance structures in the Eastern Mediterranean create the potential for a set of risks including piracy, waves of migration, and environmental damage. Israel should monitor these risks, and raise the issues with the EU.

7. The growing activity of national and supra-national maritime task forces in the region including the Russian forces, UN (following UNSCR 1701), European forces and anti-piracy forces creates both constraints and opportunities to cooperate. For example, Israel may want to consider advancing a coordinating framework for all forces in the region, including possible search and rescue joint training. Cooperation in international activity can improve Israel's power projection and image in the international arena, but may require an additional naval platform, given the heavy load of activity of existing platforms.

8. Border demarcation problems have an impact on Israel's ability to exploit natural resources and attract foreign investment, as well as providing Hezbollah with another justification for aggression. Israel should continue therefore to take part in the American-brokered negotiation efforts to settle the issue with Lebanon. Lebanese gas finds may increase the hostility with Lebanon over the disputed area.

9. The maritime domain may facilitate solutions that will ease the political and economic situation of Gaza. Israel should develop a comprehensive position on maritime activity along the Gazan shore, including its standpoint on issues like fishery, desalination plants, import-export trade, and extraction of natural resources.

10. Israel's difficulties in reaching an agreement regarding the terms of extraction of gas from Tamar and Leviathan fields, as well as the recent Egyptian gas find in Zohr, might influence Israel's reputation, its energy security, and its ability to utilize the gas to advance its national interests.

15. Appendixes

15.1. Appendix A: Delineation of the Eastern Mediterranean and Red Sea regions

15.1.1. *Delineation of the Mediterranean:*

The Mediterranean is a semi-enclosed sea that lies between Southern Europe, North Africa, and Western Asia. It is about 3,800km long by 1,600km at its widest point, and its surface area covers 2.5 million km². The sea is connected in the west to the Atlantic Ocean through the Straits of Gibraltar, to the Indian Ocean in the southeast through the Suez Canal, and to the Black Sea in the northeast through the Dardanelles and the Bosphorus Strait.

The importance of the Mediterranean stems from its strategic position bridging the gap between three continents, as well as its location on the southern border of Europe. Throughout history, the Mediterranean has been a major route for trade and immigration between North Africa, Asia, and Europe. The sea has also been the site of major battles, as world powers vied for influence and hegemony. Since the opening of the Suez Canal, the importance of the Mediterranean as a major trading route has grown even further. The end of the Cold War and the demise of the Soviet Union somewhat diminished the strategic importance of the Mediterranean in the contest between superpowers. However, the resurgence of Russian naval power in the last decade, together with a growing Chinese presence in the global arena has emphasized its strategic value once more. Recent events in Libya, Syria and the Crimea have heralded the resurgence of superpower rivalry over the Mediterranean.

The Mediterranean can be divided into three main sections: the Western Mediterranean, stretching between the Straits of Gibraltar and the Straits of Sicily; the Central Mediterranean stretching between Sicily and Italy on the western side and the line between Greece and Benghazi on the eastern side;

and the Eastern Mediterranean, stretching from Greece and Crete to the eastern shore of the Mediterranean.

The Eastern Mediterranean is roughly 1,300km long and 1,000km at its widest point, when including the Aegean Sea. This region is bordered by nine countries, whose maritime boundaries overlap and intersect with one another.

These countries have been experiencing significant challenges following the outbreak of the Arab Spring and the economic depression in Europe. Several of these countries have been critically destabilized by civil wars, while others underwent severe turmoil. These different local and regional challenges are reflected in the Mediterranean through the movement of migrants from Asia and Africa towards Europe, as well as through the naval activities of various non-governmental militias which sprang up during local civil wars. Furthermore, recent offshore gas discoveries have exacerbated previously existing conflicts over sovereignty claims, causing heightened tensions between regional states.

15.1.2. Delineation of the Red Sea:

The Red Sea is a seawater inlet, lying between Africa and the Arabian Peninsula. The sea is about 2250 km long and 355 km wide at its widest point, and has a surface area of roughly 438,000 km². It is connected to the Indian Ocean in the south through the Bab el Mandeb strait and the Gulf of Aden. In the north is the Sinai Peninsula, the Gulf of Aqaba/Eilat, and the Gulf of Suez (leading to the Suez Canal).

The Red Sea has a long history as a major trading route leading from the South Asia and the Horn of Africa to Egypt and the Mediterranean coast. Since the construction of the Suez Canal and the discovery of oil in the Persian Gulf, the importance of this area has increased significantly. Currently, about 10% of the world's naval trade passes through the Suez Canal.²²³

The Red Sea is bordered by eight coastal states, which include Israel, Jordan, Saudi Arabia, Yemen, Djibouti, Eritrea, Sudan and Egypt. Adjacent

countries also include Ethiopia and Somalia. Growing political instability in some of these countries has created substantial naval security threats to commercial transportation, especially the threat of piracy attacks in the Gulf of Aden.

15.2. Appendix B: Distinctions between types of vessel employed by local Mediterranean navies:

Small patrol boats (PBs) refer to vessels which measure up to 30m, with a displacement of up to 50 tons. These PBs are usually employed in law enforcement duties closer to the shore and in territorial waters. The report accounts for both armed and unarmed PBs; however, we place special significance on armed vessels as they allow for self-defense and enforcement.

Large patrol craft refers to vessels which measure up to 50m, with a displacement of up to 100 tons. This type of vessels is usually employed in patrol and law enforcement duties in territorial and adjacent waters, and is armed with medium and small caliber guns.

Off-shore patrol vessels (OPV) refer to vessels with a displacement of over 100 tons which are not armed with missiles. This category contains specialized vessels such as anti-submarine warfare (ASW) or mine-hunter vessels, as well as specifically-built OPVs. Vessels of this type are usually employed to patrol the EEZ and are armed with medium and small caliber guns.

Missile Fast Patrol Boats (MFPBs) refer to small vessels, up to 1,000 tons which are armed with a combination of anti-ship missiles and guns. Some vessels in this category are equipped to perform additional tasks, usually an ASW role. This type of vessel is usually employed in a combat role in the territorial and adjacent waters, but is not designed to withstand the conditions of the high seas.

Corvette refers to a compact multi-role vessel with a displacement of between 1,000 and 2,500 tons. These vessels are typically equipped with a

combination of guided missiles, Air defense (AD) and ASW weapons which endows them with comprehensive protection in international waters. These vessels are usually employed in combat roles in the EEZ and beyond. Filling a gap between MFPBs and full frigates this category offers an affordable solution for small littoral navies.

Frigate refers to a category of multi-role combat vessels with a displacement of over 2,500 tons. Such warships are usually equipped with AD and ASW weapons, as well as guided missiles which are capable of hitting both surface vessels and targets on shore. These vessels can operate in international waters well beyond the boundaries of EEZs, and form a nascent basis for power projection capability.

Modern *destroyers* are similar in role and capability to frigates, however slightly larger, with displacement of over 3,500 tons. These vessels fulfill combat and escort roles in international waters, protecting large flotillas and trading routes. Destroyers are usually found in the fleets of ocean-bordering nations with deep-water navies.

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