MARITIME STRATEGIC EVALUATION FOR ISRAEL 2022/23

Chief Editor: **Prof. Shaul Chorev**

Editor: **Dr. Ziv Rubinovitz**

אוניברסיטת חיפה
University of Haifa
جامعة حيفا

HMS
המרכז לחקר מדיניות ואסטרטגיה ימית
Maritime Policy & Strategy Research Center

Summary of Maritime Strategic Evaluation for Israel and Policy Recommendations

Shaul Chorev

Abstract of Insights

Geopolitical and geo-economic changes affecting Israel's interests in the maritime domain

The year 2022 was notable for its many diverse challenges, all affecting and intensifying one another in a relatively short period: the war in Ukraine, the continuing impact of the COVID-19 pandemic, the ongoing Iranian nuclear program, the Chinese threat to Taiwan, signs of a global economic slowdown, inflation, the weaponization of energy sources, uncertainty in the global food market, climate problems, and droughts. The increased tensions between the superpowers raise the concern of a return to a Cold War atmosphere, perhaps even the possibility of a large-scale, violent conflict erupting because of the Russian campaign in Ukraine and the tensions that have recently flared between the Unites States and China over Taiwan. A significant result of these upheavals is that the Middle East, which the United States had tried to move from the center of gravity of its international focus, returned to center stage, as manifested in the importance that the superpowers are now attributing to it.

Russia's invasion of Ukraine in February 2022 caused the most serious international crisis since the Cold War, marking a new stage in determining borders and the movement of populations in Europe.[1] These are amplified by concern about China's ambitions in its spheres of influences in East Asia and the Indo-Pacific region that have the potential to reshape the international order. Putin's frequent references to the potential use of nuclear weapons also worry the West, especially given that relations between Russia and the United States have not been so strained since World War II. This concern is amplified by China's support for Russia in the international arena. It should be born in mind that during most of the Cold War, in contrast to today, senior defense officials in the Soviet Union and the United States, foreign policy makers, intelligence officials, and experts in nuclear oversight managed to engage in extended, informed discussions about the capabilities of nuclear weapons and the risks of nuclear war. These meetings resulted in arms control agreements, mutual inspections of sites where nuclear weapons were

1 Paul Dibb, The Geopolitical Implications of Russia's Invasion of Ukraine, *The Australian Strategic Policy Institute*, September 2022.

stationed and stored for agreement verification, and a comprehensive set of means for transmitting signals and messages at times of security crises.

Before deciding to invade Ukraine, President Vladimir Putin saw EU member states as weak and divided, and the United States as a declining superpower, an assessment he shared with Chinese President Xi Jinping, newly reelected to another five-year term by the Chinese Communist Party. Apparently, the latest reactions of EU and NATO members to the invasion, in part manifested in rapid and painful anti-Russian sanctions, in addition to steadfast material and moral support for Ukraine, have persuaded both leaders to take the EU and NATO as well as the U.S. commitment to these organizations much more seriously. The scope and depth of China-Russia relations is not yet clear from the most recent events mentioned above. Nor it is clear how both – together and separately – are seeking to change the balance of power in the Indo-Pacific region.[2] Like his predecessors, U.S. President Joe Biden has tried to shift the center of gravity of the U.S. system toward Southeast Asia and to prepare for the possibility of a military conflict there. However, he, too, has been dragged back into dealing with familiar and troublesome problems in other regions. NATO's strategic doctrine, updated in 2022, recognizes that the Indo-Pacific region is important to NATO and that developments there might directly impact Europe's security. Accordingly, NATO announced it would strengthen its dialogue and cooperation with existing and new partners in the Indo-Pacific region to be better prepared for cross-regional challenges and "joint security interests" – a new direction in NATO's strategic vision regarding China.[3]

The geostrategic importance of the Middle East – an area connecting Asia, Africa, and Europe – remains at the center of the competition over influence among the global powers. The competition among the United States, China, Russia, and Europe, as well as rising powers such as India, which is working on creating new connections throughout the region, undoubtedly had an impact on the region in 2022. Consequently, most of the region's nations have started a process of "strategic hedging", expressing their desire to maintain good relations with all the external powers named above. Thus, for example, the United States under President Biden tried to formulate a liberal values-based foreign policy in the Middle East that would challenge Turkey and Saudi Arabia, is instead grappling with the fact that Turkey is a potent regional geopolitical power; as a result, securing Turkey as an ally is starting to become more important than the way President Erdogan runs his regime. This shift, similar to that – albeit unsuccessful – with Saudi Arabia, is

---

2 Ibid, 22.

3 Adopted by Heads of State and Government at the NATO Summit in Madrid, June 29, 2022, NATO 2022 Strategic Concept.

evidence that in the realm of international relations, realpolitik calculations are weightier for both sides.[4]

In 2022, Iran and its relations with Middle East nations continued to preoccupy regional leaders and the United States. In the absence of progress in the nuclear talks, Iran expanded its stockpile of nuclear materials and raised its enrichment level. Even if the nuclear talks are resumed, as long as the current Iranian regime stays in power, the international community will inevitably face broad security questions related to Iran's support for regional terrorism. These will in all likelihood remain unresolved and continue to contribute to Middle East uncertainty. Iran's involvement in the Russia-Ukraine war through its sale of Shahed-9 unmanned aerial vehicles (UAVs) to Russia and their deployment against military and civilian infrastructures, has earned Western condemnations while also certainly creating future Russian political and military obligations to Iran.

Regional attempts to rehabilitate diplomatic relations damaged in recent years in the Middle East and to normalize relations among nations that cut ties or never had diplomatic relations in the past are likely to continue. The growing rapprochement among Turkey, Egypt, Israel, Qatar, Saudi Arabia, and the UAE will likely progress slowly as these nations seek ways to coordinate and cooperate over issues related to the economy, energy, and common security. Still, a certain measure of distrust will continue to mark their relations, and the scars of the 2011 Arab Spring will be remembered. The normalization agreements between Israel and the UAE, Bahrain, and Morocco have resulted in economic and security ties, but there have been no breakthroughs in relations with other nations, such as full diplomatic ties with Saudi Arabia; nor has there been progress on the Palestinian front. As part of the process of repairing relations in the region, Turkey continued its attempts to restore ties with Israel in 2022. In March, President Isaac Herzog was received by President Erdogan in Ankara, the first diplomatic meeting of heads of state since 2008. This was followed by Prime Minister Yair Lapid's visit to Turkey in June in the wake of thwarted Iranian terrorist attacks on Turkish soil. In August, Israel and Turkey announced full normalization of diplomatic relations, and the two leaders, Lapid and Erdogan, held a historic meeting in New York during the U.N. General Assembly in September. Defense Minister Benny Gantz then visited Turkey in October to renew security relations between the nations after a more than decade-long freeze. During his visit, Gantz met in Ankara with Erdogan and Turkish Defense Minister Hulusi Akar.

Despite Turkey's dire economic situation, marked by high inflation and persistent currency devaluation, economic cooperation between Israel and Turkey increased. In 2021, trade

4 Alper Coşkun, Making the New U.S.-Turkey Strategic Mechanism Meaningful, *Carnegie Endowment for International Peace*, May 12, 2022.

between the nations grew by 35 percent, amounting to some $6.7 billion.[5] Erdogan, facing reelection in 2023, is undoubtedly shaping some of his economic policies in order to secure his victory. Erdogan has a solid international standing and has successfully established ties with the Gulf States as well with Russia and China. According to him, the July 2022 grain transfer agreement between Russia and Ukraine that he helped broker is his own personal achievement and proof of his desire to help poor nations whose food security has been endangered because of the war. While Turkey has been hurt by skyrocketing energy prices, it is still reaping handsome benefits from the war, and not just because of the investments of Russian citizens and oligarchs in the country. Trade between Turkey and Russia has grown by almost 200 percent since the start of the war, and is estimated at more than $6 billion; this in addition to the $10 billion Russia has invested in building a nuclear power plant in Turkey. In October 2022, Putin and Erdogan announced an agreement to turn Turkey into a regional marketing hub of gas and oil. These resources will flow through this center to European countries from Saudi Arabia, Iran, Russia, and various Middle East nations, despite the fact that Turkey is providing Ukraine with UAVs to fight Russia. At the same time, Finland and Sweden are still waiting to be accepted into NATO as Turkey delays these efforts by trying to wrest concessions, such as NATO nations' support for Turkey taking an even harder line against armed Kurdish militias. Turkey's relations with Saudi Arabia have started to yield economic benefits. In addition to the financial aid Turkey will receive from the kingdom, the giant Turkish holding company Yuksel was recently awarded a $12 billion contract for infrastructure construction in Saudi Arabia. Another Turkish company won a tender to develop infrastructures in Mecca. In addition, the UAE has pledged approximately $10 billion to an aid and financing package to Turkey. These successes stand in contrast to the Turkish economic crisis and its attendant high rate of inflation.

Our insight on taking a stand on the Russian-Ukrainian war: Although Israel originally remained neutral, in light of recent developments, including Iran's support for Russia and the use of Iranian drones against civilians in Ukraine, it may now have to cede to the United States and its allies and align itself with them. This despite Israel's strategic need to take a cautious approach and not get caught in the middle of the U.S.-Russia rivalry. It would be prudent for the new Israeli government to formulate its stance sooner rather than later. At the same time, Israel must also come to terms with the new world order and provide unique and solid contributions to new coalitions and cooperative frameworks

5 Danny Zaken, "Heskem shituf pe'ula hadash beyn ha'irgunim ha'iski'im beyisrael veturkiya" (Hebrew) ["New Agreement of Cooperation between Business Organization in Israel and Turkey"], *Globes*, March 6, 2022.

that will enable it to withstand the upheavals of this new era, first and foremost the Iranian challenge.

Our insight regarding Turkey is that Israel must make it clear that no progress in relations with Turkey would come at the expense of its relations with Greece, Cyprus, Egypt, and the UAE. Nonetheless, Israel must support a political settlement (and not just according to the UN Convention on the Law of the Sea, UNCLOS) of the Turkish-Greek disagreement over their respective exclusive economic zones.

The military campaign between Russia and Ukraine must also be addressed. This is primarily a ground war, but the maritime aspect is not altogether absent. Its effect is felt in two major areas. The first is the cessation of the supply of grain and wheat through Black Sea ports, due either to events related to the war or to the closure of Turkish straits to shipping. The second involves the war's naval clashes, culminating in the sinking of Russia's cruiser, the *Moskva*, events that have most certainly had an impact on the nature of naval warfare and fleet deployment. It is also impossible to ignore several other significant events, including the Russian navy's blockade on Ukraine's ports, which has disrupted the global supply chain of various goods; the laying of mines in the Black Sea (to date, it is not clear who is responsible); the launching of cruise missile from Russian naval vessels and submarines in the Black and Caspian Seas at ground targets in Ukraine; the use of UAVs in the naval theater by both sides to attack military targets, such as ports; and the failure of the Russian preparations for amphibian operations near Odesa. An in-depth examination of these events shows that the nature of naval warfare continues to change and that these changes obligate navies everywhere to adapt their naval doctrines and reorganize their naval forces and technology development to meet the new nature of warfare.

Our insight on this issue is that it is vital that the officials in charge of the maritime domain in Israel, including the Israeli navy, also study the lessons of the naval incidents during the Russia-Ukraine campaign. They must understand and internalize the changes in the nature of warfare in the maritime domain in order to make the necessary changes in naval force construction and to adapt the doctrine of its force operation to Israel's unique attributes and situation. Apart from drawing conclusions from the asymmetrical and hybrid warfare in the Russian-Ukrainian campaign, it would be prudent for Israel to examine the nature of other events, including the unilateral closure of international naval passages to military vessels (which has impacted Israel negatively more than once), and the ramifications of strikes on large military vessels with large crews in terms of loss of life. Israel would be advised to develop an appropriate response to rapidly developing threats, such as UAVs and drones capable of attacking naval vessels (such as the Shahed-136), in addition to rockets and missiles. Successes in using this promising type of weapon suggest that such

threats will only multiply, as can be seen in the use of other devices by the Houthi rebels to lay sea mines in the southern part of the Red Sea, which could pose a threat to Israeli shipping in that region. A response to changes in the nature of warfare must find the right balance between reliance on technological components versus conceptual and organizational components. To succeed in such a process, the Israeli Navy must invest in training the people working in the field of strategic thinking about the naval theater of war.

The Government's Handling of Issues Related to the Maritime Domain

In 2022, the Israeli government made several moves designed to develop Israel's maritime domain. Led by the National Council on Economy and Society in the Prime Minister's Office and in conjunction with the Directors General Committee of the government ministries, it was determined that: The relative advantages of the Haifa Bay region include knowledge-intensive industry, a naval port and logistics, "green" energy and chemical manufacturing industries … and the realization of an "Innovation Bay" plan expected to generate considerably more jobs than are currently available there.[6]

The committee went on to recommend forming an economic development authority for the development of Haifa Bay within the Prime Minister's Office tasked with advancing an outline to be defined by government decision.[7]

On July 4, 2022, the National Center of Blue Economy and Innovation was launched with a conference in Haifa, a significant event marking the beginning of implementation of the Directors General Committee decision. Under the terms of the Arrangements Law of 2021/22, the Minister of Innovation, Science, and Technology, Orit Farkash-Hacohen, was asked to instruct the National Council for Civilian Research and Development to articulate national technology and science priorities on which the government would concentrate its civilian research and development efforts over the next five years, as defined in the National Council for Civilian Research and Development Law (§5). To this end, the Council formed a dedicated 17-member commission led by Research and Development Council Chair Prof. Peretz Lavie. The commission undertook an extensive investigation to determine the nation's technology and science priorities. The Maritime Policy & Strategy Research Center in cooperation with the Leon H. Charney School of Maritime Sciences, University of Haifa, presented three subjects to the Council under the rubric of "the sea as

6 "Recommendation of Directors-General Committee to Advance and Develop Haifa Bay", Prime Minister's Office, the National Economic Council, April 26, 2021.

7 Ibid., p. 85.

a national resource": artificial islands, a blue economy, and mariculture. We are pleased to report that "the sea as a national resource" was selected as one of the five fields the Council chose to prioritize as research topics of national importance for civilian research and development worthy of government investment.[8] This decision, which should be accompanied by a government budget, is highly significant, although in the situation in which Israel finds itself after the last parliamentary election (November 2022), there is no certainty it will be implemented any time soon.

Our insight on the topic is that Israel's 37th government must continue to advance the moves described here under the rubric of "the sea as an Israeli national resource".

Regulating government policy for Israel's maritime domain: The document on Israel's maritime policy in the Mediterranean, which the planning directorate disseminated in December 2018, has not been approved by any political echelon, and certainly not by the Israeli government. At present, there is an inter-ministerial team of directors general addressing the recommendations and working to turn them into a program.

The "Maritime Regions" bill (2017) has been before the Knesset Economic Affairs Committee in preparation for its second and third reading for five years and has yet to be approved. The purpose of the law is: To define the maritime regions near Israel's shores, including the littoral waters, internal waters, adjacent region, and Israel's exclusive economic region (to be collective known as "Israel's maritime regions"), as well as to anchor Israel's rights and jurisdictions in them, including by way of setting statutory provisions that will apply there and at naval installations therein, all in accordance with the provisions of international law, to attain *inter alia* the following objectives: defining the various maritime domains adjacent to the State of Israel and determining the rights and jurisdiction of state authorities as well as other institutions in those areas.[9]

The Knesset's delay in passing the law is damaging Israel's ability to govern its maritime regions.

Our insight on the subject is that Israel's 37th government should establish as one of its objectives the commencement of formulating a national maritime strategy for Israel's maritime domain after government approval of policies, objectives, and maritime security strategy and government approval of a marine spatial planning program. Furthermore, the Knesset must complete the legislation of the "Maritime Regions" bill (2017) to define the various maritime areas adjacent to Israel. A new section relating to the policy document

---

8 National Council for Civilian R&D, the committee to formulate topics for national R&D priorities, "Decision on National Priorities for Civilian R&D in Israel", August 2022, p. 12 [Hebrew].

9 Draft of law: Maritime Regions, 2017 (in Hebrew).

must determine the authority of the entity responsible for marine spatial planning and the rights and jurisdictions of state authorities and other bodies in those regions.

Developing and Protecting Israel's Natural Gas Resources

In the wake of Russia stopping the flow of gas through Nord Stream 1 for maintenance and not yet returning it to operation, and following underwater explosions at two pipelines, the price of gas has skyrocketed. The demand for gas from sources other than Russia has also increased. Accordingly, the Israeli gas market can expect to greatly increase the rate of natural gas exports to European nations (through Egypt) after Israel, Egypt, and the EU signed an unprecedented memorandum of understanding in June 2022. This agreement was entered into against the backdrop of a global energy crisis that is especially problematic for Europe because of the continued fighting between Ukraine and Russia and the sanctions against the latter. The signatories were Energy Minister Karine Elharrar, Egypt's Oil and Natural Resources Minister Tariq al-Mula, and European Commission President Ursula von der Leyen. The memorandum was signed during a meeting of the Eastern Mediterranean Gas Forum (EMGF).

This memorandum of understanding includes agreements on preserving Israel's interest in its natural gas reserves – Karish-Tanin, Leviathan, and Tamar – in such a way that preserves Israel's energy security, including giving priority to the needs of its domestic market. The agreement between Israel, Egypt, and the EU relates to the flow of natural gas from Israel to Egypt, where it will undergo a process of liquefaction; the liquid form will then be sent via tankers by sea to Europe.

In October 2022, Cyprus and Greece launched the construction stage of the EuroAsia Interconnector, an underwater cable financed by the EU that will cross the Mediterranean with up to 2,000 MW of electricity to eventually connect electrical grids in Israel and Cyprus to Greece. At this point, only the first phase of the project between Cyprus and Greece has been approved. The EuroAsia Interconnector is another key infrastructure project strengthening the energy security of the EU by connecting Cyprus to the EU's electrical grid.[10]

In 2021, the Israeli government set a new goal of having thirty percent of its electricity produced by renewable sources by 2030. However, the goal seems very ambitious. Israel has not met its much more modest interim goal for 2020 (10 percent of electricity produced by wind and solar power). In November 2022, Israel, Jordan, the United States, and the UAE signed a memorandum of understanding to promote a solar power station

10 "East Med Gas Could Help Ease Europe's Energy Crunch with Right Funding – Officials", *Reuters*, October 14, 2022.

in Jordan and a desalination plant in Israel for electricity and water cooperation between the two nations. This is an important step and aligns with the interests of all sides, because stability in Jordan and meeting its water needs are an Israeli interest. Also important are Israel's ability to purchase clean electricity from Jordan and to overcome the scarcity of land in the country for generating electricity.[11] In December 2022, after settling the maritime border between Israel and Lebanon, the Israeli Energy Ministry issued its fourth tender to search for gas in Israel's EEZ. After an environmental strategic survey, the Energy Ministry announced that all searches would take place only at a distance of 40 km. or more from shore. Hence, Israel should continue searching for additional gas reserves at sea while also building facilities to produce renewable energy.

The Israel Citizens' Fund (Wealth Fund): In a Knesset debate held on June 14, 2022, Amir Katznelson, the finance minister's economic advisor and the Council secretary, noted that "As of June 1 this year, NIS 1.14 billion have accumulated in the fund. The finance minister has signed a directive to begin operating the fund. An annual budget of NIS 3 million has been allocated to operate it".[12] This sum is lower than the Bank of Israel's forecast, according to which some NIS 3.8 billion would be funneled to the Wealth Fund from the natural gas revenues between 2018 and 2022.[13] The reason for the discrepancy is additional search and development costs at the Tamar gas field.

Our insight on these matters is that in tandem with establishing alternative energy facilities, Israel should continue developing its gas fields, as this resource will be with us for many more years. Israel should also build one large power station operated by natural gas (in addition to solar power stations) in order to ensure that it will meet its growing electricity demand by 2030, and thereby strengthen its foreign policy through the EMGF, of which it is a member. It is also critical to direct the sums starting to accumulate in the Wealth Fund toward training scientific and technological personnel who will be able to face the challenges this domain poses to the State of Israel.

Protecting Israel's Energy Production Infrastructures

The downing of the drone Hizballah launched at the Karish reserve production rig in July 2022 was an Israeli Navy success; it achieved its mission of protecting the nation's energy

11 Energy Ministry, Spokesperson's Announcement, "Leading Israeli Climate Initiative Just Signed: Energy Ministry Continues to Advance Prosperity Projects to Purchase Green Electricity from Jordan and Sell Water to Jordan", November 8, 2022.

12 Special Committee on the Israel Wealth Fund, "Report Issued by Yarom Ari'av, Chair of the Israel Citizens Fund Investment Committee on the Start of Wealth Fund's Operations", *Knesset Website*, June 14, 2022.

13 "Energy Market Goal for 2030", Executive Summary, State of Israel – Energy Ministry, 2018.

infrastructures at sea. Israel downplayed the event so as not to disrupt the progress of the negotiations it was then conducting with Lebanon (with U.S. mediation) over settling their maritime border. Nevertheless, it is surprising that the ensuing public debate did not question why Israel chose to place the Karish rig in such a sensitive location that requires the allocation of so many resources to secure it. Obviously, had the rig been built south of its current location, it would have been possible to protect it better and at a lower cost. Furthermore, the placement of the rig during the midst of the talks was predictably seen by the Lebanese as an attempt to set facts on the ground.

The Leviathan reserve production rig, whose production potential is ten times that of Karish and Tanin, was at first meant to be located above the gas field located 120 km from Israel's shores. Only at a later stage it was moved into Israel's territorial waters west of Dor Beach. The Energy Ministry, which advocated for this move, then claimed that it was preferable to place the production rig in Israel's territorial waters to provide maximal protection for Israel's energy security as well as ensure reliability and redundancy. In August 2018, the security establishment joined in support of this demand, even though four years earlier it had ordered Sa'ar 6-class corvettes, designed to defend production rigs far from Israel's shores. As a result, despite protests from local inhabitants that the location might pose risks to them, the production platform was placed 10 km. from shore.

Concerning the location of the Karish production rig, the Energy Ministry claims that placing the production facility near the reserve reduces the length of the pipes and auxiliary support systems, and that the presence of the platform near other potential gas fields will make possible relatively simple connections to future reserves. Still, the ministry agrees that its considerable distance from the shore reduces risks to the population and to activities near the shore – a distance that prevents defacing of the landscape and eliminates noise and air pollution.

Clearly, no analysis of alternatives that takes into account all the relevant factors has been undertaken to determine the optimal location of infrastructure facilities in Israel's maritime domain; that is, an analysis considering both the security and ecological ramifications of placing a production rig near the shore.[14] The series of explosions and leaks that occurred at Nord Stream 1 and Nord Stream 2 in the Baltic Sea on September 26, 2022 have created a new reality in which securing facilities and infrastructures for extracting gas from the sea must consider additional threat scenarios of greater

14 Nir Zarhi, "Vulnerability Analysis of Alternative Systems for Maritime Handling of Natural Gas: The Case of Security Threats against the Dor Facility", paper for the Zichron Yaakov Local Council, July 2018 [Hebrew].

complexity than ever before.[15] In October 2021, the U.S. Naval Forces Central Command (NAVCENT) established a new taskforce, Taskforce 59, to enable the rapid integration of unmanned systems and artificial intelligence with naval actions in the Fifth Fleet's area of operation in the Persian Gulf, Red Sea, Arabian Sea, and parts of the Indian Ocean. According to U.S. Navy Vice Admiral Charles Bradford "Brad" Cooper II, Commander, United States Fifth Fleet, the geography, climate, and unique strategic importance of the Fifth Fleet's zone of operations offer an ideal environment for innovation. Cooper also stated that launching Taskforce 59 strengthens the fleet's cooperative programs in this area, because the fleet, via the taskforce, is expanding the operational picture it shares with its partners in the area.[16] In September 2022, the U.S. Navy and the Israeli Navy held a joint exercise in the Gulf of Aqaba/Eilat where the Israeli Navy was shown the capabilities of Taskforce 59, which integrates manned and unmanned surface platforms of the Saildrone Explorer and Devil Ray T-38 types. The Israeli Navy, which in the past was a leader in technological innovation, must begin to develop or equip itself with such platforms to upgrade its capabilities for defending Israel's critical infrastructures located in its maritime domain against a wide range of emerging threats.

Our insight on the topic is that in addition to securing the current gas fields by the Israeli Navy, Israel must undertake a vulnerability analysis of the alternatives for processing natural gas at sea and include other possible scenarios that could be implemented should there be further discoveries of gas reserves and the emergence of new threats as a result. In addition, Israel must also examine means for securing underwater communications cables connecting Israel with Europe and determine the best way to protect them. For all these, it is necessary to examine the use of unmanned vessels, both above and under water, which could serve as an effective operational response to the scenarios described herein and which have already passed the stage of operational proof in other advanced navies.

The Israeli Navy's Deal to Purchase Submarines and Surface Vessels

In May 2022, the Israeli government decided to establish a state commission of inquiry to examine the following: the agreements or purchase processes of the Sa'ar 6 corvettes, AIP submarines, anti-submarine boats; the privatization of the Israeli Navy's shipyards; and

15 NAVCENT Public Affairs. (2021) *U.S and Israel Complete Unmanned Exercise in the Gulf of Aqaba*. U.S Naval Forces Central Command / U.S Fifth Fleet.

16 Task Force 59: Creating Maritime Capabilities for the 5th Fleet Area of Operations, *Second Line of Defense*, October 24, 2021.

Israel's agreement that a German submarine be sold to a third party.[17] The government determined that the commission, to be chaired by former President of Israel's Supreme Court, Justice Asher Grunis, would investigate the purchase processes of the naval vessels, including the work processes of the professionals involved and the decision-making processes of the political echelon regarding the purchases or deal. The commission, tasked with issuing a report on the results of its investigation and recommendations, was also empowered to render an opinion on existing procedures relevant to these matters. Given the importance of the issues under inquiry and the urgency of its recommendations, the commission was to submit its report to the government at the earliest opportunity and would determine its work processes accordingly. At the time of this writing, more than seven months have passed since the 36th government announced the launching of the commission, but it is still focused on gathering and studying materials. With the establishment of the 37th government, concerns have been expressed on the continuation of the commission's work. The conclusions and lessons of such a commission for possible future purchases are most critical for the Israeli security establishment in general and for the Israeli Navy in particular.

Our insight on the matter is that regardless of the outcome of the most recent parliamentary election and the change in government, it is necessary that the commission in its current constellation continue its work and submit its recommendations to the Israeli government, irrespective of other processes in the Israeli legal system.

Demarcation of Israel's Maritime Border with Lebanon

On August 10, 2021, the U.S. Secretary of State announced the appointment of Amos Hochstein as Special Envoy and Coordinator for International Energy Affairs. It was decided that he would deal with the Israeli-Lebanese dispute over their maritime border, among other issues. As Hochstein began mediating between the sides, media reports made it clear that the intention this time was to resolve both the border question and the resource question. Faced with a strict time frame due to the end of the Lebanese president's term at the end of October 2022 and Israel's parliamentary election on November 1, 2022, the talks proceeded at an intense pace. Indeed, on October 12, 2022, the government approved the agreement and placed it before the Knesset and it was authorized on October 27. In the intervening time, the High Court of Justice denied petitions regarding the procedure of authorizing the agreement.

---

17 Prime Minister's Office, Decision No. 4015, "The Establishment of a State Commission of Inquiry on the Deals and/or Purchase Processes of the Saar 6 Gunboats, AIP Submarines, Anti-submarine Boats, the Privatization of the IN's shipyards, and Israel's Agreement that a German Submarine be Sold to a Third Party – Amendment to Government Decision", May 4, 2022.

On October 19, 2022, the Knesset Foreign Affairs and Security Committee met to discuss the agreement. The director of the National Security Council (NSC), the director general of the Foreign Affairs Ministry, and the director general of the Energy Ministry explained the contents of the agreement, how it was achieved, and its implications. Their statements can shed light on the negotiation processes as well as what they considered achievements. The NSC director noted the directive the government gave the negotiating team, namely: to preserve all of Israel's security interests so that an agreed-upon international borderline would be drawn; to create strategic stability for the Israeli and Lebanese parallel rigs in order to prevent unwanted escalation or routine friction; and to ensure the security of the nation's energy infrastructures and its energy continuity, i.e., not allow anything to interfere with gas production at Karish as the result of various measures taken regarding it. The director general of the Foreign Affairs Ministry added the importance of creating an agreed-upon international borderline with an enemy state.

The maritime border is marked using four maritime coordinates and severs the dependence on a starting point of the land borderline and a maritime borderline for the sake of the agreement alone, without the sides conceding their legal claims on the matter. The maritime borderline between Israel and Lebanon is built on two complexes: the "buoy line" route and the maritime borderline marked by four naval coordinates, which begin at the end of the buoy line, whose length extends to Point 23 at the edge of the EEZs of the two sides.

It is our opinion that the maritime border preserves Israel's security interests as defined by the government, including the NSC, the IDF, and the Israeli Navy. This is the first time a maritime border agreement has been signed with an enemy state without the agreement being a peace treaty. The agreement determines that this maritime border will establish "a permanent and equitable resolution of [the parties'] maritime dispute."[18] The coordinates of the maritime border will be submitted to the United Nations and serve as international reference to the validity of the agreement. In practice, the maritime border ends Lebanese claims to maritime areas and resources located in the exclusive economic zone on the Israeli side.

Another article in the agreement deals with the development of the Sidon-Qana gas field, a reserve straddling the border between the two nations. On November 15, 2022, the Israeli Ministry of Energy announced that an agreement had been signed with TotalEnergies of France and Eni of Italy that defines the principles upon which exploration drilling will be carried out near the Israeli border. This agreement, signed as a follow-up to a prior initial agreement, defines the following principles: the companies will undertake

18 Full text of the agreement is available on the Knesset website.

an assessment to determine the size of the field and how it is distributed between Israel and Lebanon; any disagreement that arises will be decided by an outside consultant agreed upon by both parties; the detailed agreement determining the consideration to be paid to Israel will be formulated only after this stage is completed; and there will be no development at the field before the detailed agreement is signed and the consideration (in whole or in part) is transferred to Israel.

Our insight on the issue is that the process has once again demonstrated that the maritime domain allows for flexibility and creativity that cannot be found on the ground or in the air. The possibilities in this domain are varied, from natural resources (both energy and water for desalination), through renewable energies, to creating new joint infrastructures. In the future, Israel's maritime domain will allow the country to expand its infrastructures and serve as a source of new cooperative ventures with its neighbors. The maritime border agreement with Lebanon should be the first milestone in thinking about and exploiting the maritime domain. Now that the agreement has been signed, Israel would be advised to focus on two national objectives. The first objective is to create a policy and strategy regarding the maritime domain, borders, and future plans for use. Israel must recognize the maritime resource and regulate it in accordance with a vision for the future. First and foremost, Israel must pass a maritime zones law in which it defines its methods for determining its maritime borders. It is necessary to determine the point of the land border from which the maritime border with Lebanon begins, a point left vague in the current agreement and which might prove to become a future problem. A policy on the maritime border at the Gaza Strip, over which there is a disagreement with the Palestinian Authority must be articulated. A policy on Israel's maritime infrastructures and how to defend them must also be determined. Thought must be given to the location of future gas development rigs; they must be located in such a way that threats are minimized and the ability to defend them is improved, which is what should have been done in the case of the Karish platform before it was built.

Israel's second objective must be to acknowledge that the maritime domain is unique in that it allows cooperative ventures that challenge the conventional paradigms of enemy state, as the agreement with Lebanon demonstrates. Even if some feel that the division of the field is disadvantageous to Israel, the important principle is that there will be future exploration and production at the gas field located in the cross-border area, even if indirect. Other examples include joint ventures to exploit natural resources in the eastern part of the Mediterranean Basin currently being formulated, such as the joint forum for Cyprus, Greece, Egypt, Israel, and the PA on energy resources and the possibility of their joint development, and the surprising rapprochement between Israel and Turkey over the past year, stemming primarily from the possibility of working together to export gas to Europe.

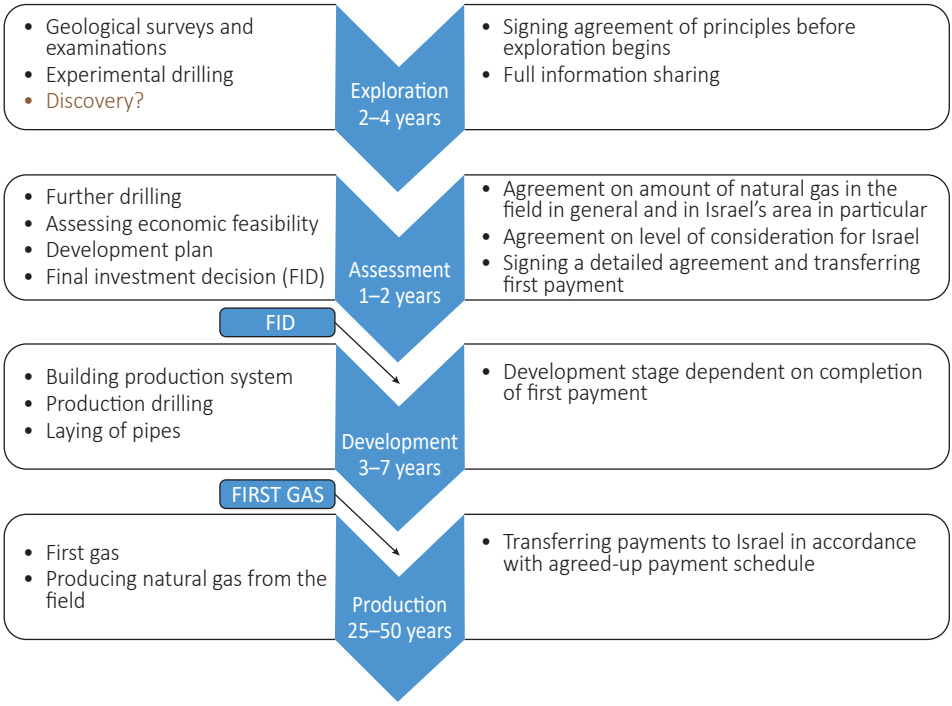

Figure 1: Stages of development and agreement milestones (source: Energy Ministry)

Challenges to Israeli Navigation in the Red and Arabian Seas

Following Iranian attacks on several ships with ties to Israel that were sailing in the Gulf of Aden and the Gulf of Oman in the first half of 2021, Israel forged closer cooperation between the Israeli Navy and the Fifth Fleet. The joint exercises they held in 2022 were in part a reflection of Israel's concern over an increased Iranian presence in the Red Sea. Despite these close ties, the Iranian Revolutionary Guard Corps (commonly known as the Revolutionary Guards, or the IRGC), renewed its activities and on November 15, 2022, attacked the *Pacific Zircon* oil tanker sailing out of Singapore under a Liberian flag and partially owned by Israeli businessman Idan Ofer. At the time of the targeted attack by the IRGC, the tanker was sailing 150 miles off the coast of Oman. Although relatively little damage was inflicted and no lives were lost, the attack made it clear that Iran has identified this type of operation as having a reasonable chance of inflicting harm on Israel for actions Israel carries out against Iran elsewhere. This issue requires a situation assessment by the Israeli Navy and Israel's entire security establishment regarding what steps can be taken to prevent the recurrence of such incidents.

The ongoing war between Russia and Ukraine, during which the Turks have closed the Bosphorus and Dardanelles straits, and the continued activities of the Houthi rebels in the Bab al-Mandab area, demonstrate the vulnerability that chokepoints pose to freedom of navigation.

The recently completed talks over marking the maritime border between Israel and Lebanon once again showed the importance of conducting negotiations through a mediator and of guarantees provided to Israel in the absence of diplomatic relations. In this light, we should examine recent developments in the Straits of Tiran, where Saudi Arabia has regained sovereignty (including the islands). In so doing, the kingdom was expected to "respect" the Israeli-Egyptian peace treaty insofar as it pertains to this area, despite not having been a signatory to it. Addressing this point, Saudi Arabia announced it does not see itself as obligated by the treaty and made it clear that it views the international observers operating in the islands to secure the treaty as a foreign force operating in its sovereign territory. As early as 2017, we at the Maritime Policy & Strategy Research Center at the University of Haifa pointed out that, from Israel's perspective, the situation in the area over which Saudi Arabia has regained sovereignty has reverted to the days before the outbreak of the Six-Day War. There is a clear and present danger of the situation deteriorating in terms of freedom of navigation through the straits, and we are convinced that Israel must strive to restore order there. During President Biden's visit to the region in July 2022, there were media reports indicating that by the end of the year the observer force would leave the islands and Saudi Arabia and relocate in Sharm a-Sheikh, from where it could continue carrying out its mission by means of long-distance observation. It is not clear what guarantees the United States provided Israel for ensuring freedom of navigation there. It is also unclear what the Israeli government's position was regarding the process or the nature of the agreements signed. Now that relations between Saudi Arabia and the United States are strained, it may be time to reexamine these understandings, reality having taught us about the fragility of agreements in the region.

Our insight on the topic is that Israel must closely follow emerging changes in these regions, especially in the Red Sea and Gulf of Aden, and articulate a policy for maritime trade, freedom and security of navigation, and the use of the maritime domain to realize its strategic objectives. Given the increased importance of this region for Israeli commerce and, at the same time, the growing threats against it, Israel must also examine its policy on force construction and deployment in the Red Sea, an issue of growing significance. Learning from the talks over drawing the maritime borderline between Israel and Lebanon, Israel must be cautious in conceding guarantees given in the peace treaty

with Egypt regarding freedom of navigation through the Straits of Tiran, especially given the fact that U.S.-Saudi relations are not at their best.

Shipping and Ports: Israel's Seaports

Implementing the landlord model at Israel's seaports is an important step toward creating efficient, competitive seaports providing a high level of service to those involved in Israel's foreign trade. The method is based on the principle of separating the development of national infrastructures, which is carried out by the state, and the routine operation of the various terminals of a port, which is conducted by private companies competing with one another.

Haifa Bayport Terminal, inaugurated in early September 2021, is capable of unloading container ships carrying up to 18,000 containers. In October 2022, ZIM, Israel's international shipping and cargo company, which until then had operated in the government-run Haifa Port, decided to move two of its five ship lines to Haifa Bayport. This move is a clear message to Haifa Port, as ZIM's five lines constitute 20 percent of the port's cargo container operations. In the months before ZIM's departure, the port's activity had already dropped to an unprecedented low.[19] The Southport Terminal in the Port of Ashdod was opened for a test run before the summer of 2021; the first ship arrived at its docks in February 2022. In late 2022, the terminal has begun to step up its level of activity, but it is still far from realizing its shipping container potential. In February 2022, the terminal began handling general cargo ships on the basis of special approval it received from the Ministries of Transportation and Finance to help ease the general cargo ship congestion. Despite the heavy workload at Israeli seaports, there are at least three piers that are not being used (Piers 7 and 8 at Haifa Bayport and Pier 28 at Southport). The Israel Shipyards Port in Haifa is administratively limited to not exceed 5 percent of the scope of activity at Haifa Port.

The "traffic jam" at Israel's ports started to ease in mid-2022. The major reason was serious concern over a recession, which led to a halt in the purchase of iron, a product used primarily in construction (Figure 2). Based on government data, it seems there is no link between the emerging end of the ship "traffic jam" and the decision by the ministers of finance and transportation to open the three piers at the private ports. Haifa Bayport's

19 Omer Carmon, "Hatahrut mithamemet: ZIM ma'avira oniyot lin'mal hamifrats upe'ilut n'mal Haifa beshefel" (Hebrew) ["Competition heats up: ZIM moving ships to Haifa Bayport as activity at Haifa port hits low"], *The Marker*, October 26, 2022.

promise that it could handle seven to ten general cargo ships weekly if the state would allow it to operate two more piers ultimately did not materialize.[20]

In November 2022, the financing deal to buy the Haifa port was closed. The Adani Group and the Gadot Group, whose joint bid was awarded the tender in July 2022, announced that they wanted to purchase the port in full for a total price of NIS 4.1 billion.[21] Financial experts expressed concern that the deal was too highly leveraged and that its business model was to function as an income-yielding real estate company within the port; in effect, to engage in commerce, which, to an extent, is in conflict with the port's operational and infrastructure concerns.

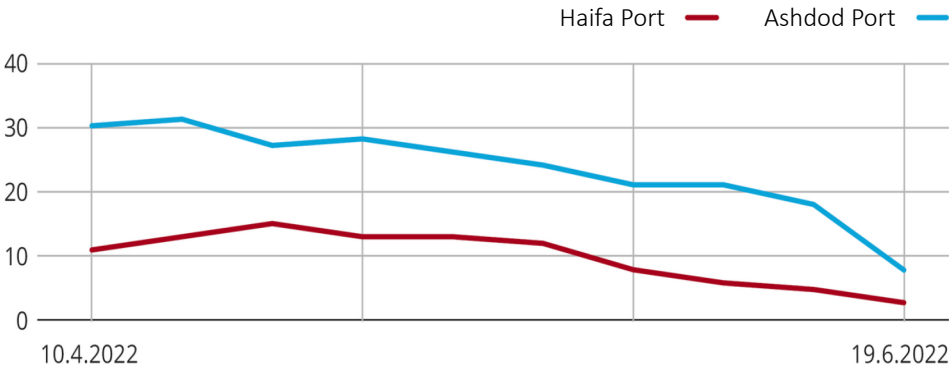

Figure 2: Number of ships waiting outside government ports in Haifa and Ashdod in recent months by weekly average (all types of cargo), 2022 (source: Haifa and Ashdod ports companies)[22]

The Ashdod Port, the only port remaining under government authority, has recently suffered from sanctions by tugboat workers who are employed by the government-owned Israel Ports Company (IPC), resulting in a return of the "traffic jam" to Ashdod's waters until an injunction was issued against the striking workers.

Our insight on the topic is that effort must be made to improve port efficiency with regard to general cargo ships and bulk freighters (bearing bulk cargo such as grain, coal, or metal ore). After gaining experience with private seaport operations, Israel will need

20 Omer Carmon, "P'kak ha'oniyot mul nimpley yisrael holekh vedo'ekh akh hasibot lekhakh eynan tovot" (Hebrew), ["Ship jam outside Israeli seaports easing but the reasons aren't good"], *The Marker*, June 22, 2022.

21 Ro'ee Weinberger, Hezi Sternblit, and Asaf Zagridek, "Hak'vutsa hahodit hodiya: Nisgra iskat hamimun lir'khishat n'mal Haifa" (Hebrew), ["Indian group announced: Financing deal to buy Haifa port ends"], *Globes*, November 13, 2022.

22 Carmon, "P'kak".

to determine whether to continue the seaport privatization process and complete the privatization of Ashdod Port to improve efficiency there, or maintain one government-operated seaport.

Israeli Shipping

Most cargo to and from Israel is shipped by sea. Some 58.1 million tons of good were transported through Israeli ports in 2021; of these, 29 million tons consisted of fuel and coal, most through the energy ports (Hadera and Ashkelon), with the rest going through the commercial ports (those of Haifa, Ashdod, Eilat, and the Israel Shipyards). In 2021, the scope of Israel's foreign trade (excluding diamonds) was estimated at $137 billion: $86 billion in imports and $51 billion in exports. The scope of global maritime trade (in tons) grew by 3.3 percent over the course of 2020. In 2022, the expected increase of trade from 2021 to 2022 was 6.2 percent.[23] In terms of the amount of cargo handled at Israeli ports, the tonnage they handled grew by some 4 percent from 2020 to 2021, with a growth of about 8 percent at the Israel Shipyards Port, followed by the ports of Haifa and Ashdod (6 and 3 percent, respectively).[24] The year 2021 was a very good one, characterized by high profitability for many of the shipyard companies. The steep growth in GDP and its effect on the scope of trade contributed considerably to the increase in maritime shipping costs. Nonetheless, despite the sharp increase in fuel and vessel operations costs, the shippers reaped very high profits.

As of February 2022, Israel owns and controls a fleet of 38 merchant ships; the average age of the fleet is 14.2 years and eight of these ships fly under the Israeli flag. Of Israel's total merchant navy, they represent about 17 percent in tonnage terms and about 20 percent in GRT (gross registered tonnage).[25]

The count of active personnel in Israel's merchant navy is based on all active sailors in the merchant navy (as of January 2022): the total number of active sailors is 387, of whom 106 are Israeli (27 percent); the number of active officers in the merchant navy is 154, of whom 97 are Israeli (63 percent); the number of active cadets in the merchant navy is 21, of whom eight are Israeli; and the number of active ranks in the merchant navy is 212, of whom one is Israeli.

In 2021, 6,429 ships entered Israeli ports (3,142 the Haifa Port, 2,288 the Ashdod Port, 677 the Israel Shipyards Port, and 142 the Eilat Port).[26]

---

23 State of Israel, Transportation Ministry, Shipyards and Ports Authority, Department of Economic Planning and Foreign Relations, *Statistical Yearbook of Shipyards and Ports 2021* (2022), p. 8.

24 Ibid, p. 88.

25 Ibid, p. 101.

26 Ibid, p. 105.

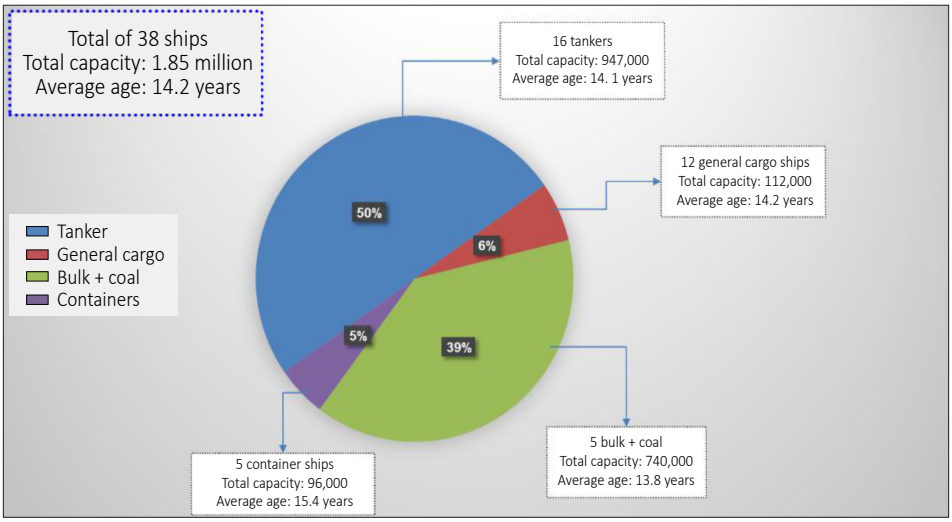

Figure 3: Israel's merchant navy – capacity and age as of January 2022

The state of Israeli shipping continues to be very poor in terms of Israeli personnel serving on the ships, the number of Israeli-owned ships or ships sailing under the Israeli flag, and referring to the new taxation law (occupancy tax), promoted by the Ministries of Finance and Transportation. The law was supposed to go into effect in January 2017, but it was postponed. Now the process of approving it must be started anew, including government approvals and three readings in the Knesset. The law's intent was to support the readiness of Israeli ships and "save Israeli shipping from certain extinction".[27] The law would have made shipping companies pay taxes on the basis of the occupancy of the ships they sail rather than on their profits. In 2004, the Israel Corporation purchased the remainder of ZIM shares still owned by the government, thereby completing ZIM's privatization. The current ownership structure was determined after extensive reorganization processes occurring in 2014. The state does not make a point of safeguarding the "golden shares" it ostensibly holds.[28]

27 Yoram Zaba, "$110 Billion Gone; The Rules have Changed and a New Era has Begun", President of the Israel Chamber of Shipping at the fifth Day of Shipping, Israel Chamber of Shipping, October 23, 2018 [Hebrew].

28 The transferability restriction is one of the terms of the state's special share in Zim, known as the golden share, which states that control of Zim or a 24% stake in the company cannot be sold without the state's consent. The purpose of this provision is to prevent Zim being sold to entities hostile to Israel.

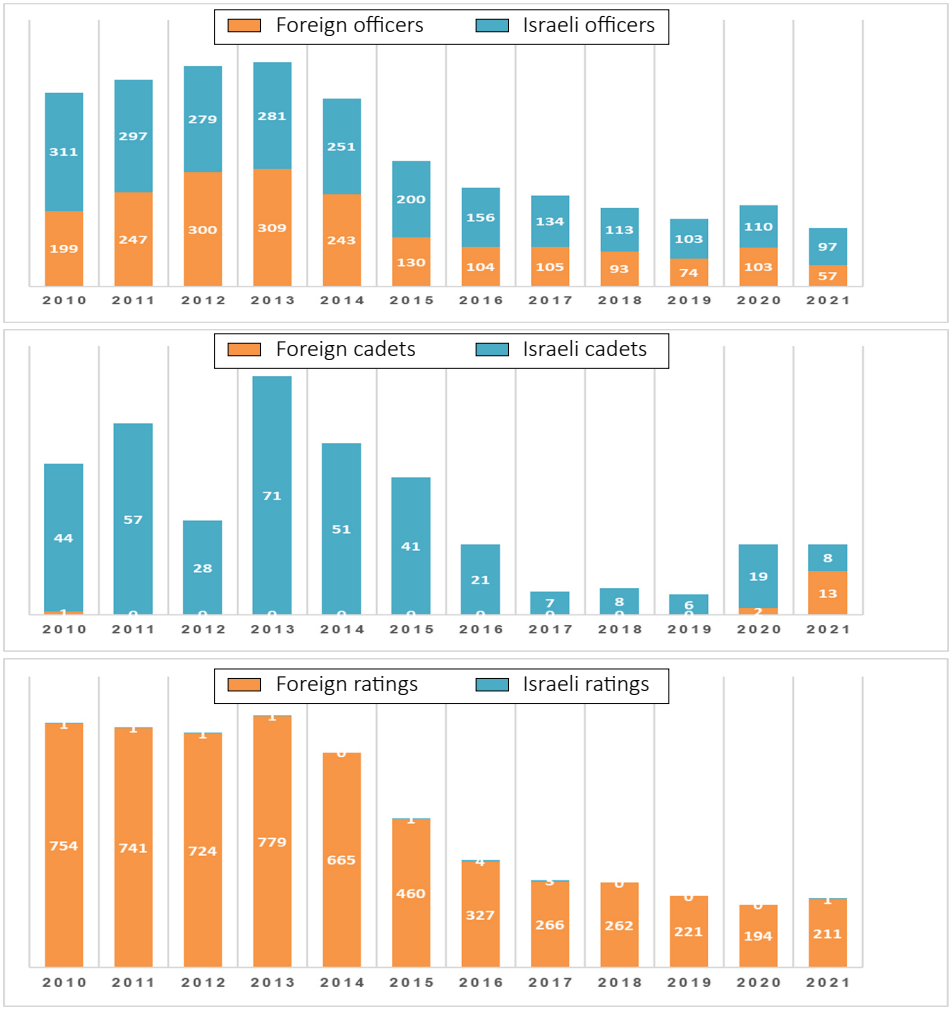

Figure 4: Active sailors in Israel's merchant navy

Our insight on the subject is that shipping in Israel and around the world is undergoing change and therefore the policy set when ZIM was being privatized is now outdated and a new policy must be set as part of Israel's overall maritime policy and strategy. Such a policy must refer to connectivity during emergencies, both in the shipping sector and in the ports sector, as matters cannot be left to develop by chance.

Israel as a Maritime Startup Nation

Some 80 percent of global trade is conducted by seas, with the economy of the maritime domain creating services and goods worth $3 trillion annually. Despite these impressive

figures, Israel's innovation sector and startup companies have yet to fully exploit the considerable resources existing in the field around the world.

In August 2021, then-Minister of Innovation, Science, and Technology Orit Farkash-Hacohen asked the National Council for Civilian Research and Development to formulate national priorities for scientific and technological research and development for the next five years. She wrote:

> Israel faces significant challenges, which require us to take a series of steps to ensure the nation's technological advantage in research and innovation in the coming years. [Current] research infrastructures do not meet the global standard, Israel lacks significant R&D industries in traditional branches of industry, a great deal of knowledge is trapped in institutions of higher education and does not find its way to industrial companies.
>
> Formulating areas of national priorities in technology and science is critical to ensure, starting today, that science, research, and technology in Israel will develop into subjects on the global agenda in the next decade, in accordance with global trend and Israel's relative advantages and its national needs.
>
> The letter was sent because of a relevant paragraph in the 2021–2022 Adjustments Law, which was added as a result of the minister's request. Farkash-Hacohen demanded that the Council submit its recommendation in cooperation with the Planning and Budgeting Committee, the Innovation Authority, the Ministry of Finance, and the Ministry of Defense within 180 days and include the topics that would be at the forefront of global innovation over the coming decade: "...subjects in which Israel has a relative advantage and/or strategic need and subjects that will make a significant contribution to maintaining Israel's standing as a scientific and research leader".[29]

Another event of importance was the inauguration of the National Center of Blue Economy and Innovation in Haifa, which took place on July 4, 2022, where Haifa was declared as the nation's center for the development of a blue economy. "Blue economy" or "blue growth" is also integral to maritime security, as management strategies require a secure maritime environment that provide the prerequisites for managing marine resources. According to the European Commission, the "blue economy" is a long-term strategy designed to support sustainable growth in maritime branches as a whole. The sea is an asset for the Israeli economy and holds great potential for innovation and growth.[30]

---

29 Hagar Rabat, "Sarat hamada Farkash-Hacohen: Likbo'a t'humey adifut le'umit tekhnologi'im" (Hebrew), ["Science Minister Farkash-Hacohen: Set national technological priorities"], *Calcalist*, August 25, 2021.

30 Christian Bueger, "What Is Maritime Security?" *Maritime Policy*, 53, no. 1 (2015): 161–164.

Figure 5: Israel's five prioritized R&D subjects

Our insight on the subject is that, regardless of changes in the government, the Minister of Innovation, Science, and Technology must adopt this decision and ensure that the budgetary source to realize it is made available to the ministry. The minister must also ensure that a multi-year plan for its implementation is formulated.

Preparing to Meet Cyberspace Challenges

The global economy is almost fully dependent on maritime trade. The results of damage to the maritime supply chain from a cyber-attack are therefore not limited to a few branches of manufacturing dependent on raw materials. Such an attack has ramifications for an extremely long list of consumer goods that depend on this supply chain. The appearance of cyber-threats as part of asymmetrical and hybrid forms of warfare in the maritime domain, both in terms of information technology and in terms of operational technology, and while involving private entities and advanced technologies to gain strategic value, makes the maritime domain highly vulnerable. In the last decade, shipping, ports, and gas and energy production facilities have become highly dependent on computerized control systems based on operational technologies that make it very difficult to analyze the implications and losses caused in practice by maritime cyber-attacks.

Planning the response to a cyber-threat in the maritime domain must be reflected in training, building technical countermeasures, and operating at the organizational level to defend the specific vessel's cyberspace. Planning for this must be integrated into the traditional fleet structure.[31] The consequences of the Russian-Ukrainian war, the damage to the Nord Stream infrastructures in the Baltic Sea, the numerous cyber-attacks on critical systems, and the most recent discoveries of gas in the eastern part of the Mediterranean in general and across from Israel's coast in particular have all placed the topic of maritime energy infrastructures on the public agenda in terms of strategy, security, the economy, the environment, and politics, and marked them as high-value targets for cyber-attack. Technological developments in the maritime industry, the dependence and unique nature of operational computer systems, most of which are not protected against cyber-threats, the high level of connectivity among systems, the complexity of the threats, and the strategic importance of maritime energy infrastructures to Israel's energy security and economy bring into stark relief the geostrategic and geopolitical implications of maritime cyberspace and its ramifications for the region as a whole.

Our insights on the subject for the relevant decision makers and regulatory agencies in Israel are that they should make regulation in the field binding, while focusing on the major technological weaknesses, tightening supervision of the platform owners and energy companies operating in Israel's territorial waters and its EEZ in the context of cyber-defense, and building a multisystem and inter-ministerial working plan. Such a plan should enable the state to face reference scenarios, from a cyber-attack on an energy infrastructure operating off Israel's shores to widespread damage and aftershocks to human life, the environment, the economy, and security.

National Preparations for Civilian Emergencies in the Maritime Domain

The devastating tar spill in the Mediterranean, considered a mid-range maritime pollution incident, began on February 17, 2021, and caused an environmental disaster to the coasts, sea, and nature along Israel's entire Mediterranean coastline. The incident was caused by tar from crude oil washing up on Israeli shores. The oil spill at sea forced the authorities to close all beaches from Rosh Hanikra in the north to Ashkelon in the south. About a month later, the Environmental Protection Ministry lowered the emergency status of the beaches to 1, thus allowing the public to return to most of them.[32] In the wake of

---

31 Peter Dombrowski and Chris C. Demchak, "Cyber War, Cybered Conflict, and the Maritime Domain", *Naval War College Review* 67, no. 2 (2014): 7.

32 "Tar in a Storm: Environmental Protection Ministry Works to Identify Source for Severe Pollution at Sea that Covered Israel's Shores in Tar", National Marine Environmental Protection Unit, Environmental Protection Ministry, February 22, 2021.

the incident, the Environmental Protection Ministry submitted a memorandum entitled "Preparedness and Response to Incidents of Oil Pollution at Sea and on Shore, 2021" intended as a response to similar incidents in the future regarding "preparing emergency plans and establishing a mechanism for international cooperation".[33] The Maritime Policy & Strategic Research Center and the Minerva Center for the Rule of Law under Extreme Conditions at the University of Haifa read the memorandum of the bill, found it lacking in several respects, and submitted their reservations to the Justice Ministry.[34] In order to enhance the understanding of how to confront such scenarios, the topic of dealing with pollution and civilian disasters at sea was selected to headline the annual conference of the Wydra Division of Shipping and Ports held in September 2021.

Although the memorandum was published in March 2021 and was closed to public comments in May 2021, as of the time of this writing, no bill has been placed before the Knesset to complete the legislation. Furthermore, despite a 2008 government decision regarding the need to adopt a national plan to handle oil pollution at sea and to anchor it in law, and notwithstanding actions the government took in this direction, there is currently no law codifying a national plan and no budget to enforce it.[35]

Our insights on the subject are that the sea is a unique domain in many ways and that action in the marine environment requires professional expertise and dedicated tools. Today, most of Israel's capabilities in the maritime domain are in the hands of the Israeli Navy, while other institutions (the Israel Police, firefighters, search and rescue outfits, and environmental protection agencies) possess dedicated capabilities that are more limited than what is generally required to handle a large-scale incident. Such an event would have to be defined as a "civilian emergency", meaning an incident that "severely harms public wellbeing, life, or property of a large population or large area, or threatens such harm, including natural disasters, environmental disasters, a toxic materials disaster, chemical or biological disasters, radiological disasters, accidents, or hostile sabotage".[36] Unlike other nations, Israel does not have a coast guard charged with constabulary work, rescue operations, the management of toxic materials spills, and so on. Israel needs one

---

33 "Memorandum on 2021 Law: Preparedness and Response to Incidents of Oil Pollution at Sea and on Shore", Justice Ministry, Government Legislation Website, March 29, 2021.

34 Ibid, "Comments by Maritime Policy & Strategy Research Center, the National Knowledge and Research Center for Emergency Readiness, and the Minerva Center for the Rule of Law under Extreme Conditions", April 28, 2021.

35 Osnat Algom Mizrahi, "Readiness for Incidents of Pollution at Sea: Background to Discussion", Knesset Research and Information Center, February 27, 2022, p. 2 [Hebrew].

36 "Law: Amendment of Police Order (No. 34) 2018, Paragraph 2701", p. 252, March 12, 2018, *Knesset Website* [Hebrew].

body to manage policy for the maritime domain and routine regulation of activity therein; the same body should be responsible for managing emergencies at sea and on shore. Given the capabilities the Israeli Navy has developed as the body charged with protecting Israel's economic waters (and the resources allocated to that end), Israel should place responsibility on the Israeli Navy for drawing up a comprehensive maritime overview. First responders could then operate on the basis of their areas of expertise. Israel must develop its preparedness to confront a wider range of civilian emergencies in the nation's maritime domain by means of the national plan to handle oil pollution at sea.[37] Israel's 37th government needs to complete the process of legislation in the Knesset, including arranging areas of responsibility and allocating appropriate budgets.

Preparing for Climate Change

In recent years, many nations have shown greater interest in the effects of climate change not only from the civilian perspective but also from a security perspective, a topic that is increasingly on the agenda of policy makers. The prevailing opinion in the West is that changes in climate must be seen as an existential security crisis. Thus, the defense budget proposal brought before the U.S. Congress for approval for 2021 included $617 million for climate change mitigation and readiness.[38]

Government Decision No. 4079 from July 2018 on Israel's preparations to adapt to climate change contained a directive to the security establishment, including the IDF and the National Emergency Management Authority (NEMA), to prepare for climate change.[39] The document of recommendations for a national plan to prepare for the ramifications of climate change, approved by the government in July 2018, also mentions the possible impact of climate change on security:

> The impact on the defense establishment will be extensive. It can be expected to include logistics (adapting uniforms, emergency reserves store units, location of military bases, sealing borders), armaments (adapting vehicles and components), engineering (mines), **the navy (rising sea level and defending energy sources)**, the medical corps (diseases, training times, and so on), manpower (expanding the Israel Border Police, the police in general, and so on), the Israel Air Force (IAF) (changing

37 The Ministry of Environmental Protection published a memorandum of law on preparedness and response to incidents of sea pollution and the coastal environment in oil.

38 *US Department of Defense (DoD)*, The Department of Defense Releases the President's Fiscal Year 2022 Defense Budget, May 28, 2021.

39 "Decision No. 4079 of the 34th Government: Israel's Preparations for Climate Change – Implementation of Recommendations to Government and a National Action Plan", July 29, 2018.

training times, adapting IAF activity to extreme weather conditions, and training/ participating in missions such as extinguishing fires, locally and internationally).[40]

The decision also established the need to establish "a national computation center with high processing capacity to be used for running high-resolution climate simulations, examining various scenarios and their possible implications, simulating the effects of different branches, and simulating the effectiveness of various adaptation methods. This resource should be at the disposal of all academic and government entities". The Climate Authority's report of April 2021 recommended the government implement its decision on establishing a national center for climate calculations and invest NIS 15 million in a super-computer to forecast climate changes and their effect on our region. This has yet to be done.[41]

At the end of October 2022, the Copernicus Observation Programme for Climate Change of the EU published a report stating that the summer of 2022 was the hottest in Europe in documented history. According to Copernicus, the average temperature in Europe that summer was the highest ever recorded both throughout the summer, i.e., between June and August, and in the month of August itself. The temperatures were higher than those of the summer of 2021 by 0.4 degrees Celsius. The report warns that extreme weather events, such as heat waves, extended droughts, and heavy rains, will only become worse and more frequent as Earth continues to become hotter.[42] The Israel Meteorological Service announced that August 2022 was the sixth hottest measured since the establishment of the state; only five had been hotter. Israel is heating up twice as fast as the global average, but is lagging behind when it comes to preparation and taking steps to mitigate the trend. Nir Stav, Director of the Israel Meteorological Service, recently issued a warning saying that future extreme heat waves could result in temperatures of 50 degrees Celsius, yet the authorities have no plans to deal with such emergencies.

Between November 6 and 18, 2022, the Conference of the Parties (COP) met in Sharm a-Sheikh. COP is the annual conference of the United Nations Framework Convention on Climate Change, the largest U.N.-sponsored event. It drew some 37,000 official participants as well as approximately 100,000 civil society representatives. The conference objective was to coordinate global efforts to prevent a climate crisis and adapt to climate change.

---

40 Environmental Protection Ministry, "Israel's Preparations for Climate Change – Implementation of Recommendations to Government and a National Action Plan", December 31, 2017.

41 "The Climate Change Preparation Authority, Environmental Protection Ministry, "Israel's Preparations for Climate Change – Report No. 1", April 2021, p. 62.

42 First Edition of the Joint WMO – C3S State of the Climate in Europe Report Unveils Impacts of Climate Change, *Copernicus*, October 31, 2022.

In 2022, Egypt, representing the African continent, hosted COP. Among the goals were to examine the realization of decisions made at previous conferences, such as constructing a global mechanism for trading emissions, setting a global goal for adaptation, examining the extent to which the financing goals of the program to confront climate change have been reached, and more. Furthermore, a discussion to debate compensation for climate loss and damage was scheduled.

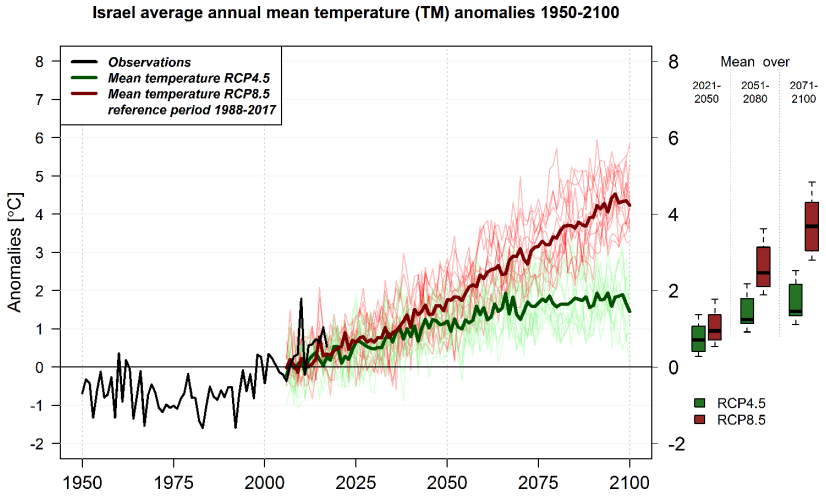

Figure 6: Average annual temperatures in Israel, 1950–2100 (source: Israel Meteorological Service report)

Because of the change in government, Yair Lapid, Israel's prime minister at the time of the conference, cancelled his participation, and Israel was instead represented by President Isaac Herzog. Israel had a pavilion where it showcased Israeli climate innovation, a topic meant to highlight Israel's capabilities in contributing practical technological solutions to the climate crisis. The fact that COP was held in Egypt made it possible for Israel to forge closer relations with regional nations (including nations with no diplomatic relations with Israel). On November 8, then-Environmental Protection Minister Tamar Zandberg represented Israel at a summit for regional leaders, which included representatives of five nations with which Israel has no diplomatic relations (Lebanon, Saudi Arabia, Kuwait, Iraq, and Qatar), where an agreement for regional cooperation on fighting climate change was reached. Other partners include Cyprus, which generated the idea, Egypt, Jordan, Bahrain, the UAE, Oman, and the Palestinian Authority.[43]

43 Yuval Bagno, "Heseg leyisrael: Shurat heskemim b've'idat ha'aklim bemitsrayim" (Hebrew), ["Israeli achievement: Several agreements at climate conference in Egypt"], *Ma'ariv Online*, November 9, 2022.

Our insights on the topic are that climate change must be seen as a threat to Israel's national security and that the Israeli government must articulate clear and realistic objectives to reduce emissions and support these objectives with an action plan with a clear budget and clear goals. Given the fact that exact predictions on developing change are limited, it was already decided to establish a national computation center as described above for performing and analyzing climate simulations and adaptations. The program that the Climate Authority has prepared is only partial and limited in scope and fails to address the effects of climate change on the maritime domain of Israel as a whole. We must expand our understanding of the connections between climate changes and effects, on the one hand, and maritime security, on the other, study the interrelations between them, and translate the findings of that research into policy papers.

Onshore infrastructures: The Climate Authority made recommendations to the Israeli government on key issues that call for the formulation of suitable policies. The security establishment and the Israeli Navy should, together with the Climate Authority, which was given responsibility for the issue, assume leadership of the field and integrate staff work.

Regionally speaking, one of the insights from the Sharm a-Sheikh conference is that the battle against the effects of climate change can serve as a subject for regional cooperation. Even nations that do not yet have diplomatic relations with Israel may be willing to join in the effort. Via such cooperation and the use of confidence-building measures, it is possible to build a relationship of trust and lower hostility. Israel is advised to take advantage of the window of opportunity opened in Sharm a-Sheikh to jumpstart regional cooperation on the climate, including with nations with which Israel still has no diplomatic relations.

Maritime Education and Academics in Israel

Due to the increase in the importance of the sea for Israel's security and resilience, the Mediterranean Sea Research Center of Israel (MERCI) was established in 2012. The Center is a consortium led by the University of Haifa and composed of seven research universities, one college, and two government research institutes. At the May 12, 2021 meeting of the Planning and Budgeting Committee, committee members discussed the University of Haifa's request to support MERCI. The committee noted the importance of MERCI, both as an advanced infrastructure center well-equipped to study the Mediterranean effectively, and as a body that brings together Israel's premier marine research institutions under the University of Haifa's leadership, which won the call for proposals to establish the center

and has to date invested millions of shekels of its own funds to run and develop it.[44] The Planning and Budgeting Committee decided to approve NIS 1 million annually for the 2021–2022 and 2022–2023 academic years to make the equipment and infrastructure MERCI has already acquired for deep sea research available to Israeli researchers at the consortium's institutions by subsidizing the cost of use. The committee demanded that the consortium member institutions (excluding the University of Haifa) commit themselves to financing their participation in the center in the center's budget starting with the 2021–2022 academic year. Membership dues to be collected may not be less than NIS 300,000 for the 2021–2022 and 2022–2023 academic years; the University of Haifa's participation in the MERCI budget may not be less than NIS 0.5 million. These are very modest sums, in no way commensurate with the recommendation of the Committee of the Israel Academy of Sciences and Humanities headed by Prof. Zvi Ben-Avraham as described above, and certainly not with the launch of a national academic program in the field of maritime science meant to broaden and strengthen the scientific and engineering community working in basic academic research and marine science applications, expand training in marine science to advanced technological fields and extend it to students in the social sciences and humanities, and make the necessary research infrastructure available to researchers at institutions of higher education.

In 2021, the national steering committee for the assessment of the field of marine sciences in Israel of the Israel Academy of Sciences and Humanities headed by Prof. Zvi Ben-Avraham issued a report recommending the establishment of a national program that would meet the growing need for researching the sea and its resources. The steering committee's objective was to map the current situation, assess the strengths, weaknesses, and deficiencies in Israel's marine sciences, and formulate a national academic strategic plan for the marine sciences in Israel. The proposed plan, to span five years, is designed to advance all marine sciences branches in Israel with an estimated budget of NIS 250 million. It is the committee members' opinion that such a plan would position Israel with neighboring and other nations whose investment in marine science and the use of the sea's resources has been steadily growing.[45] The committee recommended launching a national academic maritime sciences program that would include the efforts mentioned above to enhance maritime science in academia and in industry and provide resources to carry out research, developing interfaces between the academe, on the one hand, and

44 Minutes of the Planning and Budgeting Committee Meeting No. 1110 8, Planning and Budgeting Committee support for MERCI in the 2021–2022 and 2022–2023 academic years, Document No. 4875, May 12, 2021, p. 4.

45 Report of the National Steering Committee Reviewing the State of Marine Sciences in Israel, Executive Summary (January 2021): XVII–XXIII.

industry and government ministries, on the other, and encouraging external investments in academic research in the field. A first opportunity here may be allocating some of the budget to be provided by the Innovation, Science, and Technology Ministry to the topic of "the sea as a national resource" for research and development in the academic realm (as noted above). This would improve the scientific-technological level and attract well-qualified academic manpower to work in the field.

Our insight on the topic is that Israel must increase its investment in maritime sciences in its various institutions of higher education. It is necessary to increase the budget from the Council for Higher Education of Israel and the Planning and Budgeting Committee, with one possible source being the Wealth Fund. The University of Haifa must continue to lead the Israeli consortium for the study of the Mediterranean, to expand the independent status of the Charney School of Marine Sciences, and to encourage cooperation with the Technion and Ruppin Academic Center wherever it is possible to establish joint infrastructures on the topic.

Education and Training of Officers in the Israeli Navy

The University of Haifa prestigious graduate program, "National Security and Maritime Strategy", which has entered its fifth year, is an auxiliary program of the International Relations Department at the University of Haifa's School of Political Science. The importance of the subject and the need to train a cadre of researchers in the field means that it is imperative that the program become independent and strengthen its connection to the Charney School of Marine Sciences within the framework of the independence it was given at the University of Haifa.

At a visit that the commander of the Israeli Navy paid to the Maritime Policy & Strategy Research Center on March 7, 2018, together with senior officials of the Israeli Navy staff, the Israeli Navy commander stated that "The graduate degree in national security and maritime strategy studies for Israeli Navy officers who are graduates of the Israeli Navy's Naval Academy course must be attractive and its target audience must be, among others, Naval Academy graduates. This two-year program will include a research component".[46] Accordingly, the population of Israeli Navy officers in intermediate positions (after commanding a vessel) was marked as one of the target audiences that the program addresses.

Our insight on the topic is that, unfortunately, after four years during which the program has been running and despite the above, the Israeli Navy has yet to formulate a position

46 Ro'ee Sasson, visit to University of Haifa (Maritime Policy & Strategic Research Center), Israeli Navy Commander, March 8, 2018.

on how vital the program is for training its officers, in particular the core of the officer cadre in the track of naval officers. Many naval officers who embark on courses of study choose an academic institution close to their homes or a graduate program that is not as demanding. Only one officer who joined the program chose the research option. Senior officers sent to study at the National Security College (where they earn a graduate degree from the University of Haifa) do not expand their knowledge of the maritime field. The Allon Staff and Command College for Israeli Navy students does not include maritime topics. Officers going to study at military institutions abroad (such as the Naval War College or the Canadian Forces College) complete the academic year without any academic credit. There is no doubt that the existing situation undermines the quality of the officers, especially of those reaching senior positions. Because the graduate program is, among other things, designed for naval officers who are Naval Academy graduates, the command of the maritime branch must be more involved in the issue and seek help from the Maritime Policy & Strategy Research Center to place mid-ranking officers in their program to receive the theoretical foundation enabling them to write studies for the branch on topics at the top of the its agenda.

Recommendations

This Strategic Evaluation is a policy-oriented document rather than an academic one. We therefore see fit to conclude it with ten recommendations aimed principally at the political echelon, government ministries, and the Israeli Navy. All recommendations focus on the government's maritime policy. The order of the recommendations is not necessarily indicative of their relative importance or urgency.

1. Formulating a comprehensive maritime policy for Israel

Once more, no progress has been made over the last year. Other than the eastern Mediterranean, where changes demanding the formulation of a maritime policy are occurring all the time, the maritime domain around Israel – the Mediterranean and the Red Sea – are undergoing essential changes that mandate redefining Israel's interests in the region and including them in the process of formulating Israel's maritime policy and strategy.

2. Formulating Israel's foreign policy for the eastern Mediterranean and the Red Sea

Israel must articulate its interests in the eastern Mediterranean and the Red Sea and determine the appropriate policy for promoting those interests. In the Red Sea, the issue is more urgent and related to new and distant threats to Israeli shipping, which have multiplied as a result of Israel's campaign against Iran and the Iranian realization that acting in distant regions gives them an advantage over Israel. Cooperation with the U.S. Fifth Fleet is a positive move, but it has not yet created the appropriate deterrence against organizations Iran controls and militias, such as the IRGC, that use asymmetrical and hybrid methods of warfare in the maritime domain (including attacking merchant ships with drones). Israel must therefore formulate an operational response capable of meeting these threats.

In the Mediterranean, the renewal of security relations with Turkey, the agreement to draw the maritime borderline with Lebanon, and Israel's inclusion in the Eastern Mediterranean Gas Forum are undoubtedly developments that have reduced regional tensions. The process demonstrated once again that the maritime domain allows flexibility and creativity that cannot be found in the air and on the ground. At sea, the possibilities are varied, from natural resources (oil, gas, and water for desalination), through renewable energy, to creating other joint infrastructures. Israel must recognize the sea as a national resource and regulate it with an eye to the coming decades.

3. Improving efficiency of Israeli shipping and ports

Given the launch of operations at Haifa Bayport and Ashdod's Southport, it appears that Israel has succeeded in improving the work of the ports with regard to container ships. At this stage, Israel must focus on optimizing how the ports work with respect to general cargo ships and bulk freighters (ships bearing bulk cargo such as grain, coal, or metal ore). Once the privatization of the port in Haifa is completed, it will be necessary to allow the private ports to stabilize their activities and improve port efficiency with regard to all types of cargo ships, including general cargo and bulk freighters. It will also be necessary to decide on the right time for privatizing the Ashdod Port.

Due to changes in Israeli and international shipping, and because Israel has failed to keep its "golden stock" within ZIM or to operate other mechanisms to encourage Israeli shipping (such as imposing an occupancy tax), Israel must undertake a new, comprehensive examination of Israeli policy on shipping, especially in the context of providing supplies by sea in emergencies, and then adopt a new policy on the issue.

Israel's ports and the ships anchored in them are an attractive target for cyber-attacks. Planning a response to the cyber-threat must be reflected in training, building technical countermeasures, and operating defensive measures for the cyberspace of any given vessel at the organization level. Thinking or planning must be integrated into the structure of the traditional fleet.[47]

4. Israeli preparation and readiness for civilian emergencies at sea

The tar spill that polluted the shores of Israel in the winter of 2021 exposed the nation's lack of preparedness to deal with a civilian emergency in the maritime domain in all stages, from detection, through containment and damage reduction, to handling the outcome. Israel has no coast guard, the force that in other nations is responsible for dealing with civilian emergencies at sea. Therefore, Israel must designate one institution to be responsible for managing civilian emergencies in Israel's maritime domain. The Israeli Navy has budgets for vessels and manpower and other capabilities, enabling it to draw up a comprehensive maritime situation assessment (even if done to protect Israel's EEZ). The memorandum on a law for handling oil pollution at sea must be approved, along with other means and capabilities to be put at the disposal of the Environmental Protection Ministry. The government also needs to determine that the Israeli Navy, in conjunction with other institutions, will be responsible for formulating a comprehensive

47 Peter Dombrowski and Chris C. Demchak, "Cyber War, Cybered Conflict, and The Maritime Domain", *Naval War College Review*, 7, no. 2 (2014): 6.

situation assessment of Israel's maritime domain. It is also important to anchor in law the body responsible for managing a civilian emergency at sea. In the absence of an Israeli coast guard, it seems that responsibility for the issue must be given to the Israeli Navy.

5. Developing and using energy resources at sea and protecting the environment

Given the conclusions of the team, headed by the director general of the Energy Ministry, which examined the need to look for more natural gas reserves in the coming decade and the energy market forecast until the year 2045, we recommend that Israel continue to search its maritime domain for additional gas reserves to maximize profits from producing this resource and funneling those profits to the Wealth Fund in accordance with its original purpose.

Due to the global energy crisis, amplified by the past year's war between Russia and Ukraine, the Israeli government and Israeli gas companies must focus the greater part of their efforts on developing a local and regional natural gas market rather than looking for distant export markets. Together with building energy facilities based on alternative energy sources, it is necessary to continue developing Israel's natural gas fields, because it is foreseeable that this resource will be with us for a long time into the future. Furthermore, one large natural gas-based energy station must be built in addition to solar energy stations, to ensure that by 2030 Israel will be able to meet its growing demand for electricity. Israel's continued membership in the Eastern Mediterranean Basin Gas Forum will strengthen Israel's foreign policy. It is also critical to direct the sums that are starting to accumulate in the Wealth Fund to train scientific/technological manpower that can manage the challenges the maritime domain poses to Israel. The Israeli government must also reach an agreement with Cyprus about producing gas from the joint Yishai-Aphrodite field, a natural gas reserve straddling the Israel-Cyprus border that Cyprus is currently developing unilaterally. In addition to all the above, Israel needs to formulate an environmental policy, which will include preparedness for hazardous incidents.

Assuming that Israel intends to develop further reserves, the state must articulate its position about additional rigs. To Israel's detriment, the Karish rig became a pawn between the sides: on the one hand threats, and on the other, the need not to give in to them. Israel needs to formulate a policy on the location for future platforms while examining all relevant considerations. Israel must make it clear to future gas tender recipients that, because the state is responsible for protecting the rigs and is their source of financing, they will have to adapt themselves accordingly.

The maritime domain is unique in that it allows cooperative ventures that shatter old paradigms about enemy nations, as can be seen in the agreement with Lebanon. Despite some assessments that the division of this reservoir is disadvantageous to Israel, the important principle is that there will be future exploration and production, even if indirect, in the shared gas field. Other examples are joint ventures to exploit natural resources in the eastern part of the Mediterranean Basin currently being formulated, such as the joint forum for Cyprus, Greece, Egypt, Israel, and the PA on energy resources and the possibility of joint development, and the rewarming of relations between Israel and Turkey over the past year, stemming primarily from the possibility of working together to export gas to Europe.

6. Moving infrastructures from land to sea

Israel is one of the world's most densely populated nations, a trend that is intensifying with each passing year. In June 2012, the Israeli government decided to establish a special team to examine the viability of building artificial islands for infrastructures such as gas production facilities, power stations, desalination plants, airports, and military installations. The topic was even presented to the National Council for Civilian Research and Development and approved as part of prioritizing the sea as a national resource. It is clear that it is necessary to realize this decision.

It is important that the plan to expand Israel's ports by 2048 be formulated together with all the authorities involved to prevent conflicts from arising between port and city infrastructures. (The Haifa Bayport development process, which has made it impossible to expand the airport there, is a case in point.)

Government Decision No. 472 of October 25, 2020, which requires all government entities to complete their preparations for shutting down the petrochemical industrial activity in Haifa Bay within 10 years, is an opportunity to determine which infrastructures should be located on artificial islands at sea and to prepare accordingly.

7. Developing Israel's human infrastructure to manage challenges in its maritime domain

Israel must increase its investment in the marine sciences at its institutions of higher education. It is necessary to increase the Planning and Budgeting Committee's budget; one possible source is the Wealth Fund. The University of Haifa should continue to lead the Israel consortium for Mediterranean research, grant the Marine Sciences School at the University of Haifa the status of an independent school, encourage joint ventures with the Technion and Ruppin Academic Center, and, wherever possible, establish shared

infrastructures. The government needs to determine the public resources required for investment in schools and institutions of higher education to build an economic, social, and professional infrastructure that can meet the challenges and opportunities inherent in Israel's maritime domain: producing and developing energy; protecting the ecological system, including industries needed to handle the topic; and establishing an Israeli marine association to serve as a platform for dialogue among the stakeholders.

Given the current manpower crisis in Israel's merchant navy and the emerging global shortage of naval officers, Israel must increase the number of Israeli cadets and officers at the Naval Officers School of Acre and ensure that they are assimilated into shipping companies with a connection to Israel once they complete their studies.

The Israeli Navy needs to formulate its position on an academic training program for mid-level naval officers who leave to study as well as on the content provided to officers who go to study at the Allon Staff and Command College and the National Security College on its behalf.

8. Promotion and regulation of maritime law and regulations

Israel must define its borders and its authority at sea, show that its maritime domain cannot be breached with impunity, and that as a country with a shoreline, it possesses naval awareness rather than naval blindness. The 37th government of Israel needs to complete the approval of the "Maritime Regions Law, 2017" in the Knesset. Failure to advance the law may expose the state to claims in legal proceedings required for developing gas fields outside of Israel's territorial water. In addition, Israel must regulate the "Planning and Construction Law, 1965". In its current format, it is not suitable for addressing deep sea activity.

Given the success in the talks with Lebanon as well as the dire situation of Gaza's economy, it should be taken into account that, before long, pressure may be brought to bear on Israel to help develop the Gaza Marine natural gas field. Resolving the Lebanese issue at sea will serve as a model for efforts to resolve the issue in Gaza as well. Israel must examine its stance on the PA's declaration of an economic waters area off the coast of Gaza (Israel, fittingly, has officially expressed its opposition). It must also examine the possibility of allowing development even if Hamas still rules the region.

9. Israel as a maritime startup nation

Given the inter-ministerial decision on the maritime domain and the development of a "blue economy" and the program to develop a business community for maritime technologies in Haifa, the state must develop a multiyear strategic plan for establishing

a national maritime innovation center, which would include a physical, scientific, entrepreneurial, economic, structural, and internationally-geared working plan. The innovation center should be established in the innovation quarter near the port and involve cooperation among academic, economic, engineering, and security sectors and stakeholders. This would certainly represent a step in the right direction. However, it must be accompanied by additional steps, such as realizing the decision by the National Council for Civilian Research and Development to define the sea as a national resource, budgeting the activity approved by the committee appointed by the Minister of Innovation, Science, and Technology, and allocating the resources to execute these activities in Haifa.

10. Preparing for the effects of climate change on Israel's maritime domain

Israel needs to act proactively to identify threatening scenarios and plan for them. By virtue of Government Decision No. 4079 of July 29, 2018, the Environmental Protection Ministry established the Climate Change Preparation Authority, which is responsible for inter-ministerial coordination. It is also tasked with for submitting a plan for implementing a national strategy for preparing for climate change. A review of the Authority's first report on geostrategy and the economy indicates that, in the area of geostrategy and economics, the Authority related only to coastal infrastructure. There is widespread agreement among scientists that to achieve the vital expansion of our understanding of the connections between the effects of climate change and threats to maritime security, it is necessary to conduct a study of the interrelationships between climate change and maritime security and translate the research findings into policy guidelines.