Israel's Preparedness to Cope with Maritime Civilian Emergency Events

Abstract:

The article evaluates Israel's preparedness and response to cope with "civilian emergency events - CEEs" in its maritime domain. The article attempts to identify gaps and weaknesses in Israel's response to a maritime CEE, and to suggest actions to be taken by Israel to deal with such events as part of its maritime security policy and strategy. The article addresses detection (including risk assessment), containment, and consequence management. The article does not examine the topic of prevention. Similarly, the article does not address CEEs potentially arising in areas within Israel's ports limits, since these are mostly coordinated and exercised periodically.

The article's main conclusion is that Israel, with its rich experience in civil land-based emergency scenarios, should adjust its regulations to cope with CEEs in the maritime domain. Such a process should include clear delegation of responsibilities, while assigning a dedicated budget to the participating organizations accordingly. In developing its operational doctrine, Israel should also consider the expertise and resources of international organizations for surveillance and consequence management.

Introduction

Israel's marine environment hosts a wide range of activities, including shipping, fishing, aquaculture, tourism, recreation, hydrocarbon production, security, desalination, communications, and other. Each of these uses has the potential to harm the marine environment with various pollutants. Israeli policymakers have focused singularly on defense against military threats in Israel's maritime domain, but other risk factors which have received minimal consideration, should also be addressed.

An event that amply illustrates Israel's lack of readiness to deal with civilian emergencies is the February 2021 ecological disaster, in which a large amount of tar washed up on an extensive swath of Israel's Mediterranean coastline, in what has been labelled by officials as one of the worst environmental disasters to hit the country. The pollution The oil spill has led impacted about 160 of the 196 kilometers of Israel's coastal strip.

to the death of many animals and caused massive quantities of tar — over 70 tons — to wash on Israel's shores. Part of the damage is invisible due to seeping of oil in porous coastal rocks, where it may remain for years. As the landing of tar on Israel's shores was unpreventable, the cleaning operations could only be commenced at a stage when the beaches were already contaminated with a large amount of tar. Aside from cleaning the beaches, efforts concentrated on trying to locate the tanker that had caused the pollution and on a dispute between the Ministries involved. Greenpeace Israel's director concluded: "when it comes to the marine environment, there is no monitoring, no enforcement and no emergency plans by the Israeli authorities".[1] For these reasons, it is of the utmost importance for Israel to be able to effectively respond to pollution by hazardous and noxious substances in its maritime domain.

The article proposes to set two main goals in a "Civil Emergency Event" (CEE) at sea: 1) Protection of people, the environment, property, and cultural heritage; 2) Significantly improving the level of disaster preparedness, effectiveness and response time to emergencies.

The article opens with a description of the characteristics of the Israeli maritime domain, proposes a definition of the term CEE in Israel's maritime domain, reviews Israel's maritime policy and strategy and the way in which it is realized in Israel's legislation and regulation. The article examines the current National Preparedness Contingency Plan for a CEE and identifies its deficiencies, mainly at the national level in terms of government responsibility for dealing with this type of incident. The article proposes some revisions to the updated Ministry of Environment Protection memorandum of law to adapt it to the concept of operations proposed and described in this article.

The Vulnerability of the Eastern Mediterranean Basin to Sea Pollution

The Eastern Mediterranean region is an established shipping hub for regional trading and supply, and ongoing transit through the Suez Canal. It is a politically volatile area with intertwined disputes over energy resources, geopolitical dominance, and domestic factors. The absence of any diplomatic relations between Israel and its neighbors in the Eastern Mediterranean – Lebanon and Syria – also complicates cooperation in case of CEEs.

[1] Sue Surkes, Satellite images of oil slicks off coast show recent spill far from a one-off, The Times of Israel, February 28, 2021. https://www.timesofisrael.com/satellite-images-of-oil-slicks-off-coast-show-recent-spill-far-from-a-one-off/ [Accessed, May 11, 2022].

The region also accommodates major oil transportation lanes, notably with oil shipments through 2 of the 6 major oil chokepoints worldwide: the Suez Canal and the Turkish Straits. From 1980 to 2021, the capacity of the world oil tanker fleet has grown by over 83 percent, to a current capacity of around 619 million deadweight tonnage (2021). In terms of tonnage, oil tankers account for around 29 percent of global seaborne trade.[2] The number of ships transiting the Suez Canal in 2021 was about 20,600. According to the findings of the Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC), incidents of oil spills and other hazardous substances in the Eastern Mediterranean caused a reduction of plankton, physical damage to fish stocks, marine mammals, and birds, resulting in aquatic population decline.[3] In light of all these factors, the significance of Eastern Mediterranean countries' preparedness to cope with CEEs, cannot be overstated.

Israel's Maritime Domain Characteristics

Israel's exclusive economic zone (EEZ) in the Mediterranean extends beyond its coastal waters to 110 nautical miles (NM) in the south of the country, and 70 NM in the north, to the delimitation line between Cyprus and Israel as agreed between the countries. Israel's maritime domain, including its EEZ, is approximately 26,000 square km. in size. The borders of the economic waters in the north and south have been marked according to customary international law, but without any agreement with Lebanon, the Palestinian Authority or Egypt.

Israel's maritime domain offers considerable potential for developing and providing a variety of services to Israel's society and economy. In the absence of a comprehensive plan for the maritime domain and effective tools for implementing it, a CEE could cause irreversible damage. Surprisingly, the maritime domain is almost absent from public discourse in Israel and is still severely lacking in appropriate legislative tools, effective enforcement mechanisms, and the necessary spatial planning.[4]

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[2] Capacity of oil tankers in seaborne trade 1980-2021, Published by Statista Research Department, Nov 22, 2021. https://www.statista.com/aboutus/our-research-commitment [Accessed May 9, 2022]

[3] The Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPC), 2014. https://www.posow.org/volunteersdb/welcome [Accessed May 9,2022]

[4] Tali Thau Sade, MARITIME ZONES LAW 2014 FOR THE STATE OF ISRAEL, Part VI- Exclusive Economic Zone, IMO INTERNATIONAL MARITIME LAW INSTITUTE, Academic Year 2013/2014, p. 17. https://imli.org/wp-content/uploads/2020/12/DRAFTING_FINAL_Tali-Thau-Sade_Israel.pdf [Accessed May 6, 2022]

Israel's Policy and Strategy for the Maritime Domain

Regrettably, Israel has not devised a maritime policy or strategy which places the maritime domain in context and explains why it matters to Israel. The Israeli Government's Planning Administration Maritime Policy (IMP) is the only official document that deals with policy issues in Israel's maritime domain (however, this too has not yet been approved by the Israeli Government). The IMP is a marine spatial planning document, and thus offers some guidelines to the protection of natural resources and heritage, as well as preventing and coping with marine pollution. It describes the main sources of pollution originating from human activity at sea: vessels, marine infrastructure, possible malfunctions, and spills of material at sea and marine waste sites.[5] The document emphasizes that "sea pollution by petroleum represents one of the most significant risks to the marine and coastal ecosystem and to various infrastructures such as desalination plants and power stations, and may harm the coastal tourism industry, sports, and marine activities." It further points out that the "shipping sector poses the biggest risk due to oil and chemical tankers, the underwater piping connecting the shore storages and other facilities as well as merchant ships' propulsion fuel". The IMP also indicates that "in recent years, there is added risk from exploration, production, and uncontrolled leakages of hydrocarbons from the sea". Accordingly, it requires that "infrastructures such as exploration and production platforms and hydrocarbon pipelines will utilize the best available technologies (BAT) to prevent and reduce petroleum based marine pollution". The document concludes by pointing out that "in view of the various developments and as part of the State of Israel's preparations for contamination events, the issue should be regulated by legislation and allocated budget ".[6] As of the time of writing this article, these recommendations have not yet been implemented.

Domestic Legislation

Israeli law had not yet been applied to its maritime domain; the Marine Areas Bill, which is intended to regulate Israel's sovereignty over its maritime space, has been on the Knesset table for four years and has not yet been approved. The draft bill is worded in a way that adopts the customary provisions of the UNCLOS. Israel is a party to the 1958

[5] Maritime Policy for Israel's Mediterranean Waters, Israel Planning Administration, May 2020, May 2020, pp. 173. https://www.gov.il/BlobFolder/generalpage/policy_maritime/he/Water_Energy_Communication_full_strategy_document_translated_24.1.2021.pdf [Accessed May 7, 2022]

[6] Ibid. p. 178.

Geneva Convention on the Continental Shelf but has not become a party to UNCLOS. Israel is, however, bound by customary international law, as reflected in UNCLOS, and by the articles defining the maritime zones, the duties and rights under them.

The proposed Marine Areas Law would establish a legal framework for activities conducted in Israel's maritime domain, including in its EEZ. Among others, the bill is intended to officially define Israel's territorial waters and EEZ. The legislation would define the powers of enforcement of various relevant authorities and apply Israel's environmental protection laws to its maritime areas. The Bill also deals with maintaining safety and security in and around marine facilities, and with protecting the environment, including protected natural values. Unfortunately, the Bill does not define the responsibilities of the different Government Ministries in case of a CEE. In November 2017, the Knesset's Economics Committee approved the bill, but it is still pending its second and third readings to become binding legislation.

The Israeli Ministry of Environmental Protection is advocating for legislation that would anchor a national program — and budgets — for readiness and response to an oil spill. A draft bill, which has completed its public and ministry consultation stages, comes 21 years after the government agreed to pass such legislation. The memorandum of law provides an opportunity to point out significant gaps in the field of response to sea pollution incidents and close such gaps.

Promoting national preparedness for marine pollution incidents is not only a matter for the Ministry of Environmental Protection. Additional state authorities and even the public should be involved, especially as it was direct public action through NGOs that carried out much of the response to the recent marine pollution incident in February 2021.

The University of Haifa has evaluated the draft bill and concluded that it is problematic that the law focuses mainly on the obligations of factories, "plant owners" and local authorities, but remains silent regarding the role of government ministries in general, and the Ministry of Environmental Protection in particular. Therefore, important aspects of the national response plan for CEEs do not find their expression in the proposed law. Since the Israeli political system is far from being stable for the foreseeable future, it is difficult to see how and when this legislation would be completed in the Knesset.

Civil Emergency Events (CEEs) and Contingency Plan

A CEE in its broad sense implies a man-made or natural disaster such as an explosion, fire, storm, flood, pollution, volcanic eruption, earthquake, or other natural calamities. Generally, it is declared through an alert to the public by a recognized agency or a government agency with expertise in a specific area.[7]

The Israel Police Ordinance defines a CEE as: "An event that causes serious harm to public safety, security of life or property, relating to a large public or large area, or an event in which there is a risk of such harm. It includes natural, environmental, hazardous materials event, chemical or biological, radiological radiation event, accident or hostile terrorist activity". During a general state of emergency (as well as in a state of war), the Government may issue emergency regulations for the defense of the State, public security and the maintenance of supplies and essential services. Such emergency regulations must be submitted to the Foreign Affairs and Security Parliamentary Committee. In case of an immediate and critical emergency, the Prime Minister is empowered to formulate emergency regulations or to empower a minister to issue them. Generally, emergency regulations shall expire three months after the day of their enactment unless their force is extended. According to the Civil Defense Law, the government may also declare a "Special Situation on the Home Front", and according to Article 90B(a) of the Police Ordinance, the Minister of Public Security may declare "Mass Disaster Event".[8] Currently, this definition is only applicable to Israel's land space.

The general regulation on states of emergency in Israel appear in the constitutional level as well as in primary and secondary legislation. On the constitutional level, the Basic The .Law: The Government defines how and by whom an emergency is declared state of emergency".[9]"Government does not provide a formal definition of the term

The Protection of the Coastal Environment Law came into force in November 2004, and To protect the coastal environment, its natural and heritage assets, to restore (1aims: and conserve them as a resource of unique value, and to prevent and reduce as far as To preserve it for the public's benefit and enjoyment ; (2) possible any damage to them

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7 Definition, defense terms. https://the-definition.com/term/civil-emergency [Accessed May 18, 2022]

8 Ibid p. 3.

9 Ibid, p. 6.

To establish principles and limitations for the (3) and for future generations; and sustainable management, development and use of the coastal environment.[10]

The related scenarios at sea should include accidents on or between vessels, oil spills, grounding of ships, cruise vessel mishaps and offshore oil rig mishaps, all of which could generate oil and/or other hazardous and noxious marine pollution substances (HNS).[11] It is therefore more helpful to think of an HNS incident as having the potential to 'release' a substance into the environment rather than 'spill' in the same way as oil.[12] Such accidents could be caused by an intentional action, human error or technical malfunction.

The Israeli National Contingency Plan for Preparedness and Response to Marine Oil Pollution was prepared by the Ministry of Environmental Protection in 2002 and is still awaiting government approval (latest information available). A contingency plan for the Gulf of Eilat/Aqaba was completed in February 1999 and will be incorporated into the national plan. The Marine and Coastal Environment Division of the Ministry of Environmental Protection (MCED) is the national authority responsible for prevention, preparedness, and response for all types of marine pollution. MCED inspectors carry out aerial, marine and coastal surveillance and inspect vessels and shore installations. The division is responsible for ensuring that all necessary clean-up operations at sea and onshore are carried out properly, either directly by the polluter and/or through its contractors or, if required, under the guidance and active participation of MECD equipment and personnel.[13]

Regulating the responsibilities and authority of the various organizations that deal with a CEE is necessary and affects the probability of successful management of the event. In 2014, the Ministry of the Environmental Protection drafted a National Contingency Plan

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[10] Protection of the Coastal Environment Law 5764-2004. https://www.gov.il/BlobFolder/legalinfo/coastal_environment_protection_law_2004/en/marine_coastal_environment_protection_of_coastal_environment_law_2004_eng_unofficial_translation.pdf [Accessed May 21, 2022]

[11] Action Plan for HNS Pollution, Preparedness and Response, As adopted by EMSA's Administrative Board at its 18th Meeting held in Lisbon on 12th and 13th June 2007, European Maritime Safety Agency (EMSA). http://www.emsa.europa.eu/hns-pollution/123-hns-pollution/260-action-plan-for-hns-pollution-preparedness-and-response.html [Accessed May 17, 2022]

[12] For example see the incident of the X-Press Pearl: The 'toxic ship' that caused an environmental disaster, Ranga Sirilal and Andreas Illmer , BBC News, June 10, 2021. https://www.bbc.com/news/world-asia-57395693 [Accessed June 2, 2022]

[13] Marine environment protection, about, Ministry of Environmental Protection. https://www.gov.il/en/departments/Units/marine_environment_protection_unit [Accessed May 21, 2022]

for Preparedness and Response to Oil Pollution Incidents, in accordance with the government's decision. After the tar pollution incident of February 2021, The Ministry of Environmental Protection released a Memorandum of Readiness and Response to incidents of sea pollution and the coastal environment in oil for public comments.[14] By May 5, 2022, the Ministry published the updated memorandum of law, according to which all stakeholders (municipalities, the Nature and Parks Authority, ports, factories, security facilities, and firms for the exploration and production of oil and gas from minerals and their subsidiaries) should all be prepared for incidents of maritime oil pollution. They could also be required to prepare local and factory emergency plans; and prepare accordingly pending approval by the Ministry of Environmental Protection. The bill also regulates how a CEE and its aftermath should be handled.[15] The proposal focuses on the last phase of the event – the Consequence Management phase. However, it does not regulate governmental responsibility in some crucial topics such as ministerial responsibility to manage the event, command and control at the national level, responsibility for building the overall maritime picture and coordination between the various organizations participating.

First Responders Role in Marine CEEs

The CEE response process is dynamic and complex. There are numerous unknowns at the time of the occurrence, such as: quantity and properties of the spilled substance, spill locations, environmental and weather conditions. The availability of resources and response techniques are the factors that affect the consequence of responses.[16] Therefore, the initial response should be generic in nature and should cover the phases of detection, classification of the event as a CEE, and risk assessment (Fig.1). Once an event **has been classified by the**

[14] Memorandum of preparedness law and response to incidents of marine and coastal pollution in oil 2022, Ministry of Justice, Government Legislative Website. https://www.tazkirim.gov.il/s/law-item [Accessed May 31, 2022]

[15] Preparing for sea pollution events in oil: The Ministry of Environmental Protection publishes a memorandum of law preparedness and response to incidents of sea pollution and the coastal environment in oil after updates and additions, Ministry of Environmental Protection, Ocean and Coastal Areas, May 1, 2022. https://www.gov.il/en/departments/news/memorandum_marine_coastal_oil_pollution_law [Accessed May 7, 2022]

[16] Bing Chen, Kenneth Lee, Marine Oil Spills—Preparedness and Countermeasures, 22.5.5 Response Operation and Decision-Making Optimization, World Seas: An Environmental Evaluation (Second Edition), 2019.

competent authorities as a CEE, the National Contingency Plan should be activated.

Since this article deals with a CEE scenario taking place on the high seas, possibly some distance from the coast of Israel, it is likely that the First Responders on the scene would be Israeli Navy vessels, or Air Force (manned, or unmanned) aircraft. The First Responders reports should be able to direct the competent governmental body to categorize and declare the event as a CEE or non-CEE and to decide whether to initiate the National Contingency Plan.

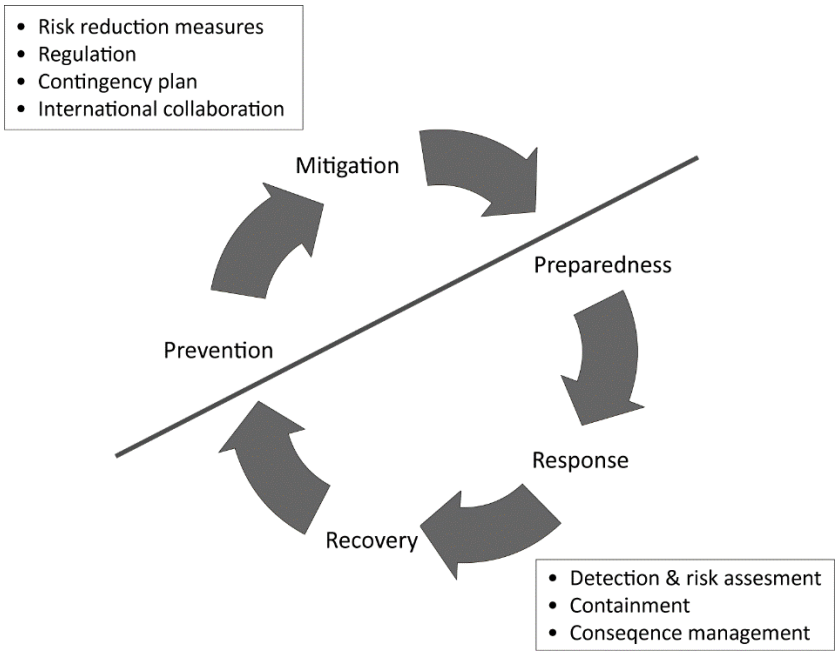

Figure 1: The Environmental Protection Phases to Cope with Marine Pollution

Coordination of Responsibilities at the National Level

Dealing with a marine pollution incident is a major inter-agency challenge. While the precise form of national coordination depends on the design of governmental activity, various agencies need to be coordinated.[17]

[17] Design base threat/reference threat: To determine the forces required to deal with marine pollution, the means to be equipped to deal with it and to perform preparedness exercises, it is necessary to determine and approve a design base/reference threat that will be approved by the ministry responsible for operating the various forces in this type of event.

At present, the Marine Environment Protection Division (MEPD) is assigned responsibility for the management of and preparedness for marine oil spills. The conclusions formulated so far from similar emergency events indicate that, without undervaluing the importance of the MEPD at CEEs at sea, the event should be managed at the national level by the Israeli Ministry of Defense.[18] The Ministry of Defense National Emergency Authority (NEMA), which is currently tasked with coordinating and integrating all the organizations responsible for home-front defense during emergency scenarios, should also take the lead in CEEs at sea.[19] The same applies to the Israel Ministry of Transport (IMOT), Administration of Shipping and Ports through its Joint Sea/Air Rescue Coordination Center located in Haifa.[20] The JRCC operates in accordance with Israel's commitment to the Search and Rescue Convention. It provides an initial response and coordinates search and rescue operations, medical emergencies, sea pollution and any other issue related to the safety of navigation in accordance with the International Convention of Safety of Life at Sea the SOLAS.[21]

The IMOT oversees the safety of navigation in Israeli coastal waters, publishes and promulgates navigational warnings, advises on weather warnings by radio, and operates the RCC-Haifa which oversees Search and Rescue following a maritime disaster including assistance of nearby merchant ships. In accordance with IMO regulations, every merchant vessel aware of any pollution must advise the nearest maritime authority.

The RCC should be coordinated by NEMA, as the assigned authority that coordinates the response at the national level to a CEE in Israel's maritime domain and beyond.

Command and Control Responsibility in CEE

In countries with a Coast Guard, the Coast Guard is responsible for emergency management and disaster response. Israel has no coast guard, and therefore constabulary missions are performed mostly by the Israeli Navy. The Maritime Police is responsible only for performing rescue operations at sea; law enforcement regarding the use of small vessels operating along beaches; assistance in the rescue operations of

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[18] Ministry of Environmental Protection, Marine environment protection, about. https://www.gov.il/en/departments/units/marine_environment_protection_unit [Accessed May 5, 2022]

[19] Ministry of Defense, National Emergency Management Authority (NEMA).

[20] Israel Ministry of Transportation, Administration of Shipping and Ports, RCC - Rescue Coordination Center, RCC. https://www.gov.il/en/departments/general/jrcc [Accessed May 05, 2022]

[21] RCC - Rescue Coordination Center, Ministry of Transportation, Administration of Shipping and Port, September 10, 2020. https://www.gov.il/en/departments/general/jrcc [Accessed May 10, 2022]

other entities operating at sea; and preventing the entry or exit of people from Israel, by vessels (excluding ships) not through ports. Since in Israel the roles of naval policing are very limited, the only body that can command and control civilian emergencies at sea is the Israeli Navy (through its constabulary mission).[22]

The discovery of massive natural gas fields necessitated a significant boost in the navy's ability to protect and defend Israel's offshore energy infrastructure.[23] It follows that in the current situation, the Israeli Navy with its extended capabilities should be the organization that also commands and controls CEEs in Israel's maritime domain. Additional bodies such as the Marine Police Unit, and the Marine Environment Protection Unit, should join and assist the Navy to fulfill this mission.

Integrated Maritime Domain Picture

To command and control CEEs successfully in Israel's maritime domain and beyond, a clear marine situation picture should be obtained. Fig. 2 presents the building blocks and the process of a system that gathers and analyzes data from multiple sources, fusing it into meaningful information, and disseminates intelligence to commanders to improve national response capabilities.

Awareness of Israel's maritime domain has begun to gain public attention, but many challenges remain. In this context, sharing information among the various organizations and expanding the concept of awareness of the maritime domain among other governmental agencies (such as the National Emergency Authority and the Center for the Management of National Crises in the Prime Minister's Office) is of paramount importance.

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[22] This mission is not unique to the Israeli Navy. See also in: Bailey, S. Mark, The mismatch: Royal Australian Navy maritime constabulary 1955–2020, Defense Security and Analysis, Volume 38, 2022 - Issue 1, Taylor & Francis pp. 1–30.

[23] Gili Cohen, Israel Navy Demands NIS 3 billion for Protection of Gas Rigs, Haaretz, July 9, 2012. https://www.haaretz.com/2012-07-09/ty-article/navy-demands-billions-to-protect-gas-rigs/0000017f-e2ca-d38f-a57f-e6da58140000 [Accessed June 1, 2022].

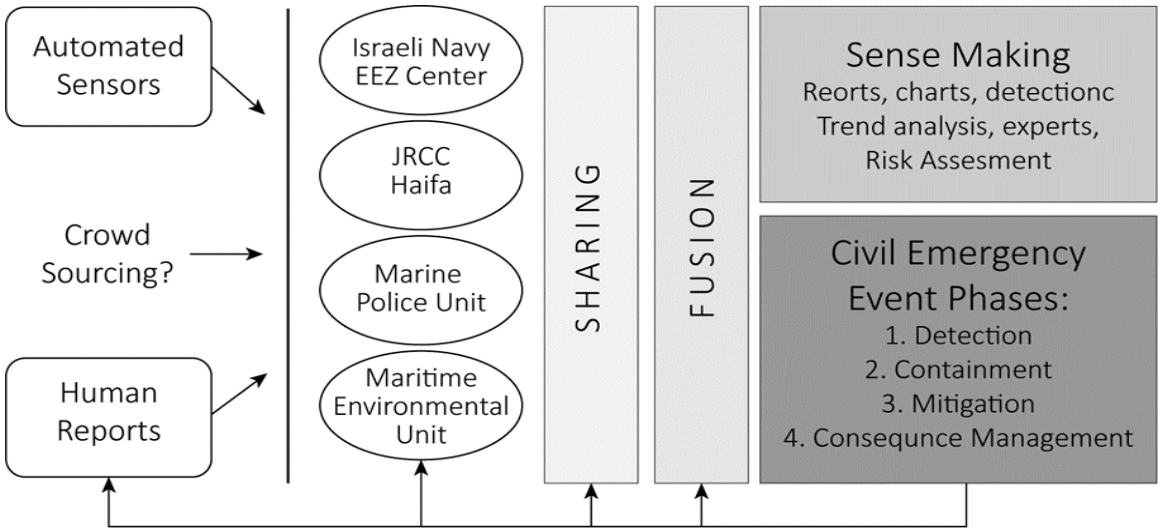

Figure 2: Maritime Domain Picture

Satellites and other technologies improve maritime situational awareness. The Global Positioning System (GPS), Global Navigation Satellite System (GNSS), images from the European Space Agency's Copernicus Program, and the Automatic Identification System (AIS) provide up to date data to all vessels carrying such a system.

Two governmental organizations have the capability to build a continuous maritime picture (although with significant differences in their capacities): the Israeli Navy and the Shipping and Ports Authority in the Ministry of Transport. The Exclusive Economic Zone Center in the Israeli Navy headquarters is responsible for creating an aerial image of Israel's EEZ. Gathering of intelligence on the presence of foreign naval units in the maritime domain should be done by Israeli Navy and Israeli Air Force (including UAVs). Such systems make it possible to monitor the activity of foreign vessels in the country's maritime domain, to monitor trends and to assess their intentions.

The February 2021 tar pollution demonstrated the difficulty in detecting and classifying an irregular event as a possible CEE in severe weather conditions.[24] Although ships may appear civilian or commercial in nature, a ship that can spill oil can also offload other threats.[25] Thus, the integrated maritime picture should combine data from all available sources, share the data with all the relevant organizations, and through data fusion, produce more consistent, accurate, and useful information. Assessment of the situation

[24] Times of Israel Staff, "Blaming Iran, environment minister calls oil spill 'environmental terrorism'", Times of Israel, March 3, 2021. https://www.timesofisrael.com/blaming-iran-environment-minister-calls-oil-spill-environmental-terrorism/ [Accessed May 14, 2022]

[25] Seth Frantzman, Israel's maritime economic zone security in spotlight after oil spill, The Jerusalem Post, March 4, 2021. https://www.jpost.com/israel-news/israels-maritime-economic-zone-security-in-spotlight-after-oil-spill-660973 [Accessed May 15, 2022]

supported by good intelligence and surveillance could support or disprove the existence of a CEE.

International Collaboration

Disasters know no borders and the risks posed by natural or man-made hazards are cross border due to their spatial characteristics, as well as to the volatility and scale of their impacts.

Israel is signatory to the 1996 Barcelona Convention (Amended in 1995 to the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean), the International Convention for the Prevention of Pollution from Ships (MARPOL 1973/1978) and International Convention on Oil Pollution Preparedness, Response and Cooperation (OPRC).[26]

States which are party to OPRC 90 and to the OPRC-HNS Protocol are required to establish a national system for responding to oil and HNS pollution incidents, including a designated national authority, a national operational contact point and a national contingency plan. This needs to be supported by a minimum level of response equipment, communications plans, regular training, and exercises.[27] The Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC) assists Mediterranean coastal States in ratifying, transposing, implementing, and enforcing international maritime conventions related to the prevention, preparedness, and response to pollution from ships.[28] REMPEC develops regional cooperation in the field of the prevention of pollution of the marine environment from ships and facilitates cooperation among Mediterranean coastal States. It provides a framework for the exchange of information on operational, technical, scientific, legal, and financial matters, and promotes dialogue aimed at conducting coordinated action at the national, regional, and global levels.

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[26] International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC), International Maritime Organization (IMO). https://www.imo.org/en/About/Conventions/Pages/International-Convention-on-Oil-Pollution-Preparedness,-Response-and-Co-operation-(OPRC).aspx [Accessed June 2, 2022]

[27] Pollution Preparedness and Response, International Maritime Organization – IMO. https://www.imo.org/en/OurWork/Environment/Pages/Pollution-Response.aspx [Accessed May 11, 2022]

[28] The Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea, UN Environment & IMO. https://www.rempec.org/en/about-us/our-history/our-history [Accessed May 12, 2022]

In May 2018, Cyprus, Greece and Israel signed the Implementation Agreement on the Sub-Regional Marine Oil Pollution Contingency Plan. The objective of the Plan is an effective reaction to spills and facilitating the co-operation among the three countries in the field of oil pollution preparedness and response. The Contingency Plan has been prepared in the framework of the MAP (Mediterranean Action Plan) with the leadership and support of REMPEC.

On February 17, 2021, REMPEC received a request for assistance from Israel regarding the tar pollution of its beaches. Israel sent samples of collected tar balls that were analyzed by the France-based research center CEDRE following a technical conference call organized by REMPEC. REMPEC activated the Mediterranean Assistance Unit (MAU) to obtain the results of forecasting models, with a view to assessing the potential impact to neighboring countries. Within the framework of the MAU, it mobilized experts from CEDRE and the Italian Institute for Environmental Protection and Research, ISPRA, to provide remote assistance to Israel.[29]

IMO has also developed a wide array of tools and practical guidance to assist countries in developing a response capacity. Much of this guidance was developed through the Organization's OPRC-HNS Technical Group, a former subsidiary body of IMO's Marine Environment Protection Committee (MEPC). This Group brought together marine pollution response experts from Member States and Observing Organizations worldwide to share experiences and lessons learned and to identify best practices, new technologies and advancements in preparing for and responding to oil and HNS incidents at sea.[30]

Israel should continue to use the means, experience and capability of the international organizations mentioned above in CEEs in its maritime domain. The signing in 2018 of the Implementation Agreement on the Sub-Regional Marine Oil Pollution Contingency Plan with Greece and Cyprus was the appropriate move to deal with cross-border CEEs. This framework needs to be expanded to include Egypt, and possibly Lebanon.

[29] Oil Spill Incident in Israel, REMPEC for the Mediterranean Sea, February 27, 2021. https://www.rempec.org/en/news-media/rempec-news/oil-spill-incident-in-israel [Accessed June 2, 2022]

[30] Responding to Marine Pollution Incidents, Maritime Environment, International Maritime Organization – IMO. https://www.imo.org/en/OurWork/Environment/Pages/OilPollutionResources-Default.aspx [Accessed May 11, 2022]

Conclusion

Significant progress has been achieved in CEE preparedness and response in the Eastern Mediterranean region over the past decade. However, the increase in the likelihood and intensity of CEEs requires intensifying the efforts at local, national, and regional levels. As demonstrated in the Israeli coastal tar pollution event of February 2021, Israel's preparedness to cope with this type of event remains limited. Therefore, it is essential to establish national systems for responding effectively to incidents of marine pollution by hazardous and noxious substances (HNS), and to establish a national contingency plan for preparedness and response. The preparedness and response for all emergency scenarios in Israel's maritime domain - whether war, terrorist or civilian - should be generic in nature, and include all possible stakeholders until the classification of the event is definite and the risk assessment (risk identification, risk analysis, and risk evaluation) has properly been completed.

An appropriate contingency plan should be formulated based on a reasonable design base threat, which then defines the size of the responding forces, their equipment, and the readiness condition. The plan should include both oil spills and HNS and promote coordination among the hierarchy of responders. The plan should be funded by a ring-fenced budget.

Since Israel does not have a Ministry of Homeland Defense that can assume responsibility for conducting the operation at the national level, and the Israeli marine police is limited in its capabilities (compared with other coast guards), the Ministry of Defense and the Israeli Navy should become the executive arm in a CEE. Therefore, the Ministry of Defense's National Emergency Authority (NEMA) should also be assigned with coordinating and integrating all the organizations responsible for civil emergency scenario at sea.

The Israeli Navy's EEZ command and control center should be able to produce an integrated maritime picture, assisted by the Israel RCC and Israel marine police.

The Ministry of Environmental Protection's National Marine Protection Unit should provide professional guidance regarding potential sources of pollution and employ supervision and enforcement tools. Aerial and spaceborne sensors could provide accurate information for monitoring marine pollutants.

To maintain the competence of all the participating forces, a national exercise should be held periodically, and should be devised in consideration of all possible threat scenarios.