

ANNUAL REPORT 2022 =



Information Fusion Centre
Indian Ocean Region

DISCLAIMER

Information collated in the IFC-IOIR's reports have been derived from various internal and external linkages such as partner nations, other maritime stakeholders, agencies and open sources. The report aims to undertake analysis of incidents by establishing trends and anomalies to ensure safety and security of mariners and seafarers. While due care and effort has been taken to ensure veracity of data, due diligence may be exercised for subsequent usage of information contained therein. The positions of incidents depicted in some cases may be approximate or indicative. IFC-IOIR requests and seeks assistance of all stakeholders to report incidents in the region to undertake accurate predictive and prescriptive analysis so as to build a comprehensive picture of existing threats in the maritime domain. The information contained in the report and the analysis thereon, is not reflective of the views of the Government of India or Indian Navy in any manner.

MISSION STATEMENT

TO ADVANCE MARITIME SAFETY AND SECURITY IN THE INDIAN OCEAN REGION BY ENHANCING MARITIME DOMAIN AWARENESS AND COORDINATING ACTIVITIES, THROUGH INFORMATION SHARING, COOPERATION AND EXPERTISE DEVELOPMENT; ALONG WITH PARTNER NATIONS AND AGENCIES.



Logo of the IFC-IOR draws inspiration from the Centre's vision of 'Collaboration for Maritime Safety and Security'. It highlights the convergence and fusion of information and data from multiple sources, that are extensively analysed to derive usable insights and disseminated to relevant stakeholders. The petals painted in all seven vibrant colours of the optical spectrum depict various national and international partners who contribute in promoting collaborative Maritime Safety and Security towards a peaceful stable and prosperous Indian Ocean Region.

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MESSAGE FROM THE DIRECTOR

Freedom of the seas is the defining trait of the modern international maritime law and in today's globalised world there probably is no non-maritime nation. The sheer geographical expanse of the oceans provides room for illegal activities, including those by the so called 'dark vessels'. The trans-national nature of maritime crime and the financial or technical inadequacies of monitoring solutions when coupled with challenges of jurisdiction and trust make collaboration and information sharing, not a just a requirement but a necessity.

India being fully cognizant of this need, conceptualised IFC-IOR which was inaugurated on 22 December 2018, with a vision of promoting collaborative maritime safety and security. Today, the Centre hosts International Liaison Officers (ILOs) from 12 partner nations and has developed linkages with several maritime security centres around the globe. The presence of ILOs indicates the high levels of convergence between countries and serves to enhance trust. The current system in the Centre can predominantly be described as 'fusion of minds'.

In order to ensure compressed timelines for information sharing, the Centre this year commenced production and distribution of Weekly Maritime Security Updates (WMSUs) in addition to its existing periodic publications such as Monthly Maritime Security Updates (MMSUs) and Half-Yearly Overviews. This Annual Report is the culmination of the analysis over the wider time frame of 2022 and is aimed at providing trends and analysis of the non-traditional maritime security situation and threats in the Indian Ocean Region and the adjoining seas.

An environment scan indicates that there has been a positive development with respect to the piracy and armed robbery situation off the Horn of Africa and in the Gulf of Guinea. Elevated number of incidents of theft in the Traffic Separation Scheme of the Singapore Strait remains a worrying trend, especially due to the critical nature of this choke-point for global maritime trade. The removal of High-Risk Area in the Western Indian Ocean is a welcome

step which has been achieved through seamless collaboration between the international community and various navies deployed in the region.

Whilst piracy and armed robbery have been suppressed in the Western Indian Ocean, hybrid threats in the form of drones and remote-controlled water borne improvised explosive devices do pose a challenge to maritime trade. Currently, such challenges are limited to particular regions but it is possible that the contiguous nature of oceans may facilitate proliferation of such means to elsewhere.

The challenges posed by contraband smuggling, especially drug trafficking and the exploitation of marine resources through Illegal, Unreported and Unregulated (IUU) fishing call for concerted regional responses and mechanisms. The nexus of various trans-national criminal syndicates combined with the phenomena of narco-terrorism and narco-fish remains a worrying trend.

It is indeed heartening to see greater discourse on Climate change and associated security aspects, an area which has the potential to exacerbate existing tensions and irregular human migration trends. Additionally, the importance of cyber security of critical maritime infrastructure and onboard vessels cannot be stressed enough.

I would like to reiterate that the team at IFC-IOR, in line with India's vision of Security and Growth for All in the Region (SAGAR); remains fully committed in our endeavours to promote collaborative safety and security towards a peaceful, stable and prosperous Indian Ocean Region.

I am sanguine that this report is helpful to not only the seafarers but also navies, maritime law enforcement agencies, researchers and policy-makers. The Centre also welcomes any feedback on its reports and activities.

SAM NO VARUNAH

CAPTAIN ROHIT BAJPAI
Director

MESSAGE FROM THE EDITOR'S DESK

Observations or Perspective without data is just someone's opinion

Adapted quote from W. Edwards Deming, Manufacturing Guru & Statistician

Dear readers,

Fake news and misinformation have become clamouring issues in the digital age, threatening the accuracy and reliability of the information we consume and share. In a world where information is readily available at our fingertips, from a wide variety of sources with varying degrees of speed and accuracy, it is becoming increasingly challenging to discern genuine news from the web of misinformation. The reports and narratives have significant implications for our societies, ranging from shaping public opinion to undermining trust in institutions. Team IFC-IOR works relentlessly to ascertain the veracity of reported maritime incidents through our International Liaison Officers (ILOs) and linkages and undertakes herculean tasks with respect to sense-making of diverse maritime threats in the vast Area of Interest. In 2022, Team IFC-IOR has grown substantially with ILOs from twelve countries and more than 65 international linkages. The Centre has emerged as one of the most important MARSEC centres in the region and is conscientiously functioning to enhance maritime safety and security in the region.

In 2022, we have reformatted our periodic reports based on valuable feedback to achieve a perfect balance between granular data and objective analysis. The effort is to constantly evolve our products and meet the requirements of our esteemed readers ranging from policymakers, researchers, MARSEC practitioners, mariners and seafarers. As our reports are based on verified data, domain expertise, and advanced analytics and are completely unbiased and objective, the Centre has become a repository of the maritime security incidents database of the region.

In keeping with our tradition of the constant evolution of reports to enhance their utility, Annual Report 2022 adopts a new theme-based representation of extensive research and data analytics coupled with advanced data visualization

techniques. In line with our other products, the colour-based theme is utilised for bringing out analysis of Piracy & Armed Robbery, Contraband Smuggling, IUU Fishing, Irregular Human Migration and Maritime Incidents. The Centre continues to report on emerging MARSEC threats viz. non-piratical maritime security threats, cyber security threats, marine environmental pollution and climate change and security.

The report also presents the Maritime Security Scan of the entire IOR in a single spreadsheet for quick understanding. The Annual report and IOR MARSEC SCAN 2022 can be downloaded by scanning QR codes.

We would like to take this opportunity to thank our trusted linkages for sharing expertise and insights to further maritime safety and security in the region.

We would also like to thank our esteemed readers for their valuable feedback and for motivating us to continuously improve our products. We humbly solicit your feedback and suggestions. Feedback may be shared by scanning the QR code placed on this page.

Have a safe and prosperous year ahead.

Happy Reading...

CDR DEEPAK LAVANIYA
Deputy Director

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EXECUTIVE SUMMARY

During 2022, the Centre monitored, recorded and analysed 4,728 incidents in the wider Indian Ocean Region and adjoining seas. These incidents pertain to a variety of non-traditional maritime security challenges, which have been broadly categorised into five major groups for analysis: Piracy and Armed Robbery; Contraband Smuggling; Illegal, Unregulated, and Unreported (IUU) Fishing; Irregular Human Migration (IHM) and Maritime Incidents (MI). An additional focus has been laid on the incidents impacting maritime security threats of hybrid nature, cyber security, marine environmental pollution, climate change and security, which have been covered under separate sections in the latter part of the report.

In this report, the Centre provides collated data, analysis of trends, and recommendations for seafarers and the shipping community. Featured text and graphics are also included for brief informational highlights of events throughout the year. The higher number of

incidents captured may be attributable to the induction of a greater number of International Liaison Officers (ILOs) with an accompanying increase in data collation and information processing capability. The presence or absence of incidents in a particular region may not necessarily be construed as a benchmark for comparing various regions; as the reporting levels and data capturing vary across the region.

Notably, the Centre's monitoring, recording, and analysis scope focuses on reported incidents in and around the maritime domain. Incidents are monitored across ports, coastal landing sites and riverways to littoral regions near shore and beyond to the open seas of the region. This report does not focus on incidents occurring inland; however, there is an implicit understanding that illicit activities are not exclusive to one geographical location and activity frequently traverses various domains.

PIRACY AND ARMED ROBBERY

In 2022, the Centre monitored 161 piracy and armed robbery incidents, reflecting a slight downward annual trend, which was also supported by a report from the International Maritime Bureau (IMB), showing that 2022 had the lowest number of recorded incidents over the last three decades. The incidents in this Section have been analysed under ten subcategories: Hijack, Kidnap, Illegal Boarding, Attack, Sea Robbery, Sea Theft, Attempted Incidents (robbery, theft, and boarding) and Suspicious Approach. Regionally, five distinct regions show piracy and armed robbery trends: the Gulf of Guinea, East Africa, West Asia, South Asia, and Southeast Asia. Sea Theft and Sea Robbery were the most frequently reported incidents.

Southeast Asia accounted for 53% of the recorded incidents in 2022, typically occurring near the coast, at night and on vessels either underway or at anchor. Weapons, where seen, were usually knives or similar items, though there were five incidents involving firearms. With 55 incidents, the Traffic Separation Scheme in the Singapore Strait subregion accounted for the largest number of incidents recorded by the Centre in 2022.

The Gulf of Guinea accounted for 21% of recorded incidents this year. Compared to the previous year, incidents in the Gulf of Guinea declined by 46%, likely due to the efforts of regional governments, the maritime industry and the presence of international forces in the area. It is also likely that some of the

organised networks involved in off-shore pirate attacks have shifted towards relatively low risk activities such as fuel siphoning, illegal refining and smuggling due to enhanced enforcement by authorities and increased fuel prices. Piracy continues to be suppressed off the Horn of Africa due to the combined efforts

of international maritime forces, regional authorities and adherence by the mercantile marine/ shipping community to various flag state, coastal state and industry guidelines. This was reflected in the maritime industry's decision to remove the High-Risk Area with effect from 01 Jan 23. It should be noted that while piracy and armed robbery incidents have been suppressed, mariners are still advised to remain vigilant and report all suspicious incidents to the relevant authorities.



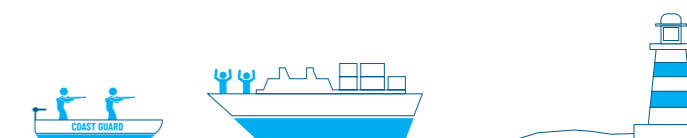
CONTRABAND SMUGGLING

The Centre recorded a total of 811 instances in which contraband was seized by authorities in the region this year, which was a monthly average of 68. The Centre categorised incidents into nine contraband groups: Drugs, Domestic Products, Natural Resources, Fuel, Tobacco, Alcohol, Weapons, Wildlife and Others. A slight increase was observed in incidents recorded as compared to 2021, which is attributable to an overall increase in incidents involving fuel smuggling and tobacco smuggling.

Incidents of drug smuggling, however, saw a 15% decrease this year and constituted 38% of total contraband incidents recorded by the Centre. These incidents have been grouped

in the Western and Eastern Indian Ocean Regions for analysis. The phenomenon of narcoterrorism and the exploitation of drug smuggling networks to smuggle weapons remains a concern. In 2022, five instances were recorded by the Centre in which both drugs and weapons were seized from perpetrators.

Fuel smuggling using small tankers, converted cargo vessels and fishing vessels were observed in West and South East Asia. This phenomenon may be attributable to the availability of fuel at subsidized rates in some countries, especially in West Asia.



ILLEGAL, UNREGULATED, AND UNREPORTED (IUU) FISHING

This year, the Centre monitored 603 IUU fishing incidents, an average of 50 incidents per month. Due to the challenges associated with reporting and enforcement operations and to avoid inaccurate representation of data, the Centre classified these events into two categories: Local IUU fishing and Poaching. Of the four sub-regions (East Africa, West Asia, South Asia and South East Asia), trends

indicate that most incidents were local IUU incidents, with poaching numbers varying across the IOR.

Seasonally, the IOR experiences two major monsoon seasons with decreased activity traditionally associated with severe weather. However, this year the Centre observed an increase in IUU fishing incidents during

monsoon conditions, possibly due to fishermen venturing out to sea to compensate for the loss of income during the pandemic.

Due to the inherent nature of enforcement operations, most recorded incidents involve smaller fishing vessels violating fisheries laws close to the coast. Illegal fishing activities have a cascading effect on the supply-demand chain. Thus, lead to economic losses and tends to be associated with other maritime crimes such as drug, human and weapons trafficking.

No IUU fishing incident was recorded in the high seas (beyond EEZ), which highlights the monitoring challenges and legal gaps in Areas Beyond National Jurisdiction (ABNJ). Disagreements linked to pending EEZ delimitations and competition between coastal artisanal fishing and foreign industrial fishing fleets remain potential flashpoints.



IRREGULAR HUMAN MIGRATION

This year, the Centre's observations of Irregular Human Migration (IHM) included 1,701 incidents (36% of total incidents) involving 63,606 migrants and 704 traffickers, with a monthly average of 142 reported incidents in the IOR and the Mediterranean Sea. Regionally, 82% of IHM incidents were reported in the Mediterranean, followed by East Africa with 14%. For analysis, the Centre has grouped IHM incidents into five geographical regions: the Mediterranean Sea, East Africa, West Asia, South Asia, and Southeast Asia.

Many criminal activities, such as the slave trade, child abuse and labour, sexual exploitation and trafficking and organ harvesting often accompany irregular human migration. Migration produces a significant security risk as it involves using migration routes and networks by terrorist and criminal elements. The ramifications due to the COVID-19 pandemic may have exacerbated the human migration numbers.

The Centre observed migrants willing to take significantly higher risks on overcrowded and often unseaworthy boats coupled with the absence of adequate survival gear during all seasons, regardless of heavy weather. Accurate IHM numbers are likely higher than recorded numbers due to numerous political sensitivities associated with tracking and reporting such movements. Irregular migration is expected to continue, with possible increases due to political instability, economic opportunities, or the impacts of climate change.

In 2022, events like the outward migration from Sri Lanka due to its economic crisis and continued global recovery from the COVID-19 pandemic has contributed to the upward trend in incidents and migrants involved.



MARITIME INCIDENTS

The broad scope of Maritime Incidents accounts for 30% or 1,395 recorded incidents in 2022. With an average of 117 incidents per month, the Centre groups incidents geographically across four regions: East

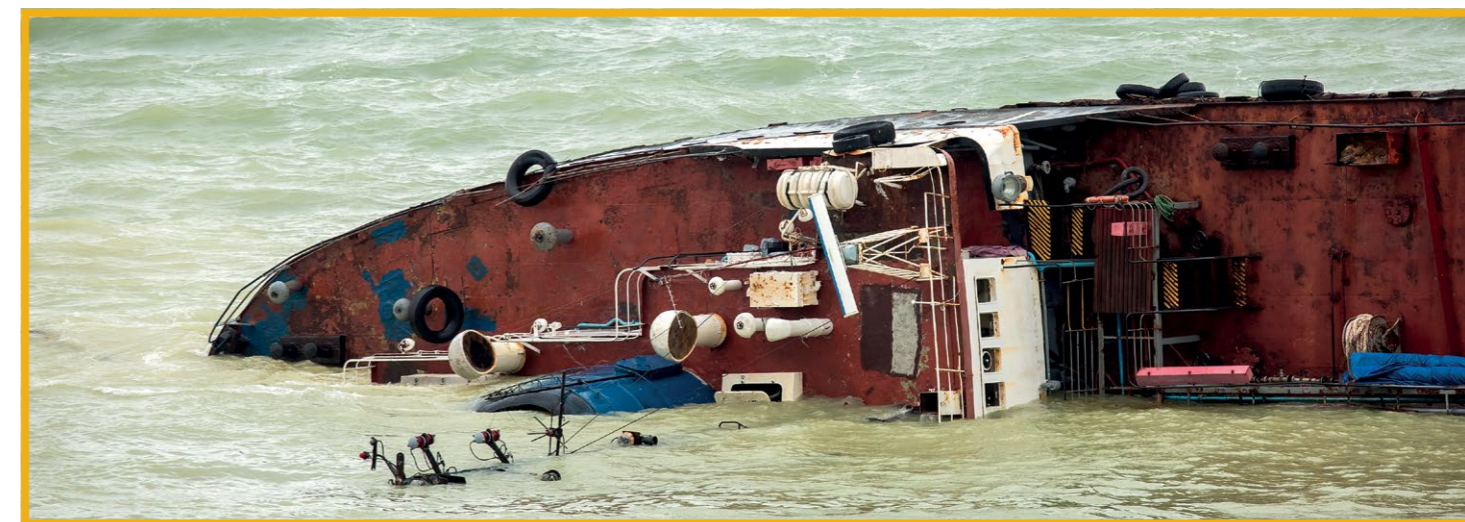
Africa, West Asia, South Asia and Southeast Asia. Fifteen types of incidents are monitored and grouped into three subcategories for ease of comprehension.

Incidents Affecting Vessels	Fire, Flooding, Grounding, Collision, Mechanical Failure, Sunk, Capsize, Cargo Mishap and SAR.
Incidents Affecting Individuals	MEDEVAC, Man Overboard, Missing and Death.
Incidents with Legal Connotations	Vessel Detained and Violent Confrontation.

Regionally, 53% of Maritime Incidents were reported in Southeast Asia, possibly due to the prevalence and usage of small vessels and comparatively higher maritime traffic. August and October recorded the highest incidents at 158 and 144, respectively, which may be attributable to the seasonal adverse weather conditions related to monsoons and cyclones (SITRANG and NALGEA).

Mechanical failure and Capsize incidents constituted 30% of recorded incidents, followed by 24% of Collision, Grounding and Sinking. This was followed by 17% of incidents classified as SAR and MEDEVAC.

During this period, significant maritime incidents include fire onboard the TSS PEARL in the Red Sea and the sinking of HTMS SUKOTHAI in the Gulf of Thailand.

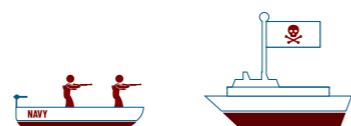


MARITIME SECURITY THREATS (HYBRID)

In the year 2022, the Centre continued to monitor several incidents of attack on ships and crew, which, because of the nature or motive, differ from the traditional acts of Piracy and Armed Robbery. Although piracy and armed robbery have been suppressed in Gulf of Aden due to the presence of warships and other measures, the continuation of maritime security threats of a hybrid nature complicates

the security situation, especially in West Asia. Such maritime security threats include the usage of conventional military measures like rockets, missiles, artillery shelling, floating mines, limpet mines, etc. and unconventional measures like Water Borne Improvised Explosive Devices (WBIEDs), Remote Controlled WBIEDs (RCWBIEDs), Unmanned Aerial Vehicles (UAVs) or Drones.

Of note, UAVs or aerial drones have emerged as a lethal means to target vessels and/ or infrastructure, both at sea and ashore. The Centre recorded four such incidents in 2022, with three involving oil tankers at anchorage.



CYBER SECURITY THREATS

Cyber security onboard and in ports assumes ever greater importance as the maritime domain increasingly becomes automated and digitised. The implications of a cyber-attack can range from loss of data, compromise of IT systems, loss of connectivity, damage to infrastructure, or even death. Only a portion of actual or attempted attacks are likely detected, of which many are not reported.

Submarine cables are a particularly vulnerable target, as they are estimated to carry more than 95% of the world's international data and communication traffic. As information super-highways, these cables are critical enablers of the interconnected world and are susceptible

to physical and cyber-attacks. Due to the interconnected nature of international data flow and redundancies, it is assessed that there is a higher likelihood of damage/ disruption in submarine cables due to negligence or accidents as compared to cyber-attacks which aim to disable landing centres or manipulate/ hack submarine cables.

The Centre noted five specific cyber-attacks in 2022. The most significant was the ransomware attack on the Jawaharlal Nehru Port Container Terminal in Mumbai in February, which affected the management information systems and led to the temporary diversion of traffic to the other terminals in the port.

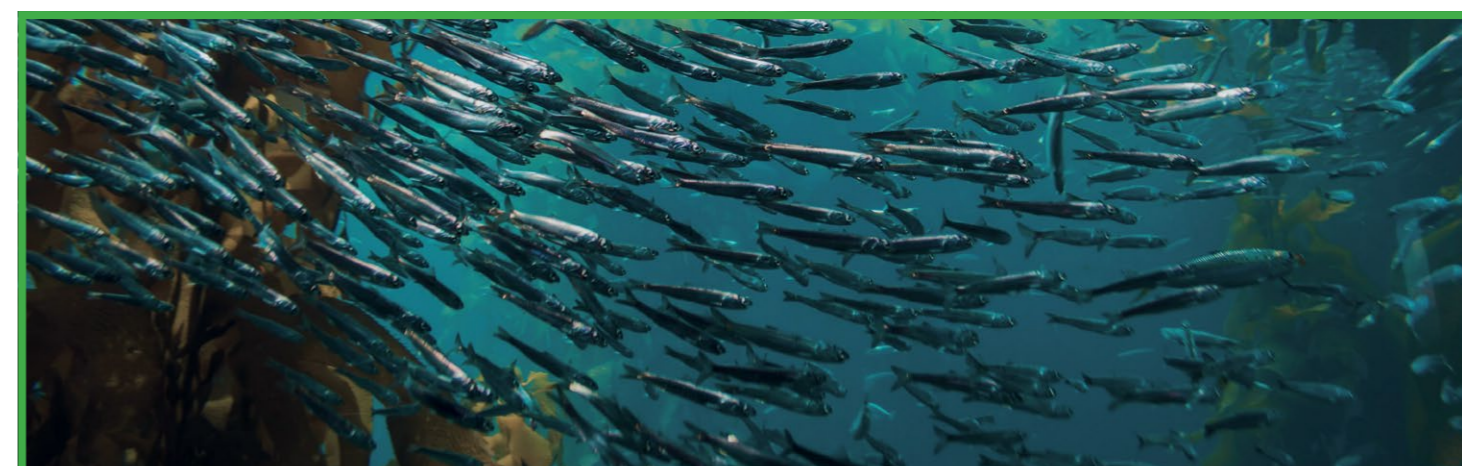


MARINE ENVIRONMENT POLLUTION

In 2022, the Centre monitored 18 incidents, with 16 involving oil spillage. The risk with such incidents is the compounding effect on marine environment safety, especially when vessels carry oil or hazardous cargo shipments.

Although there were no notable incidents this year, the looming environmental ramifications from the VLCC FS SAFER moored off Hodeidah, Yemen, since 2015, exist. At the risk of

structural failure and subsequent spillage, this vessel holds over one million barrels of crude oil. It has a connection to the Ras Isa-Marib pipeline, which contains an additional one million barrels. This would have catastrophic ecological and economic effects on the region and may require a cleanup operation estimated to cost USD 20 billion.



CLIMATE CHANGE AND SECURITY

Climate Security is the impact of climate change on traditional and non-traditional security threats. Climate change related effects are likely to exacerbate existing issues and conflicts and also have significant potential to generate new conflicts. Rising sea levels, consequential loss of coastal areas, risks to fresh water supplies, increasing human

and animal migration, conflicts, overfishing, extreme weather and natural disasters are some key problem areas. The Centre will continue to monitor the impact of climate change on illicit maritime activity in the Indian Ocean Region. Two regional perspectives by the Mauritius and Sri Lanka ILOs at the Centre are also included in this report.



INDIAN OCEAN REGION - 2022

MEDITERRANEAN SEA

Incidents in the Mediterranean region accounted for 82% of the total IHM incidents recorded this year. Varied ethnicities/ nationalities of migrants attempted to reach European shores via sea. Migration attempts were observed using overcrowded and often unseaworthy boats with no presence of survival gear during all seasons, regardless of heavy. The ramifications due to the COVID-19 pandemic and enhanced reporting trends are likely causes which have exacerbated this increasing trend.

GULF OF GUINEA

A 46% drop from 2021 in incidents of piracy and armed robbery was observed in the Gulf of Guinea, likely due to the efforts of regional governments, maritime industry and the presence of international forces in the area. While Pirate Action Groups, on a few occasions, demonstrated the ability to target vessels operating more than 200nm from the coast, most of the incidents in the region were recorded closer to the shores. One incident involved the kidnapping of two seafarers, who were released later.

WEST ASIA

Piracy continues to remain suppressed in the Gulf of Aden due to the combined efforts of international maritime forces, regional authorities, and adherence by the mercantile marine/ shipping community to various flag state, coastal state and industry guidelines. This was reflected in the maritime industry's decision to remove the High-Risk Area from 01 Jan 23.

Only incidents of suspicious approaches were reported on vessels underway during the day. No incidents of hijacking, kidnapping and attacks have been recorded in West Asia in 2022.

The Centre recorded a large number of drug seizures originating from the Makran coast. The seizures of methamphetamines and captagon pills were assessed to be on the rise, in addition to traditionally observed heroin and hashish.

Maritime security threats of hybrid nature, including prominent attacks on merchant vessels and maritime infrastructure, were observed in the region.

SOUTH ASIA

Major illegal activities monitored in the region include drug smuggling, IUU fishing and Irregular migration via sea routes. There was a significant increase in the number of IUU incidents reported off Sri Lanka, possibly due to enhanced enforcement operations and fishermen using banned fishing methods (blast fishing) and gears.

SOUTH EAST ASIA

The Traffic Separation Scheme in the Singapore Strait saw a 12% increase in robbery and theft incidents from the previous year. The armed robbery incidents were primarily recorded on vessels underway during dark hours in the East Bound Lane. However, most of the incidents observed were of petty thefts.

Increased apprehensions of irregular migrants via sea routes has been observed in the Malacca Straits, which may be attributable to the focused operations of authorities in the region, enhanced patrolling and collaborative efforts between regional authorities.

Many vessels were detained for unauthorised anchoring in the region, especially off Malaysia.



Scan QR code to download IFC-IOR MARSEC SCAN 2022 pdf

PIRACY AND ARMED ROBBERY



OVERVIEW

Piracy is a persistent threat to maritime security that poses significant risks to the global economy, human lives and the environment. The impacts of piracy have, in the past, been devastating, disrupting global trade and commerce, causing delays and increased costs for shipping companies and resulting in the loss of valuable cargo and equipment.

Piracy has also posed significant security risks to ships and their crew, with perpetrators often using violence or the threat of violence. Furthermore, piracy has been used as a cover for other illegal maritime activities such as terrorism, drug smuggling and human trafficking.

As part of the analysis for the year 2022, specifically in respect of piracy and armed robbery, in addition to the Indian Ocean and adjoining seas, the Gulf of Guinea region has also been considered. The incidents of piracy and armed robbery have been further divided into ten sub-categories according to the type of incident, viz. hijacking, kidnapping, illegal boarding, attack, sea robbery, sea theft, attempted incidents (robbery, theft and boarding) and suspicious approach to enable detailed analysis.

The overall trends of piracy and armed robbery in the region have declined in the past few years. In 2022, while only a few incidents were recorded by the Centre in which perpetrators boarded and hijacked vessels/ kidnapped crew members, most of the incidents in the year involved the theft of miscellaneous items, ship stores, engine spares and crew belongings. A

relatively new phenomenon observed recently includes perpetrators forcing seafarers to transfer money, which indicates their desperation to ensure financial compensation for their endeavours.

161 incidents classified under piracy and armed robbery were monitored by the Centre in 2022, a slight decrease as compared to 2021 (168 incidents) and a 40% decrease as compared to 2020 (267 incidents). This drop is mainly attributable to the reduction of incidents recorded in the Gulf of Guinea region. The Centre recorded a monthly average of approximately 13 incidents in 2022 as compared to 14 incidents in 2021 and 22 incidents in 2020.

Similar declining trends have been observed by other international organisations such as the International Maritime Bureau (IMB), which reported that incidents of piracy and armed robbery in 2022 were the lowest in the last three decades. This decrease may be attributed to international collaboration, regional information sharing, sustained presence/ deployment of naval forces, industry guidance and proactive actions by seafarers.

The various sub-categories have also reflected a declining trend, except for sea theft and hijacking/ kidnapping. Sea theft has witnessed a 42% (64 incidents) increase as compared to 2021 (45 incidents); the numbers, however, are 23% lesser when compared to 2020 (83 incidents). With respect to Hijack and Kidnap, there have been 06 incidents in 2022 as compared to 02 in 2021 and 03 in 2020. Analysis based on the type of incident and a

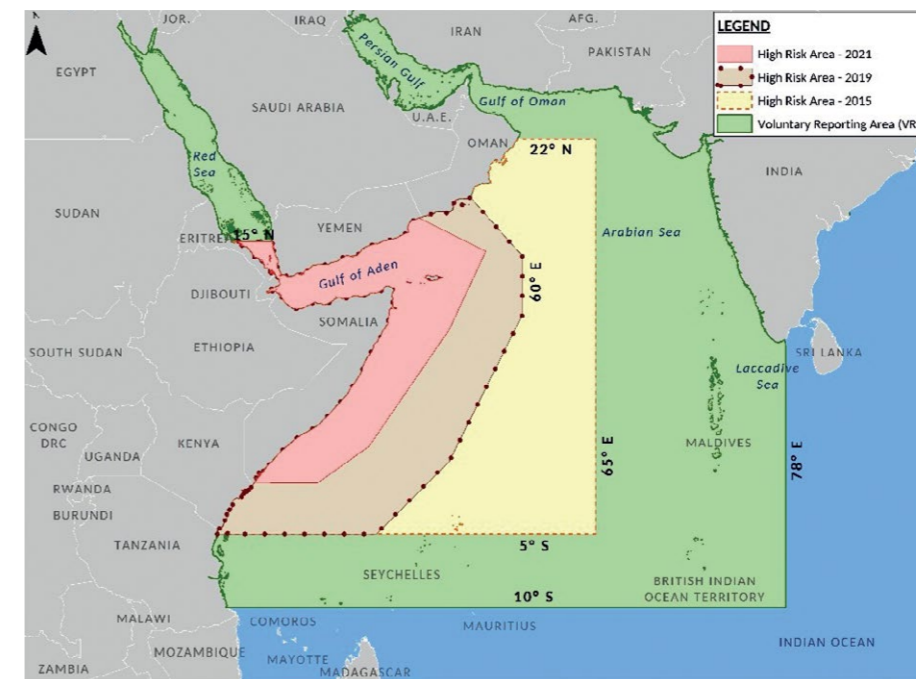
region-wise assessment is contained in the latter part of this section.

One of the significant positive highlights of this reporting period is a 54% reduction in the use of guns or firearms in incidents (11 incidents) as compared to 2021 (24 incidents) and an 85% reduction as compared to 2020 (72 incidents). The reduced number of incidents in the Gulf of Guinea, indicating an improvement in the maritime security situation, has been a major contributor to this overall drop in the number of incidents involving the presence/ usage of firearms.

South East Asia continues to account for the majority of the incidents in 2022, highlighting the vulnerability of the merchant shipping community, especially while transiting restricted waters. However, most of the incidents in this region have been petty thefts and robbery as opposed to the more serious

incidents of attacks, hijacks and kidnappings as recorded in the Gulf of Guinea. The perpetrators have mostly been reported to be armed with knives/ similar weapons and have escaped immediately upon being sighted by the crew. The presence of firearms/ gun like objects have been reported in five incidents, three of which involved fishing vessels. The remaining two incidents were reported on a product tanker and bulk carrier, both transiting the Eastbound Lane of the Traffic Separation Scheme in the Singapore Strait.

Piracy and armed robbery continue to remain suppressed in the Gulf of Aden due to sustained international collaboration and the presence of international navies. The industry's withdrawal of the High-Risk Area off the Horn of Africa came into effect from 01 January 2023; a move which substantiates the discernible elimination of threats from piracy and armed robbery in the region.

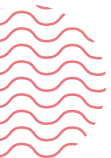


Manohar Parrikar Institute for Defence Studies & Analyses, GIS Section. Map not to scale.

161
Piracy incidents monitored

40%
Reduction in incidents (2022 Vs 2020)





ATTEMPTED V/S SUCCESSFUL INCIDENTS

The types of incidents captured by the Centre include both attempted as well as successful events of piracy and armed robbery. The perpetrators succeeded in stealing items, hijacking vessels or kidnapping crew members in 93 of these incidents. This constitutes 67% of the incidents where perpetrators succeeded in boarding vessels and 58% of the total incidents recorded by the Centre.

The 23 unsuccessful attempts to attack or board a vessel constitute 14% of the total incidents, including suspicious approaches, attempted boarding and attack on vessels. An overall decline in the number of such incidents has been observed as compared to 44 incidents

in 2021 and 79 incidents in 2020. Most of the attempts thwarted were due to the vessels' proactive actions, including crew actions such as raising alarms, evasive manoeuvres, alert watchkeeping and the presence of armed security teams onboard.

Like the previous year, **Sea Theft was the most frequently reported type of incident in 2022, accounting for 40% (64 incidents out of 161) of total incidents as compared to 45 incidents in 2021 and 83 incidents in 2020.**

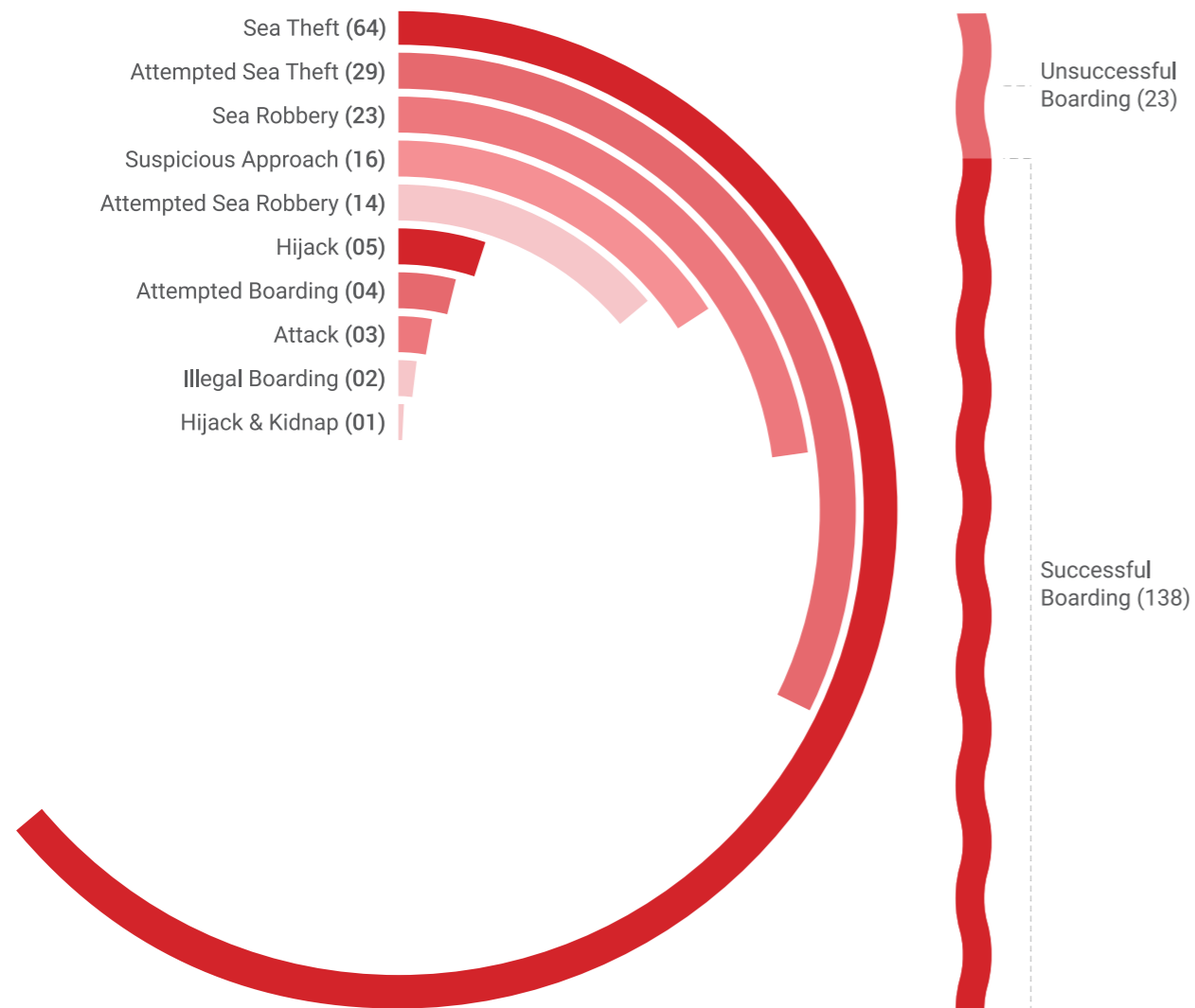
About 27% of the overall incidents and 28% of incidents of the boardings included failed attempts of theft/ robbery by the perpetrators. This is attributable to the crew raising the alarm

promptly. The majority of these incidents were recorded onboard vessels underway in the Traffic Separation Scheme in Singapore Strait.

A rise in such minor incidents in the near future is anticipated due to the economic impact of the ongoing conflicts globally on the world

economy, rising food and energy prices and disruptions in supply chains which have led to increased economic hardship across the region. This may push perpetrators to low-risk ventures like sea theft on opportune vessels.

Types of Incidents- 2022



TYPES OF VESSEL

While vessels with low to medium freeboard and/ or those transiting at slow speeds have been observed to be the easy targets in 2022, such vessels accounted only for 33% of the recorded incidents (53 out of 161). The majority of these incidents were recorded in South East Asia (22 out of 53). Fishing vessels, service vessels, tugs, supply vessels, barges under tow by tug and passenger vessels have been the types of vessels involved in these incidents. The incidents of theft/ robbery onboard tugs/ barges were appreciated to be opportune attacks aimed at stealing the ship's

stores, engine spares and scrap metal.

67% (108 out of 161) of the incidents recorded involved vessels with medium to high freeboard. **Bulk carriers were targeted in 30% of the total incidents, followed by tankers (23%) and container vessels (6%).** This shows the dexterity of perpetrators in boarding medium to high freeboard vessels, even while they are underway. The majority of the incidents involving bulk carriers were reported in South East Asia and the Gulf of Guinea.

Type of vessels targeted



IMB PRC's Annual report of 2022 indicates that the majority of the vessels boarded were over 50,000 DWT with high freeboards, including six laden vessels over 150,000 DWT.



NAVIGATIONAL STATUS AND TIME

Similar to the previous year, the majority of the incidents recorded were reported on vessels underway (53%), followed by anchored vessels (27%) and vessels berthed alongside (13%).

2020). All these incidents were successful/ attempted theft onboard vessels and none involved weapons/ firearms. This indicates that these are likely opportunistic attempts by perpetrators to exploit gaps/ limitations in port security.

While the number of incidents at anchor and underway have reduced in comparison to the 2021 and 2020, 21 incidents involving vessels berthed alongside were also recorded in 2022 (as compared to 10 in 2021 and 21 in

Similar to previous years, 77% of the total incidents recorded were reported during darkness.

Timing of incidents

		2021	2022
DAY		46	34
NIGHT		122	124

DISTANCE FROM COAST

78% of the incidents were reported in the proximity of land (<12 nm), 34% of which were recorded in the Traffic Separation Scheme in the Strait of Singapore.

While the overall percentage of incidents saw a decrease, there was an observed increase in the average distances of such incidents from the coast, which may be attributable to the enhanced capabilities with perpetrators resulting in greater sophistication to target vessels at extended ranges from the coast.

Four incidents (2%) were reported beyond 200 nm from the coast, three in the Gulf of Guinea and one in West Asia. This points to a credible organisation and the sophistication of Pirate Action Groups, especially in West Africa.

Incidents Based On Distance From Coast

Region	Distance (in Nautical Mile (NM))				
	<12 NM	12-50 NM	50-100 NM	>200 NM	Unknown
South East Asia	75	3	0	0	8
South Asia	13	0	0	0	0
West Asia	6	2	2	1	0
East Africa	11	0	0	0	1
Gulf of Guinea	21	4	2	3	4

NUMBER OF PERPETRATORS

The Centre has information with respect to the perpetrators in 67% of the recorded incidents. Of these, 50% of incidents involved 1 to 5 perpetrators (almost 2/3rd in South East Asia and the balance in the Gulf of Guinea) and 14% of incidents involved 6-10 perpetrators (13% in South East Asia, 9% in the Gulf of Guinea and 19% in West Asia). The balance incidents involving a group of 11-15 (2.5%) perpetrators were also observed by the

Centre. In one incident of Sea Theft onboard a barge, Indonesia authorities apprehended 47 perpetrators. This was the most severe in terms of the number of perpetrators in South East Asia.

The majority of incidents were orchestrated by small groups of perpetrators, which highlights the vulnerability of merchant vessels.

Analysis on perpetrators involved



USE OF SKIFFS

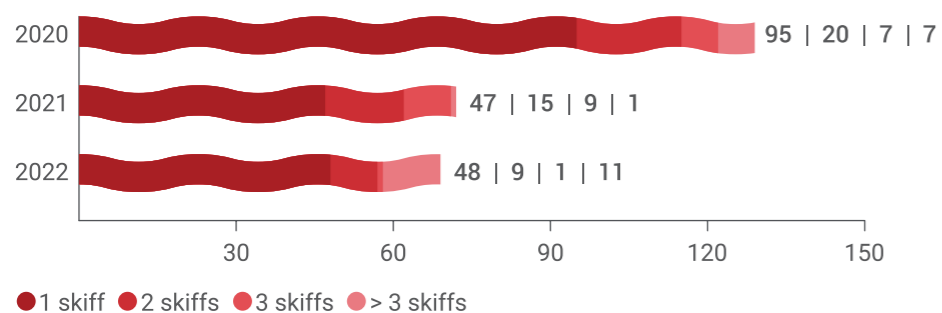
In 2022, the Centre monitored 69 incidents involving the usage of skiffs or small boats by the perpetrators for acts of piracy and armed robbery. This constituted 43% of the total incidents recorded.

The traffic and pattern of life of fishing vessels operating in groups inherently present the possibility of misidentification. Such vessels may approach ships that are likely to run into their nets and/ or attract attention by waving arms or approaching closer to vessels transiting. Vessels with Privately Contracted Armed Security Personnel (PCASP) embarked are advised to pay special attention to this phenomenon.

70% of these incidents involved the presence of one skiff, 25% (12 out of 48) of which were recorded in the Gulf of Guinea.

The highest number of boats used in a single incident was ten during two sea theft incidents in the TSS of Singapore Strait.

Analysis on skiffs used



USE OF WEAPONS AND VIOLENCE AGAINST CREW

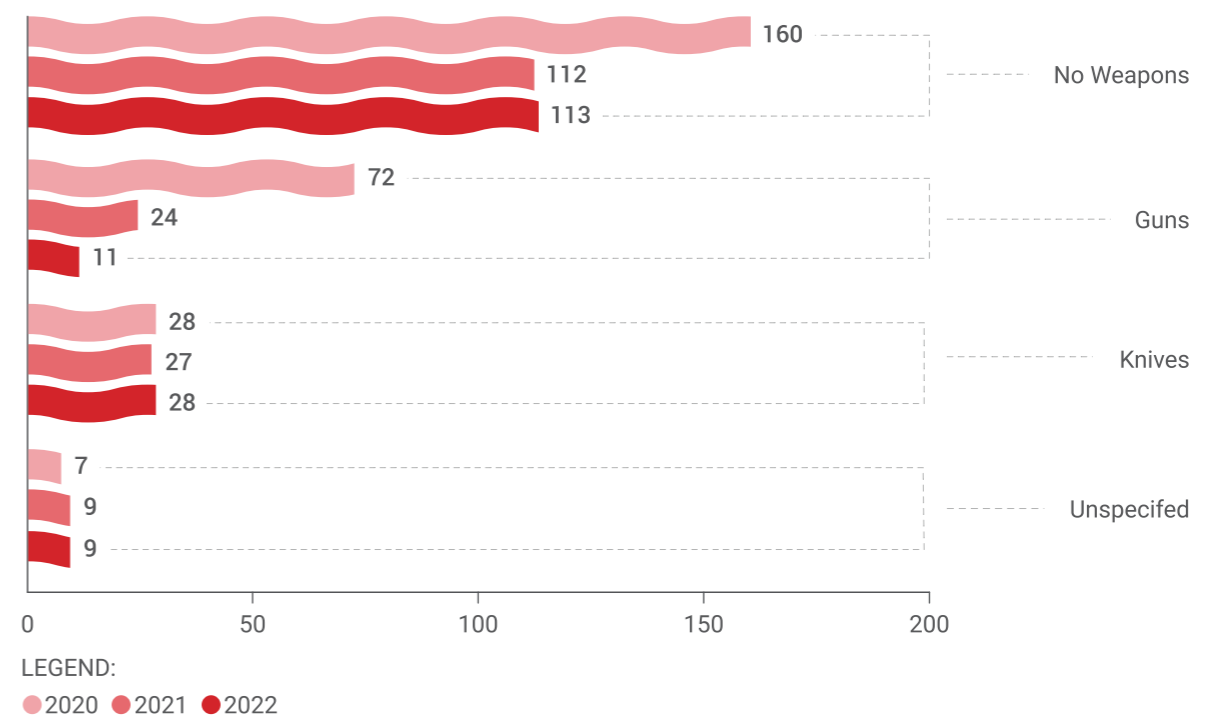
In 2022, sighting or usage of weapons was reported in 30% of the recorded incidents of piracy and armed robbery. 60% of the incidents with weapons involving different types of knives or smaller weapons (knives and machetes) and 23% of incidents involved guns and similar weapons. The type of weapons, however, could not be established in 19% of the incidents involving armed perpetrators.

It is highly likely that perpetrators carrying guns also have knives which are not sighted/ detected by crew members. Such knives are generally used by perpetrators to cut items and lashings, as well as to threaten the crew.

A major cause for concern is perpetrators confronting crew members in some of the incidents, which have sometimes led to injuries. While no death of crew members was recorded during 2022, five crew members suffered injuries in such incidents. Two crew members onboard the supply vessel *CAPE HATTERAS* and one passenger in a passenger's vessel were injured off Nigeria and the Gulf of Guinea in two separate incidents. One fisherman suffered injuries in an incident in the South China Sea and one crew member onboard *AS ELENIA* suffered minor injuries off Bangladesh.

A total of five incidents, each involving the usage of guns, were reported in the Gulf of Guinea and South East Asia. Knives constituted the majority of the weapons used in South East Asia, with three-four cases of machetes/ similar weapons being used/ carried by the perpetrators. 21 incidents involving the usage of knives were recorded off Indonesia and one incident off Malaysia.

Analysis on types of weapons utilised



ANALYSIS OF INCIDENTS

SEA THEFTS/ SEA ROBBERIES

81% of the total number of piracy and armed robbery incidents recorded in 2022 (130 out of the 161 incidents) involved attempted/ actual incidents of theft/ robbery. In one-third of such incidents, perpetrators failed to steal items from the target vessel.

62% of these (81 incidents) were reported in South East Asia, with the Singapore Strait accounting for two-thirds of this number alone. In 47% of such incidents recorded in South East Asia (38 out of 81), perpetrators were unsuccessful in stealing any stores.

In the Gulf of Guinea, 87% of the incidents of theft/ robbery recorded involved the loss of stores. The perpetrators left empty handed only in 13% of the recorded incidents.

This indicates that the perpetrators may not be willing to risk the possibility of getting caught and leave the vessel empty handed immediately after being noticed by the crew. Further, the perpetrators were observed to be non-confrontational during the majority of incidents. It is, therefore, likely that an alert crew might deter or dissuade a sizeable portion of such attempts.

HIJACKING AND KIDNAPPING

The Centre recorded six incidents of hijacking in the year 2022 as compared to two incidents in 2021 and three incidents in 2020. Four of the

incidents recorded this year were reported in the Gulf of Guinea and two in South East Asia. One of these incidents in the Gulf of Guinea commenced as a hijack scenario and ended with the crew being kidnapped. A Marshall Islands flagged bunker tanker *B OCEAN* was reportedly hijacked twice off Abidjan, Côte d'Ivoire (24 Jan and 23 Nov 22).

While only one incident of hijacking involved cargo theft, increasing law enforcement operations inland coupled with elevated fuel prices may cause groups involved in kidnapping seafarers to pivot towards activities such as oil siphoning from vessels offshore.

A steep decline was observed in the number of kidnapping incidents this year. A single incident of kidnapping in 2022 (two crew members kidnapped on 13 Dec 22 in the Gulf of Guinea and subsequently released on 17 Jan 23) as compared to 10 incidents in 2021 (78 crew members) and 23 incidents in 2020 (140 crew members) is a significant and positive change. It bears mention that the Centre does not record incidents that occur in the creek/ riverine areas of the Gulf of Guinea.

The steep decline in the kidnapping of crew members in the Gulf of Guinea may be attributed to the enhanced presence of multinational warships, focused operations, enhanced coordination by coastal states, international collaboration and industry efforts.

Though the Centre has observed a remarkable and significant improvement in the security the situation in respect of the safety of the crew, it is opined that even a single seafarer harmed/ kidnapped is one too many. Continued efforts of all stakeholders are essential to eradicate this threat to seafarers.

Notable incidents in 2022 under this Section are as follows:

- » On 06 Jan 22, an incident of hijack was reported onboard an Indonesian flagged bunker tanker *SPOB GRAHA DUA SATU* off Sulawesi, Indonesia. Reportedly, the vessel was boarded by six perpetrators armed with machetes with the help of a speed boat with an outboard engine circled the tanker with two pirates in it during the hijack. A total of eight crew were herded into the mess room and tied up. Later, the pirates forced the crew to take the tanker to a specified position. The perpetrators left the tanker on the morning of 07 Jan 22, robbing the crew of valuable items of ship (mainly electronics) and cash. All crew members were reported to be safe.
- » On 24 Jan 22, around 9-11 pirates armed with guns boarded the Marshall Islands flagged bunker tanker *B OCEAN*, which was drifting 59 nm SSW off Abidjan, Côte d'Ivoire. Reportedly, all crew members were detained initially on the bridge and then moved to the crew mess room. The perpetrators switched off all navigational and communication equipment on the vessel and made the crew paint over the vessel's name written on top of the bridge. The perpetrators then navigated the bunker tanker (using their own GPS equipment) to rendezvous with an offtake vessel. While enroute the bosun was told to prepare the manifold. Once the tanker was alongside the off take vessel, the chief officer and bosun were told to commence discharge operations. After around six hours, the cargo operation was stopped. The perpetrators

later disembarked and escaped with part of the tanker's cargo as well as the ship's and crew's cash, personal belongings of crew members and the ship's properties. All crew members were reported to be safe. The vessel subsequently anchored off Abidjan on 26 Jan 22.

- » An incident of hijack was reported onboard a Malaysia flagged fishing boat with three crew members onboard off Pulau Jambangan, Sabah, Malaysia on 24 Apr 22. Reportedly, the vessel was boarded by an unknown number of perpetrators armed with guns. Three crew members were held along with the boat by the perpetrators and thereafter released.
- » On 15 Nov 22, an incident of hijack was reported onboard the Togolese flagged container ship *ARMENISTIS* with 12 crew members onboard about 50 nm W of Sherbro Island, Sierra Leone. Reportedly, seven armed perpetrators onboard a small boat boarded the vessel while underway and took over the control from the master. The perpetrators steered the vessel until it ran aground and eventually abandoned the vessel. The vessel and the crew were reported to be safe.
- » On 23 Nov 22, the Marshall Islands flagged bunker tanker *B OCEAN* was targeted again while in position 236 nm SSW off Abidjan, Côte d'Ivoire. Reportedly, eight armed perpetrators boarded the vessel whilst underway. Security forces reported a loss of communication with the tanker on 23 Nov 22. They requested the assistance of vessels operating in the area to report sightings or any unusual activity in the area. An Italian Navy warship later intercepted and rendered assistance to the tanker. The perpetrators had damaged the engine, navigation and communication equipment and stole the ship's cargo and crew's personal belongings. The tanker was towed to the Abidjan port on 02 Dec 22.



Source: <https://gcaptain.com/wp-content/uploads/2019/04/Maersk-Alabama-Lifeboat.jpg>

» On 13 Dec 22, reportedly an incident of hijack was reported onboard St. Vincent & Grenadines flagged passenger vessel *FERNANDE* about 48 nm SE of Bioko Island. A group of nine-ten armed perpetrators approached the vessel in a fast boat, fired shots, boarded the passenger vessel and took control from the master. The perpetrators kidnapped two crew members, stole portable communication equipment and escaped. The remaining crew managed to navigate to a safe port. The kidnapped crew members were subsequently released on 17 Jan 23.

ILLEGAL BOARDINGS/ ATTACKS

The Centre monitored five incidents of illegal boarding and attack during the year, a 62% decrease as compared to 2021 and an 81% decrease as compared to 2020. All incidents were recorded in the Gulf of Guinea except one attack on a fishing vessel in the South China Sea.

An overall decrease in the number of incidents in the Gulf of Guinea may be attributed to implementing of stringent security protocols and ship/ company security plans onboard the vessels transiting the area. Continued implementation of such measures is recommended as they will foil attempts at kidnapping crew members.

The Centre has grouped the recorded incidents into five distinct regions – South East Asia, South Asia, West Asia, East Africa and the Gulf of Guinea.

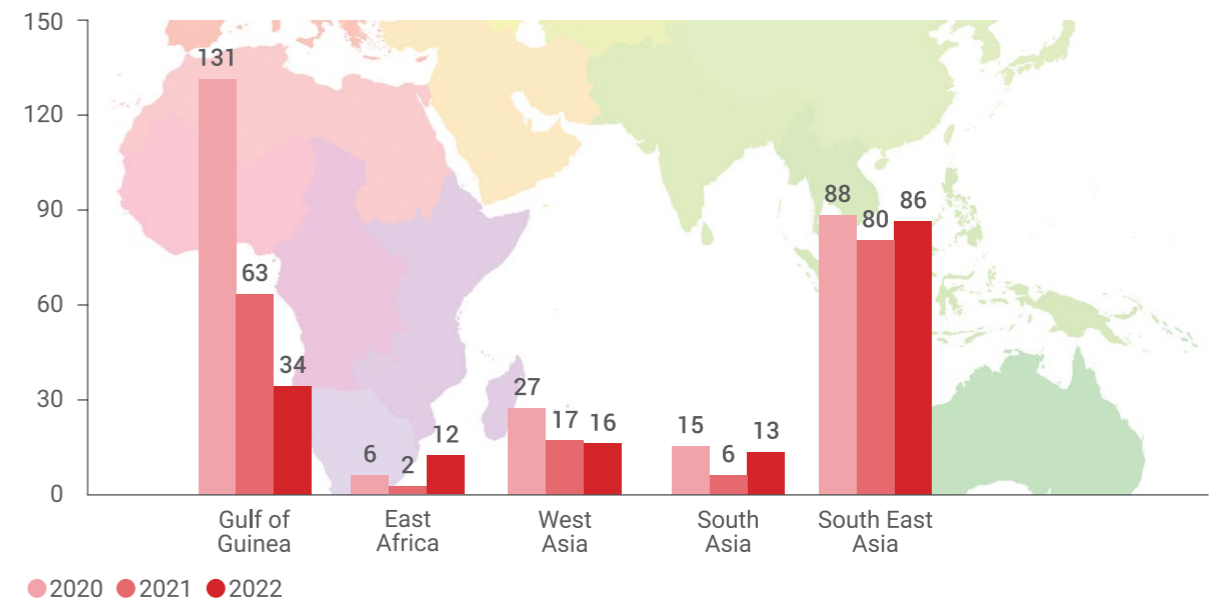
South East Asia continues to account for half (53% - 86 incidents) of the recorded incidents, slightly higher than in 2021 (80 incidents) and almost similar in 2020 (88 incidents). The Traffic separation scheme in the Singapore Straits has seen an increased number, albeit minor, incidents of petty thefts onboard bulk carriers and barges whilst being underway. The repeated incidents reported within a short period and in close proximity indicate the persistence of the perpetrators, who likely target multiple vessels until they are successful or until circumstances permit.

The Gulf of Guinea observed a significant decline in the number of piracy and armed robbery incidents in 2022 (34 incidents) as compared to 2021 (63 incidents) and 2020 (131 incidents). The significant improvement in the security situation is attributable to increased vigilance, enforcement activities, enhanced presence of naval forces and stronger political will to curtail such activities. However, a relatively high threat incidents such as hijacking and kidnapping have been recorded in this region.

West Asia, including the Gulf of Aden and the Red Sea, saw 16 incidents accounting for 10% of the recorded incidents. A similar number of incidents were also reported in 2021 whereas 2020 recorded a slightly higher number (27). The shipping industry's withdrawal of the High-Risk Area in the Western Indian Ocean off the Horn of Africa comes into effect from 01 January 2023 and reflects the suppression of piracy and armed robbery in the region.

South Asia recorded 13 incidents and East Africa recorded 12 incidents in 2022. Both regions have witnessed an increase in the number of incidents as compared to the last two years; with six incidents in South Asia and two incidents in East Africa being recorded in 2021 and 15 incidents in South Asia and six incidents in East Africa captured in 2020.

REGIONAL ANALYSIS



SOUTH EAST ASIA

The Centre monitored 86 actual and attempted incidents of piracy and armed robbery across various anchorages, ports and waters of South East Asia. Most of the incidents reported were cases of petty theft involving perpetrators who escaped immediately upon being sighted by the crew. The perpetrators involved in these incidents are opportunistic in nature and have no intention to harm the crew. Their primary aim is to steal the ship's stores, engine spares etc. and flee unnoticed. The perpetrators are mostly unarmed resulting in no reported injuries to the crew members. However, as the perpetrators are not arrested in most incidents, such trends are likely to continue. The majority of the incidents involved vessels underway (74%) and were reported during the period of darkness (83%).

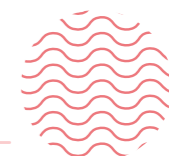
All incidents, except three, were reported less than 12 nm from the coast. A majority (55) of these incidents were reported onboard vessels underway in the Traffic Separation Scheme (TSS) of the Singapore Strait. Analysis of the incidents in South East Asia indicates that while many incidents are recorded close to the

coast, only a few incidents have taken place inside the ports signifying stringent security protocols at the ports.

Actual and attempted sea robberies continue to be the most common threat in this region, accounting for about 31% (27 out of 86 incidents) of the overall reported incidents. The incidents reported in this region were generally of low intensity and 65% (56 incidents out of 86 incidents) of the overall incidents did not involve the usage or sighting of weapons. Perpetrators were reported to be armed in about 35% (30 incidents out of 86 incidents) of the total incidents, with knives or similar weapons such as iron rods, machetes, etc.

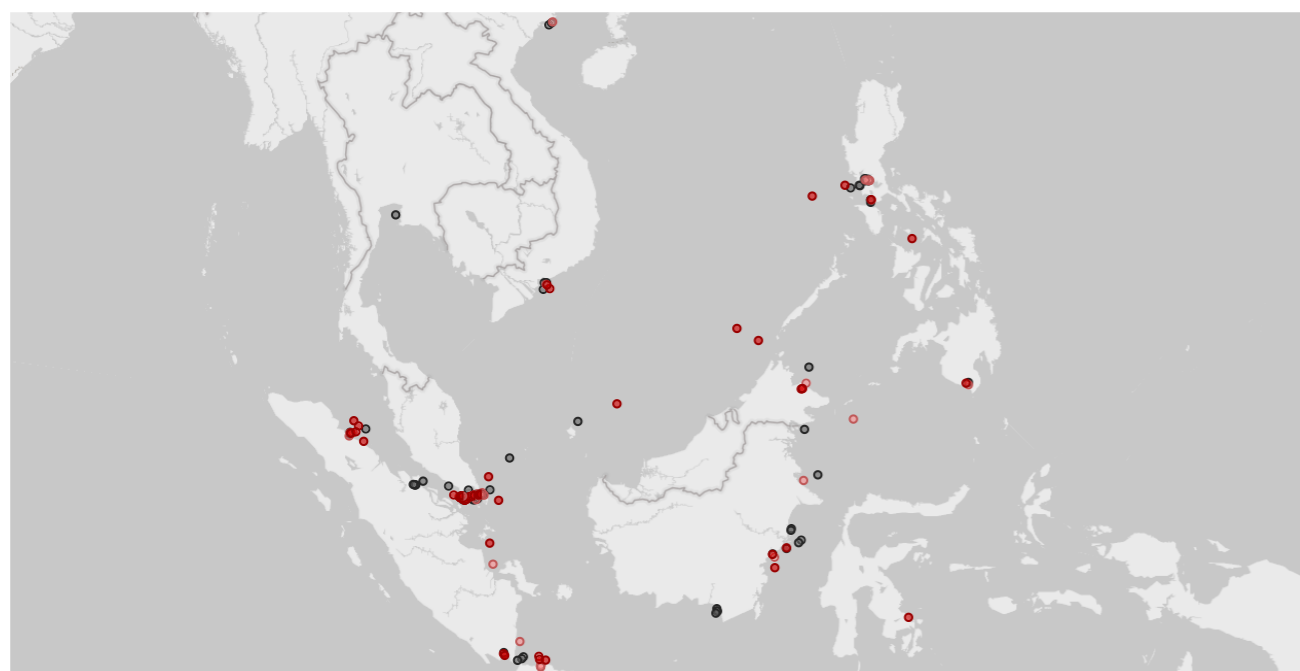
Guns were sighted in five incidents – two in the TSS in Singapore Strait (one pistol and one gun like weapon) and one incident each in the South China Sea (shots fired on a Vietnamese fishing vessel), Sulu Sea (armed perpetrators targeted a fishing vessel) and Indonesia (fake guns).

The apprehension of perpetrators by authorities of the coastal state in some of the incidents



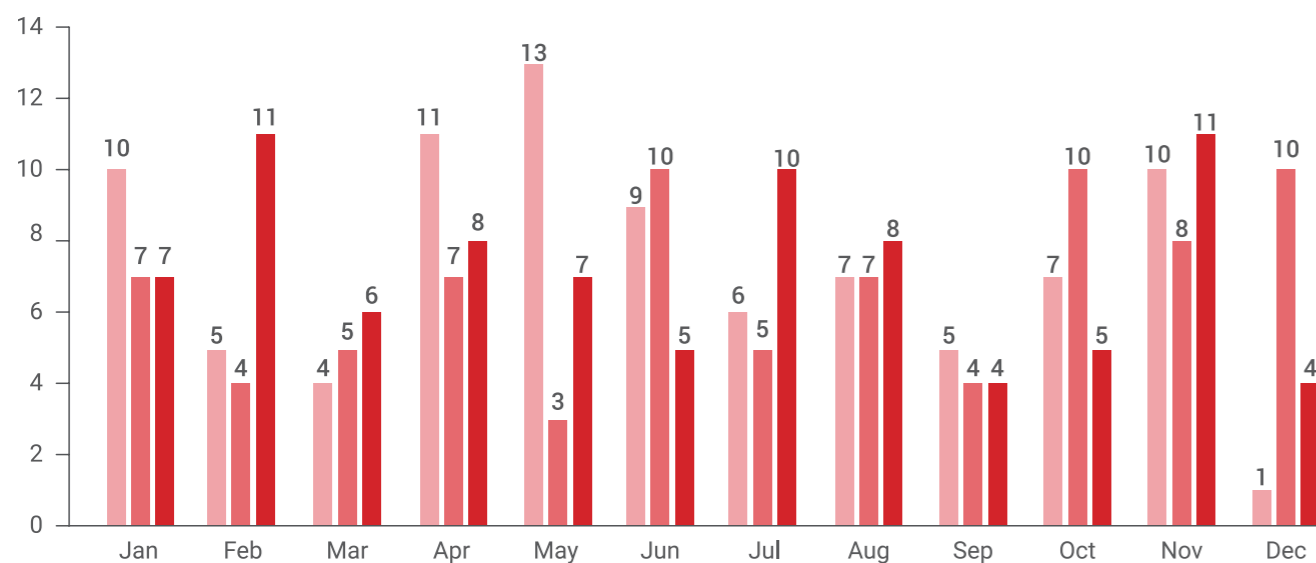
is a positive development and is facilitated by quick reporting of incidents by vessels at sea. Five apprehensions were recorded by the Centre in South East Asia. Indonesia authorities apprehended a total of 56 perpetrators in three incidents (two involving coal theft and the third, in which perpetrators targeted a fishing

vessel with fake guns). Malaysia authorities apprehended seven perpetrators who were stealing items from an unmanned oil platform. Vietnam authorities apprehended two perpetrators who were stealing scrap metal from a dumb-barge.



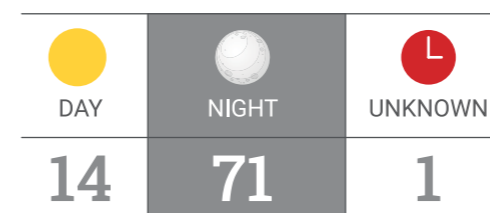
● 2020 ● 2021 ● 2022

Monthly Analysis of incidents

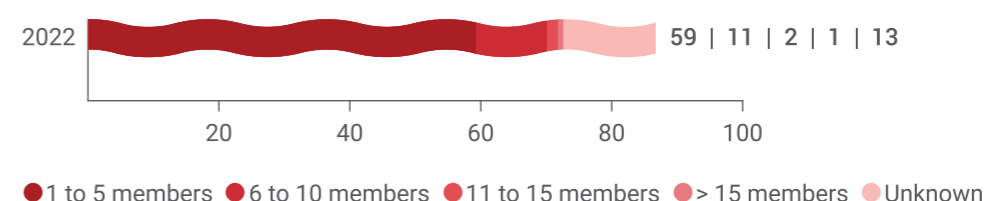


LEGEND:
● 2020 ● 2021 ● 2022

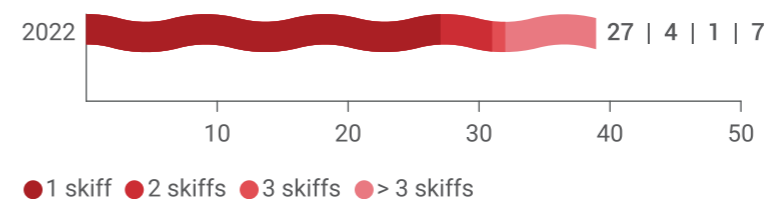
Timing of incidents



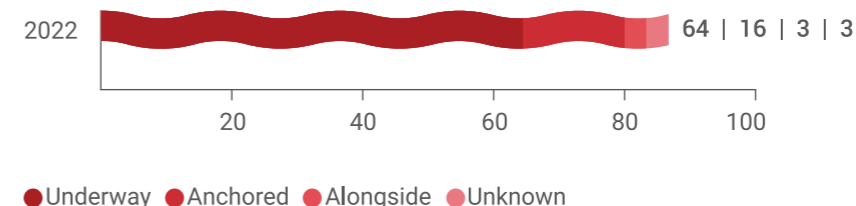
Analysis of perpetrators involved



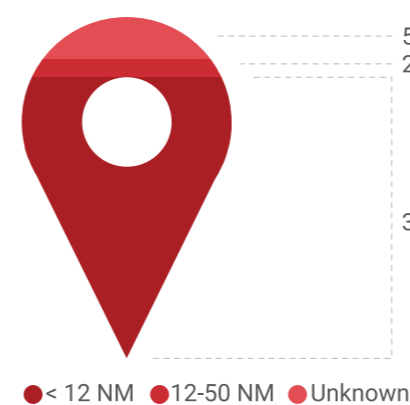
Analysis on skiffs used



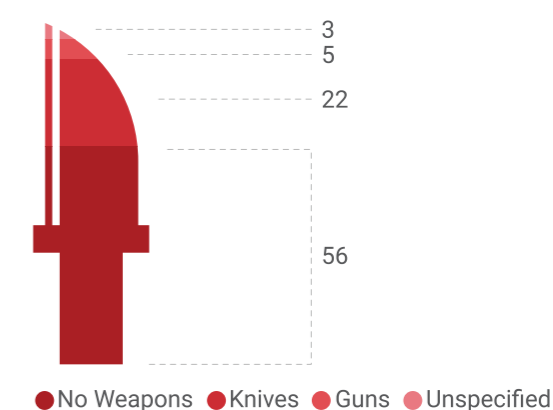
Status of vessels when targeted



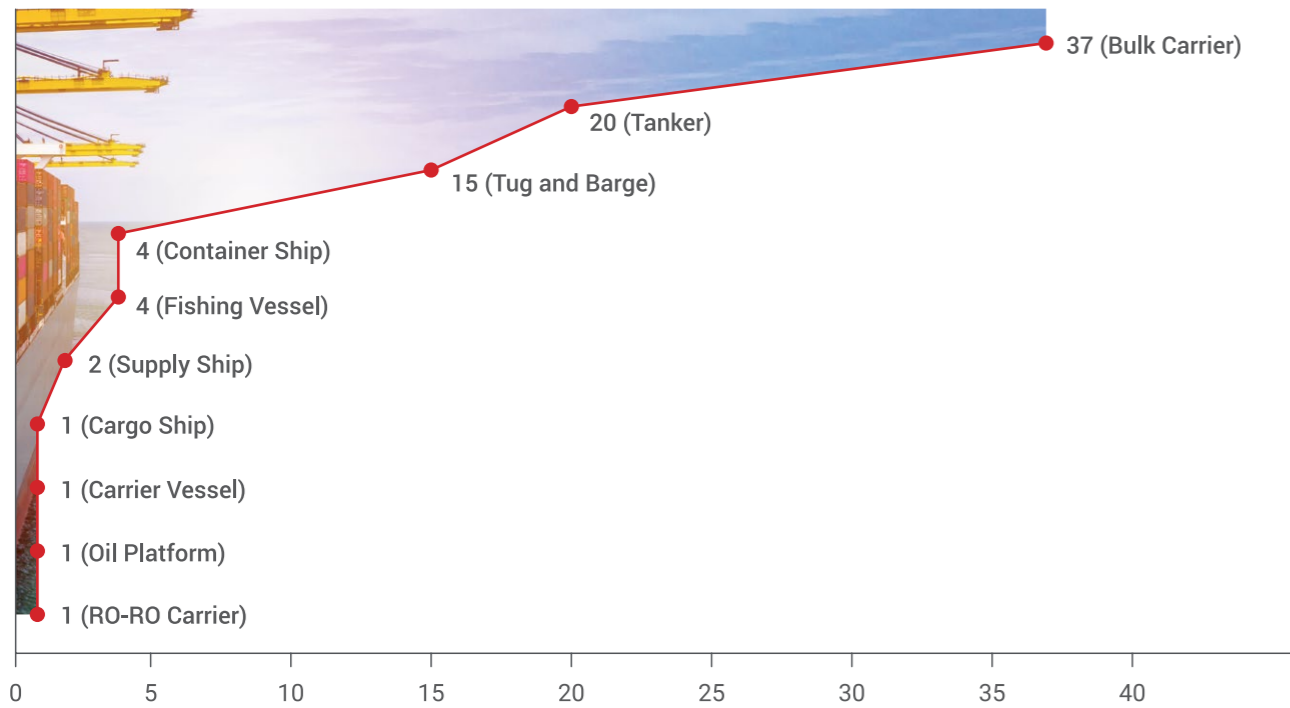
Distance from Coast



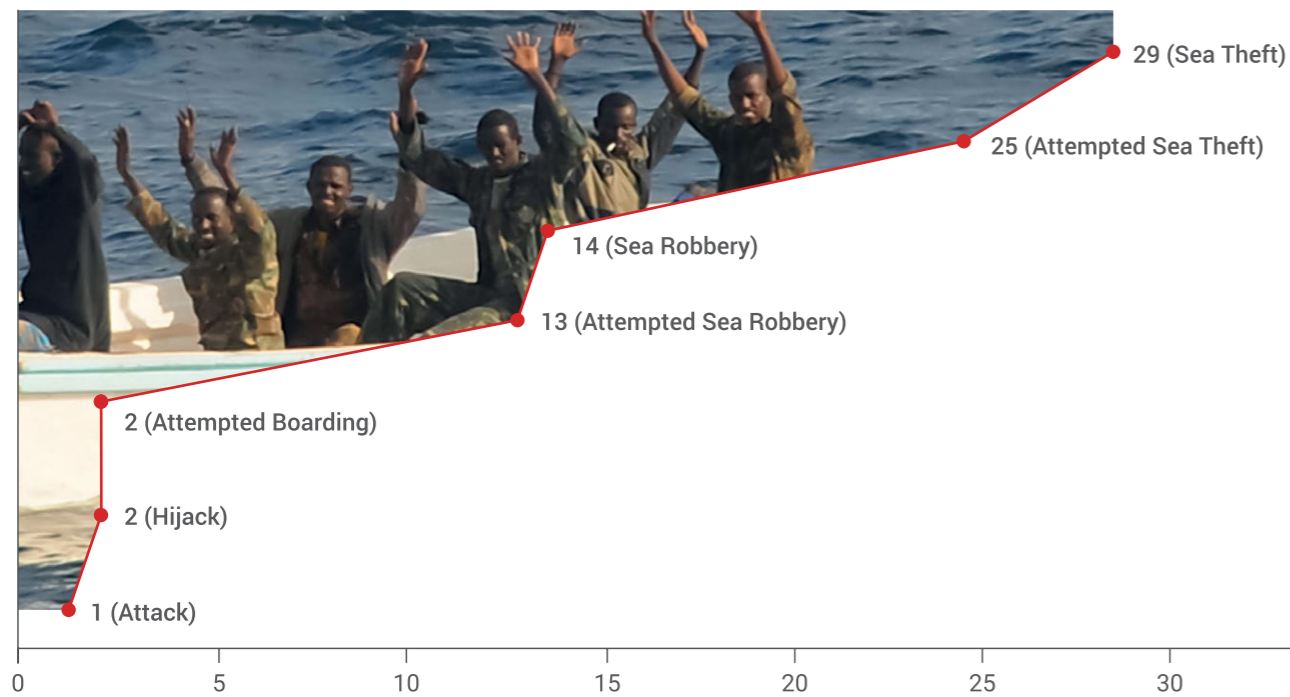
Types of weapons utilised



Type of vessels involved



Type of incidents



TSS in Singapore Strait - With 55 incidents, the Traffic Separation Scheme in the Singapore Strait sub-region accounted for the largest number of incidents recorded by the Centre in 2022. This was 64% of the total incidents recorded in South East Asia.

All incidents were reported on vessels underway and 85% of the incidents (47 out of 55) were recorded during the period of darkness. All incidents that were reported during the day involved tugs & barges, except for one incident in which a bulk carrier was targeted. This trend is likely due to the perpetrators' desire to target opportune vessels in the dense shipping lane at a time which is likely to complicate the efforts of law enforcement or military vessels and when the level of alertness of the crew may be low.

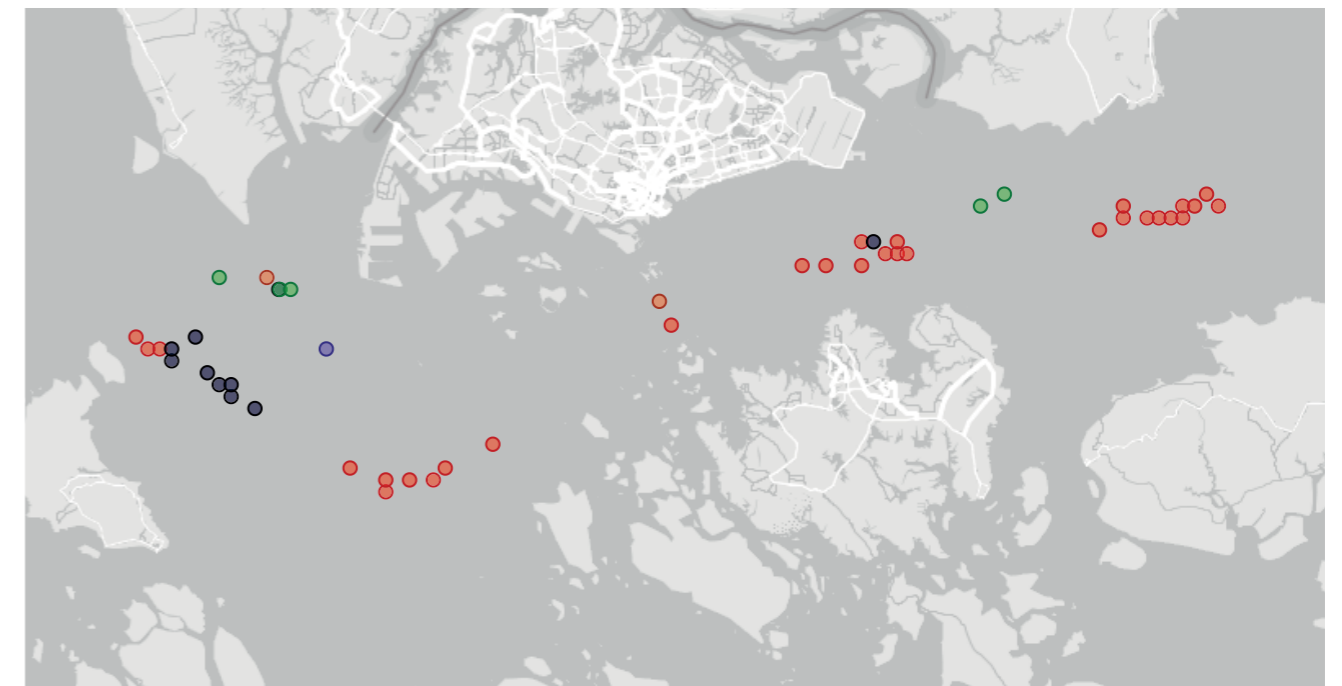
Majority of the incidents (35 incidents, 64%) were recorded in the Eastbound Lane of the TSS in Singapore Strait, a trend similar to the previous year. 11 incidents were recorded in the precautionary area, six incidents in the Westbound Lane, two incidents outside of the TSS and one incident in the separation zone. Bulk carriers accounted for the majority (53%)

of the vessels attacked, followed by tankers (22%) and tugs and barges (22%).

The incidents onboard vessels predominantly involved the theft of items such as engine spares and other movable items, such as breathing sets, ropes, etc. Scrap metal and other easily removable items were observed to have been stolen from tugs and barges.

All six incidents in the Westbound Lane of the TSS in Singapore Strait involved unarmed perpetrators targeting low-freeboard vessels proceeding at low speeds (barges being towed by tugs). All six of these incidents were reported during the period of light. This may be due to the relatively lesser time taken to board and steal items from barges being towed and the requirement of daylight to safely handle potential dangers such as scrap pieces with jagged edges. The limited crew available onboard such vessels and the prevailing traffic density in the region is likely to be limiting factors in the tug crew's detection of such actions.

Even though the waters are busy, it has been observed that perpetrators mostly operate at night and are likely to target more than one



● Eastbound Lane of TSS ● Outside of the TSS ● Precautionary Area of TSS
● Separation Zone of the TSS ● Westbound Lane of TSS

vessel until they are successful. The geography and traffic prevalent in the area further aid such perpetrators in escaping to safety.

Although uncommon, one incident each of carriage of a pistol and gun like object by perpetrators was recorded in the region.

WEST ASIA

Piracy and Armed Robbery in West Asia continues to be suppressed. The industry's withdrawal of the High-Risk Area off the Horn of Africa came into effect from 01 January 2023. It is assessed that while pirate groups still possess the capability to target vessels, they are likely to have shifted to alternate criminal activities such as smuggling.

The Centre monitored 16 incidents of piracy and armed robbery as compared to 17 incidents in 2021 and 27 incidents in 2020 in this region. Incidents were predominantly reported on vessels underway during the day. A majority (14) of these were incidents of suspicious approach. Tankers (38% - Chemical Tanker, LNG Tanker, Oil Tanker and Tanker) constituted most of the vessel types involved.

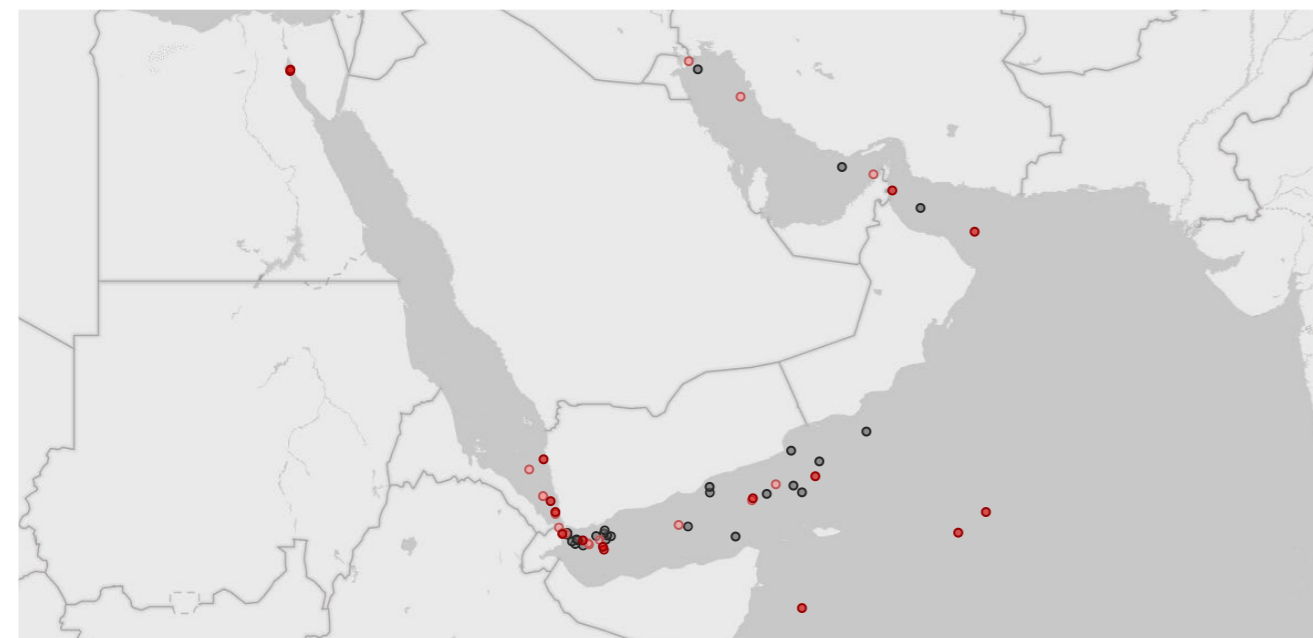
No incidents of hijacking, kidnapping and attacks were reported in West Asia in 2022. 88% of piracy and armed robbery incidents

Perpetrators are highly likely to be in possession of knives and have been observed to threaten/ physically restrain/ injure individual crew members on watch or security rounds. The Centre recommends that any altercation with perpetrators be avoided.

recorded in the region were only suspicious approaches.

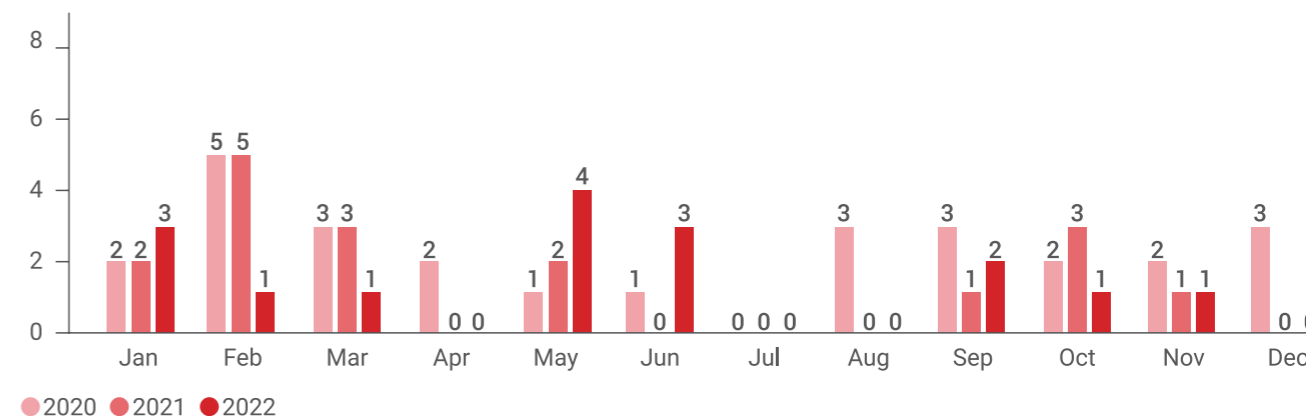
The incidents of suspicious approaches were recorded in the Gulf of Aden (five incidents), Red Sea (four incidents), Arabian Sea (three incidents) and Gulf of Oman (two incidents). The prevailing security situation in the region including the pattern of life, the presence of irregular militia and elevated levels of security measures by transiting merchant shipping are likely to be the contributing factors to this trend.

In four of the recorded incidents, all classified as suspicious approach, victim vessels reported being approached by more than three skiffs. It is pertinent to note that the pattern of life in the region includes a significant number of small/ medium-sized fishing vessels operating as a group. Such fishermen, on occasions, may approach vessels transiting, especially to safeguard their nets.

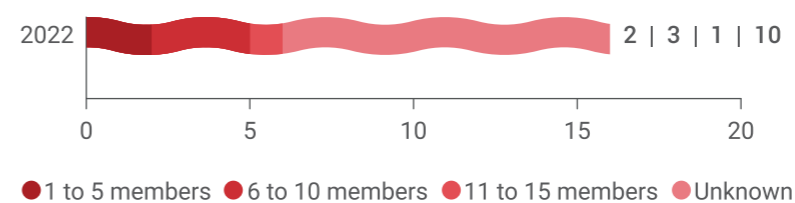


● 2020 ● 2021 ● 2022

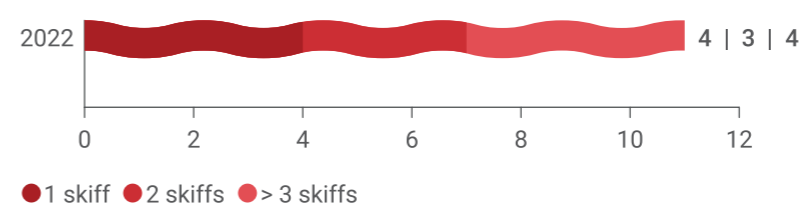
Monthly analysis of incidents



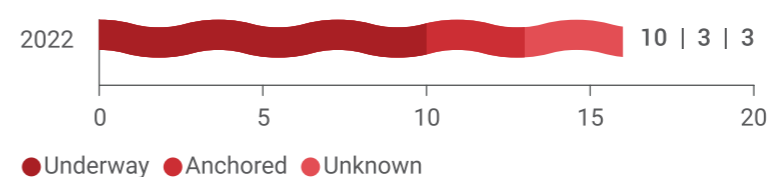
Number of perpetrators involved



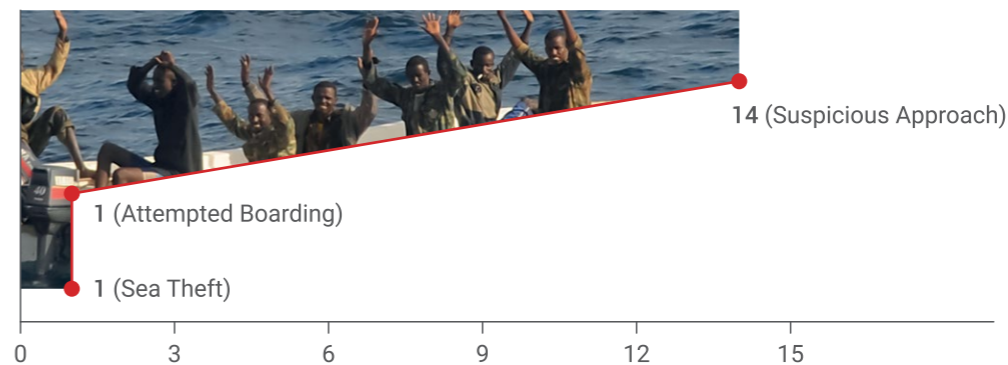
Number of skiffs used



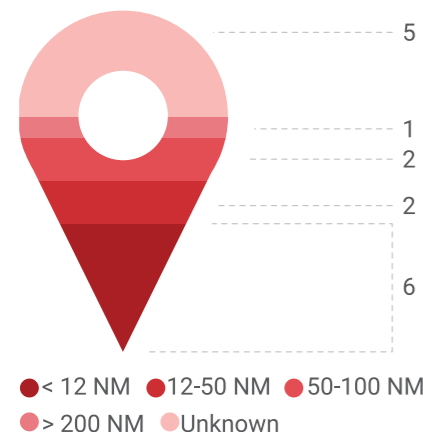
Status of vessels when targeted



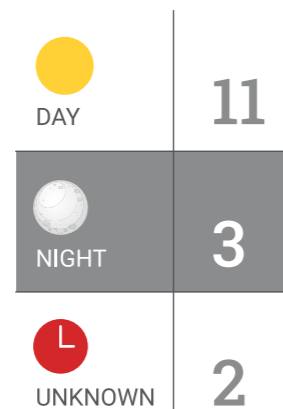
Type of piracy incidents



Distance from Coast



Timing of incidents



SOUTH ASIA

The Centre monitored 13 incidents of piracy and armed robbery in 2022 as compared to six incidents in 2021 and 15 incidents in 2020 in the South Asia region. Most of the incidents in the region were sea thefts, sea robbery or attempts, primarily at/ near ports and anchorages.

Seven incidents were recorded off Bangladesh and six incidents were recorded off India. Perpetrators targeted vessels which were either underway or at anchor in 10 out of the 12 incidents. Only two vessels were targeted while berthed alongside (one each in Bangladesh and India). This may be attributable to the relatively higher degree of security in ports. Further, as this region is home to three of the biggest ship breaking yards in the world, perpetrators sometimes board vessels on their final journey to steal ship's stores.

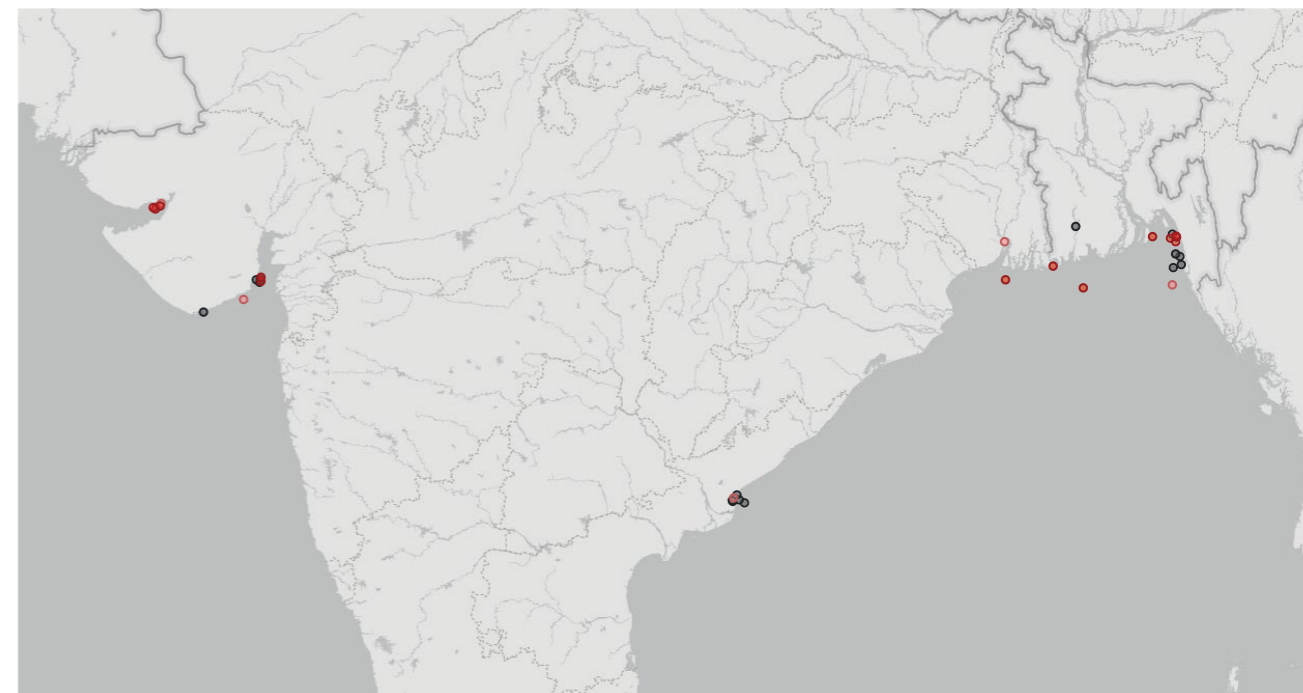
The Centre recorded five incidents of sea theft and one incident each of sea robbery and attempted sea robbery at various ports/ anchorages in Bangladesh. The remaining six incidents were of sea robbery, sea theft, attempted sea theft and attempted boarding at/ off various ports in India.

Notable incidents in the region in 2022 are listed below:

- » Bangladesh authorities apprehended six perpetrators attempting to board the

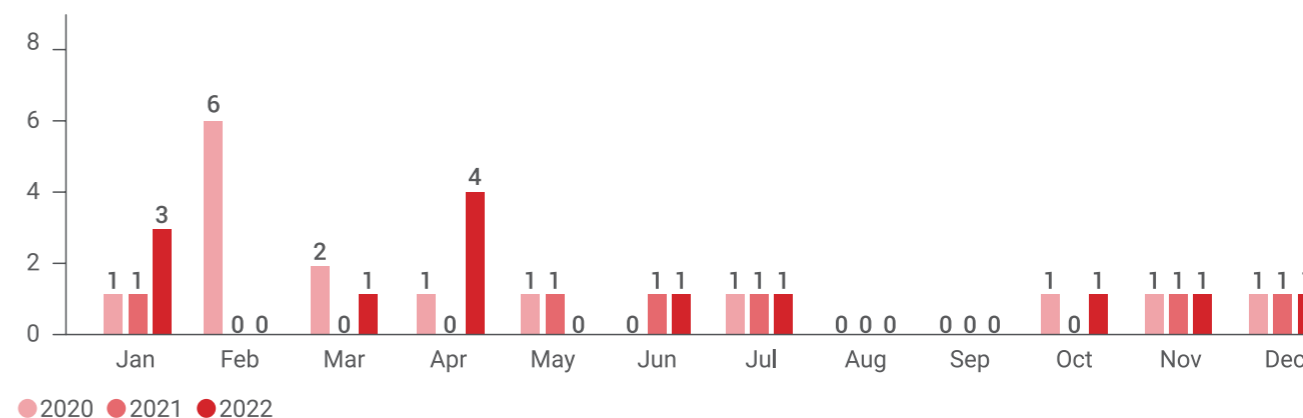
Malta flagged Heavy Load Carrier *BLUE MARLIN* while underway on 11 July 22. A timely report from the vessel to the nearest coastal state and a proactive response by law enforcement agencies facilitated this.

- » An incident of sea robbery was reported on 22 Nov 22, involving bulk carrier *AS ELENIA* at Mongla outer anchorage, Bangladesh. Reportedly, 18 perpetrators armed with long knives arrived on two long wooden boats and boarded the vessel at anchor, using ropes. They took the deck watchman on routine rounds as a hostage, threatened him with a knife on his throat and tied him up. The perpetrators broke into the paint locker, the bosun and forecastle stores and stole the ship's properties and stores. Three robbers approached the accommodation area and using the deck watchman's UHF radio, contacted the Master and asked for a ransom. The Master offered a reduced amount which was rejected. The robbers told the Master that they would leave once they had taken the ship's stores and properties. Later, the deck watchman was released and was found to have sustained minor injuries because of the knife being pressed on his neck and the hands being tied. Bangladeshi authorities later recovered and returned the stolen items on 25 Nov 22. It was reported by ReCAAP that delay in reporting the incident to the coastal authorities resulted in delayed assistance.

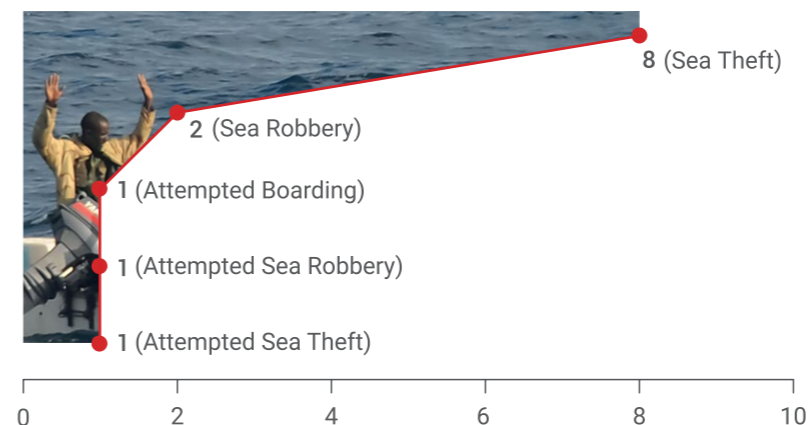


● 2020 ● 2021 ● 2022

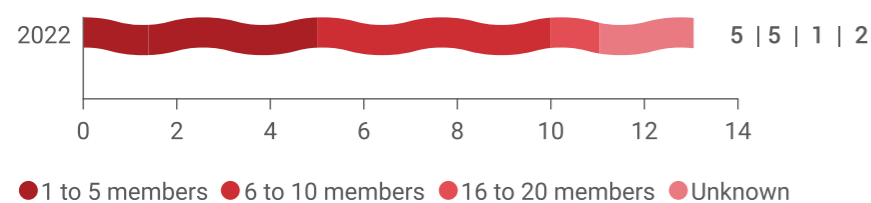
Monthly analysis of incidents



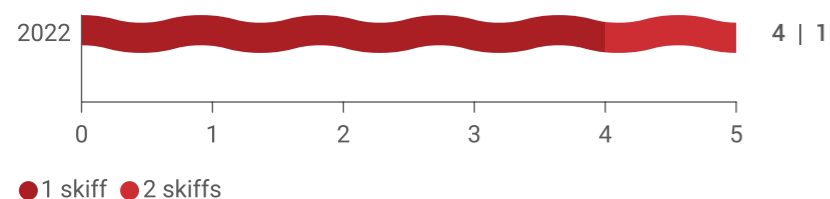
Type of piracy incidents



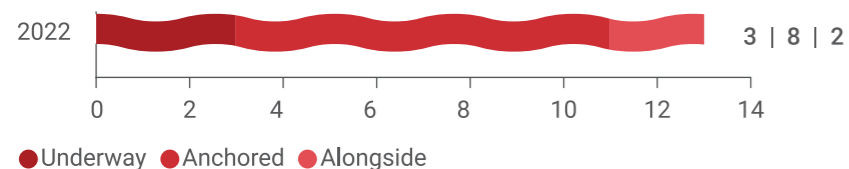
Number of perpetrators involved 



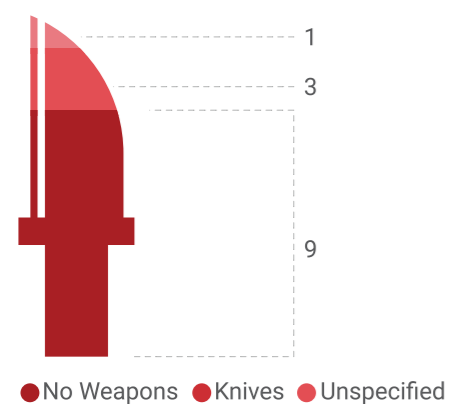
Number of skiffs used 



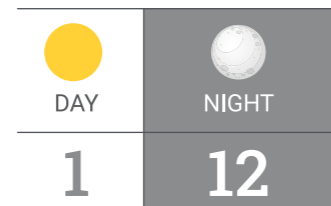
Status of vessels when targeted 



Types of weapons utilised



Timing of incidents



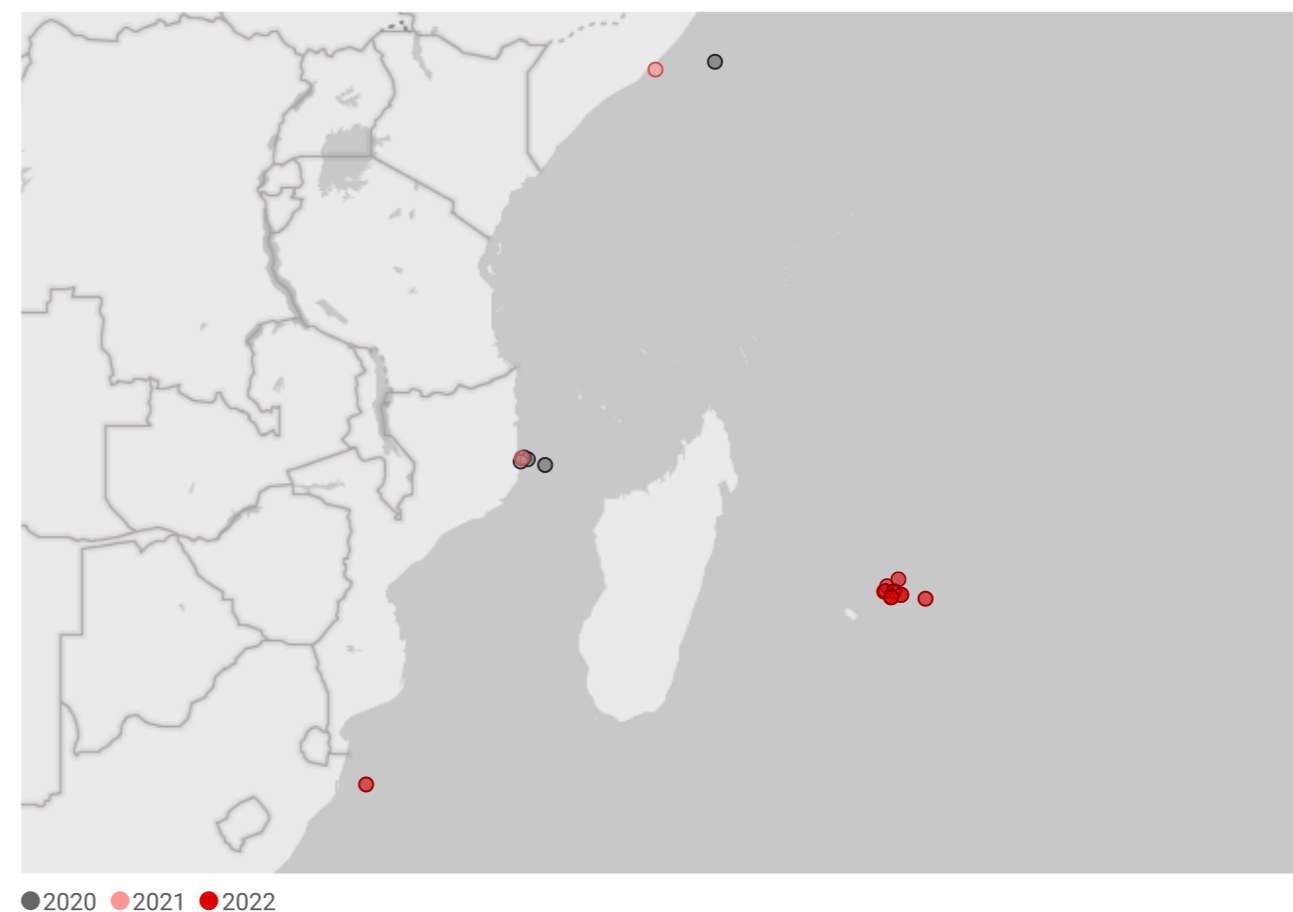
EAST AFRICA

The Centre recorded 12 incidents in the East Africa region in 2022, as compared to two incidents in 2021 and six incidents in 2020. 11 incidents of sea theft were reported off Mauritius and one off South Africa. Incidents off Mauritius were reported onboard pleasure crafts during dark hours. The perpetrators boarded the moored vessels and stole the ship's stores, engine spares, OBMs etc. The increased number of incidents recorded off Mauritius is attributable to the positioning of an ILO at the Centre which, enhanced information sharing and data collection.

The incidents recorded off Mauritius were reported onboard pleasure crafts and catamarans. The majority of the incidents were reported during the night time on crafts that were moored in lagoon, with no crew members onboard and perpetrators using this opportunity to steal the ship's stores, OBMs, batteries, accessories, harness cables and dinghies.

No incident of Hijack, Kidnap and attack was reported off Somalia. Piracy off the coast of Somalia is assessed to be suppressed but not eradicated as the actors are still likely to possess requisite capabilities, with the presence of multinational warships in the region deterring such activities. The industry's withdrawal of the High-Risk Area off the Horn of Africa came into effect from 01 January 2023.

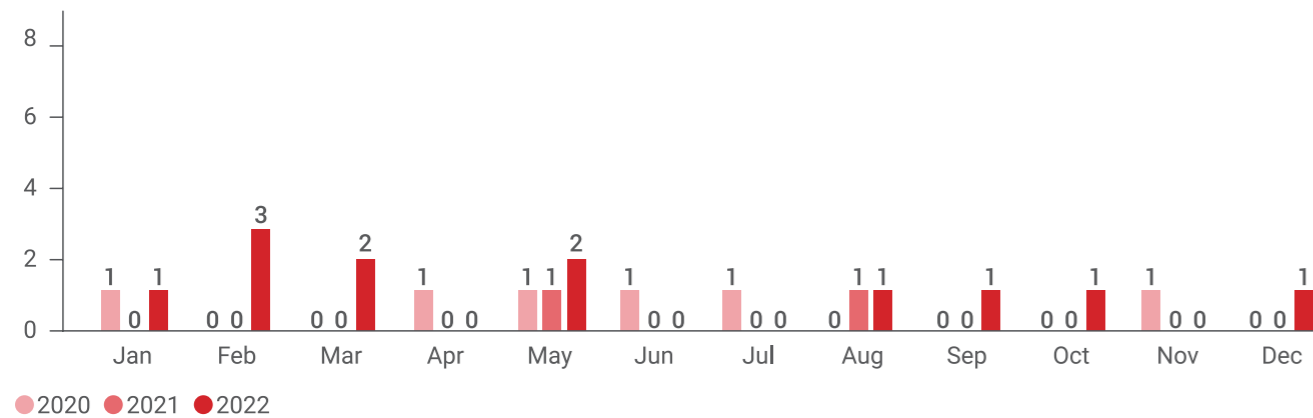
One incident of sea theft was reported off Durban Port, South Africa, on 02 Feb 22 on a Panama-flagged bulk carrier *ISABELLA M* where an unknown number of perpetrators boarded the vessel unnoticed whilst the vessel was berthed alongside. Subsequently, a search onboard reported that the perpetrators escaped with cash and the crew's personal belongings. Reportedly, an unknown number of perpetrators boarded the vessel unnoticed whilst the vessel was berthed alongside.



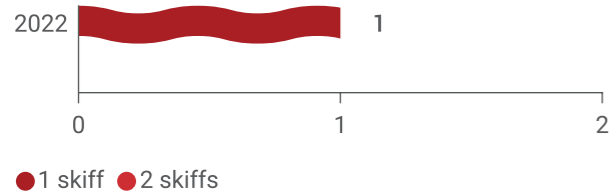
● 2020 ● 2021 ● 2022



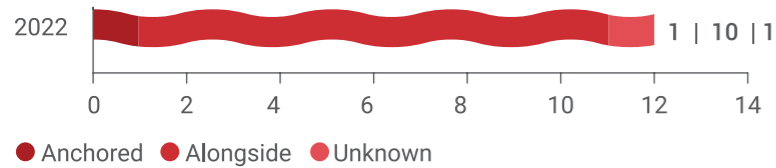
Monthly analysis of incidents



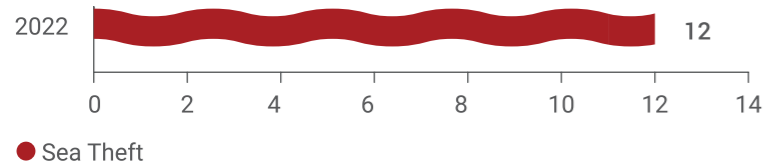
Number of skiffs used



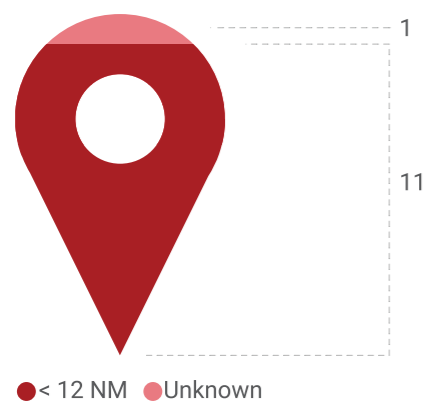
Status of vessels when targeted



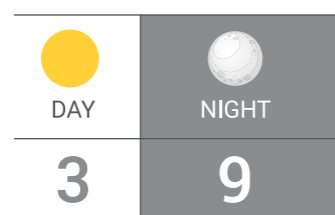
Type of Piracy Incidents



Distance from Coast



Timing of incidents



GULF OF GUINEA (GOG)

The Gulf of Guinea has seen a significant improvement in the security situation due to enhanced regional collaboration, information sharing, proactive company and industry measures and actions by the crew. The increased number of warship deployments is likely to have further deterred such endeavours. The Indian Navy's maiden anti-piracy deployment in the region was aimed to further collaboration with partners and countries in the region.

The Centre monitored 34 actual and attempted incidents of piracy and armed robbery as compared to 63 incidents in 2021 and 131 incidents in 2020 across various anchorages, ports and waters in the Gulf of Guinea. Most of the incidents involved anchored vessels (47%) and were reported during darkness (85%). Bulk carriers and passenger vessels (18%), tankers (15%) and supply ships (15%) constituted the remaining vessels targeted. It has been observed that a sizeable portion of incidents involving bulk carriers, passenger vessels and supply ships are aimed at theft/ robbery, except for one incident of hijack and kidnapping. No incident of hijack, kidnap and attack involving fishing vessels to secure a mothership or to kidnap crew members were recorded.

In 12% of the reported incidents, the perpetrators failed to board the vessels. Nearly 50% of the failed attempts were suspicious approaches reported by vessels. In the rest of the failed incidents, while the perpetrators managed to make contact with the vessel, they could not board the vessel. The majority of these incidents were thwarted due to the timely sighting of speed boats/ skiffs and proactive measures by the crew.

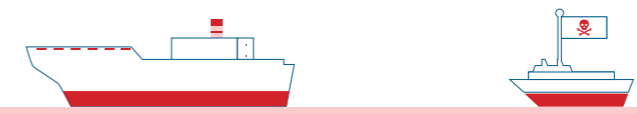
62% of the reported incidents involved robbery and theft and perpetrators were successful in stealing in more than half of the total incidents.

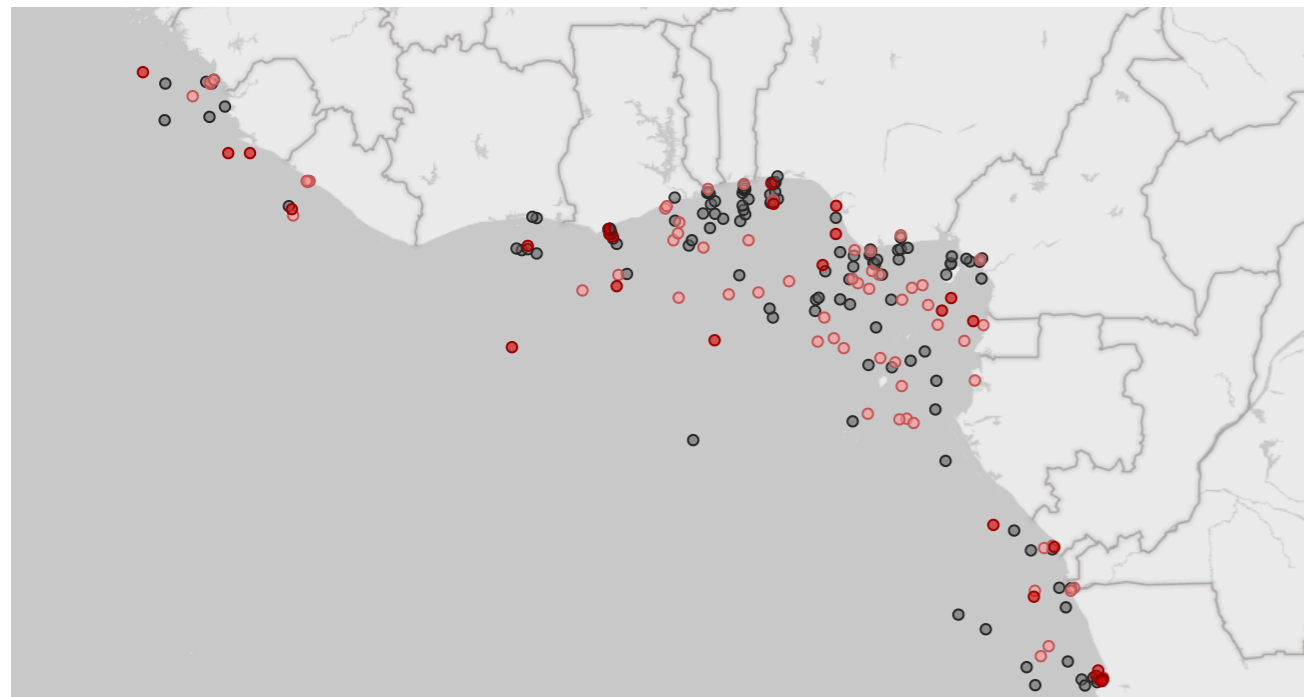
About half of the overall incidents (62%) in the region were reported at distances less than 12 nm from the nearest coast, which highlighted the requirement for enhanced security measures and operations close to the coast. 71% of these incidents were monitored onboard stationary vessels at anchorage. Three incidents (9%) beyond 200 nm from the coast, highlighted the need for vigilance at greater ranges, as well.

The perpetrators were armed in nearly 38% of the overall incidents. Unlike the other four regions, the Gulf of Guinea witnessed the highest percentage of incidents which involved the sighting of weapons. 38% of the armed incidents involved the usage/ carriage of guns by the perpetrators. In addition to the carriage of weapons, the issue of perpetrators firing at the vessels is considered a major challenge as it directly affects the safety of seafarers.

Four incidents of the hijacking were recorded in the Gulf of Guinea region in the year 2022. One of these incidents commenced as a hijack scenario and ended with the crew being kidnapped (two crew members). Both kidnapped crew members were released after 35 days in captivity. No other incident of kidnapping of crew members has been recorded, which is a steep decline as compared to 10 incidents in 2021 (78 crew members) and 23 incidents in 2020 (140 crew members). Greater details are contained in the Hijacking and Kidnapping section above.

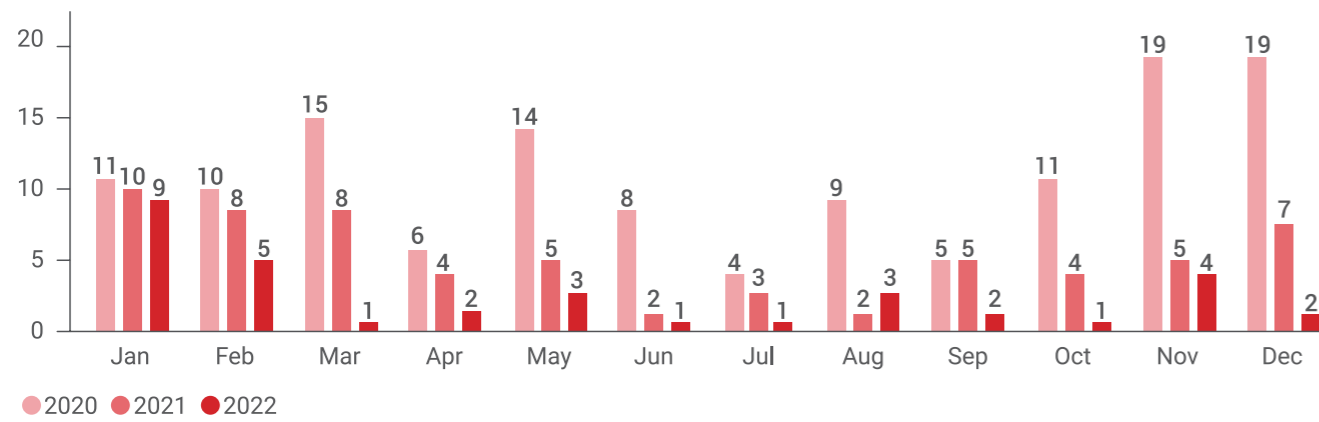
Whilst the reduction in the number of incidents and a drastic decrease in the number of hijackings/ crew kidnappings is a welcome step, vessels are advised to continue following laid down security measures as pirate action groups are assessed to be active in the region.





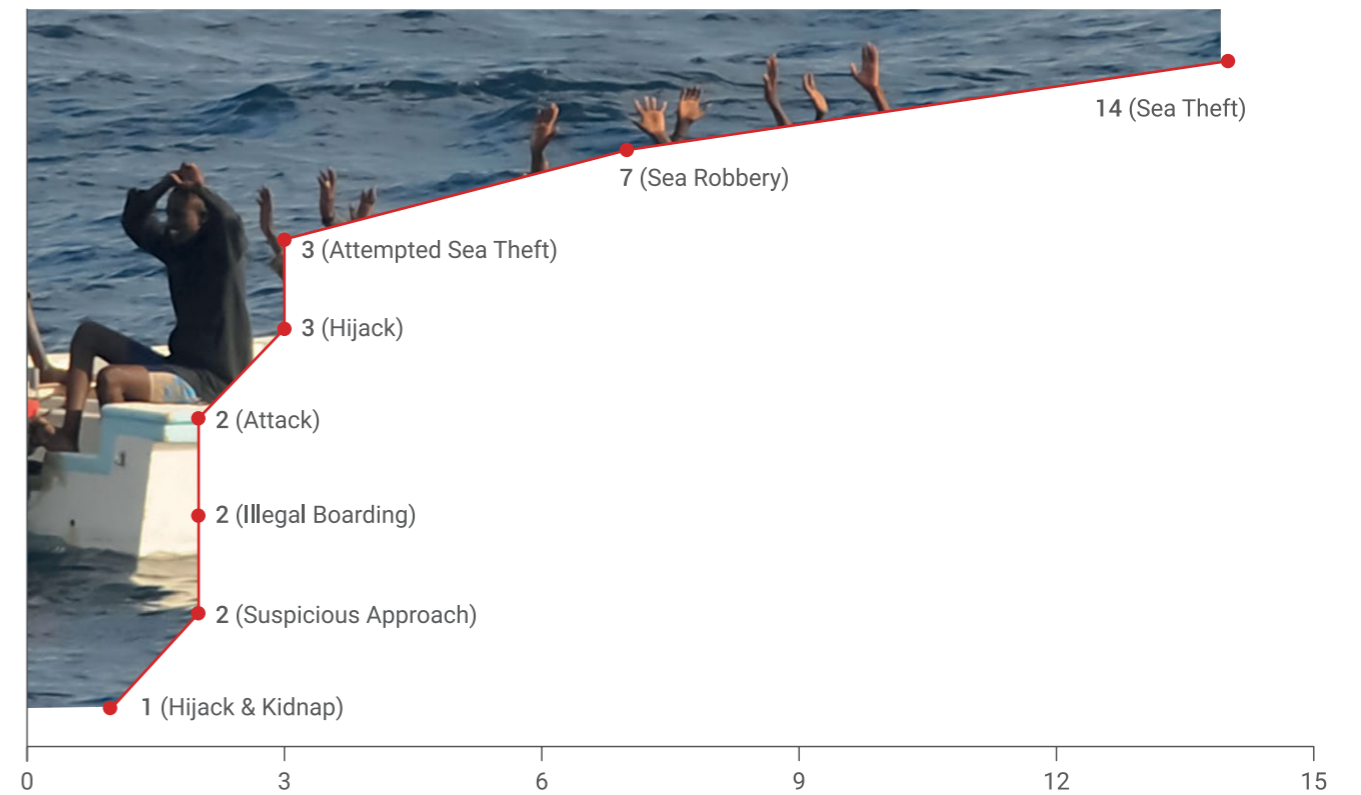
● 2020 ● 2021 ● 2022

Monthly analysis of incidents

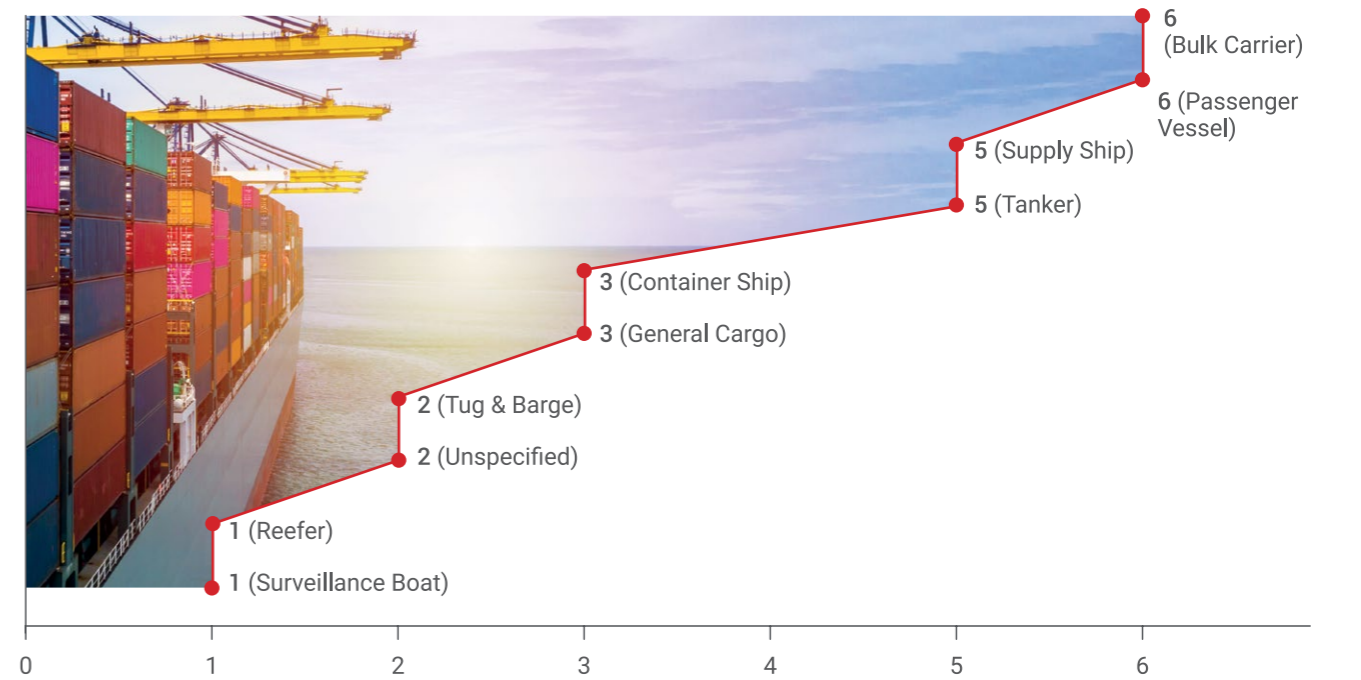


● 2020 ● 2021 ● 2022

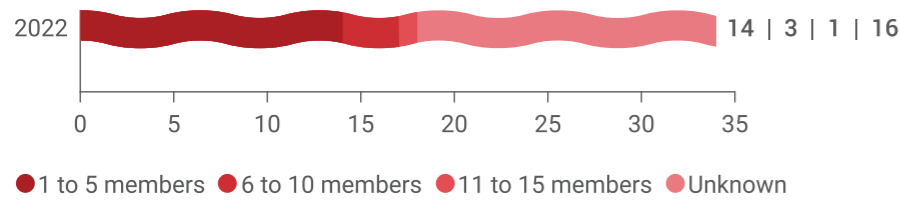
Type of piracy incidents



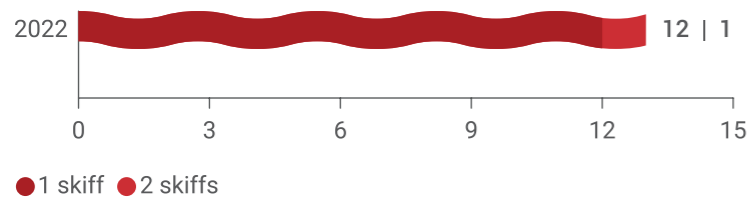
Type of vessels used



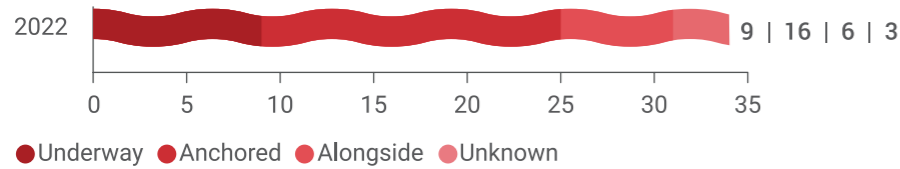
Number of perpetrators involved



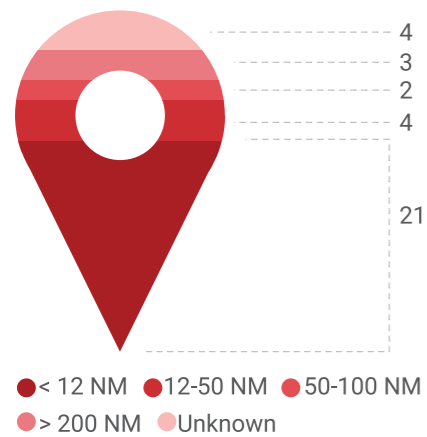
Number of skiffs used



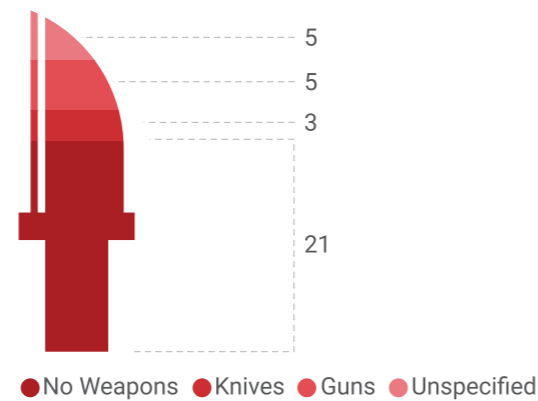
Status of vessels when targeted



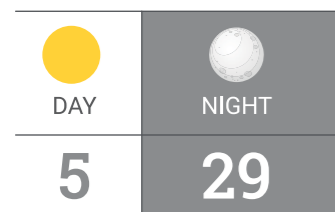
Distance from Coast



Types of weapons utilised



Timing of incidents



IFC-IOR RECOMMENDATIONS

- » Vessels are strongly recommended to follow respective flag state, IMO and coastal state guidance.
- » Measures for hardening vessels, including those contained in BMP5 or BMP West Africa, are recommended to be followed. Company Security Officers/ Masters are encouraged to keep abreast of the latest developments in the transit region.
- » Recording, alerting and emergency communication equipment must be kept operational at all times, while at sea. Photographic/ video evidence is encouraged as it would assist appropriate investigative agencies.
- » As perpetrators have been observed to use the vessel's tools for breaking into citadels, a proper mechanism for the safe custody of heavy/ power tools onboard vessels is recommended.
- » Suspicious small crafts are to be reported to the nearest coastal state and flag state at the earliest.
- » Vessels are advised of the possibility of mis-identification of small/ fishing vessels, which sometimes operate as a cluster. Accordingly, adequate caution is to be exercised by vessels with Privately Contracted Armed Security Personnel (PCASP) embarked.
- » Proactive and timely reporting to relevant agencies as per established procedures is critical to ensure appropriate and timely assistance to vessels under attack.
- » When under attack, post raising necessary alerts, vessels are recommended to continue transmitting on Automatic Identification System (AIS) to enable responders to quickly locate the vessel and track its movements.
- » The Centre strongly advises seafarers to avoid confrontation with perpetrators, especially when armed. It is likely that the perpetrators may cause harm attempting to escape from the vessel or may turn violent upon being provoked.
- » As incidents in the Gulf of Guinea have been observed more than 250nm from the coast, relevant company security protocols may be implemented prior closing 300 nm from the coast.
- » Continued impetus is recommended on information sharing between coastal states and relevant agencies, especially in regions with more incidents.

CONTRABAND SMUGGLING



OVERVIEW

Contraband smuggling, especially narcotics has a cascading effect not only on the economy and security of a country but also severely affects the society, social well-being, employment and health of the citizens. The UNODC World Drug Report 2022 highlights that young people continue to use more drugs than adults and have higher levels of use than in past generations. Smuggling via the maritime domain exploits gaps in coastal border management and has been one of the biggest non-traditional threats to maritime security. Several regional law enforcement agencies have observed and highlighted a steep rise in contraband smuggling through sea routes in the past few years, particularly in the guise of legitimate cargo. The multiple seizures reported at sea and various ports ascertain that the contraband is smuggled via sea routes.

In 2022, the Centre recorded 811 instances of contraband smuggling in the maritime domain as compared to 722 instances in 2021. Contraband smuggling constituted 850 incidents, as some of the recorded instances had multiple categories of contraband being smuggled. The recorded incidents have been classified into nine categories of smuggling: Drugs, Domestic Products, Natural Resources, Fuel, Tobacco, Alcohol, Weapons, Wildlife and others. A slight increase was observed in contraband smuggling incidents in 2022 as compared to 2021. This increase in overall numbers is attributable to increased fuel and tobacco smuggling incidents. The incidents, except for drug smuggling, saw a 15% decrease.

Recorded incidents are based on media reports and government press statements, and therefore may not be fully representative of all incidents of interdiction. Currently, the Centre has limited capabilities to monitor all incidents reported solely in local vernacular media coverage. Due to the inherent nature and presence of law enforcement, most of the recorded seizures were reported at points of embarkation/ disembarkation/ transshipment or in close vicinity of land. The seizures which were reported well offshore were primarily related to drug smuggling.

Drug smuggling was the most frequently reported type of contraband incident in 2022, accounting for nearly 37% of the total incidents, a slight decrease as compared to 2021. The second most frequent was fuel smuggling at 16% followed by domestic products smuggling at 15% of incidents and tobacco smuggling at 13% of incidents. A similar trend was also observed in 2021. A slight increase in fuel smuggling may be attributable to enhanced enforcement activities amid uncertain fuel prices.

The Centre observed a slight increase in the monthly average of seizures, with 68 seizures in 2022 as compared to 60 seizures in 2021. In some instances, a single seizure involved incidents of two or more categories of items being smuggled. Oct 22 saw a spike in the number of incidents recorded, driven by an increase in the number of drug smuggling incidents.



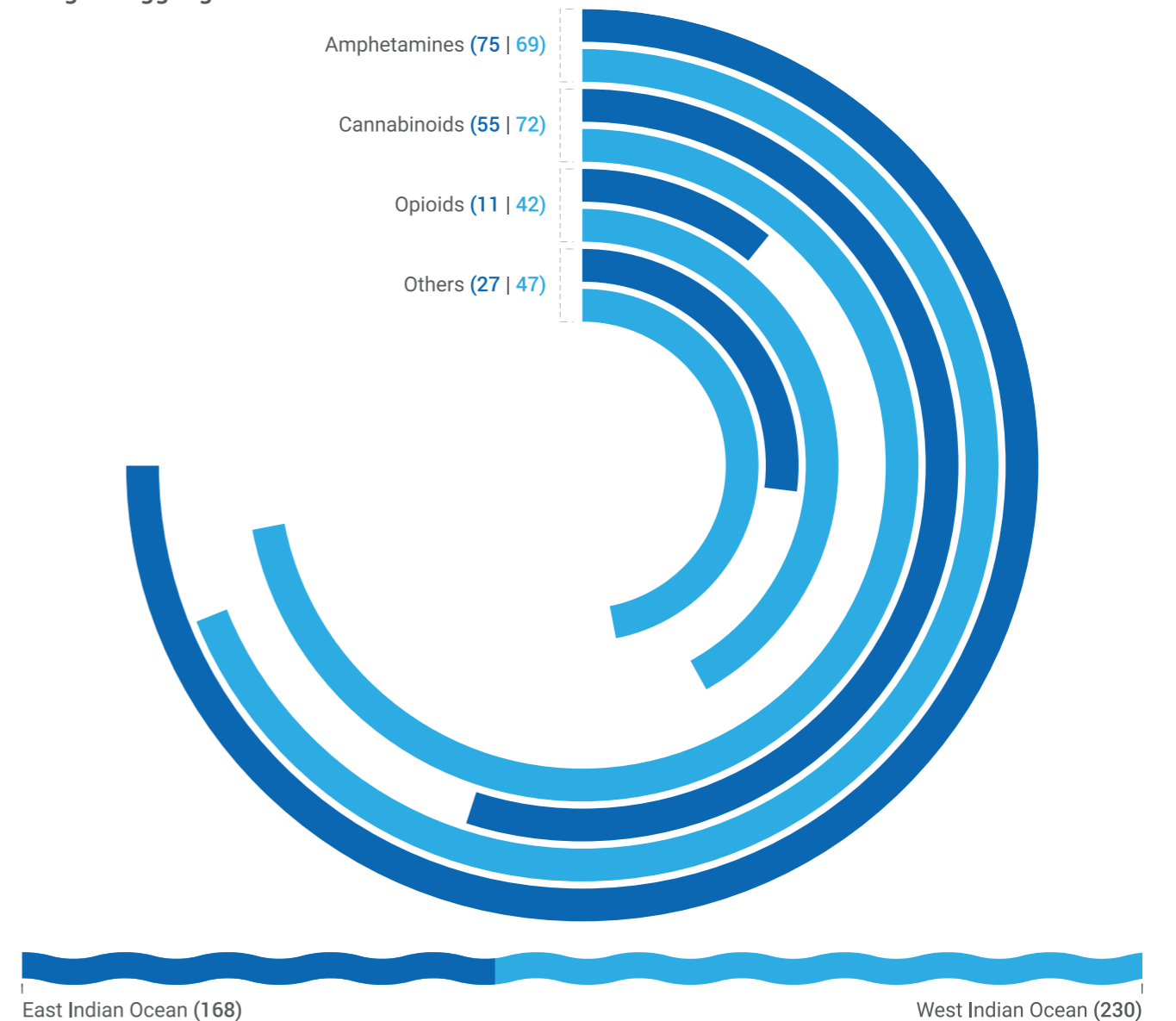
DRUG SMUGGLING

318 incidents of drug seizures were recorded by the Centre in the wider IOR in 2022 as compared to 376 incidents in 2021. As some of the recorded incidents involved multiple types of drugs being smuggled and taken individually, there were 398 seizures in 2022, compared to 457 in 2021. The Centre recorded the seizure of over 191 tons of various drugs, which were estimated to be worth over 3.2 billion USD. The decrease in the number of drug seizures from the last year may be attributable to strict law enforcement by regional authorities, enhanced screening/ risk profiling at ports, efforts of

multinational forces (especially in the Western Indian Ocean) and international collaboration across IOR and adjoining seas.

A monthly average of 33 drug seizures in the maritime domain was observed in the wider IOR in 2022. October 22 observed a spike in the number of recorded seizures. This trend may partly be explained by drug smugglers utilising the opportunity provided by improved weather and better sea conditions in northern IOR post the drawdown of the monsoon season, which is usually associated with rough seas.

Drug Smuggling incidents- 2022



Major drug seizures in the IOR centred mainly around large shipments of Amphetamine Type Stimulants (ATS) such as methamphetamine, cannabinoids and opioids heroin. The monitored seizures follow a smuggling lifecycle highlighting regional manufacturing hubs and seaborne transportation/ smuggling routes.

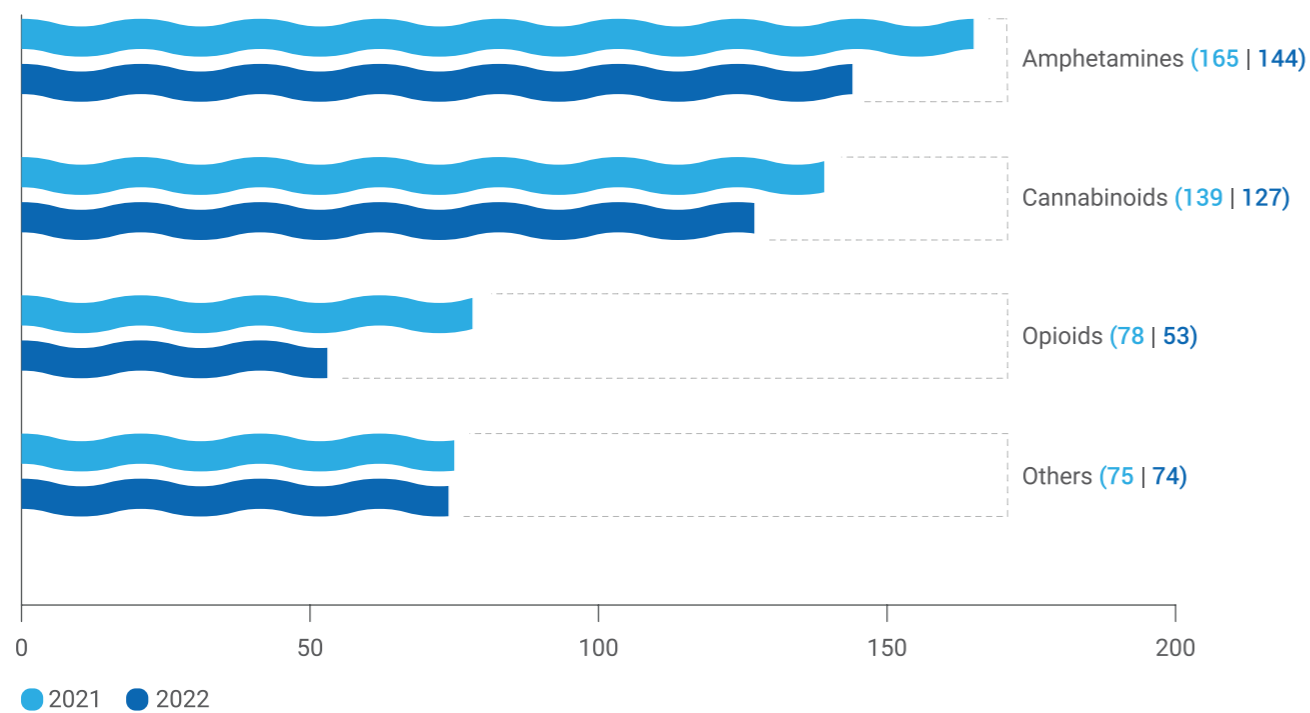
The phenomenon of narco-terrorism, where proceeds of drug/ narcotics smuggling are utilised to fund terrorism, armed groups and political violence, is particularly worrying.

Whilst this phenomenon is more acute in the Western Indian Ocean, some areas in the Eastern Indian Ocean do have insurgents/ rebels who finance their activities through narcotics production/ distribution.

Further, it is likely that drug smuggling networks are also exploited for the smuggling of weapons. In 2022, five instances were recorded by the Centre in which both drugs and weapons were seized from perpetrators. Two of these seizures were made by Bangladesh authorities and one each was carried out by India, Iran and Malaysia authorities. The relatively easy availability of weapons in some of the drug production regions in IOR raises the possibility of such attempts in the future.

However, the relatively lower number of incidents in which both drugs and weapons are seized may be due to the modus operandi of smugglers, who are likely to ditch weapons as soon as they are approached by authorities.

Seizure classes distribution 2021 vs. 2022



REGIONAL ANALYSIS

The areas referred to as Golden Triangle and Golden Crescent are widely reported to be the two main drug manufacturing and distribution hubs in the Indian Ocean. It is assessed that production/ processing facilities are active in the so called Golden Crescent region. The political instability and economic challenges observed in countries of the region are likely to further exacerbate the trend of narcotics originating from the Makran coast. Large scale drug seizures in these areas have been recorded both at sea and in the ports. Interdictions by warships have also been reported on the high seas, especially in the northern Arabian Sea. Most of these interdictions by international forces involved stateless dhows/ vessels, especially in the Gulf of Oman.

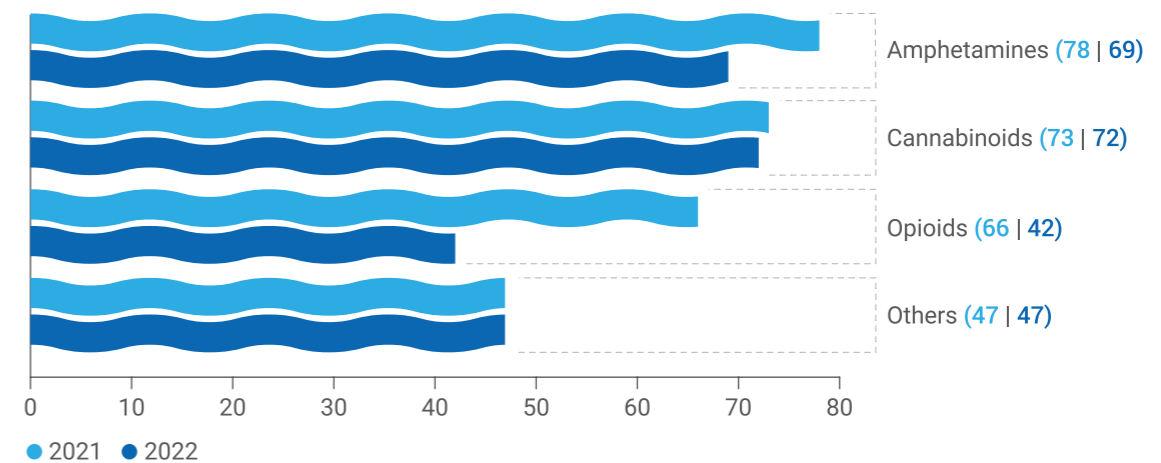
WESTERN INDIAN OCEAN

The trend of increased seizures of methamphetamines has continued in the Indian Ocean, especially in the Western Indian Ocean, which may be attributable to the growing demand for drugs and geopolitical complexities Amphetamine Type Substances (30%), Cannabinoids (31%) and Opioids (18%) constituted the majority of drugs seized in the region. In addition to the traditionally observed heroin and cannabis smuggling, seizures of

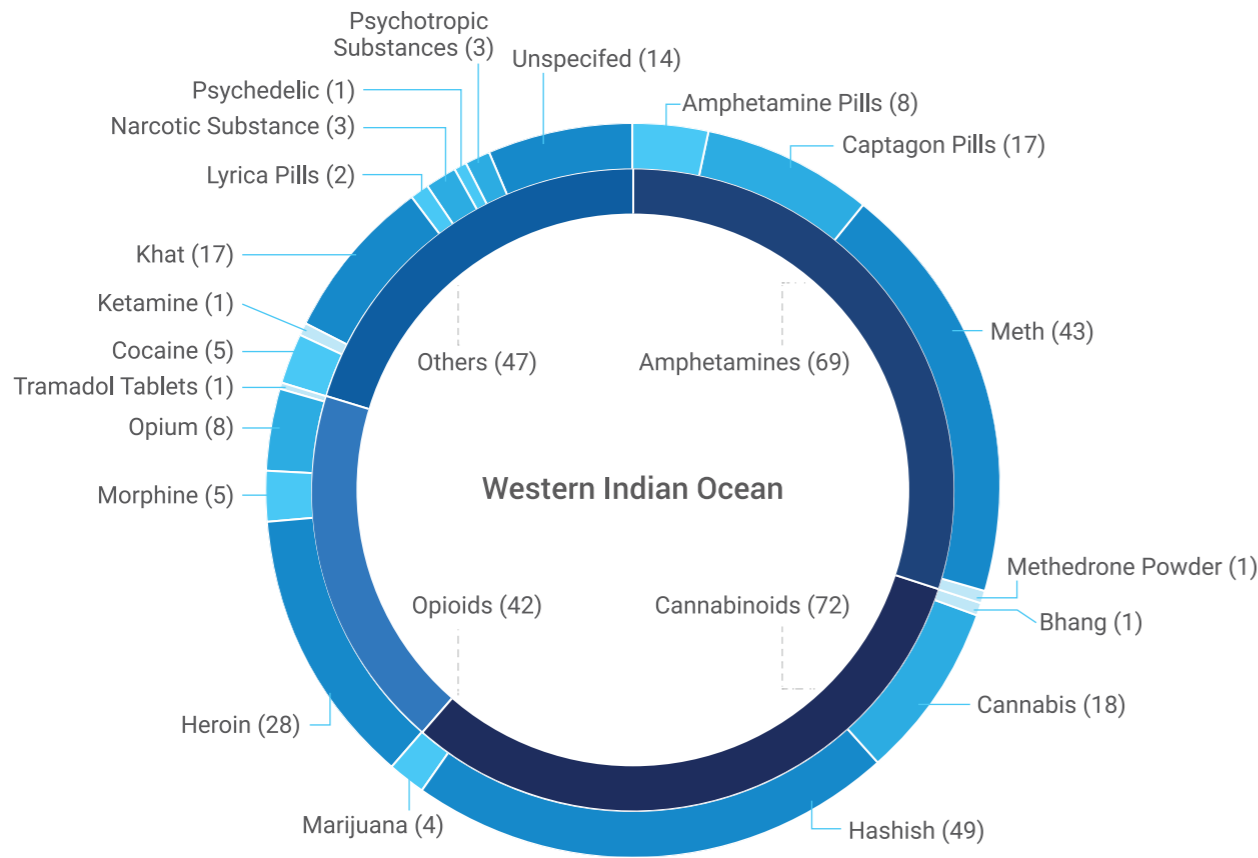
methamphetamine (30%) and other drugs (20%) comprising cocaine, khat, ketamine, etc. were monitored. The seizures of Captagon pills (a synthetic alternative to amphetamine) were predominantly recorded in West Asia, especially Saudi Arabia (11 out of 17 incidents). This is assessed to be caused by factors such as proximity to production centres in West Asia, higher demand, economic and political instability in some countries in the Western Indian Ocean and the higher price that can be fetched in the region. The transshipment of drugs using dhows/ small boats were observed in the Western Indian Ocean region. However, what is more, concerning is the use of containers onboard legitimate ships for transporting drugs, thereby imperilling/ increasing cost for legitimate cargo originating from ports frequently used by traffickers. Approximately, 122 tonnes with a value of 2 billion USD of narcotics were seized by the regional and multinational law enforcement agencies in the Western Indian Ocean region.

In April 2022, Taliban authorities in Afghanistan were reported to have banned all cultivation of opium poppy and all narcotics under strict new laws.

Seizure classes distribution 2021 vs. 2022



Drug Seizure Incidents



Some of the key findings of the UNODC Research Brief of November 2022, titled Opium cultivation in Afghanistan: Latest findings and emerging threats, are reproduced below: -

- » Seizures of opiates around Afghanistan indicate that the trafficking of Afghan opium and heroin has not stopped. Afghanistan supplies 80% of global opiate demand.
- » Opium cultivation in Afghanistan increased 32% over the previous year to 233,000 hectares-making the 2022 crop the third largest area under opium cultivation since monitoring began.
- » The income made by farmers from opium sales tripled from USD 425 million in 2021 to USD1.4 billion 2022 - the equivalent of 29% of the 2021 agricultural sector value. The sum still represents only a fraction of the income made from production and trafficking within the country. Increasingly larger sums are further accrued along the illicit drug supply chain outside the country.

However, the move has not been observed to impact the number of seizures at sea immediately. If strictly implemented, these laws may decrease the production of opioids in the region. However, the economic incentives

for farmers and other power centres in the country are unlikely to support this in the near/ mid-term. The increased share of synthetic drugs such as methamphetamines in the drug seizures of the past few years have been linked

to new production centres of synthetic drugs in the so called Golden Crescent region and substitution of some of the pre-cursor chemical with naturally occurring alternatives (such as those derived from Ephedra plant found in

Afghanistan). The proceeds of drug smuggling have been reported to be used for funding terrorism, insurgency and other instabilities in the region.

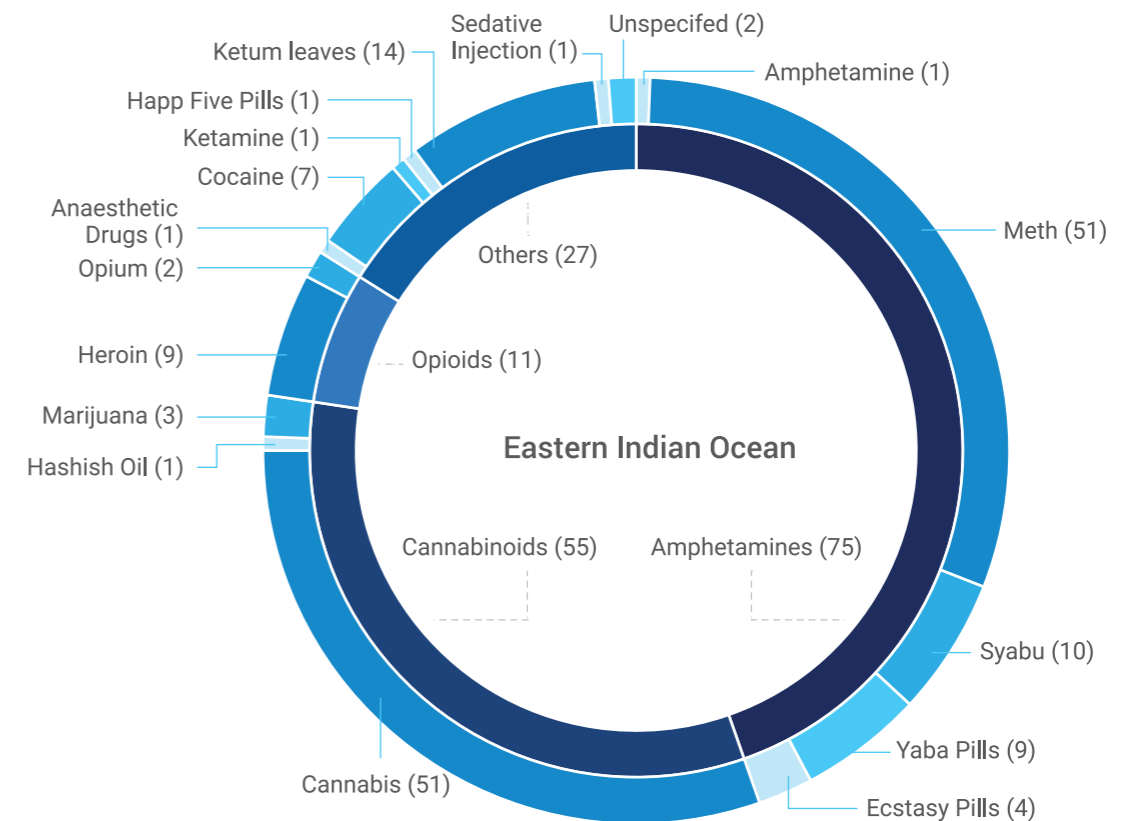
“The Western Indian Ocean Report-2022 published by the Stable Seas, notes that “The trafficking of drugs to Africa through the Western Indian Ocean is detrimental for economic and security reasons as it displaces licit trade while also serving to fund armed groups and their political violence, but it also contributes to major health crises. In addition to recreational purposes, drugs are used for self-medication, which causes a wide variety of deleterious effects on individuals, families, and whole communities.”

EASTERN INDIAN OCEAN

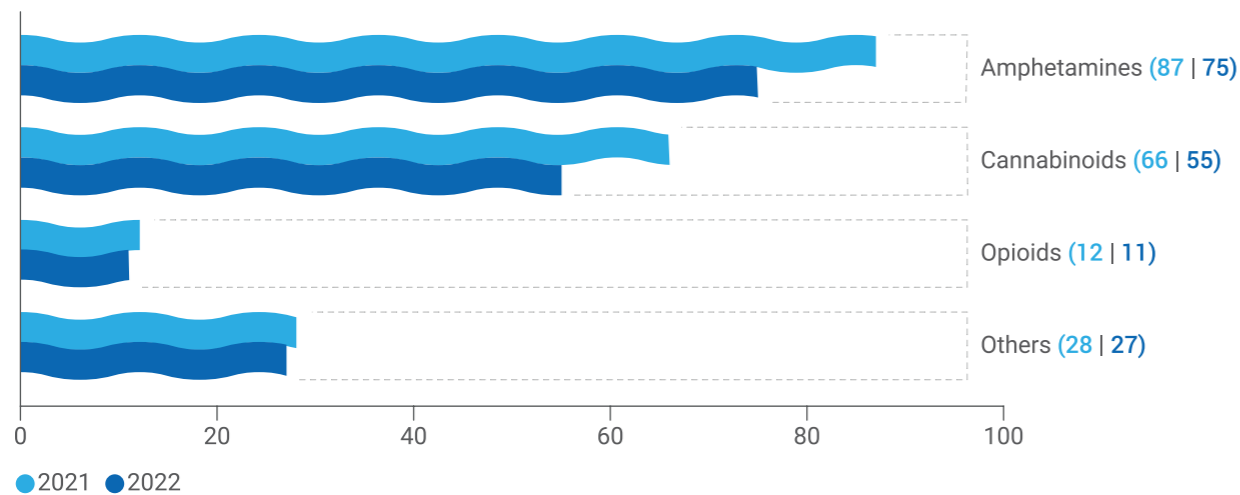
A higher share of Amphetamine Type Substances (45%) was observed in the seizures in the Eastern Indian Ocean, a region which traditionally saw high production of ATS. This was followed by cannabinoids (33%) and other

drugs (16%) - predominantly Ketum seized in South East Asia. Approximately 69 tonnes, with a value of 723 million USD of narcotics, were seized by the regional and extra-regional law enforcement agencies in the Eastern Indian Ocean region.

Drug Seizure Incidents



Seizure classes distribution 2021 vs. 2022



DRUG SMUGGLING METHODOLOGY

MODUS OPERANDI

The smuggling of drugs generally starts via land routes and inland waterways, from their point of production to the nearest/ preferred port of debarkation. The two most common methods observed were transshipment using dhows/ small boats and concealment in containerised cargo. While seizures indicate the movement of drugs on smaller boats, however, the concern is the use of containers onboard legitimate ships for transporting drugs, thereby imperilling/ increasing costs for legitimate cargo originating from ports frequently used by traffickers. From large cargo vessels with thousands of containers to dhows and dugout canoes, traffickers use any type of vessel at their disposal. A few incidents monitored by the Centre involved attachment of contraband to the hull of the vessel and subsequent collection by divers at major ports exploiting the legal security gaps at ports. The following additional delivery methods were observed:-

- » “Dead drops” in remote locations.
- » Contraband moored to buoys with GPS fixed locations.
- » Contraband ditched at sea for pick up at a later date or to drift ashore.

- » Concealment of contraband under/ attached with navigational buoys.
- » Carriage by the crew onboard merchant vessels.
- » Carriage by passengers/ concealment in vehicles being transported by ferries.
- » Hidden inside containers and domestic products such as fresh fruits and vegetables, tea bags etc.
- » Concealment in the structure of containers.
- » Dissolved in liquid, then soaked in woollen cloths and paper.

Drug smugglers were observed to transfer small portions of narcotics to multiple smaller vessels from the intended destination country. This mechanism reduces the possibility of interception of an entire load of contraband. Also, it benefits from the relatively less stringent checks for small vessels belonging to the respective coastal state.

Concealment in containerised cargo exploits the sheer scale of such traffic, which presents opportunities for smugglers. Appropriate information sharing, intelligence, continued risk-assessment and timely flagging of suspect vessels/ containers are key to intercepting such attempts.

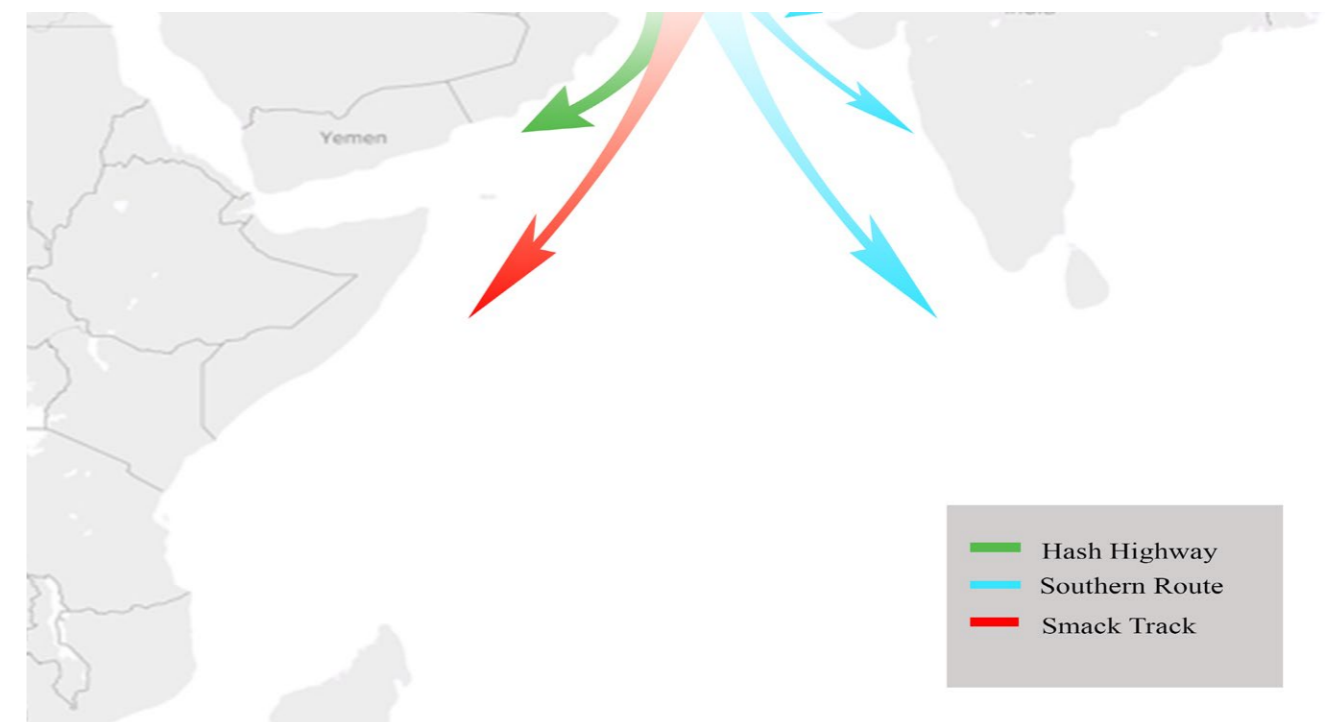
In other parts of the world, underwater hull attachments, submersibles and even autonomous underwater drones were reported to be used by international drug traffickers. Such methodologies may be in future also

proliferate in the IOR, especially to smuggle drugs into countries that intercept a large portion of drugs shipped via other means and where the prices of narcotics are attractive for such efforts.

MAJOR DRUG SMUGGLING ROUTES

In the Western Indian Ocean, Smack Track/ Hash Highway refer to heroin and hashish smuggling routes that originate from the Makran Coast or North Arabian Sea. This is also referred to as the Southern Route (the other two routes of narcotics produced in Afghanistan are the Northern and Central routes – both of which are land-based and off late have become more hazardous for traffickers).

Analysis of the recorded incidents indicates that traffickers have shifted their transshipment routes, which were traditionally direct to more circuitous pathways that may head out to the middle of the Indian Ocean, primarily to avoid law enforcement.



PACKAGING

Narcotics are routinely observed to be packed in a certain distinguishable manner. For example, the narcotics were observed to be wrapped in bundles of one kilogram in the Western Indian Ocean and packaging of drugs in tea bags with Chinese markings in the Eastern Indian Ocean. For large quantities of hashish or cannabis, large bales are normally utilised for the sake

of efficiency. On the other hand, it is common to find synthetically produced drugs packaged in such a way so as to identify their branding. A typically observed example would be the packaging of methamphetamine in tea bags with Chinese markings in the Eastern Indian Ocean Region. Seizures in the Western Indian Ocean Region saw contraband being packed in

recognised brands of domestic products such as fresh fruits and vegetables, rice and coffee, which are popular in West Asia. Overall, in many instances, seized drugs were observed to have unique stamps with month/ year of production,

possibly a branding exercise indicating the production Centre/ team. There were also incidents reported that involved the hiding of narcotics in bushes or burial inside bushes near beach areas.

INCREASED SEIZURES OF AMPHETAMINE TYPE SUBSTANCES (ATS)

The Centre has observed a continued trend of ATS accounting for the majority of the drug seizures in both the Eastern and Western Indian Ocean. While the numbers recorded have dipped marginally from 2021, ATS still remain the major category of drugs smuggled in IOR. This trend is particularly evident in the Western Indian Ocean and is assessed to be caused by the establishment of synthetic

drug production centres in areas undergoing political instability/ without adequate oversight in the Golden Crescent Region. The low cost of production and discovery of alternatives for some chemical precursors (like the ephedra plant in Afghanistan) are likely to have reinforced this trend. Law enforcement by regional and multinational forces has also contributed to increased seizures.

The UNODC World Drug Report - 2022 states that: -

- » Global seizures of ATS rose rapidly over the previous decade. Methamphetamine seizures rose fivefold; amphetamine, fourfold; and “ecstasy”, threefold.
- » Methamphetamine manufacture and use have continued to expand beyond “traditional” markets in East and South East Asia and North America, notably in South-West Asia and Latin America.
- » Methamphetamine manufacture and use has risen in Afghanistan recently and the drug is being trafficked to the wider region.
- » Accounts suggest that the use of methamphetamine and “Captagon” tablets is rising in South-West Asia and beyond, in particular in Iraq, although no recent estimates are available. Seizures in the Gulf suggest that a methamphetamine market may emerge there too.

IMPACT OF POLITICAL/ ECONOMIC INSTABILITY

Drug production and smuggling syndicates have been observed to exploit political/ economic instability to further their nefarious activities. In the so called Golden Crescent region, the political situation in Afghanistan has been complicated and is likely to further compound the narcotics smuggling. Similarly,

the strained economic situation in some countries of the region is likely to curtail law enforcement operations at a time when an increasing number of individuals may take to/ be forced into such ventures. The reliance on narcotics production and smuggling for economic gains and funding illicit activities

including terrorism by some actors in the region is an ongoing phenomenon. Similarly in the Golden Triangle region, the areas dominated by insurgents in Myanmar are reported to be major drug production centres. Fishermen

continue to be a particularly vulnerable target for exploitation by international smuggling networks, in line with the phenomenon of narco-fish that has been laid out by various academics and researchers.

DOMESTIC PRODUCTS AND FUEL

Incidents involving the smuggling of domestic products cover a wide range of items, from counterfeit material to undeclared items at customs. 127 incidents of domestic product smuggling have been monitored by the Centre as compared to 125 incidents in 2021. The ban on the import of turmeric by Sri Lanka was imposed in 2019 which led to a significant increase in turmeric smuggling in 2020 and 2021. A significant decrease in the recorded seizures of turmeric smuggling has been observed in 2022. The Centre recorded only four incidents of turmeric smuggling in 2022 as compared to 86 incidents in 2021. This may be attributable to an increase in local production and enforcement operations to deter turmeric smugglers. However, the Centre observed a remarkable increase in the seizure of cooking oil products in 2022.

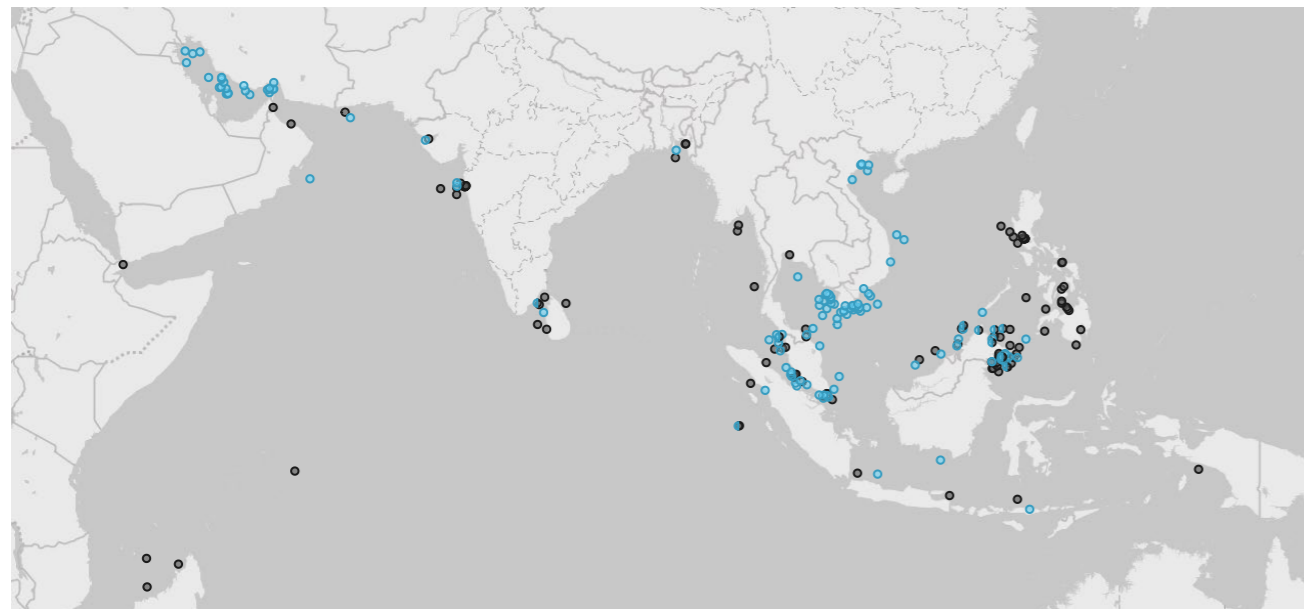
A significant portion of the incidents involving the smuggling of domestic products involved small vessels. This may be attributable to the historical pattern of life in the region and the disparity in prices amongst nearby states. Smuggling of food products (both fresh and frozen) were also observed in containers. These incidents were primarily assessed to be attempts to circumvent import duties/ restrictions that have been imposed by the destination country to safeguard respective agricultural sectors.

In 2022, the Centre monitored 133 incidents of fuel smuggling as compared to 52 incidents

in 2021, 74% (99 out of 133) of which were reported in Southeast Asia (59% in the Straits of Malacca and Singapore and the South China Sea, 21% in the Sulu and Celebes Sea, 17% in the Gulf of Thailand). Fuel smuggling that occurs in Southeast Asia is likely due to lengthy and porous coastlines in the archipelagos, the transient nature of maritime traffic and price differential. The political situation and regional conflicts in the Western Indian Ocean region have also contributed to an increasing amount of fuel seizure which accounts for about 14.76 million litres of fuel at different locations.

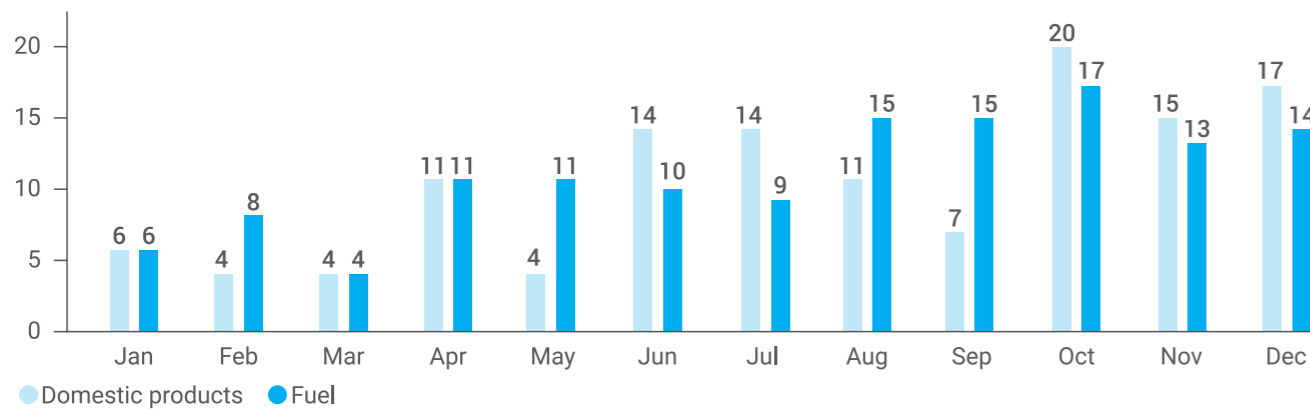
Fuel smuggling incidents record include the smuggling of subsidised fuel across national boundaries using small tankers and converted cargo/ fishing vessels. Unauthorised usage of vessels, such as to fuel other vessels at sea, has also been observed. Such incidents in the Straits of Malacca and Singapore are likely to be driven by economic considerations which enable vessels to stay at sea for long durations. Incidents recorded also reveal a pattern of small vessels coming close to bigger vessels at anchor/ close to the coast to obtain fuel, which is further landed on to the adjoining state. Such incidents involve the exchange of money or other goods and are unlikely to be possible without the involvement of at least some members of the vessel crew. members of the vessel crew.





● Domestic Products ● Fuel

Analysis of domestic products and fuel smuggling incidents globally



● Domestic products ● Fuel

Onion Smuggling into the Philippines

The end of 2022 has seen an increase in onion smuggling incidents in the Philippines. The nationwide shortage and the Filipino’s vast consumption of domestic products have skyrocketed onion prices.

The government had projected a shortage since August 2022, but the effects of an estimated 17,000 metric tons per month of national consumption, global inflation, and disrupted crop growth has resulted in an onion price that saw an August 2022 price of \$2.54 per kg rise to a record high of almost \$15 USD per kilogram in December 2022.

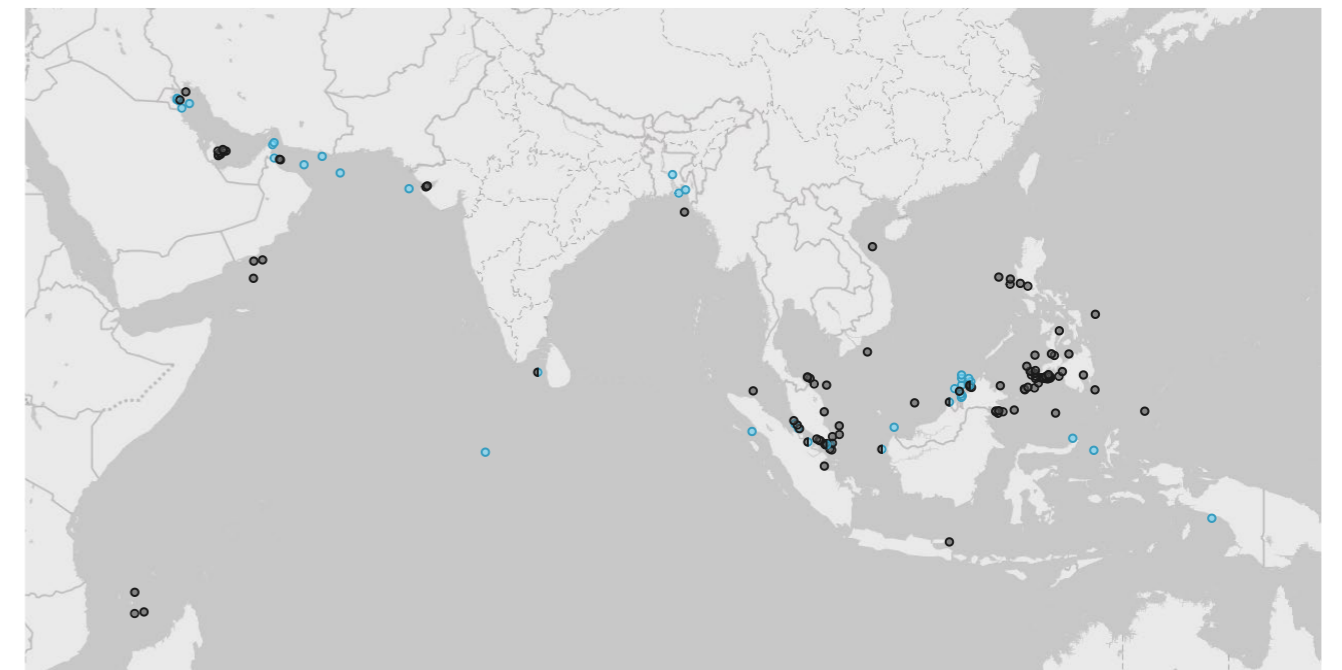
Local growers produced 23.30 metric tons of onions in the third quarter of 2022, but the average quarterly national consumption is more than double the production, creating a shortage in supply with a steady demand.

Source(s): NPR, BNN Philippines and Time.com

ALCOHOL AND TOBACCO

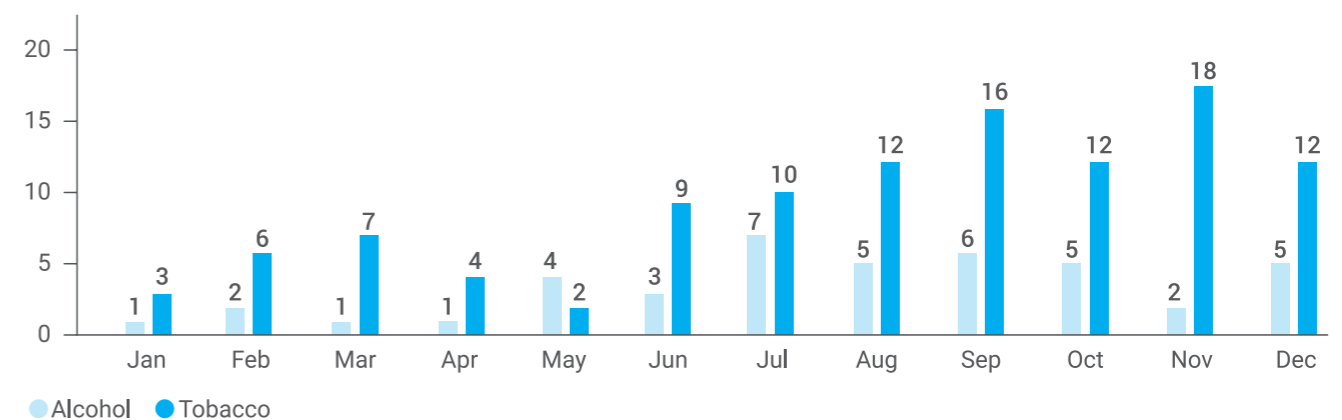
Alcohol smuggling incidents in the region were mainly driven by attempts to skirt duties, bans or restrictions on consumption, providing a lucrative market for smuggling. Of the 42 incidents reported in 2022 as compared to 34 incidents reported in 2021, 57% (24 out of 42 incidents) were monitored in Southeast Asia, where the archipelagic nature of the area allows for illicit transfers to be conducted with relative ease using sea routes. Some incidents recorded illegal transport of domestically produced liquor via the maritime domain between different parts of the same country.

A total of 111 incidents of tobacco smuggling were recorded in 2022, as compared to 90 incidents in 2021. Large scale seizures were observed from both containerised cargo and small cargo boats. In a similar trend seen with alcohol smuggling, the Centre monitored 79% of tobacco smuggling incidents in 2022 as compared to 72% of incidents in 2021 that were reported in Southeast Asia. Illicit tobacco products are smuggled due to the demand for cheaper products by consumers, avoiding high taxes and the disparity in pricing in adjacent countries.



● Tobacco ● Alcohol

Analysis of alcohol and tobacco smuggling incidents globally



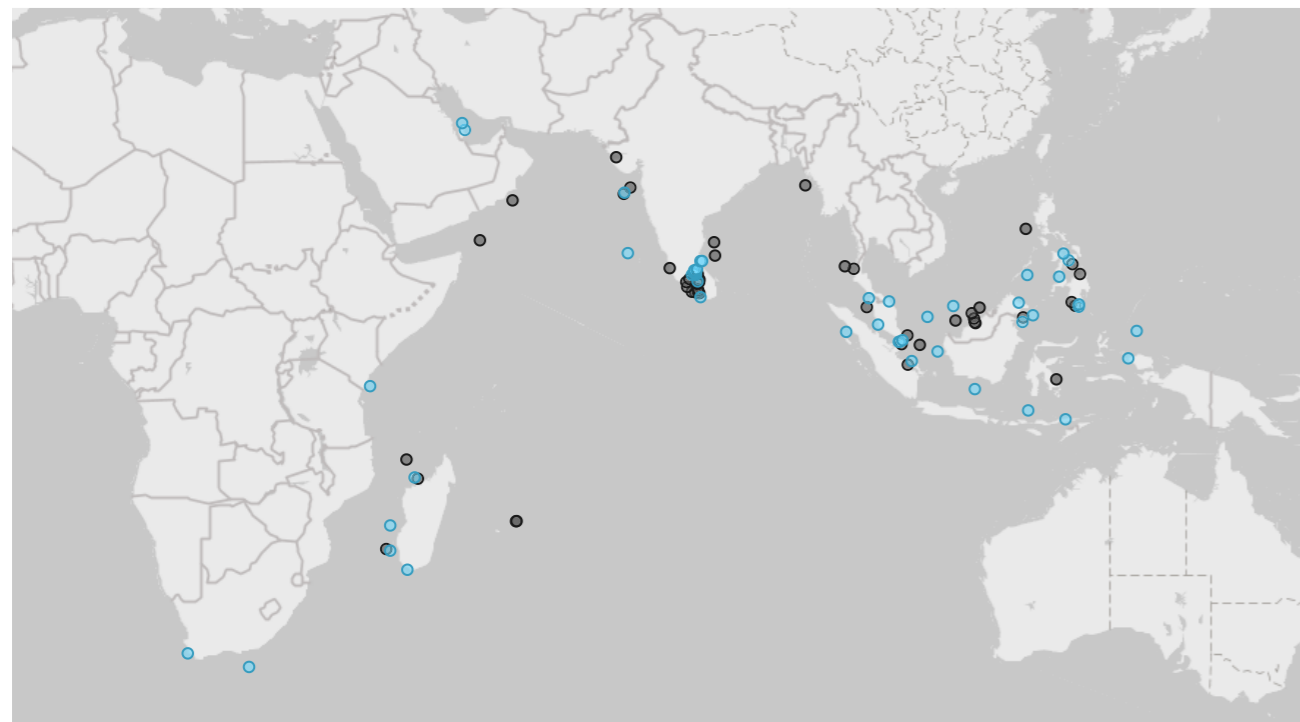
● Alcohol ● Tobacco

WILDLIFE AND NATURAL RESOURCES

The Centre monitored a total of 49 wildlife smuggling incidents in 2022 as compared to 38 incidents in 2021, with 49% (24 out of 49 incidents) of seizures occurring in Southeast Asia. Sea cucumbers, shark fin and pet animals were observed to be the most smuggled wildlife products.

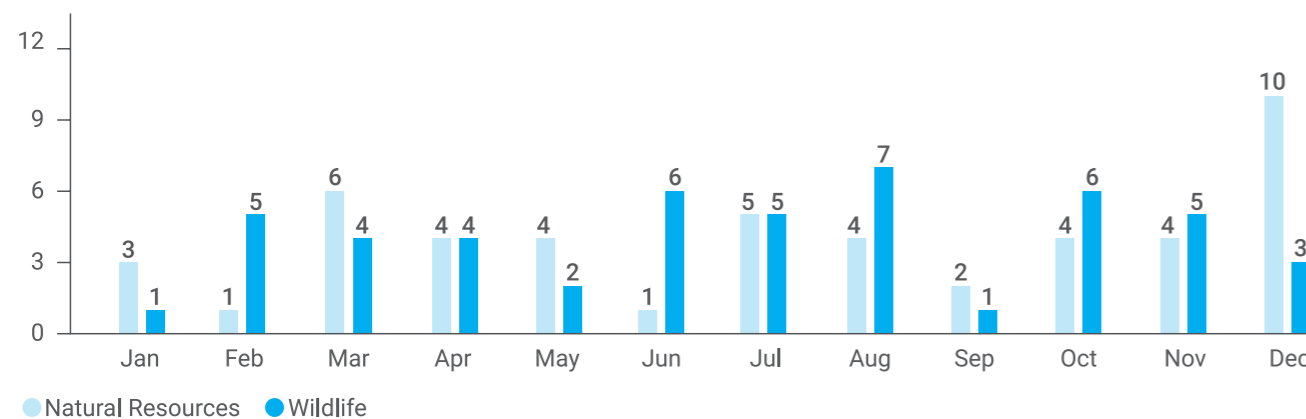
A total of 48 incidents of natural resource smuggling in 2022 as compared to 28

incidents in 2021 were monitored, the majority of which were recorded in the East Indian Ocean, specifically South East Asia. Similar to domestic products that were smuggled in 2021, a variety of natural resources were seized, the most common being wood, precious metals and Kendu leaves (used as a substitute for paper in rolling tobacco for low-cost cigarette alternatives).



● Natural Resources ● Wildlife

Analysis of wildlife and natural resources smuggling incidents globally



● Natural Resources ● Wildlife

WEAPONS AND MISCELLANEOUS

14 weapons smuggling incidents were recorded in 2022, a slight increase compared to 2021 (10 incidents). Ten of the recorded incidents involved a relatively small quantity of weapons, of which five involved the seizure of weapons and drugs/ other contraband. The apprehension of a foreign fishing vessel carrying both drugs and weapons by the Indian Coast Guard in Dec 22 is one such instance.

Four major seizures of weapons were recorded in the region. The details are as follows: -

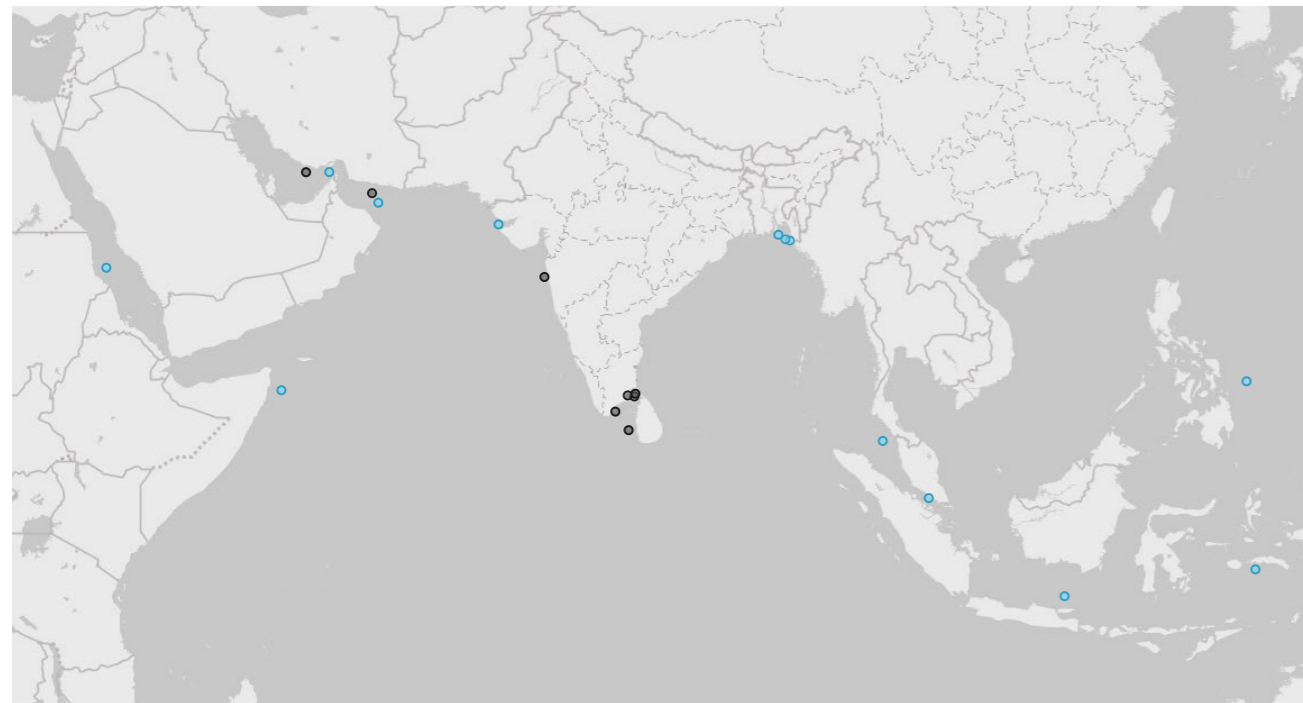
- » In Jul 22, Somali authorities apprehended 19 suspected smugglers and seized illegal weapons from two boats off Bandar-Bayla, Somalia. The weapons were reported to be destined for the Al-Shabaab-controlled coastal town of Harar-Dhere in the Mudug region, central Somalia.
- » In Sep 22, Sudan authorities apprehended four suspects and seized illegal weapons (90 Kalashnikov rifles, 162 boxes of Grinov submachine guns, 182 boxes of various calibre ammunition, 43 cartons of detonating cord and 45 cartons of explosion-proof fuses) from a boat off Sudan.
- » In Nov 22, Indonesia authorities apprehended one suspected smuggler and seized 5,000 bomb detonators off Anchor Port, Situbondo, East Java, Indonesia.

» In Dec 22, a US warship seized over 50 tonnes of ammunition from a fishing trawler in the Gulf of Oman. The seizure included one million rounds of 7.62 mm ammunition, 25,000 rounds of 12.7 mm ammunition, 7,000 proximity fuses for rockets and 2,100 kg of propellant. It was reported that the contraband was destined to Yemen.

It is assessed that items such as detonators are also likely to be smuggled for usage in illegal fishing techniques such as blast fishing.

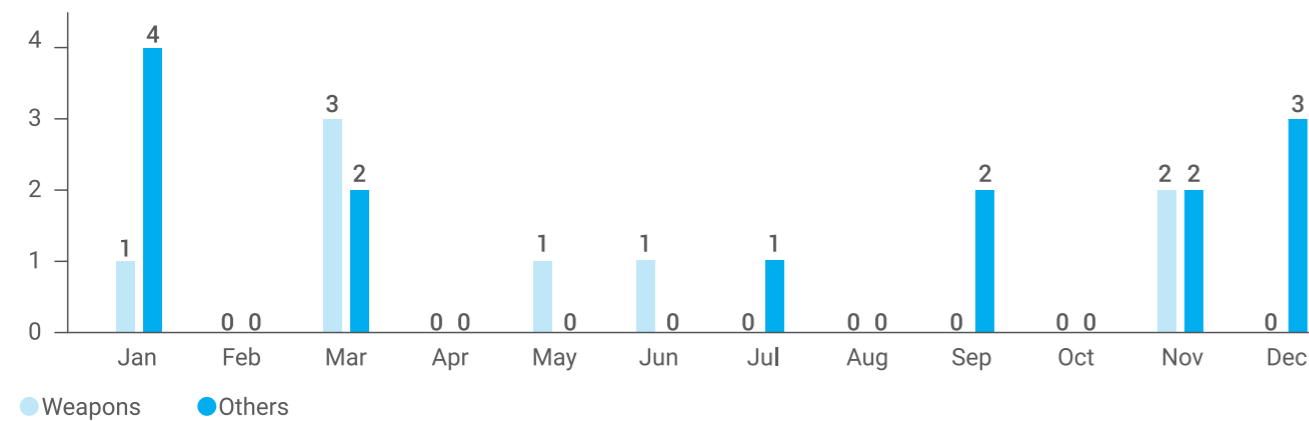
The Centre recorded eight other incidents of smuggling of miscellaneous contraband items. Three of the incidents involved the seizure of fertilizers/ similar chemicals (two by US warships in the Gulf of Oman and one by India authorities). It was reported by US authorities that the contraband seized was likely to be utilised for explosives/ missile fuel. One incident each of seizure of aluminium dross (industrial waste) was reported off India. Two incidents each involved seizures of pesticides and herbicides destined for Sri Lanka, which may be attributable to the restrictions imposed on such chemicals and price differential with adjoining countries.





● Others ● Weapons

Analysis of weapons and miscellaneous smuggling incidents globally



● Weapons ● Others

FUEL SMUGGLING IN THE PERSIAN GULF

- Maj Hassan Nadeem, Maldives ILO at IFC-IOR

Oil is a substantial energy source that powers the globe and has a direct impact on our day-to-day activities. The Persian Gulf region has the largest crude oil reserves in the world with significant fuel production facilities. The major oil-producing nations in this region produce millions of barrels of crude oil daily. The impact of elevated fuel prices was sensed globally when the cost of a barrel in the global oil market crossed the 100 USD mark in 2022¹. Price differential across borders provides avenues for fuel smuggling, which are exploited by fuel smuggling syndicates on a large scale.

Iran was reported to be the third-largest natural gas producer in the world in 2020 and the fifth-largest Organisation of the Petroleum Exporting Countries (OPEC) crude oil producer with 3.2 million barrels per day in 2021². However, although being abundant in reserves, the production of crude oil in Iran has observed a downward trend since 2017, as the oil sector was prone to underinvestment and various sanctions for several years. The crude oil production was reported to be at a 30 year low in 2022 with exports decreasing to less than 500,000 barrels per day. With the economy also ailing due to COVID-19, the Iranian government implemented subsidies in myriad areas which included oil, natural gas and electricity. As a result of Iran's substantial subsidies, over 10 million litres of its inexpensive oil were smuggled out daily, according to the Oil Minister of Iran³.

The prices for gasoline and diesel fuel in Iran are one of the world's cheapest and these fuels are increasingly being illegally exported to foreign countries and, subsequently, sold at a price up to ten times higher than its domestic rate. For law enforcement agencies, curbing fuel smuggling has become a major priority. Towards this, Iranian officials also decreased the monthly fuel allotment to motorists from 250 litres to 150 litres in late September 2022⁴.

The majority of smuggling operations occur at night, just beyond the international seas between Iran and the United Arab Emirates (UAE) to avoid detection by regional authorities⁵. The illicit diesel fuel is delivered to anchored ships in the area using small boats, and usually takes between four to five days to fully load the vessel. During these operations, the smuggling vessel turns off its Automatic Identification System (AIS) to remain 'hidden' from the Iranian authorities. The tankers then leave the seas for international markets with the shipment fabricated to make it appear as though they were leaving from Iraq or the UAE. These operations are reportedly widespread and well-coordinated across reputable shipping firms in Asia and the Gulf⁶. The increased seizures of vessels and smugglers involved in fuel smuggling off Iran's coast by Iranian authorities have been observed in 2022⁷. Fuel smuggling off Iran is envisaged to increase further due to tense geo-political situations and sanctions being imposed on Iran. Plugging security gaps both on land borders and at sea coupled with timely regional information sharing is essential to curb these illegal activities.

1. https://www.opec.org/opec_web/en/data_graphs/40.htm
2. <https://www.eia.gov/international/overview/country/IRN>
3. <https://www.presstv.ir/Detail/2022/12/22/694972/Iran-motor-fuel-smuggling-figure-Salari>
4. <https://www.presstv.ir/Detail/2022/12/22/694972/Iran-motor-fuel-smuggling-figure-Salari>
5. <https://channel16.dryadglobal.com/smuggled-iranian-fuel-and-secret-night-time-transfers>
6. <https://oilprice.com/Latest-Energy-News/World-News/US-Sanctions-13-Companies-Selling-Iranian-Petroleum-Product-To-East-Asian-Buyer.html>
7. 20 incidents of fuel smuggling off Iran was monitored by IFC-IOR in 2022



ILLEGAL UNREPORTED UNREGULATED FISHING



OVERVIEW

Fish provide nutrition and livelihood for a sizeable portion of the global population and thus, it is critical to prevent actions like Illegal, Unreported and Unregulated (IUU) fishing which threaten this vital resource. IUU fishing causes significant harm to the health and resilience of the ocean, thereby imperilling global livelihoods and food security.

IUU fishing is primarily aimed at economic benefits. A vessel that is fishing illegally can minimise operating costs in terms of licensing, regulation, use of vessel monitoring systems and documentation. IUU fishermen may ignore quota levels, enter closed fishing areas, catch undersized fish or target rare or endangered species, attracting a premium from unscrupulous buyers. As per United Nations' Food and Agricultural Organisation, each year, about 11-26 million tonnes of fish, which is estimated to have an economic value of \$10-23 billion, are caught by IUU fishing. The Guide to IUU Fishing report by 'Sea Fish' highlights the fact that global losses from illicitly traded catches from IUU fishing have been estimated to be between 8 and 14 million tonnes per annum. This figure is reported to be between 10 and 17% of the total wild-caught marine fisheries production and is a conservative estimate.

INCIDENTS RECORDED

In 2022, the Centre monitored 603 reported incidents of IUU fishing, a 54% increase as compared to 2021 (392 incidents). This increase in numbers may be attributable to enhanced data capture, better collaboration amongst coastal states especially in South East Asia, increased seizures of illegal fishing nets in coastal states of East Africa/ West Asia and information being received from Australia regarding the apprehension of foreign fishing vessels.

Due to the inherent nature of enforcement operations and challenges of jurisdiction,

In addition to the economic costs and damage to the marine ecosystem, it is also linked to associated crimes that include labour and human rights abuses, as well as broader maritime security challenges. Further, IUU fishing also increases tensions between nations over issues like the rule of law, corruption and criminal activities. IUU fishing also imperils efforts to collect the data required to manage fisheries and endangers the sustainable management of fish, which threatens the replenishment of the marine fish population, the maritime ecosystem and biodiversity. It is for these reasons that an increasing number of countries consider IUU fishing as their top maritime security threat.

While small vessels make up most of the world's fishing fleets, the estimation of their numbers is particularly challenging. Large numbers of modern mechanised fishing vessels with effective fishing gear, if not appropriately managed, can potentially jeopardize the sustainability of fishing. Such industrial vessels are usually subject to licensing and registration requirements, which may not apply to small/ artisanal vessels. Further, small vessels may not always be reported in national statistics, even when registries exist.

most of the recorded incidents were observed to include smaller fishing vessels/ artisanal vessels that violated fisheries laws close to the coast. Illegal fishing is observed to be more common in areas lacking national or international regulations, inadequate law enforcement, improper management of fisheries and insufficient monitoring of seas.

No IUU fishing incident was recorded in the high seas (beyond EEZ), which highlights the monitoring challenges and legal gaps in Areas Beyond National Jurisdiction (ABNJ). Disagreement linked to pending

EEZ delimitations and competition between coastal artisanal fishing and foreign industrial fishing fleets remain potential flashpoints. The phenomenon of tensions between local fishermen and foreign industrial fishing vessels

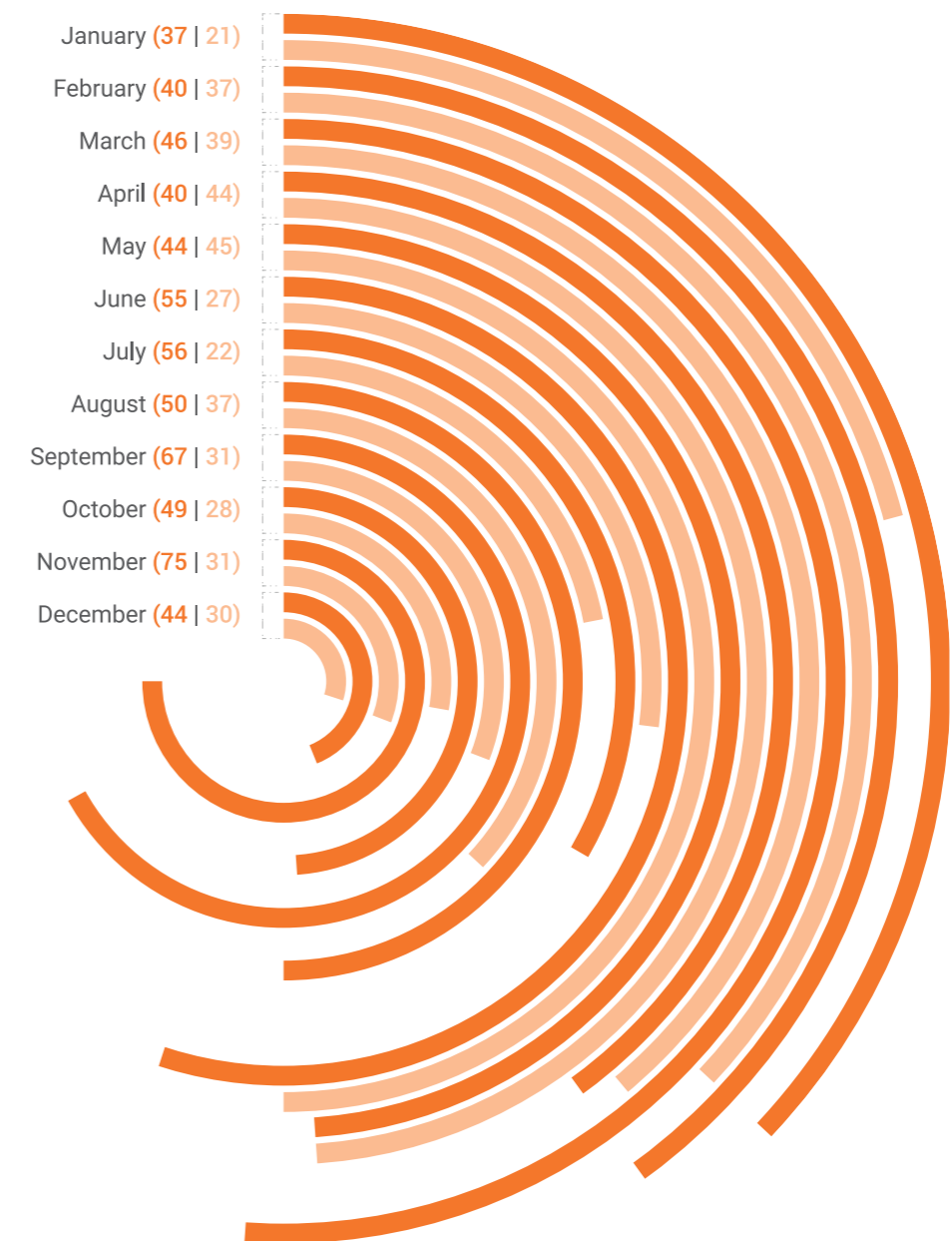
was observed in the Baluchistan province of Pakistan. Affected fishermen were observed to protest in a manner that impacted legitimate trade by hindering the operations of ports and legitimate vessels.

MONTHLY DISTRIBUTION

The regions monitored by the Centre for IUU fishing broadly experience two major monsoon seasons. South Asia, West Asia and parts of South East Asia are impacted by South West monsoon from late May to early October. The North East monsoon is active from November

to early February, typically peaking in December, impacting South East Asia and some parts of South Asia.

A common phenomenon in both monsoons is rough weather accompanied by strong winds and heavy sea swells, which combine



● 2021 ● 2022

to become dangerous for the navigational safety of smaller vessels. Law enforcement activity is also affected as small patrol vessels experience difficulty in remaining at sea for prolonged durations to undertake counter-IUU deployments in heavy weather.

The Centre recorded an average of 50 incidents per month during 2022, a 52% increase as compared to 2021 (33 incidents). Incidents of IUU fishing recorded usually saw a dip during the peak periods of the two monsoons. However, during the year 2022, IUU incidents were monitored to have increased between

June to September as compared to 2021 and may be attributable to two possible factors. Firstly, fishermen ventured out to sea even during rough weather to compensate for the loss of income. Secondly, it is also possible that the difference is due to a decrease in IUU activity during the first half of 2022 rather than a distinct increase in incidents during the second half of the year. The sharp decrease in December can be attributed to the peak of the northeast monsoon, which reinforces the anomaly of the June to September increase in incidents. A similar trend was also observed in 2021.

TYPES OF INCIDENTS

IUU fishing encompasses a wide variety of illicit fishing activities and occurs both on the high seas and in areas within national jurisdiction. While undertaking an analysis of the reported incidents, the Centre observed that it is difficult to categorise incidents into distinct 'Illegal', 'Unreported', or 'Unregulated' fishing. Therefore, to obviate inaccurate representation of data, the reported incidents have been categorised as 'Local IUU' and 'Poaching'. The working definitions used by the Centre are available in the Glossary section at the end of this report.

64% (388 out of 603 incidents) of recorded IUU incidents were that of local IUU fishing and 36% (215 out of 603 incidents) were of poaching IUU fishing, a 57% and 48% increase respectively as compared to 2021. A majority of these incidents were related to license violations by local and foreign fishermen, illegal fishing techniques and fishing of banned species.

About 62% (153 incidents) of the local IUU incidents in Southeast Asia were reported off Malaysia, a significant increase as compared to 2021 (77 incidents). This may be attributable to stringent law enforcement and proactive reporting of IUU fishing related apprehensions by local authorities.

The Centre observed that 66% (141 out of 215) of the poaching incidents were recorded in South East Asia and most incidents were monitored in the waters of Malaysia and Australia. The interdiction of foreign fishing trawlers by authorities across the region was observed due to robust surveillance, timely information sharing, coordinated patrols and adequate focus on the pertinent issue of poaching. 20% (43 out of 215 incidents) of the overall poaching incidents reported off Australia involved the seizure of fishing vessels and fish catch. In many such instances, the fishermen and fishing vessels were subsequently released by

the Australia authorities. In some instances, it was observed that offending fishermen were

pushed/ cleared off respective EEZs by coastal authorities.

REGIONAL DISTRIBUTION

The incidents of IUU fishing recorded by the Centre have been geographically grouped under four regions: South Asia, West Asia, East Africa and South East Asia.

About 65% of overall incidents were recorded across the waters of South East Asian countries, mainly off Malaysia and the Philippines, followed by Australia, Indonesia, Thailand and Papua New Guinea. An overall 53% increase was observed in reported incidents in South East Asia as compared to 2021 (255 incidents) in South East Asia.

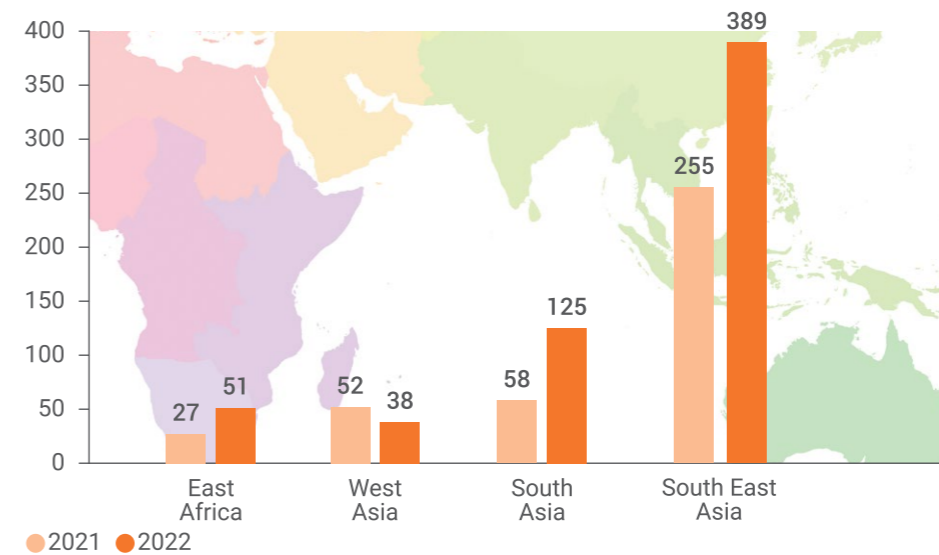
Nearly 21% of the total reported IUU incidents were monitored in South Asia, a marginal increase as compared to 2021 (58 incidents).

48% of these incidents were local IUU and 52% were poaching.

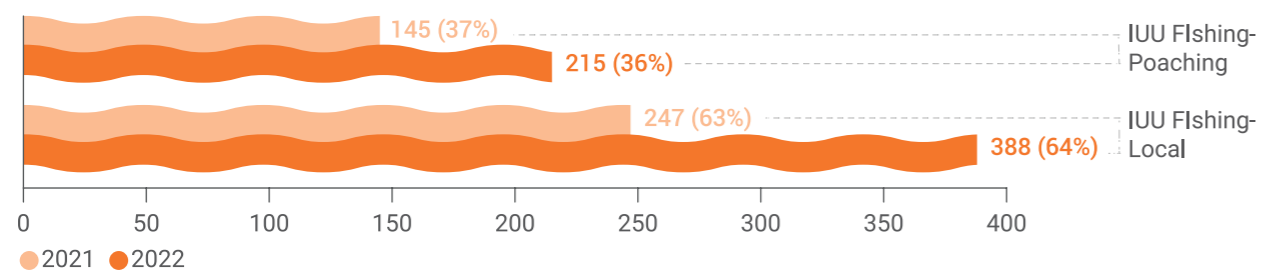
About 87% of IUU incidents monitored in West Asia were local IUU, with the remaining 13% being poaching, a 20% and 54% decrease as compared to local IUU and poaching incidents in 2021 respectively.

Reported incidents along East Africa accounted for 8% of overall incidents, an 89% increase as compared to 2021.

With fisheries related activities being a major source of food and income in the island nations of the Indian Ocean, IUU fishing in the region severely affects the regional economy and employment opportunities.



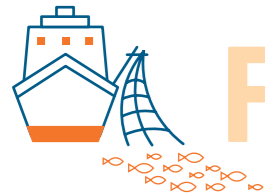
Number of incidents



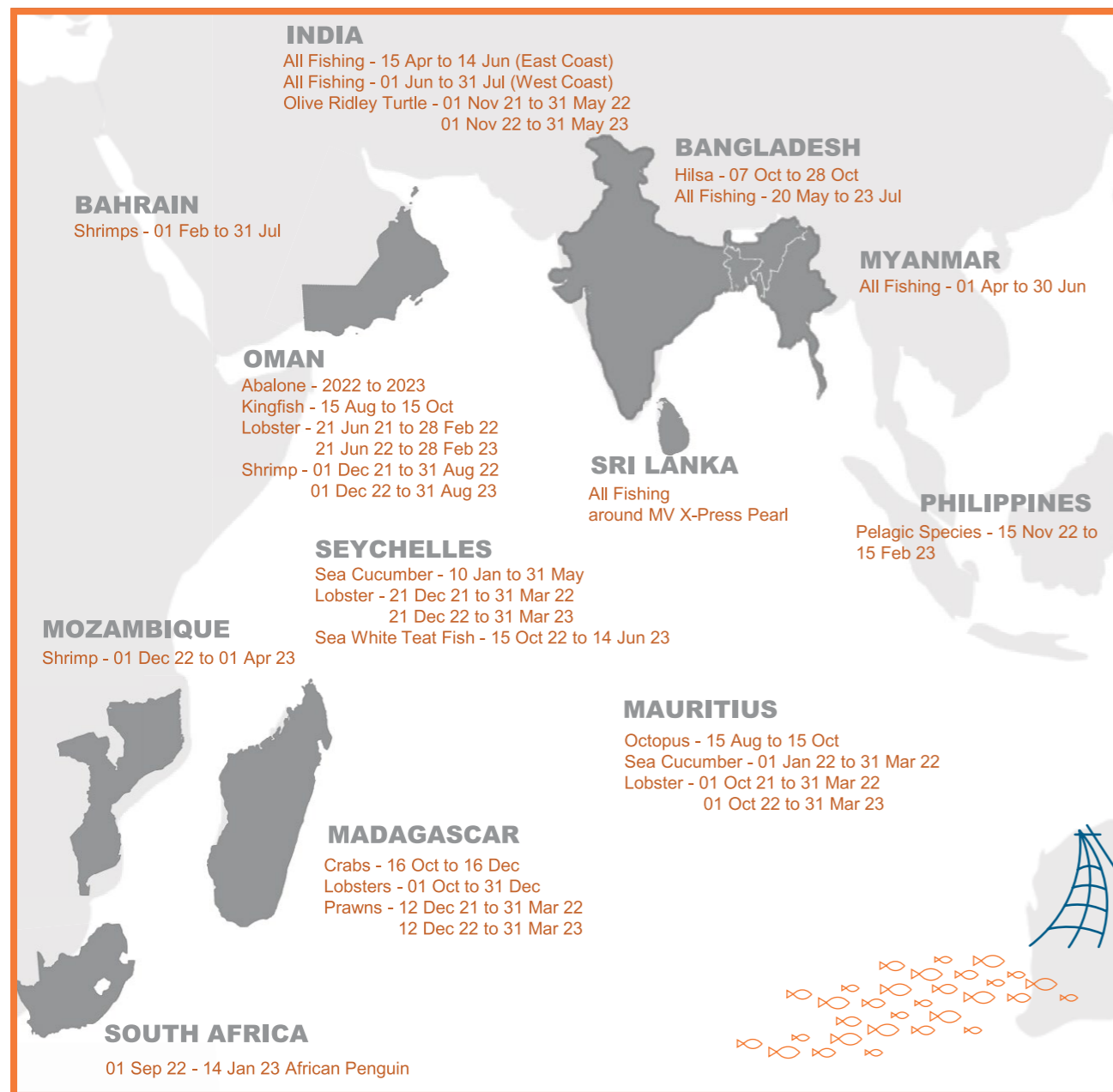
FISHING BANS

During the year, the Centre monitored various bans on fishing activity imposed by coastal states broadly aimed at protecting species from uncontrolled exploitation during breeding seasons. Fishing bans are generally seasonal and specific dates for the year are announced

by the concerned coastal states for awareness. Some seasonal bans targeted a specific type of species, while a few bans applied to all species in a specific geographical area. Some bans are also enforced for non-fish species which are in danger of being caught as by-catch.



FISHING BANS 2022

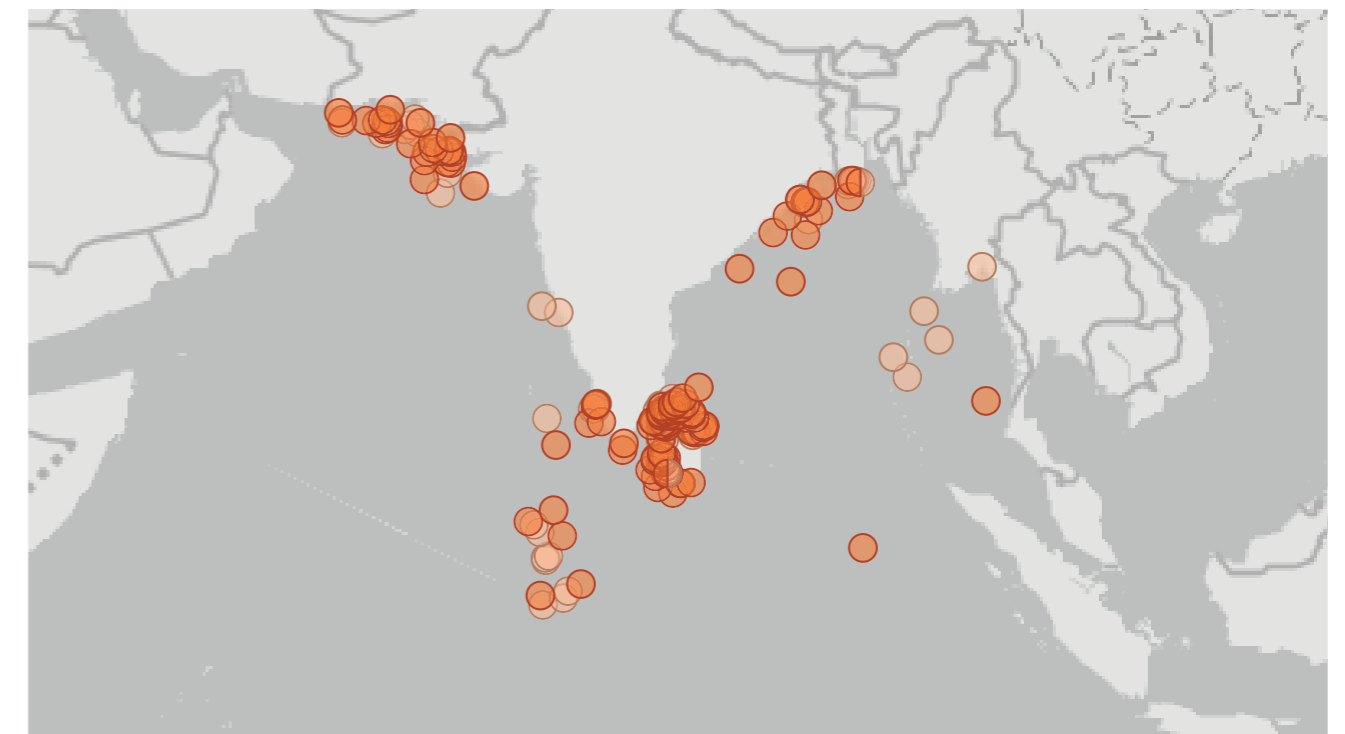


FOCUS BY GEOGRAPHY

SOUTH ASIA

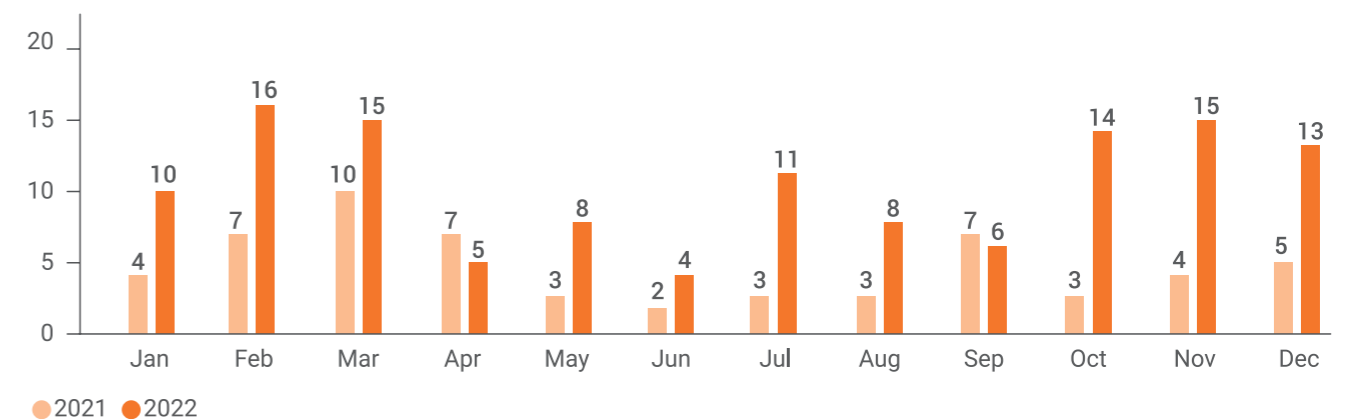
The Centre monitored 21% of IUU fishing incidents in South Asia, a reasonable increase as compared to 2021 (58 incidents). Local and poaching IUU incidents averaged five incidents per month, a trend similar to 2021. Reports in February, March, October, November and December are above the average.

There was a significant increase recorded in the number of IUU incidents reported off Sri Lanka this year (70 incidents) as compared to the last year (18 incidents), possibly due to the effect of enhanced enforcement operations and fishermen using banned fishing methods (blast fishing) and gears. A significant increase in the number of seizures of shark fins was observed off Sri Lanka. This may be attributable to the increase in demand and



● 2021 ● 2022

Analysis of IUU fishing incidents



● 2021 ● 2022

value of shark fins in South East Asia as well as strict law enforcement by Sri Lanka authorities.

A significant increase in the number of foreign fishing boats in EEZ of coastal countries was observed in 2022 (146 foreign fishing boats) as compared to 2021 (61 foreign fishing

boats). Further, a total of 211 fishing boats and 1247 fishermen involved in IUU fishing were apprehended by law enforcement agencies in South Asia in 2022. In a notable incident that showcases stringent law enforcement by regional authorities, a total of 135 fishermen with eight fishing trawlers were apprehended

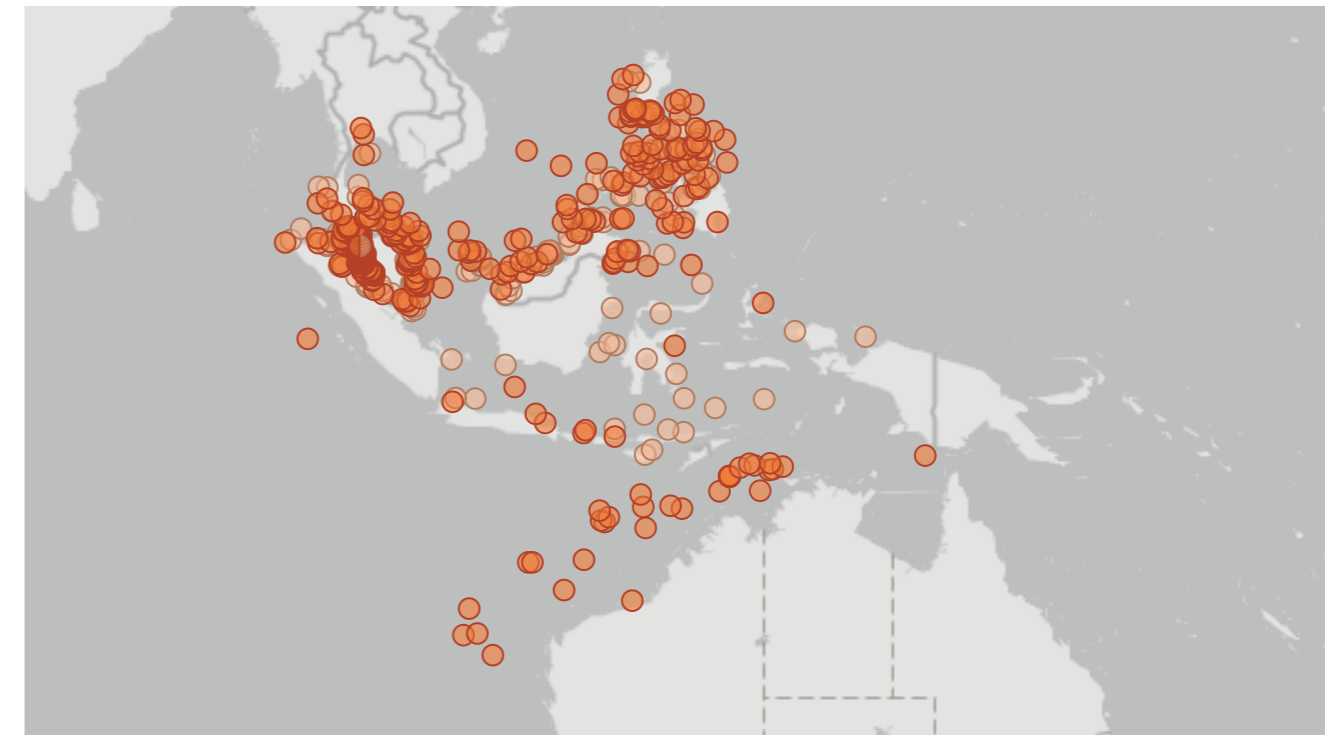
by Bangladesh authorities for fishing during the banned season.

SOUTH EAST ASIA

The Centre monitored 389 incidents (65%) of IUU fishing incidents in 2022, a 53% increase as compared with 2021 incidents (255). This increase may be partially attributable to more seizures recorded off Australia and enhanced operations by regional coastal authorities. Approximately 30% of the incidents involved fishermen fishing without valid documents and using banned fishing methods.

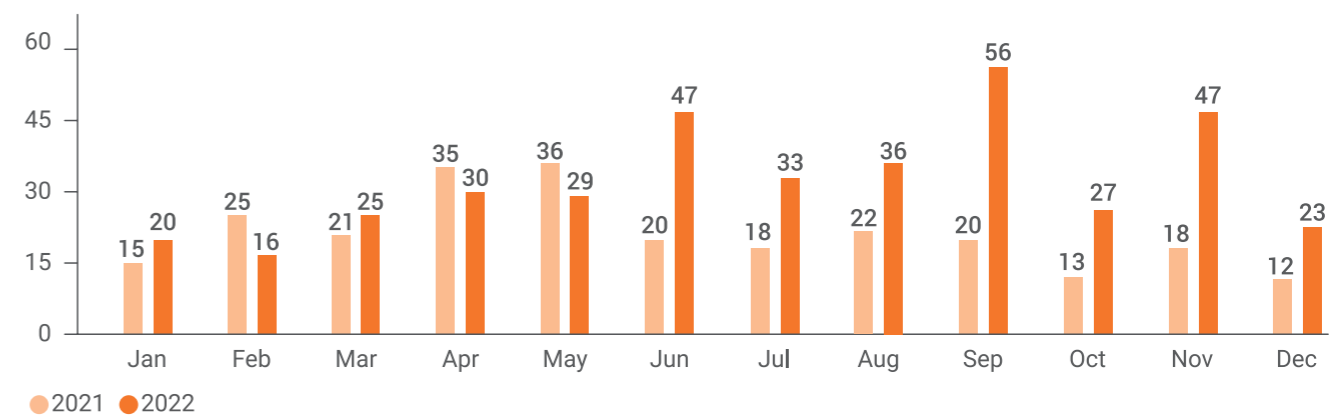
An average of 32 incidents per month were monitored in South East Asia. With 56% of the incidents, Malaysia accounted for the highest number of incidents in this region, followed by the Philippines (21%) and Australia (11%) and a few incidents were also reported off Indonesia and Thailand.

South East Asia constituted 64% of local and 36% of poaching IUU incidents recorded by the Centre.



● 2021 ● 2022

Analysis of IUU fishing incidents



● 2021 ● 2022

WEST ASIA

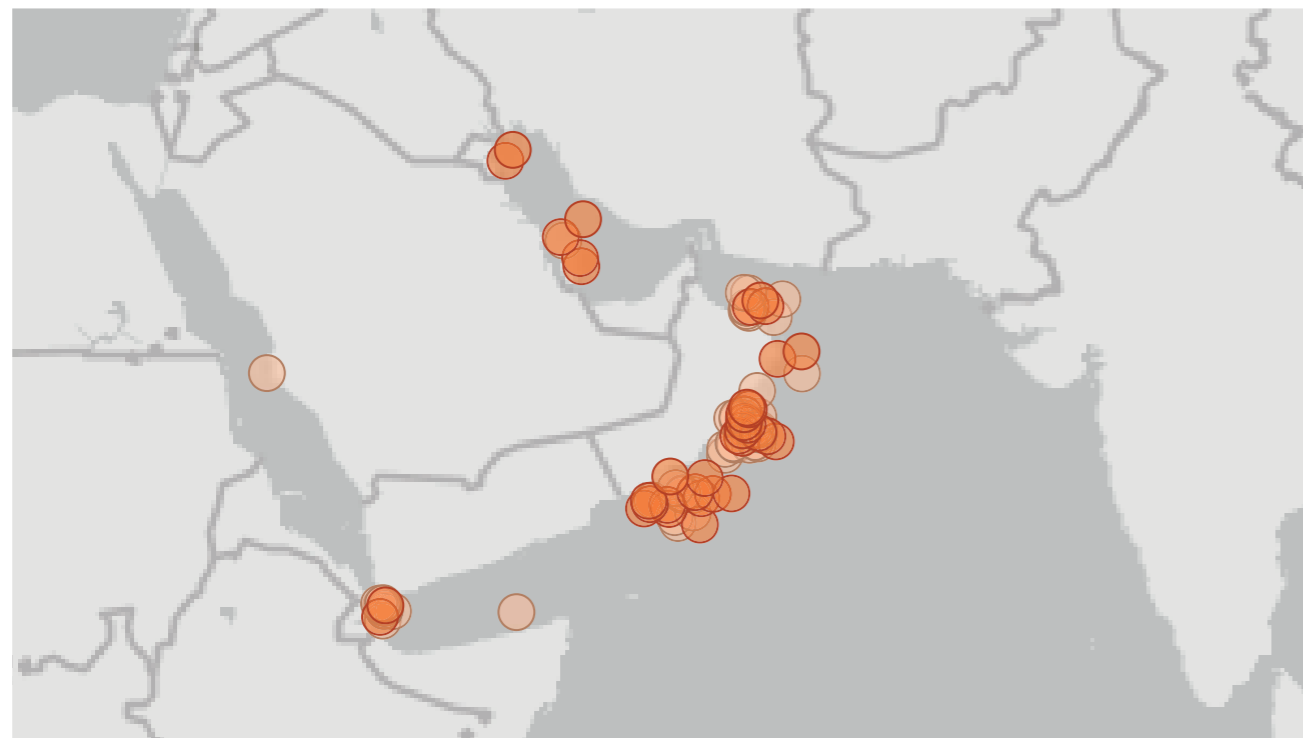
The Centre monitored 38 incidents accounting for 6% of the total incidents recorded, a 27% decrease as compared to 2021 (52 incidents).

87% of the incidents reported in this region were of Local IUU fishing. 88% of these were reported off Oman and few incidents of Local IUU fishing were also reported off Bahrain, Kuwait and Qatar, the majority of which were incidents of fishing during closed seasons and in prohibited areas. This may be attributable to

enhanced operations by the Oman Authorities. A total of 74 local boats involved in IUU fishing were seized by the coastal states.

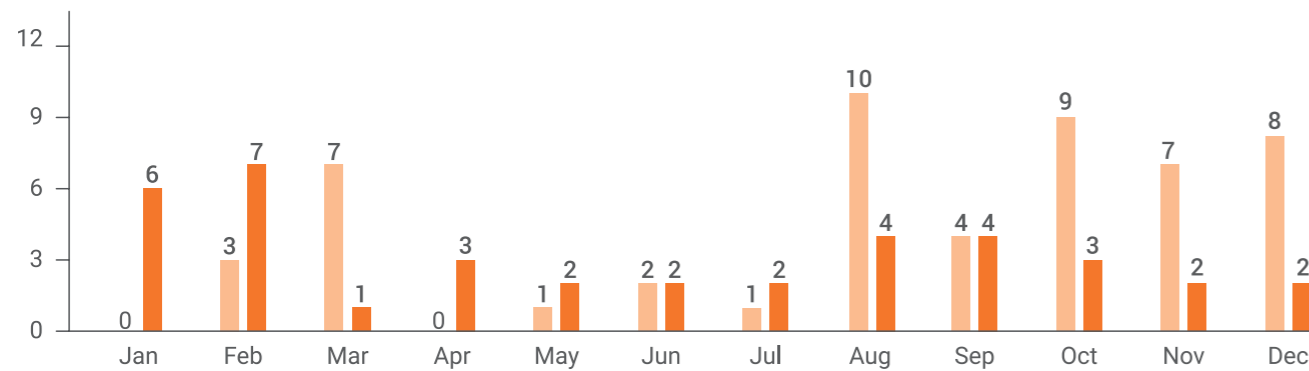
Five incidents of poaching were also reported in this region. Foreign fishing boats were apprehended while fishing off Djibouti, Kuwait and Qatar.

A total of 277 fishermen were apprehended in IUU fishing in this region. A high number of expatriate workers were observed in the local IUU incidents in the region.



● 2021 ● 2022

Analysis of IUU fishing incidents



● 2021 ● 2022

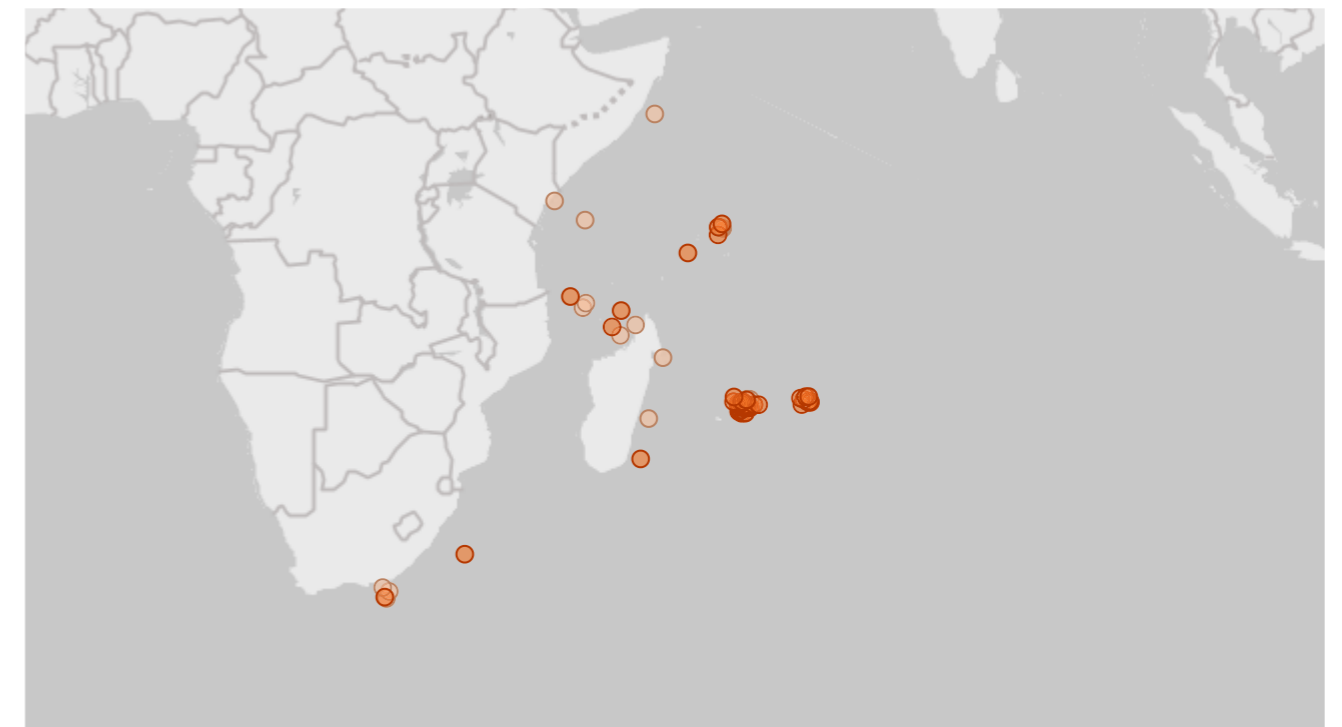
EAST AFRICA

The Centre monitored 51 incidents in the region, 89% increase as compared to 2021 incidents (27), which accounted for 8% of the overall IUU incidents.

Local IUU fishing accounted for 92% and peaked in November, with more incidents reported off Mauritius involved the seizure of illegal fishing nets. These nets were observed to be of different dimensions as specified by

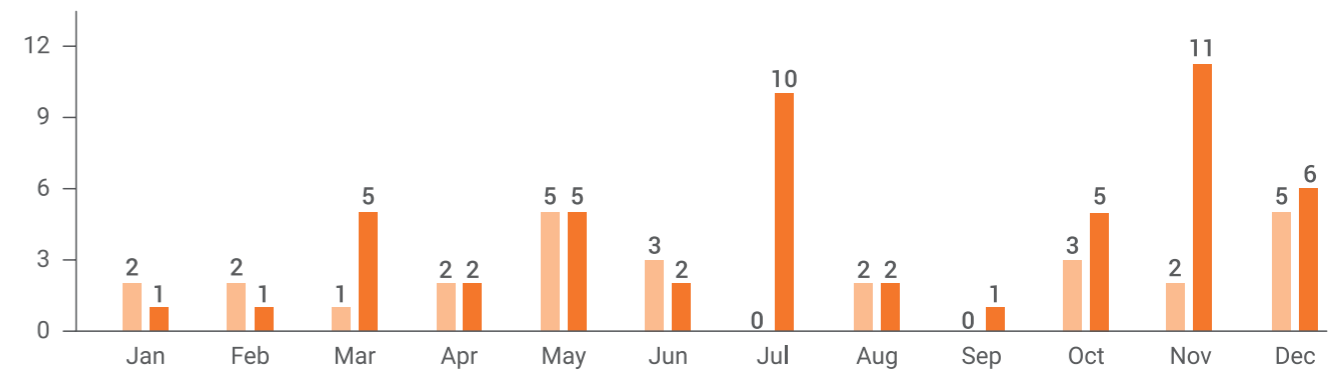
the fisheries act in Mauritius. The use of these illegal nets may be due to low cost and easy availability in the local market.

Four incidents of poaching were also reported in this region. A slight decrease as compared to 2021. A total of six foreign fishing boats were seized and 121 fishermen were apprehended by the law enforcement agencies in this region. The foreign fishing boats were observed to be fishing without valid documents.



● 2021 ● 2022

Analysis of IUU fishing incidents



● 2021 ● 2022

ADDRESSING IUU FISHING

Data collection is paramount to address IUU fishing. New technology tools are currently being developed and used by government and non-governmental agencies, including artificial intelligence, dedicated satellites, AIS tracking, infrared and drones. Moreover, with climate change and global warming, the protection of planet biodiversity is a priority and intersects with the domain of IUU fishing, resulting in governments becoming more involved in the IUU law enforcement process. The key to combat IUU fishing is to locate/ detect vessels involved in IUU fishing and understand the modus operandi of IUU-caught fish entering local markets.

Moreover, to address IUU fishing, a huge and urgent effort is to be made on the following issues:-

- » "Legal gaps in the high seas" (large oceanic areas are not controlled/ regulated as they are located beyond national jurisdictions and at times, not regulated by even RFMOs, resulting in overfishing).

- » "Ghost Fishing", (the ability of fishing gear to continue to fish after all the gear has been discarded/ abandoned).
- » "Bycatch" (incidental capture of non-target species such as dolphins, marine turtles and seabirds etc).
- » "Trans-shipment" (where fish is transferred from one vessel to another. Whilst not illegal, trans-shipment, especially when carried out at sea, can allow IUU fishing to go undetected. Some large vessels can remain at sea for months, remotely refuelling, re-supplying and rotating their crew. By transferring catches to transport ships (refers), they can avoid entering the port with illegally caught fish. IUU fish can potentially be 'laundered' on board the reefer by mixing it with legally caught fish)
- » Marine pollution due to ADLFG "Abandoned, Lost or otherwise Discarded Fishing Gear".



PROACTIVE MEASURES AND INITIATIVES

Initiative	Source	Observations and Link
IOTC Resolution 22/01 on climate change as it relates to the IOTC	IOTC	The Indian Ocean Tuna Commission (IOTC) has decided to take into account scientific information from the Scientific Committee and other relevant international processes on the potential impacts of climate change on tuna stocks, bycatch and species belonging to the same ecosystem or dependent on or associated with tuna stocks. The IOTC Scientific Committee shall consider how climate change and fishing activities may be related and provide advice to the Commission on the potential implications for these relationships for the conservation and management of tuna and associated stocks. https://iotc.org/sites/default/files/documents/2022/05/Circular_2022-35_-_CMMs_adopted_in_2022E.pdf
IOTC Resolution 22/02 on establishing a programme for transshipment by large-scale fishing vessels	IOTC	Transshipments by Large Scale Tuna Vessels in waters under the jurisdiction of the cooperating Non-Contracting Parties are subject to prior authorisation from the coastal State concerned. Transshipment operations within the Maldives between pole and line fishing vessels and Maldives flagged collector's vessels and registered on the IOTC Record of Authorised Vessels shall be exempted. https://iotc.org/sites/default/files/documents/2022/05/Circular_2022-35_-_CMMs_adopted_in_2022E.pdf
IOTC Resolution 22/03 on a management procedure for bigeye tuna in the IOTC area of competence	IOTC	A management procedure for the bigeye tuna stock managed by the IOTC with a view of maintaining the stock biomass in the green zone of the Kobe plot (not overfished and not subject to overfishing) while maximizing the average catch from the fishery and reducing the variation in the total allowable catch between management periods. https://iotc.org/sites/default/files/documents/2022/05/Circular_2022-35_-_CMMs_adopted_in_2022E.pdf

<p>IOTC Resolution 22/04 on a regional observer scheme</p>	<p>IOTC</p>	<p>The objective of the IOTC Regional Observer Scheme shall be to collect verified catch data and other scientific data related to the fisheries for tuna and tuna-like species in the IOTC area of competence. The IOTC Scientific Committee, in collaboration with the Compliance Committee, shall develop and agree on minimum standards for the use of Electronic Monitoring System (EMS) for purse seine, longline, bait boat (pole and line), handline, and gillnet fleets by 2023 at the latest, including on modalities of the substitution of the human observer coverage by an EMS, taking into account factors such as the principles and regulations regarding minimum safe manning requirements. The Commission may consider and adopt these standards by 2024 in a separate Resolution.</p> <p>https://iotc.org/sites/default/files/documents/2022/05/Circular_2022-35_-_CMMs_adopted_in_2022E.pdf</p>
<p>Voluntary Guidelines for transshipment</p>	<p>FAO</p>	<p>The objective of the Voluntary Guidelines for transshipment is to assist States, regional fisheries management organizations (RFMOs) and other intergovernmental organizations by providing standards for developing their policies and regulations that govern transshipment, to integrate these into the regulatory framework for sustainable fisheries management. These Guidelines aim to regulate, monitor and control transshipment to support sustainable fisheries and further close loopholes that enable fish derived from IUU fishing to enter the market," stated Audun Lem, Deputy-Director of FAO's fisheries and aquaculture division.</p> <p>https://stopillegalfishing.com/news-articles/cofi-35-endorses-voluntary-guidelines-for-transshipment/</p>
<p>Blue Transformation – Roadmap 2022 – 2030 A vision for FAO's work on aquatic food systems</p>	<p>FAO</p>	<p>Promote the sustainable management of deep-sea fisheries resources in the Agreement Area, including target fish stocks and non-target species. This applies to all CCPs to the Agreement engaging or intending to engage in bottom fishing.</p> <p>https://www.fao.org/3/cc0459en/cc0459en.pdf</p>

<p>South East Asia program by Australia</p>	<p>Australian Department of Agriculture, Fisheries and Forestry</p>	<p>The Australian Government program runs from 2022 to 2026. Working with government fisheries agencies in Southeast Asia, the program aims to improve:</p> <ul style="list-style-type: none"> » monitoring, control and surveillance (MCS) capabilities » regional cooperation in combating IUU fishing » gender inclusivity in fisheries management. <p>The program supports:</p> <ul style="list-style-type: none"> » Association of Southeast Asian Nations (ASEAN) countries » Regional Plan of Action to Promote Responsible Fishing Practices, including Combating IUU Fishing (RPOA-IUU) countries. <p>https://www.agriculture.gov.au/agriculture-land/fisheries/iuu/combating-iuu-fishing-program</p>
<p>US National 5-Year strategy for combating IUU fishing 2022 - 2026</p>	<p>US Interagency Working Group on IUU fishing</p>	<p>US National Strategy for Combating IUU fishing establishes the Working Group's priorities to combat IUU fishing, curtail the global trade in seafood and seafood products derived from IUU fishing and promote global maritime security. This Strategy provides a framework for coordination for the next five years among the relevant U.S. Government (USG) agencies, in partnership with other governments and authorities, the seafood industry, academia, and nongovernmental (NGO) stakeholders that will be key in continuing to make tangible progress in addressing IUU fishing and carrying out a shared vision for stewardship of marine resources.</p> <p>https://media.fisheries.noaa.gov/2022-10/2022_NationalStrategyReport_USIWGonIUUfishing.pdf</p>

IRREGULAR HUMAN MIGRATION



OVERVIEW

Irregular Human Migration (IHM) poses multiple challenges to countries of origin, transit and destination, as well as to migrants themselves. Human migration over the years has been driven by economic needs, survival requirements, natural events, etc. Maritime migration is highly dependent on the environment, political situation, border enforcement and conducive sea conditions for small to medium boat operations. In the recent past, such crossings have gained greater visibility due to their unsafe nature. The scale of challenge and its human cost is highlighted by the **International Organization for Migration (IOM), which states that at least 50,000 people have died during migration since 2014.**

The Centre recorded 1,701 incidents of Irregular Human Migration in 2022, which involved 63,606 migrants and 704 smugglers/traffickers. An increase of 74% as compared to 2021 (977 incidents) which involved 45,328 migrants rescued/apprehended and 339 smugglers being apprehended. The increase in the number of incidents of irregular human migration may be attributed to enhanced reporting and better data collection/analysis by the Centre.

The incidents recorded by the Centre in 2022, included a total of 344 migrant deaths and 443 missing individuals, as compared to 167 deaths and 1,007 missing in 2021. A substantial (50%) decrease in the number of missing migrants may be attributable to enhanced reporting,

better responses by the regional authorities and enhanced collaborative measures by law enforcement agencies. However, an increase in the number of deaths during migration is a concern and signifies the fact that migration attempts via sea routes are inherently dangerous. In a trend similar to last year, the majority of the recorded migrant deaths were reported in the Mediterranean region.

What further complicates the challenge of Irregular Human Migration is that it is often accompanied by a plethora of criminal activities such as slave trade, child abuse and labour, sexual exploitation and trafficking, organ harvesting, etc. Illegal migration routes and networks are also used by terror and criminal elements, which poses a big security challenge. Further, migrants are particularly vulnerable to discrimination, exploitation and abuse.

In some regions, cultural and ancestral linkages drive such migration attempts across geographical boundaries. For ease of analysis and understanding, the Centre has grouped the IHM incidents into five geographical regions – West Asia, East Africa, South Asia, South East Asia and the Mediterranean. Whilst Irregular Human Migration may be subdivided into two distinct categories – human smuggling and trafficking. The Centre has not attempted such subdivision due to the challenges associated with conclusively determining the will and intent of illegal migrants.

MIGRANT MOVEMENT

The monthly average of IHM incidents recorded by the Centre was 142, an increase of 75% as compared with 2021 (81 incidents per month). A higher number of incidents were recorded in the second half of the year; a similar trend was also observed in the previous year. A total of 63,606 migrants were rescued or apprehended in all recorded incidents, a 40% increase as compared with 2021 migrants (45,328), with a monthly average of 5,300 migrants. The normalisation of travel and easing of COVID-19 related restrictions in 2022 may have eased some of the problems for the smuggling/trafficking networks.

As was in the past, migrants were observed to be willing to take significantly higher risks on overcrowded and often unseaworthy boats. Due to the inherent nature of such attempts of migrations, it is usually difficult to conclusively arrive at the number of migrants who initially started the voyage. This highlights the perilous ventures as most of the sea crossings took place in packed, unseaworthy, inflatable boats with minimal/ no survival gears, many of which capsized or were deflated, leading to fatalities during crossings.

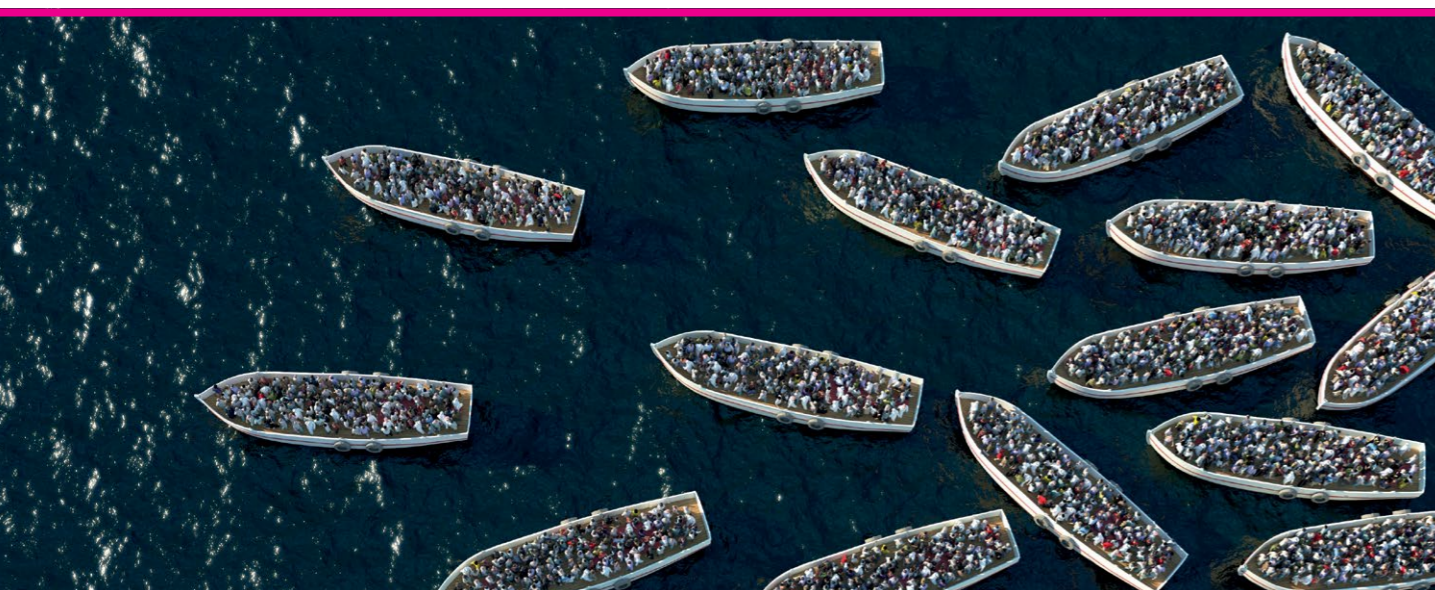
The World Migration Report 2022, published by IOM, notes that most recorded deaths are of people travelling via clandestine routes, which are often at sea or in remote areas (to evade detection), meaning that remains are often not found. In some incidents, the information on migrants and their condition was available only after satellite calls from migrant boats to various international humanitarian organisations and non-governmental organisations.

The methodologies and observations of IHM in 2022 are as follows: -

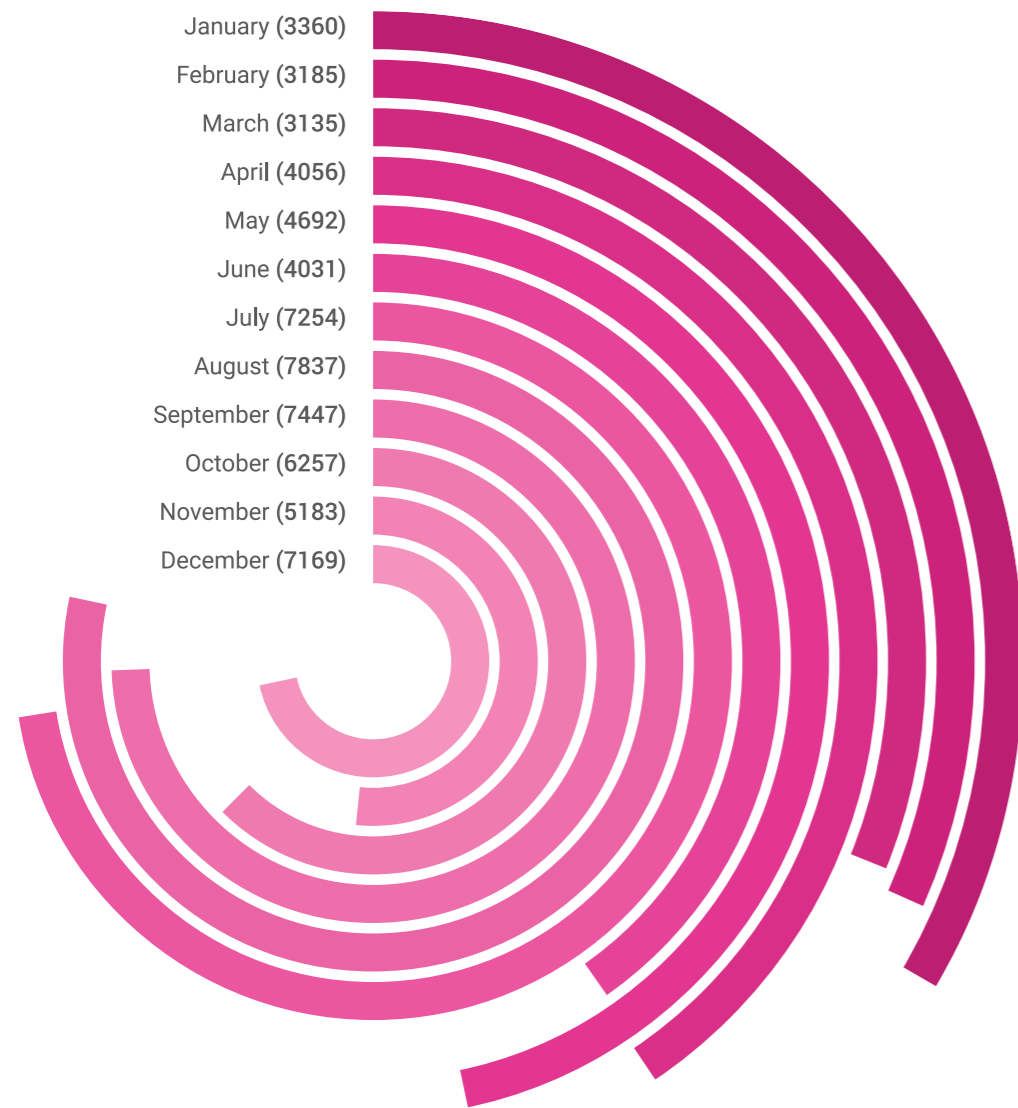
- » Transfer of illegal migrants on small boats, to undertake regular economic activity in a nearby country. This was usually observed where the distances involved are relatively shorter.

- » Embarkation of migrants on converted fishing vessels from beach areas, away from ports/ harbours.
- » Transfer by small boats to a relatively large migrant vessel offshore. This vessel can then stay for multiple months at sea, waiting for a suitable landing window.
- » Concealment in scheduled passenger services/ ferries.
- » Stowaways in merchant vessels.
- » The economic crisis caused a spike in the number of outward migrations from Sri Lanka in 2022.
- » Potential candidates for migration have been apprehended ashore awaiting to be transferred on board fishing vessels/small boats. In some instances, the migrants are grouped and lodged separately to avoid mass apprehension by the authorities.
- » Chartering of passenger's vessels to migrate to distant countries.
- » Inflatable boats have been extensively used as means of transport by migrants, especially in the Mediterranean.

The true numbers associated with Irregular Human Migration are likely to be higher than the recorded numbers, due to challenges associated with detecting, identifying, tracking and reporting such endeavours. Such irregular crossings are likely to continue in the future, with climate change induced effects likely to be a multiplying factor. For instance, the World Migration Report 2022, published by IOM notes that in 2022, there were 26.4 million refugees and 55 million Internally Displaced Persons (IDPs) as opposed to 14 million refugees and 21 million IDPs in the year 2000.



Migrant Movement- Monthwise



UNODC: GLOBAL REPORT ON TRAFFICKING IN PERSONS 2022

The World Migration Report 2022 published by IOM, highlights the following facts:

- The Global Report on Trafficking in Persons 2022, published by the United Nations Office on Drugs and Crime (UNODC) states that the number of detected victims fell for the first time in 20 years. This was attributed to limitations imposed by the pandemic which constrained both traffickers and law enforcement agencies.
- The report also notes that additional factors such as increased impunity in home countries and war/conflict result in more victims trafficked to more destinations. Climate change was recognised as a factor that multiplies trafficking risk
- While boys and men were found to account for a greater share of detected victims, women and children were likely to suffer greater violence at the hands of traffickers.

REGION-WISE DISTRIBUTION

Whilst Irregular Human Migration may be subdivided into two distinct categories- human smuggling and trafficking. The Centre has not attempted such a subdivision due to the challenges associated with conclusively determining the will and intent of illegal migrants. For ease of analysis and understanding, the Centre has grouped the IHM incidents into five geographical regions- The Mediterranean, West Asia, East Africa, South Asia and South East Asia.

A total of 50,487 migrants in the Mediterranean, 6,441 migrants in East Africa, 2,963 migrants in South East Asia, 2,142 migrants in South Asia and 1,573 migrants in West Asia were rescued/ apprehended during the recorded irregular migration attempts.

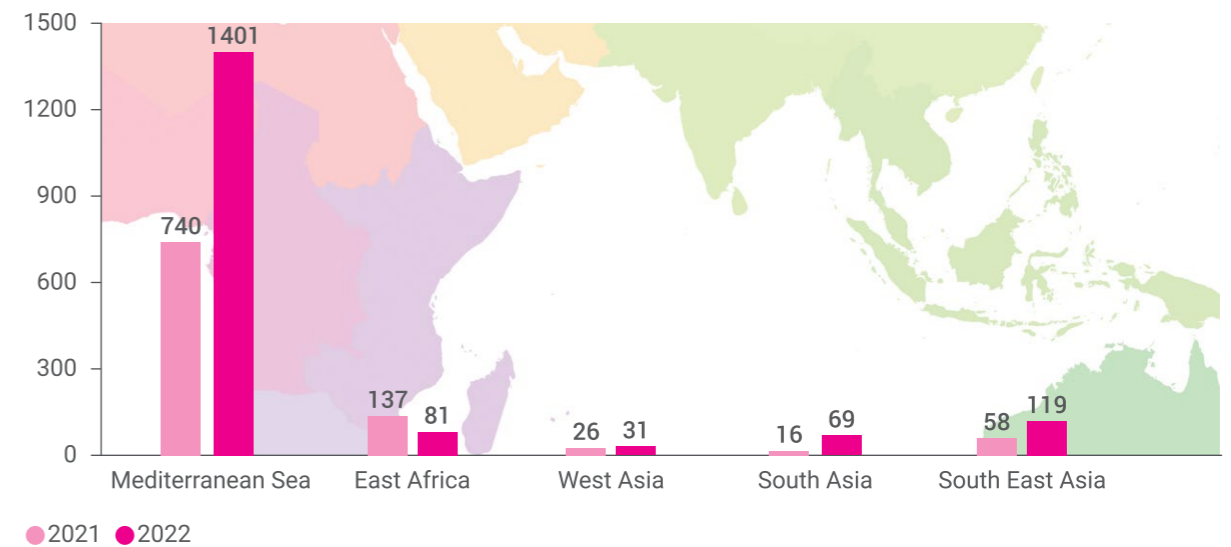
A 21% increase in the number of migrants apprehended in the Kwassa-Kwassa boat by France authorities was observed in 2022. This

increase may be attributable to exacerbating factors in home countries during COVID-19 and relaxation of travel restrictions.

A marginal increase in the number of IHM activities in Malaysia and Sri Lanka was also observed in 2022 as compared to 2021. This increase may be attributable to exacerbating factors in home countries due to the pandemic and the relaxation of travel restrictions.

The region-wise distribution of dead and missing migrants have been observed to be in accordance with the respective share of incidents for all regions except East Africa, which has recorded comparatively lesser numbers. This is likely due to the relatively smaller distances involved in the migration attempts.

Further region-specific analysis is contained in the following part of this section.



EAST AFRICA

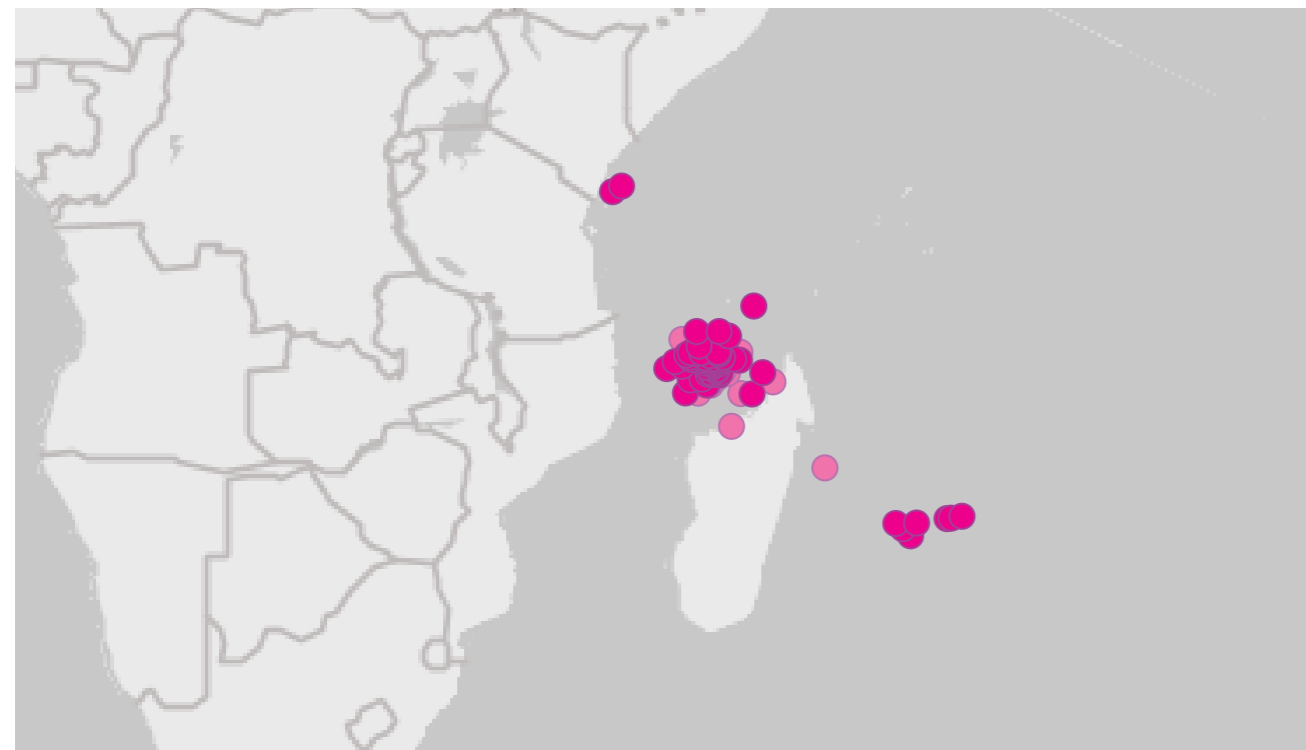
A total of 6,441 migrants were rescued/ apprehended in 2022 as compared to 4,552 in 2021. About 41% increase in migrants rescued/ apprehended was observed by the Centre. However, a significant reduction in incidents was observed (from 137 in 2021 to 81 in 2022). This may be attributable to the change in reporting methodology by Mayotte authorities which in some instances, were observed to have consolidated data of apprehensions in a particular week. Further, no migrants were reported missing/ dead and 368 smugglers were apprehended in 2022, as opposed to eight missing migrants and 247 smugglers apprehended in 2021.

Kwassa-Kwassa (small boats) was observed to be the choice of transport in the recorded incidents as has been the past trend. These boats are susceptible to rough weather conditions in the region between May–Oct, caused by the Southwest Monsoons. 84% (68 out of 81 incidents) of these incidents were recorded off Mayotte alone. A 21% increase in the number of migrants apprehended in Kwassa-Kwassa boats by France authorities

was observed in 2022. In many such instances, the Kwassa-Kwassa boat is seized and the migrants are repatriated to their parent country by the regional authorities.

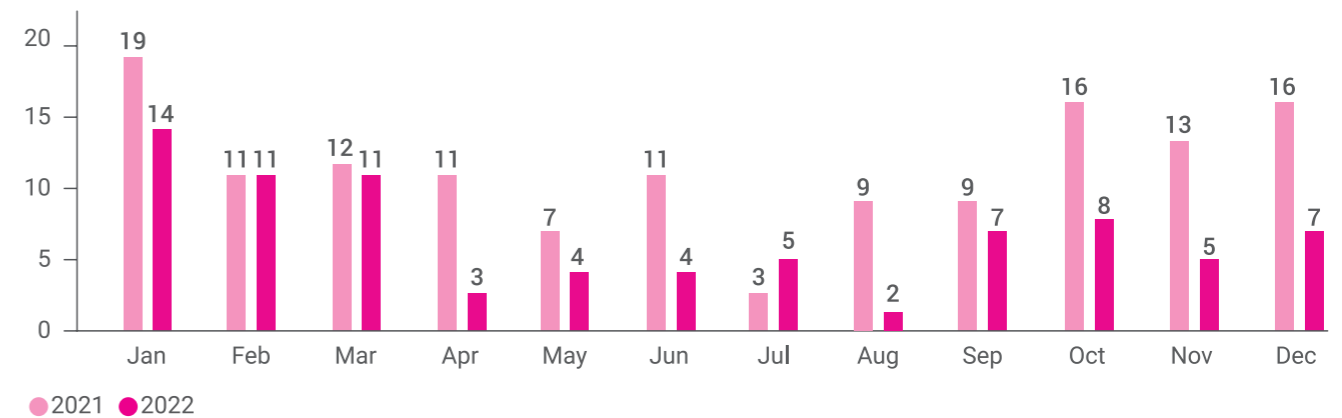
The migrants from Sri Lanka were also observed to be seeking asylum in island countries of the South Indian Ocean. The Centre monitored four such instances which involved multiday fishing trawlers with irregular migrants attempting to reach La Réunion Island in 2022. This may be attributable to the economic crisis in Sri Lanka and a few migrants falling prey to human smugglers promising better livelihood in La Reunion Island. The Centre has observed a steady flow of irregular human migrants to Mayotte and La-Reunion Island.

In addition to cultural and familial ties spanning generations, socio-economic factors are understood to be the drivers behind Mayotte being a popular IHM destination in the region. However, the political and economic crisis in some countries of the Indian Ocean Region leading to migrants seeking the opportunity for asylum purposes may have contributed to the migrations attempts to La-Reunion Island.



● 2021 ● 2022

Analysis of Illegal Human Migration Incidents



MEDITERRANEAN SEA

Mediterranean continued to be the hotspot of IHM in 2022, with 1401 incidents as compared to 740 incidents in 2021, accounting for 82% of the total incidents recorded. The quarterly analysis indicates that the second half of the year is the favourable timeframe, a pattern like the previous year. The increase could be attributed to enhanced reporting, change in reporting methodology by some countries in the region, better data capture by the Centre and favourable weather conditions in the Mediterranean.

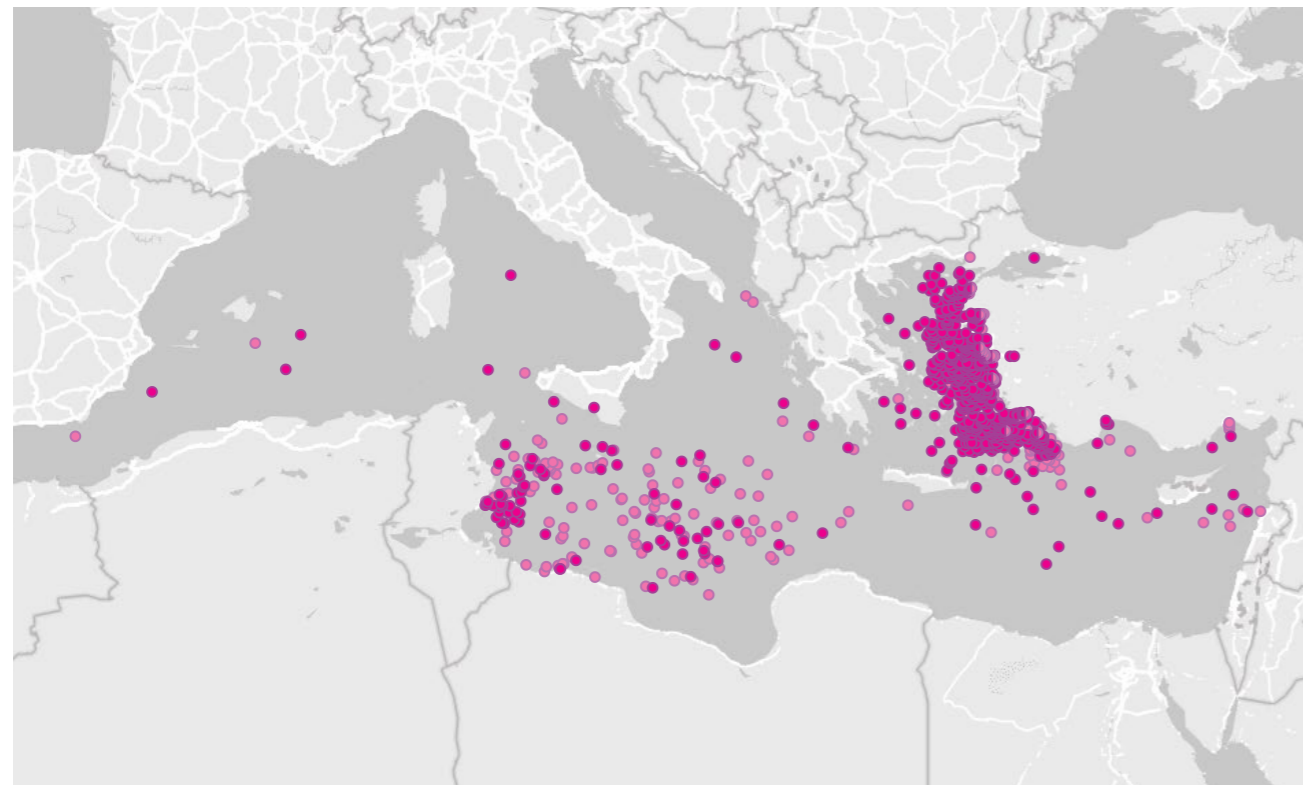
In the recorded incidents by the Centre, the Mediterranean region accounted for 283 migrant deaths and 310 missing migrants in 2022, as compared to 118 deaths and 635 missing individuals in 2021. A total of 50,487 migrants were rescued/ apprehended in 2022, compared to 38,135 in 2021.

It has been observed that inflatable boats have been extensively used as means of transport by the migrants. 862 (62%) of the total incidents in this region involved the usage of inflatable boats. Also, the migrants were willing to take higher risks to cross the Mediterranean to Europe on fragile boats driven by human smugglers regardless of the seasonal variations, sea conditions and were often not deterred by the presence of security forces.

Europe was observed to be the destination for almost all recorded incidents, with the easing of cross borders movement post-COVID-19 likely to have induced an increase in the influx of flow of illegal trans-Mediterranean migration. Varied ethnicities of the migrants were reported, with large numbers belonging to Africa, West and South Asia. The common conditions, as identified earlier in the section, are the drivers in the region and are assessed to be the push and pull factors for such ventures. It is also assessed that, in some cases, the countries bordering the shores of north Africa are mere transit destinations to Europe.

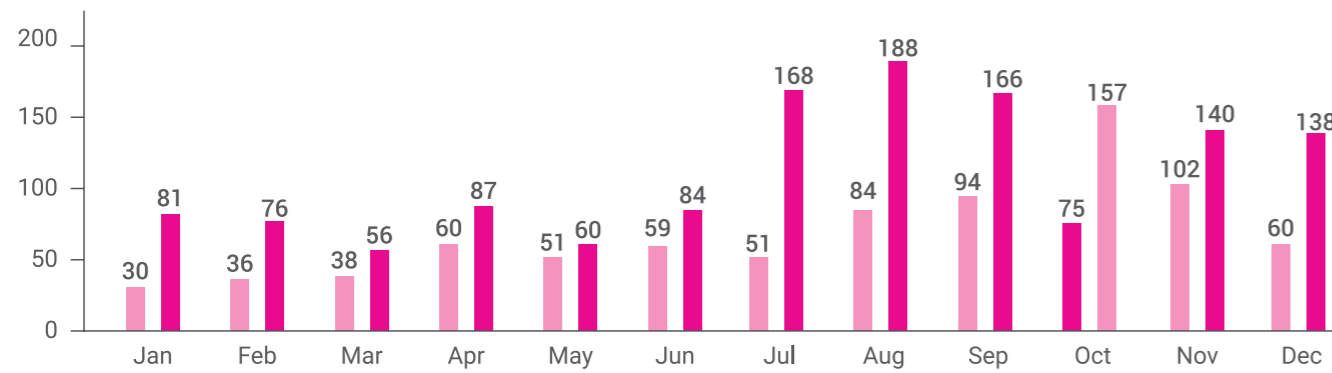
Research by the Centre indicates that the Western and Central Mediterranean routes continue to account for a major part of migration into Europe. However, details of individual incidents have been difficult to obtain, thereby limiting analysis. The Centre has been able to pick up a greater number of incidents along the Eastern route due proactive reporting to countries/ bodies in the region, especially Turkey. Accordingly, the statistics and trends may be taken as indicative and specialised reports by organisations such as UNHCR, IOM, FRONTEX, etc. may be consulted.





● 2021 ● 2022

Analysis of Illegal Human Migration Incidents



● 2021 ● 2022

SOUTH EAST ASIA

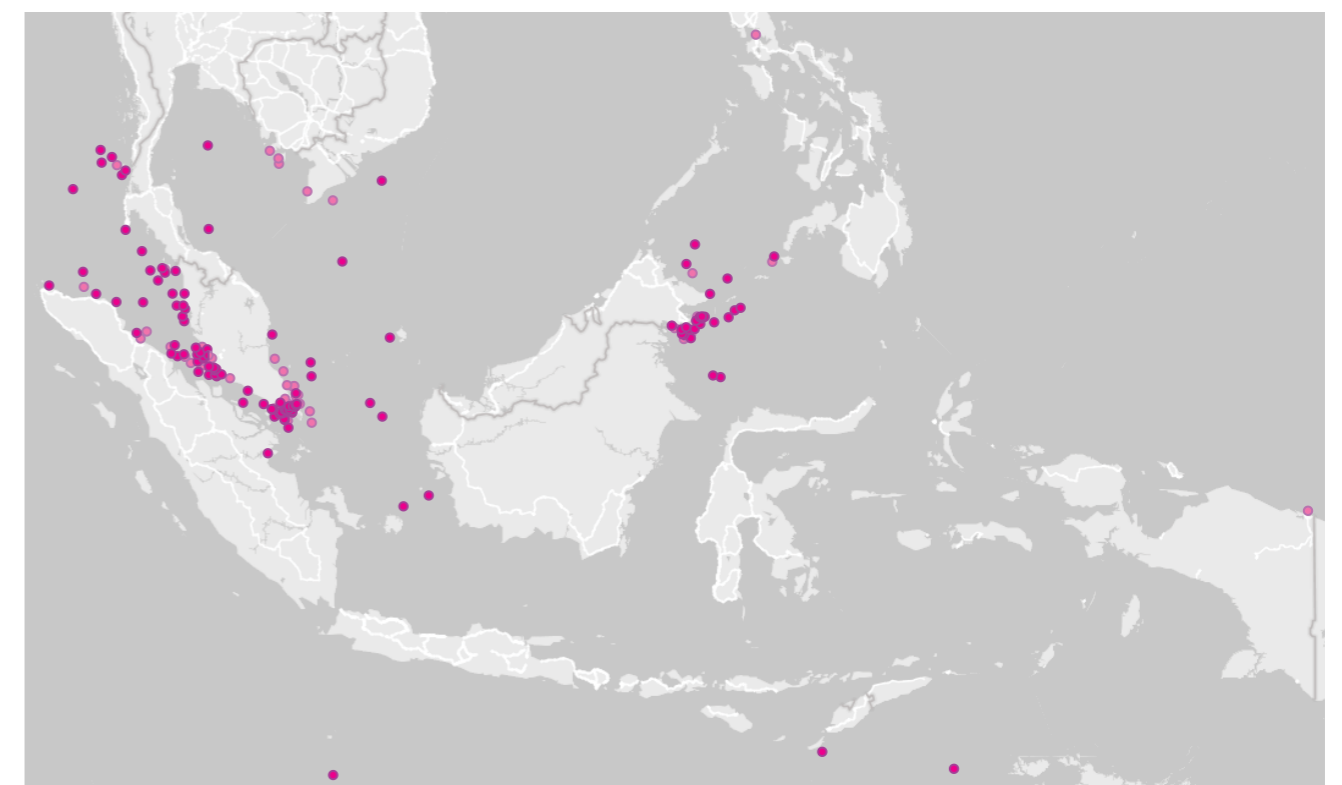
The Centre recorded 119 IHM incidents in the South East Asia region in 2022 as compared to 58 incidents in 2021. In the recorded incidents by the Centre, a total of 2,963 migrants were rescued/ apprehended in 2022 as compared to 1,455 in 2021. South East Asia region also accounted for 36 migrant deaths, 58 missing migrants and apprehension of 32 smugglers in 2022, as compared to 33 migrant deaths, 30 missing migrants and apprehension of 22 smugglers in 2021.

59% of the recorded incidents were reported off Malaysia, followed by 24% off Indonesia and a few incidents off Thailand, Australia and Philippines. The migrants were observed to be using speed boats, wooden boats and fishing boats etc.

A large number (44 out of 119) of incidents were recorded in the Malacca Straits. This may be attributable to the focussed operations of authorities in the region, enhanced patrolling and collaborative efforts between regional authorities. Malaysia is likely to be a favoured destination due to the abundance of low-skilled

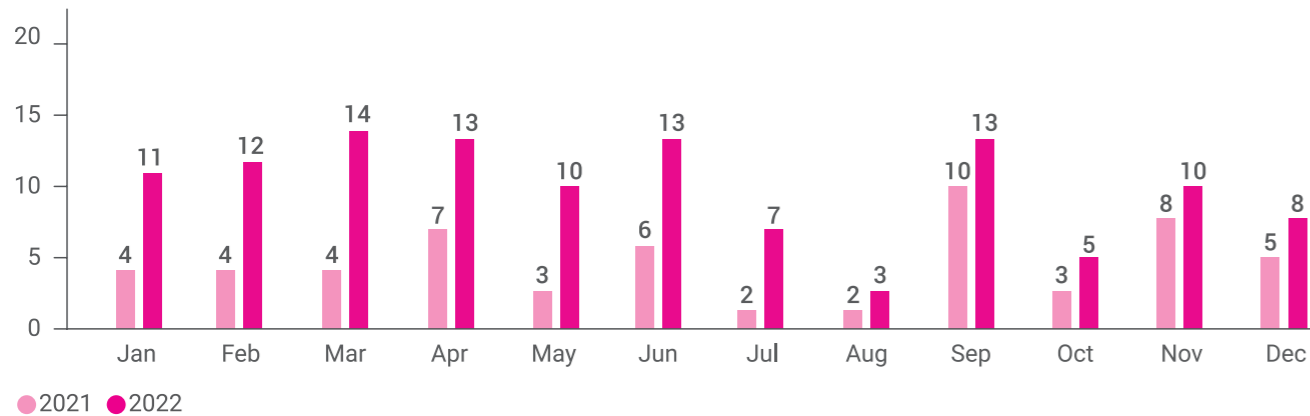
jobs in industries such as palm plantation and rubber. Also, with better livelihood and security, the migrants may consider it as a choice destination to migrate and settle. The favourable economic situation is also considered to be attractive for migration. The majority of these incidents include migrants who are illegally travelling to/ departing from Malaysia. World over, employers tend to hire illegal immigrants due to economic considerations and challenges in finding locals willing to do these jobs. Such migrants often do not intend on settling down in their destination countries but regularly travel back home, including for events such as important festivals.

In a notable incident that showcases the reach of migrant smuggling networks and international collaboration for maritime safety, a total of 303 irregular migrants from a fishing trawler Lady R3 were rescued by a Ro-Ro vessel HELIOS LEADER in Nov 22. The fishing trawler was about 258 nm SE of Vung Tau Cape, Vietnam, had experienced water ingress and the migrants onboard were reportedly destined for Canada.



● 2021 ● 2022

Analysis of Illegal Human Migration Incidents



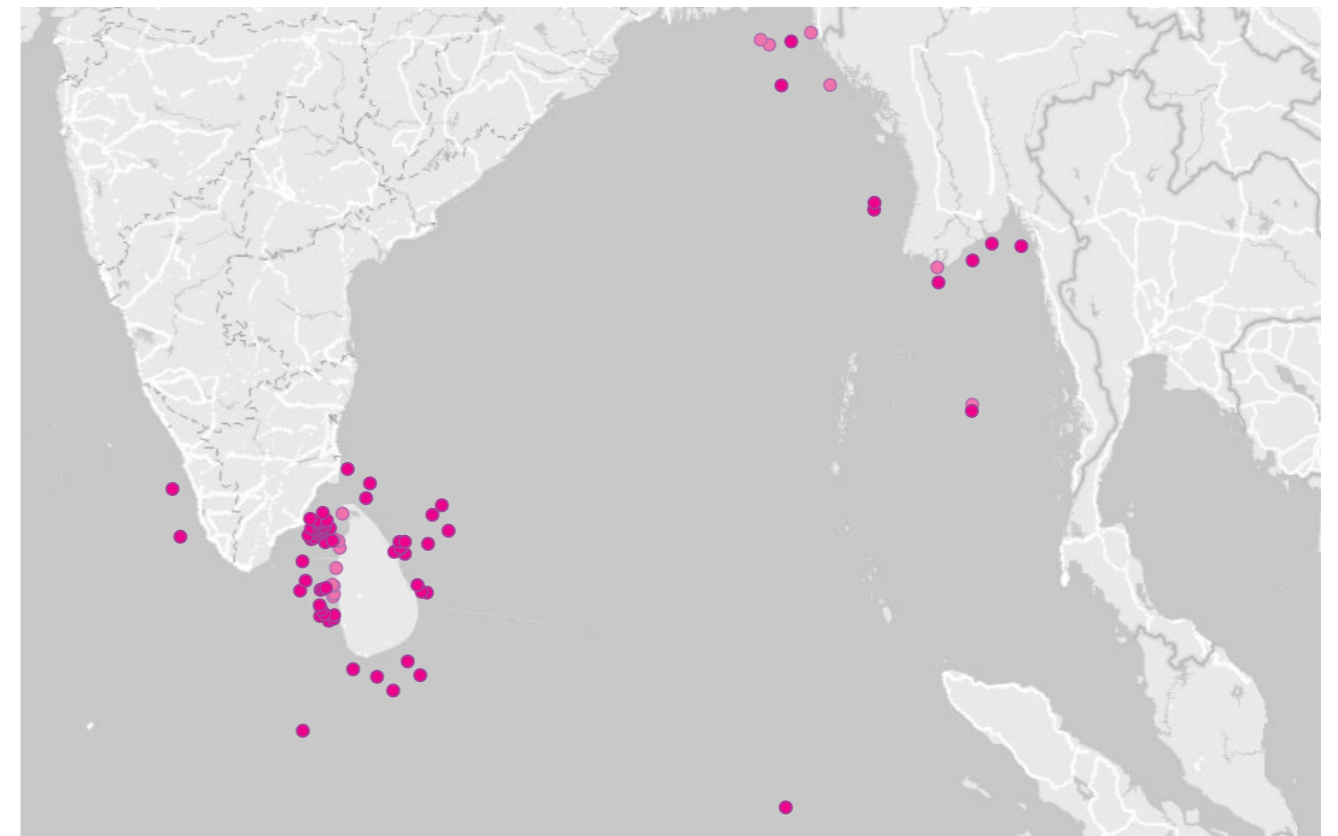
SOUTH ASIA

The Centre recorded 69 incidents in South Asia during this year as compared to 16 incidents in 2021. In the recorded incidents, a total of 2,142 migrants were rescued/ apprehended in 2022 as compared to 606 in 2021. South Asia region also accounted for 25 migrant deaths, 75 missing migrants and the apprehension of 105 smugglers in 2022, as compared to 11 migrant deaths, 50 missing migrants and the apprehension of seven smugglers in 2021.

In 2022, the IHM incidents were even observed during the monsoon season, a trend which was almost absent in 2021. 36% of the incidents involved the usage of fishing boats/ trawlers and 17% involved small boats such as dinghies, wooden boats, etc., as a means of transport by the migrants. Such attempts often involve unseaworthy and overcrowded vessels, resulting in frequent breakdowns at

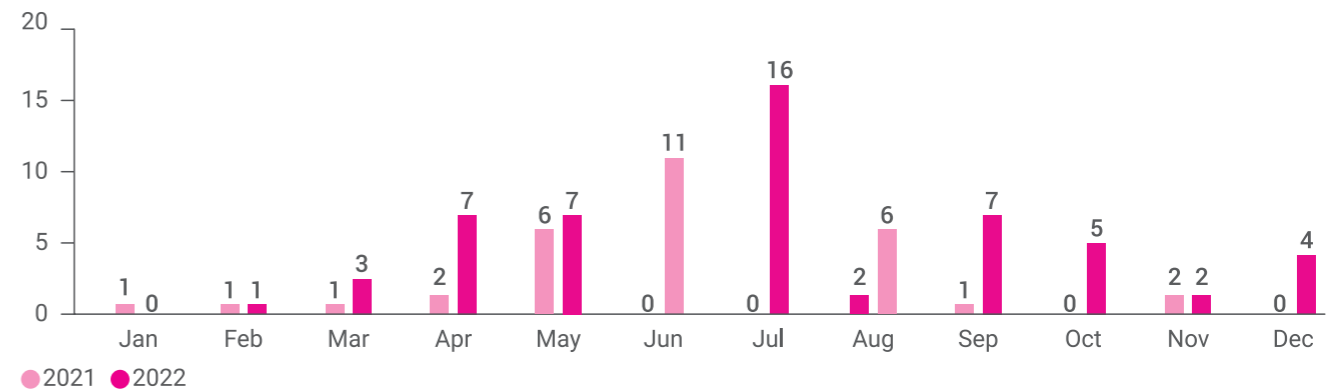
sea. This indicates that venturing out at sea in unseaworthy boats may result in the deaths of migrants. The lack of survival gear further exacerbates the situation. On 18 Dec 22, a passenger craft with 104 migrants experienced a mechanical failure in Sri Lanka’s territorial waters. The Sri Lanka authorities rescued the migrants in rough sea conditions.

A significant increase in the number of incidents in South Asia was observed in 2022. 55% of the incidents were recorded off Sri Lanka, 30% off India and 15% off Bangladesh and Myanmar. The elevated number of incidents off India and Sri Lanka may be attributable to the fallout of the economic crisis during the first half of the year. The remaining incidents of rescue/ apprehensions off Bangladesh and Myanmar have been in line with the previous trend observed in the region.



● 2021 ● 2022

Analysis of Illegal Human Migration Incidents



FALLOUT OF ECONOMIC CRISIS IN SRI LANKA

Similar to South East Asia, cultural and ancestral ties play a part in the illegal movements of Sri Lankan Tamils to and from India using sea routes. A sizeable diaspora of Sri Lankan Tamils live in the refugee camps in Tamil Nadu, India and have close ties in Sri Lanka. Such ties sometimes enable the planning and execution of IHM ventures to other countries. This may be attributable to the historic political conditions, socio-economic scenario and remnants of conflict-related issues.

This trend was exacerbated by the economic crisis in Sri Lanka, where in a large number of incidents were recorded off India and Sri Lanka involving migrations out of Sri Lanka. It was observed that the incidents of irregular migration from Sri Lanka to India usually involved relatively smaller number of migrants (<10), as opposed to distant migration attempts from Sri Lanka) in which boats were observed to have over 100 migrants in some instances.



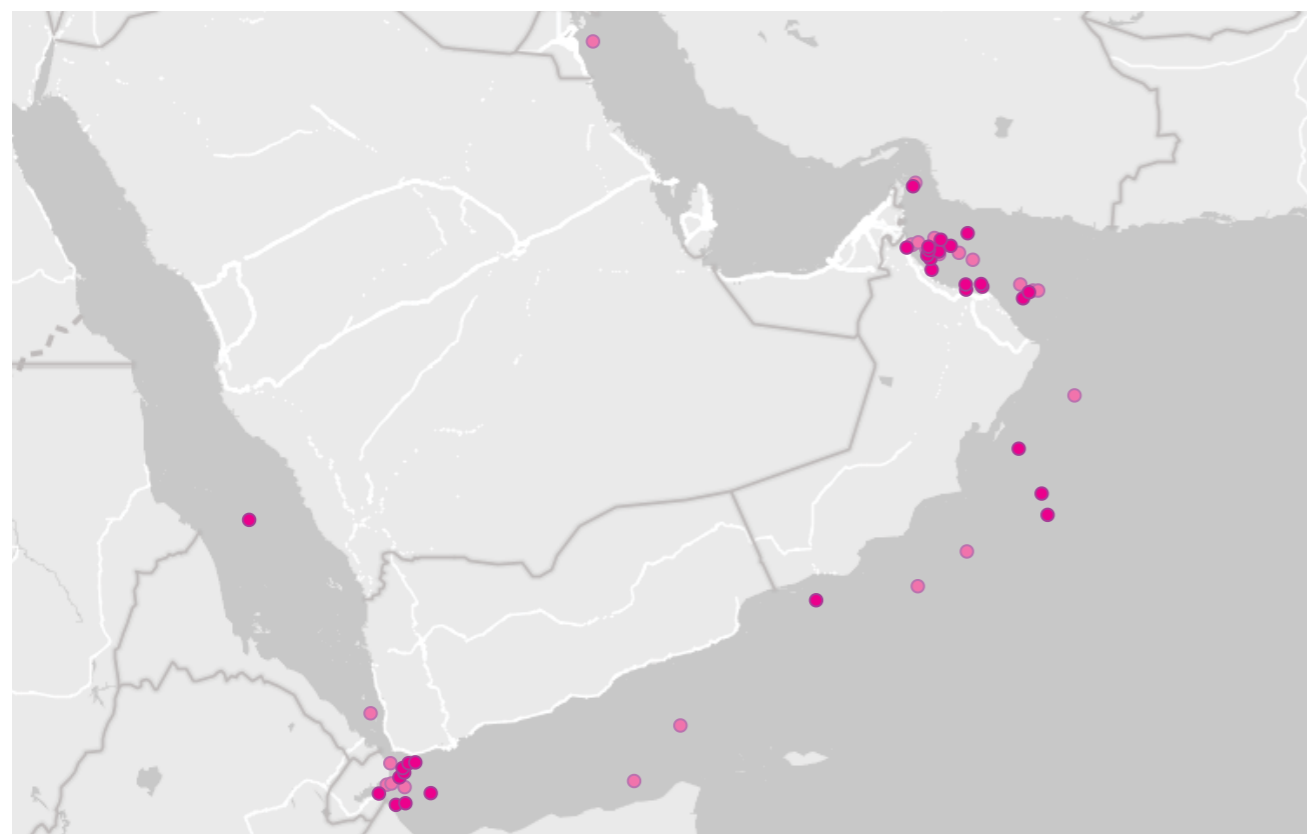
WEST ASIA

The Centre monitored 31 incidents in the West Asia Region in 2022 as compared to 26 incidents in 2021. In the recorded incidents by the Centre, a total of 1,573 migrants were rescued/ apprehended in 2022 as compared to 580 in 2021. West Asia region recorded 21 smugglers apprehensions in 2022 and no migrants deaths or missing reports, compared to five migrant deaths, 284 missing migrants and the apprehension of two smugglers in 2021. Some of the migration attempts may be attributed to cultural ties, trade and other reasons attributable to the historic pattern of life. Conflict/ instability in certain parts of the region is likely to exacerbate the trend. It is assessed that varied standard of reporting/ information sharing is likely to limit the information available at the Centre.

Oman accounted for about 68% of the recorded incidents, which may be attributable to

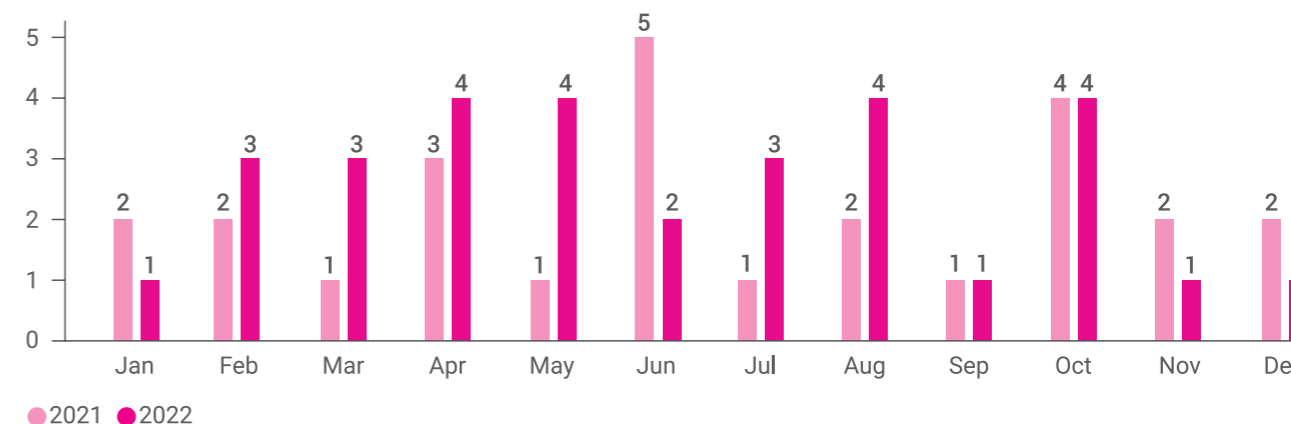
economic factors as well as proactive reporting by Oman authorities. Due to its proximity to the Makran coast, this route is also likely to be used by other criminal elements to cross illegally over from/ to other countries in the region. On 21 Nov 22, a large quantity of drugs was also seized along with the migrant boat off North Al Batinah, Oman by Oman authorities.

In the incidents recorded, 1,057 migrants were rescued/ apprehended off Djibouti, 485 migrants off Oman and 31 migrants in the Red Sea in 2022. The migrants were observed to be predominantly using Galba/ small boats (local boats). In many such instances, these boats were overcrowded, with more than 100 migrants attempting to migrate to a foreign country. The enhanced patrolling and better coordination by Djibouti Coast Guard has led to an increase in the number of the rescue of migrants in 2022. Such migration attempts are likely to continue in the near future.



● 2021 ● 2022

Analysis of Illegal Human Migration Incidents



● 2021 ● 2022



MARITIME INCIDENTS



OVERVIEW

Maritime transport is an important facet of the global economy. As per the United Nations Conference on Trade and Development (UNCTAD) accounts for 80% of worldwide trade, which includes an array of resources and products being transported. The dynamic and unpredictable nature of oceans, breakdowns at sea and unprecedented eventualities make the shipping industry prone to various accidents

which are grouped under the category of Maritime Incidents by the Centre. This category is further classified into 15 different sub-categories. For ease of comprehension, the individual sub-categories have been grouped into the following three broad classifications (some incidents may involve both vessels and individuals):-

Incidents Affecting Vessels	Fire, Flooding, Grounding, Collision, Mechanical Failure, Sunk, Capsize, Cargo Mishap and SAR.
Incidents Affecting Individuals	MEDEVAC, Man Overboard, Missing and Death.
Incidents with Legal Connotations	Vessel Detained and Violent Confrontation.

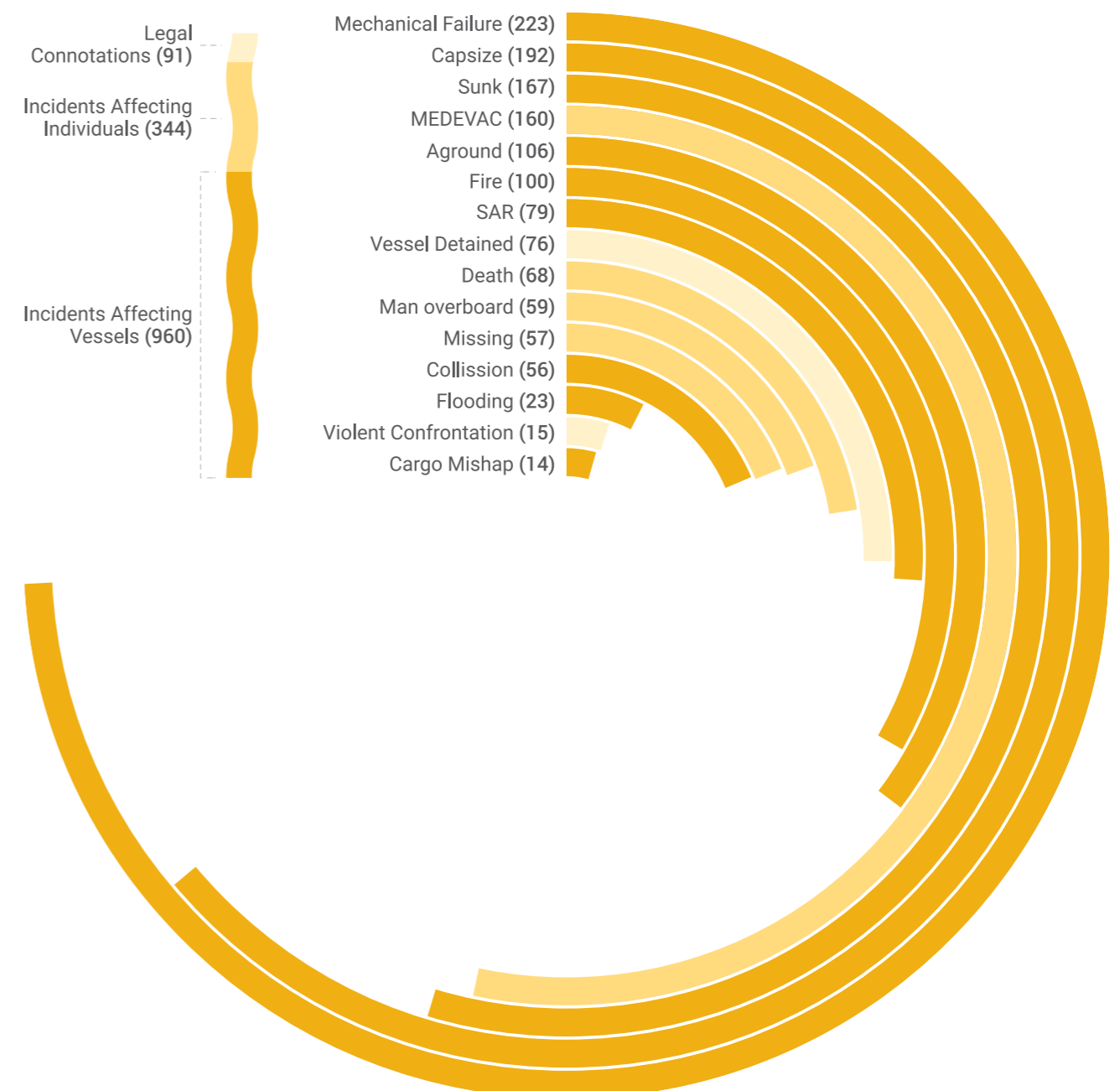
IFC-IOR monitored 1,395 incidents classified under the maritime incidents section, which was a 25% increase as compared to 2021 (1117 incidents). These incidents may primarily be attributable to factors such as environmental conditions, mechanical failure, human error, etc. In the incidents recorded this year, a total of 564 individuals were recorded to have died, an increase of 34% from 420 deaths recorded in 2021. This year also saw 747 individuals being reported missing in such incidents, which was a 13% increase from the 663 missing in 2021. This increase may be attributable in part to enhanced data capture by the Centre.

For further analysis, recorded incidents have also been classified into four geographical regions: East Africa, Southeast Asia, South Asia and West Asia. 53% of the incidents were reported in South East Asia, followed by 27% in South Asia, 13% in East Africa and 7% in West Asia. A large portion of incidents being recorded in South East Asia may be attributed to the presence/ usage of large numbers of vessels including small boats for transportation purposes and proactive reporting by authorities.

TYPE OF INCIDENTS

Mechanical failure and capsizes incidents combined, constituted 30% of recorded incidents, followed by 24% of collision, grounding and sinking. This was followed by 17% of incidents being classified as SAR and MEDEVAC. Fire and flooding sub-categories accounted for 9% of incidents. In line with the previous trend, incidents of 'Vessel Detained' and 'Violent Confrontation' sub-categories were also recorded. Most of the 'Vessel Detained' incidents were reported in Malaysian waters and

predominantly associated with unauthorised anchoring by vessels and lack of requisite authorisation. The various subcategories of the Maritime Incidents section have reflected an increasing trend except for Vessel detained, Violent confrontation, Collision and SAR sub-categories, which decreased slightly compared to 2021. Small vessels and fishing vessels accounted for 45% (627 out of 1395 incidents) of Maritime Incidents compared to 24% in 2021.



1,395
Incidents Monitored

25%
Increase 2022 vs. 2021

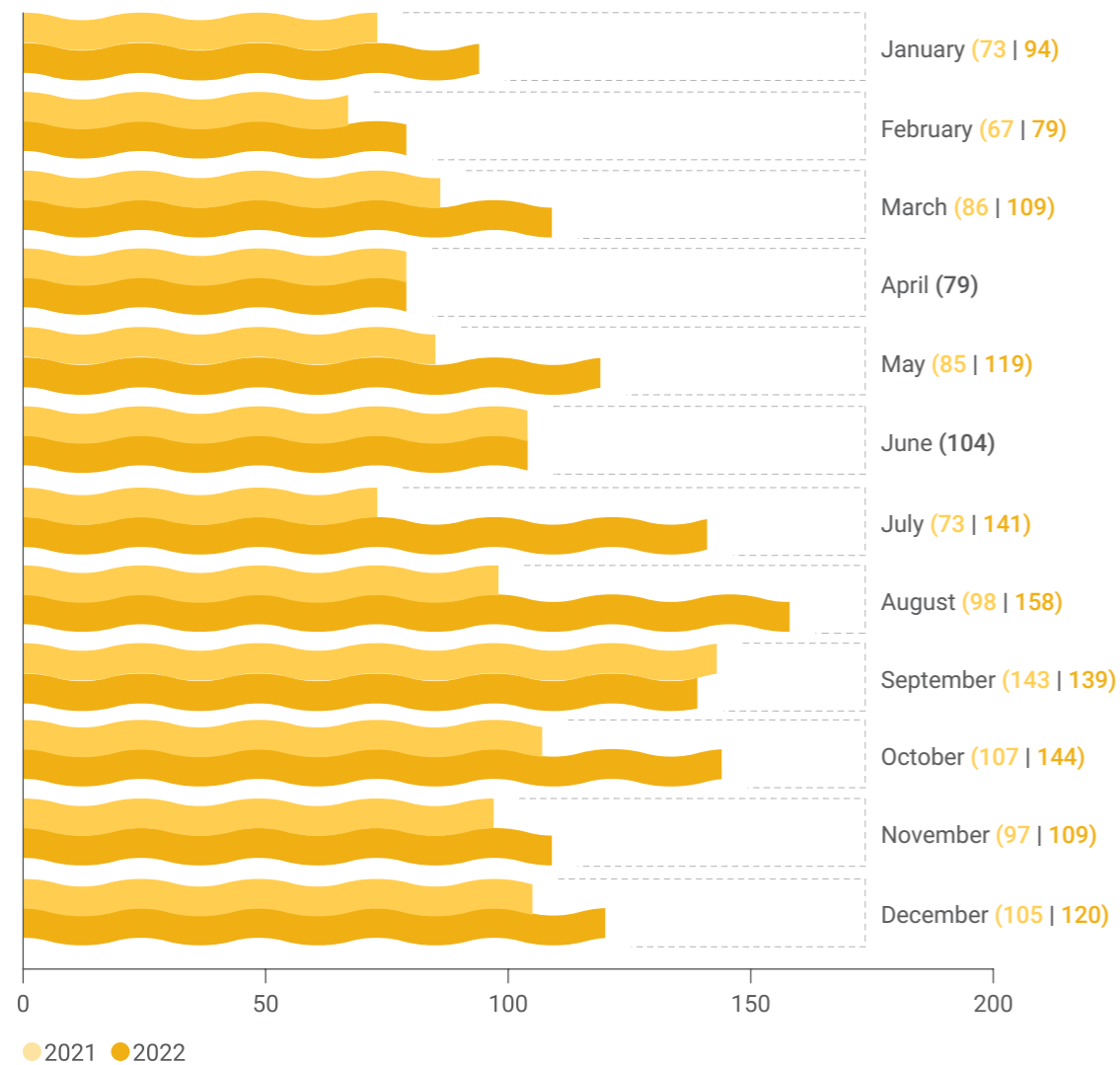


564
Lives Lost

MONTH WISE BREAKDOWN

An average of 116 incidents per month were monitored in 2022. August and October recorded the highest number of incidents at 158 and 144 respectively, which may be attributable to the adverse weather conditions

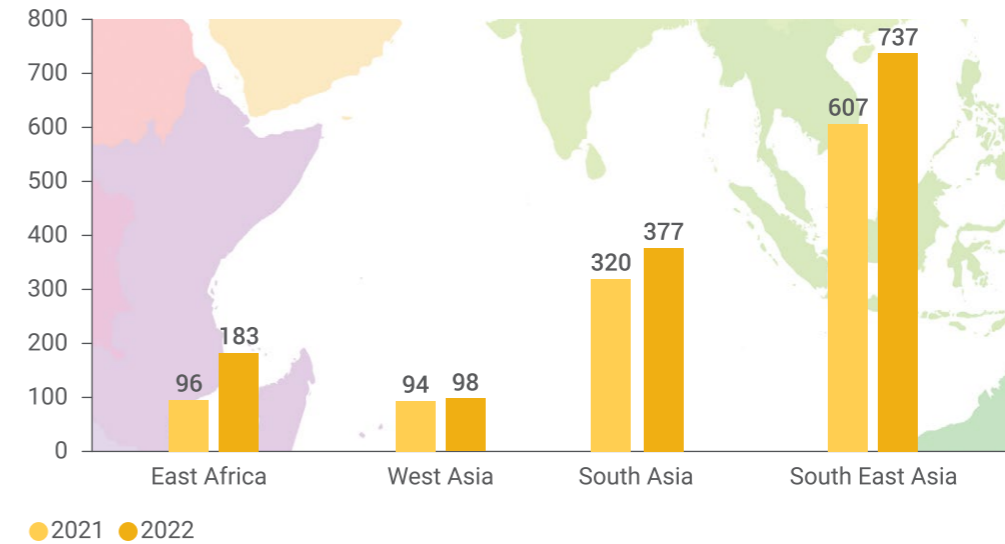
during monsoons, cyclones (Cyclone SITRANG and Typhoon NALGEA) and lack of adequate maintenance. IFC-IOR recommends that the mariners adhere to the weather advisories/warnings issued by competent authorities.



REGIONAL DISTRIBUTION

53% (737) of the overall incidents were recorded in South East Asia followed by 27% (377) in South Asia, 13% (183) in East Africa and 7% (98) in West Asia. All regions have reflected an increasing trend of maritime incidents as compared to 2021. The number of incidents continues to peak during the SW Monsoon seasons, especially in South East and South

Asia. A higher number of 'Capsize or Sunk' incidents, especially those involving smaller vessels, medium-sized vessels and fishing vessels, were monitored during rough weather periods. Many small boats were assessed to have capsized while proceeding to/ from beaches due to the surf/ waves breaking near the coast.



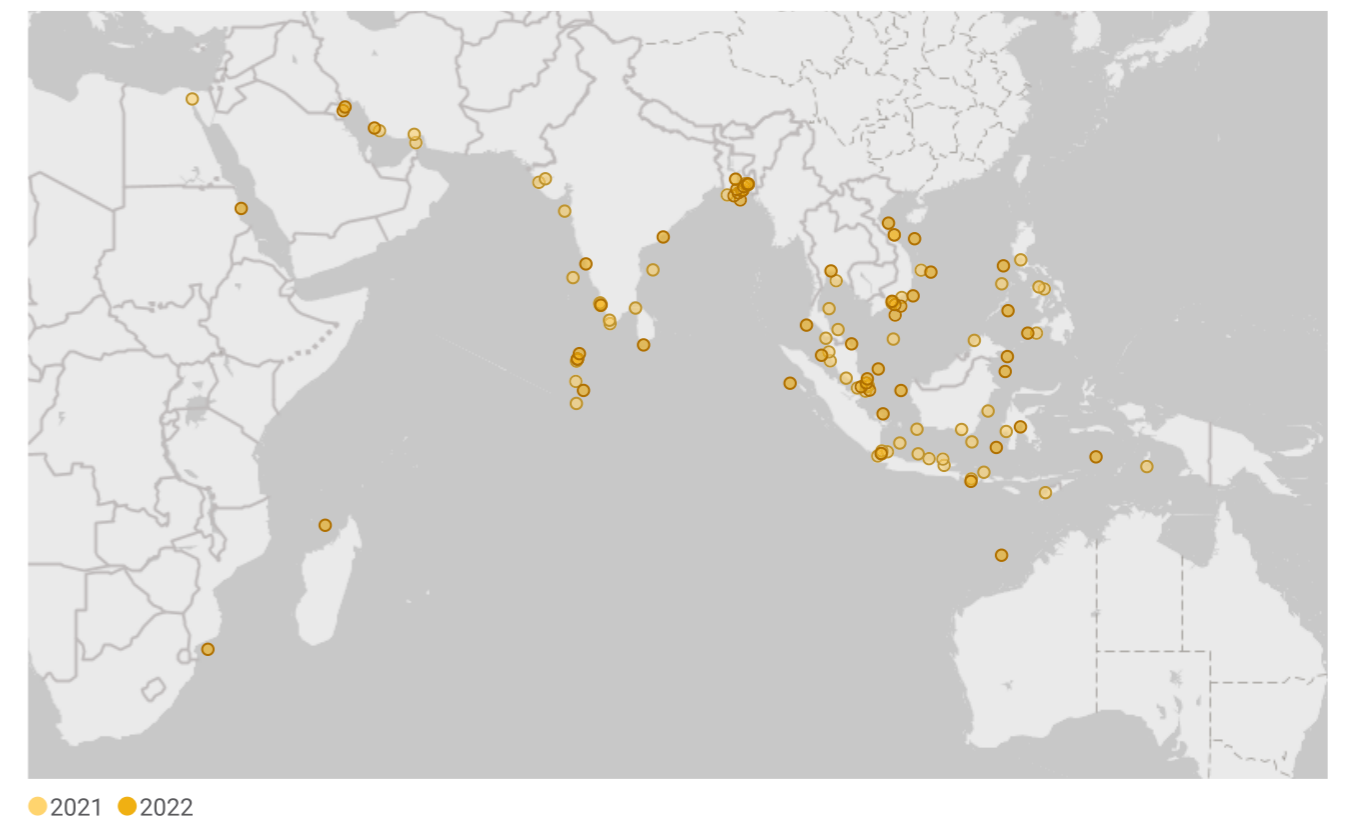
ANALYSIS OF INCIDENTS

COLLISIONS

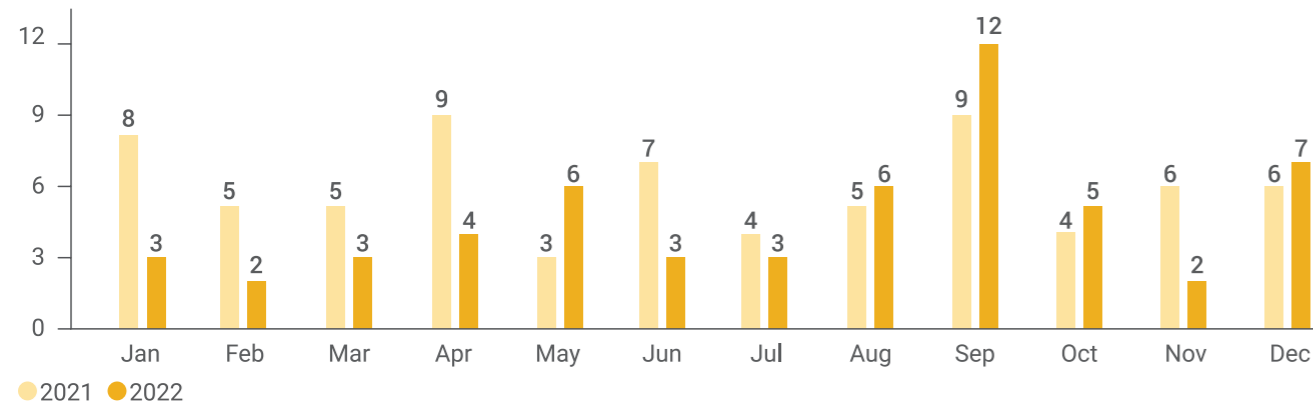
In 2022, the Centre monitored 56 incidents of collisions, which is a 21% decrease from the 71 incidents recorded in 2021. These included both ship-to-ship collisions and vessels colliding with marine/ port infrastructure. September saw the highest number of incidents (12).

South East Asia (55%) accounted for the highest number of incidents, followed by South Asia (34%), West Asia (7%) and East Africa (4%). Approximately 20% of the collision incidents were reported off Indonesia and Bangladesh.

Cargo ships and fishing vessels accounted for 13% and 23% of recorded incidents, respectively.



Analysis of Collision incidents

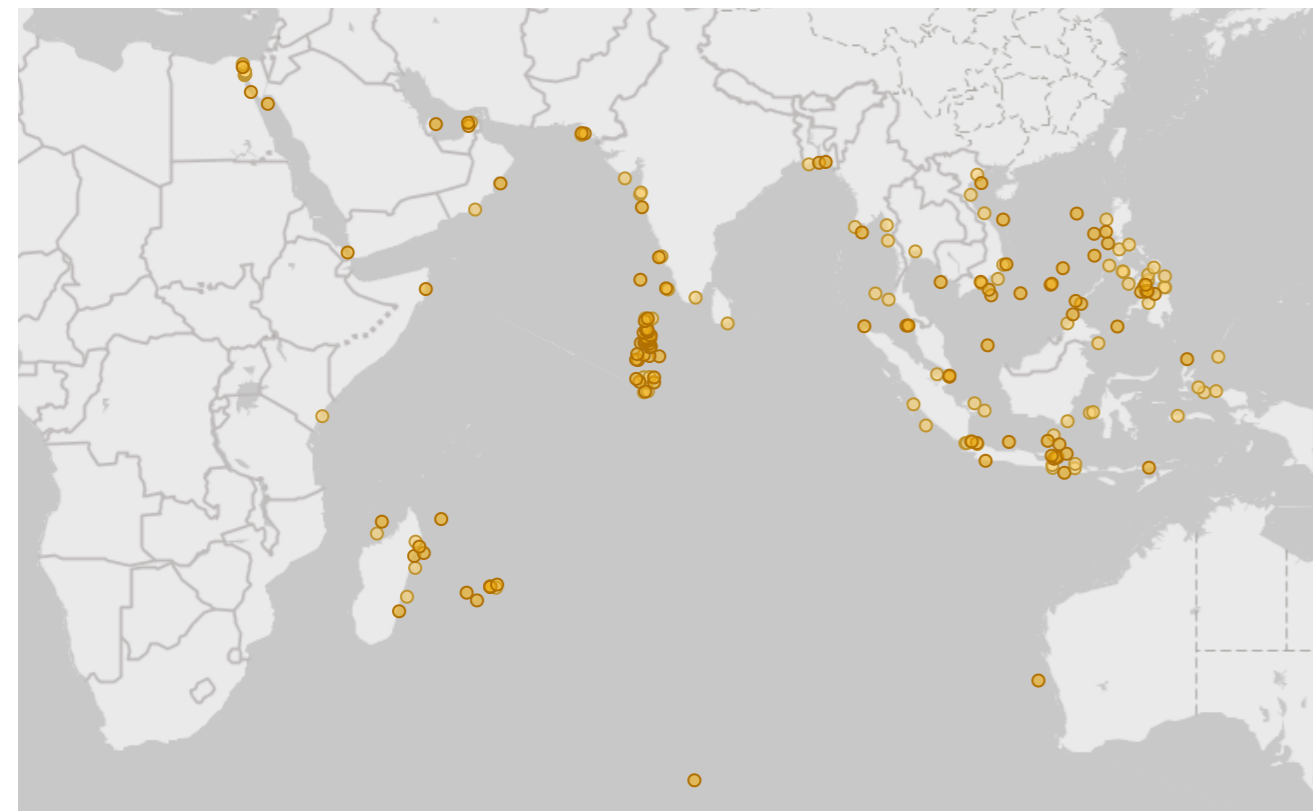


GROUNDINGS

The Centre monitored 106 incidents of vessels running aground in 2022, with a approximate monthly average of nine, a slight increase as compared to 2021 (88 incidents). Groundings, Collisions and Mechanical Failures, are not uncommon in the Suez Canal. However, the Centre recorded only one incident of grounding in 2022 as compared to eight such incidents in 2021 in the Suez Canal, which is covered in the latter part of the section. The vessel was

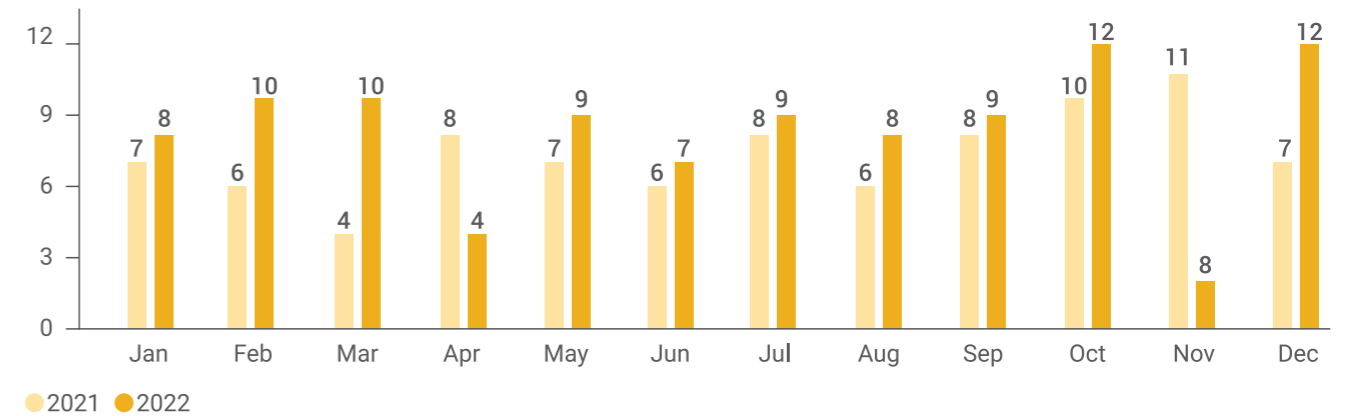
refloated and anchored at Suez Anchorage with minimal effect on traffic flow.

44% of the incidents were recorded in South East Asia, predominantly off Indonesia (18%) and the Philippines (13%). The remaining incidents were distributed in South Asia (36%), East Africa (14%) and West Asia (6%). 47% (50 out of 106 incidents) of the incidents recorded involved smaller vessels such as cargo, passenger and fishing vessels.



● 2021 ● 2022

Analysis of Grounding incidents



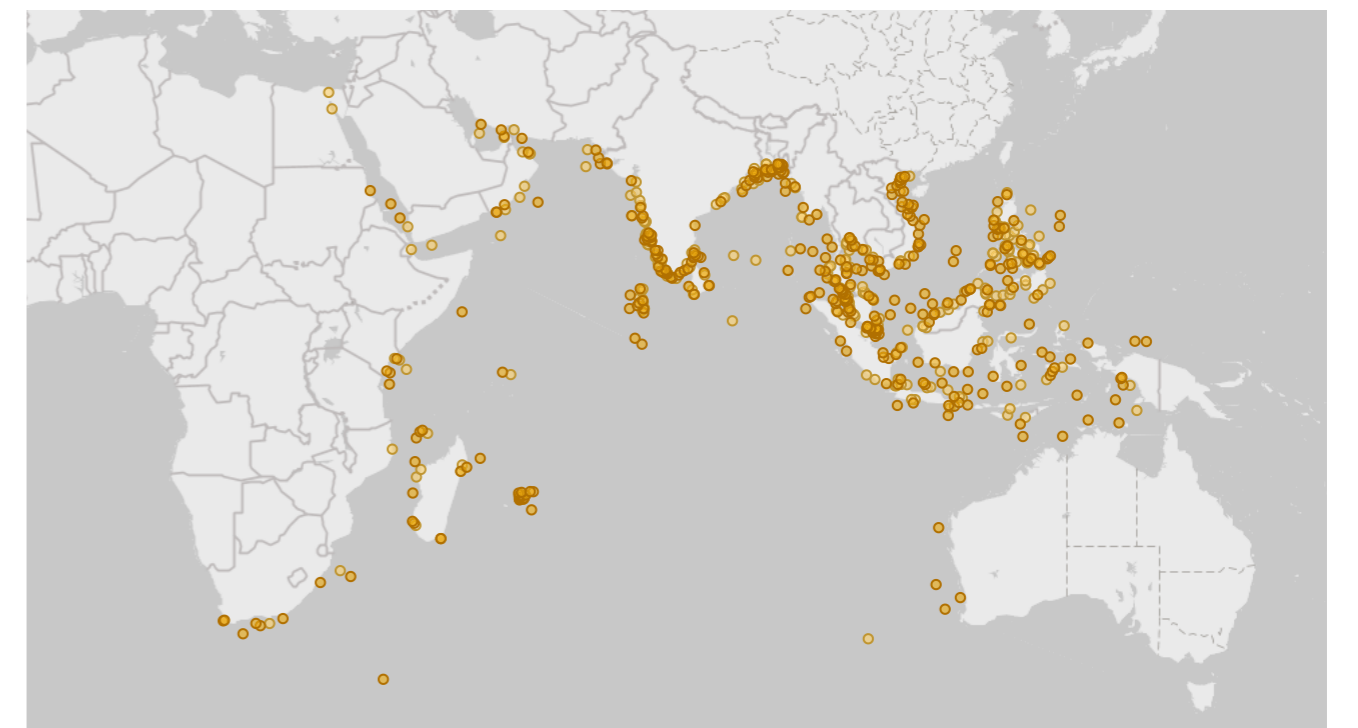
CAPSIZING OR SUNK

The Centre monitored 359 incidents of vessels capsizing (192) or sinking (167) at sea in 2022 with a monthly average of about 30 incidents, as compared to 250 incidents in 2021 (monthly average of about 21 incidents). The highest number of incidents were recorded in the month of August 2022 and the third quarter of the year, which can be attributed to rough weather associated with monsoons in the region.

Vietnam (20%). The remaining incidents were distributed in South Asia (28%), East Africa (11%) and West Asia (3%). An overall increase in the number of incidents in this subcategory was observed in all regions except West Asia, which observed a slight decrease.

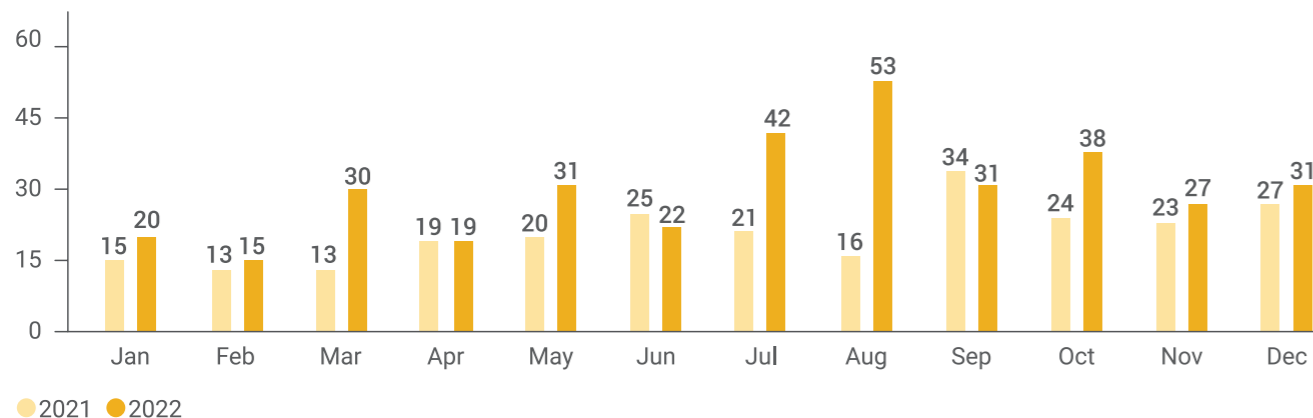
Fishing vessels alone constituted 49% of the recorded incidents of capsizing or sinking, the majority of which were reported close to the coast. Ignoring weather warning to make a living may have forced many fishermen to venture into the sea in rough weather conditions and is likely the cause for some of these incidents.

58% of the incidents were recorded in Southeast Asia, predominantly off Indonesia (33%) and



● 2021 ● 2022

Analysis of Capsize/Sunk incidents



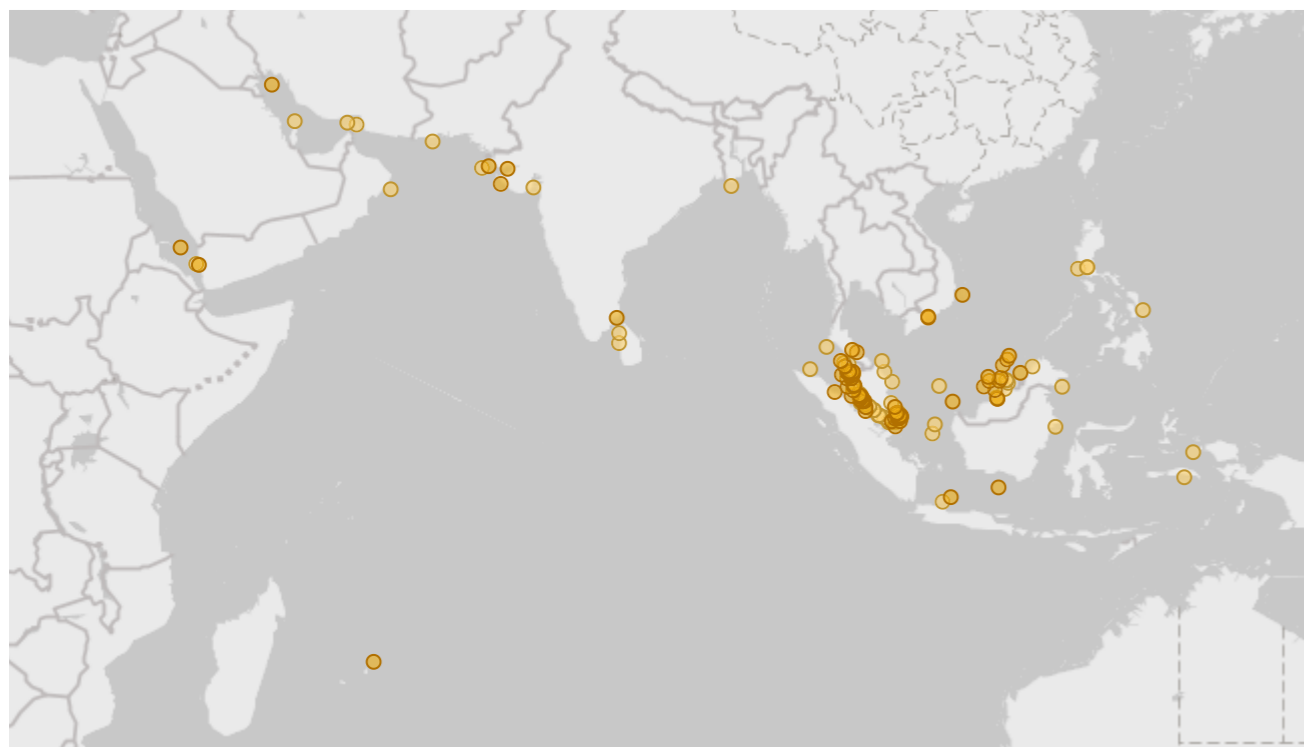
VESSEL DETAINED

The Centre monitored 76 incidents in 2022. Incidents peaked in January and July with 11 detentions each.

Approximately 89% of the total recorded incidents were reported in South East Asia, 80% of which were recorded off Malaysia. However, it is a decrease of 26% compared to 2021. The majority of these detentions were attributed to

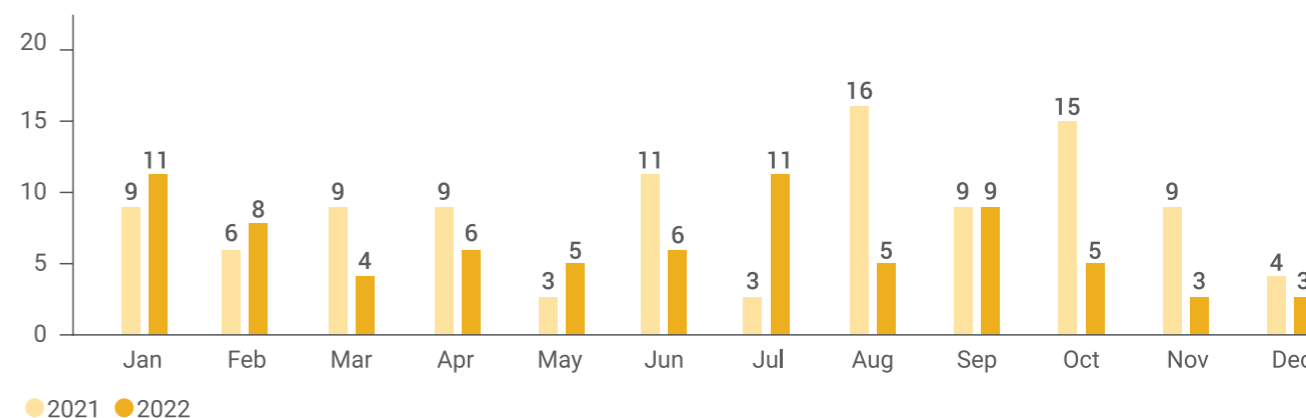
unauthorised anchoring and strict enforcement by Malaysia authorities. Tankers, cargo vessels and tugboats constituted the majority (47%) of the vessels detained.

Seafarers are advised to be cognizant of the various requirements imposed by the coastal states prior anchoring, except where *Force Majeure* is applicable.



● 2021 ● 2022

Analysis of Vessel Detained incidents



SIGNIFICANT INCIDENTS

MAJOR FIRE ONBOARD TSS PEARL

On 07 Oct 22, a major fire was reported onboard the Panama flagged container vessel *TSS PEARL*, 123 nm northwest of Jizan Port in the Red Sea. The container vessel was transiting from Jeddah to Aden when a fire was reported in the container stacks at the stern of the vessel, forward of the accommodation block. All 25 crew abandoned the vessel, were rescued by Saudi Arabia's Border Guard and were subsequently disembarked at Port of Jizan, Saudi Arabia. The ship was reported to have sunk in the Red Sea with about 150 – 200 containers drifting in the area. No impact on traffic was, however, reported due to the incident.



Source: Saudi Press Agency

HTMS SUKHOTHAI SANK IN THE GULF OF THAILAND

On 18 Dec 22, *HTMS SUKHOTHAI* encountered engine failure due to heavy weather and eventually sank in the Gulf of Thailand. Strong winds reportedly blew seawater into the ship and caused damage to its electrical system. The total loss of power caused more seawater to flow into the vessel, causing it to list and sink. It was reported that 76 crew members were rescued, 24 lives were lost and five went missing.

Source: Associated press, Bangkok and Royal Thai Navy



VEHICLE CARRIER SINKS AFTER COLLIDING WITH GENERAL CARGO SHIP OFF INDONESIA

On 01 Dec 22, an Indonesia flagged vehicle carrier *SERASI I* collided with a general cargo ship *BATANGHARI MAS*, while crossing the Bangka Strait off Bangka Belitung Islands, Indonesia. Based on the reports, vehicle

carrier *SERASI I* experienced a hull breach with massive water ingress. The vessel was carrying a total of 497 vehicles and 17 crew onboard. All 17 crew members abandoned the ship using life rafts and were evacuated by the general cargo ship *KM LOTUS UNGU*. The local authorities installed buoys around the area where the vessel sank to warn passing vessels.

IFC – IOR RECOMMENDATIONS

- » Incorrect cargo details and/ or misdeclaration of cargo leads to cargo mishaps at sea. The importance of correct declarations is to be highlighted to all members involved in the supply chain.
- » Proper cargo and weight management is to be ensured onboard to maintain stability in prevailing and envisaged sea conditions. Improperly loaded cargo is likely to shift in adverse weather conditions, thereby leading to stability issues.
- » Installation of the latest fire-protection systems, such as infrared cameras and heat sensors, that can detect and provide quick/ faster reaction time, especially for vessels carrying hazardous cargo and cargo requiring special attention, such as electric vehicles with Lithium Ion batteries.
- » The Centre strongly recommends the seafarers to monitor weather warnings prior to putting out to sea.
- » Vessels to monitor relevant warnings/ broadcasts whilst at sea are advised to seek shelter (if feasible) or steer a safe course during periods of heavy weather.
- » Vessels are recommended to monitor coastal state guidelines on anchoring locations and procedures.
- » Proactive and timely reporting to relevant coastal agencies is recommended to facilitate an appropriate response.
- » The Centre urges all seafarers to maintain a good lookout for small vessels in distress and render timely assistance, which is also mandated by SOLAS convention.
- » Effective crew change mechanisms may be worked out to minimise chances of human errors due to possible crew fatigue. Relevant flag state, port state, IMO and industry guidance may be consulted to ensure timely crew change.

IMO-ILO GUIDELINES ON SEAFARER ABANDONMENT

- As per the International Maritime Organisation (IMO), a significant rise has been observed in cases of abandonment of crews reported to the International Labour Organization (ILO). The number of such abandonment cases, which were less than 20 cases per year during 2011 - 2016, increased to 40 in 2019, 85 in 2020, 95 in 2021 and 114 cases as of mid-December 2022.
- To suitably address this challenge, IMO and ILO adopted Guidelines on Seafarer Abandonment in a joint meeting held on 20 Dec 22. The Guidelines aim to improve coordination among various countries where different stakeholder parties are present. These include flag states, port states, states where seafarers are national or resident and states where recruitment and placement services operate. This is aimed towards the early resolution of seafarer abandonment cases, including payment of pending dues and repatriation home.

Source: <https://www.imo.org/en/OurWork/Legal/Pages/Seafarer-abandonment.aspx>

The Safety and Shipping Review 2022 by Allianz Global Corporate & Specialty (AGCS) highlights the fact "Cargo fires, in particular, are of growing concern. Mis-declared and dangerous goods are a recurrent issue for container shipping, while lithium batteries are an emerging risk for both container ships and car carriers, which are transporting growing numbers of electric vehicles, given existing counter-measure systems may not respond effectively in the event of a blaze. Cargo fires on board such large vessels can spread quickly and be particularly difficult to control, often resulting in the crew abandoning ship."

IFC-IOR Comment: The challenges posed by Lithium-ion batteries are further compounded by seawater exposure. It is essential that appropriate regulations such as the International Maritime Dangerous Goods (IMDG) Code be rigorously followed at all stages of the maritime transport chain.

MARITIME AUTONOMOUS SURFACE SHIPS (MASS)

- Several countries and companies are actively pursuing the development of Maritime Autonomous Surface Ships (MASS). While such autonomous ships are expected to reduce operational costs by up to 60% due to reduced fuel consumption and crew cost, they present challenges regarding regulations and information/ cyber security.
- During the 105th session of IMO's Maritime Safety Committee (MSC) conducted in April 2022, a roadmap containing a work plan for the development of IMO instruments for MASS was approved. For the first stage, the roadmap envisages the development of a non-mandatory Code, to be adopted in the second half of 2024. Subsequently, a mandatory MASS Code will be developed and is envisaged to enter into force on 01 January 2028.

Source: <https://www.imo.org/en/MediaCentre/HotTopics/Pages/Autonomous-shipping.aspx>

MARITIME SECURITY THREATS (HYBRID)



OVERVIEW

Maritime security threats of hybrid nature refer to an action conducted in the maritime domain by state or non-state actors whose goal is to undermine or harm a target by combining overt and covert military and non-military means, conventional capabilities, irregular tactics and formations, indiscriminate violence and coercion, as well as criminal disorder. Maritime threats are complex and unpredictable due to their occurrence in different formats, especially with non-state actors optimally using the technology to invent and improvise the methodology of attack from the sea and at sea. These occurrences and their effects can hamper the global economy and territorial integrity of a country. The commercial shipping fleet, International Shipping Lanes (ISLs) and energy supply chains can also suffer severe losses due to hybrid attacks. In 2021, the French oil company TOTAL had to stop its oil exploitation activities and withdraw all its staff from Mozambique due to the worsening security situation in Cabo Delgado province. As the non-state actors master the art of exploiting the loopholes in various security measures enforced by law enforcement agencies, hybrid Maritime Security Threats will continue to

be dangerous for seafarers and have global cascading effects.

In 2022, the Centre continued to monitor several incidents of attack on ships and crew, which differ from the traditional acts of Piracy and Armed Robbery because of the nature or motive. Although piracy and armed robbery have been suppressed in the Gulf of Aden due to the presence of warships and other measures, the continuation of maritime security threats of a hybrid nature complicates the security situation, especially in West Asia.

Such maritime security threats include the usage of conventional military measures like rockets, missiles, artillery shelling, floating mines, limpet mines, etc. and unconventional measures like Water Borne Improvised Explosive Devices (WBIEDs), Remote Controlled WBIEDs (RCWBIEDs), Unmanned Aerial Vehicles (UAVs) or Drones. Such threats may also directly imperil economic activities.

A brief description of these incidents, along with the available datasets and analysis, has been elucidated in the succeeding paragraphs.

WATER-BORNE IMPROVISED EXPLOSIVE DEVICES (WBIEDS)

WBIED poses a tenacious threat to global maritime trade due to its usage against commercial shipping and military vessels. Where capabilities exist, various parties, including insurgents and terror groups, will likely use WBIEDs to apply economic and military pressure against adversaries. Such skiffs are operational closer to the coast and limited to West Asia, predominantly the Southern Red Sea. However, the proliferation of technology, miniaturisation, the adaption of

hobby kits and the availability of commercial satellite communication networks may be exploited to increase their range.

The Centre monitored five incidents of destruction or neutralisation of WBIEDs compared to 16 incidents in 2021. The decrease in the number of incidents may be attributable to the enhanced presence of regional and extra-regional forces in the area.

UNMANNED AERIAL VEHICLES (UAVS)

Unmanned Aerial Vehicles (UAVs) or aerial drones have emerged as a lethal means to target military and non-military assets both at sea and ashore. Usage of UAVs for delivering explosives and 'kamikaze drones' have been observed in the maritime domain. With drones being deployed to attack commercial ships near the coast and on high seas, it may cause significant damage to shipping and loss of human life at sea. Although vessels have been attacked by such means in the past, the resultant loss of life onboard a modern

commercial vessel was recorded for the first time in 2021.

The Centre recorded four such incidents in 2022 as compared to three incidents in 2021. Three out of four incidents involved oil tankers at anchor and one incident involved the interception of a drone at Bi'r Ali Port, Shwaba, Yemen. No casualties or damage to the vessels were reported in these incidents. This threat is likely to persist due to the increasing popularity and affordability of such drones and other unmanned aerial platforms.



PROMINENT INCIDENTS

Prominent attacks on merchant vessels and maritime infrastructure in 2022 are enumerated below. Due to the ongoing conflicts, the exact cause of most of the incidents could not be conclusively determined.

MINES, RED SEA: DETECTION AND NEUTRALISATION – 13 JAN 22

On 13 Jan 22, it was reported that 15 sea mines were detected in the Red Sea, of which eight were initially detected and disarmed by demining teams. Five additional mines were reportedly also destroyed.

RED SEA: POSSIBLE MISSILE ATTACK – 05 MAR 22

On 05 Mar 22, a missile impact was reported in the waters of the Red Sea by the US Navy. No merchant vessel was reported to have been impacted by the incident.

MOTORBOAT, OFF CATBALOGUN CITY, PHILIPPINES: EXPLOSION DURING GUNFIGHT 22 AUG 22

On 22 Aug 22, Philippine authorities reported the explosion of a hostile motorboat with two suspects onboard off Catbalogun City, Philippines. Reportedly, a group of armed individuals boarded the motorised boat which

was pursued by Philippines Armed Forces. The boat exploded during a gunfight.

M/T NISSOS KEA, GULF OF OMAN: REPORTED UAV ATTACK – 21 OCT 22

On 21 Oct 22, the Marshall Islands flagged oil tanker M/T *NISSOS KEA* had called at the port of Ash Shihr in Yemen for loading. Reportedly two drone-driven explosions were observed in close proximity of the tanker. No damage to the vessel, casualties and pollution was reported.

MV PACIFIC ZIRCON, OFF OMAN: REPORTED UAV ATTACK – 15 NOV 22

On 15 Nov 22, the Liberian flagged oil tanker was reportedly hit by a drone off the coast of Oman. Minor damage to the vessel hull was reported with no water ingress. No casualties were reported in this incident.

BI'R ALI PORT, SHWABA, YEMEN: REPORTED UAV ATTACK – 09 NOV 22.

On 09 Nov 22, Bi'r Ali Port, Shwaba, Yemen was attacked by a drone. Reportedly, the drone landed near an oil tanker which was offloading fuel at the time of the attack. No damages to the vessel or injuries were reported in this incident.

MV VLCC PRATIKA, GULF OF ADEN: UAV ATTACK - 21 NOV 22

On 21 Nov 22, the Panama-flagged oil tanker VLCC *PRATIKA* was reportedly attacked by

a drone off Al-Dhaba's Ash Shihr oil terminal, Yemen. No damage to the vessel or casualties were reported in this incident.

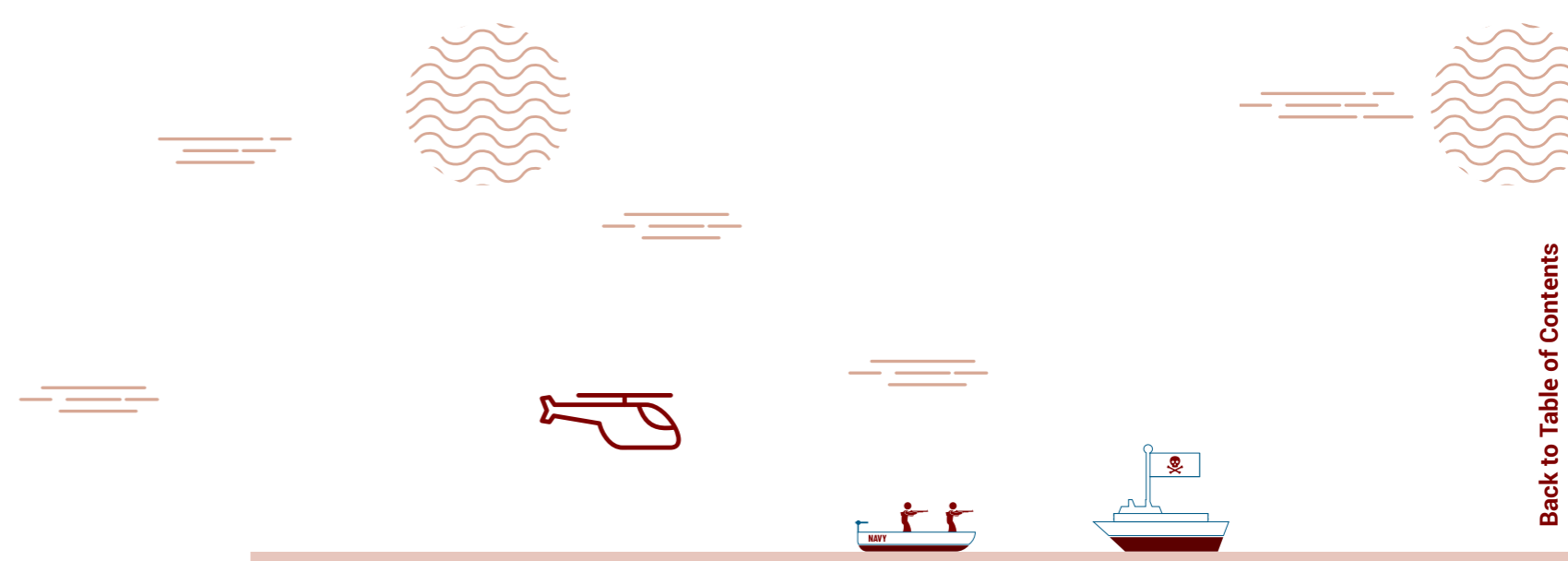
ANALYSIS BY THE CENTRE

- » The usage of WBIEDs by the terrorist groups or unscrupulous state actors, may pose a serious threat to global maritime traffic and have major economic repercussions, especially in choke points.
- » The proliferation of technology along with miniaturisation and reduced costs have made such means available to a wider variety of actors and it may also not only be restricted to West Asia in future. The adoption of technology such as commercial satellite communication services will effectively increase the threat radius of RCWBIEDs and UAVs.
- » The attacks monitored in West Asia were observed to be against specific flags/ owners, indicating deliberate targeting. However, attacks on other vessels due to misidentification and/ or spillover of attacks on a wider group of merchant traffic cannot be ruled out.
- » Similarly, the adoption of these tactics by state/ non-state actors in other parts of the world for targeting maritime infrastructure and/ or ships in choke points would endanger ships and seafarers as well as seriously affect global maritime traffic. Political instability in littoral regions provides a staging area for actors carrying out such activities.
- » Mariners are advised to continue to exercise caution and keep a sharp lookout. Strict compliance with respective flag state guidance and adherence to preventive measures laid out by the industry/ companies is recommended.

Damage to MT PACIFIC ZIRCON



Source: CNN International



MARINE ENVIRONMENT POLLUTION





The IFC-IOR monitors incidents in the maritime domain related to environmental hazards, or any substance, situation, or event which

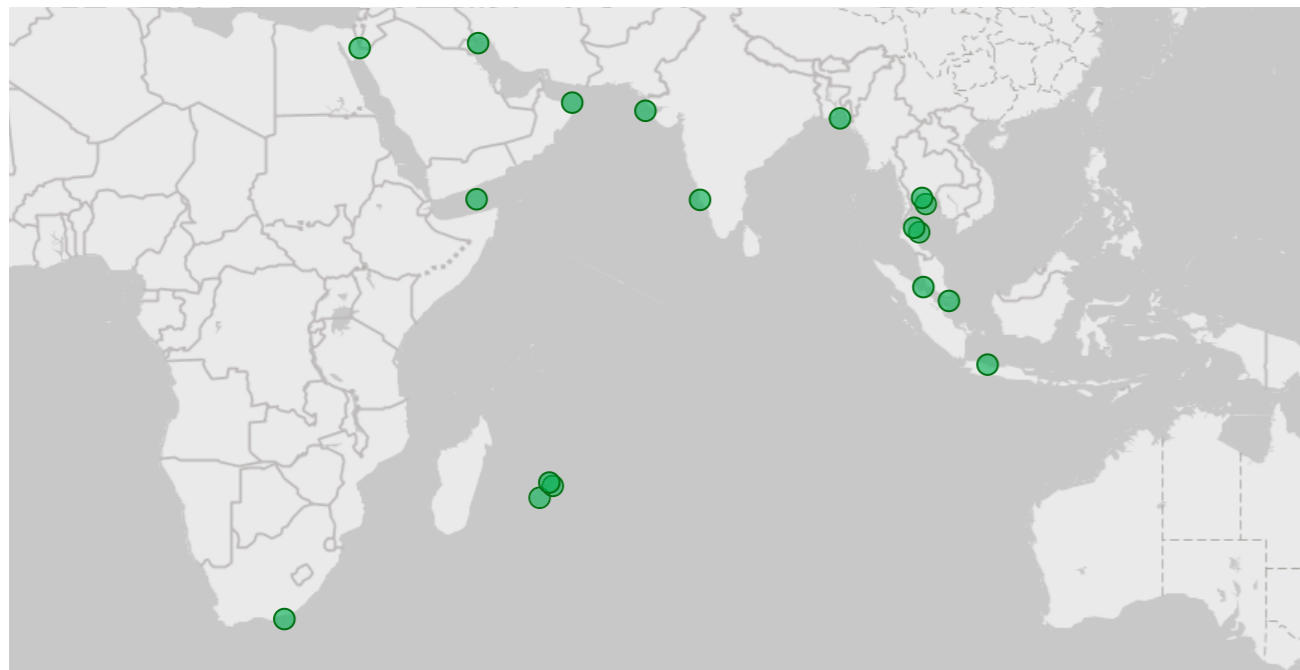
has the potential to threaten the surrounding natural environment or adversely affect people's health.

OVERVIEW

In 2022, the Centre monitored 18 incidents involving marine pollution compared to eight in 2021, with 16 being oil spills and two involving floating bags of cooking oil and detergent. South East Asia accounted for seven incidents, South Asia for three, and West Asia and East Africa for four each. None of the recorded oil spill incidents was major and, in most cases, was reportedly contained and cleaned up by the authorities or expected to dissipate naturally.

Of the oil spills, nine involved ships (sinking, colliding, running aground, ship-to-ship fuel transfer, leaking or discharging at sea), five were from pipelines and two were at sea from unknown sources. The notable change in 2022 was reporting incidents involving leaks from pipelines, none of which was recorded in 2021.

Marine Pollution incidents - 2022



HIGHLIGHTS

Noting that none of the recorded oil spills in 2022 was major, there remain threats to the environment from ongoing incidents from previous years, notably the VLCC FS SAFER moored off Hodeidah, Yemen, since 2015 and unmaintained since. This vessel holds over one million barrels of crude oil and risks structural failure and explosion from the build-up of volatile gases. Furthermore, the vessel

has a connection to the Ras Isa-Marib pipeline, which holds a further one million barrels of crude oil, potentially adding to any spill into the sea. This would have catastrophic ecological and economic effects for millions of people in the region and require a cleanup operation estimated to cost USD 20 billion.

Other pollution threats to the oceans come

VLCC FS SAFER moored off Hodeidah



Source: IMO

from a variety of sources, e.g., plastics, noise, light, air pollution, dangerous cargoes, ship waste discharge, lost fishing gear, anti-fouling treatment and seabed mining. The year 2022 saw positive moves to mitigate risks from several sources. A few such initiatives are listed below.

- » The United Nations Environment Assembly adopted Resolution 5/14 'End plastic pollution: towards an international legally binding instrument' on 02 March 2022. This also heralded the formation of the Intergovernmental Negotiating Committee (INC) to develop an international legally binding instrument on plastic pollution. The INC's inaugural meeting was in Uruguay from 28 Nov - 02 Dec 22, with the aim of completing negotiations by the end of 2024.
- » In Apr 22, the International Maritime Organisation (IMO) Sub-Committee on Pollution Prevention and Response (PPR 9) agreed to draft amendments to MARPOL Annex V. This will extend the mandatory requirement for Garbage Record Books to ships of 100 gross tonnage and above rather than from ships of 400 gross tonnage and above.
- » Three IMO Rule changes came into force, consisting of amendments to:-
 - An amendment to MARPOL Annex VI came into force on 01 Apr 22. This Annex regulates the prevention of air pollution by ships and energy efficiency and the issue of International Air Pollution Prevention (IAPP) and International Energy Efficiency (IEE) Certificates.
 - An amendment to the International Maritime Dangerous Goods (IMDG) Code came in force with effect from 01 Jun 22. The IMDG Code has provisions with respect to the carriage of dangerous goods by sea regulations and the issue of a Document of Compliance for Ships (DCS) carrying dangerous goods in packaged form.
 - » An amendment to the Ballast Water Management (BWM) Convention of 2004 came into force with effect from 01 Jun 22. This regulates the ballasting and de-ballasting processes of ships, including the installation of an approved BWM treatment system. The aim of the convention is to eliminate the risk of invasive aquatic organisms spreading from one part of the world to another through ballast water.
 - » Removal of the wreck of bulk carrier WAKASHIO and all associated debris was completed on 16 Jan 22. The vessel which had run aground off Pointe d'Ensy, Mauritius in Jul 20, had caused significant environmental damage.

IFC-IOR RECOMMENDATIONS

- » Pipelines are vulnerable to the vagaries of extreme weather, accidental or malicious damage (both ashore and undersea) and risk from poor maintenance in some areas. Whilst recognising that it can be a difficult and costly task, pipeline security would benefit from more oversight by authorities and operating companies to ensure the risk of damage and possible leakages leading to environmental damage are minimised.
- » Regarding the VLCC FS SAFER the UN garnered an agreement with parties in Yemen in 2022 to affect a salvage operation and raised funds to enable Phase 1 to commence in early 2023. However, to follow on to Phase 2 and complete the work requires further funding. As a matter of urgency, the UN, industry, insurers, and regional authorities should collaborate in taking swift action to raise funds to ensure the salvage operation is completed as soon as practicable.



CYBER SECURITY THREATS



ANALYSIS OF INCIDENTS

Cyber security is assuming greater importance in the shipping industry due to potential incidents and vulnerabilities that pose a huge challenge to commercial shipping and port facilities. As the maritime domain is increasingly becoming automated and digitised for better efficiency and productivity, Cyber Security assumes even greater importance. Information networks and services in the maritime industry face similar challenges as systems elsewhere. Due to its inherent interconnected nature, attacks on such infrastructure can originate from anywhere. Onboard ships, sophisticated computer systems are categorised as Information Technology (IT) and Operational Technology (OT). IT systems manage the flow of information and data computation. In contrast, OT manages the operation of the physical processes and equipment. The increasing role of IT and OT systems onboard ships and in ports/ marine infrastructure brings an inherent risk of a malicious attack or unauthorised access, which may directly impact the safety of seafarers and vessels.

Ransomware attacks have become the second nature of cybercriminals to gain access to the systems of insurance companies, shipping fleets and port infrastructure. Shipping lines are especially susceptible to cyberattacks because of the varied range of access points to their navigation technologies and cargo handling, communications and management systems. The impacts of cyber-attacks can paralyse shipping operations and control of vessels including their respective systems which

endanger the vessel and its personnel, affect the shipping traffic in major shipping routes/ channels, lead to the closure of ports, sacrifice important data of shipping companies, most importantly can cause major financial losses to the organisations and global economy. It is likely that only a portion of actual or attempted attacks are detected and many of these are not reported. The increasing automation, digitisation and dependence on IoT, IT and OT have made the shipping fleet vulnerable to cyber-attacks. The increasing Cyber Security Threats necessitate robust cyber security measures, awareness and a collaborative approach to deter and counter cyber-attacks in the maritime domain.

A submarine communication cable is a fibre optic cable laid on the seabed to connect two or more land-based stations carrying digital and telecommunications signals across oceans. Submarine cables are crucial links and play an important role in ensuring the availability of the internet across the globe. Submarine cables are estimated to carry more than 95% of the world's trans-regional data traffic. These information super-highways are critical enablers of the interconnected world which are susceptible to both physical and cyber-attacks/ incidents. Due to the interconnected nature of international data flow and redundancies, it is assessed that there is a higher likelihood of damage/ disruption in submarine cables due to negligence or accidents as compared to cyber-attacks which aim to disable landing centres or manipulate/ hack submarine cables.



INCIDENTS RECORDED IN 2022

CYBER ATTACK ON JAWAHARLAL NEHRU PORT CONTAINER TERMINAL

On 21 Feb 22, the Jawaharlal Nehru Port Container Terminal, Mumbai, India suffered a ransomware attack that affected the management information systems and led to diverting of ships to the other terminals in the complex located near Mumbai. The cyber-attack affected all software operations of Gateway Terminal India, thus affecting operations of loading and unloading containers. One out of five terminals was severely affected by this attack. This attack led to traffic congestion in the JNPT area and severely affected passenger vessels.

CYBER ATTACK ON SEMBCORP MARINE, SINGAPORE

On 02 Sep 22, the Singapore-based shipbuilding firm Sembcorp Marine suffered a cyber-attack which involved an unauthorised entity accessing part of their Information Technology network via third-party software and compromising the company's incoming, existing and former employees' sensitive information. The attack and related risks were addressed by the Cyber security experts. No financial loss or material impact on the consolidated net tangible assets was reported.

CYBER SECURITY INCIDENT – MUMBAI PORT TRUST

On 10 Oct 22, the Mumbai Port Trust (MBPT) reportedly lodged a complaint against a few unidentified hackers who had created a fake website of the MBPT. The cyber frauds had created a fake website and invited job applications from the aspirants. The case

was highlighted and cyber fraud was reported when the applicants were unable to receive the receipt of the application fee.

CYBER ATTACK ON VOYAGER WORLDWIDE

On 12 Dec 22, Voyager Worldwide, a Singapore-based maritime technology solutions provider, was hit by a cyber-attack. All systems were taken offline at the navigation services and solutions provider, which boasts more than 1,000 shipping companies as customers around the world. Mandiant, a cyber security firm, was reported to be assisting Voyager's internal internet team. No major economic losses or disruption of traffic was reported.

CYBER ATTACK ON PORT OF LISBON, PORTUGAL

On 25 Dec 22, Port of Lisbon, Portugal suffered a ransomware attack which affected the port's website and internal computer systems. LockBit claimed responsibility for the ransomware attack. Security analysts have reported that LockBit is among the most prolific and widespread ransomware groups of 2022. It was reported that the hackers had managed to capture a broad range of confidential data from the port authority. They were also claiming to possess financial reports, company audits, budgets, contracts, cargo manifests, ship logs, information about crewmembers, personal data of customers and port documentation, along with other vital information of the Port of Lisbon. LockBit had threatened to publish all of the files that were seized during their computer attack should their ransom demands of \$1.5 million be left unmet by 18 January. The port's website remained offline for four days. However, the incident failed to impact port operations.



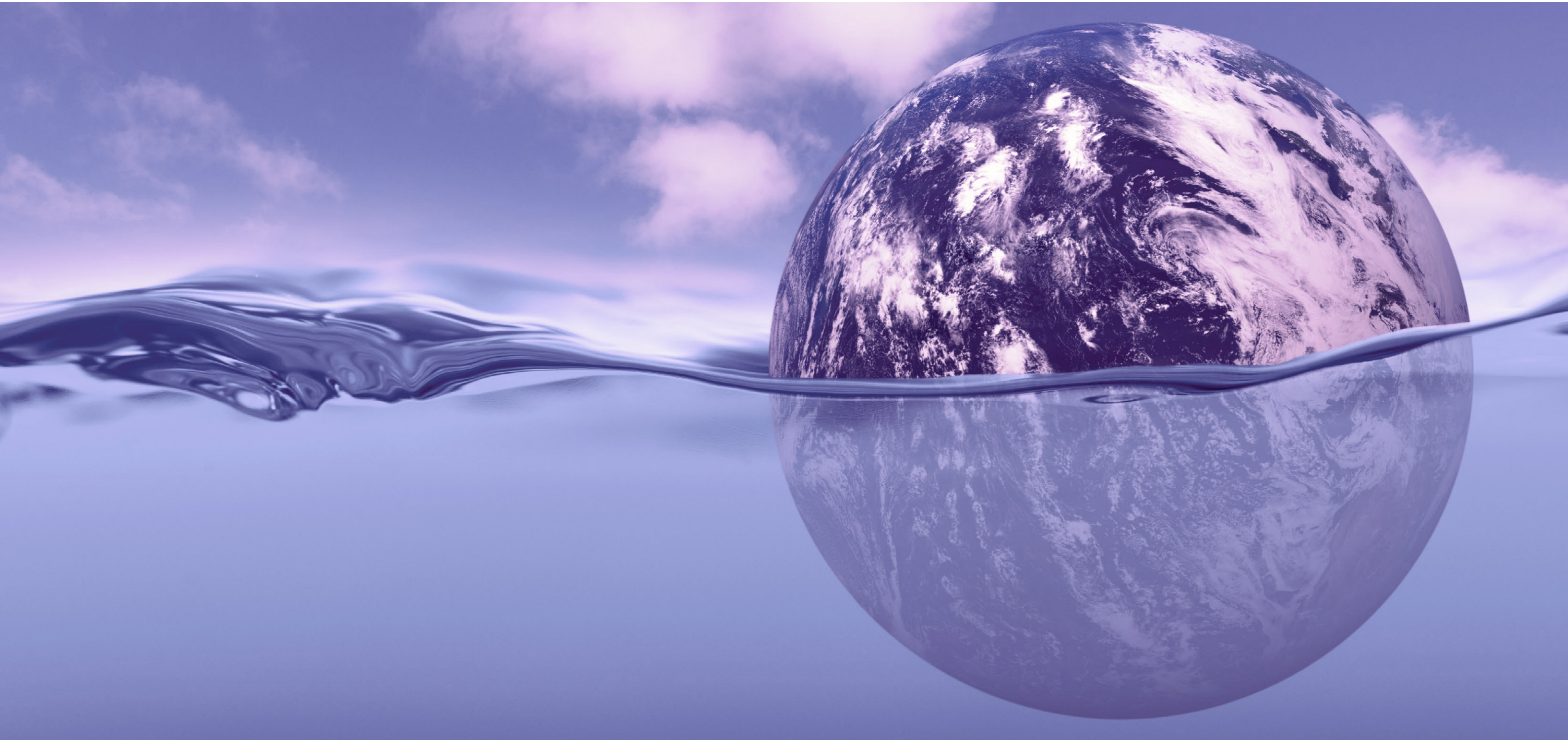
IFC-IOR RECOMMENDATIONS

- » The Centre recommends that mariners plan for cyber security vulnerabilities, have a response and contingency plan and follow the guidelines outlined in the IMO Resolution MSC-FAL.1/Circ.3 of 05 Jul 17.
- » In addition to flag state guidance, other IMO resolutions/ circulars, industry and company guidance is recommended to be followed.
- » Regular sensitisation of crew regarding Do's and Don'ts with respect to ensuring cyber and IT security is recommended.





CLIMATE CHANGE AND SECURITY



ANALYSIS OF INCIDENTS

Climate change is a term used to describe long-term shifts in temperatures and weather patterns. Both natural events and human activities may impact this phenomenon. This phenomenon also calls for a greater global understanding of the associated security aspects. As climate change accelerates, its impacts aggravate existing social, fiscal, and ecological challenges in many contexts, which can contribute to uncertainty at various levels.

The World Meteorological Organisation (WMO) has analysed six leading international temperature datasets. It is assessed from the findings of WMO that during 2022, the average global temperature recorded was about 1.15 (1.02 to 1.27) °C higher as compared to the 1850 - 1900 pre-industrial era. The annual global temperatures have continued to rise at least 1°C above pre-industrial levels and 2015-2022 were assessed to be the eight warmest years on record by the WMO.

According to the 2022 Sixth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC), the climate has already been irreparably damaged and the damage is more extensive than anticipated, with ecosystems deteriorating and losing their capacity for natural adaptation. Extreme weather patterns have hampered attempts to achieve sustainable development goals and decreased food and water security for millions of people despite an increase in global food production. Malnutrition has been a problem in many nations due to the abrupt loss of agricultural farmland and the availability of food supplies. Those in isolated areas with little food production, poor incomes and high dependency rates are particularly severely hit.

The impact of climate change is a potential threat to the security of a country and can severely disrupt food, water and energy supplies. It can also have a cascading effect on natural resources, cause loss of livelihoods and increase irregular human migration in the form of climate refugees. Climate Security is the impact of Climate Change on traditional and non-traditional security threats and the Centre focuses on Climate Security in the maritime domain. This phenomenon will threaten human survival and national and regional political stability. Climate change-related effects will likely exacerbate existing issues/ conflicts and generate new ones. Sea level rise, increased severity and frequency of natural disasters, fisheries conflict, climate migration and risks to fresh water supply are some of the key problem areas.

It is pertinent to consider development goals and aspirations while working out a strategy to tackle the challenges posed by climate change. Holistic international response through funding, capability enhancement, collaboration and cooperation are hence essential to effectively address the challenges posed. The 27th Conference of the Parties (COP27) organised by the United Nations Framework Convention on Climate Change (UNFCCC) in Egypt from 06 - 18 Nov 22, deliberated on some of these key issues.

While discussing, deliberating and acting to address the impact of climate change, it is essential to consider the effects on vulnerable regions of the world. Regional perspectives by Mauritius and Sri Lanka ILO are included in the report.

Climate Change Impact on Small Island Developing States (SIDS)

- Mr Geeandeo Cheetamun, ASP, Mauritius ILO at IFC-IOR

The pristine Small Island Developing States (SIDS) located in the Western Indian Ocean, such as Maldives, Madagascar, Comoros, Mauritius and Seychelles, are among the most idyllic places in the world. These states have evolved over decades post-colonisation and are located in the centre of the Indian Ocean with limited shelter from the elements. They are exposed to natural phenomena of cyclones, tropical storms, unpredicted rainfalls, etc. The compounding impact of climate change on natural disasters is acutely being felt in the region and is likely to intensify in the coming years. Increased population and enhanced human activities linked to development and modernisation are major contributors to climate change impacting these island states. Further, the strategic location of these SIDS makes them prone to geo-political competition between various global and regional powers.

Climate change exacerbates various existing challenges these states face and may potentially impact respective Blue economies on a large scale. Their remote locations, relatively small size, fragile ecosystems, small population and limited resources and capabilities worsen SIDS challenges. As per the Organisation for Economic Co-operation and Development (OECD)¹, SIDS account for two-thirds of the countries that suffer the highest relative annual GDP losses (between 1% to 9% of GDP per year) due to natural disasters. Hence, these states are acutely vulnerable to the impacts of climate change.

The emerging environmental issues related to SIDS were studied as part of a 'Foresight Process' by the United Nations Environment Program (UNEP). The impact of climate change was highlighted in a report². The salients of this report included rising sea levels, intensification of natural disasters, change in weather patterns and consequent population displacement. According to UNEP, climate change-induced sea-level rise in SIDS is estimated to be up to four times the global average. In addition to the threat of going underwater, the rising sea levels directly impact the economy of SIDS.

This envisaged impact is already evident in SIDS, especially in Mauritius. The first Biennial Update Report of the Republic of Mauritius³ states that Mauritius is highly vulnerable to the effects of climate change and its key economic sectors, such as agriculture, fisheries, tourism and water, are all being affected. Recently, temperature increase, unpredicted rainfall activity, unprecedented cyclones, beach erosion and flash floods have been monitored in a few SIDS, especially in Mauritius. With unpredictable seasons, rainfall activity has also been observed to be unpredictable, thus leading to a reduction in agriculture activities due to a limited freshwater supply. As most of the food products are being imported by SIDS, limited food production will increase dependence on other countries.

Fisheries, including fish export, is a key economic sector for most SIDS in the Indian Ocean Region. This sector has been impacted by the increased frequency and scale of cyclones and unfavourable sea conditions, which have increasingly kept the fishermen at bay. Also, SIDS potentially face uncertainties and challenges due to shifting baselines and Illegal, Unreported and Unregulated (IUU) fishing. Further, increased human activities and pollution have resulted in minimal fish catch, especially in the lagoon area. As the sea temperature rises, the marine biomass in the resource-rich zone of SIDS is likely to be severely affected.





The negative impacts of climate change bring out the vulnerability of the SIDS to climate change and natural calamities. As these effects are envisaged to increase manifold due to increased exploitation of SIDS, human activity and pollution, there exists an acute need for greater collaboration, awareness, firm policies and guidelines to protect these island states from the potential disasters associated with climate change.

1. <https://www.oecd-ilibrary.org/sites/9789264287648-6-en/index.html?itemId=/content/component/9789264287648-6-en>
2. 'Emerging Issues for Small Island Developing States: Results of the UNEP Foresight Process - 2014'. <https://www.unep.org/resources/report/emerging-issues-small-island-developing-states>
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National Security Priorities and the Impact of Climate Change on Them – A perspective from Sri Lanka

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Sri Lanka occupies a geo-strategic position in the Indian Ocean, which overlooks many of the International Shipping Lanes (ISLs) in the IOR. However, despite the locational advantage, Sri Lanka is not immune from the impacts of climate changes on the planet and in the Bay of Bengal in particular. Explicitly, Sri Lanka is equally or exceedingly susceptible to the adverse effects of climate change. Aftereffects of climate change alike, temperature rise, rainfall variability and sea level rise are desperately disturbing the majority of the economic sectors in the country. Occurrences of natural disasters due to extreme weather conditions like prolonged droughts, flash floods and landslides imperil lives and deprive livelihoods of people.

Sri Lanka strongly believes that building the resilience of vulnerable communities and ecosystems over climate change effects within a broader sustainable development framework should be the national priority as a developing country. This has been acted upon by Sri Lanka, which is one of the pioneer countries in the region to have identified climate changes associated risks and initiated an action plan to mitigate its adverse effects. Towards this, Sri Lanka prepared the National Climate Change Adaptation Strategy in 2010 and adopted the National Climate Change Policy in 2012. As the next logical step of climate change adaptation, the government presented the National Adaptation Plan for Climate Change Impacts in Sri Lanka 2016 – 2025¹. It was prepared in line with the broad guidelines set forth by the United Nations Framework Convention on Climate Change. The NAP is a country-driven, gender-sensitive and fully transparent approach to coping with the effects of climate change on Sri Lanka. Towards a proper execution of the National Adaptation Plan, the line ministry aims to set up the Adaptation cells and prepare adaptation plans at the provincial and sectoral levels.

The NAP has recognised agriculture, fisheries, water, human health, coastal and marine ecosystems and biodiversity, infrastructure and human settlements as the extremely susceptible sectors to the detrimental consequence of climate change. This plan allows all the stakeholders to develop policies, strengthen cooperation, institutional setup, resource

mobilisation, technology development and transfer, awareness and capacity building to increase the resilience of exposed societies, areas and sectors on the island.

To implement the NAP of Sri Lanka, the country has solicited external support for further strengthening the national adaptation planning process in the country and technical and monetary backing to make these activities realistic at the ground level.

On the sideline to the National Adaptation Plan, on 08th November 2022, the Sri Lankan government launched the 'Climate Prosperity Plan'² to power faster economic recovery and achieve net-negative carbon emissions.

The Climate Prosperity Plan is a roadmap to attract foreign investment in Sri Lanka's economy to enhance economic growth and employment while expediting climate adaptation and bringing down the country's greenhouse gas emissions as it transitions towards net harmful emissions.

The proposal is anticipated to bring an economic growth rate of 1% per year higher, ensuing in a GDP that is 34% higher by 2050. The Sri Lankan strategy aims to increase Sri Lanka's renewable energy generation from 35% to 70% by 2030. The transport, forestry, water and tourism sectors have equally determined aims. The plan paved a pathway for Sri Lanka to become a carbon-negative economy before the mid-century.

1. <https://www4.unfccc.int/sites/NAPC/Documents%20NAP/National%20Reports/National%20Adaptation%20Plan%20of%20Sri%20Lanka.pdf>
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GLOSSARY



GLOSSARY OF TERMS AND WORKING DEFINITIONS

PIRACY AND ARMED ROBBERY

1. **Piracy.** Article 101 of the UNCLOS defines piracy as any of the following acts:

- » Any illegal act of violence or detention, or any act of depredation, committed for private ends by the crew or the passengers of a private ship or a private aircraft, and directed:
 - i. On the high seas, against another ship, or against persons or property onboard such ship.
 - ii. Against a ship, persons or property in a place outside the jurisdiction of any State.
- » Any act of voluntary participation in the operation of a ship or of an aircraft with knowledge of facts making it a pirate ship or aircraft.
- » Any act of inciting or of intentionally facilitating an act described in subparagraph (a) or (b).

2. **Armed Robbery.** In accordance with the Code of Practice for the Investigation of Crimes of Piracy and Armed Robbery against Ships of the International Maritime Organisation (IMO) Assembly Resolution A.1025(26), armed robbery is defined as:

- » Any illegal act of violence or detention, or any act of depredation, or threat thereof, other than an act of “Piracy”, committed for private ends and directed against a ship, or against persons or property onboard such ship, within a State’s internal waters, archipelagic waters and territorial sea.
- » Any act of inciting or of intentionally facilitating an act described above.

Note: It has been observed that sometimes the exact location of an incident is unavailable in order to classify it as piracy and armed robbery. Hence, while capturing the incident, the sub-categories used in the Piracy and armed robbery cluster are listed below.

3. **Sub-categories of Piracy and Armed Robbery.** The incidents of piracy and armed robbery (attempted/ successful) are classified as follows:

- » **Hijack.** An illegal act of violence where attackers have illegally boarded and taken control of a ship against the crew’s will with an objective which could include armed robbery, cargo theft or kidnapping.
- » **Kidnap.** An illegal act of violence involving unauthorised forcible removal of persons belonging to the vessel.
- » **Attack.** An act of violence, where a ship has been subjected to an aggressive approach by an unidentified craft AND weapons have been discharged.
- » **Illegal Boarding.** An act of violence, where attackers have boarded a ship but HAVE NOT taken control. Command remains with the Master.
- » **Sea Theft.** Any illegal act of stealing property from a vessel without any violence against the crew or passengers, other than an act of piracy and directed against a ship or property onboard a ship.
- » **Sea Robbery.** Any illegal act of stealing property from a vessel committed with arms or with

violence against the crew or passengers, other than an act of piracy and directed against a ship or property onboard a ship.

- » **Attempted Sea Theft.** Any illegal act of an attempt to steal property from a vessel without any violence against the crew or passengers, other than an act of piracy and directed against a ship or property onboard a ship. Nothing reported to be stolen from the vessel.
- » **Attempted Sea Robbery.** Any illegal act of an attempt to steal property from a vessel committed with arms or with violence against the crew or passengers, other than an act of piracy and directed against a ship or property onboard a ship. Nothing reported to be stolen from the vessel.
- » **Attempted Boarding.** An action involving, close approach or hull-to-hull contact with report that boarding paraphernalia were employed or visible in the approaching boat, but are thwarted by BMP measures, PAST, weather conditions, lack of appropriate equipment, etc.
- » **Suspicious Approach.** An action involving, definite alteration towards the ship, rapid increase in speed which cannot be accounted for in the prevailing conditions, sudden changes in course towards ship and aggressive behaviour by the craft.

CONTRABAND SMUGGLING

4. **Contraband Smuggling.** Contraband is any item that is illegal to produce or possess. Smuggling is most prominently a form of customs violation, avoidance of duties, and tax fraud. Contraband smuggling involves movement of goods that are against the law to be imported or exported.

» **Drug Smuggling.** The broad understanding of drug smuggling is derived from commentary of the United Nations Convention against Illicit Traffic in Narcotics Drugs and Psychotropic Substances, 1988. For the purpose of this report, “drugs” also refers to UNODC’s definition of any natural or synthetic substances in Schedules I and II under the Controlled Substances Act, and “illicit traffic” under the International Drug Control Convention. The report categorises drugs by type and effect under the following definitions:

- Opioids. Substances that bind to μ -opioid receptors, including opium and derivative substances, such as heroin and morphine. Also includes semi-synthetic opioids of varying strength such as codeine, fentanyl, carfentanyl, methadone, hydrocodone, hydromorphone, meperidine, tramadol, and oxycodone.
- Cannabinoids. All substances derived from or synthesized to emulate and bind to cannabinoid receptors in the brain. Includes hashish, cannabis, ganja, charas, marijuana, bango, and synthetic cannabinoids.
- Amphetamine Type Substances (ATS). Amphetamine and derivatives, predominantly methamphetamine, captagon, ecstasy, syabu, yaba, and mephedrone; includes ephedra as a precursor for synthetic drugs.
- Other Drugs. There are several additional drugs noted in this report that are not easily placed into these categories. They include khat, cocaine, LSD, magic mushrooms, and ketum.
- » **Domestic Products Smuggling.** Goods that are either common household products or manufactured items. Examples include rice, flour, salt, turmeric, gas cylinders, and cars.
- » **Natural Resources Smuggling.** Goods or resources that are harvested from nature, including gold, wood, sand, and metals.



- » **Fuel Smuggling.** Smuggling fuel is a form of arbitrage aimed at bringing lower priced fuel from one jurisdiction into a higher priced jurisdiction in order to obtain a profit through the price differential. Examples include petroleum, crude oil, and gas.
- » **Tobacco Smuggling.** Any product of the tobacco plant, including cigarettes, cigars, and chewing tobacco.
- » **Alcohol Smuggling.** Smuggling of alcoholic beverages that are illegal to be imported or exported.
- » **Weapons Smuggling.** Goods designed for inflicting bodily harm or any form of damage, including guns, knives, explosives, and fireworks.
- » **Wildlife Smuggling.** Live animals, bird, or animal parts listed under the Convention on International Trade in Endangered Species (CITES) of Wild Fauna and Flora, including elephant tusks, pangolin scales, sea cucumber, tortoises, turtle eggs, and shells.
- » **Others.** Items not falling in any of the categories above such as ancient artefacts, ammonium nitrate, etc.

ILLEGAL UNREPORTED AND UNREGULATED (IUU) FISHING

5. **IUU Fishing.** A range of offences covering fishing without permission or in violation of regulations of the flag state or host nation, misreporting or failure to report catches to relevant authorities where required to do so, fishing vessels without a flag or national registration, or fishing on stocks without management measures in place. These following terms are defined in the International Plan of Action to prevent, deter and eliminate IUU fishing (IPOA-IUU), prepared by the Food and Agriculture Organization (FAO) of the United Nations:

- » **Illegal Fishing.** Fishing conducted by national or foreign vessels in waters under the jurisdiction of a State, without the permission of that State, or in contravention of its laws and regulations; conducted by vessels flying the flag of States that are parties to a relevant regional fisheries management organisation but operate in contravention of the conservation and management measures adopted by that organisation and by which the States are bound, or relevant provisions of the applicable international law; or in violation of national laws or international obligations, including those undertaken by cooperating States to a relevant regional fisheries management organisation.
- » **Unreported Fishing.** Fishing activities which have not been reported, or have been misreported, to the relevant national authority, in contravention of national laws and regulations; or are undertaken in the area of competence of a relevant regional fisheries management organisation which have not been reported or have been misreported, in contravention of the reporting procedures of that organisation.
- » **Unregulated Fishing.** Fishing Activities in the area of application of a relevant regional fisheries management organisation that are conducted by vessels without nationality, or by those flying the flag of a State not party to that organization, or by a fishing entity, in a manner that is not consistent with or contravenes the conservation and management measures of that organization; or in areas or for fish stocks in relation to which there are no applicable conservation or management measures and where such fishing activities are conducted in a manner inconsistent with State responsibilities for the conservation of living marine resources under international law.

6. While undertaking analysis of the reported incidents, the Centre observed that it is difficult to categorise incidents into distinct 'illegal', 'unreported', or 'unregulated' fishing. Therefore, to avoid inaccurate representation of data, the reported incidents are categorised as 'Local IUU Fishing' and 'IUU Fishing - Poaching'.

- » **Local IUU Fishing.** IUU fishing conducted by fishing vessels of a state, in the waters under the jurisdiction of the flag state, without valid license/ permit of that state, or in contravention of its laws and regulations. Offences by licensed foreign fishing vessels are also counted under this category.
- » **Poaching.** IUU fishing conducted by foreign flagged vessels, in waters under the jurisdiction of a state, without valid license/ permit of that state, or in contravention of its laws and regulations.

IRREGULAR HUMAN MIGRATION

7. **Migrant Smuggling.** United Nations Office on Drugs and Crime (UNODC) defines Migrant Smuggling as the facilitation, for financial or other material gain, of irregular entry into a country where the migrant is not a national or resident.

8. **Human Trafficking.** UNODC defines Human Trafficking as the recruitment, transportation, transfer, harbouring or receipt of people through force, fraud or deception, with the aim of exploiting them for profit.

9. **Irregular Human Migration.** The incidents have been placed in a single category of Irregular Human Migration due to the challenges associated with conclusively determining the will and intent of illegal migrants.

Note: Only Migration/ Trafficking incidents/ attempts in the maritime domain are recorded and

MARITIME INCIDENTS

10. **Fire.** Incidents involving fire and/ or explosion in the maritime domain.

11. **Grounding.** Incidents involving vessel running aground.

12. **Collision.** Incident involving collision of vessels or collision of vessel with navigational hazards/ aids.

13. **Mechanical Failure.** Incidents involving failure of mechanical shipboard systems such as engine, steering, switchboards etc.

14. **Medical Evacuation (MEDEVAC).** Incidents involving evacuation of crew from their vessel due to a medical emergency.

15. **Search and Rescue (SAR).** Incidents involving conduct of search and rescue by authorities or maritime personnel to locate missing person or vessel.

16. **Sunk.** Incident involving vessels sinking at sea due to maritime accidents attributable to collision, weather or other constraints.

17. **Capsize.** Incident involving capsizing of vessels sinking at sea due to maritime accidents attributable to collision, weather or other constraints.



- 18. **Flooding.** Incidents involving water ingress into the vessel not classified as collision, grounding, sunk, capsize, etc.
- 19. **Man Overboard.** Incidents involving crew/ passengers falling overboard from a vessel.
- 20. **Vessel Detained.** Incidents involving apprehension of vessels by maritime authorities of a state for engaging in unauthorised activities within the maritime jurisdiction of the state.
- 21. **Violent Confrontation.** Incident involving acts of violence (such as use of force) in an encounter between two or more parties in the maritime domain.
- 22. **Cargo Mishap.** Incidents involving cargo including containers falling overboard at sea.
- 23. **Missing.** Incidents involving mariners reported missing due to accidents at sea.
- 24. **Death.** Incidents involving loss of life at sea attributable to collision, weather or other constraints.
- 25. **Grouping of Maritime Safety Incidents.** For ease of comprehension, the individual categories have been grouped into the following three broad classifications (some incidents may involve both vessels and individuals):

Incidents Affecting Vessels. Fire, Grounding, Collision, Mechanical Failure, Flooding, Sunk, Capsize, Cargo Mishap and SAR.

Incidents Affecting Individuals. MEDEVAC, Man Overboard, Missing and Death.

Incidents with Legal Connotations. Vessel Detained and Violent Confrontation.

MARITIME SECURITY THREATS (HYBRID)

- 26. An action conducted in the maritime domain by state or non-state actors, whose goal is to undermine or harm a target at sea or in maritime ports by combining overt and covert military and non-military means, conventional capabilities, irregular tactics and formations, indiscriminate violence and coercion, as well as criminal disorder.
- 27. Includes the use of conventional military measures like rockets, missiles, and floating mines, with unconventional measures like unmanned, remotely controlled Water Borne Improvised Explosive Devices (WBIEDs), unmanned aerial vehicles (UAVs), and drones.

MARITIME TERRORISM

- 28. While Terrorism has not yet been universally defined, Maritime Terrorism can be broadly defined into two main categories:
 - At Sea.** Maritime terrorism incidents involving attacks against ships at sea.
 - From the Sea.** Maritime Terrorism from the Sea comprises of direct or indirect attacks ashore from the sea.

MARITIME CYBER SECURITY THREATS

29. Single actors or groups targeting maritime systems, vessels, or organizations for financial or other gains to undermine electronic systems, or to cause disruption, panic, and fear, including attacks using malware, viruses, trojans, spyware, ransomware, adware, botnets, phishing, and denial of service. These may include attacks on Information Technology (IT) and/or Operational Technology (OT) systems.

Environment Pollution & Climate Change

- 30. The Centre monitors incidents related to the environment and climate change, including:
 - Natural Events.** Natural Events, or incidents involving violent or destructive natural events beyond human control, such as earthquakes, tsunamis, tropical storms and hurricanes, and lightning strikes.
 - Environmental Hazards.** Environmental Hazards, or any substance, situation, or event which has the potential to threaten the surrounding natural environment or adversely affect people's health.

OTHERS

31. This category encompasses incident and events in the maritime domain which do not fall under the previous eight definitions.



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