



**NESA Center's Indian Ocean Region Underwater Security Workshop**  
**Final Report/Executive Summary**  
**March 2022**

*Executive Summary:*

From 21 to 23 March, the Near East South Asia (NESA) Center for Strategic Studies conducted a digital workshop that explored underwater security challenges in the wider Indian Ocean Region (IOR). The discussions discussed topics pertaining to military/security concerns, cyber and technological components, environmental considerations, and private sector perspectives on the underwater domain. Participants hailed from nineteen different countries and provided their own thoughts on what aspects of the underwater domain they feel should be prioritized by policymakers and their views on trend lines. NESA's Director, LTG (ret) Terry Wolff kicked off the event and NESA's Dean, Dr. Roger Kangas provided farewell remarks. NESA faculty member Professor David Des Roches served as a speaker with facilitation provided by Dr. Michael Sharnoff. Jeff Payne, NESA's lead for IOR programs, led the event.

This workshop was conducted digitally due to the ongoing pressures of the pandemic environment. A component part of NESA's ongoing investment in Indian Ocean Region (IOR) focused programming, this workshop featured the support of United States Indo Pacific Command (INDOPACOM), United States Central Command (CENTCOM), and United States Africa Command (AFRICOM), among other U.S. government elements. The workshop featured speakers from Europe, the United States, South Asia, and Southeast Asia.

The workshop's focus on underwater security was the result of requests from members of NESA's growing IOR and maritime alumni groups. Underwater topics remain uncommonly discussed in open forums, despite the growing cyber, environmental, security, and economic challenges that present there. The workshop covered considerable ground, with specific interest in developing technologies that will impact knowledge of spaces beneath the surface, increased interest in developing operational capacity by militaries, and the ways in which non-state illicit actors could operate underwater. Some of the relevant themes and recommendations that emerged from the workshop's proceedings include:

- The underwater space is increasingly a focal point for investment by nation states. The availability of recent technologies to integrate into existing submarines, the development of submarine assets to pursue national interest, and increasing interest in the development of Anti-Submarine Warfare (ASW) are all trend lines being observed across the Indo Pacific and within the IOR. The competitive nature of the U.S.-China relationship is one inspiration for these trends, but so too are regional rivalries and a desire to maintain

greater agility in the maritime domain. Due to the increasing diversity of underwater military assets, there is also a great ability for smaller and less developed states to become underwater actors by developing niche capabilities. Overall, the trend is clear – there are more nation states than ever before investing in underwater assets and in submarines.

- Autonomous/Unmanned Underwater Vehicles are increasingly exiting the experimental world and entering a phase where they could be deployed for various missions by nation states. As with other automated/unmanned systems, their scope remains limited, misunderstandings about their use among policymakers remain common, and barriers for widespread integration into maritime operations remain high. Yet, these vehicles further clarify the quilt of technological advancements in the maritime domain and can be added to sensor systems, buoys, submarines, ocean floor mapping, and other elements that have a direct or indirect security dimension. There is no turning back from the trend – drones, gliders, and so forth are part of our security environment. The toothpaste is out of the tube in this regard.
- Communication challenges from the underwater point of view: Undersea cables are critical for global commerce and global communication. They are vulnerable, both to potential purposeful damage, interruption, or destruction. The complexity of the problem is not merely tied to submerged cables, but also to the relay stations at coastal hubs for the cable network. The potential security threat to these cables is routinely theorized within governments and among academic audiences, but overt discussions among government actors in a multilateral environment have not been common. This should be altered, either as add-ons to existing meetings or exercises, or in a working group setting stood up among like-minded nations.
- Ecological and Environmental Considerations: The health of the oceans should be understood as an underwater priority, for the health of the ecological system beneath the surface secures fish stocks, coral reefs, and a wide variety of plant life. IUU fishing is a problem on the surface and traditional responses to that illegal activity is performed by surface fleets, but many regional states in the IOR need greater information about the stability of the underwater environment. Some of this data exists among coastal communities who have deep knowledge of local waters, but additional data can be overlaid to what exists locally. Specifically, a variety of sensors, buoys, and information networks in development or already existing within the academic community can be vital. The hurdle to overcome is extracting the data held by scientists and academics, translating into policymaking circles, and then providing forums for improved data sharing and governmental responses. Beyond protecting maritime life, another consideration to factor in are the economic implications of ocean floor resources. Ocean floor mapping, resource sampling, and mining/collection are developing industries across the globe. Determining resource deposits and measuring the wisdom of extraction is something that will become a larger debate within many IOR littoral states. There is not uniform way to pursue resource extraction, but like other aspects of the underwater domain, greater transparency and more frequent conversations would assist in developing best practices, more accurate assessments, and less disruptive methods. Informing the entire ecosystem beneath the surface is the state of the climate itself. Warming waters threaten wildlife on a scale never seen. More extreme weather patterns disrupt our

waters' natural cycles. Invasive species can thrive beyond traditional zones due to changes in climate. From an environmental, economic, political, and security lens, the health of our waters is a universal concern.

- Methodologies for Addressing Underwater Domain Awareness: Regardless of the perspective one has on the security of the underwater domain; it is a common feature that multilateral conversations are uncommon. Thus, all actors interested in protecting the underwater domain need to increase their willingness to engage and do so with greater frequency. There remains the question as to the best method for hosting these conversations. Are existing international organizations the best tool? Should it be government-led in a Track 1 or 1.5 formula? Do new organizations need to be stood up? Is a private sector approach, led by academics and scientists in a Track II style, the best option? There is no consensus yet as to the method, but what is clear to IOR states is that whatever format is pursued, it must have political power behind it. Thus, the initial step for all actors is to increase the attention senior policymakers direct towards underwater security and maritime domain awareness.
- The impact of illicit non-state actors in underwater spaces needs greater attention among policymakers and analysts. Criminal activity, whether trafficking, terrorism, IUU Fishing, or other activity, exists at sea. These actors are adept at altering their methodologies to avoid law enforcement and military interdiction, as well as integrating recent technologies to maintain their illegality. Illicit non-state actors are often networked together by necessity or opportunity. Thus, it follows that government actors and institutions need to see such actors as not tied to a particular format or even domain, but by a common commitment to avoid our collective security frameworks. Narcotics traffickers already employ semi-submerged vehicles for transport. Illegal fishing operations are experts at going dark to penetrate EEZs. The list can go on. What emerged from this workshop is the desire among professionals of easier and more responsive information sharing. This could be advanced using regional fusion centers, more routine Shiprider agreements, better integration of coastal communities, and when applicable, the better integration of commercially available technologies.

#### *Recommendations:*

Based on the presentations, discussions, and debates from the workshop, there were certain recommended next steps for participants and NESA to take.

- *Underwater Domain Awareness is an underdiscussed element of that should be featured within international conversations, whether led by governments, international organizations, or academic institutions. All who took part should build into their programming, exercises, and exchanges the room needed for conversations on the underwater domain.*
- *As with all aspects of maritime security, information sharing is emerging as a foundation principle to assist all actors with addressing threats. More routine and committed information sharing is a compounding good for our oceans and that includes exchanges through technology, person-person meetings, military exercises, and training forums.*

- *Scientists, coastal communities, and others at the front lines of climate change should be integrated into conversations about the health of our oceans. It is a security issue, as well as an economic and political one. The work of those directly researching or monitoring climate change should be less and less isolated in their work. The naval, coast guard, and overall maritime community should commit to integrating such individuals and groups routinely.*
- *Spread the word about the challenges existing beneath the surface. Conversations within our institutions, within our governments, within our countries, and within our regions should occur and we are a community that can assist in initiating such conversations.*

## ATTACHMENTS: RESULTS OF PARTICIPANT ACTIVITIES

### Quick Response Questions:

1. How can we better draw attention to the challenges of the undersea space?
  - a. More Security Cooperation: 42%
  - b. Better Means of Information Sharing: 35%
  - c. More Liaising with Private Sector Institutions: 0%
  - d. More Frequent Academic/Engagement Opportunities: 15%
  - e. Other: 8%
2. What do you see as the greatest category of challenge that exists beneath the surface?
  - a. Military/Security: 35%
  - b. Economic: 23%
  - c. Climate/Ecological: 38%
  - d. Informational/Technological: 4%
  - e. Other: 0%
3. What technological feature are you most focused on?
  - a. Unmanned Systems: 25%
  - b. Undersea Cables/Information Technology: 17%
  - c. Monitoring Systems (Buoys/Sensors): 17%
  - d. Cyber/Interfaced Systems: 33%
  - e. Other: 8%
4. How can the U.S. help facilitate undersea awareness?
  - a. Facilitation of commercial/public sector engagements: 29%
  - b. More technical training opportunities: 25%
  - c. Information sharing on challenge sets: 46%
  - d. Other: 0%