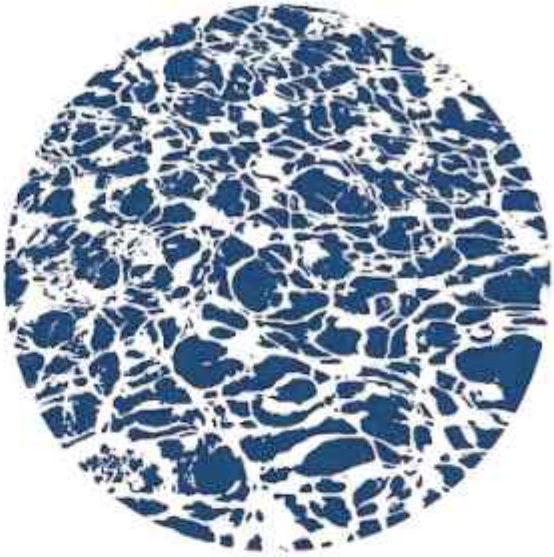
# CHASING CURRENTS

Red Lantern ANALYTICA

ASSESING INDIA'S SAGAR DOCTRINE IN THE AFTERMATH OF CHINA'S DEEP-SEA AMBITIONS IN THE INDIAN OCEAN

# Introduction

The littoral of the Indian Ocean has reconstituted itself from a simple economic transit corridor to the core geopolitical axis for the distribution of global resources, trade flows, and marine competition. This large maritime region, ranging from Australasia to South Asia, West Asia, and Eastern Africa, provides the base for a huge economic and population powerhouse. Today, it accounts for close to 40 percent of the world's offshore oil production. While widely cited institutional metrics frequently attribute over 80 percent of global seaborne oil trade to the broader region and its structural chokepoints, precise entry-point monitoring by the IFC-IOR and Brookings models track direct basin transit closer to 64 percent."



India lies squarely in the core of this network and is engaged in a major strategic realignment. The exponential growth of global shipping traffic has shattered New Delhi's previous, land-centric defensive thinking and forced a permanent shift to broad-area naval and marine policy.

The current marine setup of India is shown with this structural change. This marine pivot was first formalised in 2015 with the SAGAR (Security and Growth for All in the Region) agenda, with a strong emphasis on cooperative security, regional capacity building, and collaborative coastal management. Rather than a simple policy refresh, this upgrade marks a deliberate transition toward active, institutionalized security coordination across the Global South, moving India from a localized maritime participant to a systematic regional stabilizer. While these doctrines project a vision of a cooperative, rules-based maritime commons, their operational implementation faces a highly sophisticated, technical challenge from parallel deep-sea scientific programs in the region. The accelerating frequency of distant-ocean survey operations near India's immediate neighborhood necessitates a rigorous re-evaluation of how India handles Underwater Domain Awareness (UDA) within its broader strategic calculus.

# The Mechanics of Distant-Ocean Survey Operations

Evaluating the shifting balance of power in the Indian Ocean requires moving past traditional surface fleet metrics to look closely at the operational scale of modern Marine Scientific Research (MSR). Over the past two decades, state-directed investment into distant-ocean oceanographic survey fleets has moved at an unprecedented pace. Naval war planning models by Martinson and Dutton (2018) estimate that on any given day, an average of five to ten highly specialized research vessels operate outside their domestic waters across the Indo-Pacific commons. These platforms are managed through a centralized institutional grid that spans China's Ministry of Natural Resources (MNR), the Chinese Academy of Sciences (CAS) and the China Geological Survey, ensuring a persistent, rotating presence near critical maritime choke points and shipping corridors.

Under the United Nations Convention on the Law of the Sea (UNCLOS), these platforms operate under the banner of peaceful, non-military scientific inquiry. However, contemporary oceanography is intrinsically dual-use. Advanced environmental tracking systems are crammed into specialized hulls such as the Xiang Yang Hong series, the SWATH-designed Shiyan platforms and the deep-sea Kexue survey ships. They use hull mounted Acoustic Doppler Current Profilers (ADCPs) to map the subsurface current velocities, multi-beam echo sounders to create high-resolution bathymetric maps of the ocean floor, and autonomous underwater gliders like the Sea Wing to record continuous variations of salinity, water temperature and acoustic sound propagation (Martinson and Dutton, 2018).

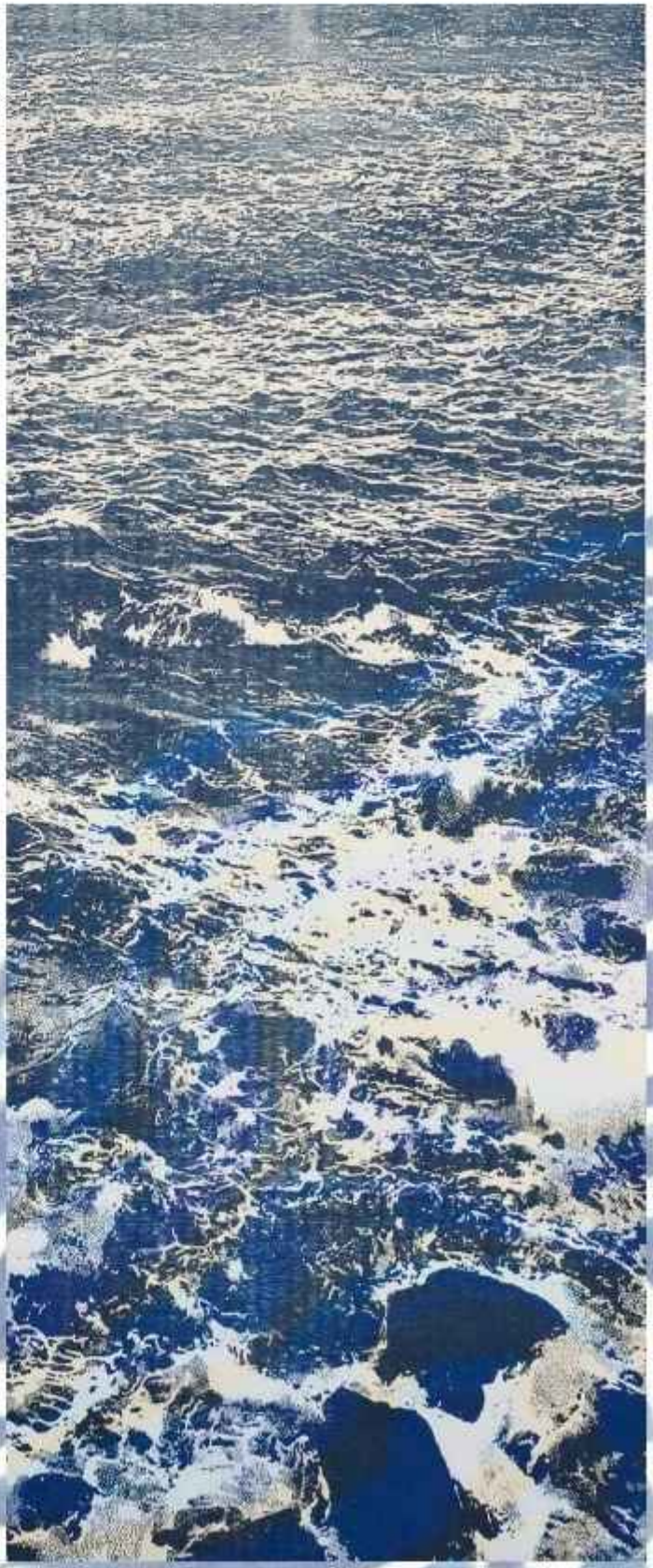
While this data serves legitimate scientific purposes like monsoon forecasting, climate modeling, and fisheries regulation, it doubles as an invaluable strategic asset. For undersea operations, the physical profile of the water column is everything. Variations in salinity stratification and thermocline depth bend and distort sonar waves; mastering these gradients allows subsurface vessels to avoid detection, clear underwater choke points safely, and map predictable deep-water navigation tracks across the regional seabed. Consequently, continuous MSR deployments allow external actors to compile highly detailed environmental profiles of India's maritime backyard. Strategic models point to these scientific activities as a mechanism for generating diplomatic capital, noting documented instances where littoral states like Sri Lanka have historically opened port access to foreign research hulls like the *Shiyan-1*.

**CIVIL-MILITARY OCEANOGRAPHIC DATA CYCLE**

# Doctrinal Adaptation: Elevating SAGAR to MAHASAGAR

Stopping this large-scale underwater surveillance forced India to rethink and rebuild its entire naval architecture. The country shifted from a defensive, 'stay close to shore' mindset to a far more ambitious, connected strategy across the wider region. New Delhi's 2015 "SAGAR" (Security and Growth for All in the Region) agenda served as the opening blueprint for this shift, anchoring neighborhood policy in practical hydrographic training, non-reciprocal capacity building, and joint disaster management with nearby island states. While this approach successfully built diplomatic capital across the littoral, the relentless pace of deep-sea foreign research expeditions quickly exposed a technical blind spot. Traditional surface patrols and basic coast guard coordination simply lack the specialised instrumentation required to monitor or match deep-sea environmental mapping.

The MAHASAGAR framework's extension has faced some operational limitations (Singh, 2025). Moving decisively beyond localized coast guard coordination, MAHASAGAR builds a far more ambitious security matrix by institutionalizing direct, real-time data pipelines among maritime agencies throughout the Global South. This evolution intersects directly with the core logic of the Indian Maritime Security Strategy, which maintains that comprehensive command of a maritime theater requires uncompromised, multidimensional visibility across the entire Information-Decision-Action (IDA) loop (Das, 2021). By centering operations around existing regional intelligence hubs, most notably the Information Fusion Centre-Indian Ocean Region (IFC-IOR), the MAHASAGAR doctrine shifts India's role from a conventional, localized security provider to the primary systemic coordinator of collective regional data sovereignty.

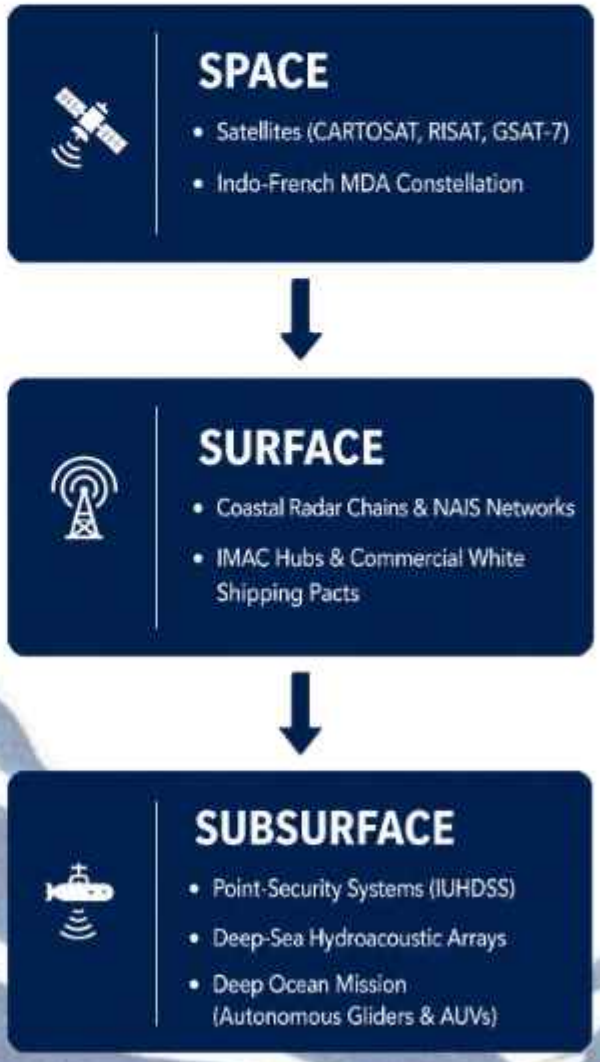


# The Critical Dimension of Underwater Domain Awareness (UDA)

The foundational friction within the MAHASAGAR framework stems directly from a stark technical imbalance: a highly mature surface-tracking capability operating over a largely unmonitored deep-sea data environment. In the wake of the 2008 Mumbai attacks, New Delhi aggressively built out its surface Maritime Domain Awareness (MDA) architecture, standardising data streams across the National Automatic Identification System (NAIS), localised coastal radar networks, and the Information Management and Analysis Centre (IMAC) (Das, 2021). ***True. Following the 26/11 Mumbai attacks, India carefully moved to strengthen it's maritime security. It established the Coastal Security Network, the National Automatic Identification System (NAIS) chain, and the NC3I Network, key initiatives to significantly improve Maritime Domain Awareness. The Information Management and Analysis Centre (IMAC) is also confirmed as part of this post-attack architecture.***

While this integrated grid effectively manages civilian shipping traffic and mitigates low-intensity threats like piracy, its operational utility drops sharply at the water's edge. The surface network remains functionally blind to sub-surface bathymetric and oceanographic changes, leaving an entire dimension of the maritime theater unmonitored. Large oceanographic research vessels maintain a unique strategic advantage in this space. Metadata analyses of global repositories like the Biological and Chemical Oceanography Data Management Office (BCO-DMO) reveal that large specialized research vessels are uniquely capable of collecting up to 97 percent of all baseline chemical, biological, and geological parameters concurrently, a multi-disciplinary data collection capability that satellites and uncalibrated autonomous platforms cannot independently duplicate.

MULTIDIMENSIONAL DOMAIN AWARENESS



To tackle this data asymmetry, India is rapidly diversifying its technical focus across three interrelated domains:

• Space-based augmentation: Use of dedicated assets like CARTOSAT and RISAT series and secured military communication satellites like GSAT-7 to monitor vast ocean space. This is reinforced by the joint India-France maritime surveillance constellation, designed to detect and track non-reporting dark vessels across the wider Indian Ocean footprint.

• Subsurface Infrastructure: Shifting away from localised point defense systems like the Integrated Underwater Harbour Defence and Surveillance System (IUHDSS) toward wide-area hydroacoustic tracking networks.

•National Oceanographic Autonomy: Launching long-range tracking gliders and dedicated scientific programs under the national Deep Ocean Mission to build independent, high-fidelity models of the regional marine environment.

# Conclusion and Strategic Outlook

The long-term viability of the MAHASAGAR framework cannot be achieved by attempting to match distant-water survey operations hull-for-hull. It demands the institutionalisation of deep, structural data-sharing networks with friendly coastal states. Because the physical processes governing the ocean column operate completely independent of political boundaries, joint scientific collaboration is a foundational prerequisite for enduring regional stability.

To cement its role as a preferred security and development partner, India must translate its high-level doctrinal visions into practical, shared technical assets. By coordinating joint hydrographic surveys, widening White Shipping Information Exchange (WSIE) protocols, and providing accessible, high-fidelity marine data repositories to smaller littoral states, New Delhi can ground its maritime leadership in the real-world needs of the regional Blue Economy. Blending technical Underwater Domain Awareness with proactive, cooperative diplomacy is the only way India can ensure the Indian Ocean remains an open, predictable, and rules-based maritime commons.

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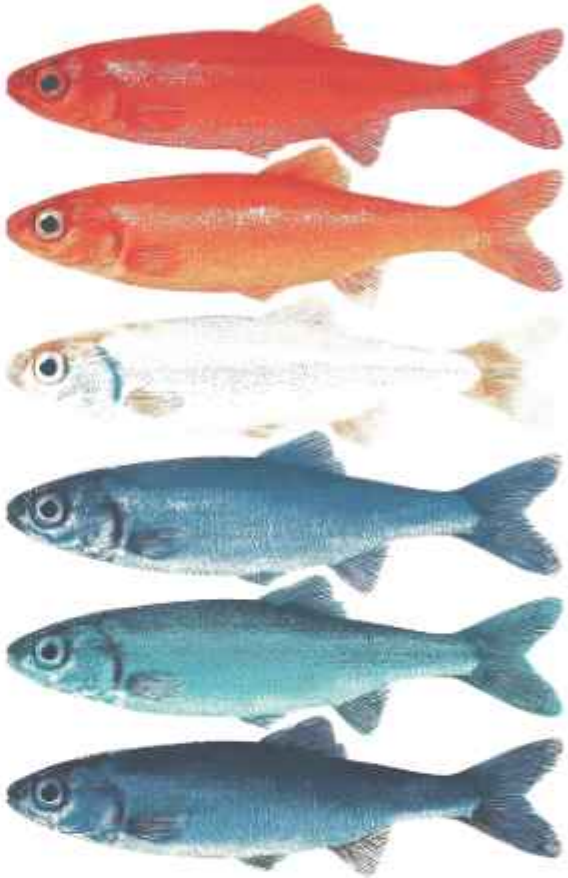

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