RIS
Research and Information System for Developing Countries
विकासशील देशों का अनुसंधान एवं सूचना प्रणाली

AIC
ASEAN-India Centre at RIS

AIC COMMENTARY

No. 51, September 2024

ASEAN-India Cooperation – A New Perspective Based on the Underwater Domain Awareness (UDA) Framework

Dr. Arnab Das*

Abstract: *ASEAN and India share a vast tropical Indo-Pacific strategic space, abundant with ocean resources and opportunities for maritime connectivity. However, they also face significant challenges in terms of sustainable development, climate change risks, and strategic security concerns. This paper proposes the Underwater Domain Awareness (UDA) framework as a new dimension for the ASEAN-India partnership, focusing on capacity and capability building tailored to the unique tropical characteristics of the region.*

Introduction

ASEAN is the geostrategic center of gravity in the Indo-Pacific, and India is expected to play a central role in this space by the global community. The Indo-Pacific has become a key arena for global power play, with more and more nations maintaining their strategic presence in the region. As a result, the ASEAN-India partnership must focus on the Indo-Pacific strategic space and how to enhance our strategic presence. This can be achieved through capacity and capability building to ensure strategic autonomy. The ASEAN-India region is connected by the Indian Ocean, making Maritime Domain Awareness (MDA) crucial. However, conventional MDA has been security-driven and fails to meet the expectations of other stakeholders, such as the Blue Economy, sustainability, climate change, and science & technology. Additionally, ongoing MDA initiatives have focused primarily on surface activities, while more than 90% of the threats, resources, and opportunities exist in the underwater domain. Therefore, Underwater Domain Awareness (UDA) must be considered separately from MDA and not as a mere extension of it. UDA requires specialized acoustic capacity and capability building.

* Founder and Director, Maritime Research Centre

Challenges of the Indo-Pacific Region

By definition, the Indo-Pacific encompasses the tropical waters of the Indian and Pacific Oceans. This region presents unique challenges across political, economic, and physical dimensions. Politically, the region's high population density and vast diversity result in volatility, which poses strategic security concerns. The fragmented geopolitics of the area leads to heightened military deployment and significant defense spending, even in developing nations facing competing socio-economic needs.

Economically, the rich biodiversity and vast undersea mineral resources of the tropical waters make the region lucrative. However, a reliance on Western technology and governance models has created substantial governance gaps. Physically, the tropical waters pose unique challenges, particularly in terms of sonar technology. Sonars, originally designed for temperate and polar regions, perform sub-optimally in tropical waters, with degradation levels of up to 60%. This results in the need for increased resource deployment to cover the same areas. The development of underwater sonar technology during the Cold War era in the Greenland-Iceland-United Kingdom (GIUK) gap continues to influence current practices, with the West pushing outdated hardware into the tropical region for return on investment. This hardware, designed for different environmental conditions, is often ineffective in tropical waters.

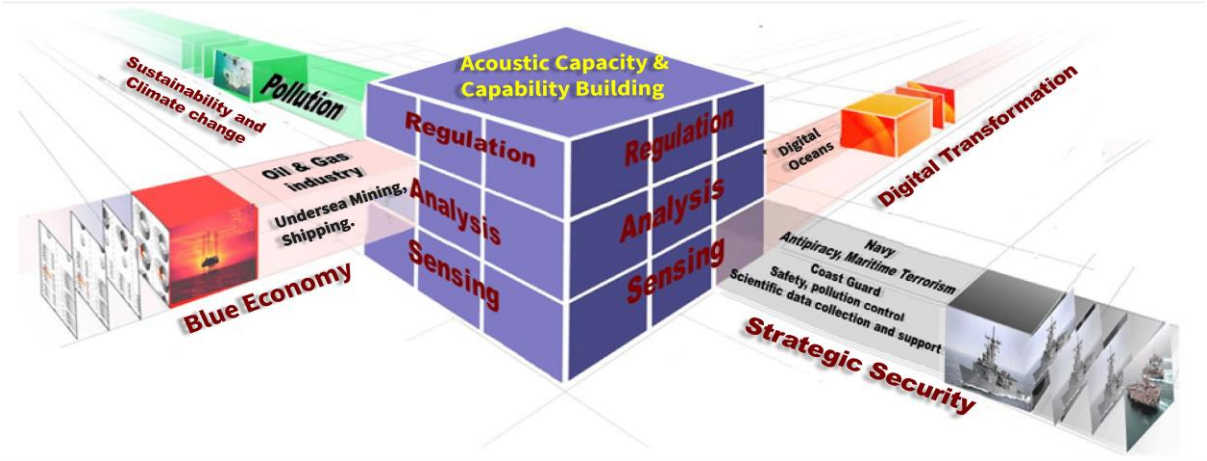
Governance and Technological Dependence

The lack of UDA has exacerbated governance gaps, resulting in strategic dependence on Western technology and know-how. This external dependence has enabled extra-regional powers to meddle in domestic politics, encouraging corruption and instability. The excessive security bogey has led to massive military spending at the cost of socio-economic upliftment. The military is buying hardware at exorbitant cost with little effectiveness in the tropical waters. Most of these technologies are outdated that the west is in the process of discarding from their own military. The unregulated practices for resource exploitation and massive scale destruction of the nature in the name of development is causing serious sustainability and climate change risk. The fragmentation is not just among the nations in the region, but also among the stakeholders within the nations as well. This leads to each of them looking at resource deployment individually, rather than a cohesive approach for enhanced optimization. Science & Technology (S&T) does not differentiate the user or the developer, multiple technologies have dual use potential and can be used across multiple stakeholders. Digital transformation will be the answer to all these critical issues and we need to prioritize the same for good governance in the tropical waters. Marine Spatial Planning (MSP) is the United Nations (UN) driven digital transformation model for good governance in the maritime domain.

Digital Transformation and UDA Framework

Digital transformation is resource intensive and will require high technology at an unprecedented level. Developing nations will require a nuanced approach for embracing the digital transformation at a scale, never seen before. The UDA framework[1] developed by the Maritime Research Center (MRC), Pune[2] and M/S NirDhwani Technology Pvt Ltd (NDT)[3], provides a structured, comprehensive and inclusive model as presented in figure 1, below. The UDA framework provides policy & technology intervention along with acoustic capacity & capability building. It is backed by five pillars of *research, innovation, skilling, knowledge and policy*. The UDA framework encourages pooling of resources and synergizing of efforts across the stakeholders and the nations in the IOR to optimize resource deployment across sectors. The tropical challenges and opportunities can be better managed with an effective implementation of the UDA framework[4].

Figure-1 Schematic Representation of the UDA Framework



Way Ahead

The ASEAN India cooperation has to deal with demographic challenge, having an aspirational young population seeking meaningful opportunity to earn livelihood. The conventional means are fast drying up and the unemployment rate has risen. The MSP could be a game changer both for governance and also as a new opportunity for the youth. *Modelling & Simulation (M&S)* based implementation (with limited field experimental validation) of the MSP will be important, in contrast to the complete sensor-based approach driven by the west[5]. The global south cannot afford to deploy sensors in such large scale. However, a nuanced capacity &

[1] https://maritimeresearchcenter.com/wp-content/uploads/2024/04/Underwater-Domain-Awareness.pdf
[2] https://maritimeresearchcenter.com/
[3] https://nirdhwani.in/
[4] https://udafoundation.in/
[5] https://digest.udafoundation.in/2024/07/02/marine-spatial-planning-msp-implementation-based-on-modelling-simulation-ms-driven-by-the-underwater-domain-awareness-uda-framework/

capability building will be the key to channelize the youth towards this new initiative. Digital transformation will require three categories of youth:

High End Data Analysts: The high technology computational hardware and Artificial Intelligence (AI) based data analytics will require human resource of a different level and caliber. India has contributed significantly to the global digital movement, so the MSP should be possible with focus on the underwater domain. The premier institutions like Indian Institute of Technologies (IITs) have an inherent mechanism to generate the talent pool to drive this initiative with domain knowledge push. The technology intervention will be better driven by this stage.

Domain Specialists: The data generated by the first stage needs to be interpreted by a massive pool of multi-disciplinary experts for customized sector specific applications. These could come from the large pool of institutions supporting the liberal arts subjects and socio-cultural disciplines. Policy interventions will be better driven by this stage. Academic & research institutions have to focus on real world problem solving, rather than purely theoretical pursuit.

Field Deployment Specialists: The field experimental validation and the community connect will be the most important stage of this entire digital transformation, to truly solve a real-world problem. This, stage will be best driven by the coastal community youth, who are well equipped with traditional knowledge and practices to deal with the water front. Such inclusive approach will allow the *coastal communities* to be main streamed into the development process, which is slowly becoming a rarity.

The implementation of the entire MSP initiative, driven by the UDA framework will have to be managed in three steps:

Outreach: Initial sensitization of the entire ecosystem across multiple levels and diverse stakeholders & communities will be critical. Workshops, seminars, interactions and publications will be the key. Policy makers, stakeholders, students, researchers, academicians, practitioners and more will have to be included in this program.

Engage: The sensitization has to be followed with engagement across the spectrum. The policy makers will have to be supported with ideas to identify the gaps and also provide data driven inputs for getting a realistic assessment of the ground situation. The present system of relying on western studies to build policy framework in the tropical region has been a flawed approach. The stakeholders need to be provided data driven inputs about the ground realities and appraised of the emerging challenges & opportunities. Youth need to be engaged under internships and fellowships and main streamed to be part of the entire process.

Sustain: The entire initiative needs to be sustained using projects under government & corporate funding, along with Corporate Social Responsibility (CSR) funding. Policy and technology project proposals, across the varied dimensions of the UDA framework will have

to be populated and driven over a long period, to build the entire MSP across sectors. Specific application oriented and infrastructure development projects will have to be supported.

Conclusion

The UDA framework can provide the foundation for ASEAN-India cooperation to build an effective MSP initiative. By embracing digital transformation, enhancing acoustic capacity, and fostering youth engagement, this cooperation can address governance gaps, optimize resource deployment, and tackle the unique challenges of the tropical waters. The UDA framework website offers further details on the broader ecosystem and implementation mechanisms[6].

[6] https://udafoundation.in/

About AIC

Considering the work of the ASEAN-India Eminent Persons Group (AIEPG), and its Report with recommendations for forging a closer partnership for peace, progress and shared prosperity, the Heads of the State/Government of ASEAN and India at the ASEAN-India Commemorative Summit 2012, held at New Delhi on 19-20 December 2012, recommended the establishment of ASEAN-India Centre (AIC), which was formally inaugurated by the Hon'ble External Affairs Minister of the Government of India on 21 June 2013 at RIS. AIC serves as a resource centre for ASEAN Member States and India to fill the knowledge gaps that currently limit the opportunities for cooperation. AIC works with the Ministry of External Affairs (MEA), Government of India and undertakes evidence-based policy research and provide policy recommendations.

AIC Commentary Series Editor: Dr Pankaj Vashisht, AIC at RIS, New Delhi

Contact us at:
ASEAN-India Centre (AIC)
Research and Information System of Developing Countries (RIS)
Zone-IV-B, Fourth Floor, India Habitat Centre, Lodhi Road
New Delhi – 110003, India
Tel. +91-11-24682177-80
Fax: +91-11-24682173-74
E-mail: aic@ris.org.in
Visit our website at: http://aic.ris.org.in

@AIC_aseanindia