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SEA CHANGE

EVOLVING MARITIME GEOPOLITICS IN THE INDO-PACIFIC REGION
edited by David Michel and Ricky Passarelli



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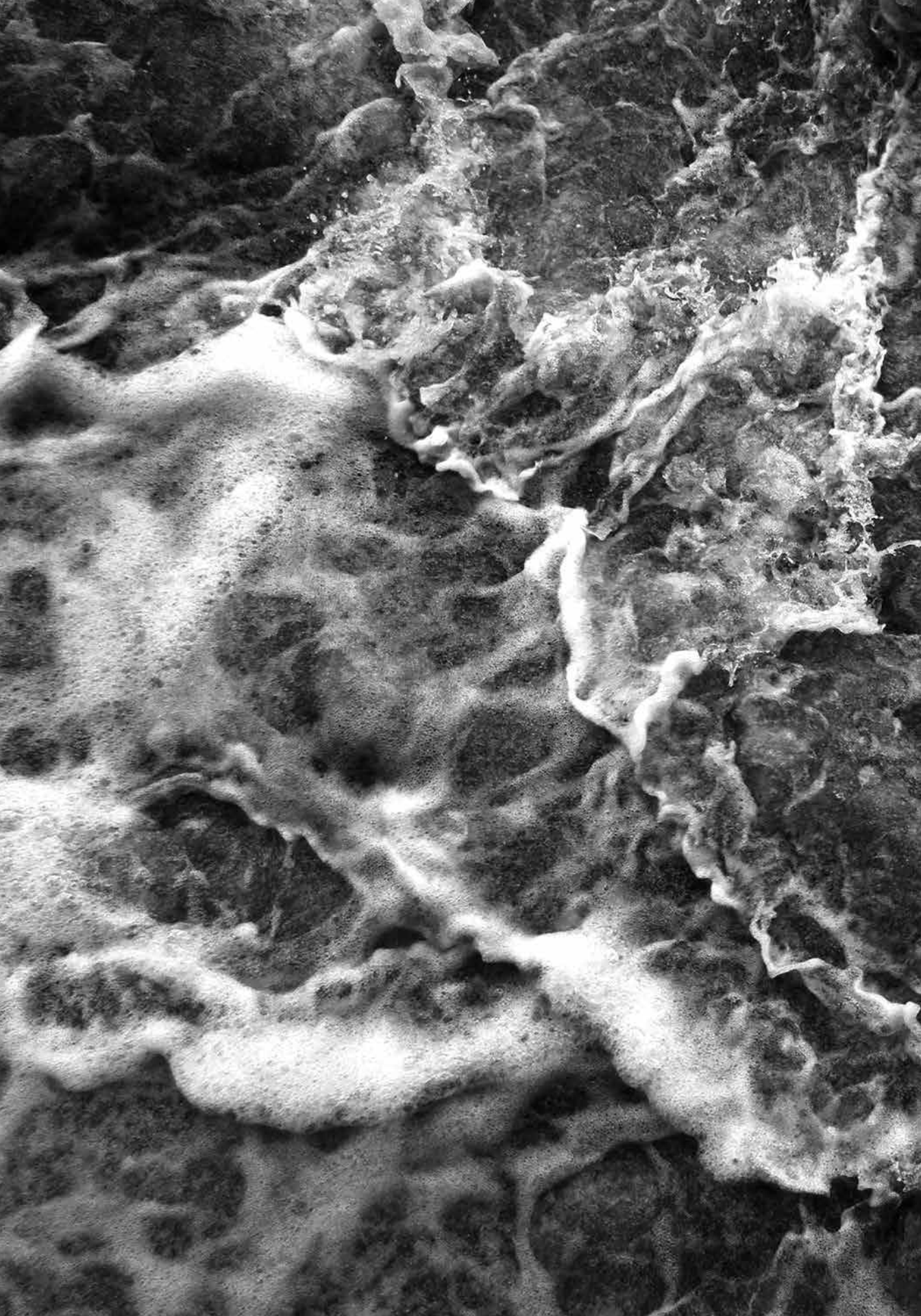
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Preface

Sea Change: Evolving Maritime Geopolitics in the Indo-Pacific Region began in the fall of 2013 when the US-based Stimson Center partnered with India's Observer Research Foundation (ORF) to launch a research initiative analyzing the maritime policy challenges and opportunities arising across the Indian Ocean and the Western Pacific as these areas emerge as central theaters of 21st century geopolitics. In particular, the project aimed to illuminate the evolving role that the waters, shipping lanes, and natural resources of the Indo-Pacific will play in shaping relationships between major regional and extra-regional powers while also examining the various ways that energy exploration and exploitation, infrastructure development, and environmental pressures will impact the Indo-Pacific littoral in the coming years and decades.

To help frame these issues, Stimson and ORF, in association with the US Consulate General in Chennai, India, convened a three-day workshop, entitled "Sea Change: Evolving Maritime Geopolitics in the Indo-Pacific Region," over the course of two related sessions, one in Chennai from June 10 to 11, 2014, and the second in Kochi on June 12, 2014.

The conference brought together senior officials, business leaders, academic analysts, military representatives, and energy and shipping industry experts from India, the United States, Australia, China, Japan and the broader Indo-Pacific region to elucidate the salient strategic, socio-economic, commercial, and environmental trends affecting the region and examine their implications for decision makers. Together, participants engaged topics such as the strategic outlooks of various states, the shifting maritime security risks confronting the region, the existing institutional and legal structures in place to face such challenges, the dynamics of Indo-Pacific maritime trade, rising strains on environmental and natural resource issues, and the role and politics of regional organizations. The conference provided a valuable venue for policy makers and stakeholders to debate their various interests and priorities, exchange views, discuss mutual concerns, and forge shared objectives. This volume features papers developed at the "Sea Change" conference, presented with an ultimate view to offer practical perspectives on future policy directions, and to spur further dialogue and debate.

The Stimson Center is grateful to the US Consulate Chennai for its generous financial support and to all of the conference participants for their energy and commitment. Stimson is also indebted to its partners at the Observer Research Foundation for their invaluable collaboration throughout. We especially thank P.K. Ghosh, Darshana Baruah, Uma Purushothaman, Abhijit Iyer-Mitra, and Samir Saran for sharing in this endeavor. Stimson also thanks the communications, development, and project management staff, particularly Jim Baird, Francene Blythe, Kyla McKenna, Alla Polyakova, Peter Toto, our interns Owen McAleer and Diane French, and the indispensable Lita Ledesma for their critical contributions to the success of this project.

David Michel
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November 2014



Introduction

Diane French, David Michel, and Ricky Passarelli

The waters of the Indo-Pacific region represent an increasingly critical arena for maritime geopolitics, security, trade, and environmental policy action—issues that have transformed the region into a major crossroads of international relations. The vast Indian Ocean and western Pacific are drawn together by natural resource flows, globalized supply chains, and international distribution networks. At the same time, Indo-Pacific littoral states face significant policy and governance challenges from multiple sources, including territorial disputes and prospective rivalries among naval powers, intensifying environmental pressures on marine and coastal infrastructure and resources, piracy and trafficking on the open ocean, and weak and failing states on shore.

The interplay of overlapping and intersecting interests in the Indo-Pacific region undergirds a complex strategic environment characterized by growth and integration as well as potential for conflict and vulnerability. Increasing exchanges of goods, people, and ideas throughout the region have spurred vital economic and social growth, both within and between countries. But certain risks may accompany these rewards. Greater interdependence entails possible vulnerabilities. Essential sea lanes also represent potential chokepoints. Developing natural resources may endanger the natural environment. New security risks flow from the pressures of climate change and asymmetric threats, such as piracy and terrorism. To navigate the complicated maritime realm of the Indo-Pacific, policy makers throughout the region will need to collaboratively develop strategies to address these interconnected strategic, socio-economic, commercial, and environmental trends that will continue to shape the region in the coming decades.

Strategic Perspectives

Varying strategic perspectives on the importance of the Indo-Pacific have been developed by a diverse set of regional actors, including the United States, India, China, Australia, Indonesia, and Japan. This shift of the United States and other countries toward the Indian Ocean region has been driven by the dramatic economic growth of China, the steady rise of India's trade and productivity, the increased importance of raw materials and resource extraction from developing countries, and the escalating crude oil exports of the Middle East to Asia. Accelerating rates of change have created a rapidly evolving security landscape characterized by both of soft and hard power, ranging from maritime partnerships and trade initiatives, to bilateral and multilateral disaster management exercises, to active efforts to demonstrate sea control and credible combat power.

The recent strategic rebalance of the United States towards the Asia-Pacific has included a strong naval presence serving several purposes. Among major US interests are guaranteeing the freedom of navigation for energy and commercial trade, ensuring a stable balance of power, monitoring and deterring threats from actors such as Iran and North Korea, and directing various maritime security operations such as counter-terrorist, counter-trafficking, and counter-piracy missions. Meanwhile, China and India have sought to thread a needle between their strategic cooperative and competitive relations. A host of economic and political interests, and an expanding web of bilateral and multilateral interactions around the region, have changed perceptions both between the two Asian giants and with regards to the United States.

In addition to the interlocking rivalries and relations of China, India, and the United States, the region's dynamics are also determined in good part by the interests and influence of other major countries sharing the Indo-Pacific littoral such as Australia, Indonesia, Japan, Malaysia, Thailand, Somalia, South Africa, and Saudi Arabia. Such nations have strategic interests not only in militarily protecting their coasts, but in protecting their coastal ecosystems, fisheries, coral reefs, and man-made infrastructure from exploitation, degradation, and rising sea levels. At sea, strategic interests in energy acquisition have also led to an expansion of international oil and gas exploration, development, and trade and opened pathways for both cooperation and competition across the region.

Maritime Security Challenges

Increased activity throughout the Indo-Pacific due to expanding regional and global trade in goods, ideas, people, and resources has raised a new set of maritime security challenges. Historical state-based concerns such as geopolitical fragility, internal political upheaval, insurgency, inter-state tensions, sea-lane security, and territorial disputes are now coupled with growing threats from non-state sources and asymmetric risks.¹ Among these are growing risks from non-state actors including piracy, terrorism, and trafficking; the impacts of environmental degradation, resource depletion, climate change, and natural disasters; and weak states and failing institutions. These diverse challenges confront an equally diverse set of nations bordering this region, ranging from prosperous states with strong rule of law to low-income countries with feeble or fragmented governance structures. Such diversity in interests and capabilities saddles the Indo-Pacific region with political tensions and brings with it a greater danger of instability and conflict.

In 2013, according to the Heidelberg Institute for International Conflict Research, a total of 182 conflicts were documented involving the littoral states of the Indian Ocean and western Pacific, representing 44 percent of the 414 conflicts observed worldwide, including 11 of the globe's 20 wars.² The vast majority of these clashes concern land-based interests. Yet the Indo-Pacific is also home to a number of prominent maritime territorial disputes, most notably in the South China Sea. Historically, these conflicts, although not infrequent, have largely been managed peacefully. Several, however, have the potential to become flashpoints for violence. Peaceful resolution of such conflicts can be promoted through international law, particularly the 1982 United Nations Convention on the Law of the Sea (UNCLOS), which plays a pivotal role in the region despite the lack of ratification by the United States. Legal measures must also be combined with policy initiatives that demonstrate consistency, creativity, durability, and adequate resource availability. A combination of these legal, naval, and policy measures can ensure Indo-Pacific nations act as capable, adaptive partners rather than disputatious, tense competitors.

Even as international territorial quarrels simmer, perils presented by non-state actors persist. Piracy and armed robbery—particularly off the Somali coast and in and around the Straits of Malacca—remain of such significant concern that many merchant vessels navigating these areas have hired private armed security teams. The inability of national and international forces to definitively secure the vast Indian Ocean has also allowed for the sustained trafficking of illicit narcotics, weapons, and people, along with the transport of common contraband such as oil, cigarettes, charcoal, khat, and endangered species. As with piracy and trafficking, tackling threats from groups such as al Qaeda in the Arabian Peninsula, the Abdallah Azzam Brigades, and al Shabaab will require both strategic intelligence and tactical capabilities.

Maritime Security Structures

Most regional players in the Indo-Pacific share common goals of economic, political, and environmental stability. How they seek to ensure these measures of stability, however, differs across countries. Actions undertaken by the United States have sought to achieve stability through capacity building and regional cooperation, when possible, and deterrence when necessary. Capacity building measures, such as financial aid, asset provision, military training and education, and regional cooperation schemes, such as multilateral exercises, information sharing, and joint patrols, have been implemented in partnership with South Korea, Australia, New Zealand, Indonesia, Japan, the Philippines, Vietnam, Malaysia, and India. Deterrence strategies, on the other hand, have played a role in US relations with Iran, North Korea, and notably, China.

Unlike the formal security frameworks initiated by the United States, relations between India and other Indo-Pacific countries have mostly take the form of informal bilateral and multilateral partnerships. This has allowed India to cultivate an autonomous perspective as a “swing state”—a strategy conducive with its overall policy of nonalignment. Such flexible strategies have been pursued with India’s immediate neighbors of Singapore and Malaysia, its intermediate neighbors of Indonesia and Vietnam, and its extended neighbors of Australia, New Zealand, South Korea, Japan, Russia, and the US. India’s engagement in the Indo-Pacific, built upon its own growing economic power, commercial investments, and regional trade interdependence, and combined with its expanding naval power, potentially position it to play a prominent, stabilizing role between the growing strategic assertiveness of China and the formal engagement of the United States.

Significant relationships have not only developed between great powers in the region, but also between smaller states, notably the numerous island nations. United by the shared threats of rising sea levels, fragile coastal ecosystems, and vulnerable infrastructure, island nations have displayed a common need for capacity building during crises and harbored common concerns about the influence of foreign powers over land and ocean territory. Indeed, their strategic locations and valuable resources place island states in a powerful position to lend unique expertise and resources to larger powers and to shape or disrupt regional power dynamics.

Indo-Pacific Maritime Highway

For centuries, the islands and mainlands of the Indo-Pacific were simply features of the Indian Ocean thoroughfare. Today, increasing flows of commerce, investment, and people are linking the Indian Ocean and Pacific nations together and to the rest of the world as part of an emerging global trading network. The Indian Ocean region has long been the primary artery for pumping oil from the Persian Gulf into the global economy. More recently, the Indo-Pacific has been primed to benefit from the expansion of offshore oil and gas exploration, and development along the eastern coast of Africa, as well as off of Myanmar and Vietnam. Its position as the principal conveyor belt for the international coal trade, and its broader geostrategic standing at the intersection of modern economic, natural resource, and environmental issues, likewise adds to the region’s economic value.

The Indo-Pacific’s rising geostrategic profile has boosted demand for maritime activity and infrastructure throughout the region. This has, in turn, resulted in the development

of regional industrial hubs, the enabling of technological innovation, the stimulation of regional growth, the facilitation of world trade flows, the formation of global shipping alliances, and an overall upsurge in regional living standards.

Port and maritime development, however, can come with their own costs, particularly given the broader geopolitical and environmental circumstances of the region. The existing threats of armed robbery, kidnapping, and sabotage from pirates, organized criminal gangs, and terrorist networks, are likely to increase as the region's offshore industry expands and the development of possible targets increases. Simultaneously, around the Indo-Pacific, demand for coastal development of aquaculture, roads, buildings, and expanding urban infrastructure exacerbates the degradation of mangroves, coral reefs, wetlands, and other ecological habitats.³ Environmental threats like rising sea levels have highlighted the vulnerabilities of the region's growing maritime infrastructure. One vulnerability analysis of global warming determined that fifteen of the twenty port cities around the world with the greatest populations exposed to climate threats by 2070 are in the Indo-Pacific littoral. Thirteen Indo-Pacific port cities rank among the twenty worldwide with the largest value of assets at risk over this time.⁴ In the face of these risks, by global comparison, Indo-Pacific ports remain among the least resilient and well-adapted to evolving climate threats.

Natural Resources and Environmental Challenges

Climate change endangers not only port and maritime infrastructure in the Indian Ocean region, but also ocean environmental systems and human well-being. The Intergovernmental Panel on Climate Change's Fifth Assessment Report published in 2013 stated with "high confidence" that "the rate of sea level rise since the mid-19th century has been larger than the mean rate during the previous two millennia" and that "it is virtually certain that the upper ocean (0-700 meters) warmed from 1971 to 2010."⁵ In addition to the exposure of coastal assets and urban infrastructure, rising sea levels and climate change threaten coastal regions with habitat destruction, biodiversity loss, shoreline erosion, saltwater intrusion into rivers and freshwater aquifers, severe storm surges, and the forced displacement and migration of populations, particularly of low-lying island nations like Mauritius, the Maldives, and Seychelles.

Rising sea levels and ocean warming, coupled with additional stressors such as weak management, pollution, and resource exploitation, have the potential to drastically harm human well-being. Thus, for example, food security, economic security, and regional security are closely linked to fisheries, which sustain the livelihoods of more than 38 million people worldwide.⁶ Indo-Pacific fisheries alone exported 7 million tons of catch (~US\$27.3 million) in 2011.⁷ Fisheries in the Indo-Pacific are influenced by dynamic factors such as trade access, governance, security, and climate change, while weak governance and lack of effective management have created an "open access system" plagued with illegal, unregulated, and unreported (IUU) fishing. Accompanying regional security concerns, such as the use of fishing vessels for piracy, terrorism, trafficking, organized crime, and prostitution, as well as direct conflict over resources, territory, and maritime boundaries, have further exacerbated these trends. Without an effective management system and legal framework, issues of water pollution, rising water temperatures, ocean acidification, and IUU fishing have the potential to devastate Indo-Pacific fisheries and, consequently, the physical health, socio-economic well-being, and overall security of local populations.

Livelihoods in the Indo-Pacific are also affected by energy resources, which literally fuel political and economic interactions in the region. Indo-Pacific states together boast 58% of the world's proven oil reserves and 46% of global gas reserves.⁸ A critical constraint, therefore, is not total resource availability, but rather the existence of “choke points” in the transportation and delivery steps of the resource supply chains, particularly those supplying poor consumers. While some countries, such as China, have made strategic investments in oil and gas pipelines, several large South Asian consumers, including Bangladesh, India, and Pakistan, lack cross-border connections to major oil and gas producing countries. Shortcomings in port and trans-shipment capacity have also been cited as potential blockades to meeting predicted future demand for coal consumption, incentivizing investment in alternative power generation sources.

Many individual countries in the Indo-Pacific region are faced with the similar environmental challenges, yet they lack a common regional policy framework for addressing or attempting to solve them. While there may be no “one-size-fits-all” solution for the entire region, a holistic framework and management approach could facilitate integration, communication, negotiation, data sharing, technology transfer, and best practice dissemination among actors and stakeholders across various levels, sectors, and locations.

International Orders in the Indo-Pacific

In the face of varied and heightened threats in the Indian Ocean region, there have arisen increased opportunities for both cooperation and competition. Indeed, prospects for peace in the maritime environment of the Indo-Pacific depend largely on mutual understanding, cooperation, and constructive engagement. Several regional political, economic, development, and security forums maintain an active role in the Indo-Pacific, including the Arab League, Southern African Development Community (SADC), Gulf Cooperation Council (GCC), Indian Ocean Rim Association (IORA), Western Pacific Naval Symposium (WPNS), Indian Ocean Naval Symposium (IONS), IBSA (India, Brazil, South Africa) Dialogue Forum, Association of Southeast Asian Nations (ASEAN), East Asia Summit, and Six-Party Talks. In addition to regional organizations, several international inter-governmental organizations such as the International Maritime Organization (IMO), Food and Agriculture Organization (FAO), and UN Environment Programme (UNEP), serve to help states manage the maritime environment and ocean resources. Such regional and functional organizations can facilitate the development of binding multilateral agreements to protect nations from environmental threats.

From a legal perspective, there are a number of existing frameworks governing maritime activity in the Indo-Pacific, including, most notably, the United Nations Convention on the Law of the Sea. Though not ratified by the United States, UNCLOS has been ratified by most Indo-Pacific countries and serves to provide a framework for agreements, organizations, and activities, including those addressing territorial claims, managing fish stocks, developing minerals outside of national jurisdiction, and implementing of environmental pacts and security partnerships negotiated through other regional bodies. The arbitration panels and mechanisms of UNCLOS work to resolve various multinational and transboundary maritime disputes, such as issues of coastal security, freedom of navigation, traditional fishing rights, piracy, maritime terrorism, conservation, the exploitation of non-living resources, marine pollution, and maritime delimitation.⁹ Though not a panacea, legal, regional, and

non-governmental organizations have a valuable role to play in ensuring the sustained livelihood and security of the Indo-Pacific and can provide a stable framework for addressing the rapidly evolving maritime geopolitics of the region.

Conclusion

Along with formal institutions, less formal arrangements have a decidedly powerful role to play in facilitating open dialogue, stakeholder collaboration, information sharing, and collaborative policy analysis. It is with these aims in mind that the Stimson Center in the United States and the Observer Research Foundation (ORF) in India partnered in June 2014 to host the maritime trade and security conference “Sea Change: Evolving Maritime Geopolitics in the Indo-Pacific Region.” Maritime geopolitics is a complicated function of security, political, economic, and environmental considerations. As such, its discussion requires a forum capable of spanning both traditional and non-traditional security challenges, across boundaries and among a variety of actors.

With a history of providing pragmatic solutions to global security challenges and deep roots in the South Asian and Indo-Pacific policy communities, the Stimson Center has been able to successfully engage a diverse group of stakeholders from government, military, business, civil society, and academic backgrounds in exploring the prominent strategic, socio-economic, commercial, and environmental trends that will shape the region in future years. Stimson and ORF have worked toward the ultimate goal of advancing awareness of essential Indo-Pacific maritime policy issues, stimulating further exploration of ongoing dynamics, and establishing fruitful connections and cooperation between governments, think tanks, research institutions, business associations, and civil society organizations engaged in the policy communities of India, the US, and the greater Indo-Pacific region. In this spirit, the papers presented in this volume serve not only as a singular forum for engaged discussion of Indo-Pacific strategic perspectives, security challenges, trade, environmental considerations, and international order, but as a starting point for further interdisciplinary analysis, exchange, and transboundary collaboration both within the region and worldwide.

About the Authors

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process, fisheries, and water resources. Prior to joining Stimson in 2008, Michel served as senior associate with the Center for Transatlantic Relations at Johns Hopkins (SAIS). He was educated at Yale University, the École des Hautes Études en Sciences Sociales in Paris, and The Johns Hopkins University School of Advanced International Studies.

Ricky Passarelli is a research associate with the Environmental Security program at the Stimson Center. His work looks to mitigate global conflicts that arise over shared water resources, environmental degradation, urbanization, and food security. With a background in civil engineering, he is particularly interested in how an improved understanding of environmental systems can influence infrastructure and urban design decisions. His previous research has looked at community-based project design and point-of-use water treatment in rural Africa. Ricky holds both a BS in Civil Engineering and a Master's in Urban and Environmental Planning from the University of Virginia.

Notes

1. See, e.g., David Michel and Russell Sticklor, eds. *Indian Ocean Rising: Maritime Security and Policy Challenges* (Washington, DC: Stimson, 2012), at http://www.stimson.org/images/uploads/research-pdfs/Book_IOR_2.pdf; Mohan Malik, ed. *Maritime Security in the Indo-Pacific* (Lanham, MD: Rowman & Littlefield, 2014).
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9. See Caitlyn Antrim, “International Law and Order: The Indian Ocean and South China Sea,” in *Indian Ocean Rising*.



The Indo-Pacific Region and the Rise of Transnational Maritime Threats and Challenges

P.K. Ghosh

The Indo-Pacific region has been witness to extensive “proxy politics” during the Cold war era. However, currently its importance has been highlighted by the fact that the trajectory of maritime geopolitics in the region will herald the global politics of the 21st Century.

Host to a spectrum of activities ranging from trade to transportation, the region also gains salience due to its emergence as the highway for important energy transfers to the energy hungry nations of the world. It is also a region that is alive to political turbulence and a complex jostle for power. The deep desire of the populous Asian states to play a more prominent role either at the regional level or at the global plane has ensured a struggle for power in the entire region that has become accentuated over time—especially with the perceived erosion of US primacy and the emergence of new nodes of power throughout the area.¹

The erosion may be notional and also debatable, but the jostle is extant with major players seeking primacy along with that of the US. The list of serious contenders includes India and China, with countries such as Australia, Indonesia, and South Africa also in the fray playing the role of a king-maker. This dynamic scenario, however, has also highlighted distrust amongst the littoral nations, which in many ways has prevented the creation of an overall security architecture despite similar security priorities and, most importantly, a common maritime thread which runs through the region.

The current accent on increasing globalization in the economic field has brought about attendant maritime security concerns. Thus, with a rising trajectory of sea-borne trade, there seems to be an increase in asymmetric threats arising from transnational crime like modern piracy, terrorism, drug running, etc., in their ever-evolving manifestations. Consequently, this rise has led to strident calls for more effective law enforcement and maintenance of maritime order by all stakeholders.

Differing definitional approaches have attempted to delineate the geographical ambit of the Indo-Pacific region, creating a debate about precise geographic boundaries. Whatever may be the precise interpretation of the region, the unitary factor that threads all the littorals together has been their dependence on sea-borne trade for their existence. Unfortunately, despite the primacy of the oceans, sea governance and a unified approach towards overcoming myriad maritime threats and challenges have not received the importance that they deserve.

Prima facie, the rationale for this seemingly ironical situation may lie in the fact that there exist considerable dissimilarities between capabilities of the littorals. India has its large navy with near blue water lies on one hand while there are others that possess limited capacities. Secondly, it may be due to the divergence of interests and national priorities on issues connected with maritime security and ocean governance.

As mentioned, there exists no singular supranational organization which focuses on maritime security and cooperation in the region. With the Association of Southeast Asian Nations (ASEAN) being primarily an economic forum that has security outgrowths like the

ARF (ASEAN Regional Forum), the nearest forum with supra national characteristics that happens to be restricted in its ambit to the Indian Ocean Region (IOR)—the Indian Ocean Rim Association for Regional Cooperation (IOR-ARC)—came into existence in Mauritius on March 5th, 1997 and had totally ignored the issue of maritime security cooperation—until recently, when it realized its importance. Even though the charter of the association did not mention maritime cooperation, a turnaround in focus and accent has ensured that maritime security has emerged as the top agenda on the table of the forum.

SLOCs Security

Economic globalization has led to more than 80 percent of world trade being conducted through the seas. Since most of the trade in the Indo-Pacific region is sea-borne, the seas effectively form the lifelines for the littoral states. With Sea Lines of Communication (SLOCs) forming the oceanic highways for the movement of merchant ships, SLOC security has emerged as a primary concern for most nations.

According to a World Bank projection, the global sea-borne trade that stood at around 21,480 billion ton-miles in 1999 was expected to rise by linear projection to 41,800 billion ton-miles by 2014.² However, the global financial meltdown of 2008-09 displaced the expected boom. A. P. Moller-Mærsk A/S, owners of the largest container fleet in the world, estimate that container handling fell by 10 percent in 2009—the first decline since containers were introduced on global shipping routes in the 1970s.³ However, in a slow turn around, a growth of 2 percent in global shipping happened from 2010. This resulted in an 8.6 percent growth in the world fleet.⁴ Subsequently, world sea-borne trade grew by 4 percent in 2011, taking the total volume of goods loaded worldwide to 8.7 billion tons.⁵

With nearly 100,000 ships transiting the expanse of the Indian Ocean annually, it is easy to predict that the Indian Ocean is a trade busy ocean. Roughly 40 percent of this sea-borne trade is accounted for by the Straits of Malacca. Every day 15.5 million barrels of oil, or 40 percent of the entire global oil trade, pass through the Straits of Hormuz, and 11 million barrels of oil pass through the Malacca and Singapore Straits.

In this context, the “energy demand heartland” of Asia, comprised of countries that are heavily dependent on energy imports like India, China,⁶ and Japan, has led to a realization that SLOC security and energy security are closely interlinked and that the freedom of SLOCs and the energy lifelines form an important national objective.

Primary Maritime Threats

The rising asymmetric maritime threats have been linked in many ways to the rise in sea-borne trade, thus affecting the security and the free flow of trade through the maritime commons. The capacity to restrict the free flow of trade has had many direct and indirect consequential effects. Indirectly, for example, the rising risk factor of a certain area can duly enhance insurance premiums for merchant ships, automatically reducing the flow of ship-borne trade, thus diminishing the economic indices of a dependent state, in turn affecting its economic development. An overview of these serious challenges includes:

Piracy

Piracy, that until recently had been dismissed as “romantic folklore,” has returned with a vengeance and has emerged as the bane of the modern seafarer. This transnational crime has made considerable impact on commercial shipping, especially on those vessels passing through some of the piracy hotspots in the region like the Horn of Africa.

Earlier, piracy was rife in the Malacca straits and in Indonesian waters. However, multi-pronged efforts, along with initiatives like the Regional Cooperation Agreement on Combating Piracy and Armed Robbery (ReCAAP), or the Tokyo Agreement of November 11, 2004, and awareness programs have led to a near elimination of this scourge from the Straits, though a few attacks continue in the South China Sea.

Modern piracy emerging from Somalia, though, has captured the attention of the global shipping community and the media. Modern piracy is a complex problem that is often the manifestation of various underlying socio-political problems. Hence piracy emanating from one area is often unique in its approach and distinct from piracy incidents in other regions of the world. The solution to eradicating this scourge does not exclusively lie at sea and requires a multi-faceted approach to tackle the root of the problem, rather than focus on an exclusively naval solution to merely suppress the problem.

From modest beginnings in 2005, Somali piracy has evolved considerably, from attempts by fishermen to collect “tax” from traversing ships to the current format in which it has emerged as a lucrative criminal industry with transnational characteristics. The main objective of the Somali pirates is to get ransom money from shipping companies by holding the crew and cargo hostage.

Initial inability to bring down the numbers of piracy incidents forced the UN to adopt Resolution 1851(2009) in January 2009. This resolution also established the contact group on piracy off the coast of Somalia. Today its membership has grown from 30 countries to more than 50 and it includes six international organizations.⁷ With the increased presence of military ships and various task forces, the numbers of piracy attacks are on a sharp decline, much to the satisfaction of the governments that have opted for the usage of military force against this socio-economic problem.

This accent on using navies to curtail piracy instead of going to the root causes is a temporary respite. Due to the pressure near the coastline of Somalia (and Puntland), the pirates have started using sophisticated equipment which enables them to carry out attacks at phenomenal ranges of 1,500 nautical miles (nm) from the Somali coastline. Hence there is a likelihood that once the navies stop or reduce their patrol intensity, piracy will rise again. In addition, the Somali pirates are also actively enhancing their linkages with terrorist organizations like *Al Qaida* and *Al Shabab*. The latter has been keen to set up their sea-based wing along the lines of the former Sri Lankan secessionist Liberation Tigers of Tamil Eelam (LTTE) Sea Tigers, and have been training former pirates for establishing the new wing.⁸

Military Efforts against Somali Piracy

Most governments and stakeholders have encouraged the use of military force to solve Somali piracy—a transnational socio-economic crime. This has led to the Horn of Africa

becoming host to a large number of warships from different countries operating in the area. Some of these warships operate in Task Groups, while others have been operating individually. The primary aim of all these naval forces is to prevent incidents of piracy from occurring and to ensure the safe passage of merchant shipping through the region.

However, many of these naval vessels are constrained due to numerous reasons. Amorphous rules of engagement (ROEs) and lack of sharing of actionable information between individual warships and Task Groups have compounded the problem. Admittedly, most operating forces vehemently disagree and suggest that information sharing has been smooth, but on-the-ground evidence suggests otherwise. Undoubtedly, there exist a number of formal and informal information sharing initiatives (like the US driven SHADES) that seek to enhance exchange of actionable information in the vast sea area—but they have their own limitations.

Apart from this there exists considerable difficulty in prosecuting the captured pirates or taking them back to their own country for standing trial due poor or nonexistent local legislation against piracy. Attempts by some special forces of the military to liquidate captured pirates have been frowned upon by human rights organizations and by the Transitional Federal Government of Somalia. Countries like Seychelles (earlier Kenya was included) that were willing to accept captured pirates for prosecution are under strain due to a lack of financial assistance from Western nations and stretching of their judicial infrastructure. However, this scenario has witnessed some change, and many countries, including India, have tried to create national legislation⁹ that would be able to deal with modern piracy in their own courts effectively.

The main naval task forces that operate in the region include the:

Coalition Task Force 151 (CTF 151). This Task Force was established in January 2009 with a mandate to combat piracy in the Gulf of Aden. It comprises countries engaged with the Coalition Maritime Force (CMF) and includes Germany, the UK, Turkey, Pakistan, etc., and functions as part of the US initiative.

Operation “Atlanta” European Union Naval Force (EUNAVFOR). This EU naval force in the area was launched in December of 2008 in accordance with United Nations Security Council Resolutions 1814, 1816, and 1838, and is based at the Northwood Operation Headquarters in Britain. It has about six ships from 27 members of the EU which maintain a convoy escort system codenamed Operation “Atlanta” and is run under the auspices of the European Security and Defence Policy. The primary mission of this force is to protect the delivery of food aid to Somalia under the World Food Programme of the United Nations. It is also tasked to prevent acts of piracy in the region and protect merchant ships in the area.

Operation “Ocean Shield” by NATO. A Standing NATO Maritime Group (SNMG)¹⁰ comprised of about seven ships from Italy, Germany, Greece, Turkey, the UK, the USA, and Spain has been deployed to allow the World Food Organization to fulfill its mission of providing humanitarian aid to Somalia under the UN World Food Programme. This operation has been codenamed “Ocean Shield.”

Many countries have chosen to deploy warships for carrying out anti-piracy operations and patrols independently. Their primary aim has been to ensure safety of the merchant ships

flying their state flag—and as an associated operation also to help other ships in the area. These countries include China, Russia, India, Iran, Japan, South Korea, etc. It is noteworthy that some of these countries, though harboring adversarial relations, have decided to cooperate closely—as is the case with China and India, and Japan and South Korea.

Many other anti-piracy initiatives have also been taken by countries in an effort to curb this menace. The Djibouti Code of Conduct is one such effort in which nine littoral countries¹¹ have agreed to establish Piracy Information Exchange Centres in Kenya, Tanzania, and Yemen, along with a regional training center in Djibouti. This document is now open for signature by 21 countries in the region.

The establishment of a 560 nm long sanitized corridor in the Gulf of Aden, known as the Maritime Security Patrol Area (MSPA), now called the International Recommended Transit Corridor (IRTC), is another such initiative with military characteristics. This corridor was established on August 22, 2008, by the US Navy Central Command (CENTCOM) with an aim to provide safe passage to all merchant ships sailing through it. Despite the efforts, and the corridor being extensively patrolled by the coalition forces of NATO and the EU,¹² there have been some piracy attacks within this sanitized area, leading to considerable embarrassment.

Apart from the above initiatives, alternative efforts such as re-routing of ships to bypass the Horn of Africa are not economically viable solutions in the longer run. Employment of armed Sea Marshalls from private security companies for particularly dangerous parts of the voyage is now normally being resorted to by shipping companies. However, the efficacy of such a move is a matter of intense deliberation in the shipping world currently. Without going into the detailed pros and cons of the debate—it is sufficient to state that the disadvantages far outweigh the advantages and such action can cause collateral damage. It is estimated that re-routing 33 percent of cargo via the Cape would cost ship-owners an additional \$7.5 billion per annum. These costs will ultimately be passed on to shippers and consumers. Ships that continue to traverse the Gulf of Aden and the Suez have to purchase insurance coverage at \$20,000 per ship per voyage (excluding injury, liability, and ransom coverage), as compared with the \$500 required a few years ago.

Maritime Terrorism

The global war against terrorism had taken on a new perspective in the post-9/11 era, while its maritime dimension and its emerging format has been highlighted during the Mumbai terrorist attacks of 26/11. Earlier, only two or three percent of all terrorist attacks were linked directly to the seas. Hence maritime terrorism was neglected by governments and security agencies. However, the Mumbai terror attacks ushered in a paradigm change, revealing the use of the seas as part of the supply chain dynamics for incidents ashore, thus bringing to the fore the evolved format of maritime terror.

The other aspect of the fight against maritime terror continues in the US initiative of searching for Al Qaeda terrorists at sea with the international coalition (Task Force 150) on the lookout for terror ships termed as the “phantom fleet.”

The deep linkage of maritime terrorism and “container security” were only realized after it was reported in January 2002 that the search of a freighter by US naval forces nearly yielded a group of Al Qaeda terrorists who had been hiding inside a well-equipped shipping

container. A dramatic increase in container cargo and inadequate infrastructure to check all sealed containers led to the Container Security Initiative (CSI) and making ports International Ship and Port Facility Security Code (ISPS) compliant, but a robust fool-proof method against such security lapses has yet to be achieved.

Closely associated with the problem of maritime terror is that of the phantom fleets flying Flags of Convenience (FOC), making them difficult to track as they routinely change names and registry. FOCs, common in the shipping world despite some procedural changes, still pose a major challenge to maritime security. It is estimated that there are about 30 such registries (some in private hands), mainly run by small islands or impoverished nations which have loose standards for the registration of ships. While considerable work has gone into getting these registries to become more security-oriented and rigorous as a flag state, much still needs to be done.

In the years to come, maritime terrorism is likely to manifest and evolve in many unique ways. The use of the seas as a supply chain link for terror attacks on land-based targets is likely to be a chosen methodology of terror outfits. While the seas ensure the easy passage of men and material for the attack, the land provides them with the publicity and number of victims unavailable at sea. Hence the constabulary functions of maritime agencies are likely to see an enhancement with the growing demand for a fool-proof coastal security system.

The Rise of Narco-Terrorism/Terror-Crime Nexus

Drug trafficking shares a close linkage to maritime terrorism since it is often used to finance terrorism, insurgencies, and piracy activities directly or indirectly. With profit margins running into hundreds of percent, it is by far the most lucrative way of generating such illegal funds. This is likely what led the Secretary Fathimath Dhiyana Saeed of the South Asian Association for Regional Cooperation (SAARC) to state in her inaugural address during the meeting of Interior/Home Secretaries at Timphu that, “Ample evidence suggests the potential links between piracy and terrorism, drugs trafficking, human smuggling and related crime.” She added that since this threat was transnational in nature, regional cooperation was the best possible method to respond to the issue.¹³

Terrorist groups share a deeply symbiotic relation with drug cartels and organized crime syndicates. Not only do drug cartels provide the much needed finance, they also provide the logistical infrastructure to move resources according to the requirements of the terror organization.

India lies in the pivot of the Golden triangle and the Golden crescent—the two infamous drug producing areas—and is used as a transit point seawards for both. This has led to a focused approach in countering narcotics supply chains by increasing cooperation between the affected governments. In this context, it is foreseen that submersibles deployed for transportation of drugs by cartels in South America may well make an appearance in the seas off South Asia. It must be remembered that the former Sea Tigers of LTTE, which possessed extensive maritime capability, had almost developed such a vessel in this region. A half finished LTTE submersible had been discovered in Phuket in Thailand. Unfortunately, the South Asian navies and Coast Guards are still unprepared to counter the arrival of such submersibles, and their arrival would prove to be a serious setback for anti-narcotics measures in the region.

Further Maritime Challenges

Maritime Pollution and Environmental Disasters

Pollution and oil-related environmental disasters at sea are a serious concern for environmentalists and security specialists equally. While they can create havoc with the marine ecology, they also have the ability to affect the free flow of trade and shipping, and hence are a concern for all seafarers. Ports and regions affected by such disasters often have to be bypassed by ships, leading to losses by shipping companies.

Most littoral governments are deeply concerned by the possibility of major oil spills or wrecks of oil tankers at narrow approaches to harbors, and choke points affecting the flow of shipping traffic. Theoretically the traffic can be directed to other similar ports or routes but practical difficulties of jetties, storage capacity, and longer routing led to a compounding of economic losses. In the IOR and the entire Indo-Pacific region there are few agencies that possess the capacity and infrastructure for tackling environmental disasters. The US Coast Guard is probably the best equipped in this region with the Indian Coast Guard coming second. Hence it would be in the interest of all if these agencies cooperate closely (along with the Chinese agency) on matters regarding environmental disasters.

The South China Sea Imbroglia

The South China Sea (SCS) region has emerged as a global flashpoint and as a major maritime challenge, not only for the littorals and the contending states, but for all the users and the stakeholders as well. In this volatile region, many claimant states have started resorting to aggressive posturing to reinforce their sovereignty over disparate islands and “rocks”. The simmering disputes and the resort to brinkmanship pose a serious threat to peace and stability in the region. Unfortunately, the current disenchantment with multilateral fora like ASEAN to find an amicable solution seems to be on the rise, making it imperative for external stakeholders and users to try and find peaceful solutions or enhance confidence amongst the parties.

The geostrategic significance of the South China Sea is difficult to overstate. The SCS functions as the throat of the Western Pacific and Indian Ocean. Host to important SLOCs, it carries nearly \$1.2 trillion in US trade annually and also represents energy life lines to the energy deficient states in North East Asia and China. Half of Indian trade through the area passes through the region that provides a transit between the Indian Ocean and the Western Pacific, ensuring the rapid shipment of goods and deployments of armed forces from one ocean to the other.

Endowed with immense living and non-living resources, the region holds significant amounts of energy. It has proven oil reserves to the tune of 1.2 km³ (7.7 billion barrels), with an approximate total of 4.5 km³ (24 billion barrels). Its natural gas reserves of 7,500 km³ (266 trillion cubic feet) make it a virtual fountainhead of hydrocarbon energy. Against this backdrop, the US, India, and others can play a stabilizing and an encouraging role by being active participants in some of the confidence building measures among the littoral states. After all, the universal aim of all the maritime parties revolves around maintaining peace and stability while ensuring the freedom of navigation and unhindered access to the movement of shipping trade across the region.

Efforts to Collaborate

It is obvious that the above stated maritime threats and challenges affecting the region as a whole can only be overcome partially or fully through expanded cooperation. Maritime cooperation, however, cannot be uniformly achieved between all the countries at the same level. Even so, India and the US share a closer maritime bonding, and it may be useful to focus on some congruities and incongruities in their relations.

India and USN

India is increasingly seen as crucial to the core US foreign policy interests in the Indo-Pacific region. As a nascent Great Power and an “indispensable partner,” in the words of Secretary of State Kerry,¹⁴ India has emerged as an important facet of the US “pivot” or rebuilding strategy in Asia. Since 2004, Washington and New Delhi have been pursuing a “strategic partnership” that is based on convergent geopolitical interests. In this context, the then US Defense Secretary Donald Rumsfeld and his Indian counterpart Pranab Mukherjee signed a “New Framework for India-US Defense” in 2005 for increasing cooperative approaches in military relations, defense industry, and technology sharing, along with the establishment of a “framework on maritime security cooperation.”¹⁵ However, it was only after a few crests and troughs that in June 2010 the two countries formally re-engaged through the US-India Strategic Dialogue initiated under President Bush. Since then, the growing level of cooperation has led US Undersecretary of State William Joseph Burns to say, “Never has there been a moment when India and America mattered more to each other.”¹⁶

While cooperative approaches in other fields have had their own ups and downs, the field with maximum potential for active cooperation has been in the maritime dimension. There has been a debate, to be sure, that the relationship at times has “evened off to a plateau,” with Indians feeling that the US was not doing enough to sustain India’s growth while the US felt that India was too slow in taking politico-bureaucratic decisions. Notwithstanding this debate, it is apparent that newer areas of cooperation in the maritime dimension ought to be highlighted to enhance this growing cooperation. In this context, the below-mentioned areas have the potential for strengthening cooperation between appropriate maritime agencies of the two countries:

- **Operational Cooperation:** This needs to be enhanced. Liaison officers from naval commands in India and theater commands in US Pacific Command (PACOM) can provide important linkages for operational cooperation.
- **HA/DR–US India Disaster Response Initiative (2005):** The disaster response initiative taken during the Tsunami of 2004-05 and repatriation of the Indian diaspora from Lebanon in 2006 are examples wherein cooperation through structured exercises can be enhanced.
- **Personnel Exchanges and Training:** Training and personnel exchanges are the essence of any cooperative efforts. Under the International Military Exchanges and Training (IMET) and the Personnel Exchanges Program, such exchanges have been taking place. However, this exchange needs to be enhanced at both the sailor level and officer level in the two countries’ staff colleges, war colleges, etc.

- **Combined Exercises:** Both the Indian Navy and the US Navy have been carrying out extensive exercises bilaterally and multilaterally (Malabar, Quadrilateral Security Dialogue¹⁷) with increasing complexity. Such exercises enhance the level of confidence and interoperability, which is essential. The idea of having an expanded Malabar Exercise has been kept on hold by the Indian side as it has been viewed with apprehension by the Chinese, who regard it as an axis against Chinese interests.¹⁸ The need to exercise with US allies, however, is a requirement that needs to be taken up to enhance interoperability with both the US and its allies operating in tandem. India is also a participant in Shared Awareness and Deconfliction (SHADE) as an important instrument of communication and information exchange against piracy in the Gulf.
- **Invitation to Multi-Lateral Exercises:** While India has been invited to the Rim of the Pacific Exercise (RIMPAC), it is necessary that the US Navy should be reciprocally invited to the MILAN exercises, which are held biennially near the Andaman Sea.
- **Amphibious Operations/Training.**
- **Counter terrorism (CT):** The 2010 Counter-terrorism Cooperation Initiative and Combating Terrorism Fellowship Programme (CTFP).
- **MDA—Maritime Domain Awareness:** The US Coast Guard has made considerable progress in matters related to MDA, while India has made unique progress in the aftermath of the Mumbai attacks of 2008. The sharing of experiences and technology will be a welcome step in enhancing cooperation.
- **Monitoring of SLOCs.**
- **Equipment Purchase and Technology Transfer:** India has purchased maritime equipment from the US, including the amphibious landing platform/dock (LPD) and eight P-8I anti-submarine warfare aircraft.¹⁹
- **Protecting the Global Commons.**

Conclusion

Maritime challenges and threats in the Indo-Pacific region have increased in recent years and have the potential to create serious impediments to the exercise of freedom of the seas, thus affecting sea-borne trade in the region. Additionally, these threats have also spawned a multitude of “out of area operations” which have entailed additional roles for the littoral navies. Countering these threats and challenges requires cooperation and sensitivity to the security concerns of other countries—an aspect that is difficult to achieve with the level of existing trust between states. India and the US, also an Indo-Pacific power, are the primary maritime nations that have a responsibility to help other littoral states towards capacity building and ultimately towards maintenance of “maritime order” in the region.

In this context, it is necessary that a matrix of cooperation be evolved which would enhance “maritime bonding” at various levels between the maritime agencies and the navies. Such measures and methods would not only help in overcoming the challenges and threats in the oceanic dimension, but ensure the freedom of navigation for global trade flows. After all, the Sea is unique in bringing together maritime-minded countries, which in turn enlarges the brotherhood of the seas.

About the Author

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Notes

1. This is an updated and modified version of the article P.K. Ghosh, “Trans national Maritime Threats and Challenges,” in *Maritime Security in the Indo-Pacific*, Mohan Malik ed., (Lanham, MD: Rowman & Littlefield, 2014). See P.K. Ghosh, “Indian Ocean Dynamics: An Indian Perspective,” *East Asia Forum*, 5 April 2011.
2. See P.K. Ghosh, “Trans national Maritime Threats and Challenges,” in *Maritime Security in the Indo-Pacific*, Mohan Malik ed., (Lanham, MD: Rowman & Littlefield, 2014), p.156.
3. World Ocean View “A look at the future,” at <http://worldoceanreview.com/en/wor-1/transport>.
4. See United Nations Conference on Trade and Development, *Review of Maritime Transport 2011* (Geneva: UNCTAD, 2011), p.xv at http://unctad.org/en/docs/rmt2011_en.pdf.
5. See UNCTAD, *Review of Maritime Transport 2012* (Geneva: UNCTAD, 2012), p.xiv at http://unctad.org/en/PublicationsLibrary/rmt2012_en.pdf.
6. At current levels of consumption, the oil import dependence of India is expected to rise to 91.6% by 2020, while in the case of China it will be 76.9%.
7. The African Union, Arab League, EU, IMO, NATO and the UN Secretariat are members. The contact group has a rotating Chairmanship and has four working groups:
 - Military and Operational Coordination, information sharing and capacity building—Chaired by UK
 - Judicial issues—Chaired by Denmark
 - Strengthening shipping self awareness and other capacities—Chaired by USA
 - Public Information—Chaired by Egypt.
8. P.K. Ghosh, “Somalian Piracy: and Alternate Perspective,” ORF Occasional Paper #16, (September 2010) at http://orfonline.org/cms/sites/orfonline/modules/occasionalpaper/attachments/occasional_1286780029911.pdf.
9. The Piracy Bill 2012, which was a comprehensive document to deal with modern piracy, remains unpassed by the Indian Legislature.

10. Starting in March of 2009, NATO started rotating its Standing NATO Maritime Group 1 (SNMG 1) and Standing NATO Maritime Group 2 (SNMG 2) warship fleets off the coast of Somalia, first with Operation Allied Provider until August of last year and since with Operation Ocean Shield, which continues to the present day and which in March was extended until the end of 2012. The current fleet consists of warships from the US, Britain, Greece, Italy and Turkey. Its area of operations includes one million square kilometers in the Gulf of Aden and the Somali Basin. (The current names of the naval groups are NATO Response Force Maritime Groups 1 and 2.) See Rick Rozoff, "Japanese Military Joins US And NATO In Horn Of Africa," *Stop NATO*, 26 Apr 2010, available at <http://rickrozoff.wordpress.com/2010/04/26/japanese-military-joins-u-s-and-nato-in-horn-of-africa/>.
11. Djibouti, Ethiopia, Kenya, Somalia (TFG), Yemen, Madagascar, Maldives, Seychelles and Tanzania.
12. ICC Commercial Crime Services Newsletter, 26 Aug 2008.
13. As cited in "SAARC seeks urgent steps to protect maritime trade, security," *The Hindu*, 22 July 2011, at <http://www.thehindu.com/news/international/saarc-seeks-urgent-steps-to-protect-maritime-trade-security/article2284646.ece>.
14. Michael R. Gordon and Gardner Harris, "In India, Kerry to Meet New Prime Minister and Seek Improved Relations," *New York Times*, 31 July 2014, at http://www.nytimes.com/2014/08/01/world/asia/john-kerry-in-india-to-meet-narendra-modi.html?_r=0.
15. Sridhar Kumaraswami, "India, US Defence cooperation 'set to escalate'," *The Asian Age*, 9 September 2007.
16. "India, U.S. launch strategic talks," *Global Security Newswire*, 2 June 2010, at http://gsn.nti.org/gsn/nw_20100602_6708.php.
17. The Quadrilateral Security Dialogue is an informal military and strategic alliance between the United States, Japan, Australia and India that is maintained by talks and by a series of formal bilateral alliances between member countries. The Chinese view it as an arrangement against their interests. The Malabar Exercises commenced in 1992. Though they were suspended in 1998 due to nuclear tests by India—prior to which only three exercises were conducted. They began again after 2002.
18. India US, Japan, Singapore, and Australia participated in the Malabar exercises conducted in September 2007 (also known as expanded Malabar due to the large participation) off the coast of Okinawa. Due to Chinese opposition and unhappiness it issued a "demarche" to India, the United States, Japan, and Australia seeking details about their four-nation exercises. Hence India returned to the original bilateral format of the exercise.
19. USS *Trenton* (INS *Jalashwa*) was purchased from US in 2007. Recently eight Boeing P8-I long-range maritime reconnaissance aircraft (LRMRA) have been purchased under the US FMS (Foreign Military Sales). Twelve such aircraft are likely to be purchased in addition.



US Maritime Security Relations and Partnerships in the Indo-Pacific: Opportunities for Enhanced Cooperation

Scott Cheney-Peters

Since first announced in 2011 as “the pivot,” the US “rebalance to the Pacific” has sought to shift military, economic, and diplomatic resources to the region and to boost their effectiveness through the development of partnerships and formal agreements. These efforts have thus far not been universally successful, but one area in which the United States has achieved several of its objectives is the maritime domain, both in terms of increased naval presence and the furtherance of regional initiatives, such as signing of the Code for Unplanned Encounters at Sea this year in Qingdao and increased participation in multilateral humanitarian assistance/disaster response (HA/DR) exercises.¹ This success has come about in part because the United States is in some cases building upon hundreds of years-old maritime relationships. As a result, an in-depth study of US maritime security relations in the Indo-Pacific could fill several books. But, while this paper will not be able to delve deeply into every partnership, it will lay out a framework for understanding and categorizing these relations and partnerships in the region and how several of the major relationships fit in this context. It will also discuss some opportunities and recommendations to further develop these and other regional maritime security relationships, focusing on opportunities for enhanced Indian cooperation both direct and complementary.

To understand US relationships in the Indo-Pacific it is necessary to first consider the goals of the United States in the region. The rebalance to the Pacific serves to highlight the United States’ recognition that, in the twenty-first century, the better part of its economic vitality hinges on uninterrupted trade flows from and through Asia and that resources should proportionally match this reality. So, while the United States may have little territory at stake in regional disputes,² it is far from an uninterested party in the region.

Recognizing this connection, the United States has as its overarching regional goal a focus on stability—a word repeated throughout speeches from President Barack Obama to Secretary of Defense Chuck Hagel to Secretary of State John Kerry.³ This broad goal extends to economic, environmental, and political stability because a stable region is best positioned to protect shipping, yield prosperous trading partners, and prevent or prepare for the types of disasters that later require much larger expenditure of resources. It is important to note, however, that support of stability does not necessarily mean support of the status quo. From forums for the advancement of human rights and democratic governance to initiatives to combat pollution and transnational crime, the United States has several regional policy areas where it hopes to effect change.

US efforts to pursue regional stability can be divided into those that support stability through development, those that support stability through deterrence, and those that support stability through capacity building and regional cooperation. This is a bit of an artificial division as, for example, aiding the development and professionalization of partners’ maritime enforcement agencies cuts across all three categories. Nonetheless, it serves as a

useful framework for broadly analyzing US efforts and their impacts on relations. Of these, it is the latter two that are the focus of the rest of this paper, for they are the main drivers of US maritime security relations in the Indo-Pacific.

To provide a full picture of US strategic architecture in the region it is necessary to start with the United States' own sovereign physical infrastructure, including that which is poised to project into the area as necessary. Along the eastern edge of the Pacific Rim sits, as naval analyst Andrew Erickson calls it, the “backbone” of US power projection in Asia—US Pacific Command. While headquartered in Hawaii, its subordinate US Third Fleet naval components and facilities stretch from San Diego north to Washington State, acting as a backstop to America's Pacific naval forces. Additionally, Alaskan ballistic missile defense (BMD) site Fort Greely along with Vandenberg in California,⁴ play a supporting role in America's deterrence of conflict on the Korean Peninsula by allowing the United States to prevent Democratic Republic of North Korea (DPRK) missile development from taking US security options hostage.

Moving west from Hawaii, Guam plays an important role in sustaining air and submarine operations in-theater by hosting prepositioned forces and Coast Guard cutters⁵ and is planned to maintain an increasing proportion of US Marines in the region.⁶ British-leased Diego Garcia plays a similar role as an element of strategic depth with another maritime pre-positioned squadron in addition to long-range air, surface, and submarine support facilities. Further to the west lie the forces of US Central Command, important to counter-piracy and deterrence missions at the west end of the Indo-Pacific, but outside the scope of this paper.

Stability through Deterrence

Tracing US Indo-Pacific physical infrastructure in the region outside of its territory largely highlights the primacy of stability-through-deterrence efforts on American security relations in Northeast Asia. It is worth noting that one reason why US regional maritime security relationships in Northeast Asia are focused on deterrence may also be that the need for some other forms of maritime regional cooperation required elsewhere are of limited necessity in this sub-region. Whether it is the strength of the rule of law or the capability of national coast guards and maritime enforcement agencies, piracy in recent years is far less of an issue in Northeast Asia than in regions to the south and west.

South Korea

No greater example exists of the US security infrastructure's reflection of deterrence concerns in Northeast Asia than the eighty-three bases and facilities in South Korea serving as a bulwark of deterrence against North Korean aggression.⁷ While troop levels are down from Cold War peaks, the focus on deterrence continues to this day. The US alliance with South Korea is also an example of the ways these relationships can transform over time, crossing into cooperation efforts with Indian Ocean counter-piracy patrols, regional HA/DR, and the sale and donation of maritime assets to US partners. The US Congressional Research Service remarked that “since 2009, the two sides have accelerated steps to transform the US-ROK [Republic of Korea] alliance, broadening it from its primary purpose of defending against a North Korean attack to a regional and even global partnership.”⁸

Yet, for the foreseeable future, the US-South Korea relationship will remain focused on deterrence and stability tied to the Korean peninsula. But here, too, there is room for further

development, especially trilaterally with Japan on issues such as maritime domain awareness and ballistic missile defense—areas of cooperation notably stymied by regional politics and historical grievances.

Japan

For its part, Japan—the United States’ second Indo-Pacific treaty ally—plays host to the largest concentration of US military bases and facilities in the region. While South Korea hosts primarily air and ground forces, Japan is home to a far greater number of naval assets, including the US Seventh Fleet. Similarly rooted in the history of Cold War deterrence, the US relationship with Japan continues to place a strong emphasis on deterring regional conflict as Japan’s security guarantor—whether by providing assurances against unilateral action over the Senkakus/Diaoyus or missile defense coverage against the threat from North Korea. Under Prime Minister Abe, this emphasis has only strengthened and is reflected in the Japanese government’s efforts to secure the right of collective self-defense, which would enable Japanese Maritime Self Defense Force (JMSDF) vessels to come to the aid of allies in combat (under stringent conditions).

Yet over the past decade, the US-Japanese maritime security relationship has also transformed into a more robust and wide-ranging partnership to address regional security issues in the Indo-Pacific. This transformation is the result of a shared interest in a stable and prosperous trading region designed to boost economic prospects. The resultant uptick in hostility from China as a result of the Japanese government’s nationalization of the Senkakus in 2012 spurred “Japan’s enlistment as a full-fledged partner in the Rebalance” to create “strategic depth.”⁹ Japan has notably stepped up its training and provision of maritime enforcement assets throughout Asia, including relaxing military export rules, while promising greater coordination on such efforts with the United States.¹⁰ Japan also broke the intellectual ground on the establishment of the Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships in Asia (ReCAAP), leading to the establishment of the Information Sharing Centre (ISC) in Singapore, and the formation of a counter-piracy regional hub at the west end of the Indo-Pacific in Djibouti.¹¹

Taiwan

Taiwan is America’s third regional relationship centered on deterrence and is governed by the Taiwan Relations Act and the Three Communiqués. Although a purveyor of military equipment to Taiwan and trainer of some of its air force, the US maintains no military footprint on the island and does not include Taiwan in maritime exercises.¹² Further, despite these constraints, the United States has been highly supportive of Taiwan’s engagement in stability through regional cooperation efforts—from a 2013 fisheries agreement with Japan to using US supplied material for HA/DR efforts in the Philippines and elsewhere. At the same time, the emphasis on deterrence is receding. The thawing of ties between Taiwan and mainland China is the sort of so-far peaceful progress that the United States can, for now, only dream of on the Korean Peninsula. Yet, while the threat of a cross-strait conflict is low in the near-term, it increases over the coming decade if current trends in the shift of the balance of power hold steady and no peaceful means for mainland China to incorporate Taiwan present themselves—a scenario made more remote by China’s handling of the recent protests over enfranchisement in Hong Kong.¹³

Philippines

Several US maritime security relationships have more recently added elements of deterrence, particularly in relation to territorial disputes in the South China Sea. The signing of the Enhanced Defense Cooperation Agreement (EDCA) with the Philippines in April facilitates, among other things, the rotational presence of American forces in the country and signals US commitment to its third regional treaty ally amid tensions with China over ownership of the Paracels and Scarborough Shoal. As with Japan's pending donation of patrol boats to the Philippines, the EDCA is also aimed at boosting the nation's fisheries-enforcement capabilities and HA/DR coordination,¹⁴ an indication of the extent of the US-Philippine maritime security relationship that runs the length of the entire archipelago south to Malaysia and the waters abutting Indonesia. This partnership includes support for the Philippines' efforts to counter insurgencies, terrorism, arms-trafficking, and insurgent invasions of Malaysia. And the partnership is growing—at the end of May, the US State Department requested a 57% increase in funds “to improve [the Philippines'] maritime security and maritime domain awareness.”¹⁵

Vietnam

In the past several years, Vietnam has increased its ties with the United States even before the Chinese National Oil Offshore Corporation (CNOOC) moved a rig to disputed waters off its coast in May of this year. The two nations began joint low-level military training and exercises in 2010,¹⁶ and the United States has promised Vietnam additional maritime capacity building funds for among other things five fast patrol vessels as announced last December by Secretary Kerry.¹⁷ Vietnam, in turn, announced in May that it was joining the US-launched Proliferation Security Initiative (PSI) aimed at interdicting weapons of mass destruction material.¹⁸ Vietnam is also set to become the third recipient of Japanese patrol boats after Indonesia and the Philippines.¹⁹ Although the US-Vietnamese relationship is nominally focused on regional cooperation efforts such as these, the flare-up with China over the CNOOC oil rig this summer makes plain the dual nature of the growing partnership. In October, the United States partially lifted its decades-old ban on the sale of military material to Vietnam, specifically enabling the purchase (as-yet unmade) of maritime surveillance kit such as patrol boats and maritime patrol aircraft.²⁰ Yet the likelihood that the United States would, as part of its deterrent efforts, signal a willingness to directly and militarily get involved in Vietnam's disputes is far less than with its treaty allies.

Malaysia

Malaysia, too, has in recent years increased the unofficial deterrence elements of its partnership with the United States, expanding its naval facilities to support a growth in American port visits and improving its maritime domain awareness capabilities with American assistance, while increasing capacity building and regional cooperation ties.²¹ President Obama's trip to the nation in April produced a joint statement affirming support for mil-to-mil cooperation, development of an Association of South East Asian Nations (ASEAN) code of conduct with China, and international legal proceedings for settling maritime disputes. The visit also reportedly discussed expanding upon the strategic partnership signed between Malaysia and Vietnam this year that called for joint patrols between the two nations.²²

Stability through Capacity Building and Regional Cooperation

America knows that its partners view its deterrence efforts as important to preserving stability in the eastern half of the Indo-Pacific and are likely to do so for some time to come. At the same time, building local capacity and boosting regional maritime cooperation are just as important for the over-arching US goal of stability in the region to protect its economic vitality.²³ It is arguable that these tasks may be even more critical since the challenges they deal with already exist—piracy and armed robbery, illegal resource exploitation, trafficking, natural disaster, and climate change.

In fact, many US partnerships in the region are largely or even exclusively focused on capacity building and regional cooperation. This does not mean that the United States wants, or is able to, participate in every exercise or joint patrol. To the contrary, the development of effective regional action not requiring US resources is a very desirable outcome for US policy makers. With a broad array of efforts encompassing everything from the PSI to the Gulf of Thailand Initiative to a full schedule of exercises, it is easy to see that these stability-building partnerships involve nearly every maritime nation in the region. Players range from China and India to several who struggle to field rudimentary coast guards, not as proxies of the United States, but out of self-interest. This paper will only briefly touch on some of the more developed relationships—namely Singapore, Australia, New Zealand, France, and the United Kingdom.

Singapore

Singapore, at the tip of the Malay Peninsula, has the epitome of a capacity building and regional cooperation partnership with the United States. It provides not only Sembawang's port facilities and hosts the rotational deployment of littoral combat ships, themselves the American naval embodiment of this type of partnership, but also ReCAAP's ISC and the multinational exercises and operations center. Singapore also participates in coordinated counter-piracy patrols in and above the Straits with Malaysia, Indonesia, and Thailand—America's fourth treaty ally—in the Malacca Straits Patrol.²⁴

Australia and New Zealand

Australia, another formal treaty ally, has likewise recently concluded an agreement to host rotational American forces and plays an important role as a respected regional voice on the resolution of maritime security issues.²⁵ It also has a wealth of experience in maritime security operations in its near abroad. Along with New Zealand, the sixth formal US ally in the region,²⁶ Australia is an active provider of professional development training and has been a pioneer in technical assistance to Pacific Island states with its Pacific Patrol Boat Program and planned follow-on.²⁷ Australia and New Zealand, along with the United States and France, also pledged a coordinated approach in 2012 to boost the surveillance capacity of Pacific Island states combatting illegal, unreported, and unregulated (IUU) fishing.²⁸ Additionally, Australia and New Zealand, as members of the Five Power Defense Agreement with Singapore, Malaysia, and the United Kingdom, have the opportunity to augment US maritime priorities by helping develop the capacity of other regional FPDA members. For example, in November, Australia promised a pair of patrol boats to the Malaysian Maritime Enforcement Agency for use in the Malacca Strait by March.²⁹

France and the United Kingdom

For their part, France and Britain are mostly extra-territorial powers in nature in the Indo-Pacific, with island territories such as New Caledonia, French Polynesia, and Diego Garcia far from the nations' homelands. But, as with Australia and New Zealand, these partners bring expertise, trainers, and capability—even if in limited numbers. France, in particular, has a history of developing the maritime enforcement capabilities of South Pacific island states, as noted above, and works with the United States in doing so. The United States regularly exercises and cooperates with these nations' maritime contingents throughout the Indo-Pacific, as well as takes advantage of their logistics, primarily as part of efforts to either boost interoperability or develop third-party capabilities.

Recommendations and Options

The above list only scratches the surface of US partnerships in this second category, but its breadth does not bar the opportunity for their deepening. Evolving geopolitics creates opportunities for strengthening ties with two key partners—Indonesia and India—and several additional options for both the United States and India to consider.

Indonesia

When newly elected Indonesian President Joko Widodo (Jokowi) gave his inaugural address in October, he focused on the development of Indonesia as a maritime nation,³⁰ backing up his words with the creation of a new cabinet post to coordinate protection of Indonesia's marine resources and maritime zones³¹ and announcing the consolidation of maritime enforcement agencies into a unitary coast guard.³² It should come as no surprise that an Indonesian leader would place maritime issues at a forefront of his nation's policy agenda. Indonesia is one of the states most challenged by maritime crime, with an increasing majority of all such crime occurring in the South China Sea region.³³ There is an opening for regional leaders, such as the United States, India, and China, to pursue a more robust relationship anchored on capacity building to combat common maritime security challenges. Already, the US president and secretary of the navy have expressed a desire to pursue closer ties over maritime issues, including piracy, disaster mitigation, naval exchanges, and counter-terrorism; but doing so with other partners would amplify the effects and could extend across a broader range of efforts.³⁴

Indonesia should also be encouraged to continue to develop a role as a leader in the region, as it has done with the establishment of multilateral HA/DR exercise *Komodo*, by joining additional regional maritime security architectures such as ReCAAP. Support should also be lent for Indonesian efforts to provide a united voice in dealing with China over the elusive code of conduct in the South China Sea—a policy Jokowi has continued in the initial days of his administration.³⁵ Indonesia is able to retain its role as neutral mediator in part due to the unacknowledged nature of its disagreement with China over the Natuna islands,³⁶ but in order to maintain this ambiguity Indonesia should be assured that any unilateral action on China's part will be effectively countered. Lastly, maritime boundary disputes with neighbors Singapore and Malaysia occasionally keep relations cool, and while they are the source of on-going technical talks, their resolution could receive a greater prioritization in diplomatic discussions.

India

India has been a strong partner of the United States on a range of maritime security issues, conducting more annual military exercises with the United States than any other country.³⁷ Bilateral counter-piracy operations in the Western Indian Ocean have aimed to work on maritime domain awareness (MDA) interoperability in annual exercises including Malabar, to which Japan was this year invited to participate for the first time since 2009.³⁸ But there is room for greater cooperation and coordination on issues of shared interest, such as HA/DR exercises and maritime law enforcement. One option is to encourage India to involve assets at the Andaman and Nicobar Command (ANC) with the Malacca Strait Patrol. ANC is already hub for India's maritime engagement and cooperation operations throughout the Bay of Bengal and Southeast Asia, and could serve to anchor the western approaches to the Malacca Strait with a cooperative naval and civil maritime enforcement hub in a reflection of Singapore at the eastern end.³⁹

The United States and India should explore ways to increase their coordination on maritime security training, aid, and assistance programs—aiming for projects that amplify one another's efforts. The United States could partner with India through its leadership role in the so-called Indian Ocean-5 grouping to bolster the spread of effective MDA and information sharing, including formal or regular exercising of linkages to other regional exchanges such as the ISC and that supporting the Malacca Straits Patrol.⁴⁰ Additional trilateral exercises in the mold of Malabar will continue to serve to strengthen with third-party partners like Australia, while complimentary capacity building as suggested in the case of Indonesia could strengthen alignments of mutual maritime interest while mitigating potential political hesitancy with countries like Bangladesh and Malaysia.

China

Other options for increasing stability involve more complicated partnerships; for example, the US relationship with China could be described as “deterrent engagement.” On one hand the United States will seek to engage China as far as reasonably possible on cooperative efforts including such ongoing examples as East African counter-piracy, the ASEAN Defense Ministers Meeting (ADMM)+ HA/DR exercise, and for the first time last summer the large-scale US-led multilateral exercise Rim of the Pacific (RIMPAC). Options for potential increased maritime cooperation include Pacific Partnership and cooperative capacity building programs. On the other hand, the US will—and should—seek through its partnerships enough credible capability to act as a deterrent against the potential for destabilizing actions. One option for the United States or others who want to play a more active role in stability-through-deterrence efforts is to increase the number of exercises and joint patrols with Vietnamese maritime units in disputed Vietnamese-claimed areas, but away from current hot spots.⁴¹ The political will for such action is debatable but it is a strengthening in partnership that Vietnam has reportedly pursued, and in which the United States may be interested.⁴²

Iran and Russia

Russia and Iran are also likely to be active players in the Indo-Pacific, with the resurgence of Russian naval power demonstrated by the protest patrol ahead of this year's G20 summit in Brisbane,⁴³ and the Iranian exemplified by its pursuit of a limited blue water

Navy and greater maritime ties with Indo-Pacific nations including Indonesia and China.⁴⁴ The United States will need to determine to what extent it can reasonably pursue a policy of cooperation based on shared interests to promote regional stability, as it has done with the pair in the western Indian Ocean with counter-piracy patrols. India, with warmer ties to both countries, may also be able to find ways to work cooperatively in the maritime domain for the good of the region that the United States finds difficult.

Non-State Actors

One of the more intriguing partnership options for the United States to pursue is increased partnerships with non-state actors, whether they are non-governmental organizations (NGOs), inter-governmental organizations (IGOs), or private maritime security companies (PMSCs). The United States has already demonstrated the success of this approach when interests compatibly align, as with aid organizations during its annual Pacific Partnership and other HA/DR efforts. This year's Southeast Asia Cooperation and Training (SEACAT) exercise, which pairs the United States and ASEAN member nations, expanded the number of civilian maritime law enforcement agencies involved and stressed cooperation both internationally and domestically—an approach that should be repeated and involve as many agencies and elements of civil society as practical.⁴⁵

As for PMSCs, Professor James Holmes notes in *The Diplomat* that the United Kingdom “explicitly endorses conscripting private security firms as an ally in the fight for oceanic law and order” in its new Maritime Security Strategy.⁴⁶ In addition to directly partnering with these groups, the United States may encourage states lacking maritime capacity to do so themselves. In a creative example, a state lacking effective maritime fisheries enforcement could partner with a conservation organization, who in turn hires a PMSC to provide training or conduct enforcement services themselves. Such an approach carries a real risk that a lack of accountability or professionalism could lead to bad outcomes. However, with rigorous oversight and safeguards, paired with the last decade of maturing industry accreditation schemes, codes of conduct, and improving standards, such risk can be mitigated to make this approach a viable option.

HA/DR Infrastructure

A final option for enhanced American partnerships in the region focuses on developing and coordinating HA/DR architecture. Singapore has this year again advocated an HA/DR Center at Changi alongside its other fusion centers.⁴⁷ This would be well placed to serve as a coordination hub for regional efforts. Canada, meanwhile, has developed a model based on Operational Support Hubs consisting of a small, dormant facility that can be expanded in times of crisis and has host nation permissions in place to minimize bureaucratic impediments to a speedy response.⁴⁸ In one scenario, similar hubs could be developed under the aegis of a multinational IGO such as the ASEAN Defense Ministers Meeting-Plus (ADMM+) with external support and established in several locations throughout the region. Another approach could see locally sponsored, but interoperable, locations created as part of a network open to partners. Either approach would require resources and raise issues including status of forces agreements (SOFAs), sovereignty sensitivities, and demarcation of the permissible range of operations for the hub. But in a region prone to natural disasters and vulnerable to the next century of climate change, such architecture could play an important part in preserving stability and driving US or Indian maritime security

relations. Working through the issues in advance is better than waiting for disaster to strike, whether by exercises or pre-approval of a range of actions. For India, the HA/DR infrastructure investment and its strategic location makes ANC a logical choice were it to offer or plug in a node to a network.⁴⁹

Conclusion

This paper has attempted to provide a general sketch of and framework for understanding US maritime security relations in the Indo-Pacific in the context of the overarching American goal of ensuring a stable and prosperous region. By categorizing US relations in the region, this paper runs the risk of oversimplifying multi-faceted maritime relationships. These categories are meant only to highlight an important, if not dominant, element of each of these relationships. But regardless of whether a relationship is more heavily weighted towards deterrence or towards capacity building and regional cooperation, the importance of sustained engagement, even through basic exercises, for tailoring expectations and supporting the ability to work together on shared interests, is critical. These partnerships take time and effort, but the returns they yield—safe sea lanes and a stable and prosperous region—are very much in the interest of the United States and the nations of the Indo-Pacific.

About the Author

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India's Evolving Security Relations and Partnerships in the Indo-Pacific

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India has been expanding its economic and strategic profile steadily since 2001, with its growing trade with Southeast Asia, East Asia, and the Pacific regions. The expanding trade profile had also witnessed the growth of its strategic capabilities, specifically its naval expansion that has come with modernization and expanding operations. India's expansion in its "Look East Policy" has, however, gone through two stages.¹ In the late 1990s, it saw India's direction of policy adopt a Southeast Asia focus resulting in the consolidation of its interests; with expanding economic ties and the institutionalisation of India-ASEAN engagement. Second, it witnessed growing economic interdependence, trade ties, diaspora connections, and defense diplomacy. The following decades saw the expansion of India's Look East Policy further eastward with Japan, South Korea, Russia, and the United States, even as India's economic ties swung eastward along with its strategic bilateral and multi-lateral exchanges. India's continued eastward focus has also been solidly based on its maritime footprint and its expanding ties brought by its engagement with Australia. In 2007, India was engaged in its Malabar Exercises with the US, Japan, Australia, and Singapore signifying this expanding reach.

India's Maritime doctrines of 2007 and 2009 have espoused this enlargement in terms of engaging with the Pacific nations with a prominent presence in Southeast Asia. India's engagement with its Look East Policy has evolved in two stages: one has been with India's intermediate neighbourhood of Southeast Asia in the 1990s and the other with the Pacific powers of Japan, South Korea, Russia, and Australia. The dynamics of these relations have been built primarily on economic and trade interdependence that had come along with the deepening of security relationships. Thus India's security relations and partnerships ride on the bulwark of the economic relations. The patterns of security relationships have been bilateral and also multilateral in Southeast Asia; whereas in Northeast Asia and the Pacific, India's partnerships have been bilateral in scope.² India's engagement in trade and security ties has seen a policy and operational shift to the Indo-Pacific more than with any other region in the world. India's membership in the various regional forums and regional economic frameworks has provided a higher level of economic interdependence with the region. What are the defining criteria of India's vision and geopolitics of the Indo-Pacific? What are India's interests in the region? How does India define its objectives in terms of its strategic autonomy? These are the issues that need to be analysed.

India's Vision of the Indo-Pacific

India's Indo-Pacific vision had emerged since 2010 with its expanding security ties to Japan, South Korea, and in recent years with Australia. With the great sway of trade - and energy flows for India from Russia's Sakhalin - India's interests in the region had deepened.³ While these economic perspectives provide India reason enough for an enthusiastic quest for engagement; the security and strategic quest for an increased Indian role has also been pushing towards greater openings for India in the region. Yet its engagements have been thus far been modest. India's relatively restrained strategic perspective on the Indo-Pacific

is based on the incremental nature of its interests, with its selective focus on freedom of navigation and its trade and transit interests, while carefully navigating the troubled waters of the South China Sea. In terms of its evolving policy, India prefers to maintain an “autonomous” strategic scope of actions, without the commitment to any collective security frameworks that the US would initiate.⁴ India has so far preferred dedicated bilateral security partnerships and engagements rather than any multilateral framework. Even so, in its operational scope India has expanded and engaged in naval exercises and defense cooperation with countries including the US, Japan, Australia, and South Korea. Naval exercises and exercises with regard to the other wings of the armed forces have sustained good momentum. In terms of participation in multilateral forums, India is also participating in the Western Pacific Naval Symposium and has used its strategic relations with the US and Japan to advance its interests.⁵

India's Look East Policy is expanding and consolidating beyond Southeast Asia with its reach with Japan, South Korea, and Australia. Economic exchanges and trade with the three powers have increased in a substantial manner. Similarly, India's strategic engagements with the three Pacific powers have been increasing. India's naval footprint has reached the Eastern Pacific and it has resulted in the institutionalization of bilateral exercises with these powers.

With these developments comes a question: Is there a niche for India in the Indo-Pacific region? This is often queried in the strategic and policy community in India and the region. India's interests could be cast in terms of the concentric layers of its presence and engagement. In the near term, India's interests are in its own backyard and the Indian Ocean where its engagement in the immediate neighbourhood is vital. Given the prospects of challenges and threats from Pakistan and China in the region, India's focus has been to secure its flanks as well as work out its naval diplomacy and build in benign naval capacity with the smaller states in the Indian Ocean like Sri Lanka, Maldives, Seychelles, and Mauritius.⁶ Since 2001, India's economic and strategic engagement with Southeast Asia has expanded incrementally with closer interdependence and strategic partnerships with several Southeast Asian states like Singapore, Vietnam, Malaysia, Indonesia, and Philippines.

India's “Look East” Policy had incrementally expanded into East Asia, with its partnerships with Japan exemplifying its salient economic trade and commercial partnerships. Since the Nuclear Suppliers Group (NSG) waiver for India, India and Japan have been closely looking into bilateral strategic partnerships and naval exercises in the East Pacific. India's engagement has also been expanding with South Korea in various areas that has resulted in greater strategic partnership between India and the East Asian powers.⁷ India's engagement with the East Asia Summit has been an important milestone as economic interdependence expands. Hence the economic rationale for strategic partnerships has been the primary energizing source for India's expanding role in the region.

Yet another debate in the strategic community within India has been about how India should shape its eastward engagement in the context of its strategic autonomy that dictates that India should stand for its independent policy and should shun dependence on other powers or being dictated to by other powers in terms of its foreign policy and security policy. There is a considerable divide in this regard over how the Indian strategic community prefers to frame this question.⁸ Nevertheless, strategic autonomy choices in the region must answer how rising powers could envision their role and engagement in the region.

There is a divided opinion in the Indian strategic and policy community over the scope of India's engagement in the Indo-Pacific, even as it is engaging the neighborhood in Southeast Asia. Some see a convergence of Indian and US interests in the Indo-Pacific. There are, however, certain sections of the Indian strategic community that view the necessity of an Indian approach to the Indo-Pacific as independent of other approaches.⁹

Even as this remains an important factor in India's engagement, there has been a steady increase of India's strategic initiatives that have come in recent years. It has been exemplified in the expansion of its naval diplomacy in the region. India's naval diplomacy and its symbolic forward presence has been the singular factor that has shaped India's Indo-Pacific operational picture.¹⁰

The “Intermediate” Neighborhood

India's engagement with its “Intermediate” neighborhood has been consistently growing since 2001 in economic, commercial, and security relationships.¹¹ India's engagement has been both in terms of bilateral ties and its engagement with ASEAN as a comprehensive trading partner.¹² The security ties with ASEAN have been growing and in recent times India has been a key participant in the ASEAN Defense Ministers Meeting Plus Three, and has actively engaged in defense diplomacy and military exchanges.¹³ Singapore tops the list of Southeast Asian states with whom India's initial economic ties and military ties commenced.

India-Singapore: Military ties evolved from the Defense Cooperation Agreement of 2003 and the Joint Military Exercises Agreement of 2007. India's naval exercises with Singapore have been conducted in the Bay of Bengal and in South China Sea in 2005, 2009, and 2011.¹⁴ They have been mainly joint anti-submarine warfare exercises. The 2005 Singapore-Indian Maritime Bilateral Exercise (SIMBEX) exercise was an epochal event that saw the deployment of India's naval task force consisting of India's flagship aircraft carrier INS *Viraat* along with two powerful destroyers (INS *Rajput* and INS *Ranjit*), a missile corvette, INS *Khukri*, and a fleet supply ship, INS *Shakti*, that provided high profile deployment into South China Sea waters.¹⁵

The SIMBEX 2011 and the follow-on Annual SIMBEX exercises have sustained a continuing willingness by India to project naval power into the South China Sea region with its exercises with the Republic of Singapore Navy (RSN).¹⁶ The momentum in defense relations was built resulting in the enhancing of the ties in the form of Defense Cooperation Agreement in 2003 and subsequently in the economic sphere when the Comprehensive Economic Cooperation Agreement (CECA) emerged.

India's engagement with Singapore has been multifaceted, and has involved operational dimensions of joint naval exercises in the South China Sea and in Indian waters; joint air exercises; co-locating Singapore air assets in India and also naval training in surface and sub-surface warfare, and naval aviation, etc. Overall, the scope of the engagement had been multi-tiered, employing unmanned aerial vehicles (UAVs), thermal imaging sights, and joint execution of missions under a unified command structure.¹⁷ Singapore's participation in the *Malabar-07-02* naval exercises in the Bay of Bengal along with the US, Japanese, Indian, and Australian navies and maritime air power has been a grand signature event for the RSN, as it engaged in a series of exercises with the naval concert in the region.

The RSN's naval exercises with India, including MILAN and SIMBEX, have been one of the most successful bilateral exercises. The scope and complexity of these exercises have been increasing to include anti-submarine warfare exercises, besides a host of other joint initiatives including sharing of maritime intelligence.

India's "non-intrusive approach" to Southeast Asia has been noted by the ASEAN countries and there have always been convergences in the position of India and Singapore along with other ASEAN states in matters of regional economic cooperation and also in terms of cooperative maritime security contending against piracy, maritime terrorism, human smuggling, and narcotics, etc., in the Andaman Sea and the approaches to the Straits of Malacca. India and Singapore have exercised in the South China Sea with units of the Eastern Naval Command sailing into the region and have undertaken a string of such exercises with Japan, Russia, and the United States in the Eastern Pacific.

India-Malaysia: Naval engagement has been substantive and has involved reciprocal engagement in MILAN, the Defence Expo, and the Langkawi International Maritime and Aerospace (LIMA) exhibitions. Malaysia's interest in joint development of submarine warfare tactics and maintenance of the Scorpene submarines has been a priority with its engagement with India. Important initiatives have been made with regard to the capacity building of the Directing Staff of the Malaysian Defence Forces, with elements of the Royal Malaysian Navy to be trained in India.¹⁸ India's expertise in missile development, communication systems, and the servicing of Russian military and naval hardware with regard to the Sukhoi-30 MM, and the training of Malaysian Sukhoi pilots are all high on the agenda of the joint endeavours.¹⁹

India-Indonesia: Maritime ties have been quite enduring between India and Indonesia. Security and naval cooperation emerged with the 2001 *Defence Cooperation Agreement*.²⁰ The India-Indonesia Joint Commission discusses various maritime issues of concern and in the July 2012 meeting of the commission, Indonesia discussed with India about the overlapping disputed water stretches with China around the Natuna islands in the southern reaches of the South China Sea.

India has core competencies with regard to servicing of Indonesian naval hardware, while Indonesia has evinced keen interest in importing batteries for torpedoes, engines for Parchim-class corvettes, and repair facilities for its Type 209 submarines. Earlier in 2004, India sought to institutionalize the arrangement pertaining to joint patrolling of the Malacca Straits and the adjoining seas, although Indonesia was reluctant.²¹ Indonesia is keen to procure naval surveillance equipment from India like radars, and wants coproduction of defense equipment based on the principle of maximizing comparative advantage. Indonesia's armed forces, especially its Navy, offer a reliable partner to the Indian Navy for joint exercises.

In the context of China seeking access and basing with Timor Leste, India's engagement with Indonesia and the vast archipelagic network offers it several access advantages.

India-Vietnam: Maritime security relations commenced with the India-Vietnam *Defence Agreement* of 1994 that was later strengthened by a *Defence Assistance Agreement* in 2000, a *Strategic Partnership Agreement* in 2007, and upgraded with a Memorandum of Understanding (MoU) on *Defense Cooperation* in 2009.²² Indian naval warships have been visiting Vietnam since 2000. The naval and strategic engagement has gained impetus since

2009 with the MoU on Defense Cooperation. The MoU enhanced the salience of coordinated patrols by the Vietnamese sea-police and the Indian coast guard, repair programs for Vietnam Air force fighter planes, and training of Vietnamese Air Force pilots. Indian avionics supplies for Vietnamese Russian made air-to-air missiles have been notable. In 2005, for instance, nearly 150 tonnes of naval accessories and ordinance were transferred to the Vietnamese Navy.²³

Vietnam's strategic calculus in the South China Sea is quite evident. Vietnamese cooperation in countering China's opposition to India in South China Sea is a vital pillar to India's Look East naval engagement. The imperative to strengthen the surveillance and communication networks and assisting Vietnam with crucial maritime intelligence sharing have emerged as vital objectives in the Indian collaboration with Vietnam.²⁴ India's interest in the Danang naval base had evident for quite some time and its use of the Cam Ranh Bay for exercises with Vietnam in the South China Sea has been one of the locus points of India's naval engagement in the region.

India-Philippines: Naval ties between the two countries have been derived from the 2006 *Agreement Concerning Defense Cooperation*, and the decision in 2009 to set up a strategic dialogue mechanism for policy coordination. In May 2012, four Indian warships visited Philippines in Subic Bay as they journeyed across the South China Sea.²⁵ The recent confrontation of the Philippines with China over the Scarborough Shoal that had elicited tensions from both sides has enhanced Manila's interest in defense cooperation with India.

Besides the major countries of Malaysia, Singapore, Indonesia, Vietnam, and the Philippines, India's forward naval engagement is also building incrementally with Thailand and Cambodia. Engaging these countries has garnered for India critical maritime access and enlarged its footprint in the region, building on the synergies of existing naval exchanges with the major countries. India's contribution in terms of capacity building, maritime infrastructure projects, turnkey projects, and maritime intelligence sharing has been vital.²⁶

India's initiatives of the MILAN and the Indian Ocean Naval Symposium (IONS) have accrued institutional value to the prevalent ties and have fostered better naval engagement, providing India a naval corridor in the South China Sea all the way to the East Pacific to engagements with Japan, South Korea, Russia, and the United States.

India's maritime multilateralism with Southeast Asia²⁷ has all the elements of enhancing maritime security in the region. It elucidates the rights of India to trade and transit in the South China Sea and also secures channels to the Northeast Pacific and Eastern Pacific. India's engagement in the ASEAN Defense Ministers Meeting in the ADMM Plus is an institutional initiative of India's security stakes in the region.²⁸ India's trade and commerce as well as its ambitions to build an Arctic presence and bolster its Indo-Pacific stature motivate the Eastward expansion and consolidation.

The "Extended" Neighborhood

The Indo-Pacific context constitutes the new vistas for India's security engagement that spawns a clear maritime vision elucidating its economic and strategic engagement with the Indian and Pacific Oceans. India's engagement with Japan, South Korea, Australia, Russia, and the United States encompasses trade and commercial flows towards the Pacific. The

Indo-Pacific perspective for India counters the Chinese assertion that India's presence in the South China Sea is intrusive.²⁹ Expanding India's economic ties with Australia and New Zealand has emerged as a new imperative given the significant Indian diaspora in the region. Thus India's eastward focus is now omnidirectional radiating into the Pacific in all directions. India's engagement in the Indo-Pacific opens up strategic partnerships that would perch India in a system-shaping role in the region.

One can envision India's strategic scheme as a "Mandala" of immediate, intermediate, and extended concentric theatres of regions that surround India.³⁰ The Indo-Pacific opens for India partnerships in the outer concentric circle or Mandala that is beyond the intermediate Mandala of Southeast Asia into the East Pacific region of economic and military powers. The analysis of the scope of India's bilateral ties with Australia, South Korea, Japan, United States, and Russia are examined.

India-Australia: The evolution and substantial growth of engagement in the India-Australia relations has been quite recent. India and Australia had travelled a very long way from the Cold War years when Australia had viewed India along with China as potential threats to its security and its role in the Pacific. Recent developments in trade and the influence of the diaspora have resulted in closer convergence of bilateral relations into more credible partnerships between the two states. However there have been some divergences that have been cited. India's strategic autonomy perspectives have been cited as obstacles to security cooperation. The fact is that India and Australia have varied strategic traditions and practices that had varied perceptions of global and regional order and apprehensions about India's power rise in the region. However, India and Australia are now reciprocally recognizing each other's power potential after the long hiatus of the Cold War years.

The improvements in India-US relations and the ensuing strategic partnership had ensured the synergy for the India-Australia partnership signed in 2009 known as the *Joint Declaration on Security Cooperation*.³¹ Some of the recent developments have been: a) India and Australia envisage the beginning of maritime bilateral exercises with the two navies; exercising from 2015 with a focus on anti-submarine warfare in the Bay of Bengal and in Fremantle, Australia; b) Bilateral Humanitarian Assistance and Disaster Relief (HADR) exercises have been conducted. Other areas of cooperation have been envisaged in counter-Maritime Piracy and Maritime Domain Awareness.³² These have provided a substantial increase in cooperative security partnerships and are considered as some of the significant areas of current maritime cooperation between India and Australia. China's assertive rise has been a key mutual concern for the two powers and Australia looks with interest on the patterns of cooperation between India and Southeast Asia.³³ The recent visit of India's Prime Minister Narendra Modi is viewed as a significant catalyst to boost bilateral relations in trade and security cooperation.³⁴

India-South Korea: India and South Korea have vital stakes in the evolution of the Indo-Pacific economic order and security architecture. As democracies in the Indo-Pacific region, India and South Korea have been engaged in economic interdependence and security ties that have been shaping the transformation of the region. The economic interdependence of the two rising powers is indeed the bedrock of the strategic partnership.³⁵ The India-South Korean convergence is well-established and enhanced in the following areas:

Strengthening Nuclear Security is a vital priority for India and South Korea. The signing of a nuclear agreement for peaceful uses of nuclear energy between the two rising Asian powers would bring in the synergies of South Korean technological strengths in nuclear engineering and nuclear safety.³⁶ With the 2012 Seoul Nuclear Security summit, India and South Korea have embraced the convergent tasks of securing the region against covert proliferation and ensuring the security of fissile materials. The two powers have immense operational and intelligence capital that could be harnessed for the global commons of nuclear energy.

Enhancing Maritime Security is a significant task for India and South Korea. The imperative to collaborate in ship-building brings to bear South Korea's technological advantages in this area. South Korean building capacities in civilian shipping and the South Korean partnership in Indian defense production and procurement would enhance and strengthen India's technological prowess. It would also enable the enhancement of maritime security ties through the spectrum of benign, constabulary, and humanitarian sectors of the two navies to be forged in strong partnership so as to establish order in the maritime commons of the Indo-Pacific.³⁷

Establishing Space Partnerships would be a new frontier even as India and South Korea engage in transformative technologies and the build-up of space capabilities in satellites and space launches.³⁸ Joint space exploration and the joint commitment to ensure the peaceful uses of outer space are vital for both powers. The Indian-South Korean partnership would serve as a means to deter brinkmanship or militarization by other powers.

Improving High Technology Cooperation is an important priority that harnesses the scientific and technological capital of India and South Korea towards the development and expansion of high-technology. Technological innovation has been critical in the Asian powers' rise. Harnessing the technological dividend and investing in the development of dual-use technologies salient for industry would be highly important even as the two powers continue to rise.³⁹

Engaging in Military Interoperability is of strategic consequence. India and South Korea could expand into areas of joint warfare doctrine, counter-terrorism, special operations forces training and exercises, and most importantly in intelligence cooperation.⁴⁰

In summation, the bilateral aspects of the global security issues between the two Asian democracies create joint stakes in augmenting regional stability, leading towards a crucial convergence. Even as the Indo-Pacific economic and strategic order transforms, the essence of concert among democratic powers in the region can provide a framework of cooperation.

India-Japan: The wide spectrum of strategic trends in the Indo-Pacific have resulted in the close nurturing of strategic partnerships between India and Japan. Since 2004, a growing convergence has been witnessed with the United States attempting to build partnerships with various regional powers with the themes of economic interdependence and on the normative plank of a concert of democracies to counter the assertive rise of China as well as to mitigate its own deficiencies.

India and Japan have moved to closer partnership in a variety of fields ranging from transfer of civilian technology to security partnership to nuclear technology transfer initiatives. Indian Prime Minister Narendra Modi's recent successful visit to Tokyo yielded much productive

results in overall ties, but did not further the nuclear cooperation between the two powers as expected by India. Indian and Japanese initiatives have, however, addressed the wider region of the Indo-Pacific, as well as the bilateral context of their growing strategic convergence.⁴¹

The *Strategic Dialogue and Security Partnership* has been the primary means of closer India-Japan security cooperation. The Aso-Singh declaration of Security Cooperation of 2008 provides the basis of the India-Japan security partnership.⁴² This framework envisages establishing the Strategic and Global Partnership that is driven by converging long-term political, economic, and strategic interests, aspirations and concerns. The declaration undergirds policy coordination on regional affairs in the Indo-Pacific region and on long-term strategic and global issues. It also expands defense dialogue and cooperation within the framework of the earlier Joint Statement signed in May 2006 between the two Defense Ministries. The Aso-Singh Declaration also set forth several cooperative mechanisms that would implement the various parameters of the strategic dialogue and the security partnership.

Defense Diplomacy has been yet another vital instrument of strategic cooperation between India and Japan. Elements of this initiative range from joint military training, exercises, and the Malabar exercises that involve Japan along with the US, Australia, and Singapore, as well as the Indian Navy task force exercises in the Yokosuka Bay in the Eastern Pacific. India and Japan have also worked out elaborate protocols of cooperation between their respective coast guards and their navies in the Indian Ocean. The India-Japan Joint Working Group is also exploring the co-production of the US-2 amphibian aircraft for search and rescue efforts. India could use it for landing a small group of troops for short strikes close to the sea coast or to maintain surveillance in the Sea Lanes of Communication. Defense Diplomacy is a new area that brings Japanese military technology and operational practices that would enhance the effectiveness of India's military.⁴³

India-Japan Nuclear Technology Partnership has been an important milestone in the strategic partnership between the two powers. This aimed to enable transfer of Japanese civilian nuclear technology to India. Japan has backed the Indo-US nuclear deal and the exemptions given to India from international technology sanctions.⁴⁴ India and Japan had expressed their commitment to continue to work to prepare the ground for India to become a full member in the international export control regimes: the Nuclear Suppliers Group, the Missile Technology Control Regime, the Australia Group, and the Wassenaar Arrangement. However, recent talks between the Indian Prime Minister Narendra Modi and Japanese Prime Minister had not resulted in a conclusive nuclear agreement between the two powers.

India-Japan Maritime Security Ties have assumed much importance since 2008. With the Japanese participation in the anti-piracy patrols in the Arabian Sea and its access to Djibouti, the presence of Japanese Maritime Self Defense force destroyers has aided in securing sea-lane security and energy security for Japanese shipping in the region. India and Japan have been regularly conducting exercises between their navies and the respective Coast Guards. Japan and India have already started a 2 + 2 dialogue (at secretary level) and an annual exercise called (JIMEX).⁴⁵ In 2012 Japan participated in the Indian Ocean Naval Symposium for the first time.

In summation, the strategic trends in the Indo-Pacific reflect a dynamic environment that is fast-paced and involves a power-shift among the great powers and changing

economic-strategic dynamics among Japan, India, South Korea, and Australia. The future of China and the role of the United States will be the net strategic factors that would determine the responses of the region. India and Japan are entering into a period characterized by greater economic and strategic convergence. Greater economic interdependence, technology transfers, and development of a strategic partnership could shape the Indo-Pacific strategic architecture.

India-United States: India and the United States have featured a convergent relationship since the Bush Administration. The hallmarks of the bilateral strategic partnership have been forged on the basis of common interests and shared strategic vision. The prevalent bilateral activities have hinged on the annual Malabar exercises between India and the United States that in some cases have included Japan and Australia.

India and the United States have signed \$13 billion in defense contracts that include major deals for military transport aircraft and attack and heavy-lift helicopters. Yet, India's decision in 2011 to exclude two US companies from a bidding process to fill its requirement for 126 Medium Multi-role Combat aircraft and its preference of the French Rafale Fighter attack aircraft was a substantial setback for the United States.

India is reluctant to sign US defense technology protection agreements as it had argued that this would affect its strategic autonomy and its technological security requirements.⁴⁶

Three areas merit to be highlighted: a) bilateral defense trade cooperation; b) Military-to-military cooperation; and c) Homeland security cooperation. However, there is the US reluctance to transfer certain high-end technology due to its laws and it is a major stumbling block in bilateral relations. On the other hand, there has been India's refusal to sign certain agreements, viz. the Logistic Support Agreement (LSA) and the Communication Interoperability and Security Memorandum of Agreement (CISMOA) which is a major inhibiting factor in Indo-US defense cooperation.⁴⁷ India's stand on the above agreements is that these are restrictive and acceding to them is against its principle of strategic autonomy.

India-Russia: India and Russia have a strategic partnership that has been modest. India and Russia have been conducting joint naval exercises, called INDRA, in Indian Ocean and in the Far East. India aims at opening opportunities for the Northern Sea route to the Arctic. In terms of defense technology collaboration, India and Russia have been working on the Brahmos missile as well as a prospective collaboration on Fifth Generation Combat aircraft. India has been buying Russian built frigates, destroyers, and conventional submarines, and leasing a nuclear attack submarine. One of the major highlights of the India-Russia partnership has been the civilian nuclear cooperation that has resulted in Moscow's willingness to build, operate, and transfer Russian nuclear reactors to India. However, there is also the negative consequence of Moscow's potential export of sensitive defense technology to China that has an adverse impact on the national security of India as Russian military technology could eventually reach Pakistan via China.⁴⁸

In all these strategic partnerships, India has not chosen alliance as an instrument of forging closer relations. India's reliance on strategic partnerships is undertaken with the aim of forging collaborations for technology transfer and co-development, while retaining its strategic autonomy.

Dynamics of Engagement

India's Look East Policy is expanding and consolidating beyond Southeast Asia to reach Japan, South Korea, and Australia. India's engagement has also been expanding with South Korea in various areas of engagement that has resulted in greater strategic partnership between India and the East Asian powers. India's engagement with the East Asia Summit has been an important milestone as economic interdependence expands. Hence the economic rationale for strategic partnerships has been the primary energizing source for India's expanding role in the region. There has been a steady increase of India's strategic initiatives that have come in recent years. It has been exemplified in the expansion of its naval diplomacy in the region.

India's maritime strategy has been evolving to a definitive eastward focus since 2007. The release of its capstone maritime doctrine of Indian Maritime Doctrine INBR 8 (April 2004) was the basis of India's naval activism. This was followed by other statements such as the Indian Navy's *Vision Statement* (May 2006) and its *Roadmap to Transformation* (October 2006). The *Freedom to Use the Seas: India's Maritime Military Strategy* (September 2007)⁴⁹ was the benchmark document that provided the impetus of a new Indian vision articulating its eastward focus. Several platform and infrastructure developments attest to the growing interest of India for adding sinews to its eastern fleet that is gaining momentum with hosting and conducting fleet exercises with the Southeast Asian navies and with the Pacific powers like South Korea, Japan, the United States, and even Russia.⁵⁰

The deployment of taskforces has been a frequent event with the Eastern Fleet, even as the Navy has dispatched taskforces into the South China Sea and beyond to the Pacific. In June 2012, the Eastern Fleet task force of four warships embarked on a visit to East Asia carrying out exercises with the Japanese Maritime Self Defense Force. In route to the north-eastern Pacific, the ships made port calls in Malaysia, Vietnam, Indonesia, and Philippines. On the return journey, the task force also embarked on exercises with China's People's Liberation Army-Navy (PLAN). The deployment of annual task forces to Southeast Asia and the Pacific signifies India's intent and capability to retain and sustain the economic and energy interests in the Sakhalin and the strategic stake of the Navy in the Pacific. The deployment of taskforces and the expeditionary capability reflect the Indian Navy's objective of "*desired power projection force levels, undertake military operations other than war and the ability to influence events ashore.*"⁵¹

The deployment of the taskforces has been sustained with various tiers of exercises with Southeast Asian navies and the Pacific navies of South Korea, Japan, Russia, and the United States, demonstrating the capacity and varied complexity of the platforms with various naval forces. The deployment of taskforces and the exercises symbolize the Indian Navy's sustained intent and capacity for closer naval partnerships with the region's navies.

Expanding its great power naval engagement, India joins the great power concert in the Indo-Pacific with its maritime forward presence. India features as a major power along with Japan and South Korea in terms of economic and strategic engagement. India's naval engagement in the region will continue as a significant factor even as the PLAN naval expansion and its surge into the Indian Ocean region continues. India sees strategic engagement in its ties with Southeast Asian navies and a counter-bulwark to the PLAN expansion in the

region. Even as India expands its naval engagements with the United States, Japan, South Korea, Russia, and Australia in the Eastern Pacific as well as in the Indian Ocean region, India's role as a significant power in the region enhances its credibility. India's gradual increase of the size and the sophistication of its warship dispatches into the region and the increasing complexity of its naval exercises with Pacific powers of Japan and South Korea, together with its participation in the Western Pacific Naval Symposium and the enlargement of the Malabar series within Indian and the Pacific waters burnishes India's credentials and constitute an important benchmark of its power status.⁵² With the Indo-Pacific gaining significance in the context of the new power alignments, the US rebalancing to the Pacific and the US access to Darwin in Australia--all raise the prospect of India's greater naval involvement in this theatre.

The Indian Navy's exercises with Southeast Asian navies have varied levels of scope with the different naval forces of the regions, demonstrating the increasing importance of interoperability. Indian naval operations have the objective to develop capacity for interoperability with the various Southeast Asian navies, although each force varies in terms of different operational capacities and platform capabilities. Interoperability may not always be feasible with the vast differences in training, operations, and platforms, yet the exercises with each of the navies provide the Indian Navy familiarity of operations and development of capacity. Although the exercises cannot accrue real offensive capability, the scope in terms of cooperative and constabulary elements remains high. From the Indian Navy's point of view, these exercises enhance maritime domain awareness, sharing of maritime intelligence, and increase the benign scope of ties. India's hosting of the MILAN and Indian Ocean Naval Symposium reciprocally brings in the Southeast Asian navies to Indian waters for similar exercises that serve to enhance interoperable features of the various operational capacities of the different navies with the Indian Navy. Interoperability serves as the benchmark of the closer degree of naval cooperation and operational capacity. The Indian Navy's operational capacity and its doctrinal focus endeavor towards greater cooperative capacity between its force and the navies in the region.⁵³

Sustaining a strong naval footprint represents a strategic priority for the Indian Navy, even as it adds new platforms into the Eastern Fleet. India's nuclear submarine platform is deployed in the Eastern Fleet and the addition of the INS *Vikramaditya*, India's next aircraft carrier, to the Eastern Fleet will significantly enhance carrier air power. With the increase of the frigates and destroyers to the fleet that comes by way of the carrier task group; it would provide the lateral platform expansion that comes along with the new combat capabilities. The newly inducted "Shivalik" and "Teg" class ships are a manifestation of the navy's desire to acquire strategic assets. The INS *Teg*, inducted in May 2012, followed by the INS *Sahyadri*, commissioned a few weeks later, are the two latest multi-purpose frigates to have joined the Fleet.⁵⁴ The frigates are tasked for a broad spectrum of maritime missions that adds to the "strategic posture" and are deployable for long-term maritime missions. India's support ships like long range oil tankers are being added to the fleet to provide longer legs to sustain the naval footprint in the region. India is also negotiating with Russia for three additional frigates of the Krivak-IV class that would serve to increase the platform numbers and enhance combat versatility of the fleet deployments.⁵⁵

In summation, the analysis of India's engagement in the Indo-Pacific has been premised on India's growing trade, commercial investments, and economic interdependence that has directed the strategic engagement with the region. India's role in the region is expanding in terms of how its presence and partnerships could shape the Asian security architecture that has important strategic implications.

India's imperatives lie in sustaining its economic development and growth, while cultivating strong commercial and technological partnerships with Southeast Asia, Japan, South Korea, and Australia. Enduring partnerships with these powers encompass a crucial system-shaping diplomatic synergy for India and are extremely vital for India to be taken seriously in the region.

India's crucial balancing role in a prospective US-China duopoly of the Asia-Pacific regional order would serve to enhance its presence and would augur a meaningful role for its power. With the discontents of an assertive China and a dilemma ridden American power, India's role and stabilizing impact would build the sinews of a regional order that is not entirely swayed to the ruthless hegemony of China nor suffers from the pangs of the US strategic challenges of staying engaged in the region. In an obvious power transition, India's normative leadership backed by its pragmatic calculus of economic strength and strategic capacity would provide the necessary foundations of India's place in East Asia and the Indo-Pacific.

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Island States in a Region of Great Powers

Nilanthi Samaranayake

This paper analyzes the perspectives and priorities of Indian Ocean island states—especially Sri Lanka—in a region of great powers. Analysis of international relations in the Indo-Pacific is understandably focused on the great powers such as India and the United States, but the examination often ends there. Although the region's island countries may be small, their strategic locations, their relations with traditionally dominant India, their growing ties with China, and rising trade and investment opportunities—especially in infrastructure development—make them an important area of analytical inquiry.

There are three unifying aspects of Indian Ocean island states (namely, Sri Lanka, Maldives, Seychelles, Mauritius, and Madagascar) that reside in a region of great powers. First, they have common needs such as building capacity for their maritime security services. Second, while they derive multiple benefits from great powers like India, island states share common concerns regarding the room to craft independent foreign policies and perceptions of the misuse of their territory by great powers. Third, despite their smaller size, they possess surprising strengths such as their strategic locations; ability to lend unique expertise to larger powers; or potential to cause a wedge in great power coordination, even if unintentional, such as between the United States and India.

Despite the often-discussed potential for great power rivalry in the Indian Ocean, smaller island countries' growing ties with extra-regional states such as China are not undermining India's traditional dominance in the region. Certainly, China's equities are inexorably rising in the Indian Ocean. Yet island states are open to Indian, US, Chinese, Japanese, or other countries' assistance if it can help them grow, especially by improving connectivity. Moreover, despite anxiety over Beijing's support of maritime infrastructure throughout the region, India increasingly derives commercial benefits from these projects and connectivity. Still, New Delhi should redouble its lending and construction capabilities so that India is seen as a more viable alternative to China for island states in the Indian Ocean. No matter who funds this infrastructure, it will allow these countries to trade more within their borders, with each other in the region, and beyond.

Common Needs

Indian Ocean island states need capacity. In addition to having broader national development goals, they face various maritime security challenges like piracy, human smuggling, arms and narcotics trafficking, and illegal fishing. To address these threats, the island states depend on great powers for assistance such as equipment (as well as parts and servicing), training, and exercises to help their smaller navies and coast guards, which in turn helps advance regional maritime security.

India's assistance to these island states is quite significant. For example, the Mauritius Coast Guard is run by a deputed Indian Navy officer, with the Indian Navy gifting and servicing patrol boats, exercising, joint patrolling, and cooperating on hydrography. Just in the past year, India's equipment assistance to Mauritius has been striking: an Indian-built offshore patrol vessel was exported to Mauritius in August 2013, making it the first ever warship to

be exported by India.¹ India handed over three new Islander aircraft engines and critical spares, as well as an inshore hydrographic survey vessel to Mauritius earlier in 2013. In 2014, Mauritius ordered a \$20.5 million fast patrol vessel from India to be built in Goa Shipyard, including machineguns and ammunition.

As with Mauritius, India provides Maldives with regular surveillance and hydrographic services as well as gifted and serviced assets for the Maldives National Defense Force (MNDF), including most recently two Dhruv advanced light helicopters. Maldives has benefited from a US-built maritime surveillance system, which was completed in January 2013, as well as India's commitment in 2009 to build coastal radars on each of the 26 atolls, although only a handful have been installed so far. The United States has been working with Maldives on environmental security, with rising sea levels posing the greatest existential threat to Maldives of any country in the Indian Ocean. US Pacific Command (PACOM) conducted a 2014 environmental security workshop with the MNDF which examined oil spill response and disaster management, among other areas.

In Sri Lanka, India offers a wide range of security assistance, coordination, and senior official visits. India's training capability is well regarded in particular, especially among Sri Lanka Navy officers, who regard it as India's major contribution to their maritime security forces as well as to other branches of Sri Lanka's military. In fact, the commander of the army, Lieutenant General Daya Ratnayake, stated as recently as November 2014 that the Indian Army "provides more than 80% of overseas training opportunities to the Sri Lankan Armed Forces, for which we are grateful."² In terms of equipment, India is building two offshore patrol vessels that are intended for delivery during 2017–18. SLINEX is an exercise between the Sri Lankan and Indian navies that began in 2005. Yet with Sri Lanka having no available ships to exercise during its war against the Liberation Tigers of Tamil Eelam (LTTE), the exercise was suspended and did not resume until 2011, off Trincomalee. It was next held off Goa in 2013. Furthermore, the Indian Navy provides vital survey assistance and engages in staff talks (most recently in the summer of 2014). In contrast with India, US military assistance is low, due to prohibitions following human rights concerns over the government's conduct of the final phase of the war against the LTTE insurgency.

In Seychelles, the Indian Navy conducts surveillance and hydrographic work in the exclusive economic zone (EEZ), which is of considerable benefit to the Seychellois Coast Guard. India gifted a fast attack craft in November 2014, in addition to one in 2005. India also supplied a Dornier maritime surveillance aircraft. The United States includes the Seychelles Coast Guard in its multinational Cutlass Express maritime training exercise in East Africa (Kenya, Tanzania, and Djibouti). In Madagascar, India reportedly has had a monitoring station since 2007 as its first listening post on foreign soil, which is intended to relay intelligence back to commands in Mumbai and Kochi. The Indian Navy's MILAN exercise in February 2014, which was its biggest ever with 17 countries in total, included the island states Seychelles, Mauritius, Maldives, and Sri Lanka.

In addition to regular capacity-building, island states have needed assistance from great powers following natural disasters. After the 2004 tsunami, the Indian Navy provided

vital first responder aid to Sri Lanka under “Operation Rainbow,” and to Maldives under “Operation Castor”. The previous year the Indian armed forces had provided relief to Sri Lanka under “Operation Denim” following widespread flooding. US naval forces also provided important disaster relief after the tsunami under “Operation Unified Assistance”.

Unlike India, China’s security assistance to these island states is currently minimal, but can be expected to grow as Beijing increases its equities in the Indian Ocean. During Sri Lanka’s war against the LTTE, China’s weapons support was vital considering that the United States and India imposed official embargoes on lethal assistance. China’s security assistance has decreased after the war concluded, but defense relations have continued. The Chinese defense minister visited Sri Lanka in 2012, and China installed a new defense attaché in Colombo at the Senior Colonel or Brigadier rank in August 2013. In addition, China has offered \$100 million to the Sri Lanka Army to support infrastructure projects. In Maldives, China committed last year to gifting a \$3.2 million sea ambulance to the Maldives Coast Guard, although the vessel has not yet been delivered. In Seychelles, China has provided two patrol craft for counterpiracy purposes and training.

Despite these activities, China’s position in the Indian Ocean remains significantly weaker than that of India, which has the advantage of a central geographic position. India has further strengthened its formidable air and sea power in the region and intensified its bilateral activities with island states.³ Moreover, New Delhi has begun to move beyond bilateral engagement with these countries through trilateral maritime security coordination with Sri Lanka and Maldives. At the time of writing, this trilateral has consistently grown to feature concrete outcomes:

1. Three meetings were held at the National Security Advisor-level since 2011.
2. An accord was signed in July 2013 agreeing to maritime domain awareness (MDA) cooperation,⁴ EEZ surveillance, search and rescue (SAR), initiatives to curb marine pollution, and exercises.⁵
3. A March 2014 meeting at the NSA-level discussed new areas of cooperation in maritime security, including hydrography and training in visit, board, search and seizure operations.⁶ Delegations from Mauritius and Seychelles also participated as guest countries.
4. In 2012, Sri Lanka was added to the two-decade old Indian-Maldivian coast guard exercise called DOSTI, which was held off Male, Maldives. In December 2013, the three forces conducted a second trilateral coast guard exercise off Trincomalee, Sri Lanka, which included a tabletop exercise on Indian ships about pollution response and a seminar on oil spills, as well as work on counterpiracy and SAR. In October 2014, the three countries repeated the DOSTI coast guard exercise off Male.
5. In March 2014, the Indian Coast Guard conducted a one-week SAR training in Mumbai for five Coast Guard Officers each from Sri Lanka and Maldives.

The arrangement is likely to become known as the “Indian Ocean-5” given deep interest by Mauritius and Seychelles. Furthermore, India is altering its internal bureaucratic orientation toward the Indian Ocean and smaller island states. The near abroad division of the Ministry of External Affairs has been reorganized within the past year by subdividing

Bangladesh and Myanmar into their own division and creating the Sri Lanka, Maldives, and Indian Ocean division, which includes the smaller island countries beyond India's traditional near abroad.

Common Concerns

In addition to having common needs, island states have common concerns regarding great powers. As developing nations, island states try to derive multiple benefits from great powers like India and the United States. But their assistance from these powers can also be of concern regarding their autonomy and room to craft independent foreign policies. For example, although India's vital assistance in disaster relief no doubt benefits island states, such operations give the Indian military operational reach in these countries' territory. An Indian armed forces officer interviewed explained that through the provision of disaster relief, a military inevitably gains knowledge of how to operate in the host nation. Under "Operation Rainbow," the Indian Navy was able to mobilize and reach Sri Lanka just 12 hours after the tsunami struck in 2004.

The Indian military's role in averting coups in Indian Ocean island states is another example of the double-edged nature of military aid. Under "Operation Cactus" in 1988, Indian Navy frigates captured plotters undertaking a coup attempt in Maldives. Similarly, around the time of political turmoil in Maldives in 2012, there were reports that the Indian Navy had two ships operating near Maldives in the event former President Mohamed Nasheed needed assistance.⁷ Indian Navy officers also describe a plan reportedly from the 1980s to airlift Sri Lanka President Ranasinghe Premadasa from Colombo in the event of a coup attempt. Coups were also averted in Seychelles in 1986,⁸ under "Operation Flowers Are Blooming," and in Mauritius under "Operation Lal Dora" in 1983.⁹

More ominously, however, smaller states can fear combat situations such as the 1987 entry of the Indian Peacekeeping Force (IPKF) in Sri Lanka under "Operation Pawan," which aimed to take control of Jaffna from the LTTE and enforce disarmament under the Indo-Lanka accord. Sri Lankan President J.R. Jayawardene arguably signed the agreement under less than ideal conditions for Colombo's interests.

The historical precedent set by such operations—whether for disaster relief or combat purposes—weighs on decision makers in island states when they consider the potential effect of being seen as challenging Indian interests in the neighborhood. In the case of Sri Lanka, the outcome of a 1987 exchange of letters between Prime Minister Rajiv Gandhi and President J.R. Jayawardene was that Jayawardene agreed that "Trincomalee or any other ports in Sri Lanka will not be made available for military use by any country in a manner prejudicial to India's interests." These letters were exchanged in the context of Colombo's growing relationship with Washington and reported US interest in an oil tank farm in Trincomalee close to Indian territory. The training of Tamil militants in Indian camps and the entry of the IPKF are often cited by Sri Lankan experts as examples of the consequences of challenging India's dominance in the region.¹⁰ More recently, when President Mahinda Rajapaksa wanted to develop a port in his home district of Hambantota, he first consulted India and even the United States for investment and reached out to China after India and US investors passed on the request.¹¹ Controversy in media analysis over September and October 2014 port visits by conventional People's

Liberation Army-Navy submarines to a Chinese-built terminal in Colombo port inflamed Indian sensitivities over foreign presence in Sri Lanka's ports. An unnamed Ministry of Defense official states that a redline for India would be if China sent a nuclear submarine to Colombo, or if a submarine paid a visit to Trincomalee in northern Sri Lanka and away from the main east-west sea lanes.¹²

Beyond India, extraregional great powers can also cause concern over perceptions of the misuse of island states' territory. European countries have territories in the Indian Ocean, such as the British Indian Ocean Territory. But Mauritius is campaigning for recognition of sovereignty over the Chagos islands, which includes the British and US military base of Diego Garcia, whose 50-year lease to the US Navy is set to expire in 2016.¹³ The Mauritian effort is unlikely to be successful, but illustrates the dissatisfaction of smaller island states with the use of their territory by great powers. Similarly, there were perceptions of potential misuse of island states' territory after the news broke in 2013 that Washington was pursuing a status of forces agreement (SOFA) with Maldives that would have allowed rights for US military personnel visiting the country, such as during the Coconut Grove exercise that US and Maldivian marines conduct. Male eventually rejected the proposed agreement.

Outside the realm of military affairs, smaller island states are dependent on India for trade and economic interactions, but fear the loss of assistance and engagement if they cross New Delhi. For example, after Maldivian president Mohammed Waheed terminated a contract for an Indian company called GMR to develop Maldives' only international airport, Maldivians saw India as retaliating by removing a special permission which resulted in cuts to the shipment of construction materials to the atoll nation.¹⁴ Four infrastructure projects were adversely affected due to this move and larger chill in bilateral relations. India also changed visa regulations, which made obtaining visas more difficult for Maldivians traveling to India in the wake of Male's cancellation of the GMR contract.¹⁵ Finally, fishing disputes between northern Sri Lankan fishermen and Indian fishermen in Tamil Nadu state loom large in Sri Lanka and raise territorial concerns beyond Colombo's interactions with New Delhi. The actions of southern Indian fishermen are perceived as an encroachment on Sri Lanka's national resources given the importance of fish in the local diet and the problem of overharvested and declining fish stocks.

Surprising Strengths

In addition to common needs and common concerns, island states also possess surprising strengths with regard to great powers. Despite their need for capacity, it is important to remember that island states can lend unique expertise to larger powers or are situated in strategic locations. For example, Sri Lanka and Maldives are situated along the main east-west sea lanes. Moreover, Sri Lanka's Navy has years of experience conducting small boat tactics and asymmetric warfare operations due to its 26-year war against the LTTE. Its counter-swarm attack tactics could be useful to the US Navy, for example, in an Iran scenario. Meanwhile, Seychelles allows US Africa Command (AFRICOM) to base MQ-9 Reaper Unmanned Aerial Vehicles for intelligence, surveillance, and reconnaissance purposes. Missions are for counterpiracy (off Somalia) and counterterrorism (Shabab in Somalia). Maldivian coast guard officers interviewed point out the benefits of MDA that is not technology-driven, but from fishermen in this close-knit society. While some claim that the culture can be too intrusive on a personal basis, at least Maldives' MDA purposes are well

served through the Maldives Coast Guard's close ties with fishermen about any aberrant activity along the coastline.

Second, island states can cause a wedge in great power coordination, even if unintentional. Two recent examples involving the United States and India are worth highlighting.¹⁶ First, the United States proposed a SOFA with Maldives, which was eventually rejected by the Maldivian president in January after India relayed concern about the agreement and the implications if China wanted to pursue a similar arrangement. Furthermore, in March 2014, India did not support a US-sponsored resolution in the United Nations Human Rights Council calling for an international investigation into the way the Sri Lankan government conducted the end of its war in case it had committed human rights violations. All indications were that New Delhi would support the resolution, as it did in the previous two years, but despite this, India abstained. A US State Department spokesperson said afterwards: "It is disappointing to us that India abstained from voting on this resolution when they voted yes for the last two years. We have made our disappointment known to Indian officials."¹⁷

Conclusion

While great-power relations in the Indian Ocean deserve the attention they receive, there should be more analysis of smaller island states. These countries should be examined as a discrete grouping both because they are of interest to great powers, which provide them with important assistance, and because their strategic locations make them integral to the region. Smaller island states have assets that can contribute to regional maritime security, thereby lessening the burden on the great powers.

Despite fears that Chinese assistance will create great power rivalry in the Indian Ocean, smaller island countries, by accepting Chinese aid, are not contesting or seeking to undermine India's traditional dominance in the region. Often it is assumed that these countries are trying to "play" India off against China.¹⁸ However, this thinking attributes more intention and capability than small island states actually have to influence the situation. Island states want to be open to Indian, US, Chinese, Japanese, or any countries' assistance if it can increase their security and improve their infrastructure and connectivity.

In the case of Sri Lanka, China has been a key funder and builder of new infrastructure in Sri Lanka, with loans and other assistance for the construction of a power plant, a deep seaport and airport in Hambantota, and a terminal at the congested Colombo port, which has already helped to expedite trade in one of the busiest ports in South Asia. Chinese state-owned enterprises have also built the first highways in Sri Lanka, connecting Colombo to major locations in the south. Interestingly, despite the controversy over Beijing's support of Hambantota and the strategic implications for New Delhi, India is getting some commercial benefits from the use of this port. Hambantota is now occupied with transshipping automobiles from India that are meant for East African markets, and also South America and eastern Europe.

Japan is another great power with growing interests in smaller island states. In March 2013, Prime Minister Shinzo Abe signed a joint statement with Sri Lankan president Mahinda Rajapaksa to increase maritime security and coast guard cooperation. Abe traveled to Sri

Lanka in September 2014, becoming the first Japanese leader to visit in 24 years. Colombo is anticipating the provision of Japanese patrol vessels. Meanwhile, Japan has also assisted Maldives through the construction of a “safe island” with breakwater protection of Male in recognition of the large number of Japanese tourists to the low-lying islands.

India is clearly concerned about China’s infrastructure activities in Sri Lanka and elsewhere in the Indian Ocean such as the Maritime Silk Road, which Maldives has also endorsed. China may even invest in a transshipment port in the northern Ihavandhippolhu atoll. Yet, New Delhi’s response to these activities should not be to criticize smaller island countries, which have national development goals to meet, but to redouble its lending and construction capabilities so that India is seen as a more viable alternative to China. Intra-regional trade in South Asia is quite low, constituting less than 5 percent of the region’s total trade according to the Asian Development Bank, compared to Southeast Asia, for example, where trade among the members of the Association of Southeast Asian Nations (ASEAN) represents 26 percent of total trade.¹⁹ No matter who funds this infrastructure—it will allow these countries to trade more within their borders, with each other in the region, and beyond. The expansion of this trade is in the interests of all great powers.

About the Author

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The Changing Balance of Power in the Indian Ocean: Prospects for a Significant Chinese Naval Presence

David Brewster

This paper examines the growth of China's naval presence in the Indian Ocean as part of the changing balance of power in the region. It makes two basic arguments: first, that China faces considerable strategic disadvantages in the Indian Ocean; and second, that China has few dependable security relationships in the region. This paper argues that China will find it difficult to mitigate its strategic vulnerabilities in the Indian Ocean. As a result, while Beijing may seek to use the prospects of a substantial naval presence for strategic leverage, it will likely only develop a significant military presence in the region in response to specific threats.

The balance of power in the Indian Ocean is changing quickly, driven by a perceived erosion of the longstanding strategic predominance of the US Navy and the rise of China and India as major powers. This is a three-sided dance. But strategic competition in this region is currently more pronounced between China and India than between either of them and the United States. Perhaps the United States, which has been the predominant power in the Indian Ocean for decades, is a known quantity and considered less likely to take unpredictable actions that would threaten trade flows in the region. Although perceptions of US decline are overdrawn, both Beijing and Delhi take the view that US presence in the region will continue to decline in relative terms and that, therefore, time is on their side. As a result, strategic instability in the region is much more a function of competition between China and India, as they jostle for influence and port access in ways reminiscent of US-Soviet rivalry during the Cold War.

Many believe that China is in the process of establishing a significant naval presence in the region. But is this a likely outcome in the near term? This paper argues that China will find it difficult to substantially mitigate the geostrategic disadvantages it faces in the Indian Ocean. As a result, while short term deployments of the Chinese navy may be used for signalling purposes, arguably it would make little strategic sense for Beijing to commit substantial defense resources to the region.

China's Fundamental Geostrategic Vulnerabilities in the Indian Ocean

The starting point of any analysis of China's strategic position in the Indian Ocean is its vulnerability. China faces profound strategic challenges in the Indian Ocean region that cannot be easily overcome, and this has a significant effect on the strategic dynamics. China's overwhelming strategic imperative in the Indian Ocean is the protection of its sea lines of communication (SLOCs) across the Indian Ocean, particularly with regard to the transport of energy. The most important of these SLOCs extends from the Persian Gulf through the Strait of Hormuz, around the Indian subcontinent, and then through the Straits of Malacca into the Pacific Ocean. Other important SLOCs extend across the Indian Ocean from Suez and across the northern Indian Ocean as well as from the southern tip of Africa across the central Indian Ocean. China is probably most vulnerable in the Malacca Strait, through which around 82% of its oil imports pass.¹ According to former Chinese President Hu Jintao, this chokepoint

represents China's "Malacca Dilemma."² China also faces a so-called "Hormuz Dilemma" in the Persian Gulf, where some 40% of its oil imports transit the Strait of Hormuz. However, China faces a strategic dilemma across most of the Indian Ocean, where China's SLOCs are vulnerable to threats from both state and non-state actors.

China's vulnerability in the Indian Ocean is principally a function of geography. The Indian Ocean is a largely enclosed ocean, with few entry points and vast distances between them. This creates a strategic premium for powers that are able to control the so-called chokepoints and deny their rivals access to ports in the region. For more than five hundred years, since the Portuguese adventurer, Afonso de Albuquerque, transformed the Indian Ocean into a *mare clausum* ("closed sea") over which Portugal had exclusive jurisdiction, competing powers have jostled over control of the Indian Ocean. The United States has not generally pursued a choke-point strategy since it became the predominant power in the Indian Ocean in the early 1970s. But the Indian navy's 2007 Maritime Military Strategy expressly invokes Albuquerque's name to justify India's strategy of seeking control over the Indian Ocean chokepoints.³

China's vulnerability is reinforced by the scarcity of overland connections between China and the Indian Ocean. Formidable geographic barriers created by the mountain ranges, deserts, and jungles along the southern edge of the Eurasian continent make such links very difficult and, until well into the twentieth century, there were no major transport routes—roads, railways or rivers—connecting China with the Indian Ocean. Even today, there are only a handful of tenuous north-south links across the southern Asian littoral. This disconnect has severely limited China's presence and influence in the Indian Ocean region and narrows China's strategic options. Virtually all of China's trade with Europe and the Middle East must cross the Indian Ocean.

This geography has a particular impact on the China-India strategic relationship. In strategic terms the Indian Ocean represents "exterior lines" for China and "interior lines" for India. The Indian subcontinent dominates the entire northern Indian Ocean and gives India a geographic, economic, and demographic centrality in the region. This provides India with considerable military advantages, including short lines of communication to its own bases and resources. China has corresponding disadvantages, including the need to deploy its naval forces to the Indian Ocean through narrow and dangerous chokepoints and then find logistical support when it arrives.⁴ As Admiral Mehta, India's former Chief of Naval Staff, commented, "The weak area for China today is the Indian Navy. We sit in the Indian Ocean and that is a concern for China and they are not happy as it is not so easy for them to come inside."⁵

China's weaknesses in the Indian Ocean contrast with its considerable advantages over India in other dimensions, including its economic power and the balance of conventional and nuclear forces. This creates an unusual dynamic. As John Garver, an expert on Sino-Indian relations, comments: "in the event of a PRC-ROI [People's Republic of China-Republic of India] conflict, India might be tempted to escalate from the land dimension, where it might suffer reverses, to the maritime dimension, where it enjoys substantial advantages, and employ those advantages to restrict China's vital Indian Ocean trade."⁶ From this perspective, any mitigation of China's relative vulnerability in the Indian Ocean could have a significant effect on the balance of power between India and China. But India's response to any Chinese presence in the Indian Ocean is not just about maintaining a strategic

bargaining chip. There is also a sense that the Indian Ocean is India's legitimate sphere of influence. China's refusal to acknowledge India's special role in the Indian Ocean is seen as part of its refusal to acknowledge India's status as an emerging power.⁷

China is trying to mitigate its vulnerabilities in the Indian Ocean in several ways: first, through building capabilities to project limited naval and air power into the Indian Ocean; second, through gaining access rights to ports (and perhaps air bases) in the region; and third, by developing limited overland transportation links between southern China and the Indian Ocean. But, as will be discussed, in the short to medium term these will have only a marginal impact on China's fundamental strategic disadvantages. China's position in the Indian Ocean is fundamentally different from say the South China Sea, where China is in a position to achieve predominance against local players and may therefore see benefit in creating an atmosphere of intimidation. In the Indian Ocean, China may be better placed in reducing regional threat perceptions and developing a substantial military presence only in response to what are regarded as legitimate threats. This paper will consider first how China is seeking to mitigate its strategic vulnerabilities and then its overall strategy in the Indian Ocean region.

China's Power Projection Capabilities in the Indian Ocean

This paper will not seek to describe China's naval expansion and modernisation program, which has been described in detail elsewhere.⁸ However, it is important to note that while China's naval capabilities are growing quickly, its power projection capabilities in the Indian Ocean are limited and are likely to remain so in the foreseeable future. Although it has made small deployments in the western Indian Ocean, the People's Liberation Army (PLA) Navy is not a true blue water navy and has limited experience in projecting power beyond coastal waters. China has a limited number of blue water naval combatants. Its ability to project naval power into the Indian Ocean is also highly constrained by the long distance from Chinese ports (the closest Chinese naval base being at Hainan Island in the South China Sea), the need to deploy through the narrow chokepoints through the Indonesian archipelago, and the lack of logistical facilities in the Indian Ocean. To compound this, the PLA Air Force currently has extremely limited capabilities in the region.

The PLA Navy is seeking to gradually normalize its presence in the Indian Ocean. But although Chinese naval activity in the region has increased over the last twelve months it remains at relatively low levels. The PLA Navy has made almost continuous deployments of two to three vessels in the western Indian Ocean since 2008 as part of anti-piracy operations and this has also provided political cover for increased submarine deployments. The PLA Navy has participated in a handful of naval exercises in the Indian Ocean with Pakistan, most recently in September 2014. In January 2014, three Chinese warships undertook China's first brief unilateral exercise in the Indian Ocean, just south of Indonesia.⁹ Between September and November 2014, a Chinese nuclear-powered (but conventionally armed) submarine made an unusual series of port calls to Colombo along with a tender. The purpose of these visits were unclear, but they occurred in conjunction with the announced upgrade of India-Vietnam defense cooperation, including the possible sale of India's highly capable *Brahmos* anti-ship missiles to Vietnam and they may have been intended as signals to India to restrain its presence in the South China Sea.

There is little doubt that China has long term aims to develop its capabilities in the Indian Ocean. But the growth of the PLA Navy presence in the Indian Oceans may also reflect the ambitions of a “Cinderella” service that is highly subordinated to the PLA in China’s Central Military Command. Like the Indian Navy, which is known as the “Cinderella” of the Indian armed forces, the PLA Navy could well be demonstrating that it can carve a space out for itself. This may lead it to act more assertively than would otherwise be warranted.

China’s String of Pearls or Maritime Silk Road

For around a decade, some analysts have argued that China is seeking to mitigate its weaknesses in the Indian Ocean through pursuing a “String of Pearls” strategy. During this period, Chinese companies have been involved in the funding and construction or upgrade of several commercial port facilities in the region, including at Gwadar in Pakistan, Hambantota in Sri Lanka, and Sittwe and Kyaukpyu in Myanmar. It is claimed that as quid pro quo, the PLA Navy has been granted rights to develop a permanent presence at those port facilities or to even develop bases.

The String of Pearls narrative in its various forms has become a prominent factor in Indian public discourse about China and its intentions in the Indian Ocean.¹⁰ But most informed analysts now acknowledge that it is unlikely that China would want to establish formal naval bases in most of these so-called “Pearls.” US analysts have pointed out that converting the ports of Gwadar (Pakistan) and Hambantota (Sri Lanka) into naval bases would require billions of dollars in investment in order to ensure their viability in wartime, and that their exposed position would make them difficult to defend against an enemy equipped with long-range precision strike capability.¹¹ Nor would a permanent Chinese naval presence at these ports prevent the interdiction of Chinese energy supplies elsewhere in the Indian Ocean. Indeed to properly mitigate its vulnerabilities in the Indian Ocean, China would need to be able to defend the entire length of its SLOCs that run from inside the Persian Gulf around the Indian subcontinent and through the Malacca Straits.

The debate has shifted towards whether China is pursuing a “places not bases” strategy to give China the flexibility to respond to specific threats. “Places not bases” refers to the US post-Cold War strategy of seeking to avoid the political and economic costs associated with permanent US bases in foreign countries in favour of more flexible arrangements that guarantee the US military access to critical infrastructure in times of crisis. Such a strategy would make considerable sense for China, especially in light of the potentially high political costs that may be associated with establishing a permanent naval base in the Indian Ocean. Chinese vessels on anti-piracy deployment in the western Indian Ocean already regularly use the ports of Djibouti, Salalah (Oman) and Port Victoria (Seychelles) for ad hoc logistical support alongside vessels from many other navies. China has also reportedly been offered the more permanent use of facilities at Djibouti alongside France, the United States, Japan and several other navies.¹² In the central Indian Ocean, recent port visits to Sri Lanka by a Chinese submarine point to Colombo or Hambantota as nodes for logistical support for the PLA Navy and potentially also the PLA Air Force.¹³

But a “places not bases” strategy would only have a significant effect on the regional balance of power to the extent that it would provide Beijing with a reasonable degree of certainty that facilities would be available in the event of an acute crisis or conflict. The PLA Navy may have use of facilities to develop a regular small presence in the Indian Ocean, but what countries

in the region would guarantee the PLA Navy access to facilities in the event of an acute crisis involving India or the United States? As discussed later, there are currently few candidates for this role, although this list could easily grow in the event of significant changes in the strategic environment. This means that China (like the Soviet Union during the Cold War) will likely be highly dependent upon afloat support for fleet logistics in the Indian Ocean.

China offers a very different narrative about its ambitions in the region. Beijing has flatly denied that it has any intention to establish military bases in the region¹⁴ and argues that the various Chinese-sponsored port projects in the Indian Ocean are purely commercial in nature. Since late 2013, Beijing has been pushing its “Maritime Silk Route” initiative as a proposed oceanic “Silk Route” that would complement its overland Silk Route projects in Central Asia. The proposal appears to envisage a system of linked ports and infrastructure projects and special economic zones in Southeast Asia and the northern Indian Ocean. Several states in the region have indicated an in-principle agreement to participate in the initiative, although Delhi remains suspicious. Details remain sketchy, but the initiative may involve the development of new production and distribution chains across the region, with China at its center—possibly something akin to Japan’s “Flying Geese” strategy of the 1960s and 70s in which component production was successively outsourced by Japanese companies to tiers of lower-cost states in Southeast Asia.¹⁵ If nothing else, in seeking to explain China’s presence in the region in cooperative economic terms, the Maritime Silk Route initiative provides an alternative narrative to the String of Pearls.

The Development of Overland Connections to the Indian Ocean

China is also mitigating its strategic vulnerability through developing new overland transport connections to the Indian Ocean, especially through Myanmar and Pakistan. China has recently completed a new connection to the Indian Ocean through Myanmar, involving oil and gas pipelines between China’s Yunnan province and a new port at Kyaukpyu. The development of the oil pipeline appears to have been heavily influenced by Beijing’s concerns over its Malacca Dilemma, although some of these justifications seem questionable.¹⁶ The strategic value to China of the new port is also severely limited by the lack of road and rail links to China. Myanmar has reportedly had second thoughts about allowing China to build a 1,200 kilometer railway to Kunming at an announced cost of \$20 billion, due to concerns over Chinese control over the route.¹⁷

An even more ambitious project is the “Bangladesh-China-India-Myanmar (BCIM) Economic Corridor,” which would involve the development of road connections and manufacturing facilities in a corridor between Kunming and Kolkata via Myanmar, India’s northeast states, and Bangladesh. Although Delhi has agreed to undertake a study of the proposal, the current Indian government is wary of its economic and strategic implications, particularly to India’s undeveloped and politically unstable northeast states.

China has also mooted plans to develop a major new corridor between its western Xinjiang province and the Pakistani port of Gwadar on the Arabian Sea at an announced cost of \$18 billion.¹⁸ This would include road/rail links to Karachi and a pipeline and road/rail link to Gwadar. But these would traverse regions of Pakistan where there are significant security risks which makes it difficult to envisage that China could depend upon (or even build) such links to Gwadar in the current security environment.

The trans-Myanmar and Pakistan projects are part of Beijing's "bridgehead strategy" of turning its landlocked Yunnan and Xinjiang provinces into gateways for engagement with the Indian Ocean.¹⁹ If completed, the projects would have major implications for China's role in the region, stimulating the development of China's southern provinces and considerably expanding China's influence in Pakistan, Myanmar, and other states. These projects may also give China a greater stake in the internal security of Pakistan and Myanmar. Historically, Beijing has largely avoided involvement in Pakistan and Myanmar's domestic problems, but this may become more difficult to sustain. China has already deployed security forces in Pakistan-administered Kashmir near the Chinese border to provide security for its construction and maintenance workers from attacks from Islamic and tribal groups.²⁰ If these projects go ahead, China could find itself securing corridors extending across much of Pakistan or Myanmar. But while these new connections would definitely expand China's strategic options, they would have only a limited impact on China's vulnerability in the Indian Ocean. For example, the Kyaukpyu-Kunming oil pipeline would account for only 3.4% of China's total oil imports by 2030.²¹ Pipelines are highly vulnerable to interdiction, and would not reduce China's vulnerability in the Strait of Hormuz.

China's Security Partners in the Indian Ocean

China's strategic vulnerabilities in the Indian Ocean mean that it will be highly reliant on local partners to support any naval presence to the extent that it is unable to rely upon afloat support. There are widespread perceptions in public debate and academic literature of a growing contest for influence across the Indian Ocean region, including a new "Great Game" (especially between China and India) over the control of and access to ports and other infrastructure.

China's economic influence is growing quickly throughout the Indian Ocean region in line with its rise as a world economic power. China is now the biggest trading partner for many states in the Indian Ocean region and a major source of investment. Many analysts assume that this will inevitably translate into strategic influence, although the evidence so far is mixed. Although China is an active arms supplier to many states, with the exception of Pakistan, it has few comprehensive security partnerships in the region. China is a major source of arms to Pakistan, Myanmar, Bangladesh, Sri Lanka, and others. This is driven by several factors: the inexpensiveness of Chinese arms (an important factor for most), the existence of arms embargos (which have affected states such as Pakistan, Myanmar and Sri Lanka), and balancing considerations (which is important for states such as Bangladesh). Some states such as Sri Lanka appear to be using China to hedge their relations with the United States and India. Small islands such as Maldives and Seychelles from time to time also play the "China card" in an effort to extract concessions or assistance from India. But significantly, no Indian Ocean state with the exception of Pakistan realistically considers China to be a security provider or security guarantor. Indeed, it could be argued that the strategic position of Indian Ocean states vis-à-vis China has some similarities with East Asia, where many have also sought to balance China's growing power by strengthening their security relationships with the United States and, increasingly, also with India. In other words, there is a dichotomy between China's significant economic power and its relatively limited security role. It is likely that the United States will remain the most important security partner for most states in the Indian Ocean region for the foreseeable future.

The major exception to this analysis is Pakistan, which, alongside its relationship with North Korea, is the closest China has come to a long-term ally. China has supplied arms to Pakistan since the 1960s and played a key role in proliferating nuclear weapons and missiles to Pakistan. In recent years, Pakistan has indicated its readiness to host Chinese naval facilities at the port of Gwadar, although China has responded cautiously to these suggestions.²² China may eventually choose to establish a small naval (and, possibly, air) presence at Gwadar. On the other hand, while the United States maintains predominance in the Persian Gulf and is able to maintain freedom of navigation through the Strait of Hormuz, China may have little immediate reason to do so. The cancellation of the planned visit of Chinese President Xi Jinping to Islamabad in September 2014 over security concerns also points to significant doubts over the long term stability and dependability of Pakistan.

Until recently, many analysts believed that the close economic and political relationship between China and the Myanmar military regime may also be translated into a *de facto* alliance.²³ The relationship has been close since Myanmar's international isolation after its 1988 military takeover coincided with China's isolation following the 1989 Tiananmen Square incident. In the 1990s, Chinese companies were involved in the development or upgrading of ports in Myanmar and a signals intelligence facility in the Bay of Bengal. But Myanmar has never publicly allowed China to use its military facilities. While the regime was happy to accept Chinese arms and investment it did not strategically subordinate itself to Beijing.²⁴ Beginning in 2011, Myanmar has partly distanced itself from China. The cancellation of several Chinese sponsored projects, including the huge Myitsone dam project, may have shaken Chinese trust in Myanmar as a partner.²⁵ Myanmar's political opening towards the United States and India and the partial liberalisation of its political system have also reduced China's influence in the country and may represent a significant set-back for China in the region. Beijing may now have significant doubts about Myanmar as a dependable long-term security partner in the Indian Ocean.

More recently, China appears to have targeted Sri Lanka as a key strategic partner in the Indian Ocean and perhaps also as a security partner. In recent years there has been significant Chinese investment into Sri Lanka, much of it into high profile infrastructure projects such as highways and ports. The Sri Lankan government has been keen to cultivate Beijing as an economic partner and as a diplomatic partner to help fend off international pressure over human rights issues. Since mid-2014, there have also been increasing indications of Sri Lanka's willingness to host Chinese military-related facilities. Although, until now, China had no role in the operation of Hambantota port, it was recently announced that China will take over management of a new and enlarged Phase II development of the port, which will include berths dedicated for Chinese use. It was also revealed in July 2014 that the government was proposing to establish a Chinese-run facility near the port of Trincomalee, ostensibly to support maintenance support for Sri Lanka's Air Force. After strong protests from Delhi, this facility may be moved to another location, perhaps near Hambantota port. This could ultimately form the basis of a PLA Air Force presence. But it is not yet clear to what extent these arrangements will involve an overt Chinese military presence in Sri Lanka. The development of an overt presence would have a significant impact on security dynamics in the Bay of Bengal, particularly the Indo-Sri Lankan relationship, but may have only a relatively small impact on China's strategic vulnerability in the Indian Ocean region.

Conclusion

China suffers from some fundamental strategic vulnerabilities in the Indian Ocean and its ability to mitigate those vulnerabilities is limited. Due to a combination of geographic factors, limited capabilities, and other more immediate priorities, for the foreseeable future China is likely to have only a very limited ability to project military power into the Indian Ocean. These will only be partly mitigated through the development of overland transport links and increased access to port facilities.

China's strategic disadvantages in the Indian Ocean are reinforced by the strategic alignments of the Indian Ocean states, which tend towards the United States and/or India. China's economic influence in the region is growing, but this is not automatically translating into security partnerships. Although Pakistan is a long-time ally, its stability is increasingly doubtful. Myanmar's dependability as a long term security partner is also under question. In recent times, China has made progress in cultivating a security relationship with Sri Lanka, but it is not yet clear to what extent Sri Lanka would be prepared to host a Chinese military presence.

While China would be expected to continue to work to mitigate its strategic disadvantages, it seems unlikely in the foreseeable future that it would be in a position to protect the entirety of its sea lines of communication in the Indian Ocean. This may imply that China will act relatively cautiously in the Indian Ocean for some years. While Beijing may seek to use the possibility of a substantial naval presence for strategic leverage it would make more sense for it to focus its naval resources in East Asia and only develop a significant naval presence in the Indian Ocean in response to specific threats.

About the Author

[David Brewster](#) is a Visiting Fellow with the Strategic and Defence Studies Centre, Australian National University, a Fellow with the Australia India Institute and Senior Maritime Security Fellow with the Indian Council on Global Relations. Dr. Brewster has written extensively on India's security relationships throughout the Asia Pacific and the Indian Ocean region. His books include *India as an Asia Pacific Power* which explores India's growing security relationships and ambitions in the Asia Pacific. His most recent book, *India's Ocean: the Story of India's Bid for Regional Leadership*, examines India's strategic aspirations and relationships in the Indian Ocean region. He is the author of numerous academic articles on Indian and Indian Ocean security affairs in international journals including *Asian Security*, *Pacific Review*, *India Review*, *Contemporary South Asia*, *Journal of Strategic Studies*, *Asian Survey*, *Security Challenges*, *Australian Journal of International Affairs*, and *Journal of the Indian Ocean Region*. He was one of the principal authors of *The Indian Ocean Region: Security, Stability and Sustainability in the 21st Century*, which analysed the security environment in the Indian Ocean and proposed strategies for dealing with the changing balance of power in the region. He is also the author of a recent report by the Indian Council on Global Relations titled *The India-Australia Security Engagement: Opportunities and Challenges*. This explores Indian and Australian perspectives on Indian Ocean security and provides policy recommendations for greater security engagement between those countries.

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Energy Exploration, Exploitation, and Exports in the Indo-Pacific Region

Dan Millison

Introduction

There are more than one billion people in the world today who do not have access to grid-supplied electricity, other commercial energy services, safe drinking water, and basic sanitation. Most of these people are in the Indo-Pacific region including East Africa, South Asia, and Southeast Asia. Commercial energy services for this “bottom billion” are a prerequisite for inclusive growth and social and political stability with obvious geopolitical implications.

Supply Chain Dynamics: Rate-limiting Factors and Choke Points

As the global economic center of gravity shifts to Asia, and more specifically to Asia’s cities, a critical constraint on more equitable socio-economic development is not total resource availability, but rather the resource supply chains, especially in the “last mile,” including poor consumers at the bottom of the economic pyramid. The bandwidth of intermodal trans-shipment capacity and last-mile connectivity is critical because strategic resources are not evenly distributed, and commodities and consumer goods have to move from coastal ports into cities and the hinterlands and vice versa. The major choke points for maritime traffic in the Indo-Pacific region are well-known. The Strait of Hormuz and the Strait of Malacca are strategic conduits for crude oil and liquefied natural gas (LNG) shipments. The Strait of Aden and the Suez Canal are critical links between the Indian Ocean and the Mediterranean Sea, connecting Asia and Europe. In addition to these choke points, rate-limiting factors in energy supply chains are petroleum refining capacity,¹ competition for water use in energy and agriculture, and resource utilization efficiency.

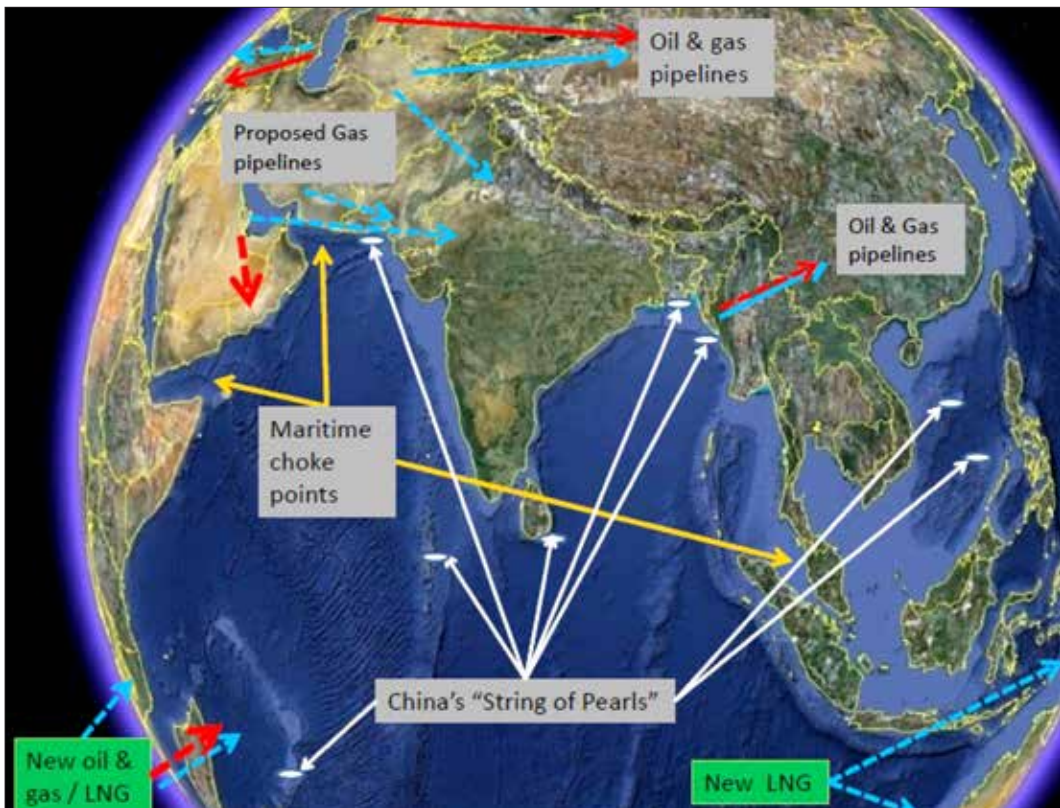
Energy Supply Outlook

Today’s global energy supply outlook is robust, largely due to development of non-conventional hydrocarbon resources in the United States, new oil and gas discoveries in the western Indian Ocean basin and East Africa, abundant coal resources in the Indo-Pacific region and the United States, improvements in energy efficiency (including vehicle fleet efficiency), and slower than expected recovery from the global financial and economic crisis of 2008. According to data from the US Energy Information Agency (EIA), the United States was the world’s largest combined oil and gas producer in 2012 and 2013, with Russia a close second.² New crude oil and natural gas production is coming online in East Africa and Mozambique, complementing the rapid growth in US hydrocarbon production. In the next two to three years, new LNG supplies will be coming online from Australia, Mozambique, and Papua New Guinea, which are mostly committed to China. Energy resources in the ground are abundant, but metabolizing these resources in the developing economies of the Indo-Pacific is a greater challenge than meets the eye. With respect to energy security, specifically hydrocarbon supplies, the big South Asian consumers—Bangladesh, India, and Pakistan—are effectively “islands” with no cross-border pipeline connections to major producing countries. In these three countries, demand for oil and gas, refined petroleum products, and coal has to be covered in part by imports.

With respect to total hydrocarbon flows, the greater region comprised of member states of the Association of Southeast Asian Nations (ASEAN) is as important as, or more important than, the Strait of Hormuz, with about one-third of global crude oil and one-half of LNG shipments transiting the Strait of Malacca and South China Sea every day. In this context, China has made strategic investments to reduce its vulnerability to these maritime choke points, mainly in the form of oil and gas pipelines and port infrastructure in the Indian Ocean (Figure 1). China has developed pipeline connections to import oil and natural gas from Kazakhstan, and natural gas from Myanmar. In May 2014, Gazprom and China National Petroleum Corporation signed an agreement to develop the “Power of Siberia” pipeline to bring natural gas from Eastern Siberia to Northeastern China. According to Stratfor’s Geopolitical Diary of March 26, 2013, these oil and gas pipelines are “largely immune to any potential US maritime interdiction”; the so-called “string of pearls” does not refer to naval bases but to port infrastructure intended to “maintain control over all aspects of its overseas supply chains.”³

There is substantial potential in mature hydrocarbon provinces waiting to be developed in South and Southeast Asia,⁴ but major bottlenecks exist in the form of unfavorable terms and conditions for exploration licenses and production sharing contracts for oil and gas, and natural gas pricing policies which for example have resulted in stranded gas offshore Bangladesh and Vietnam. In addition, maritime territorial disputes have hampered

Figure 1. Choke Points, Strategic Pipelines, and China’s String of Pearls



Source: Dan Millison, “What Will Travel on the Marine Silk Road: Energy, Food, and Consumer Goods” (paper presented for panel titled “Indian Ocean Basin: 21st Century Challenges” at Third Biennial Critchfield Conference, College of William and Mary, Williamsburg, VA, April 2013).

exploration and development of some offshore resources. Earlier this year, a Chinese-owned drillship conducted drilling near the Paracel Islands in waters claimed by Vietnam; test results were not made public, but developing any commercial reserves would be complicated by overlapping territorial claims. By way of example, the Sampaguita Field near Reed Bank off of Palawan was discovered in 1976, with initial natural gas reserve estimates of 3-5 trillion cubic feet (TCF). Seismic surveys completed in 2006 indicated that reserves may be as high as 20 TCF.⁵ The Sampaguita Field is in waters claimed by the Philippines, but further development has been delayed due to competing Chinese claims on the area.⁶ As of May 2014, Forum Energy Plc and China National Offshore Oil Corporation (CNOOC) were in discussions for further exploration and development of the field, which presents an opportunity for a commercial deal that may lead to “cocktail diplomacy.”⁷

There is significant wind potential offshore of the Indian states of Kerala, Gujarat, Karnataka, and Goa, which are host to a mature on-shore wind power business. Technical potential is estimated at up to 500,000 megawatts (MW), but commercial potential remains to be determined. Gujarat is also host to some of the world’s largest tidal energy potential, which is co-located with some of India’s best offshore wind prospects. As of October 2014, two utility-scale wind projects offshore Gujarat were announced: India’s Ministry of New and Renewable Energy (MNRE) signed a memorandum of understanding with a consortium of major public sector utilities to develop a 100 MW project, and Suzlon, the world’s fifth largest supplier of wind turbines, announced its interest in developing a 300 MW project.

Looking farther into the future of unconventional hydrocarbon prospects, methane hydrates have been detected in various locations in the region, and are noteworthy as in early 2013 a Japanese research ship conducted a short-term production test in the Nankai Trough, suggesting that these resources may have a commercial future. The presence of methane hydrates below sea water depths of 350 meters has been known for decades, and the United States Geological Survey estimates that potential resources are ten to one hundred times larger than US shale gas resources. Although commercial exploitation at scale is far from a certainty, in 2013 the executive director of the International Energy Agency noted that “shale gas was in the same position 10 years ago. We cannot rule out that new revolutions may take place through technological developments.”⁸

Coal Use Scenarios

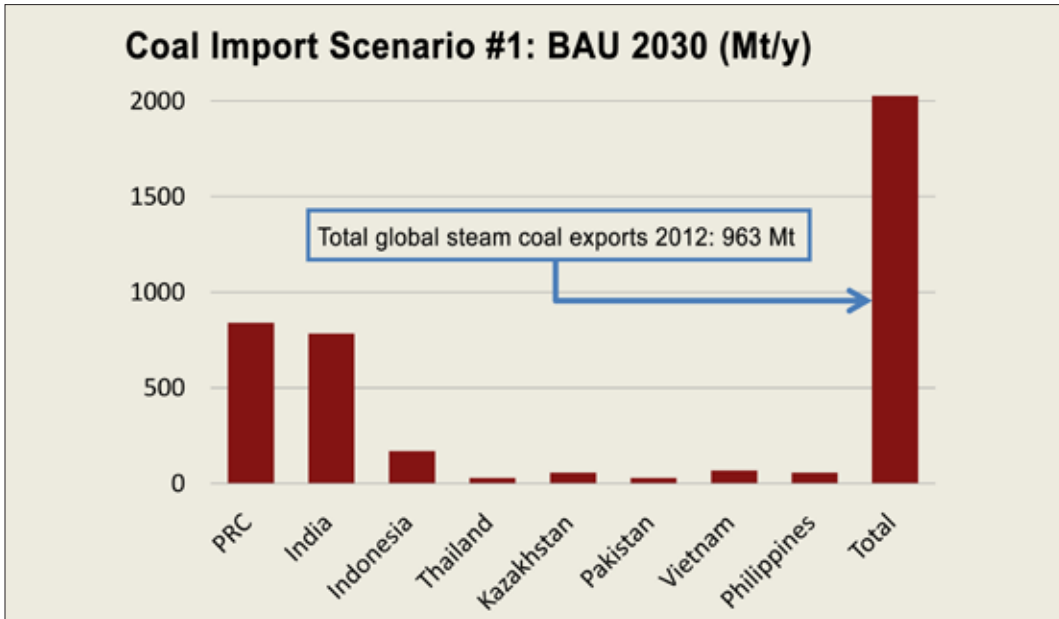
The conventional and unconventional resources are mid- to long-term prospects with at least five- or ten-year development lead times, so in the near-term most countries in South and Southeast Asia are focused on expanding coal-fired electricity supplies. Most of the developing countries in Asia have been pursuing coal expansion strategies that are intended to bring the cost of supply below retail tariffs, with meager results (e.g., India and Indonesia). Coal appears to be a least-cost solution with a hypothetical wholesale cost of around \$0.05–0.06 per kilowatt-hour (kWh) versus typical retail tariffs of \$0.06–0.09 per kWh.⁹ Coal is not without its own challenges, one of which is that most of the coal to support new power generation capacity will have to be imported—hence it is the third form of “offshore energy.” Three scenarios for coal-fired power through 2030 illustrate these challenges; in each scenario, China and India dominate the outlook for coal-fired power capacity.

Scenario 1: Business as Usual

A business-as-usual scenario for developing countries in Asia prepared in 2011 projected an additional 700 gigawatts (GW) of new coal-fired power capacity to be installed by 2030 (Figure 2). This new capacity would require an additional 2 billion tons per year (t/y) of steam coal by the year 2030, most of which would have to be imported, on top of total global steam coal exports of about 1 billion t/y in 2012. This additional 2 billion t/y is a 207 percent increase over total global steam coal exports in 2012.¹⁰ Assuming a typical Panamax collier with 60,000–70,000 tons per load, 2 billion tons per year translates to at least 23,000 additional shiploads per year, or 63 shiploads per day, mostly at ports in China and India.¹¹

There is plenty of coal that can be loaded onto ships, but not all of the countries in the Indo-Pacific region have the port and trans-shipment capacity to metabolize a major increase in coal imports, especially in the near term. This is most pronounced in India: the current five-year plan period envisioned more than 60 GW of new coal-fired capacity coming on line, but up to 45 GW of this may be at risk due to limited intermodal trans-shipment capacity at Indian ports. As of 2012, Peabody Energy had a mixed outlook on the supply and intermodal trans-shipment constraints, anticipating roughly 400–450 million t/y new supplies coming online by year-end 2016,¹² but noting bottlenecks in steam coal production, trans-shipment, and consumption due to rail and port capacity constraints. In late 2013, Stratfor noted the lack of significant spare delivery capacity in the near term and potential impact on imports to China:

Figure 2. Coal Scenario #1



Coal consumption for business-as-usual is based on 400 tons per gigawatt-hour. Peoples Republic of China estimate assumes 3percent annual growth in installed coal-fired capacity; actual additions may be much higher but will be offset by retirement of obsolete plants. India estimates from World Bank. 2010. Unleashing Renewable Energy Potential in India. Estimates for Indonesia, Thailand, Kazakhstan, Vietnam, and Philippines are derived from Clean Technology Fund Investment Plans which are available on-line at www.climateinvestmentfunds.org. Pakistan estimates from Pakistan Energy Security Plan 2005. (Source: Millison, “What Will Travel on the Marine Silk Road.”)

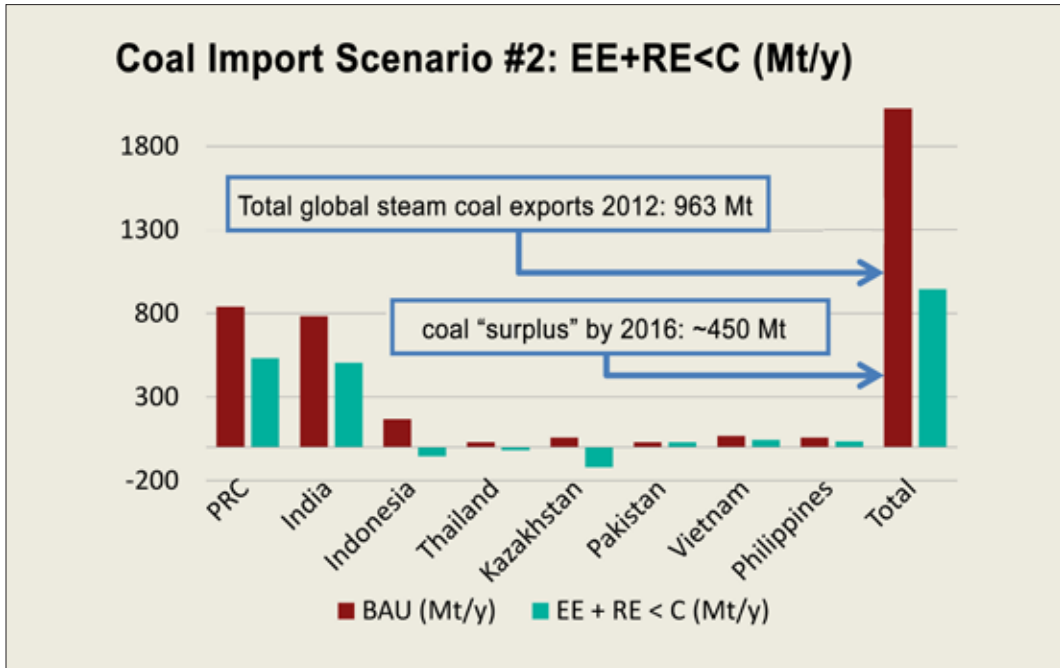
It would be extremely difficult for the global coal market, which measured a little over 1 billion tons in 2012, to accommodate another 10 percent rise in coastal coal import demand. In short, even without political and social pressure to reduce coal consumption on the coast, there are structural incentives for these provinces to seek alternative power generation sources in the next seven to 10 years.¹³

Indonesia has been the world’s biggest steam coal exporter for the last several years, but its exports are projected to level off after 2011 and decline for the foreseeable future.¹⁴ Australia has the potential to export about one billion tons per year, but this would require new investment in mine-to-port trans-shipment capacity.¹⁵ The US currently has a coal surplus, with exports in 2013 of about 65 million tons of metallurgical coal and just over 50 million tons of steam coal. There may be additional surplus capacity of as much as 170 million tons per year from the Powder River Basin in Wyoming and Montana, which has a significant price advantage at the point of loading and may have a delivered price advantage over Australian and Indonesian steam coal depending on the destination: free-on-board cash costs of Australian and Indonesian coal were just over \$70 per ton and \$60 per ton respectively,¹⁶ compared with well under \$50 per ton for Powder River basin coal.¹⁷

Scenario 2: EE + RE < C

The second scenario assumes that a broad spectrum of energy efficiency (EE) gains and renewable energy (RE) is developed, achieving cost parity with coal (C) or at least the grid

Figure 3. Coal Scenario #2



BAU scenario is the same as in Figure 2, with coal consumption at 400 tons per gigawatt-hour. Consumption for EE+RE<C is assumed coal consumption improves to 300 tons per gigawatt-hour. Reduced coal demand for EE+RE<C is based on references noted at Figure 2, except for China which is based on published estimates for RE output totaling 138 terawatt-hours per year. (Source: Millison, “What Will Travel on the Marine Silk Road.”)

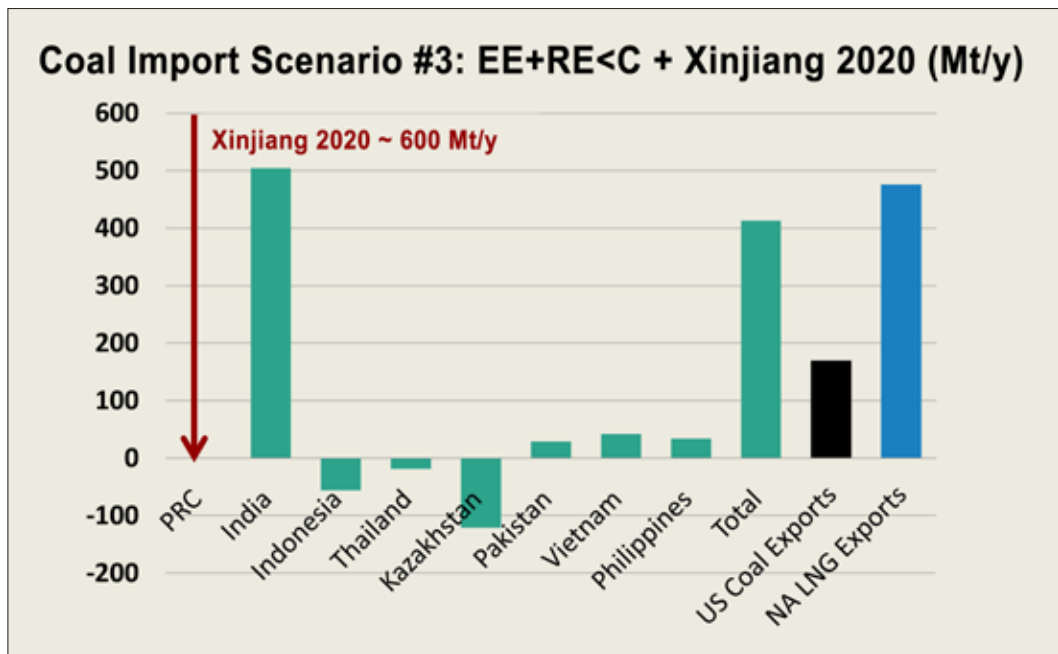
mix by 2030. In this scenario there will still be demand growth for about another 1 billion t/y steam coal by 2030; this is around a 100 percent increase on top of 2012 global exports (Figure 3).¹⁸ About half of this extra one billion tons per year may be online within the next couple of years,¹⁹ with another half a billion tons per year likely to be available from Australia, China, Mongolia, Mozambique, and the United States.

This “EE+RE<C” scenario is emerging in India and Indonesia where fast-track coal-fired power initiatives launched in 2006 have fallen well short of the mark, with new efficiency and renewable energy programs starting to take up the slack. It is not obvious that the developing countries listed in these three scenarios can metabolize an additional 1 billion t/y of coal. In the case of India, RE is rapidly approaching parity with the cost of electricity using imported coal, the landed cost of which is about twice that of domestic coal (see notes on coal price spreads below). In Indonesia, the average cost of electricity supply is about \$0.20 per kWh, which is higher than every form of commercially available RE kit today.²⁰

Scenario 3: Xinjiang 2020

China may cap coal consumption at 4 billion t/y (there appears to be a de facto cap already).²¹ Coal production in Xinjiang is projected to increase by as much as 600 million t/y by the end of this decade,²² which, combined with a cap on domestic consumption, would eliminate coal imports by 2020. At least one market-watcher notes that China has increased coal imports mainly due to price considerations rather than reserve and production

Figure 4. Coal Scenario #3



The EE+RE<C scenario is the same as Figure 3. Assumptions: (a) US coal exports increase by 170 million tons/year; (b) All proposed LNG export proposals in Canada and the US proceed, with a total of 11.38 trillion cubic feet of gas per year; this is equivalent to 476 million tons of coal per year assuming 25.10 gigajoules (GJ) per ton coal and 1.05 megajoules (MJ) per cubic foot of gas. (Source: Millison, “What Will Travel on the Marine Silk Road.”)

constraints.²³ If domestic coal consumption is capped, China will have to make an aggressive shift to natural gas, with new pipeline gas from Russia (based on agreements reached in May and November 2014), expanded pipeline gas supplies from Central Asia (underway), and possibly additional LNG from North America and other suppliers post-2016 (subject to US policy whims and permitting decisions). In this scenario, North American energy exports could theoretically cover residual demand (equivalent to about 500 million t/y of coal), mostly in India, assuming that additional import terminals and related infrastructure could absorb a surge in coal and LNG imports.

The Role of North American Energy Exports in the Indo-Pacific Region

In the three scenarios discussed above, Canada and the United States will play an important role with respect to increased exports of coal, crude oil and refined products, and LNG. As noted above, US steam coal exports are currently around 50 million tons per year, with additional production to spare in the Powder River basin. As shown in Figure 4, the various LNG export projects in the development queue have a combined volume of 11.38 TCF of gas per year, equivalent to about 476 tons of coal per year. Energy price spreads, as of early 2014, have caused quite a bit of excitement in Canada and the United States. The potential margins of exports of Powder River basin coal appear to be as high as \$75 per ton, and the potential margin for LNG exports based on Henry Hub prices appears to be on the order of \$10 per million British thermal units (MMBTU).²⁴ These potential margins are being realized for some coal exports, but have yet to be monetized at the scale for LNG.

As long as economic growth in the Indo-Pacific region is maintained, the United States and Canada are likely to be winners in the global energy trade for the foreseeable future. There are no major regulatory controls on US coal exports. In contrast, US LNG exports are subject to policy and regulatory hurdles, and only a handful of new LNG export projects may materialize.

Discussion Points

The foregoing scenarios are not presented as robust forecasts, and are subject to change due to unforeseen and improbable events, or so-called “black swans.”²⁵ In the near term, three major activities have a significant bearing on the global energy outlook through year 2030:

- Successful transition of China’s economy from being export oriented to domestic consumption oriented
- Re-invigoration and restructuring of India’s economy
- Disintermediation of traditional power utilities and transport sector due to rapid decline in costs of solar photovoltaics (PV), energy storage, and electric vehicles

In the global coal supply chain, China is the proverbial eight hundred-pound gorilla (India is its four hundred-pound cousin), and in the context of global energy trade, what happens in China does not stay in China. China has been driving global commodity demand for the past ten years, but has entered a very difficult transition period. Already, China has lost its low-cost labor advantage: its demographic dividend has been spent; simply stated, China has grown old before growing rich.²⁶ If it succeeds in retooling its economy from being export oriented to being domestic consumption oriented in a timely manner, China will become “a Singapore on steroids”²⁷ and that success story will make the reforms of the last

thirty-five years look insignificant. A successful economic transformation will require aggressive action on air pollution control, which, in turn, will require capping domestic coal consumption and using natural gas and renewable energy in place of coal: in this scenario, China would conceivably consume all of the surplus gas in the world via pipelines and LNG imports. The shift from coal to gas is already evident via the agreement for the “Power of Siberia” pipeline, signed in May 2014, and a second agreement for additional gas supplies signed in early November 2014.²⁸

If China’s economic transition is not successful, it is likely to experience long-term stagnation (or worse) for the foreseeable future;²⁹ in that instance, forecasts for global commodity demand to the year 2030 should be considered highly suspect. According to recent analysis by Stratfor, there are sixteen developing countries which are well-suited to succeed China as the world’s low-cost, export-oriented economic hubs. Twelve of these sixteen countries are in East Africa, South Asia, and Southeast Asia: Ethiopia, Kenya, Tanzania, and Uganda in East Africa; and Bangladesh, Cambodia, Indonesia, Laos, Myanmar, the Philippines, Sri Lanka, and Vietnam, in South and Southeast Asia.³⁰

In contrast to China, which is effectively 100 percent electrified, at least one-fourth of India’s population does not have grid-supplied power—roughly equivalent to the entire population of the United States—and many grid-connected areas suffer from poor quality supply and frequent brown-outs. Retail energy prices have historically been subsidized, but there is limited public sector fiscal depth to sustain retail price subsidies indefinitely. Prime Minister Modi’s new government is expected to adopt policies that were successful during his tenure in Gujarat, namely moving the electricity sector to fully commercial operations while limiting subsidized retail consumption. The Modi government has consolidated the former ministries of coal, new and renewable energy, and power into a single ministry, and has signaled clear intent to streamline India’s notorious bureaucracy with the theme of “less government, more governance.”

As of late October 2014, India’s Ministry of New and Renewable Energy (MNRE) had announced the intent to expand and accelerate the solar power program from a goal of 20 GW of grid-connected capacity by 2022 to 100 GW of new capacity by 2020. This expanded target implicitly acknowledges that the BAU scenario shown in Figure 2 is heavily burdened with fuel supply chain bottlenecks and supply chain risks. The BAU scenario would require expansion of domestic coal and natural gas production, complemented by expanded coal import terminals and intermodal trans-shipment capacity, LNG terminals, and gas pipelines, including regional cross-border pipelines. Expanding the solar program to 100 GW indicates that the EE+RE<C scenario shown in Figure 3 is in fact materializing in India. This expanded target will require “new” investment on the order of \$10 billion per year, some of which will be in lieu of investments in fossil power under the BAU scenario. Shifting from BAU to the new 100 GW objective will avoid most of the sunk costs for fuel supply chain infrastructure, reducing fuel supply chain risks in the process, and likely reducing the growth in future coal demand below that shown in Figures 3 and 4.³¹

Against this backdrop, rapid technological and commercial advances in renewable energy—particularly solar power—are running ahead of policy and regulatory developments, and causing disintermediation of the conventional electric utility business model. The market

disruption caused by shale energy development, combined with disintermediation in electricity markets, are portents of a broader transformation of the energy business which is expected to occur by 2030. Solar photo-voltaic (PV) systems are experiencing the fastest learning rate of any form of renewable energy system and are on their way to becoming “too cheap to meter” at each end of the energy supply chain, meaning: (i) the wholesale cost achieves parity with coal, and (ii) the retail price can be delivered without financial hardship to the consumer. The solar PV learning rate is due partly to technological advances associated with rapid expansion of manufacturing capacity—industrial mass production as pioneered by Henry Ford—and partly because the pre-paid mobile phone service model is being adapted and transferred to the electricity business. Solar PV is becoming a preferred choice for off-grid and distributed generation applications, as well as for utility-scale power. PV is upwardly and downwardly scalable and, with reasonable load-following characteristics, is a partial solution for peak generation (peaking capacity being the most expensive power in the grid mix).

Solar PV and other renewable resources are being developed at sufficient scale to have a visible impact on the traditional electric utility industry. Earlier this year, David Crane, the president and chief executive officer of NRG Energy, Inc., the largest independent power producer in the United States, noted that there is an “inexorable trend towards a distributed generation-centric, disaggregated future featuring individual choice and the empowerment of the American energy consumer. That this future is going to occur is, in my opinion, inevitable; *that it’s going to occur faster than almost every person thinks it’s going to occur is highly probable.*”³² In late May 2014, Barclays downgraded bond ratings for the US electric utility industry, noting that “we believe that a confluence of declining cost trends in distributed solar photovoltaic (PV) power generation and *residential-scale power storage* is likely to disrupt the status quo.”³³

The combination of disruptive energy development and disintermediation of the electric utility industry points to wholesale transformation in global energy development. Paraphrasing David Crane and Barclays on the shift toward RE-based distributed generation, “it’s not if, it’s when.” This shift is complemented by new business models to deliver energy services including “pay as you go” and rooftop solar leasing being pioneered by Simpa, Solar City, and other firms. Tesla’s new gigafactory is expected to drive learning rates for battery storage in the near future, which would result in much more affordable energy storage to complement distributed solar power infrastructure. To some extent, these business models are building a market which is running ahead of regulation. Given the dynamic evolution occurring in energy markets today, forecasting future outcomes with any semblance of accuracy is an extreme challenge, but it does appear that transformation of the energy sector in the Indo-Pacific region is starting to happen. In the absence of robust clairvoyance, we might simply remind ourselves of former Saudi oil minister Sheikh Ahmed Zaki Yamani’s comment that the “stone age did not end because of a shortage of stones.”

About the Author

Dan Millison is the Manager of Transcendery LLC, a private consultancy established in 2008 to provide sustainable infrastructure solutions. He has more than 26 years professional experience with over 14 years of experience in clean energy development, including support for Asian Development Bank's (ADB) programs and projects with co-financing from the Clean Technology Fund and the Scaling Up Renewable Energy Program. He was formerly a senior energy specialist at ADB, and previously worked in the environmental services and oil and gas industries. He holds an MS in Civil Engineering and a BA in Geological Sciences, both from Northwestern University in Evanston, Illinois.

Notes

1. Petroleum refineries are engineered to handle specific ranges of crude oil. For example, when "sweet" crude oil production in Libya went offline in 2011, additional "sour" output from Saudi Arabia was refined in the US, resulting in minimal disruptions in supply of refined products.
2. Cameron Nelson, "MSR21 Sounding Report #1: The Impact of Indian Ocean Energy Pipeline Development on the Global Landscape," (unpublished manuscript, Marine Silk Road 21, LLC, Williamsburg, VA, 24 February 2014).
3. Stratfor, "Xi Jinping's Symbolic Overseas Tour," *Stratfor Geopolitical Diary* (March 2013), p.17, at <http://www.stratfor.com/sample/geopolitical-diary/xi-jinpings-symbolic-overseas-tour>. This article notes that the "string of pearls" are not naval bases, but are intended to avoid US maritime interdiction at Indo-Pacific choke points.
4. One of the lessons learned from the US shale energy revolution is that mature hydrocarbon provinces may yield much higher reserves and production rates than previously thought.
5. These resource estimates are from Forum Energy plc, at <http://www.forumenergyplc.com/company/profile.aspx>.
6. Hong Kong-based media reported that in March 2011 Chinese navy vessels threatened to ram a survey ship hired by exploration company Philex Petroleum Corporation; Reuters, "Huge Gas Find to Heat Sea Squabble," *The Standard* (Hong Kong), 25 April 2012, at http://www.thestandard.com.hk/news_detail.asp?we_cat=6&art_id=121832&con_type=3.
7. As suggested by Dr. Hasjim Djalal in his presentation, "Maritime Geo-Politics in the Indo-Pacific, Strategic Perspectives: Indonesian Perspectives," delivered at the Maritime Trade and Security Conference "Sea Change: Evolving Maritime Geopolitics in the Indo-Pacific Region," co-hosted by the Stimson Center of the United States and the Observer Research Foundation of India in June 2014.
8. Sylvia Pfeifer, "Methane Hydrates Could Be Energy of the Future," *Financial Times*, 17 February 2014, at <http://www.ft.com/intl/cms/s/2/8925cbb4-7157-11e3-8f92-00144feabdc0.html#axzz3JWeZlwrG>.
9. With retail electricity tariffs around \$0.25/kWh, the Philippines is an exception among developing countries in the Indo-Pacific region.
10. World Coal Association, *Coal Facts 2013* (London, United Kingdom: World Coal Association, 2013), p.2, at [http://www.worldcoal.org/bin/pdf/original_pdf_file/coal_facts_2013\(11_09_2013\).pdf](http://www.worldcoal.org/bin/pdf/original_pdf_file/coal_facts_2013(11_09_2013).pdf).
11. New LNG export capacity from Australia and Papua New Guinea are committed to China and this is built-in to the BAU and EE+RE<C scenarios.
12. Gregory H. Boyce, *2012 Analyst and Investor Forum: Creating Value for Both Near Term and Long Term* (St. Louis, MO: Peabody Energy, 2012), at <http://www.peabodyenergy.com/mm/files/Investors/IR%20Presentations/10%20Greg%20Boyce%20Summary%20and%20Key%20Takeaways.pdf>.
13. Stratfor, "China Strives to Clean Up Pollution" *Stratfor Analysis* (October 2013), p.14, at <http://www.stratfor.com/sample/analysis/china-strives-clean-pollution>. This article notes Chinese government intent to cap domestic coal consumption at 4 billion tons per year, and further notes that there is limited global export-import capacity to support a rapid increase above 1 billion tons per year.

14. International Energy Agency, *Southeast Asia Energy Outlook: World Energy Outlook Special Report* (Paris, France: IEA, 2013), at http://www.iea.org/publications/freepublications/publication/southeastasiaenergyoutlook_weo2013specialreport.pdf. Note: Figure 3.8 shows projected Indonesian coal production and share of net exports from 1990 through 2035. Figure 3.7 shows free-on-board prices for steam coal exporters in 2012.
15. Ailun Yang and Yiyun Cui, “Global Coal Risk Assessment: Data Analysis and Market Research,” working paper (Washington, DC: World Resources Institute, November 2012), at http://www.wri.org/sites/default/files/pdf/global_coal_risk_assessment.pdf.
16. IEA, *Southeast Asia Energy Outlook: World Energy Outlook Special Report*.
17. Mark Thurber, “Exporting Coal from the US Pacific Northwest: Potential Impacts of Removing an Energy Transportation Constraint,” working paper, National Bureau of Asian Research (NBR), 2014 Pacific Energy Forum Working Papers, Seattle, WA, April 2014, at http://www.nbr.org/downloads/pdfs/ETA/PEF_2014_workingpaper_Thurber.pdf.
18. World Coal Association, *Coal Facts 2013*. The coal consumption estimates presented in this scenario were prepared independently of, but are consistent with, global electric power capacity additions projected from 2010 through 2030 presented by Michael Liebreich in his “State of the Industry” keynote address at the 2014 Bloomberg New Energy Finance Summit; Michael Liebreich, “State of the Industry,” (Keynote address, Bloomberg New Energy Finance Summit, New York, NY, 15 April 2014), at <http://about.bnef.com/video/summit-2014-michael-liebreich/>.
19. Boyce, *2012 Analyst and Investor Forum*.
20. Asian Development Bank, *Risk Assessment Report and Risk Management Plan for Indonesia Energy Sector*, ADB TA 7277-REG: Governance and Capacity Development Initiative (Phase 2) [Confidential document] (Manila: Asian Development Bank, 2010). For the costs of RE systems, see International Renewable Energy Agency, *Renewable Power Generation Costs in 2012: An Overview* (Abu Dhabi: IRENA, 2012).
21. Some US observers have noted publicly that air pollution in China is so bad that it threatens government stability. US Ambassador to China Max Baucus was quoted to this effect in a recent article by Jeff Goodell in *Rolling Stone*. See Jeff Goodell, “China, the Climate and the Fate of the Planet,” *Rolling Stone*, 15 September 2014, at <http://www.rollingstone.com/politics/news/china-the-climate-and-the-fate-of-the-planet-20140915>. In a panel presentation at the Woodrow Wilson International Center for Scholars in Washington, DC, Amy Myers Jaffe said that air pollution in China was so bad that “it could bring down the government.” See Amy Myers Jaffe, “Platforms, Pipelines & Policies: Energy & Security in China and Asia Pacific,” speech presented at Woodrow Wilson International Center for Scholars, Washington, DC, 17 September 2014, video file, Kissinger Institute for China and the United States, at <http://www.wilsoncenter.org/event/platforms-pipelines-policies-energy-security-china-and-asia-pacific>.
22. Stratfor, “China’s Ambitions in Xinjiang and Central Asia, Part 2,” *Stratfor Analysis* (October 2013), p.15, at <http://www.stratfor.com/sample/analysis/chinas-ambitions-xinjiang-and-central-asia-part-2>. This article notes that coal production in Xinjiang is expected to increase from 141 million tons per year to 750 million tons per year by 2020, a 600 million ton per year increase.
23. David Gambrel, “China Ship Congestion—How So Many Capesize Ships Got Locked Out of China’s Ports,” *Coal Age*, 12 September 2012, at http://www.coalage.com/index.php/departments/transportation-tips/2232-china-ship-congestionhow-so-many-apesize-ships-got-locked-out-of-chinas-ports.html#VGy_D_nF_Xw.
24. Thurber, “Exporting Coal,” p.4.
25. Nassim Nicholas Taleb, *The Black Swan: The Impact of the Highly Improbable*, 2nd ed. (New York: Random House, 2010); Nassim Nicholas Taleb, *Antifragile: Things That Gain from Disorder* (New York: Random House, 2012).
26. George Friedman, *The Next 100 Years: A Forecast for the 21st Century* (New York: Doubleday, 2009).
27. Elizabeth C. Economy, “China’s Imperial President: Xi Jinping Tightens His Grip,” *Foreign Affairs* (November/December 2014), at <http://www.foreignaffairs.com/articles/142201/elizabeth-c-economy/chinas-imperial-president>.

28. This agreement is indirectly related to the rapid growth in unconventional gas reserves in the US, where gas is replacing coal. US steam coal exports increased from around 20 million t/y in 2009 to around 50 million t/y in 2012, much of which is displacing natural gas in Europe, including gas from Russia.

29. Friedman, *The Next 100 Years*.

30. George Friedman, "The PC16: Identifying China's Successors," *Geopolitical Weekly*, Stratfor, 30 July 2013, at <http://www.stratfor.com/weekly/pc16-identifying-chinas-successors#axzz3JWxVBaMK>.

31. The BAU and EE+RE<C scenarios are derived from an unpublished manuscript prepared for Asian Development Bank in 2011. The projections are consistent with global electric power capacity additions projected from 2010 to 2030 presented by Michael Liebreich in his "State of the Industry" keynote address at Bloomberg New Energy Finance forum, April 2014, available online at: <http://about.bnef.com/video/summit-2014-michael-liebreich/>.

32. NRG Energy Inc., "NRG Energy's CEO Discusses Q4 2013 Results - Earnings Call Transcript," Seeking Alpha, 28 February 2014, <http://seekingalpha.com/article/2059563-nrg-energys-ceo-discusses-q4-2013-results-earnings-call-transcript>.

33. Michael Aneiro, "Barclays Downgrades Electric Utility Bonds, Sees Viable Solar Competition," *Barron's*, 23 May 2014, at <http://blogs.barrons.com/incomeinvesting/2014/05/23/barclays-downgrades-electric-utility-bonds-sees-viable-solar-competition/>.



Shipping Developments and Challenges in the Indo-Pacific Maritime Realm

Rupert Herbert-Burns

Introduction

Amidst the context of steady economic growth of the rising Asian powers of India and China, the surge in endemic growth of Sub-Saharan Africa, the inescapable strategic imperative of the petroleum sources of the Persian Gulf and Arabian Peninsula and the challenges of geopolitical contest in the South China Sea, there is arguably no more important or complex geo-economic or geo-strategic maritime canvas on Earth than the Indo-Pacific. Indeed, perhaps what is more compelling is that the extent to which the geo-strategic and geo-economic importance of the Indo-Pacific region has yet to evolve as we advance further into the 21st century. This evolution has applicability for all: state leaders; policy-makers; scientists; leaders of industry, commerce, and finance; businessmen; senior military officers; academics; ships' masters and crews; and fishermen.

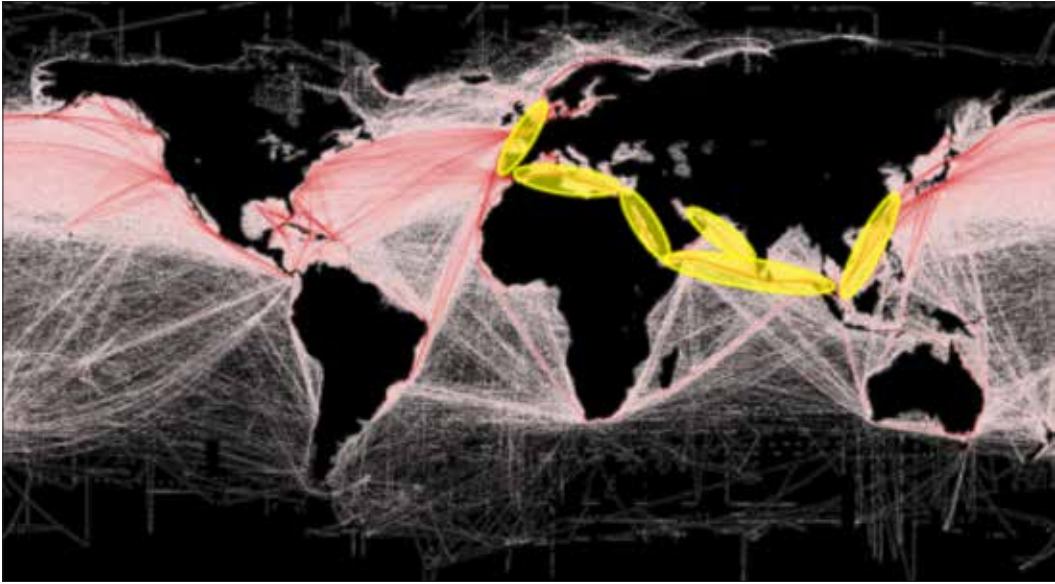
Across the vast distances and variances of the physical and human geographies of the Indo-Pacific Maritime Realm, in addition to the cybersphere, the most critical means of geo-economic linkage, if paradoxically unsighted for most, remain the ports, terminals, vessels and sea lines of communication. The aim of this paper is to provide a concise capture of the status, developments and challenges facing the international shipping industry within the Indo-Pacific maritime realm.

Following a strategic-level overview that provides the geographical and geopolitical canvas for the subject matter, the essay will comprise the following sections: A capture of the state of maritime commerce in the region with macro trade statistics and market segment news; a review of the major trades in the region including dry bulk, containerised trade, petroleum sector shipping (crude, products and bulk gases); an appraisal of the trade through-put and dynamics of the major container ports, critical oil and gas terminals, and strategic refining hubs; and, lastly, a snapshot of the state of shipbuilding in the region.

Strategic overview

From a strategic-level trading perspective, the Indo-Pacific maritime realm stretches from the southern exit of the Suez Canal to Hokkaido in Japan, and from Cape Aghulas to the Bass Strait. Within this expanse, are the world's largest container ports, crude oil loading terminals and commercial anchorages, the busiest East-West-East sea lines of communication, and the most strategically vital chokepoints and oceanic inter-connector—the Phillips Channel off Singapore. In terms of the scale of trade dependent population, the volume and tonnage of trade exchanged, the numbers of vessels in motion, the share of the world's mega ports and terminals, there is no more important maritime space on Earth. To echo Henry Kissinger in his address to the International Institute of Strategic Studies—“The center of gravity of world affairs has left the Atlantic and moved to the Pacific and Indian Oceans.”

Figure 1. Global map of human impact on marine ecosystems



Source: Grolltech [User] via Wikimedia Commons derived from Benjamin S. Halpern, et al., “A Global Map of Human Impact on Marine Ecosystems,” *Science* 319 (2008): 948-952, <http://dx.doi.org/10.1126/science.1149345>.

The powerful illustration in Figure 1 reveals the relative location and separation of the key maritime trading nodes and the sea lines of communication (SLOC) that link them. While the synapses within the Atlantic Basin and the container strings across the Pacific are well established and immediately obvious, the level of concentration of shipping traffic along the East-West-East maritime trade belt linking Asia and Europe is unmatched anywhere else in the world (indicated in yellow). Indeed, it is the extent, density and routing of these SLOC that link key ports, terminals and chokepoints across the Indo-Pacific that characterize the maritime geopolitics of this maritime space, and also give rise to the key maritime security issues confronting the region, including trafficking, piracy and armed robbery at sea and the threat of maritime terrorism.

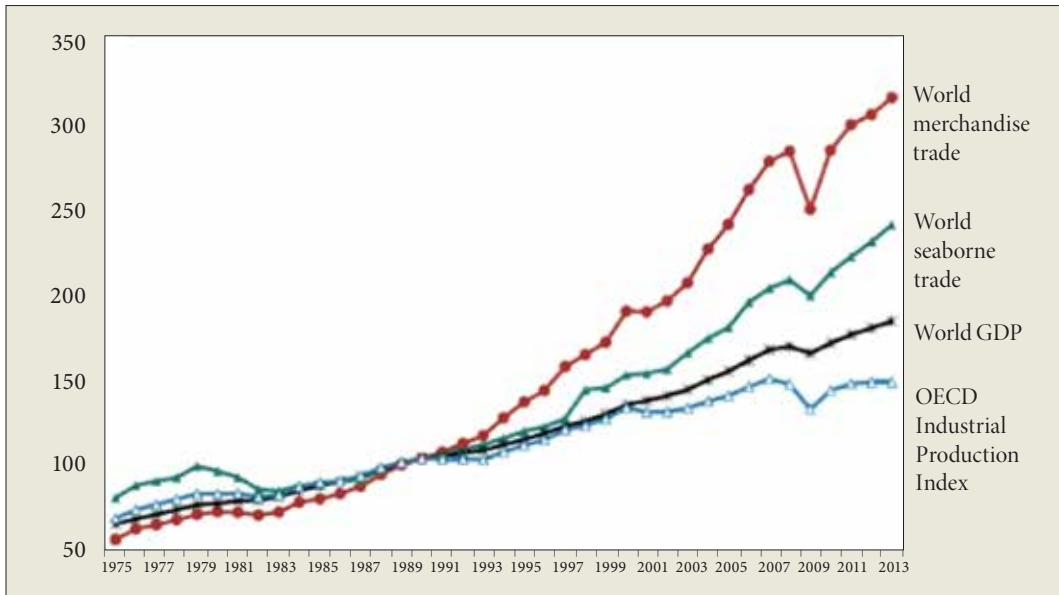
Industry news trade volumes & statistics

Indo-Pacific maritime transport is facing complex challenges, most notably: energy security and bunker costs, costs and regulations associated with climate change and environmental protection (with the latter in particular continuing to rank high on the policy agenda of shipping and port executives); overcapacity and fluxing freight rates; and, for the some in the containerised sector—onerous corporate debt.

Nevertheless, in a world often judged and measured in empiricism, this is the state of play: Global seaborne trade grows gradually but remains vulnerable to downside macro-economic risks. As always, one cannot judge and forecast the health of the international shipping sector without assessing the state of the global economy and the traditional engines of industrial and output growth, in particular China.

Overall, weaker demand for Chinese manufactured exports, especially in Europe and to a lesser extent the United States, coupled with a decline in Foreign Direct Investment (FDI) growth in mainland China has dampened the country’s overall output growth. Growth in China’s GDP slowed from 9.3% in 2011 to 7.8% in 2012,¹ the lowest rate in more than a

Figure 2. Macro GDP and trade activity correlations



Source: UNCTAD, Review of Maritime Transport, 4.

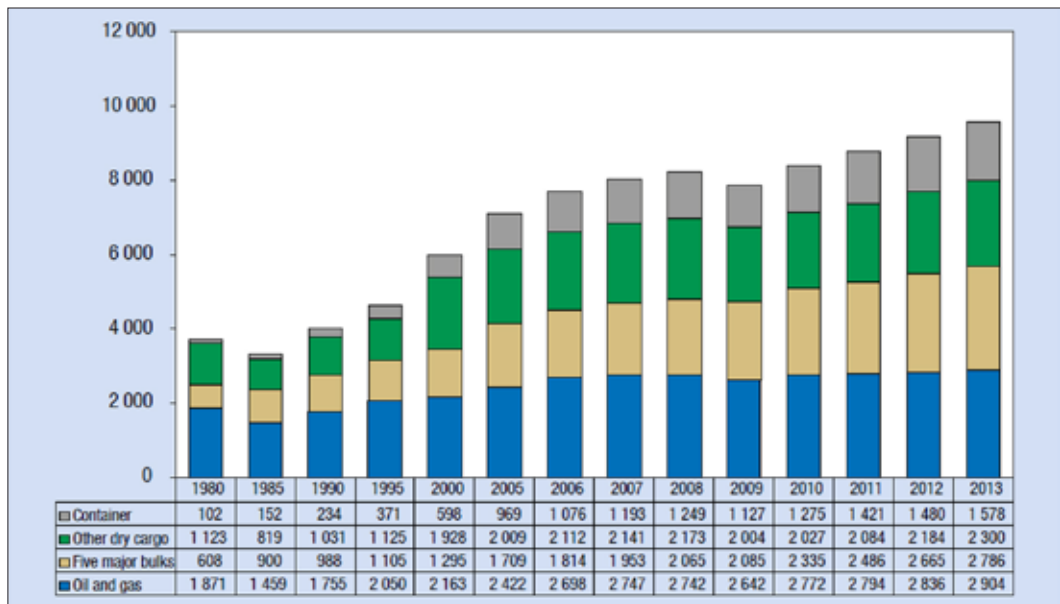
decade. In 2014, analysts are indicating that China may be turning the corner towards an upward curve in growth with GDP targeted to reach 7.5%. Though not a significant value, considering the stellar overall growth during the last decade, it is a move in the right direction. Furthermore, this is good news for the shipping industry, which has been waiting for any sign of building momentum since 2012. Growth in India was cut by more than half in 2012 to 3.8%, which has proved challenging to bounce back from. However, a rating agency, Icria, has suggested there are signs for optimism, and has forecasted that growth in the fiscal year 2014-15 could reach 5.5%, as an upswing in manufacturing and investment is expected in the second half of the fiscal year.²

Nevertheless, the larger picture is encouraging as Figures 3 and 4 illustrate—put another way, there is no reason to be overly pessimistic when looking at longer trends and what this means in a positive way for trade and shipping in the Indo-Pacific and in a global context.

Approximately 9.2 billion tons of goods were loaded worldwide last year,³ with dry cargo responsible for the lion's share of this. The shipping sector continues to experience marginal and unstable freight rates in its various segments because of surplus tonnage/lifting capacity in the global fleet, particularly in the container trade. Across all the main sectors of dry and liquid bulk and the container trades, freight rates have stabilized again in real terms from the drastic lows precipitated by the global economic crisis of 2008-2010 due to a convergence in macro supply and demand as illustrated in Figure 4.

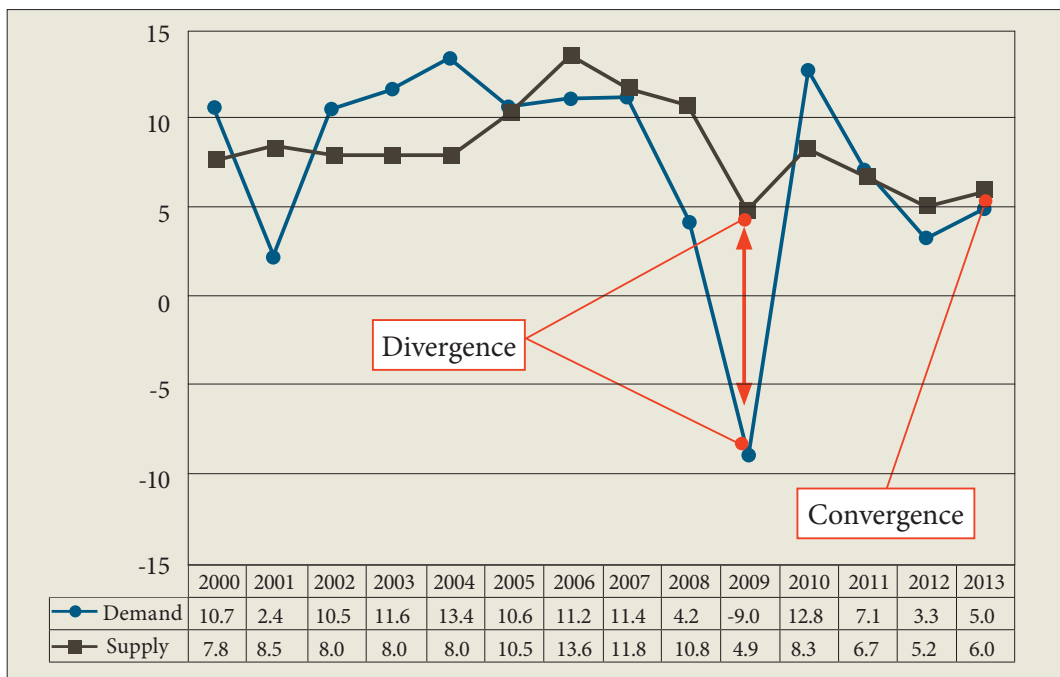
Overall, the shipping industry is on the verge of exiting from its longest period of negative growth in over 30 years- the result of chronic over capacity coupled with the massive decline in market demand resulting from the global economic downturn.

Figure 3. Trade composition of long-term shipping growth



Source: UNCTAD, *Review of Maritime Transport*, 7.

Figure 4. Macro supply and demand of global shipping trade



Source: UNCTAD, *Review of Maritime Transport*, 68.

Dry bulk shipping

The dry cargo segments are picked to be the biggest rises as demand for bulk commodities cargoes, in particular coal and iron ore, outstrips lifting capacity for the first time in almost a decade. Global bulk trade is slated to expand by some 5.8% in 2014 to 4.37 billion tonnes, outpacing a 5.3% rise in bulk carrier tonnage.⁴ This year will be the first year since 2007 that the growth in demand for the “big five” bulks—iron ore, grains, coal, phosphates and bauxite—and the minor bulks such as cement, finished steel products, non-ferrous metal ores (copper sulphide), sugar and timber has been greater than dry bulk tonnage growth. Once again, this acceleration in demand is being driven by the major economies of the Indo-Pacific.

The distribution of growth of combined iron ore, steam coal and coking coal imports in recent years has been somewhat uneven. Between 2008 and 2013, global trade of these commodities grew on average by 7% year on year, with majority of tonne miles being recorded in the Indo-Pacific region. Approximately 98% of this growth was accounted for by China and India (81% and 17% respectively).⁵ Unsurprisingly, bulk commodity imports by most developed economies have declined during the same period. China’s iron ore and coal import growth has been critical for the dry bulk trade in the last few years and consequently this sector of the shipping industry is enjoying some of the highest freight rate indices of all. In 2014, China’s share of global lifts is projected to reach 46% of the global trade in these commodities. Nevertheless, though China’s imports dwarf the absolute volume of imports by other economies, the pace of growth of India’s imports has been greater than that of China’s.⁶

Container shipping

Growth in containerised trade started to slow notably from 2012 and remains stubbornly weak in 2014. Lift volumes of twenty foot equivalent units (TEU) increased by only 3.2%, which contrasts sharply from 13.1% surge in 2010, and 7.1% in 2011.⁷ The sharp 2010 climb can be explained in part by the fact that after the bottoming out of the market in 2009, any increase would represent a considerable trade “bounce”.

The EU’s ongoing sluggish GDP growth continues to have a commensurate effect on lacklustre import demand for manufactured goods from Asia. This has given rise to an undulating effect on global export volumes, in particular from Asia, which has contributed significantly to the marginal numbers of stuffed containers on the Asia-Europe container strings. The container trade world-wide has been further hampered by the massive surplus of tonnage available. This was the result of the very large numbers of vessels ordered by the major lines prior to 2008, which completed while the world was still in recession and maritime trade was already hugely depressed.

Dysfunctional supply and demand fundamentals in the liner trades has resulted in the major container lines withdrawing some services on the Europe/Asia/Europe strings, ordering slow-steaming, and seriously contemplating the creation of so-called “grand alliances” to seek out economies of scale in order to survive. Paradoxically, aggregate container throughput has increased in net terms by 3.8% in the last 24 months, and containerised cargo processed by ports in the Indo-Pacific region still account for some 30% of the global total.⁸

Petroleum shipping & liquid bulk movement patterns

The crude oil tanker market in the first half of 2014 is still suffering from substantial tonnage oversupply, as it did for most of 2013, when freight rates fell to their lowest level in many years. However, in the 4th quarter of last year, record-high Chinese demand for crude, weather-related delays and a slower fleet growth caused the Baltic Dirty Tanker (chartering) Index to rise above 1,000, and a degree of optimism returned to the market as did vessel contracting.⁹ However, in 2013, some 17 million deadweight tonnage (dwt) of new build tankers was contracted for; pushing up both new-building and secondhand prices. The crude oil tanker fleet of very large crude carriers (VLCCs), Suezmax and Aframax vessels is now younger than it has been in years, and thus early scrapping seems inevitable if future supply out-performs demand by a wide margin. However, putting vessels into short and mid-term lay-up, and longer travel distances could absorb the increasing inflow of vessels in to the Indo-Pacific market segments.

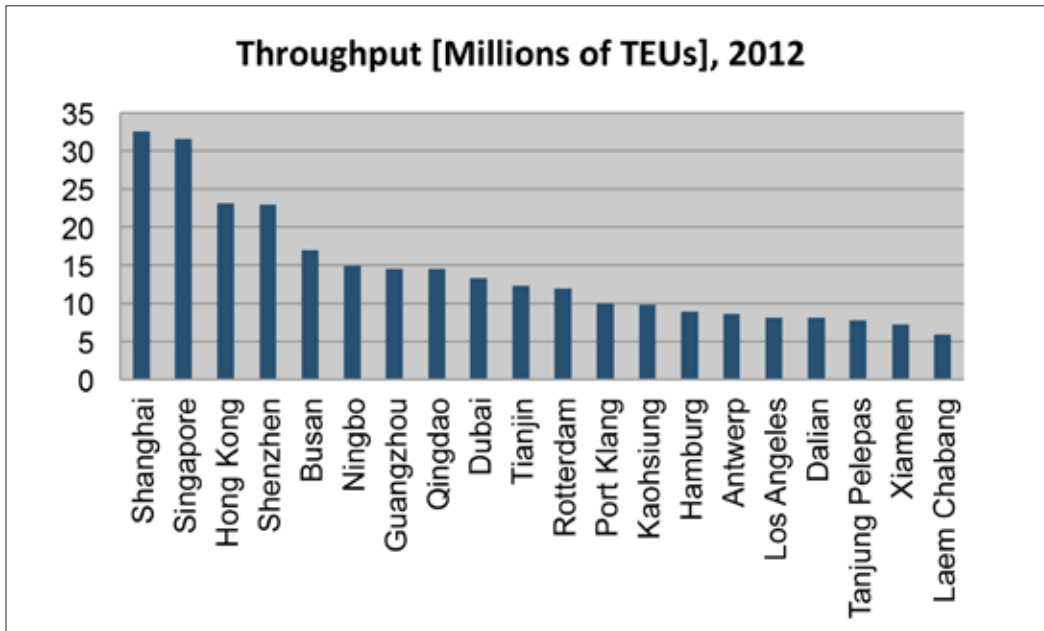
After a very tough 2012, the product tanker market improved in 2013. Freight rates gained in during Q1 of 2013 as a particularly cold winter in the northern hemisphere drove up the demand for heating oil; a good proportion of which is now being refined in, and exported from, the mega refineries in the Indian Ocean (which I will address in greater detail shortly). Later in the second half of the year, rates began to fall once again due to softening demand, which was exacerbated by the large number of new-build deliveries in late 2013, with more on the way. Currently, the market balance is very fragile; however, the growth in longer and longer range lifts of refined products and distillates with the extremities of the Indo-Pacific and from the region to Europe and even the US means that demand could absorb this fleet growth. Though still volatile, tanker freight rates are predicted to climb as demand fundamentals are strengthening in Asia, it is worth noting that 42.5% of all the world's crude oil, product and distillate trade is lifted from and through the Indo-Pacific region, and this proportion of the global total will continue to grow. Viewed at a strategic level, the region is home to 49.6% of the entire world's proven reserves; almost a third of all global gas production; and, just under 56% of the total liquefied natural gas (LNG) lifted by sea.¹⁰

During the middle of 2014, there were signs of optimism for the major tanker operators as freight rates picked up for crude oil lifts; particularly on the routes from the Persian Gulf to the Far East. However, by November 2014, the tanker operators were becoming more anxious about plummeting oil prices and the impact the global oil glut would have in the short-to-medium term. "Basket" prices of crude oil hitting a four-year low will likely have a significant impact on the health of the crude tanker market. Saudi Arabia, has maintained production volumes and drastically discounted contracted oil to the US in order to squeeze the shale oil producers, which have contributed to falling US imports and external oversupply. China's tightening demand has also contributed to threaten contracted lifts of crude and freight rates. If the glut worsens, this will have a very serious negative impact on the tankers market just when it was starting to show signs of recovery.

Major ports & terminals

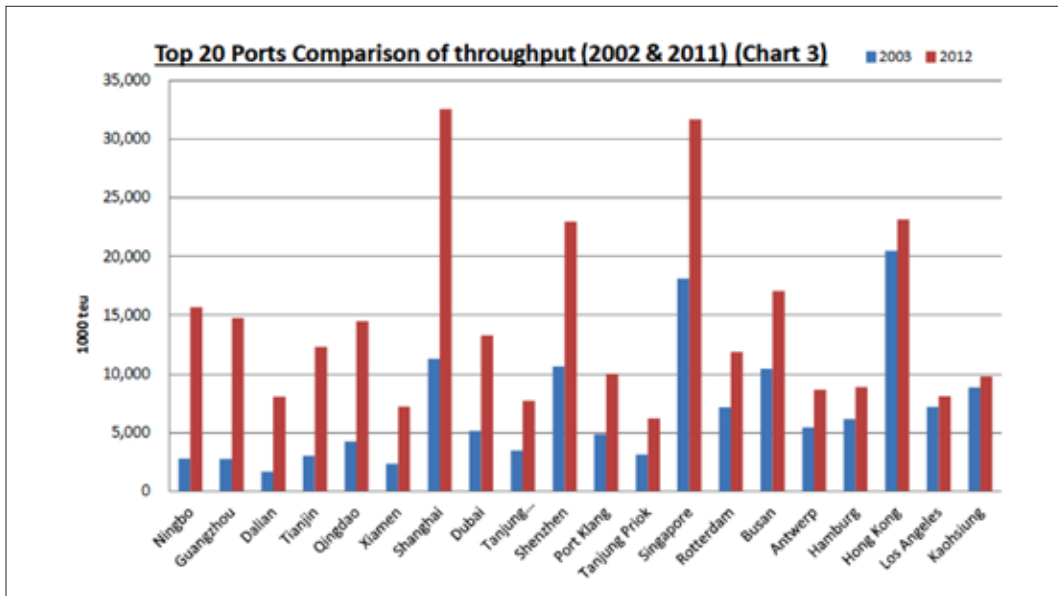
The Indo-Pacific region is home to by far the world's largest container ports, more specifically the primary hub or transshipment ports, and the most strategically vital crude oil terminals, LNG plants, and refining nodes in the world.

Figure 5. Global container throughput by port



Source: UNCTAB, *Review of Maritime Transport*, 91.

Figure 6. Top 20 ports comparison of throughput (2002 & 2011)



Source: Rupert Herbert-Burns, 2014, derived from UCTAB data.

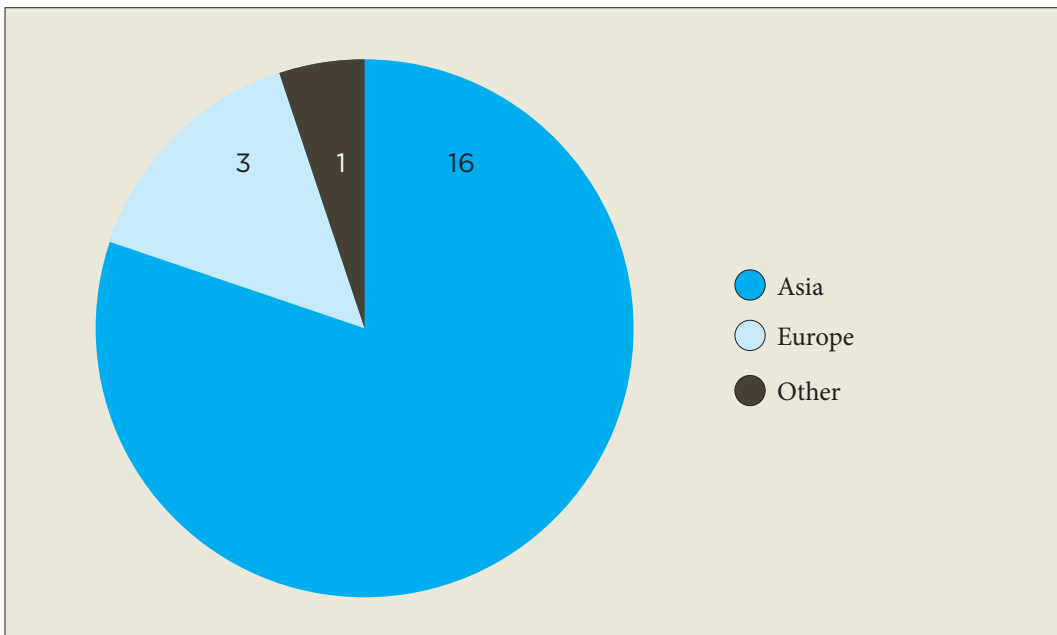
The graph in Figure 5 shows that the share of Chinese mainland ports as a proportion of total world container throughput remains at an estimated 25%, while the top 20 container ports, all located in the Indo-Pacific, accounted for 47% of world container throughput in 2012.

Figure 6 reveals the startling growth in throughput during the early part of the century. Note the considerable rise in TEU processing at the major Chinese ports and the continued expansion at Singapore.

Figure 7 cements the reality of where the concentration of shipping and cargo processing lies, with Asia having 75% of the world's largest ports in the world.

Interestingly, despite the well-known capacity of the major Asian container ports, there are several that are experiencing severe congestion, which is resulting in unloading and loading log-jams and long delays for vessels at commercial anchorages waiting to come alongside. The most congested port is Manila; however, Hong Kong, Shanghai, Qingdao, Incheon and Cat Lai in Vietnam are also badly affected. Most worryingly, and perhaps surprisingly to those not familiar with the port, it is Hong Kong that stands out as both a concern for shipping lines reliant upon it and those seeking potential investment opportunities. The fundamental problem is a lack of berths and TEU processing infrastructure combined with comparatively complex access and the need for many vessels to rely upon barges for TEU transfer. Overall, the problem is compounded with the complexity of processing cargo for carriers using vessel-sharing agreements—the result of carriers trying to maintain business share and rhythm in a trade with reduced margins and inconsistent profitability. The problems being experienced at Hong Kong are partially responsible for shipping lines sending their vessels to other Chinese ports such as Guangzhou, and port managers are

Figure 7. Top 20 ports by continent



Data Source: UNCTAB, *Review of Maritime Transport*, 88.

even concerned that Hong Kong may lose its status as the third largest port in the region after Shanghai and Singapore.

Port congestion and optimistic estimates of future macro trade growth through and with the Indo-Pacific is forcing planning and construction of vast new container port areas. A notable example is the massive project to relocate Singapore's main container terminal away from the longstanding PSA facility located in the heart of the city to an expanded Pasir Panjang facility; located in the country's southwest. Aside from the logistical imperatives, the US\$2.85 billion investment by PSA International is testament to its conviction in the future growth of seaborne trade and the strategic necessity for Singapore to remain a global maritime trading superpower.¹¹

Oil and gas terminals

From the point of view of the economic security of the producer countries in this space and the energy security of the major consuming powers in Asia, in particular China, Japan and India, there is no more important single factor than the unimpeded export of crude oil from Iran, Iraq, Kuwait, Saudi Arabia and the UAE. There are a large number of oil terminals within the Persian Gulf and Arabian Peninsula space that contribute to export approximately 18 million barrels of oil per day. With 11 terminals, the UAE has the most, followed in succession by Iran and Saudi Arabia with six each, and then Qatar, Kuwait, Oman, Yemen and lastly, Iraq.

The dominant player in this vital activity remains Saudi Arabia. Saudi Aramco's terminals handle more than¹² 3,000 tanker loadings per year. Aramco terminals are located at Ras Tanura and Ju'aymah on the Arabian Gulf coast and at Jiddah, Rabigh, Jaizan, Yanbu' and Duba on the Red Sea coast. However, it is the significant dominance of Ras Tanura and Ju'aymah in terms of loading and export capacity that sets them apart. The two terminals alone account for over 32% of total crude exports by sea from the region, and almost 90% of Saudi Arabia's annual exports of crude oil. This pivotal concentration of export capacity renders these Saudi terminals arguably the two single-most important crude oil export facilities in the world. In 2014, average global consumption of oil stands at approximately 92 million barrels of oil per day, representing an average annual consumption of some 33.58 billion barrels. Of this, Ras Tanura and Ju'aymah alone account for 1.477 billion barrels, or 4.4%.¹³

VLCCs bound for the major refineries in China, Japan, South Korea, India, Singapore, Europe and the United States load approximately 1.3 billion barrels of oil each year at Ras Tanura and Ju'aymah.¹⁴ These facilities are thus *de facto* the most vital single terminals for the crude oil supply-security for the major importing states in the Indo-Pacific maritime realm. Indeed, were the terminals to be put out of commission, the impact upon the region and the wider global oil market would be severe in the extreme as the pipeline capacity within Saudi Arabia is currently insufficient to divert the terminals' output to the Kingdom's primary Red Sea terminal at Yanbu.

Kharg Island in Iran, Jebel Dhanna Terminal in the UAE and Kuwait's Mina al Ahmadi constitute the second tier output terminals in the region with a combined export output representing 28.11% of the region's total; almost one third.¹⁵ Though Saudi Arabia's maritime export capacity tends to overshadow that of other producers in the region, it can

quickly be seen that even if the total maritime export capacity of Iran, the UAE and Kuwait individually were to be compromised, the effect on dependent countries and the market-volume/price dynamic would be considerable.

LNG terminals and exports

Ras Laffan Industrial City, inaugurated in February 1997, is situated along the northeast coast of Qatar and covers an area of 106 sq km. The facility's primary purpose is the production, storage and loading of LNG, and to a lesser extent, the production of gas-to-liquid petroleum products using natural gas as feedstock. In March 2007, Qatar solidified its leading role in world LNG production when *RasGas* completed its fifth LNG production train, giving the country a total of 30.7 million metric tonnes (MMt) (or 1.5 trillion cubic feet [Tcf])¹⁶ of annual liquefaction capacity, the largest single source in the world.

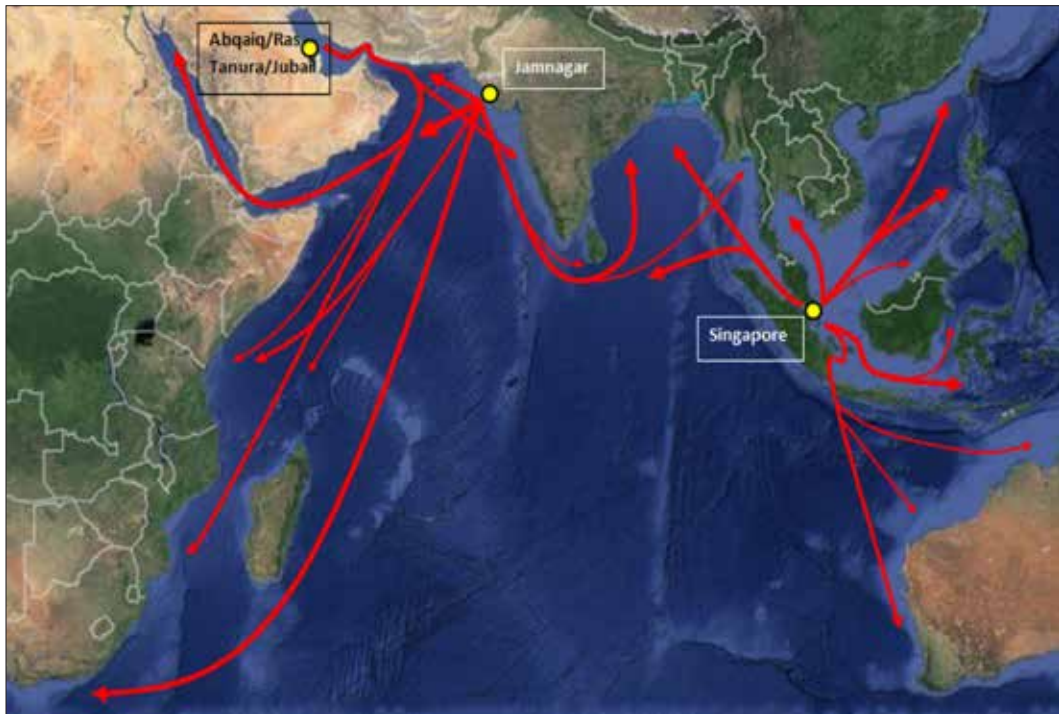
Physically and in terms of location, Ras Laffan's petroleum geopolitical significance is further enhanced due to two main factors—the scale of Qatar's gas supply and the country's position. Qatar's North Dome gas field is part of a larger structure—the South Pars/North Dome gas condensate field, which is shared between Iran and Qatar. The structure is the largest single gas field in the world. South Pars (which is located in Iranian waters) is the northern part of the structure, with the North Dome located to the south in Qatari waters. With reserves in place equivalent to some 360 billion barrels of oil equivalent (BOE), the field is the planet's biggest single hydrocarbon accumulation; larger than the world's largest oil field, Ghawar, in Saudi Arabia. The gas reserve estimates for the Qatari section stand at 900 tcf (25.5 tcm) of recoverable gas, equating to virtually 99% of Qatar's proven reserves and a staggering 14% of the world's total proven gas reserves.¹⁷

By way of a concluding overview of the Indo-Pacific region's importance as a source and exporter of LNG, data analysis reveals the relative contribution of various key terminals and source countries viewed in terms of numbers of sailings per year, primarily to markets in Japan, China, South Korea and India. Though Ras Laffan is clearly the largest and most strategically vital single terminal in the region with over a thousand sailings of LNG carriers per year, Australia aggregate sailings to key Asian markets is 357, placing it in a convincing second place in terms of strategic source importance for the Indo-Pacific maritime realm. Combined, these terminals export 55.9% of all the LNG transported by sea in the world. Furthermore, it is estimated that Australia's export volume is set to expand by over three times from its current level of 24 million tonnes per year to over 80 million before the end of this decade, thus making the country the number one exporter in Indo-Pacific over Qatar.¹⁸

Strategic refining hubs

Almost a fifth (18.1%)—of the globe's aggregate refining capacity occurs in the Indo-Pacific region.¹⁹ Indeed, the region's primary refining nodes—Jubail, Jamnagar and Singapore—have reshaped the composition and pattern of the region's petroleum trade so significantly that these facilities are now amongst the most strategically significant single industrial sites in the northern Indian Ocean. Changes in the long-established global patterns of crude oil transportation, once thought to be a fixed phenomenon, which are being recast as a result of the significant expansion of refining capacity, are also altering the patterns of petroleum trade in the wider Indo-Pacific area as refining capacity and distribution capacity builds in the Indian Ocean whereas before this capacity dominance resided largely in north-east Asia.

Figure 8. Map of petroleum shipping flow lines



Source: Rupert Herbert-Burns, 2014.

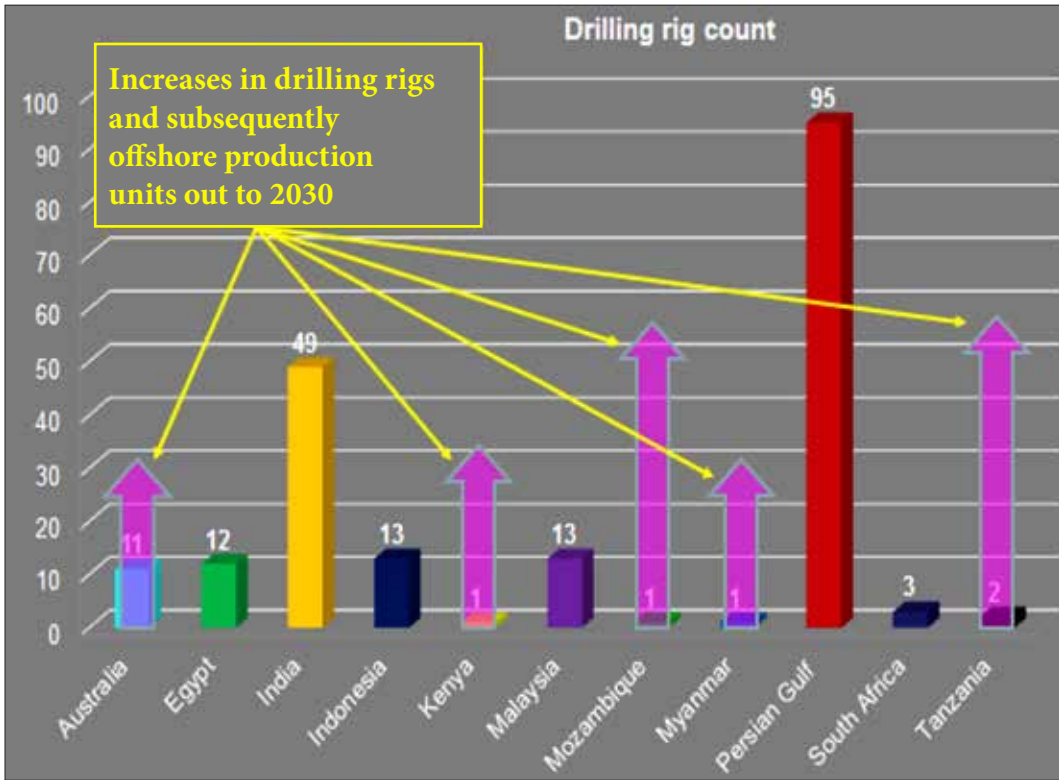
The progressive increase in the product tanker fleet, particularly the larger variants, has been driven by the increasing emphasis in international trade of refined product and distillates from major refining complexes and those countries in parts of Africa and Asia with limited or no refining capacities. Large product tankers, with the capability to convey a wide range of different products, function as a “petroleum lifeline” for some states and very distant local storage and distribution facilities. This has been the case for major refineries in Saudi Arabia and Singapore and, increasingly, the export-configured refineries in India. Saudi Aramco’s refining complex at Jubail on the Kingdom’s Persian Gulf coast and Reliance Industries’ massive refinery at Jamnagar in Gujarat (currently the largest single-site refinery in the world) can be defined as *strategic refining hubs*, while Singapore is arguably the world’s optimum example of a *petroleum gateway*.

Figure 8 reveals how product/distillate flow lines emanate from the big three hubs – with refined products not only reaching those Indian Ocean states and territories with limited or not refining capacity of their own, but also reaching deep into the western and north-western Pacific. Products from Jubail and Jamnagar are also exported to Europe and West Africa.

Shipbuilding and new vessel technology

The ship-building industry in the Indo-Pacific is in the midst of a consolidation process whereby inefficient yards are being shut down, client buyers are seeking greater quality while squeezing on cost—it is certainly a buyers’ market, and building capacity is adjusting to lower future demand. The major success story centers on the high turnout of sophisticated oil exploration and production units, such as drill-ships and floating production units

Figure 8. Drilling rig count by country



Source: Rupert Herbert-Burns, 2014.

from the South Korean yards—Samsung Heavy Industries and Daewoo. Building activity of jack-up drilling rigs, floating production, storage and offloading unit (FPSO) conversions and offshore support vessels in Singapore continues apace, with the Keppel yard showing the most impressive gains. Figure 9 illustrates how the growth in exploratory drilling in the Indian Ocean region will continue to drive the need for more drilling rigs in the region. Although tensions are still high in the South China Sea, in the fullness of time demand for more shallow-water drilling capacity will also emerge.

Separately, one of the key drivers of ship-building growth for the major Asian yards is the upswing in demand for lifting many of the major bulk commodities of iron ore, coal and grain, supported by expanding demand for the minor bulks such as fertilizer, logs and soya.

Paradoxically, building or and new orders for the latest high-capacity super post-Panamax container vessels continues as Maersk’s competitors attempt to emulate the strategy of the Danish giant’s development of their Triple-E class of 18,000 TEU capacity ships. These new leviathans of the Indo-Pacific SLOCs represent the very latest manifestations in commercial shipping technology as evidenced by the name of the class—Triple-E, whereby the vessel generate greater efficiency by being able to lift more containers in a single hull over great distances; increased economy is achieved through up-scaling and more fuel-efficient propulsion, which in turns renders the ships more environmentally friendly by reducing CO2 and other emissions per ton mile.

Debate concerning the efficacy of sustained building of new mega-capacity container vessels continues. Nevertheless, it is the long-term expansion campaigns the major container lines, the strategic benefits of trading strings with high-capacity ships, and the positive economies of scale inherent in being able to lift huge numbers of TEUs in a single hull, which will underpin the large new-build order-books of the major builders in South Korea and China.

As an overall indication of the positive outlook for Asian ship-builders, the data indicates that the cost of both new-build and secondhand vessel started to climb in 2013 on owner and charterer expectations of a macro trading recovery. However, some analysts warn that some operators will still only break even in 2014, and that recovery may falter in 2017 when tonnage overcapacity could again overtake demand for lift in some trades, including the east-west-east liner trade.

Outlook

The Indo-Pacific maritime realm contains several of the cornerstones of short-to-medium macro-economic resilience and growth, notably China and India, and Africa will become a key driver of long-term regional demand growth. These cornerstones are in different ways also sources of raw material and manufactured good supply. When combined with the maritime links and shipping capacity that links the markets and centers of production of Europe, Africa, Asia and Australasia, the contribution of the Indo-Pacific trading system to the state and future prosperity of the global economy is impossible to overstate. Encouragingly, at the time writing, the outlook is fairly sanguine. Ship owners are confident that maritime trading fundamentals will support an upturn well into 2016. Bulk cargo trades are trending towards growth as demand growth outstrips available vessel tonnage. Trade in refined petroleum products and bulk gas remains resilient. This positive outlook is tempered by concerns over weak container shipping fundamentals and declining regional and global demand for crude oil, which is threatening bulk liquid freight rates.

Regional and global economic fluctuations and their commensurate effects upon the volume and pace of seaborne trade in the Indo-Pacific are axiomatic. However, as shown in this essay, the fundamentals of this vast maritime trading region underpin long-term resilience and growth in seaborne trade. In the end, these fundamentals speak for themselves: Aside from the considerable volume of containerised cargo processed by ports in the Indo-Pacific (approximately 30% of the global total), some 42.5% of all the world's crude oil, product and distillate trade is lifted from and within the region. The region is home to 49.6% of the entire world's proven reserves; almost a third of all global gas production; and, just under 56% of the total LNG lifted by sea. When combined with the expanding middle class segments in China and India—a vital driver of demand for finished and high-end manufactured goods, and the resilience of GDP figures for the major African economies, it is evident that this entire hemisphere will remain a growing and dynamic maritime trading space. Though it must always be born in mind that trade and economic security is also impacted by the inimical effects of persistent geopolitical insecurity, great power completion, and asymmetric security threats, it is the lasting and positive reality that states fundamentally also seek and gain some measure security through economic prosperity and trade.

About the Author

Rupert Herbert-Burns is Director of Triton Consulting and a non-resident Fellow at the Stimson Center in Washington, DC. A leading international maritime consultant, he engages in security and operational risk management projects for shipping, offshore oil and gas clients, and private maritime security firms with operations in Africa, Asia and Europe. Previously, as a director at Lloyd's Marine Intelligence Unit in Washington and London, Herbert-Burns was engaged in security-risk and shipping data analysis, port security surveys and threat assessment support roles for branches of the US military and government, NATO, UK Metropolitan Police and NYPD. As part of his reserve military service, Herbert-Burns works as a lead advisor to Her Majesty's Government and key British oil and gas companies with regards to petroleum sector security. Prior to his current professional activities, Herbert-Burns was commissioned as a warfare officer in the Royal Navy; serving worldwide on major surface warships, a conventional submarine, and support vessels. He also had subsequent service as an infantry platoon commander with the Brigade of Gurkhas. Herbert-Burns has master's degree (Security Studies) and a PhD (Petroleum Geopolitics) from the University of St Andrews in Scotland.

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Fisheries, Food Security, and Climate Change in the Indo-Pacific Region

David Michel

The Stakes

The living resources of the waters of the Indo-Pacific represent one of the region's most significant assets. According to the United Nations Food and Agriculture Organization (FAO), catches taken from the marine capture fisheries of the Indian Ocean and western Pacific have soared from less than 20 million metric tonnes in 1970 to 46 million tonnes in 2012, over 57 percent of the world catch. Among the world's fishing nations, 14 of the 18 largest producers (and all of the top 10) lie around the Indo-Pacific rim, accounting for more than two-thirds of the global haul. Aquaculture—farming fish, shellfish, and other aquatic animals in captivity—has expanded equally rapidly, growing five-fold globally since 1980, to nearly 67 million tonnes in 2012. Thirteen of the top fifteen producers of farmed fish sit on the Indian or Pacific Ocean.¹

Harvesting the ocean's bounty contributes substantially to regional livelihoods and in many communities occupies much of the labor force. Fisheries contribute substantially to many regional economies, particularly in the small island states. In the Maldives, for example, fisheries represent some two percent of GDP, but constitute 90 percent of domestic exports. For the Seychelles, fisheries and associated activities (such as canning) represent 16 percent or more of formal employment, and half of foreign exchange earnings.² In the Pacific, half of all households in many small island nation coastal communities earn their first or second incomes from catching or selling fish.³ Fisheries are also economic lynch pins for several larger states. In Indonesia, for example, fishing and fish farming employ nearly six million people, a number greater than the labor force working in the country's vaunted textile and apparel industries. In addition, the FAO reckons that for each person directly employed in fish capture or aquaculture, another three to four gain jobs in related activities such as boat construction, gear maintenance, and fish processing, packaging, and distribution.⁴ Further, four of the five biggest fishery commodity exporters also hail from the region, with China earning USD\$18.2 billion in 2012, Thailand \$8.1 billion, Vietnam \$6.3 billion, and the US \$5.8 billion.⁵

More importantly, fisheries and aquaculture furnish vital food supplies to hundreds of millions of people around the Indo-Pacific. On average, the populations of China, Egypt, Japan, Malaysia, Mozambique, Myanmar, North Korea, the Philippines, Qatar, Seychelles, Singapore, South Korea, Tanzania, Thailand, and Vietnam obtain 20 percent or more of their animal protein from fish. The inhabitants of Bangladesh, Comoros, Indonesia, Maldives, and Sri Lanka get more than half of the animal protein in their diets from fish.⁶ Fisheries thus contribute to human security and social welfare both as a food source and as a source of livelihoods.

Around the Indian Ocean, littoral states large and small are moving to seize on these trends. Australia, noting that global demand for fish, fish meal, and fish oils will double in value by 2050, plans to capitalize on its proximity to increasingly affluent Asian markets to boost exports of “clean and green” food commodities, positioning itself to reap the benefits of building an “environmentally friendly” product brand, according to a recent government

Figure 1. Marine capture fisheries: major producer countries

2012 Ranking	Country	Continent	2003	2011	2012	Variation	
						(Percentage)	
			(Tonnes)			(Percentage)	
1	China	Asia	12 212 188	13 536 409	13 869 604	13.6	2.4
2	Indonesia	Asia	4 275 115	5 332 862	5 420 247	27.0	1.7
3	United States of America	Americas	4 912 627	5 131 087	5 107 559	4.0	-0.5
4	Peru	Americas	6 053 120	8 211 716	4 807 923	-20.6	-41.5
5	Russian Federation	Asia/ Europe	3 090 798	4 005 737	4 068 850	31.6	1.6
6	Japan	Asia	4 626 904	3 741 222	3 611 384	-21.9	-3.5
7	India	Asia	2 954 796	3 250 099	3 402 405	15.1	4.7
8	Chile	Americas	3 612 048	3 063 467	2 572 881	-28.8	-16.0
9	Viet Nam	Asia	1 647 133	2 308 200	2 418 700	46.8	4.8
10	Myanmar	Asia	1 053 720	2 169 820	2 332 790	121.4	7.5
11	Norway	Europe	2 548 353	2 281 856	2 149 802	-15.6	-5.8
12	Philippines	Asia	2 033 325	2 171 327	2 127 046	4.6	-2.0
13	Republic of Korea	Asia	1 649 061	1 737 870	1 660 165	0.7	-4.5
14	Thailand	Asia	2 651 223	1 610 418	1 612 073	-39.2	0.1
15	Malaysia	Asia	1 283 256	1 373 105	1 472 239	14.7	7.2
16	Mexico	Americas	1 257 699	1 452 970	1 467 790	16.7	1.0
17	Iceland	Europe	1 986 314	1 138 274	1 449 452	-27.0	27.3
18	Morocco	Africa	916 988	949 881	1 158 474	26.3	22.0
Total 18 major countries			58 764 668	63 466 320	60 709 384	3.3	-4.3
World total			79 674 875	82 609 926	79 705 910	0.0	-3.5
Share 18 major countries (percentage)			73.8	76.8	76.2		

Source: FAO Fisheries and Aquaculture Department, *The State of World Fisheries and Aquaculture 2014* (Rome: FAO, 2014).

White Paper.⁷ Meanwhile, the Mauritius Ministry of Fisheries aims to transform the island into an Indian Ocean “Seafood Hub,” offering services along the entire value chain from unloading catches to warehousing, processing, and distribution of seafood products.⁸

Yet, the long-term health of fisheries in Indo-Pacific is difficult to gauge. Fisheries production naturally varies from year to year, and data on catches is also frequently inadequate and many specific regional fisheries and species stocks remain unassessed. Total annual capture from global marine fisheries has remained relatively stable in the period 2007 to 2012 at about 80 million tonnes. In the Indian Ocean, catches in the western portion have held steady over the past decade, but catches in the eastern region have surged more than a third since 2003. In the Pacific, catches in the northwest and central western areas have grown modestly over the same period, while falling by almost 18 percent in the southwest. (See Figure 2) The total national wild fish catch of some countries in the region can include

significant amounts of fish harvested outside coastal waters and the 200 nautical-mile Exclusive Economic Zone (EEZ), and in some cases catches from beyond the Indian Ocean or western Pacific. Despite the appearance of relative stability in the composition of the catch by species and distribution by country, fishing area and species in some cases have been changing markedly in recent years. Fish size has been steadily decreasing for a number of species, and mature fish are increasingly scarce. In general, the most commercially important fish species in both bodies of water are considered overfished.⁹

Climate Change Impacts in the Indian Ocean and western Pacific

Coastal and marine areas figure among the most vulnerable of all environments to global climate change.¹⁰ Projected impacts from global warming include rising sea levels, stronger tropical cyclones, larger storm surges, increasing sea surface temperatures, and—as the oceans absorb more of the carbon dioxide that human activities emit to the atmosphere—growing acidification of surface waters. Climate change will also interact with other human stressors on marine systems, such as overfishing, habitat destruction, and marine pollution, in complex patterns. Significant portions of the Indian Ocean and western Pacific already figure among the most highly impacted marine ecosystems on earth.

The consequences of these multiple pressures for specific fisheries are difficult to evaluate. In some cases the impacts may be additive, that is to say cumulative of the impacts of each individual stressor. But some effects may be off-setting, the impacts of one stressor mitigating the impacts of another. By the same token, interactions between still other stressors may be synergistic, exacerbating negative impacts beyond the sum of individual pressures. Yet at present, little is known about how the ultimate effects of myriad stressors exerting overlapping pressures in concert may vary over time, between different marine ecosystems, or between species, further complicating policy efforts to manage fisheries sustainably.¹¹ For fisheries, coastal and marine ecosystems, and communities around the Indo-Pacific, the repercussions could be considerable, threatening the livelihoods, health, and welfare of millions of people.

Climate change will expose fisheries and fisher communities to increasing risks at sea and on shore. Along their coasts, Indo-Pacific nations may suffer stronger and more frequent storms and higher storm surges. Recent studies suggest that tropical cyclones in the region could grow more intense, with likely increases in extreme high water levels and maximum wind speeds.¹² Projected climate impacts to the Indian Ocean and western Pacific littoral especially threaten the region's growing maritime and fishing infrastructure. Cyclones and storm surges can destroy ports, docks, fishing boats and equipment, storage and processing facilities, as well as the ponds, cages, and other installations and material necessary for coastal aquaculture. In May 2008, for example, Cyclone Nargis smashed into Burma, leaving 27,000 fisheries workers missing or dead, destroying over 3,000 boats, and inflicting losses of 160 billion kyat (US\$ 24.5 billion) in damages and forgone production on the country's fishing sector. Typhoon Haiyan, which struck the Philippines in November 2013, is estimated to have damaged or destroyed 30,000 fishing boats, with total damages from the storm impacting more than 200,000 fishing households.¹³ Beyond such acute natural disasters, progressive sea level rise may jeopardize freshwater aquaculture in low-lying coastal areas, contaminating ponds and fish pens by gradual saltwater intrusion.¹⁴

Figure 2. Marine capture: major fishing areas

Fishing area code	Fishing area name	Variation				
		2003	2011	2012	2003–2012	2011–2012
		(Tonnes)			(Percentage)	
21	Atlantic, Northwest	2 293 460	2 002 323	1 977 710	-13.8	-1.2
27	Atlantic, Northeast	10 271 103	8 048 436	8 103 189	-21.1	0.7
31	Atlantic, Western Central	1 770 746	1 472 538	1 463 347	-17.4	-0.6
34	Atlantic, Eastern Central	3 549 945	4 303 664	4 056 529	14.3	-5.7
37	Mediterranean and Black Sea	1 478 694	1 436 743	1 282 090	-13.3	-10.8
41	Atlantic, Southwest	1 987 296	1 763 319	1 878 166	-5.5	6.5
47	Atlantic, Southeast	1 736 867	1 263 140	1 562 943	-10.0	23.7
51	Indian Ocean, Western	4 433 699	4 206 888	4 518 075	1.9	7.4
57	Indian Ocean, Eastern	5 333 553	7 128 047	7 395 588	38.7	3.8
61	Pacific, Northwest	19 875 552	21 429 083	21 461 956	8.0	0.2
67	Pacific, Northeast	2 915 275	2 950 858	2 915 594	0.0	-1.2
71	Pacific, Western Central	10 831 454	11 614 143	12 078 487	11.5	4.0
77	Pacific, Eastern Central	1 769 177	1 923 433	1 940 202	9.7	0.9
81	Pacific, Southwest	731 027	581 760	601 393	-17.7	3.4
87	Pacific, Southeast	10 554 479	12 287 713	8 291 844	-21.4	-32.5
18, 48, 58, 88	Arctic and Antarctic areas	142 548	197 838	178 797	25.4	-9.6
World total		79 674 875	82 609 926	79 705 910		

Source: FAO Fisheries and Aquaculture Department, *The State of World Fisheries and Aquaculture 2014* (Rome: FAO, 2014).

Additional climate change impacts will manifest in the ocean itself. As world emissions of greenhouse gases (GHGs) have grown, the oceans have absorbed increasing amounts of this added carbon dioxide from the atmosphere. Since the beginning of the Industrial Revolution, the cumulative ocean uptake amounts to some 30 percent of humanity's total CO₂ emissions. The extra carbon dioxide alters the ocean's chemistry, rendering it more acidic (measured by a lower pH value). From preindustrial levels, the acidity of the surface ocean layer has spiked by 26 percent, corresponding to a drop in pH of more than 0.1 units. If greenhouse emissions continue unabated, pH levels will tumble a further 0.13 to 0.42 points over the 21st century, a change 30 to 100 times greater than those seen in the past and at a rate unprecedented in at least the past 300 million years.¹⁵ By the same token, as climate change warms global average temperatures, the oceans are also absorbing heat from the atmosphere. In the past 50 years, the oceans have soaked up 93 percent of the supplemental heat generated by global warming, boosting surface ocean water temperatures by about 0.1°C per decade since 1971. By 2090, average surface ocean temperatures are projected to be nearly 3°C higher than in 1990, under a continuing high GHG emissions scenario.¹⁶

Over the coming decades, oceanic warming and acidification could significantly distress marine ecosystems and global fisheries, affecting the physiology, reproduction, and development of individual species as well as the relations between species and their habitats, food sources, competitors, predators, and pathogens.¹⁷ One recent study, for instance, finds that changes in ocean temperature and biogeochemical properties could substantially affect the ecophysiology of marine organisms, diminishing the average maximum body weight of ocean fishes by 14 to 24 percent by 2050. The largest projected shrinkage—24 percent—occurs in the Indian Ocean.¹⁸

Available analyses suggest that climate change could also engender substantial shifts in catch sizes and locations by mid-century.¹⁹ Across the Indo-Pacific, for example, many tropical fisheries depend upon coral reefs for food and habitats. Globally, coral reefs are thought to support about 10 percent of all fish caught in tropical countries and 20 to 25 percent of fish caught by developing island states. But climate change imperils up to two-thirds of the world's coral reefs with long-term degradation from coral bleaching, storm damage, and other pressures. As a result, production of reef fish in the Pacific is projected to drop 20 percent by 2050.²⁰

Overall, global maximum potential catches may witness little change (+ 1%), but projected potential catches in different regions under climate change vary from considerable increases to precipitous declines. In Indo-Pacific fisheries, model simulations project marked increases in maximum catch potential in 2055 relative to 2005 levels in much of the Arabian Sea and East African waters, while catch potentials may plummet by 30 to 50 percent or more in the Red Sea, Persian Gulf, Bay of Bengal, and the high seas of the equatorial Indian Ocean. Similarly, maximum catch potentials may rise 50 to 100 percent in parts of the Northwestern Pacific, while falling more than 50 percent across the western central Pacific. For Indonesia, lying between the Indian Ocean and Pacific, catch potentials within its EEZ are projected to slip more than 20 percent by 2055, the largest drop for any country.²¹

Such a significant shuffle of fishing potential could dramatically alter fisheries politics across the region. Rising catch potentials in the western Indian Ocean and Arabian Sea could draw in competing fleets from Europe, China, and elsewhere. By the same token, about one third of the current catch from the Bay of Bengal comes from fishing areas beyond national EEZs. This same area is projected to suffer dramatic declines in catch potential at mid-century. Falling catch potential in the open ocean could push regional and extra-regional fleets to seek out new fishing grounds to make up the difference, potentially colliding with similar efforts by other fleets.²² Large-scale redistribution of world fish catches could risk creating both winners and losers, reverberating across the Indo-Pacific and beyond.

Economically, ongoing climate change risks substantial harm to world fisheries. Estimates indicate global warming of 2°C could cut the value of world catches some 17 to 41 billion dollars a year by 2050, with East Asia and the Pacific bearing the deepest losses.²³ Equally troubling is the danger to the region's food security. All told, the food security vulnerability of any one country to climate change impacts on fisheries can be construed as a combination of that country's fisheries catch exposure to climate impacts, the country's dependence on fish and seafood consumption as a source of available protein, and the country's adaptive capacity—expressed through GDP per capita, projected population growth, and present rates of undernourishment in the

population. Evaluated on these measures, one recent analysis ranked eight countries in the Indo-Pacific region—Comoros, Cook Islands, Kiribati, Eritrea, Mozambique, Madagascar, Pakistan, and Thailand—among the ten most vulnerable nations worldwide to food security threats from climate impacts on fisheries.²⁴

Regional Organizations and Initiatives for Sustainability Cooperation

Several regional and international agreements exist to promote the sustainable management of the Indian and Pacific Oceans' resources. Among the most important, the 1982 United Nations Convention on the Law of the Sea (UNCLOS) underpins other international treaty arrangements addressing marine resources by establishing the regime of EEZs defining national maritime limits and jurisdiction, bringing waters out to 200 nautical miles under the regulation and control of coastal states. Other international instruments such as the 1993 Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas; the 1992 Convention on Biological Diversity; the 1995 UN Agreement on Straddling Fish Stocks and Highly Migratory Stocks; the 1995 UN Food and Agriculture Organization Code of Conduct for Responsible Fisheries and follow-on 1998 International Plan of Action for the Management of Fishing Capacity; the 2001 International Plan of Action to Prevent, Deter and Eliminate Illegal, Unregulated and Unreported Fishing; and the 2013 UN General Assembly Resolution on Sustainable Fisheries also contain provisions on cooperation to optimize fisheries management and protect marine biodiversity.

These international arrangements constitute a patchwork of participation and compliance. All Indo-Pacific states except Iran, the United States, and North Korea are party to UNCLOS. Many important fisheries states, though, have not joined the 1995 UN Fisheries Agreement on Straddling Fish Stocks. The 1995 Code of Conduct for Responsible Fisheries and related International Plans of Action (IPOAs), for their part, are widely deemed import tools for sustainable management, but they are voluntary agreements. Compliance with the Code, moreover, has proven very poor, with Indo-Pacific countries figuring among the least conformant.²⁵

The Indo-Pacific also counts a number of fisheries commissions and broader environmental organizations. Yet these institutions have not been constructed to encompass the whole region, but instead operate at the level of a sub-regional system or an individual species.²⁶ In the Indian Ocean, for example, the Indian Ocean Tuna Commission (IOTC) encompasses the entire Indian Ocean, but only addresses the catch of tuna and “tuna-like” species. Similarly, the Commission for the Conservation of the Southern Bluefin Tuna (CCSBT) covers the migration range of that species across the southern Indian Ocean, but its membership is small. The Southwest Indian Ocean Fisheries Commission (SWIOFC) has the waters off of East Africa as its area of competence, covering all species in this zone, but has no management powers. In the Persian Gulf and Gulf of Oman, the Regional Commission for Fisheries (RECOFI) can make management recommendations, but they are not binding if a state objects. The Bay of Bengal Large Marine Ecosystem (BOBLME) Project unites the eight littoral countries from the Maldives to Malaysia to formulate a common program of action for improved management of the coastal environment and fisheries, but it is limited

to the Bay of Bengal. A new body, the South Indian Ocean Fisheries Agreement (SIOFA), covering all fish in much of the western and southern ocean beyond national EEZs, has only recently entered into force in June 2012.

In the Pacific, the Western and Central Pacific Fisheries Commission (WCPFC) enjoys the broadest remit, covering all species of highly migratory fish stocks in the region and counting 24 states, seven territories, and the European Union among its members. The North Pacific Anadromous Fish Commission (NPAFC) espouses relatively rigorous regulatory objectives, but covers only particular species of salmon and trout and applies only to Canada, Japan, Korea, Russia, and the US, with any important management decisions taken only by consensus. The Pacific Islands Forum Fisheries Agency (FFA) holds only advisory authority, while the Asia-Pacific Fishery Commission (APFIC)—which also includes part of the Indian Ocean—possesses a broad mandate to promote the conservation and management of aquatic resources among its twenty members, but it has no regulatory powers and does not encompass the western Indian Ocean. The South Pacific Regional Fisheries Management Organization (SPRFMO), finally, like the SIOFA, only entered into force in August 2012.

While the management effectiveness and sustainability of the SIOFA and SPRFMO cannot yet be evaluated, recent assessments of the world's Regional Fisheries Management Organizations (RFMOs) found many performing poorly.²⁷ Comparing fishing mortality and biomass to the rates that would maintain the maximum sustainable yield, the IOTC and NPAFC received a score of 77.8 percent on a scale of 0-100. The WCPFC, though, garnered only 66.7 percent, while the CCSBT received a score of zero percent. The effectiveness of both international and national-level management and regulation is limited by high levels of noncompliance. Fishers have little incentive to limit their catches since monitoring and enforcement of catch limits is low and much marine legislation is outdated. In response to this problem, some fisheries management has moved towards the decentralization and localization of management authority. Local communities in the southwest Indian Ocean, for example, have increasingly asserted their own regulations and enforcement of fish stocks.

By the same token, the Indo-Pacific area is home to a number of regional economic organizations and political associations that also vary in their mandates and membership. Though primarily directed to economic and security issues, many of these institutions have increasingly moved to engage environmental issues and sustainable development policy. As such, they may provide broader fora in which fisheries management challenges that transcend national borders and single issue agencies may be set in larger economic, political, and human security contexts potentially amenable to regional cooperation. Even so, these regional economic and political bodies confront some of the same difficulties as the fisheries organizations in the form of geographical fragmentation and the lack of binding decision authority across their members.

The Indian Ocean Rim Association (IORA), previously known as the Indian Ocean Rim Association for Regional Cooperation, has the broadest membership. It includes a wide array of Indian Ocean rim states and aims to foster economic, scientific and cultural cooperation. The IORA membership counts 18 Indian Ocean states—with some important absences—plus efforts to engage extra-regional powers such as the US as dialogue partners.

While the IORA charter does not extend to security issues, piracy off of Somalia has been raised as a matter of mutual concern to maritime trade and fisheries. The IORA is not perceived as being particularly effective and some member states, notably India, have mooted reform measures that would expand the charter to better facilitate regional cooperation on maritime issues and the environment.

Nevertheless, region-wide institutions are lacking. The association of Southeast Asian Nations (ASEAN), the South Asian Association for Regional Cooperation (SAARC), Southern African Development Community (SADC), the Gulf Cooperation Council (GCC) and the Indian Ocean Commission operate at the sub-system level. Other bodies such as the African Union and the Asia-Pacific Economic Cooperation (APEC) partly overlap the Indo-Pacific region while also incorporating other members beyond it. The ASEAN Regional Forum (ARF) includes Southeast Asian and eastern Indian Ocean states but does not include western Indian Ocean states. Similarly, Australia has proposed an Asia Pacific Community (APC) to comprise the 21 members of the Asia Pacific Economic Community (APEC) together with the addition of India. The APC would promote regional dialogue on economic, cultural, strategic and security. Yet the focus is predominantly directed toward the Pacific, with the inclusion of Russia and the US, while it appears that Indian Ocean states like Pakistan, Bangladesh, Sri Lanka, and East African and Middle Eastern nations may not be included.²⁸ There remains no region-wide Indo-Pacific arena in which convergent regional food security, economic and environmental issues—including fisheries—can be considered in a collectively inclusive manner.

Nevertheless, regional countries are coming to recognizing threats to fisheries from climate change and trying to bring fishing under cooperative and regulatory regimes. The intergovernmental Southeast Asian Fisheries Development Center (SEAFDEC), for instance, established in December 1967, now seeks to promote sustainable fishing. The Center's Member Countries are Brunei, Cambodia, Indonesia, the Lao PDR, Myanmar, the Philippines, Singapore, Thailand, and Vietnam (all members of ASEAN), plus Japan. In 2009 at the 41st meeting of its policy-making Council of Directors, the Council adopted a new SEAFDEC Program Framework, which includes a mandate to develop and manage the fisheries potential of the region by rational utilization of the resources for providing food security and safety to the people and alleviating poverty through transfer of new technologies research and information dissemination activities".²⁹

At the bilateral level, some indicators suggest the possibility that shared interests can foster sustainable fisheries management even in the face of the most serious surrounding political disputes. The 2000 Boundary Agreement between Vietnam and China over the Gulf of Tonkin marked the limits of the territorial seas, contiguous zones and Exclusive Economic Zone of both countries. The agreement on boundaries entered into effect in 2004 with ratification by both the Chinese and Vietnamese, and coincided with a parallel agreement on fishery management ratified on the same day. The fisheries agreement established a Joint Fisheries Commission intended to allow for successful co-management of fish stocks that crossed the newly created maritime border in order to prevent depletion of those resources. Though there have been clashes between fishermen and fishery administrations of both sides and frictions in the South China Sea continue to test their relationship, joint patrols of the Gulf of Tonkin have continued since 2005.³⁰

Conclusion

A staple of regional food security, fisheries represent one of the Indo-Pacific's most important resources. The sustainable usage of those natural assets will be a key to securing the region's future welfare. As the global population swells from 7 billion to 9 billion by mid-century, some studies anticipate that world fish production might need to rise by half from current levels to keep pace with projected food requirements. Yet current overexploitation of most of the planet's fishing grounds coupled with emerging climate and other environmental strains on marine ecosystems cast doubt on whether the world's fisheries can readily achieve such yields sustainably without significant management improvements.³¹

The regional fisheries management organizations (RFMOs) and other international institutions can provide the governance tools to ensure the sustainable development of vital marine resources, but they must be strengthened and consistently implemented and enforced. The capacities of the RFMOs to formulate and apply sustainable strategies and regulations must be bolstered in line with current best practices and their performance regularly reviewed, updated, and—most importantly—coordinated regionally to eliminate gaps in geographical and species coverage and address transboundary issues such as mitigating and adapting to climate pressures.

Ultimately, political will from all the Indo-Pacific littoral and fishing countries will be required to promote effective management collaboration. Most of the current governance efforts fall short in this regard. The regional mechanisms that do exist have successfully identified many of the most important risks to sustainability and food security. Whether the necessary cooperation will develop fast enough to meet these challenges remains an open question.

About the Author

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A Strategy for Securing the Maritime Commons

Girish Gujar, P.K. Ghosh and Hong Yan

Today, ninety percent of global trade is transported by sea.¹ Yet we have yet to arrive at a consensus on the appointment of a global, regional, or local constabulary to oversee the maritime realm. Nor is there a designated prosecuting authority to secure the maritime commons. This is not only an issue of resources and competency but also of mutual trust, acceptability, reliability, sustainability and motivation. Assuming that the principle that the strong protect the weak is still valid, it naturally then becomes the responsibility of the three strongest nations today, namely China, India, and the United States to jointly accept this role.

It appears that in near future, the world will witness a strong simultaneous coincidence and conflict of interests among the above mentioned three countries. This will lead to cooperation amongst them in some instances and the adoption of adversarial positions in others. There are two main reasons for this predicament. The first is the economic and military rise of China and India, almost at the same time. This will, to a certain extent, result in a strategic overlap, essentially due to the inherent global competition for markets and resources and for global dominance. The second reason is the decision of the United States to adopt a “pivot to Asia” strategy with the explicit intention to contain the rise of China by building a strategic alliance with India, Japan, and Australia. These events have the potential to result in rivalry and conflict.

All this is happening while the world is witnessing significant geo-political change. We are seeing a near collapse of good order and reigning lawlessness in nearly the entire Middle East, North Africa, and much of Eastern Europe. The US forces are pulling out of Afghanistan, while they may re-enter Iraq to start another endless and increasingly brutal war. The resulting vacuum risks being filled with sundry warlords who will be unable to bring stability to this region. It will also have a negative impact on the surrounding countries, particularly India and China, which have significant Muslim populations. A spillover of the Middle Eastern wars in this economically rising region will lead to disastrous consequences for all, particularly in its economic repercussions.

As such, most stakeholders believe that it becomes pragmatic for all three countries to share the responsibilities of securing the maritime commons, particularly in Asia, which the US (mainly) has been discharging (not very successfully and rather thanklessly) since the end of Second World War.² It will necessarily mean clear identification and acceptance of the consensually developed common objectives as well as enumerating and highlighting the areas of disagreements in order to enhance cooperation while trying to simultaneously deter the occurrence of conflicts in this region. The next step would be endeavoring to develop a short-term as well as long-term strategy, and finally preparing a roadmap to implement it.

Several analysts interviewed for our research have advised that there are several such important issues demanding attention, and that they should be prioritized with the top-most tasks being to draw a roadmap for developing a mutually beneficial tri-lateral relationship among the three powers. This paper attempts to explore this aspect by highlighting areas of cooperation as well as those of conflict and suggesting ways and means to enhance the one while diminishing the other.

Introduction

Presently the Indian Ocean is viewed as a more “active” ocean than the Atlantic and Pacific, as it is hosting a spectrum of activities ranging from extensive trade and transportation to important energy transfers which are quantitatively as well as qualitatively much larger in scope and size than that which can be found in the other two oceans. Given that nearly 100,000 ships transit the expanse of the Indian Ocean annually, it is a very trade-busy ocean.³ It is perhaps the only ocean through which Sea Lines of Communication (SLOCs) (reach out to the entire world, be it those originating from the Persian Gulf with oil and gas laden ships, or those with other cargo or commodities from the littorals, as well as transiting ships from the Far East. Significantly, some of the world’s most important choke points and narrow passages provide access to the Ocean, and these can have associated vulnerabilities.

As such, the current accent on increasing globalization in the economic field has for the littoral nations brought attendant maritime security concerns to the fore. Thus, with a rising trajectory of sea-borne trade, there seems to be a corresponding increase in asymmetric threats. Incidents of maritime transnational crime like modern piracy, terrorism, drug running, etc., in their ever evolving manifestations have emerged as the bane of the seafarer. As these maritime security challenges are essentially asymmetric in nature, there have been strident calls for effective law enforcement and maintenance of maritime order by all stakeholders.

This growing salience of sea-borne trade and the attendant rise in transnational threats in the region has also led to the adoption of enhanced cooperative approaches between navies of various Indian Ocean littoral countries in the form of numerous anti-piracy patrols which operate in the area, resulting in an eventual decrease in the number of piracy attacks. But the challenge remains as attacks continue to take place in further ranges due to the use of sophisticated technologies by pirates and other non-state actors.

It is against this backdrop that, to the old idea of collective security, concepts of common, comprehensive, and cooperative security have been added. Confusion was bound to follow as the term is used to describe different things or conditions in different contexts. The question is less one of “What, exactly, is security?” Rather, it is perhaps better phrased as “What are the different ways in which to conceive of security?” And what are the implications for policy? Because most theorizing about security has not been maritime focused, it is essential to place the development of concepts of maritime security within the context of the wider security debate.

Buzan et al. proposed that the concept of security can only be fully understood by integrating the interdependent “levels of analysis” and “issue sectors” or “dimensions” of security.⁴ Buzan’s levels of analysis are individual, national, and international (both regional and system-wide) security, while his issue sectors comprise military, political, societal, economic, and environmental security.⁵

The Indo-Pacific region in general—and Indian Ocean Region (IOR) in particular—is a region that is alive to political turbulence and a complex jostle for power between emerging powers rushing in to fill the perceived erosion of US primacy or influence. While the

erosion may be notional and debatable, the tussle for power exists in that many participating major players are seeking to enhance their strategic influence in the emerging niche they see vacated by the US, seeking primacy along with that of US. The list of serious contenders includes India and China, with countries such as Australia, Japan, Indonesia, and South Africa also in the fray, playing the role of a king-maker. This dynamic scenario, however, has also highlighted the distrust amongst the littorals, which in many ways has prevented the creation of an overall security architecture despite similar security priorities and, most importantly, a common maritime thread which runs through the region.

The other reason for this struggle is geo-political. We are witnessing a near collapse of good order in the Middle East with conditions of civil war in some states. The US is pulling out its troops from the region as policy makers cannot find any justification for their continuing presence in an endless conflict situation. The resulting vacuum will likely be filled with sundry warlords who will be unable to bring stability to this region. It will also have a negative impact on the surrounding countries, including India and China, which have significant Islamic populations. A spillover of the Middle Eastern conflicts in either of these countries would lead to disastrous consequences.

However, despite the strategic divergence and competitiveness on many issues in the region, both India and China are increasingly keen to assume the responsibilities of global policing of maritime commons which the US, so far, has been discharging after the exit of the British from the region in the late sixties. Given that the maritime capacities of most of the other littoral states are inadequate, it has become incumbent on India, China, and US, along with other capable maritime nations, to don this mantle. This will necessarily mean clearly identifying and stating the common objectives as well as enumerating the areas of disagreements. The next step would be endeavoring to develop a short-term as well as long-term strategy and preparing a roadmap to implement it.

Such a strategy will necessarily have to look beyond narrow national maritime boundaries towards the security of the global maritime commons. With the US maritime power in erosion (perceived or real), maritime disputes on the rise, and international maritime law being increasingly tested, the world can no longer take the security and openness of the maritime commons as a given.

While there are maritime nations like India and China that have the capacity to assist in sea governance, it must be remembered that it is of utmost importance to “carry along” other littorals in such an effort. Thus multinational forums in the region come to the fore, as they have an important role to play in this regards. Maritime initiatives like Indian Ocean Naval Symposium (IONS) started by India, and those like the Indian Ocean Rim Association (IORA) can also be used for cooperation for overcoming issues related to maritime security threats, thereby assisting in maintaining good order at sea and in sea governance. Similarly, the ASEAN Regional Forum (ARF), the ASEAN Defense Ministers Meeting and Dialogue Partners (ADMM Plus), and its associated agencies (e.g., the ASEAN Maritime Forum) provide institutions which encourage cooperation. However, one of the prime lacunae has been intra-governmental cooperation, which needs to be addressed first, before looking across the boundaries.

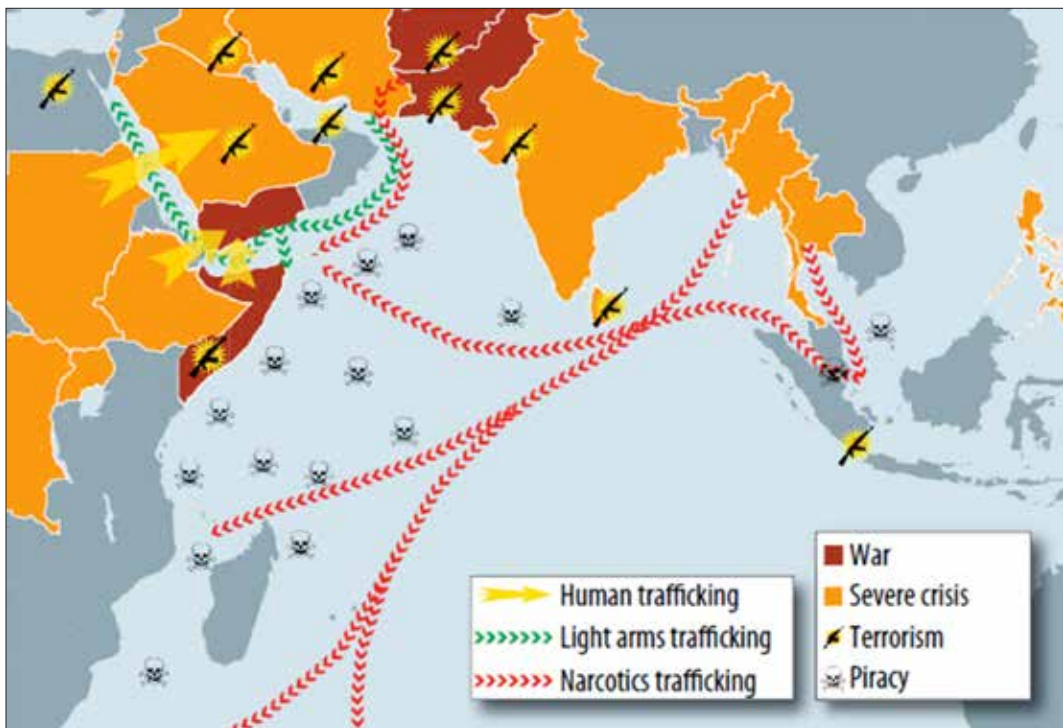
Altered Global Environment and Global Commons

These geo-political changes are reshaping the nature of the maritime commons. The global shift in maritime power thus harbors a strong potential for conflict and confrontation between regional powers and could slip out of control if caution is not exercised.

The main reason for this scenario is the global diffusion of maritime power as a result of the “rise of the rest,” above all, changing the geostrategic maritime balance. It will result in enabling the new entrants to project power beyond their territorial waters. Inevitably, neighboring countries will respond by strengthening their own power capacities.

The enhanced focus on regional maritime zones of influence appears to be one potential consequence of this development, and such countries also display the intent to dominate the weaker players within their zones. For instance, China has once again sought to reinterpret international boundaries. The geography of the seas, too, is also changing in other respects, such as the expected opening of new sea routes across the Arctic. As such, it will also lead to a greater competition for Arctic routes and Siberian energy resources. India and China have seized on this opportunity caused by reduced US imports from Latin America and West Africa, thus resulting in a redirection of maritime flows.

Figure 1: Major Security Concerns in the Indian Ocean



Source: Amit Pandaya, Rupert Burns, and Junko Kobayashi, *Maritime Commerce and Security: The Indian Ocean* (Washington, DC: The Stimson Center, February 2011), p.98. Political boundaries projected in the diagram are approximate.)

In the Asia-Pacific, minor incidents commonly spark security stand-offs and political crises, as witnessed recently between China on the one hand and Vietnam, the Philippines, and Japan on the other. Non-state actors, too, such as pirates, terrorists, and criminal syndicates can create “events” by limiting the freedom of navigation, in particular around the Horn of Africa and West Africa. This has enabled the use of private maritime security companies (PMSCs) that has been on the rise.⁶ The rapid growth of private security actors has added further complexity to the situation, as flag state policies concerning the use of armed guards vary. Together, these changes make for an increasingly complex and contested international maritime region.

The deep linkages of maritime terrorism and of “container security” was only realized after it was reported in January 2002 that the search of a vessel by US naval forces nearly yielded a group of Al Qaeda terrorists who had been hiding inside a well-equipped shipping container.⁷ A dramatic increase in containerized cargo and inadequate infrastructure to check all sealed containers led to the Container Security Initiative (CSI) and making ports International Ship and Port Facility Security Code (ISPS) compliant, but a robust and fool-proof method against such security lapses has yet to be created.

Closely associated with the problem of maritime terror is that of the phantom fleets which fly the Flags of Convenience (FOC), making them difficult to track as they routinely change names and registry. FOCs, common in the shipping world despite some procedural changes, still pose a major challenge to maritime security. It is estimated that there are about 30 such registries (some in private hands) mainly run by small islands or impoverished nations which have loose standards for registration of ships.⁸ While considerable work has gone into getting these registries to become more security-oriented and rigorous as a flag state, a lot still needs to be done.

The other primary concern is that of rising maritime terrorism. In the years to come, maritime terrorism is likely to manifest and evolve itself in many unique ways. The use of the seas as a supply chain link for terror attacks on land-based targets is likely to be a chosen methodology of terror outfits. While the seas ensure the easy passage of men and material for the attack, the land provides them with the publicity and number of victims unavailable at sea. Hence the constabulary functions of maritime agencies are likely to see an enhancement with the growing demand for a fool-proof coastal security system.

Role of India, China, and US

India is increasingly seen as crucial to the core US foreign policy interests in the Indo-Pacific region. As a nascent Great Power and an “indispensable partner”, India has emerged as an important facet of the US “pivot” or rebuilding strategy in Asia.⁹ Since 2004, Washington and New Delhi have been pursuing a “strategic partnership” that is based on convergent geopolitical interests. In this context, the US and India signed a “New Framework for India-US Defense” in 2005 for increasing cooperative approaches in military relations, defense industry, and technology sharing, along with the establishment of a “Framework on maritime security cooperation.”¹⁰ However it was only after a few crest and troughs that in June 2010 the two countries formally re-engaged with the US-India Strategic Dialogue initiated earlier.

While cooperative approaches in other fields have had their own ups and downs, the field with maximum potential for active cooperation has been in the maritime dimension. There has been a debate that the relationship at times has “evened off to a plateau,” with Indians feeling that the US was not doing enough to sustain its growth while the US felt that India was too slow in taking politico-bureaucratic decisions.¹¹ Notwithstanding this debate, newer areas of cooperation in the maritime dimension need to be highlighted to enhance this growing cooperation. In this context, several areas have the potential for greater cooperation between appropriate maritime agencies on matters regarding Maritime Domain Awareness (MDA). The US Coast Guard has made considerable progress in harnessing the entire gamut of MDA, while India has made unique progress in the aftermath of the Mumbai attacks of 2008 in the same field. The sharing of experiences and technology will be a welcome step in enhancing cooperation.

It is noteworthy that the main focus of any collaborative efforts between configurations of China, India, and the US will have to overcome certain historical disagreements and allied strains in relations which the three countries have had over the past few decades. All the three countries would also have to make additional efforts to enhance the “maritime bonding” between naval personnel and maritime agencies for mutual benefit. Thus, one approach is to concentrate cooperation in noncontroversial areas, which would in many ways serve as confidence building measures to enhance the bonding aspect. It is also necessary to enhance personnel-to-personnel interaction at the grass roots level to increase the mutual understanding of each country’s naval ethos, work culture, and thought processes.

The geostrategic significance of the South China Sea (SCS) is difficult to overstate. The SCS functions as the bridge between the Western Pacific and Indian Ocean. Host to important SLOCs, it carries nearly a \$1.2 trillion in trade annually and also supplies energy life lines to the energy deficient states in North East Asia and China.¹² Half of merchant fleet trade by tonnage, and almost thirty percent of crude oil trade globally pass through the region that provides transit between the Indian Ocean and the Western Pacific.¹³

In the recent past, the South China Sea region has emerged as a global flashpoint and a major maritime challenge, not only for the littorals and the contending states but for all the users and the stakeholders as well. In this volatile region, many claimant states have started resorting to aggressive posturing to reinforce their sovereignty over disparate islands and “rocks.” The simmering disputes and the resort to brinkmanship pose a serious threat to the peace and stability of the region. Unfortunately, the current, disenchantment with multilateral fora like ASEAN to find an amicable solution seems to be on the rise, making it imperative for external stakeholders to try and find peaceful solutions or enhance confidence amongst the parties.

As such, India, China, and US can and should play a stabilizing and an encouraging role by being active participants in some of the confidence building measures. After all, all three share the aim of maintaining peace and stability while ensuring the freedom of navigation and unhindered access to the movement of shipping trade across the region.

It is obvious that the above stated maritime threats and challenges affecting the region as a whole can only be overcome partially or fully through expanded cooperation. However, maritime cooperation between the three countries cannot be placed the same level

uniformly. While India and US on one hand, and the US and China on the other, do share a closer maritime bonding, the impetus for forming a closer bond between India and China is relatively nascent. Hence it would be appropriate to discuss the issue first under separate headings at the bilateral level between the countries and later at the trilateral level.

The two developing giants, India and China, share a number of common strategic objectives that revolve around the keenness to define their roles in the evolving geo-strategic dynamics of the region given their influence on global economics affairs. Both countries promote the cause of a multi-polar world, and both would prefer to be recognized as major international players alongside the United States. But at the same time, both would like to maintain their sovereign independence from outside influences that could be a legacy of the unhappy colonial experiences.

China and India had earlier shared a subterranean adversarial relationship but have recently been making history by starting to come together on the high seas for structured naval exercises. This move is a reiteration of the dictum that opportunities for symbiotic cooperation at sea are often more beneficial than those on land. Consequently, the continuing series of Sino-Indian Naval exercises in the seas off Shanghai or off Indian coasts add considerable impetus to the developing relationship.

At one level, these basic search and rescue (SAR) and other exercises between the Indian Navy and the People's Liberation Army Navy (PLAN) foster the general bilateral relationship and encourage "maritime closeness" between the naval forces. At another level, they provide each navy an opportunity to assess the professional capability of the other. Yet another aspect of the relation allows a degree of interoperability to develop, though this is essentially rudimentary since the working ethos of the two institutions are totally different. Training is the basis of all operations at sea. While there has been some exchange of training for military officers at the senior levels between the two countries (with Indian Naval officers attending the National Defence College courses in Beijing), the practice needs to be broader based. It is advisable that both navies work out programs for training mid-level personnel in non-sensitive, non-controversial subjects like hydrography (in which Indian Navy has expertise) engineering, etc. However, given the slow progress of cooperative steps being taken, it may take time to see mid-level Chinese naval officers in Indian training establishments or vice versa.

Finally, it becomes imperative to state that the main focus of such an eventual trilateral effort will be to overcome adversarial strains of relations which the two countries – India and the US – share with China and enhance the "maritime bonding" between naval personnel and maritime agencies for mutual benefit. Thus, the accent is to keep the cooperation restricted to noncontroversial areas, which would in many ways serve as confidence building measures to enhance the bonding aspect.

Conclusion

Maritime challenges and threats in the Indo Pacific region have been on the rise in recent years and have the potential to create serious impediments to the exercise of freedom of the seas, thus affecting sea-borne trade in the region. Additionally, these threats have also spawned a multitude of "out of area operations," which has entailed additional roles for the

littoral navies. Countering these threats and challenges requires cooperation and sensitivity to security concerns of other countries, a quality that is difficult to achieve with the level of existing trust between states. The US, an Indo Pacific power along with India, and China are the primary maritime nations that have a responsibility to help other littoral states towards capacity building and ultimately towards maintenance of “maritime good order” in the region.

Unfortunately, the current state of relations belies the underlying sense of mistrust that China holds toward the other two states. In this context, it is necessary that a matrix of co-operation be evolved which would enhance “maritime bonding” at various levels between the maritime agencies and the navies. This cooperative approach would also serve as a de facto confidence building measure between the three countries. This has been evidenced by the current cooperative efforts in combating Somalian piracy singly, bilaterally, and multi-laterally in the Horn of Africa. Such measures and methods would not only help in overcoming the challenges and threats in the oceanic dimension but ensure the freedom of navigation for the trade flows, bringing together maritime minded countries to enlarge the brotherhood of the seas.

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SEA CHANGE

EVOLVING MARITIME GEOPOLITICS IN THE INDO-PACIFIC REGION

The Indo-Pacific region is rapidly emerging as a key focus of maritime geopolitics. The Indian Ocean and Western Pacific represent an increasingly critical avenue for world trade and arena for international security. Accelerating communications and expanding economic exchanges are fueling vital global growth and driving beneficial regional integration. At the same time, persistent problems ranging from piracy on the open ocean to territorial disputes in the regional seas and intensifying environmental pressures on marine and coastal infrastructure and resources, pose significant governance challenges for policymakers around the Indo-Pacific littoral.

Sea Change: Evolving Maritime Geopolitics in the Indo-Pacific Region, the result of a collaboration between the Stimson Center in the US and India's Observer Research Foundations in India, seeks to elucidate the interconnecting strategic, socio-economic, commercial, energy, and environmental trends affecting the region and explore their implications for decision makers. It examines the strategic outlooks and objectives of major states, the shifting maritime security risks facing them, the institutional and legal structures in place to meet such challenges, the dynamics of Indo-Pacific maritime shipping and energy trade, as well as the rising strains on environmental and natural resource issues and the role and politics of regional organizations. Finally, it offers practical recommendations to help policy makers achieve the promise and avoid the potential pitfalls embodied in the region's ongoing rise to prominence.