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The Indian Ocean Region in the 21st Century: geopolitical, economic, and environmental ties

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1.0 Introduction

The Indian Ocean littoral, which spans Australasia, South East Asia, South Asia, West Asia, and Eastern and Southern Africa, is home to 2.7 billion people. It is one of the world's youngest regions - the average age of India Ocean littoral is under 30. The region is rich in natural resources, has critical fish stocks, and is home to some of the world's fastest growing economies. 40 per cent of the world's offshore oil production comes from the Indian Ocean. 80 per cent of the world's oil shipments travel through its waters, with the region at the heart of connections that extend on to the Middle East, Africa, East Asia, Europe, and the Americas. Aside from economic connections, environmental threats, including rising levels of pollution and climate change, increasingly tie the future prosperity of Indian Ocean states together.

The Indian Ocean region has not featured prominently in the imagination of Australia's politicians, policy-makers, or publics in recent history. This is the case even though the region is the birthplace of global trade and is today a core region of the global economy. Only at times of crisis, such as during the 2004 Asian Tsunami, or when Indian Ocean piracy was at a peak, has the Indian Ocean garnered attention as a region. In Australia, the Indian Ocean has recently received attention only as part of a larger 'Indo-Pacific' region, which has become a key facet of Australia's geopolitical imagination. This tethering of the Indian and Pacific Oceans together has led to Australian foreign policy thinkers becoming more interested in looking to its western Ocean. In these discussions, however, Australia rarely looks much further west than to India.

The Indian Ocean region nevertheless has a distinct history, economic geography, set of cultural ties, environmental story, and regional security architecture. It needs to be recognised and considered as a distinct region in its own right, rather than purely as the least important wing of the Indo-Pacific. This is demanded by the reality of deepening geopolitical, economic, and environmental Indian Ocean region ties.

This report examines geopolitical, economic, and environmental dynamics in the Indian Ocean. It first looks at the history of the Indian Ocean region, examining trade, culture, and geopolitics. Following this, the report addresses in turn: the Indian Ocean's geopolitics and the threats it faces; trade and economic flows through its waters; and the Indian Ocean as an environmental space, with a focus on environmental risks and climate change. In conclusion, the report outlines how deepening and interconnected geopolitical, economic, and environmental ties are making the Indian Ocean a central region in the 21st century.



2.0 The Indian Ocean in human history

2.1 Precolonial networks

The Indian Ocean region has played a crucial role through human history. A review of this history also underscores how the Indian Ocean's environment has allowed various societies to prosper. This history also shows the possibility for change, which can bring dramatic consequences for human livelihoods. For Australians, the rich history of the Indian Ocean region has largely been forgotten in the public imagination. Australia, at least in terms of its foreign policy, has tended to think of the Pacific Ocean as its most significant. It has also thought of the Atlantic, the ocean which connects Europe to the Americas, as its cultural forbear. This, though, neglects the role that the Indian Ocean played in larger human history, not to mention Australia's history.

India and Indians are central to the story of the Indian Ocean. It is not accidental that this ocean is named for India. Geographically, the Indian sub-continent is at the heart of the ocean. Economically and culturally, people from South Asia have had important roles through its history. For example, peoples on India's west coast have long been connected to the Middle East and East Africa, while present day Tamil Nadu has a large diaspora in South East Asia.

Genetic studies of human movement around the Indian Ocean rim show a remarkable level of migration dating back thousands of years. This includes more than just relatively well-known migrations from South Indian empires to South East Asia - influence still visible in the art and architecture around that region. Recent studies have shed light on a complex set of migrations. For example, one study has shown that the Malagasy people of Madagascar are descended from migrants who came from what today is Indonesia. Another that a small group of Indians came, settled and intermingled with Indigenous peoples in Northern Australia. Sanjeev Sanyal has described this as the churn of the ocean: the continual movement of peoples around the Indian Ocean over centuries.

During the last ice age, lower sea levels allowed populations to move more easily around the Indian Ocean region, particularly around South East Asia and south to Australia. Sea levels stabilised at today's levels some 7000 years ago.

The Indian Ocean was 'globalized' long before the Atlantic was. There were well established trading routes around the Indian Ocean littoral centuries before European ships made their way to the ocean in the 1500s.

The repetitive, natural cycles of monsoons were key to this. The regularity of seasonal monsoon winds over centuries has made the Indian Ocean comparatively easy to cross. Small dhows in the Indo-Arab tradition and prahus and sampans in the Indonesian traditions were able to take small cargoes on regional journeys. In the 14th century, enormous Chinese 'Treasure Ships' began to enter and Indian Ocean. Early European colonisers, too, would rely upon monsoon winds to carry them safely to India and the Far East.

For centuries, goods, plants, religion, language, and culture have been spread through the region. Spices, silk, and textiles were commonly traded around the Indian Ocean region prior to colonization. Global trading networks centred around the Indian Ocean enabled textiles originating from Gujarat to be sold around the African coast, down to Indonesia, and, perhaps, even the Northern coast of Australia.

Trade, in turn, led to migration between the Persian Gulf, the East Coast of Africa, to Melaka in present-day Malaysia. With the movement of people also came the movement of ideas and religions. India's position in the Indian Ocean meant that it has long been central to these migrations. At the turn of the first millennium, the Chola empire, centred on present day Tamil Nadu, had great influence around the Bay of Bengal and South East Asia. The Chola had profound influence on the artistic styles of South East Asia. As Sunil Amrith has demonstrated, the Bay of Bengal has a particular history within these networks. It played a long historical role as the thoroughfare between India and China.

Indic scripts travelled to South East Asia around the 1st to 5th century. Major Hindu temples, many in the South Indian and Chola style, can be found today in Myanmar, Indonesia, Cambodia, Malaysia, and the Philippines. The timeframe for Islam coming to South East Asia is uncertain. It likely began in the 9th century and was spread gradually over centuries.

Some historians have come to see the Indian Ocean as 'ground zero' for globalization. The arrival of Europeans in the Indian Ocean in the 1400s was the beginning of a major transformation. The Portuguese rounded the Cape of Good Hope after 1497. The Dutch and the English East India Companies emerged in the early 1600s. However, we should remember that these forms of 'globalization' and trade pre-existed the arrival of Europeans. Still, from the 1500s onward, the Indian Ocean was part of a deeply heterogeneous global system, with an exceptionally diverse set of actors - including states, empires, and sprawling corporate entities.

2.2 A 'British Lake'? 1858-1947

With the arrival of Europeans, there began a contest between foreign empires for control of the Indian Ocean. The British eventually established a naval supremacy through the 1800s. This period of the Ocean's history is frequently associated with the rise of British sea power, with the Ocean being thought of as a 'British lake'.

During the colonial period the East India Company and other colonial powers re-worked and grew trade networks for natural goods, from coffee and tea to opium and indigo. Historical research, however, has shown that long running precolonial trade networks survived the rise of the British navy. It is something of a Eurocentric myth, then, that the Indian Ocean during this period was a 'British Lake'. British shipping and colonial monopolies on trade were not absolute. There was resistance to them. Rather, British naval power overlaid a system which ultimately allowed forms of precolonial networks of trade and influence to be maintained.

In this period as well, India and Indians were central. Indian traders continued to ply the region. This period in history also saw Indians transported in large numbers through the region, largely as cheap and oppressed labourers. The 'coolie' labour system led to the consolidation of large Indian populations around the Indian Ocean littoral, most notably in Mauritius, Réunion, South Africa, and Zanzibar. The spread of poor, predominately low-caste Indians around the Indian Ocean as part of imperial networks came with racial discrimination, most famously in South Africa. Australia, for example, considered on numerous times taking in large numbers of Indian labourers to work on plantations and infrastructure development. This possibility was largely prevented by growing concerns amongst Australia's white settler population over non-white immigration.

Historians Thomas Metcalf and Robert Blyth have argued that the colonial Indian state was central to the governance and management of the Indian Ocean region at this stage. Colonial networks have been reimagined by historians as a complicated web of interactions with various key nodal points. The placing of telegraph cables across the ocean enabled the consolidation and centralisation of British control around the Indian Ocean littoral.

Australia's popular imagination as solely connected to the US and the UK, then, is out of step with Australia's history, and its positioning within these global colonial networks. Throughout this period, British shipping to and from Australia was largely going through the Indian Ocean on its way to Calcutta, Bombay and Madras. The idea that Australia is historically a Pacific Ocean state then, is ahistorical, even if it has a hold over Australia's political imagination. The Australian colonies in their early years were thoroughly dependent on goods from India. These connections were partially severed by the end of the British empire. With India's independence, Australian and Indian foreign policy elites took sharply different views as to what a decolonised international system should look like. Still, shipping, familial, and imperial ties remained to some extent. They were quietened, however, by disagreements over decolonization, the Cold War, and Indian irritation over the white Australia policy.

By the second half of the nineteenth century, the Indian Ocean was deeply connected to international shipping routes and global trade. Indian Ocean shipping continued through the middle of the 20th century, despite disruptions from World War One and World War Two.

2.3 The Cold War and Decolonization: A 'Zone of Peace'?

In the second half of the 20th century two key global transformations, decolonization and the rise of the Cold War, would bring change to the Indian Ocean. Decolonization ensured that the Indian Ocean littoral was no longer directly ruled from Europe. Indian Ocean states won their independence gradually throughout the 1940s, 1950s, 1960s, and 1970s, bringing into existence the geopolitical map that we recognise today.

As postcolonial India began to advocate for a decolonised world order, it pointed out the continuing forms of imperialism and racial discrimination, particularly in the former British Empire. This most famously meant apartheid South Africa. India advocated also, though, for the various Indian diasporic populations who had been sent around the Indian Ocean, such as in Singapore, Malaysia, Kenya, Tanzania. It also sought to challenge racialized immigration practices in Australia.

In 1964, as Cold War tensions between the US and the Soviet Union (USSR) took on a global scale, Sri Lankan Prime Minister Sirimavo Bandaranaike proposed that the Indian Ocean be declared a 'zone of peace'. India frequently pushed for this as the form of order. This demand meant closing all foreign military bases around the Indian Ocean and denuclearization. In practice, however, India allied selectively with the US and the USSR, while trying to prevent either superpower from gaining total control of the ocean.

New trade routes through the Indian Ocean developed in the 20th century while others declined with the emergence of modern states and modern economic globalisation. Perth, Durban, Mumbai, Kolkata, Singapore, Jakarta, and Colombo, alongside various ports on the Strait of Malacca and the Strait of Hormuz, emerged as key nodes in a globalised shipping network around the Ocean.

2.4 Conclusion

Despite the rise of industrialised global shipping networks, some elements of precolonial migrations are still visible. In Malaysia and Singapore, small groups of Indians, known as Chetty Melaccans, trace their origins to the precolonial movement of Indians to present day Malaysia. Today, they are joined by larger groups of Indians, most predominantly Tamils, who make up considerable elements of Singaporean and Malaysian communities. The links between India and the Middle East are particularly strong between Malayalis and Gujaratis, two peoples with long histories of connection to that region. The migration of Sinhalese and Tamils to Sri Lanka is foundational to that state's politics. Evidence of South Asian connections to the East African coast has been found in oral traditions, ancient texts, and archaeological digs. These interactions intensified under colonial networks. Today, there are large Indian populations existing up and down the East African

coast. Historical Indian influence is also visible in the art, architecture and character of South East Asia. Throughout this history, India and Indians have been central to the ocean. India remains central, both literally and figuratively, to the Indian Ocean's geopolitics today.



3.0 The Geopolitics of the Indian Ocean

The US has been the dominant naval power in the Indian Ocean since the collapse of the USSR. The US has used this supremacy to ensure that its trade routes and energy supplies have not been disrupted. It also used the Ocean to launch military interventions, including in Kuwait, Iraq, and Somalia. It did not, however, seek to build a particularly strong or formalised regional order. There are some signs that this might be changing. With the fall of apartheid in South Africa, the region saw its first significant attempt at the creation of an intergovernmental organisation, with the formation of the Indian Ocean Rim Association for Regional Cooperation (IOR-ARC), today known as the Indian Ocean Rim Association (IORA).

The Indian Ocean today is seeing two, interconnected geopolitical transformations. The first is the increasing activity of the People's Republic of China in its waters. The second is a shift in language and imagination: the folding of the Indian Ocean into the much larger idea of the 'Indo-Pacific'. Various strategic analysts, particularly those emerging from the US, Australia, Japan and India, have argued that the Indo-Pacific idea is a response to the rise of China.

As we will examine in more detail below, a great deal of the world's trade, particularly its oil, flows through the Indian Ocean. There are major chokepoints in the Indian Ocean, which have considerable geopolitical and geoeconomic interest, such as Bab el Mandeb, the Strait of Hormuz, the Strait of Malacca, the southern end of the Suez Canal, and the Lombok Strait.

3.1 International governance and organizations

International governance in the Indian Ocean is set partly by multilateral institutions such as the UN, through the United Nations Convention on the Law of the Sea (UNCLOS).

The Indian Ocean has quite limited international governance and a limited sense of regional identity. Its primary institution is IORA. While some analysts have expressed great hope for the organisation, notably Indian former Minister of External Affairs Shashi Tharoor. Various academic assessments of the association point to its weakness in setting regional agendas.

The Indian Ocean is characterised by increasing discussion about its 'big picture' importance, and some attempts at building a regional order at the littoral level. Within IORA, there is a limited sense of regional identity. This is despite the history of connection between the Ocean, and the ongoing patterns of migration between India, East Africa, the Middle East, and South East Asia. What regional identities there are have tended to create institutions with less broad geographic scope, instead centring around cultural groupings. Such organisations include the South African Development Community (SADC), the Gulf Coordination Council (GCC), the South Asian Association for Regional Cooperation (SAARC), and the Association of Southeast Asian Nations (ASEAN).

Indian Ocean Rim Association (IORA) Membership



Figure 1: IORA membership. Source: Council on Foreign Relations

IORA is an inter-governmental organisation. It was established on 7 March 1997. The organisation was created at the urging of South Africa, under post-apartheid leader Nelson Mandela. Mandela's suggestion for a trading alliance around the Indian Ocean was welcomed by India. With the non-aligned movement losing much of its purpose with the end of the Cold War, new forms of South-South cooperation were gaining currency. Australia, India, Kenya, Mauritius, Oman, South Africa, and Singapore were the founding members of IOR-ARC in 1997.

The group has slowly expanded. Today it has 22 member states and seven dialogue partners. Its permanent secretariat is in Mauritius. IORA member states are: Australia, Bangladesh, Comoros, India, Indonesia, Iran, Kenya, Madagascar, Malaysia, Maldives, Mauritius, Mozambique, Oman, Seychelles, Singapore, Somalia, South Africa, Sri Lanka, Tanzania, Thailand, United Arab Emirates, and Yemen. IORA dialogue partners are China, Egypt, France, Germany, Japan, the United Kingdom, and the United States. These are states considered to have significant interests and abilities to contribute to the Indian Ocean. IORA primarily aims to promote sustained growth and balanced development in the region. IORA's focus areas are maritime safety and security, trade and investment facilitation, fisheries' management, disaster risk management, tourism and cultural exchange, academic, science and technology, blue economy and women's empowerment. There are, however, two states which on the Indian Ocean Littoral which are not members of IORA: Pakistan and Myanmar. These reflect some of the geopolitical fractures which make Indian Ocean governance difficult. In particular, Pakistan's non-membership of the institution reflects India's influence. Late in 2018, South Africa blocked Myanmar's entry to the association, primarily over Myanmar's treatment of its Rohingya minority.

3.2 How IORA functions

Decision-making in IORA is premised on a consensus model, meaning all members have to give their assent to any decision that is taken. Its charter states that 'bilateral and other issues likely to generate controversy and be an impediment to regional co-operation efforts will be excluded from deliberations'. This makes it easier for the institution to successfully govern uncontroversial issues. It also makes it almost impossible for the institution itself to set the agenda. An inability to discuss difficult issues means that individual states remain important actors in making the international governance of the Indian Ocean.

There have been various critiques of IORA's effectiveness levelled by academics studying the Indian Ocean, based largely on its inability to transcend the disputes between member states. Small Indian Ocean states have proven to be quite entrepreneurial in other governance areas, particularly in raising environmental issues, as we will discuss below.

3.3 The Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC)

Aside from IORA, there are smaller sub-regional groupings which are explicitly tied to the ocean. The Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) comprises of Bangladesh, India, Myanmar, Sri Lanka, Thailand, Nepal and Bhutan. Its permanent secretariat is in Dhaka, Bangladesh. It was established in 1997. BIMSTEC tries to avoid geopolitical issues, and looks more at connectivity and economic and social development.

India's Ministry of External Affairs noted in 2004 that a BIMSTEC free trade area would be a 'major step towards greater economic linkages... connecting South Asia with South East Asia'. However, the group is still today negotiating a free trade agreement.

Free trade agreements around the Bay of Bengal require the creation of new infrastructure projects around the region, if they are to be particularly meaningful. Minority politics around the region, though have long been delayed such infrastructure development. India's northeast is home to a host of religious and cultural minorities. As a result, India has tended to view its northeastern region with suspicion. Border regions in Bangladesh and Myanmar are similarly populated with minoritized peoples. Furthermore, infrastructure projects in the region require support from the region's largest economy and most successful infrastructure developer, China, to be successful. However, India-China tensions over borders in the Himalaya, particularly after their 1962 border war, make cooperation difficult. If anything India and China are engaged in competitive infrastructure-building around the region, not cooperative infrastructure building. These factors combine to make trade connectivity around the Bay of Bengal region difficult. Concerns that the forum might be perceived as an anti-China regional grouping have limited the prospects for the organisation. The free trade agreement has also been hampered by various other overlapping free trade agreements between BIMSTEC member states.

The most recent meeting of BIMSTEC took place in Nepal in late August of 2018. There were some signs for hope that deeper regional integration might emerge out of this organisation. This meeting saw a memorandum of understanding on better integrating the electricity grids of all member nations. Some analysts also noted progress on regional connectivity had been made at this meeting.

3.4 Key actors and perspectives on the Indian Ocean

3.4.1 India

In 1945, two years before Indian independence, Indian strategist and diplomat KM Panikkar noted that ‘whoever controls the Indian Ocean has India at its mercy’ and that India could not be stable or developed ‘unless the Indian Ocean is free and her own shores fully protected’. His argument was premised largely on the story of European expansion into the Indian Ocean, leading to India’s colonization. His prophetic argument also noted that the post-war struggle between the US and the USSR was ‘likely to transform the Indian Ocean again into a major strategic theatre is, in fact, inherent in the world situation that has developed after the war.’

Indian policy-makers often talk about the Indian Ocean as though it were a space that India should ‘naturally’ control. India is, after all, the only country in the world with an eponymous ocean. Doubts over India’s ability to make a bid for hegemony, though, are largely due to the simultaneous rise of China, and the ongoing presence of the US in the region. Despite this, there have been occasional signs of India being prepared to intervene, particularly on behalf of its diaspora. India advocated forcefully against apartheid in South Africa, initially only arguing for the protection of people of Indian origin. India also considered mounting a military intervention in Mauritius in 1983, on behalf of the Indian diasporic community in that state, which it felt was being threatened. Today, much Indian strategic discourse on the Indian Ocean is focused on the rise of China, and China’s efforts to cultivate allies around the Indian Ocean littoral.

The US and Australia are seeking to draw India in to a new, and deeper relationship with them in order to maintain control of the Indian Ocean. It is not entirely clear, though, that India wants the same order in this ocean as Australia and the US. In practice, India’s strategic discourse tends to highlight Indian Ocean spaces with prominent Indian populations. Indian Prime Minister Narendra Modi speaks of this diaspora as an integral part of an India that transcends its borders. His visits around the Indian Ocean littoral have largely been up and down the East coast of Africa, focused on states with Indian diasporic populations. He has made speeches to and engaged with the Indian diaspora in Malaysia, Australia, Singapore as well as the East African coast. The Indian diaspora, and India’s historic links around the Indian Ocean, loom large in India’s strategic imagination.

India has become supportive of linking the Indian Ocean to the Pacific Ocean as part of the Indo-Pacific strategic construct. Some Indian commentators have embraced the idea, seeing it as a way to end non-alignment and counter Chinese influence. Others have rejected the concept, arguing that non-alignment remains the best way to achieve India’s objectives. The Indo-Pacific has, however, begun to appear in India’s policy documents, in the context of seeking a ‘plural, open and inclusive’ region, not dominated by any one power. In Singapore in 2018, Indian Prime Minister Modi argued for a ‘free, open and inclusive Indo-Pacific’. Though similar in tone, this is not the same strategic imagination as Australia, Japan, and The US’s desire for a ‘free and open Indo-Pacific’.

3.4.2 The United States

The United States has been the primary naval power in the Indian Ocean since the end of World War Two. Although it is still the most significant naval power in the Indian Ocean today, it is no longer as dominant as it once was. The US military, with its size and ability to deploy rapidly, clearly remains a crucial actor in the region. Justin Hastings has argued that while the US has identified the strategic significance of the Indian Ocean littoral states, and on specific naval choke points, it has viewed the Indian Ocean itself as being on the periphery of more important regions, rather than part of its core interests. He notes that, although the US might dominate the ocean in terms of its naval capacity, it does so as an afterthought.

The US has been a key proponent of the Indo-Pacific strategic construct. The region received considerable attention in the most recent (2017) US National Security Strategy. The region was very clearly defined in this instance as facing a clash between democracy and authoritarianism: ‘A geopolitical competition between free and repressive visions of world order is taking place in the Indo-Pacific region’. The rise of the Indo-Pacific idea has coincided with the US, along with Australia and Japan seeking to draw India into a ‘Quadrilateral’ security dialogue.

Under President Trump, though, the US has become an increasingly unreliable ally. It has dramatically shrunk the budget of its state department, while increasing funding for its armed forces. The US recently changed the name of its Pacific Command to the Indo-Pacific command, signifying the military emphasis of its reimagining of the region.

3.4.3. Australia

Australia’s recent efforts to (re)engagements with the Indian Ocean have taken place within the rise of the ‘Indo-Pacific’ idea. Australia had sometimes previously positioned itself as an ‘Eastern Indian Ocean’ power, meaning its visualization of its region stopped at the west coast of India. Within the idea of the Indo-Pacific, the Indian Ocean has started to take on more prominence. Australia’s foreign minister Marise Payne recently highlighted the importance of the Indian Ocean to Australia. At a speech at the Raisina dialogue in Delhi, she noted that five of Australia’s top 15 trade partners were on the Indian Ocean rim and that half of Australia’s global exports depart from Indian Ocean ports.

Australian foreign policy elites have become increasingly concerned about the US’s treatment of its allies under President Trump. This anxiety is leading to Australia to seek greater diversity in its foreign policy. Australia has also grown more deeply concerned about China’s international intentions. As a result, Australia has chosen to look to India as a likely future foreign ally. Australia’s approach to India has recently focused on economics. Peter Varghese’s report *An India Economic Strategy to 2035: Navigating from Potential to Delivery*, has now been accepted by both of Australia’s major parties. This report argues for deeper economic integration between Australia and India. Australia’s dominant foreign policy thinking seems at this moment to be that getting the economic connections right will lead to deeper foreign policy alignments.

Australia commentators and foreign policy establishment now seem to take for granted that we have entered an ‘Indo-Pacific’ era. In Australia’s case, this narrative seems to signal our anxieties and our aspirations. Australia’s own embrace of the Indo-Pacific has taken place in the context of its desires to improve its relationship with India. However, given that Australia’s emphasis on the Indian Ocean is so new, Australia requires a deeper and more thoughtful engagement with India, its domestic politics, and the Indian Ocean more broadly.

There are some signs that this may be occurring. The Australian Strategic Policy Institute recently published a report arguing that Australia needs to engage more deeply with the Indian Ocean as part of its broader Indo-Pacific strategy. The ASPI report stated that ‘We’ve long seen ourselves as principally a Pacific Ocean state, reflecting our history and demography’. This historical narrative, though, is a misnomer. As noted above, Australia has long historical ties to the Indian Ocean and to India. The assumption that Australia’s history and demography makes it more of a Pacific Ocean state, is in this sense bizarre. Migration from Europe in the first 200 years of Australian settlement came through the Indian Ocean. Australia’s ongoing neglect of the Indian Ocean is a function of its identity and premised more on the forgetting of its colonial history, than this history itself.

3.4.4 China

China's spectacular GDP growth over the last 30 years has led it to take a far more prominent role in world affairs. It has recently developed blue water navy capacities, enabling it to expand its presence in the Indian Ocean. The Indian Ocean is one of two key routes of its Belt and Road initiative (BRI).

China's primary goals in the Indian Ocean are to protect shipping and its energy requirements. It is also seeking influence more generally, however. In particular, China is seeking the construction of new trade routes through its BRI. In order to achieve its goals, China requires the logistical assistance of local states, which it currently receives from Pakistan, Oman and Seychelles. With this, it has intensified its ties with states like Sri Lanka and the Maldives, and has built its first ever foreign military base in Djibouti. This base will be used to support China's anti-piracy operations in the Arabian sea.

As we will see below when mapping the Indian Ocean region's connectivity, there is an infrastructure deficit in the region. Figure two shows the shipping networks planned by China, which will require the construction of new port facilities to go with increased shipping. In particular, China is seeking deeper connections with the East Coast of Africa.

The Chinese navy frequently visits Karachi, where it has accessed maintenance and supplies. The Chinese built port at Gwadar, Pakistan, is close to China's shipping interests in the Strait of Hormuz. It will also become the terminus of the China-Pakistan Economic Corridor, which will connect Western China to Pakistan. There are plans for 500,000 Chinese workers to be housed in Gwadar. China recently gave Kenya a 3.2 billion dollar

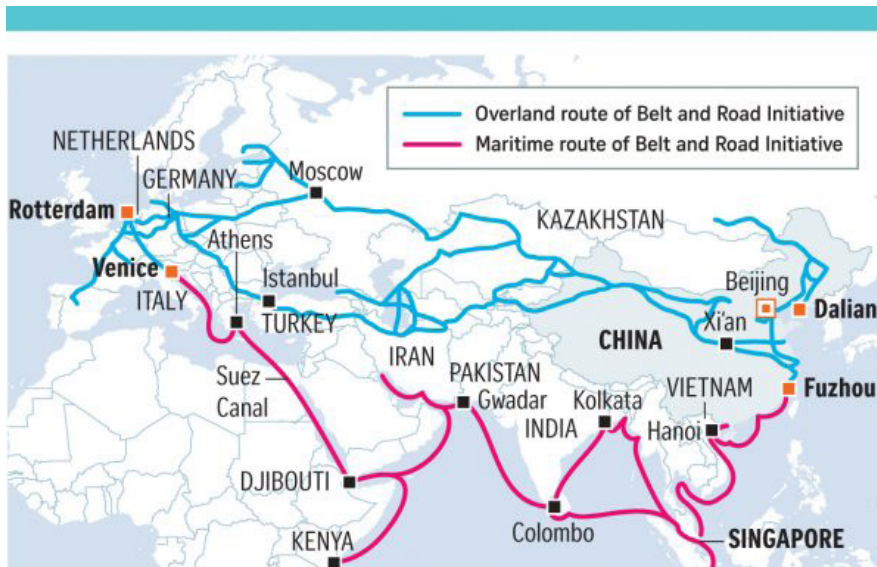


Figure 2: Planned infrastructure development routes for the BRI: Source New Straits Times

loan to finance a 470 kilometre railway, to link the capital Nairobi to the port city of Mombasa. Chinese investment in Sri Lanka has seen a state-owned firm take control of port facilities in Hambantota. Anxieties over Chinese influence in Sri Lanka led India to buy the largely empty Hambantota airport. In Eastern Africa, China has close relations with Tanzania, where it is developing military ties. It similarly has strong relations with Mozambique and Madagascar.

China has also sought closer relations with the Maldives, with a recent domestic political struggle there seen internationally as a contest for influence between India and China. China is also seeking port access in the Eastern Indian Ocean and the Persian Gulf. Indian anxieties about China relate not only to the Indian Ocean and the potential for Chinese naval power to encircle it, but to its contested Himalayan borders with China and Pakistan.

China-watchers tend to focus on the South-China Sea as a test case for the extent to which China is seeking to transform the nature of the world order. Yet, China increasingly relies on the Indian Ocean, and the strait of Malacca, for its energy supplies and has growing economic interests in the region. Their quest for influence and infrastructure in the Indian Ocean makes this region a necessary one to watch in terms of China's future actions.

3.5 Non-traditional Security threats in the Indian Ocean: Piracy

Aside from great power contestation, and the dynamics between India, China, and the US, there are significant non-traditional security threats in the Indian Ocean that demand attention. Non-traditional security threats are generally defined in international relations as threats states face that are not military in nature. This includes pandemics, terrorism, piracy and environmental threats (such as tsunamis). They are frequently tied to studies in 'human security', a body of scholarship which argues that rather than securing the state and its military, the study of security should focus on people.

Expansion of pirate operations

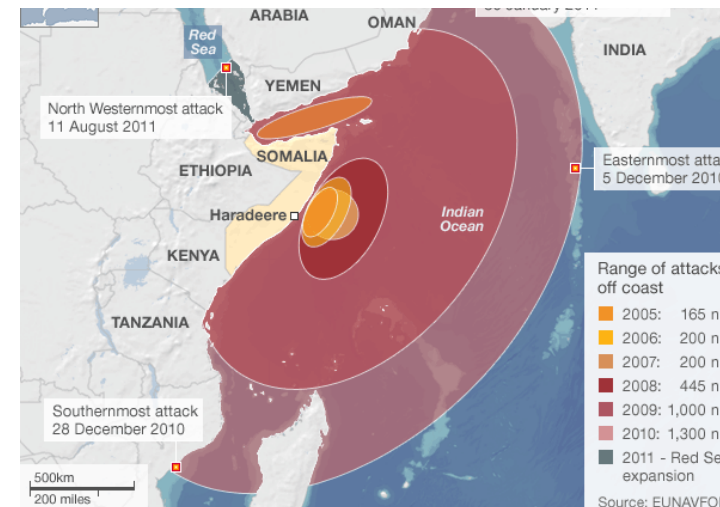


Figure 3: Range of piracy from Somali coast. Source: <https://www.bbc.com/news/world-africa-17487767>

The rise of new forms of terrorism as well as recent history of piracy, particularly around the gulf of Aden emanating from Somalia. Piracy emanating from Somalia is closely related to famine, conflict, and the collapse of local fish stocks. Somali pirates have even been known to operate close to the Indian coastline.

The NATO taskforce concluded its work in 2016. EU patrols are scheduled to continue through 2020.

4.0 Economics and trade

Over the last three decades, economic growth around much of the Indian Ocean littoral has been rapid. Australia, South East Asia, India, the Middle East, East Africa, and Southern Africa have all enjoyed robust growth. In this context, trade flows through the region have rapidly increased in volume. For this to continue, though, sea and air port infrastructure will need to be built.

Trade growth in the Indian Ocean has outperformed the world economy since 2000. Trade volume in the Indian Ocean grew annually at 9.4% from 2000 to the global financial crisis in 2009. From 2011-2017 it slowed to 4.8%.

Now, at the start of the 21st century, it is clear that the economic geography of the Indian Ocean region is not just growing, but being re-worked anew by contemporary geoeconomic contestations. China, through the BRI, is channelling billions of dollars in the Indian Ocean region, looking to change the economic geography of the region to its own advantage. In response, India, Japan, and several African countries have launched the Asia-Africa Growth Corridor (AAGC) with the intention of investing in infrastructure such as to challenge China's BRI. The outcomes of this contestation is yet to play out on the ground. To date, Australia stands largely on the side lines of these initiatives; even as both promise to remake trade in the Indian Ocean region.

A report from the Lakshman Kadirgamar Institute, a think tank based in Sri Lanka, estimates that the Indian Ocean economy will account for 20 per cent of global GDP by 2025. Its GDP per capita is expected to almost double over this time.

However, this growth is certainly not guaranteed. There are various potential barriers to the growth of trade across the Ocean. In the Indian Ocean, the average time it takes for border compliance checks is 65.4 hours. In the OECD, these same checks average 11 hours. In Tanzania, however, the average time is 402 hours. Port quality around the Ocean is also variable. Australia, Singapore, Malaysia, and South Africa tend to have better port infrastructure than less developed economies. Tanzania, Yemen, and Myanmar are thought of as having the weakest port infrastructure in the region.

China's BRI is seeking to address this infrastructure deficit. Major port projects under construction or agreed include the Kyanukpyu Deep Sea Port in Myanmar (worth 7,300 million USD), Payra Deep Sea Port in Bangladesh (worth 15,000 million USD), and the recently completed Hambantota Port in Sri Lanka.

Tariffs are also a potential barrier to trade growth increasing in the region. Tariffs are particularly high in the Middle East, Africa, and South Asian regions of the Indian Ocean. Whether or not free trade agreements are reached will influence the extent to which economic activity around the region will continue to grow.

Aside from these more logistical challenges, Wignaraja, Collins, and Kannangara argue that strengthening regional economic governance and narrowing development gaps are also crucial to ensuring that the region realises its economic potential.

4.1: Indian Ocean Rim Economies

The Indian Ocean Rim contains some of the fastest growing economies in the world. In 2017 Bangladesh (7.2%), Tanzania (7.1%), Maldives (6.91%), Myanmar (6.76%) and India (6.68%) grew the fastest of all Indian Ocean economies. The UAE, South Africa and Australia were the slowest growing economies in the region. Oman (-0.27%) and Yemen (-5.94), going through a devastating civil war, are the only two economies which shrunk in 2017. In terms of size of economy (measured by GDP purchasing power parity in US Dollars), India (9,474 billion) is by far the largest Indian Ocean Economy, followed by Indonesia (3,250 billion), Iran (1,640 billion), Australia (1,248 billion), Thailand (1,236 billion), and Pakistan (1,061 billion).

4.2 Visualizing Economic Connectivity

4.2.1 Air travel

A mixed story of air connectivity around the Indian Ocean littoral can be told today. The Middle East, South Asia, South East Asia, and Australasia have extensive air connections. Over the last two decades, the falling cost of air travel and the expansion of low-cost airlines has enabled growing passenger numbers between these regions. Hundreds of millions now travel routinely for work, migration, and tourism. For example, millions of Indians travel to the Middle East for work, and Australia's cities have multiple daily departures to the Middle East.

Around the Indian Ocean littoral, Singapore, Dubai, Doha, and Abu Dhabi are primary hubs for air travel. Kuala Lumpur, Bangkok, Addis Ababa, Nairobi, and Perth are also increasingly important hubs for connectivity.

Very few commercial air routes traverse the Indian Ocean from Australasia to South Asia or Africa, or from South East Asia to Africa. Singapore Airlines and Cathay Pacific operate regular flights to South Africa's major cities Johannesburg and Cape Town. Qantas and South African Airlines offer flights between Perth and Sydney in Australia to these same two destinations. Flights from Australia and South East Asia also operate to Mauritius and Sri Lanka, largely as the islands are popular tourist destinations. Only Air India offers direct flights between India and Australia.

Rapid economic growth in the region, and increasing migration suggests that connectivity can be expected to rapidly develop in the coming decades. For example, the Indian diaspora in Australia is growing rapidly, suggesting the lack of direct connections between India and Australia is unlikely to continue for long.

The relative lack of point-to-point connections between cities around the Indian Ocean littoral is in notable contrast to the Atlantic and Pacific Oceans. Point-to-point flights between first and second tier European and North America cities are numerous, as are flights connecting large Chinese and South East Asian cities to the US and Canada.



Figure 4: Map showing 59,036 flight routes between 3,209 airports. Source: openflights.org. Data gathered in January 2012

4.2.2 Shipping routes

The busiest ports of the India Ocean are: Chennai (India), Colombo (Sri Lanka), Durban (South Africa), Jakarta (Indonesia), Kolkata (India), Melbourne (Australia), Mumbai (India), and Richards Bay (South Africa).



Figure 5: Satellite image of shipping in the Indian Ocean. Source: Marinetrac.com

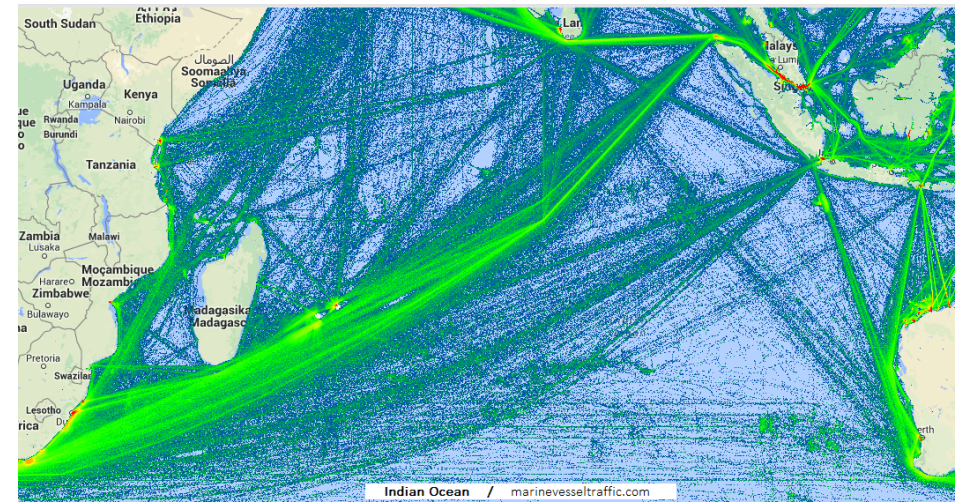


Figure 6: Visualisation of marine traffic in the Indian Ocean. Source: Marinevesseltraffic.com.

As Figure 4 shows, a great deal of shipping rounds the Cape of Good Hope, and crosses the Indian Ocean to go through the Straits of Malacca. This links up with shipping from the Strait of Hormuz. This is inclusive of oil tankers, cargo shipping, pleasure vessels, and fishing vessels.

In the mid-1990s, the Indian Ocean region countries totalled 30 per cent of the world population, but only 8 per cent of its GDP. The Indian Ocean region has also struggled for foreign direct investment (FDI) in comparison to other global regions. In 2010 only 11.2% of the world's total FDI went to these states.

4.3 Asia-Africa Growth Corridor (AAGC)

The AAGC is an initiative by India, Japan, and several African states launched in 2017. Its priority areas are health and pharmaceuticals, agricultural and agro-processing, disaster management, and skills enhancement. It looks to integrate West Africa with South Asia, South East Asia, East Asia, and Oceania. It also sets out to boost people to people relations across the region.

The AAGC looks to deliver a 'free and open Indo-Pacific region'. This has often been seen as an alternate geoeconomic project to the China-led BRI. Similar to the BRI's talk of the silk road, it speaks of rediscovering ancient sea-routes and creating new sea corridors. For example, the strategy speaks of connecting sea ports, including Jamnagar in Gujarat with Djibouti in the Gulf of Eden, Mombasa and Zanzibar with ports connected to Madurai, and Kolkata with Sittwe port in Myanmar. The AAGC also promises institutional, industrial, and transport infrastructure investment in Asia and Africa.

5.0 The Indian Ocean as an environmental space

5.1 The Environment, Natural Resources, Trade

The Indian Ocean is surrounded on three sides by land and seeing little mixing with cold water from the polar regions, it is the world's warmest. Rich in phytoplankton, the Indian Ocean is home to diverse marine life, including large and economically important fish stocks, as well as ancient coral reef ecosystems. Circulation of the Indian Ocean is driven by monsoon weather systems. The Indian Ocean's islands are rich in biodiversity, including numerous endemic species.

The lands surrounding the Indian Ocean are primarily tropical, sub-tropical, and arid. The Indian Ocean coastal region is home to some of the world's most important wetland areas and mangrove forests. The region has abundant natural resources, including oil, gas, coal, and minerals.

The Indian Ocean region is iconic for its monsoon weather systems. It was these predictable seasonal trade winds generated by the Indian Ocean's monsoon weather systems that enabled communication and trade through the region to develop thousands of years ago. The Indian Ocean has provided a benign environment for long-distance voyaging. The repetitive, natural cycles of monsoons might at first appear to be outside of history. However, they changed over millions of years. Fifty million years ago, the Indian subcontinent crashed into Asia, creating the Himalayas. The cycle of hot air blowing north from the tropical Ocean into the Himalayas creates the monsoonal rains that have allowed human life to flourish in South, South East and East Asia. The combination of monsoon rains and glacial melt from the Himalayas feeds most of Asia's large rivers. The monsoon brings life to many of the lands surround the Indian Ocean, including West Africa, South-East Asia, and Australia. Monsoonal rains are challenged now by climate change.

The Indian Ocean region's natural resources remain the basis for much of modern day trade through the region. The lives of hundreds of millions of people in the littoral of the Indian Ocean rely upon this trade. Goods as diverse as chickpeas, meat, and coal flow along now well-established trade routes. Perhaps most striking, 40 per cent of the world's offshore oil production is in the Indian Ocean, and more than two-thirds of the world's oil passes through the region's waters. Australia, Indonesia, and South Africa account for more than half of global coal exports. The regions rich biodiversity and natural beauty has allowed the development of a tourism sector worth billions.

Australia has a growing importance in modern trade, as resources and foods that Australia produces are urgently needed to feed large and growing populations in the Indian Ocean and to fuel economic activity.

The Australian public has become much more aware of growing trade between Australia and the Indian Ocean region in recent years, as a result of notable controversies around the export of live sheep to the Middle East, and coal to India. This poses a political challenge, but also highlights an opportunity and need for the country to have an open conversation about how Australia should be involved in growing trade through the Indian Ocean region.

5.2 Environmental Risks and Climate Change

The Indian Ocean region faces numerous and growing environmental risks, including but not limited to: habitat destruction, biodiversity loss, land and marine pollution, and over fishing. States throughout the region face numerous economic, social, political, cultural, and human vulnerabilities to these risks.

Mangroves, wetlands, and coral reefs are being threatened and lost through the region due to coastal developments. Threats to marine life come from destructive fishing practices, including the use of poisons and harmful nets; untreated sewage and industrial wastes entering coastal waters; and agricultural and industrial run-off entering the Indian Ocean causing eutrophication and hypoxia. Billions of litres of sewage and industrial wastes enter the region's coastal waters every year. Scientists have found that in parts of the Indian Ocean oxygen levels are declining, threatening fish stocks, and so-called 'dead zones' have been identified where there is not enough oxygen to sustain marine life. Over-fishing has the potential to be destabilizing for communities around the Indian Ocean that rely on fishing for their livelihoods. The case of Somali pirates demonstrates this strikingly.

Bio-security is a clear challenge in the Indian Ocean, with nearly half the world's container traffic moving through the region. The Indian Ocean region is increasingly vulnerable to ocean dumping, waste disposal, and oil spills.

In 2010, an Indian Ocean Garbage Patch was discovered, covering a vast area roughly half way between Africa and Australia, suspended in the upper water column of the Indian Ocean Gyre. The dynamics of this garbage patch are still poorly understood, other than that it is a zone where plastic floats, circulating continuously over years before it reaches the centre of the gyre where scientists believe it may reside indefinitely.

Climate change is a serious challenge for the Indian Ocean region. Expected impacts include rising sea levels, increasing sea surface temperatures, acidification of waters, stronger tropical cyclones, and larger storm surges. The Indian Ocean is the fastest warming ocean. Between 1901-2012 the western Indian Ocean experienced anomalous warming of 1.28C in summer SSTs. Key risks and vulnerabilities resulting from climate change and warming seas include: changes to Asian monsoon circulation and rainfall and altered marine food webs in the region; increased storm intensity; the inundation of low-lying coastal areas, shoreline erosion, and saltwater intrusion as a result of more frequent and severe storms and rising seas; a degrading of the ecology of coral reefs and fisheries from acidification. These all represent severe risks for the livelihoods and health of millions.

Important tuna distribution and catches are already being impacted by warming waters. Extensive littoral areas, home to more than half a billion people, are at risk from climate change, including coastal regions of eastern India, Bangladesh, Sri Lanka, Myanmar, Thailand, Malaysia, and Sumatra.

A 2009 World Bank study on vulnerability to storm-surge disasters found that five out of 10 countries with the greatest percentage of coastal population at risk, five out of the 10 countries with the highest percentage of coastal GDP at risk, six of the 10 countries with the highest proportion of coastal urban areas, and 21 of the 50 most vulnerable major cities at risk lie around the Indian Ocean.

Estimates from The Intergovernmental Panel on Climate Change show that tens of millions of people will be victim to coastal flooding every year along the coastal region of the Indian Ocean from Pakistan to Thailand and Indonesia by 2100 – even under conservative estimates of climate change. Even one meter of sea-level rise, without the range of probabilities, will cause massive coastal inundation, and threaten small and low-lying islands like the Maldives, Mauritius, and the Seychelles.

The Indian Ocean region is home to a significant number of poor, living in areas extremely vulnerable to climate change. Many countries have limited capacity to cope with the impacts of climate change.

Over recent decades, serious cyclones affecting South Asia have highlighted the power of natural hazards to wreak human and economic destruction. Cyclones have killed hundreds of households and displaced many more. Loss of mangroves and natural protections, as well as limited state capacity to deal with cyclones made these events much more damaging. These highlight strikingly the risks the region faces.

5.3 Environmental-based Cooperation

There are promising examples of Indian Ocean states collectively working to solve shared environmental challenges, however, overall there is not a strong track record of action.

Organisations including the United Nations Environment Programme's (UNEP) Regional Seas programs, the Indian Ocean's various fisheries commissions, East African Community, the South Asian Association for Regional Cooperation, the Association of Southeast Asian Nations, and IORA have limited mandates on environmental issues, but none include in one forum all of the region's states.

Over the issue of fisheries, the Indian Ocean as a region has worked together most successfully. This reflects the important fish stocks in the region, which have historically been exploited on a free for all basis.

The Seychelles marshalled an alliance of Indian Ocean countries to bring in an effective ban on whaling in the Indian Ocean – successfully having the International Whaling Commission adopt a sanctuary area in the Indian Ocean in 1979. This laid the foundation for a vote in 1982 to end commercial whaling. When the Seychelles arrived for the Commission's 1979 meeting in London, they had the backing of 50 Indian Ocean and African states. This was important, because it established international and regional control over an area previously free for all, and points to a model for what is possible in other areas of environmental concern.

The Indian Ocean Marine Affairs Cooperation (IOMAC) grouping is notable for its efforts in the management of the Indian Ocean tuna fishery.

More common, are individual state actions to protect the Indian Ocean. For example, Australia has set-up several protection zones in the Indian Ocean. In 2010, the British Indian Ocean Territory set up a 640,000 km² 'no-take' marine protected area.

In Australia, the Munderoo foundation is a notable organisation with several projects on ocean health. They run the 'Pangaea Ocean Explorer', a boat which is being utilised to monitor levels of plastic pollution in the Indian Ocean. They aim to characterise and quantify plastics at the sea surface, in the water column, along shorelines, and deposited in sea floor environments. They have further supported The Ningaloo Marine Research Centre in Exmouth, where scientists are studying tropical coastal marine ecosystems in the UNESCO Ningaloo Coast World Heritage site, as well as research facilities in Perth.

Also in Australia, The University of Western Australia's Marine Futures Lab/ Centre for Marine Futures has projects. For example, The Pangaea Chagos Initiative looks at shark abundance across the Indian Ocean in order to test hypotheses about the effects of shark predation on the diversity, abundance, size, biomass, diet, and genetic signatures of reef fishes. The Chagos Conservation Trust, Global Fishing Watch, and WWF Australia are all active on environmental issues in the Indian Ocean.

5.4 Environmental Risks and the public imagination

Environmental degradation, a warming climate, and reductions in fish stocks are introducing risks that highlight the inter-connectedness and inter-dependence of Indian Ocean states and the common interest that Indian Ocean states have to collectively act.

The Indian Ocean is a region where states and various actors will increasingly need to work together to monitor and manage the environmental impacts of human activity. The risks are diverse, highlights the need for clear rules on diverse issues, from pollution for industry through to understanding fish stocks such that food security is protected.

The 2004 Indian Ocean Tsunami highlighted clearly how the Indian Ocean is bound together as an environmental region. On 26 December 2004, an Indian Ocean earthquake caused a tsunami wave that hit fourteen countries around the Indian Ocean. Since then, states in the region have worked together to ensure that monitoring and early warning systems are in place. There are also countless examples of countries working together in the short-term to deliver aid and reconstruction, with help motivated by a shared imagination as being members of the Indian Ocean region.

The discovery of an Indian Ocean Garbage Patch similarly has had deep resonance in the public imagination in Australia and around the Indian Ocean region.

Through the search for the missing Malaysian Airlines flight MH370, believed to have been lost in the Indian Ocean, Australians have been made aware of the Indian Ocean as an environmental ocean region. Months of press reports about the search saw reports of possible aircraft debris being found, which would inevitably turn out to be waste.



6.0 Conclusion: The confluence of geopolitics, environment, and economics in the Indian Ocean

Inter-connected geopolitical, economic, and environmental dynamics are transforming the Indian Ocean. This points to an on-going rise of the region as a distinct space where collective action on governance will need to be taken, where significant opportunities lie, and where future risks must be tackled.

6.1 Geopolitics

Geopolitically, the Indian Ocean does not have a strong regional identity and is yet to develop strong institutions able to govern the environmental and geopolitical threats that it faces. The lack of a regional identity is perhaps, not surprising, given the enormous cultural diversity around the ocean's littoral. This is despite the history of interconnection addressed early in this report. Its current institutions seem at present to lack the capacity or will to deal with these changes.

Australia and the US are looking to the Indian Ocean largely for geopolitical and geo-economic reasons, leading partly to its tethering of the Indian Ocean to the Indo-Pacific. This is being done at least partly in response to the rise of China, which is looking to the ocean for its own geo-economic stability. Foreign Affairs Minister Marise Payne's recent speech at the Raisina Dialogue is a welcome development, for its more expansive focus on the Indian Ocean.

The Indian Ocean is a region that has not loomed large enough in Australia's collective imagination. If the Indo-Pacific strategic construction is to lead, it will be necessary to take a much closer look at the Indian Ocean.

6.2 Economics

The Indian Ocean is one of the fastest growing regions in the world. It has a particularly youthful population, with very uneven development around its littoral. It includes some of the fastest growing economies in the world. At its centre is India, which is poised to become the world's third largest economy. The region's thirst for development has seen its states embrace massive infrastructure development projects, such as the BRI and the AAGC.

Economically, the Indian Ocean's shipping routes are increasingly vital arteries of global economic activity and are set to become much busier in the 21st Century. Economic growth is continuing at a rapid pace in the region, and so trade is set to grow. Key global powers, including India, Japan, and China are intent on investing billions in further port and sea trade infrastructure that is set to reshape the economic geography of the region. As trade in various commodities, including oil and coal rises, and as economic investments are made, the region will become an even more crucial engine of the global economy.

6.3 Environment

Environmentally, though, the increase in demand for the oil, coal, and other forms of energy for development are clear threats. The Indian Ocean is warming faster than any ocean on earth. Low-lying islands such as the Maldives and low-lying littoral states like Bangladesh are at threat of being subsumed beneath rising seas. Phytoplankton density has seen recent declines, with still unknown potential consequences for fish stocks. The monsoon system in the Indian Ocean, known to have been unstable through history, may see changes as the climate warms. This is not just due to changes in the ocean, but rapid climate change in the Himalaya. Historically, when the monsoon has failed, India has faced severe droughts. Climate change is already causing havoc in rural India, with increasingly unpredictable monsoons and variable rain levels leading to agricultural losses.

In many ways, the region has environmental risks that can be characterised as canaries in the coal mine, in terms of global environmental and climate change risks. Climate change is shifting the currents of the ocean. Environmental and climate risks are closely tied into the economic story of the region. The environmental impact of shipping on the Indian Ocean is substantial, and plans for increased shipping and port infrastructure around the ocean will only contribute to this further unless more environmentally sustainable forms of shipping can be found.

6.4 Interconnections

In order to develop a holistic understanding of the Indian Ocean, it is productive to continually think through the interconnections between geopolitics, economics, and environment. The case of piracy emanating from Somalia provides an ideal example, as it shows how international politics, localised conflict, underdevelopment, and environmental change come together to make political order.

Somalia's conflict has long historical roots, dating back to European colonization. Famines, we know, are rarely caused solely by environmental factors. They are also political events, often the result of poor governance, the international economy, or a weak state. Somalia's droughts have been exacerbated by climate change, and in particular the El Niño and La Niña weather phenomenon, which scientific studies have noted have been increasingly intense over the last few decades. More recently, overfishing in the Indian Ocean has decimated the fish stocks relied upon by local fishermen. All of these factors combined led Somalis living on the ocean to turn to piracy. The threat to the global economy posed by the resulting piracy eventually drew the attention of international institutions like NATO and the EU. The rate of piracy has since been quelled. The underlying causes, conflict, drought, climate change, and poverty, though, remain in place.

As the region becomes the site of more economic and political activity, its importance to global affairs will only increase. At the same time, the threats it faces will likely become graver and more immediate.

In October of 2009, the Maldives government held a 30-minute cabinet meeting six meters under water. The Maldives are an average 2.1 meters above sea level. The cabinet members communicated through sign language and white boards, and signed a document calling on all states to cut carbon emissions. It was an attempt by a small island state to generate attention, cultivate unconventional alliances, and highlight the threats faced by low-lying areas around the Indian Ocean littoral. These types of efforts by low-lying states will only grow more intense as the climate changes.

Opportunities for greater inter-connection of electricity infrastructures through the Indian Ocean region points to how the Indian Ocean is likely to become a more coherent region in terms of infrastructure, provided geopolitical, economic, and environmental variables can be aligned appropriately. Currently states around the Indian Ocean littoral are taking steps to invest in renewables-based electricity generation and to modernise electricity infrastructures. In some cases, where electricity has never been reliable or available to all, infrastructures are still being developed from scratch. In this process, there is growing opportunity and need for greater regional inter-connectivity. One recent study for example, highlights great potential for Australia to export solar-based electricity at competitive prices to South East Asia. Already in South East Asia, hydro-power projects are being developed, with plans to export the electricity generated long distances to countries and regions with growing and high demand. There is great opportunity in this area, but any large-scale development of a regional super-grid would require new forms of regional institutional oversight and governance.

If we are to take seriously the importance of the Indian Ocean to the world's future, we have to ask if the ocean's ecosystems can survive the intertwined challenges of infrastructure development, increased trade, and geopolitical contestation. Future analyses of the Indian Ocean need to take in not only geopolitics, trade and infrastructure, but how increased activities might affect the historical, cultural and environmental oceanic systems that define it.

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