

Encirclement or Engagement? Assessing the String of Pearls and India's Security Concerns

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Abstract

China's so-called String of Pearls paradigm—an interconnected lattice of ports, logistical nodes, and infrastructural assets dispersed across the Indian Ocean Region (IOR)—has emerged as a central determinant of contemporary maritime geopolitics. From India's vantage point, this evolving configuration evokes apprehensions regarding strategic encirclement, as well as the fragility of critical Sea Lines of Communication (SLOCs), particularly through the Strait of Malacca and adjoining maritime corridors. Beijing's extensive financial infusion into regional port development, coupled with its expanding military engagements with neighbouring states, amplifies anxieties surrounding India's security calculus. Consequently, India's strategic orientation necessitates the consolidation of maritime partnerships and the safeguarding of navigational freedoms within an increasingly contested seascape marked by China's augmented footprint. This study delineates the genesis and structural elements of the String of Pearls, interrogates India's perception of it as a strategic liability, and evaluates responsive measures such as intensified naval posturing (the Necklace of Diamonds), alliance-building initiatives (notably the QUAD), and infrastructural collaboration with littoral states across the Indian Ocean.

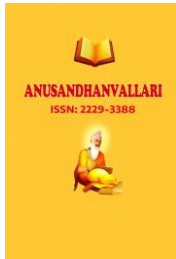
Keywords: Necklace of Diamonds, QUAD, String of Pearls, Maritime Security, Sea Lines of Communication, Indian Ocean Region

Introduction

The expression String of Pearls designates an array of Chinese commercial and strategic undertakings extending from the South China Sea across the Indian Ocean toward the Arabian Sea. Initially popularised by American strategic discourse in 2004, the term encapsulates Beijing's endeavours to secure maritime supply chains while simultaneously projecting influence. India interprets this constellation—comprising harbours, airstrips, and auxiliary installations—as indicative of a potential containment architecture. Certain Indian scholars construe it as a deliberate manoeuvre aimed at constricting India's strategic latitude. Concerns primarily stem from China's access to port facilities in Sri Lanka, Pakistan, Myanmar, and other regional states, which may engender security vulnerabilities. The enduring salience of these waters is encapsulated in Alfred Thayer Mahan's assertion that dominion over the Indian Ocean equates to supremacy in Asia. Within this framework, China's intensifying infrastructural investments have elicited profound unease in New Delhi.

The "String of Pearls" Concept

From Beijing's standpoint, the initiative forms part of a broader strategic-economic design intended to safeguard its burgeoning trade networks and energy dependencies across Asia. Official Chinese narratives foreground the developmental and commercial dimensions—emphasising connectivity and infrastructure—while eschewing



explicit military connotations. Nevertheless, analysts highlight the latent dual-use capacity of many such installations, suggesting that ostensibly civilian facilities could be repurposed for military utilisation. In this interpretation, China is methodically establishing infrastructure capable of accommodating naval deployments along vital maritime arteries. These developments, while embedded within the economic framework of the Belt and Road Initiative, function concurrently as strategic moorings. For example, Xi Jinping's 2017 commitment of \$124 billion toward connectivity projects underscores Beijing's willingness to underwrite expansive regional integration. Beneath this economic outreach lies a coherent strategic vision: the construction of a chain of deep-water ports and airbases spanning from the South China Sea through India's immediate neighbourhood to the Horn of Africa, thereby ensuring sustained maritime accessibility. Although Chinese official discourse rarely invokes the term itself, the discernible pattern of infrastructural acquisitions in locations such as Gwadar, Hambantota, and Kyaukphyu reinforces the perception of an emergent quasi-encirclement strategy.

String of Pearls as Strategic Encirclement

China's maritime engagements within the Indian Ocean can be conceptualised as discrete nodes within this overarching chain. In Sri Lanka, the Hambantota port epitomises this dynamic. Constructed through Chinese financing and inaugurated in 2010, the project encountered fiscal distress, prompting Colombo to lease the facility to a Chinese state-linked enterprise for 99 years. This arrangement effectively furnished Beijing with a strategic foothold proximate to major shipping routes south of India. Indian policymakers remain wary that such infrastructure could eventually be leveraged for naval replenishment or broader military purposes.

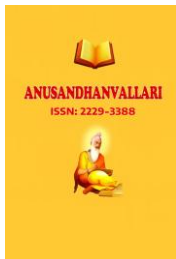
Another critical node is Gwadar, situated in Pakistan's Balochistan region. Developed under the China-Pakistan Economic Corridor (CPEC), the port provides Beijing with direct access to the Arabian Sea near the Strait of Hormuz. From India's perspective, its proximity to vital hydrocarbon transit routes renders it strategically consequential. Beyond commercial functionality, Gwadar is perceived as a potential logistical hub facilitating the operational reach of the People's Liberation Army Navy (PLAN). Additionally, proposals for pipeline connectivity from Gwadar to western China could mitigate Beijing's reliance on the Malacca Strait.

Myanmar hosts further significant components of this network. The port of Sittwe grants access to the Bay of Bengal, while the more strategically salient Kyaukphyu deep-water port, located on Ramree Island, is integrated with pipelines linking to China's Yunnan province. These conduits enable the overland transport of energy resources, effectively circumventing maritime chokepoints. Collectively, these assets fortify China's energy security architecture while simultaneously raising apprehensions in India due to their geographical proximity to its eastern seaboard.

China's outreach has also extended to Bangladesh, where interest in augmenting port infrastructure—such as potential developments in Chittagong or Cox's Bazar—has been observed. Although less prominent, such engagements could carry strategic implications for India's northeastern region.

In the Maldives, Chinese economic involvement has intensified since the early 2010s through loans and infrastructure initiatives. Financial commitments, large-scale housing projects, and enhanced diplomatic engagement—including high-level visits by Xi Jinping—have deepened bilateral ties. While both Beijing and Malé characterise these interactions as developmental, critics have speculated about possible long-term strategic ramifications. This evolving alignment has generated both opportunities and apprehensions within regional discourse.

Further west, China has established a tangible military presence. Its naval base in Djibouti, operational since 2017, represents the PLAN's first overseas installation, significantly extending its operational radius into the western



Indian Ocean. Similar engagements in island territories such as the Seychelles underscore the expanding geographic breadth of China's maritime posture.

Taken collectively, these nodes appear to envelop India along multiple axes: western (Gwadar, Djibouti), southern (Hambantota, Maldives), and eastern (Myanmar). While Beijing frames these initiatives as routine economic ventures, Indian strategic assessments interpret them as constituting a latent containment framework. In a contingency scenario, these facilities could facilitate Chinese naval deployments, potentially constraining India's maritime mobility and surveillance autonomy. Consequently, each infrastructural asset transcends its commercial façade, embodying strategic significance that remains under vigilant scrutiny by New Delhi.

Strategic and Economic Significance

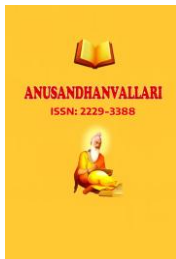
The *String of Pearls* framework is fundamentally anchored in two overarching strategic compulsions: the preservation of energy security and the regulation of maritime transit corridors. A substantial proportion—estimated at nearly three-fourths to four-fifths—of China's crude oil imports traverse the Indian Ocean Region, underscoring its acute dependence on these oceanic passageways. Any perturbation within this maritime expanse would therefore pose a direct threat to Beijing's energy sustenance. India, likewise, exhibits a comparable reliance on these seaborne arteries for both trade and hydrocarbon inflows. Indeed, a dominant share of global maritime oil transportation—exceeding four-fifths—passes through this ocean, with critical chokepoints such as the Strait of Hormuz and the Strait of Malacca accounting for particularly significant proportions.

India's own energy matrix reflects this vulnerability, with a substantial majority of its petroleum requirements sourced externally, predominantly from the Gulf region and conveyed through these very sea routes. Consequently, both China and India remain inextricably tied to identical maritime lifelines, rendering any disruption—whether through conflict, blockade, or instability—economically debilitating for both actors. The strategic salience of these corridors is thus elevated to paramount importance.

China's acute dependence on the Indian Ocean is further illustrated by the concentration of global oil flows through its chokepoints, including Hormuz, Malacca, and Bab al-Mandeb. India's economic vitality is equally contingent upon the uninterrupted functioning of these routes, given its reliance on imported energy resources. As a result, any obstruction at these maritime bottlenecks would jeopardise not only national energy security but also broader economic stability for both nations. In response to such vulnerabilities, China has proactively invested in alternative logistical pathways, such as overland pipelines via Myanmar and infrastructural linkages through the China-Pakistan Economic Corridor.

The immense economic weight carried by these Sea Lines of Communication (SLOCs) implies that any asymmetry in naval capability—or the imposition of a maritime blockade—could impose severe costs, particularly on India. These chokepoints collectively handle the overwhelming bulk of global seaborne oil commerce, reinforcing the Indian Ocean's centrality within the global energy architecture. The disproportionate share of oil transiting through Malacca and Hormuz further elucidates why maritime stability in this region constitutes a strategic imperative for both regional and extra-regional powers. Any disruption, even temporary, could cascade into widespread economic dislocation on a global scale.

Within this geopolitical milieu, control—or at least assured access—to the Indian Ocean assumes critical significance. China's pursuit of a network of port facilities and cooperative nodes can thus be interpreted as an attempt to insulate its energy supply chains while simultaneously augmenting its strategic reach. India, conversely, is compelled to ensure that these maritime arteries remain open and free from coercive domination. In essence, the *String of Pearls* encapsulates both economic pragmatism and strategic ambition, reflecting China's dual



objective of securing supply routes and extending influence, while simultaneously reshaping India's security considerations.

India's Security Concerns:

From New Delhi's perspective, the expanding Chinese footprint across its maritime periphery evokes pronounced strategic unease. The foremost anxiety revolves around the prospect of encirclement. Chinese access to port infrastructure across Pakistan, Sri Lanka, Myanmar, Bangladesh, and other neighbouring states is perceived as forming a constrictive arc around India. These overseas installations, while ostensibly commercial, possess latent military utility and could, under adverse circumstances, be employed for surveillance or offensive operations targeting Indian naval assets.

In a potential conflict scenario, Chinese submarines or missile-capable vessels operating from these nodes might seek to neutralise India's strategic deterrent capabilities or impede access to critical ports. Indian defence analysts frequently allude to the possibility of Chinese underwater platforms operating covertly near India's coastline, leveraging a network of friendly harbours for logistical sustenance.

Compounding these concerns is the asymmetry in naval capabilities. China's expanding maritime strength, including the potential deployment of carrier strike groups into the Indian Ocean, could place India at a relative disadvantage. While Indian strategy may emphasise denial—raising the operational costs for Chinese forces—the disparity in military hardware remains a critical constraint. Any maritime confrontation, even of limited scale, could imperil India's energy lifelines; for instance, disruption of traffic through the Strait of Malacca—through which a substantial portion of India's oil imports flows—would have severe repercussions.

These strategic anxieties are not confined to military considerations alone but extend into the diplomatic and economic domains. Official Indian discourse has increasingly characterised Chinese infrastructural expansion in neighbouring states as indicative of a broader containment strategy. Despite Beijing's assertions of benign intent, Indian media and policy circles frequently interpret such initiatives through the prism of "strategic encirclement."

Moreover, China's financial engagements with smaller regional states—particularly Sri Lanka and the Maldives—are viewed as instruments of influence-building. Beijing's support to Colombo during its civil conflict and its subsequent economic involvement have significantly enhanced its leverage within the island nation. In contrast, India's earlier policy emphasis on normative concerns inadvertently created space for China's expanding presence. Contemporary developments, such as the Hambantota port arrangement and narratives surrounding debt dependency, have reinforced apprehensions that certain regional actors may increasingly align with Chinese strategic interests.

Parallel concerns are evident in the Maldives, where rising indebtedness linked to Chinese financing has generated speculation regarding potential strategic concessions, including limited foreign military access. Although such interpretations remain contested, they contribute to a broader climate of suspicion within Indian strategic thought.

In aggregate, India's perception of the *String of Pearls* transcends the realm of conventional military threat assessment. It is equally understood as a challenge to India's traditional influence within South Asia and the wider Indian Ocean Region, encompassing diplomatic, economic, and geopolitical dimensions.

India's Countermeasures and Policy Initiatives

Confronted with these evolving strategic pressures, India has adopted a diversified and layered response mechanism. On the military front, considerable emphasis has been placed on naval modernisation and coastal



defence enhancement. The induction of advanced assets—including the indigenously developed aircraft carrier INS Vikrant, nuclear-powered and conventional submarines such as the Arihant-class, along with next-generation surface combatants—reflects this ongoing transformation. Despite these advancements, Indian planners remain cognisant of the quantitative imbalance vis-à-vis China's naval strength.

To mitigate this disparity, doctrinal focus has shifted toward anti-access/area-denial (A2/AD) capabilities within the Indian Ocean theatre. This includes the deployment of submarines, sea-denial mechanisms such as mines, and land-based anti-ship missile systems aimed at elevating the operational risks for any adversarial incursion. Concurrently, India has intensified its maritime presence through routine patrols, particularly in sensitive zones such as the Gulf of Aden and the Strait of Malacca, ensuring both anti-piracy operations and the secure transit of commercial shipping. Institutional mechanisms like the Indian Ocean Naval Symposium (IONS), along with bilateral and multilateral naval exercises, serve to enhance coordination, situational awareness, and interoperability among regional maritime forces.

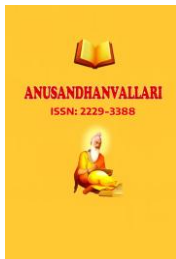
From a strategic and diplomatic standpoint, India has broadened its engagement with littoral and extra-regional partners. The articulation of the SAGAR (Security and Growth for All in the Region) doctrine in 2015 marked a significant shift, underscoring India's commitment to collaborative maritime governance and regional capacity-building. Through this framework, India has extended assistance in port infrastructure, coastal surveillance systems, and maritime training to smaller Indian Ocean nations. Initiatives such as operating facilities in Seychelles, infrastructural cooperation with Sri Lanka and Bangladesh, and the development of Iran's Chabahar port exemplify efforts to create alternative connectivity pathways that bypass strategically sensitive chokepoints.

At the multilateral level, India has reinvigorated strategic alignments such as the Quadrilateral Security Dialogue (QUAD), comprising the United States, Japan, and Australia. Although not formally articulated as a counter-China coalition, the grouping emphasises principles such as freedom of navigation and the maintenance of a "free and open Indo-Pacific," implicitly responding to growing Chinese assertiveness. Complementing this, India has pursued logistics-sharing agreements with multiple partners—including Singapore, France, and others—enabling reciprocal access to naval facilities for refuelling and maintenance, thereby extending its operational reach.

Operational coordination among QUAD members is further reinforced through joint exercises such as the Malabar naval drills, which enhance tactical synergy and maritime preparedness. Additionally, intelligence-sharing frameworks and increased surveillance of strategic chokepoints—including the Andaman Sea and the Malacca Strait—have strengthened India's situational awareness. The augmentation of military infrastructure in the Andaman and Nicobar Islands serves as a critical forward presence for monitoring Chinese naval movements. Simultaneously, investments in strategic ports such as Sabang in Indonesia and Chabahar in Iran aim to counterbalance China's expanding influence.

India has also explored the strategic utilisation of its island territories. Plans to develop naval facilities in Lakshadweep (Agatti and Minicoy) and the Andaman and Nicobar Islands are intended to enhance maritime surveillance and enable power projection across both eastern and western sectors of the Indian Ocean. These initiatives are complemented by efforts to secure overseas logistical footholds, including facilities in Madagascar and prospective arrangements in Oman, thereby expanding India's strategic footprint.

Economically, India recognises its relative limitations in matching China's expansive financial commitments and has instead adopted a targeted investment approach. Projects such as the development of Chabahar port, undertaken in collaboration with regional partners, provide strategic alternatives to Chinese-backed Gwadar. Similarly, initiatives aimed at strengthening maritime connectivity with African ports—such as Mozambique's Nacala—reflect an intent to cultivate influence in emerging regions of strategic importance.



Collectively, these measures coalesce into what is often termed the “Necklace of Diamonds” strategy—India’s countervailing framework to China’s *String of Pearls*. This approach emphasises network-building through strengthened bilateral ties, enhanced maritime cooperation, and the provision of viable developmental alternatives to Chinese projects. Key strategic locations—including Lakshadweep, Chabahar, Sabang, Duqm, Agaléga, and Assumption Island—serve as nodal points reinforcing India’s maritime posture and ensuring oversight over critical sea lanes.

Beyond military and infrastructural initiatives, India has also pursued broader strategic partnerships with nations such as France, Vietnam, Indonesia, Japan, and Australia. These collaborations encompass defence cooperation, joint exercises, logistical agreements, and technology sharing, thereby reinforcing a collective security architecture within the Indo-Pacific.

In parallel, India has advanced an agenda of economic diplomacy aimed at offering alternatives to China’s Belt and Road Initiative. By promoting transparent, sustainable, and cooperative infrastructure projects across South Asia and the Indian Ocean region, India seeks to mitigate concerns surrounding debt dependency while preserving regional autonomy. Through this multidimensional strategy—encompassing military preparedness, diplomatic outreach, and economic engagement—India endeavours to counterbalance Chinese influence while safeguarding its strategic interests and ensuring the stability of the Indo-Pacific maritime order.

Conclusion

The *String of Pearls* strategy represents China’s concerted effort to secure its global trade and energy corridors through the establishment of an extensive network of overseas facilities across the Indian Ocean. Developments ranging from Gwadar and Kyaukphyu to Hambantota remain under close scrutiny by India, reflecting deep-seated concerns regarding strategic encirclement and diminishing regional influence.

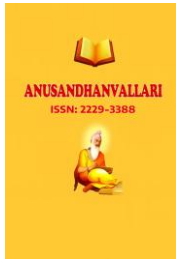
While China’s maritime and economic capabilities currently surpass those of India, the latter’s geographical advantages and focused strategic orientation offer a degree of counterbalance. India’s response—manifested through naval modernisation, strengthened alliances, and regional infrastructural engagement—illustrates an adaptive approach to an evolving security environment.

At present, it remains uncertain whether the *String of Pearls* will ultimately crystallise into a fully militarised network or persist primarily as an economic construct with latent strategic implications. Nevertheless, its emergence has undeniably catalysed a reassessment of India’s maritime doctrine. The future equilibrium of the Indo-Pacific will hinge upon India’s ability—alongside its partners—to uphold secure sea lanes and a rules-based maritime order in the face of China’s expanding presence.

In essence, while the *String of Pearls* may not constitute an immediate existential danger, it embodies a sustained strategic challenge that necessitates continuous and calibrated responses across diplomatic, military, and economic domains.

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