

The Sea and the State

Odisha's Maritime Heritage Trade and Blue Economy 2026

Edited by
Lakshmi Narayan Raut
Patit Paban Mishra
Chandi Prasad Nanda



ODISHA RESEARCH CENTRE • BHUBANESWAR

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Editorial

The present edited volume is the outcome of an international workshop titled “Sailing Through Time: Odisha's Maritime Heritage and Blue Economy.” Scholars from India and abroad shared their perspectives on the theme, opening new dimensions for coding, decoding, and documenting our understanding of maritime heritage and culture- locally, regionally, and globally. The present volume brings together a selection of those presentations for the benefit of readers and future researchers.

The selected articles are organized into five sections, each engaging a distinct aspect of Odisha's maritime history across the ages, while also tracing emerging horizons of the blue economy.

In the Section-I, we have included the lectures of our four distinguished invited guests, taking into account its immense value for the readers as well as the researchers.

Placed as a standalone contribution, Shri Bhartruhari Mahtab's address functions as the volume's conceptual prologue- less a formal “welcome” than a provocation that turns maritime heritage into a live research agenda. Beginning from the founding impulse behind the Odisha Research Centre, he frames Bali Yatra not as annual commemoration but as a diagnostic question: if Odisha once sustained centuries of ocean-facing trade and cultural circulation, “where is it now- where has it gone, and how?” He then deliberately maps the “gaps” that scholarship must fill- shipbuilding lineages, navigation without compass or radar, shifting coastlines, the absence of Andaman references in early literature, traces such as Roman coins, and the political economy of ports in ancient and modern Odisha. Importantly, Mahtab. advances a

set of historically testable conjectures: the social fear of sea-crossing and “outcaste” anxieties; and, more structurally, the role of temples as repositories of capital- “banks” that financed maritime activity- making repeated temple lootings not only an assault on faith but a dismantling of the financial architecture that underwrote shipbuilding and trade. The address closes by returning to the future-facing register of the workshop: blue economy as connectivity, port-led development, coastal infrastructure, and crucially, maritime skilling-marine schools, academies, and pathways into the merchant navy- so that heritage is translated into capability rather than nostalgia.

Sanjay Gupta’s presentation is positioned as the volume’s policy keystone- an interpretive bridge between Odisha’s maritime inheritance and the hard administrative question of how “blue growth” can be made durable, ecologically tenable, and socially inclusive. Framed explicitly against two familiar but insufficient registers- heritage as invocation, and ports as infrastructure. The essay’s central move is to recast the blue economy as an integrated governance formation rather than a single-sector thrust or a bundle of flagship projects. It foregrounds a governing diagnosis: Odisha’s constraint is less a shortage of opportunity than a coordination deficit-fragmented mandates across ports, fisheries, tourism, environment, renewables, inland waterways, and disaster management, producing “policy abundance without integration.”

It offers a portfolio logic of diversification that is conceptually and administratively instructive: natural capital (mangroves, seagrass) treated as productive economic substrate; distributed maritime infrastructure (minor ports, jetties, landing points) as inclusion-oriented nodes; aquaculture as the necessary reorganization of the food- livelihood system amid declining natural catch; offshore wind as a test-case for

marine spatial planning and trade-off governance; ecotourism as stewardship-linked employment (with an explicit gendered lens); and connectivity as the design principle that binds coast and hinterland, and positions Odisha within wider Bay of Bengal corridor architectures. The concluding insistence is unmistakable: the measure of blue development is not accelerated extraction, but state capacity for stewardship-resilience, distributive breadth, ecological intelligence, and institutional discipline.

Subrat Tripathy's essay functions as the section's vision-text, binding Odisha's maritime inheritance to the present-day grammar of ports, trade, sustainability, and state capacity. Its key move is to invert the usual hierarchy: maritime heritage is not an ornamental preface to development, but a historical blueprint for contemporary economic agency, prompting Odisha to reimagine itself as an ocean-facing coastline of consequence rather than merely a state with ports.

The argument unfolds through three linked frames: oceans as the planet's under-examined "engine-room" (climate, biodiversity, commerce); Odisha/Kalinga's maritime past as a system of connectivity (navigation, river corridors, Southeast Asian cultural traffic); and the blue economy as an integrated opportunity ecology-ports, logistics, fisheries, renewables, tourism, and marine research- bounded by sustainability imperatives. The Dhamra-Bhitarkanika-Gahirmatha reference underscores his insistence on governed coexistence between infrastructure and conservation. The article closes with a sharp hook-PPP reimagined as 'People, Planet and Prosperity'- positioning maritime revival as an ethics of growth, not just an expansion of throughput.

Pralay Kanungo's observations serve as the section's critical method-note. It cautions against treating maritime heritage

as a ready-made “glorious past” and instead foregrounds how such pasts are constructed- through sources, lenses, and interpretive choices. A brief historiographical map of post-Independence Indian history-writing (from nationalist to Marxist to processual state-formation approaches) operates here as a clear editorial warning: the lens determines the story.

A key intervention is his critique of one-way “transplantation/ Indianization” claims in Odisha- Southeast Asia narratives. He argues for connected histories- mutual circuits, negotiated influences, and regional agency- so the discussion remains credible rather than triumphalist. He also pushes two forward-facing prompts: read maritime history through the coast-hinterland relationship (goods, routes, institutions), and treat Pushpagiri as a potential global knowledge corridor, imaginatively reactivated as a university-scale institution. The closing note on the blue economy is deliberately guarded, stressing sustainability while flagging coordination and governance risks.

Section II, captioned “*Foundations and Archaeology (The Past)*,” is designed as a workshop in disciplined historical seeing. Rather than rehearse Odisha’s maritime past as a familiar romance of sails and pilgrim-ports, the section trains attention on the apparatus by which an oceanic history becomes legible: the kinds of evidence that can bear weight, the vantage points that distort or clarify, and the methods that turn inheritance into argument. The sea appears here not as scenery but as an organizing medium- one that carried people, practices, commodities, and meanings in both directions. The section’s composite claim is straightforward and demanding: maritime heritage is not secured by repetition; it is secured by reconstruction-through archives widened, materials tested, and narratives recalibrated against proof.

Patit Paban Mishra's "Odisha and the Khmer World: Maritime Migration and Cultural Rapprochement" presents Odisha as a civilizational nucleus within a transoceanic world that shaped the cultural destiny of Southeast Asia, particularly the Khmer world of Cambodia. The Bay of Bengal is framed as Odisha's cultural highway, transmitting indigenous seafaring traditions, customs, religions, arts, architecture and sculpture, as well as social and political formations. The author extends the discussion to Odisha's celebrated ports, open-sea navigation techniques, trade networks, and articles of import and export—alongside the cultural mobility that enabled infrastructural foundations. The article remains significantly focused on the relationship between Kalinga (ancient Odisha) and Kambuja, and its contribution to the emergence of Khmer kingship—premised on immigrated Brahmanic culture, socio-religious practices, rites and rituals, Sanskrit language, and the theorization of divine kingship. Another highlight is the discussion of Odishan Śaivism, the Devarāja cult, and sacred geography. The emphasis is on how Cambodia institutionalized cultural traditions associated with ancient Odisha to shape its identity—through sacred kingship, cosmological understandings of territory, ritual, political legitimacy, sovereignty, language, and the arts. The author cogently analyses how Śaivism shaped Khmer kingship and how Vaiṣṇavism—along with the Jagannath cult—contributed to the evolution of political theology in Cambodia. The parallels between Odisha and Cambodia, in respect of traditions, rituals, cultural practices, iconography, and sculptural enrichment, are carefully drawn. To cap it, the article sets the section within a transregional frame, positioning maritime movement as a two-fold engine: demographic mobility on one register, cultural translation on another. The title's insistence on "*rapprochement*" does conceptual work: it nudges the reader away from one-way

diffusion narratives and toward a relational understanding in which contact produces mutual reorderings- of ritual, aesthetic vocabularies, and political imagination- across the Bay of Bengal. In this move, the sea becomes a corridor of encounter rather than a line of separation, and “migration” is treated less as episodic travel than as a long-duration mechanism that thickens cultural affinities into recognizable worlds.

Sila Tripathi, in “Early Maritime Contacts of Odisha along the East Coast of India: Prospects of Further Maritime Archaeological Research,” focuses on the prospects of using new archaeological evidence to reconstruct ancient Odishan maritime culture. Drawing on archaeological, epigraphical, numismatic, and literary sources- alongside artistic and sculptural evidence- Odisha is situated within the mainstream maritime traditions of India and beyond. Findings from archaeological explorations carried out by the ASI and the NIO on the eastern coast of India are highlighted. The essay identifies certain hitherto unknown ports of Odisha (along with known ones) through literary evidence. In addition, it emphasizes Odishan boat-building technology and the importance of studying stone anchors. For reconstructing the maritime heritage of Odisha, research initiatives such as mapping ancient shorelines, analyzing coastal migration, conducting field explorations (both coastal and inland), and instituting a maritime research centre-cum-museum are strongly recommended. More specifically, Tripathi’s article sharpens the section’s evidentiary conscience. Where Mishra opens a wide interpretive horizon, Tripathi tightens the lens, insisting that maritime history must also be answerable to material traces, coastal geographies, and the constraints of archaeological method. By foregrounding “prospects,” the essay functions as a research manual: it does not merely place early contacts on a timeline, but indicates how future

scholarship can be made more exact- what explorations, site-attentions, and disciplinary collaborations are required to move beyond plausible assertion. This is not merely additive; it is corrective. The argument remains honest through the insistence that the ocean's past cannot be willed into existence through cultural memory alone; it must be retrieved through patient techniques of recovery.

Umakanta Mishra's "Changing the Gaze: Tapping Sources from Southeast Asia to Explore Maritime History of Odisha" begins by locating the indigenous tradition of *Bali Yatra*, as narrated in literature linking rituals and practices with overseas maritime activity, maritime communities, and the exchange of material culture between Odisha and Southeast Asia. The article presses the need to move beyond inherited frames by shifting the evidentiary centre toward archaeological materials available across Indian Ocean countries. Specifically, the presence of Kalingan traders in East Java, and the exchange of goods supported by archaeological evidences (wares, glass beads, and inscriptions- such as Javanese, Palebuhén, and Balawi) receive due emphasis. The scholar convincingly investigates political and cultural connections between East Java and Kalinga during the early medieval period. Further, the article reviews matrimonial and political connections between Kalinga and Sri Lanka, leading to the foundation of a Kalinga dynasty in Sri Lanka. It also delineates Odisha's relations with Burma, focusing on the emergence of Buddhism as a state religion during the 5th-6th centuries CE, its influence on temple architecture, and the appropriation of indigenous cults. Mishra's presentation undoubtedly widens the section's archive in a different direction- and, in doing so, widens its ethics. The phrase "*changing the gaze*" is not rhetorical ornament; it signals an epistemic shift. Instead of allowing Odisha's maritime story to be told primarily from the shoreline inward- through local

legends, internal chronicles, or later reconstructions– the essay repositions Southeast Asia as an active repository of evidence and perspective. Odisha becomes not only the subject that speaks, but also the object that is seen– named, described, and remembered elsewhere. This external vantage can corroborate, complicate, and sometimes contradict familiar accounts, and it forces maritime history to become genuinely comparative rather than provincially self-confirming. The sea, here, is also an archive– distributed, multilingual, and resistant to single-source certainty.

Benudhar Patra’s article, titled “Relocating the Maritime Heritage and Linkages of Early Odisha: A Study of Archaeological Sources, Texts and Traditions,” offers a vivid, source-driven reconstruction of Odisha’s early maritime history and overseas linkages across a long historical span. The article is placed in this section as a source-led foundation piece– an evidentiary map of how Odisha’s ocean-facing world can be recovered with discipline, not nostalgia. It triangulates the results of archaeological explorations and excavations with relevant Sanskrit, Pali, and Odia textual materials, and then extends the archive into folklore, folk songs, oral traditions, and ritual life to show how maritime memory survives beyond formal records.

A particular strength is the insistence that “text and tradition” are not decorative supplements to archaeology: customs, fairs, festivals, and ceremonial practices are read as living carriers of past maritime practice, while the worship of maritime gods and goddesses– in Odisha and across regions historically connected through sea-voyages– is treated as an interpretive clue for locating older port-worlds and sailing cultures. The presentation further underlines the historical value of classical chronicles and foreign travel accounts, and it briefly notes shared traces in castes, surnames, and place-names across

maritime contact zones. In this way, the article functions as a reference spine for the section—cataloguing sources, cues, and research pathways that later contributions can build on without slipping into celebratory generalities.

Sujit Kumar Panda’s “Unveiling Maritime Trade of Kalinga Through Literary Lenses: A Study of Ganjam” enumerates the use of literary sources for maritime historical narratives and conjectures overseas trading activities of Kalinga up to the 6th century BCE, particularly with South and Southeast Asia. Primary material is culled from classical literature, *Puraṇas*, *Kavyas*, Buddhist *Jatakas*, and other literary texts. The focus is on ports, merchandise, boat-building technology, navigation and shipping traditions, sea voyages and riverine trade, typologies of boats, maritime deities, folklore, and legends that glorify Kalinga’s maritime past. The scholar attempts to highlight the maritime trade of Ganjam—hitherto neglected or only marginally addressed in maritime discourse. The role of ruling dynasties since early times is also depicted. It can be surmised that the essay completes the section’s evidentiary architecture by translating literary material into historical inference. Texts are treated not as ornamental supplements to “real” history, but as instruments that preserve commercial imagination—names of places, rhythms of exchange, and social expectations around ports and travel—often in compressed or coded form. By centering Ganjam, the essay also prevents “maritime Odisha” from collapsing into a single canonical geography; a specific coastal region becomes a test-bench where trade can be read through narrative and language, and where literary attention yields a map of economic life that may not survive in administrative documentation. In this sense, the article models a craft practice: how to read literature as evidence without reducing it to data, and how to keep interpretive reach tethered to textual particulars.

Viewed as a whole, the section assembles a grammar of maritime historiography. It moves from the transregional claim (Odisha–Khmer connections) to methodological discipline (archaeological prospects), from archive–expansion (Southeast Asian sources) to interpretive technique (literary lenses). Each piece extends the previous one’s reach while policing its temptations: ambition is paired with verification, breadth with method, narrative with materials. Section II thus establishes the volume’s baseline competency: before policy, before blue–economy futures, before contemporary maritime identity can be meaningfully debated, the past must be made durable– through evidence that can be checked, frames that can travel, and methods that can be taught.

What lingers from this section is a composite insistence that Odisha’s maritime past is neither a relic to be venerated nor a slogan to be deployed. It is a field to be worked upon– by excavation and comparison, by translation and reading, by archive and argument. In short: attention before assertion, method before myth, evidence before spectacle.

Section III, captioned “*Regional Legacies and Technology (The Bridge)*,” is the volume’s hinge: a bridge–architecture that refuses to treat “heritage” as either a sealed antiquity or a museum label. The essays gathered here track the mechanisms by which the sea’s past continues to operate inside the present– through craft, social hierarchies, trade regimes, and diasporic memory. This section therefore functions as a laboratory of continuity and conversion: how older maritime capabilities are refashioned under new political economies; how regional coastal worlds metabolize imperial reorderings; how mobility produces not only movement of bodies but also portable cultures, retained and remade abroad. If Section II trained historical sight, Section III trains historical grasp– showing what

maritime life feels like when handled as technology, social practice, logistics, and lived inheritance.

Prativarani Barik's article, "Colonialism in South and Southeast Asia: The Impact of Odia Culture in Southeast Asia," offers a wide-angled, chronological narrative of Odisha/Kalinga as a sea-facing society whose traders and travelers carried commerce, ritual, and cultural forms across South and Southeast Asia over long *durée* circuits. Drawing on an unusually broad evidentiary palette- archival and secondary research, archaeological finds, sculptural references, classical/literary materials, and foreign travel accounts- the essay foregrounds the port-and-route ecology of Kalinga (with recurring attention to nodes such as Tamralipti and Palur) and the inland road networks that linked capitals and markets to maritime gateways.

A distinctive feature is the article's social-lexical attention to maritime actors: it interprets terms, titles, and occupational/caste markers associated with seafaring communities (including the figure of the *sādhava*) and illustrates how wealth from seaborne commerce intertwined with status- sometimes even enabling proximity to nobility. The argument is thickened through "living culture" materials- boat-related festivals (notably *Boita Bandana*), deity-centered rituals (especially around Goddess Mangala), and craft memory around ship/boat building- so maritime history is read not only through texts and objects, but also through continuing ceremonial practice.

Crucially, the article does not treat "colonization" as a settled claim. It stages the theoretical debate on Indianization/Greater India by presenting competing interpretations- ranging from conquest-led diffusion to local agency and merchant-led cultural transfer- before tracing Odia/Kalinga influence

in political formation, naming practices, language-literary circulation, religious-ritual systems, and art/architecture across Southeast Asian contexts.

Lakshmi Narayan Raut's article, "Revisiting Maritime World of Late Medieval Odisha," opens with a brief framing of Odisha/Kalinga's longer maritime inheritance- overseas connections, cultural exchanges, and shared sea-borne traditions- and then deliberately shifts the lens to the late medieval phase when coastal commerce was reshaped by European corporate entry and the consolidation of port-based trading settlements. The central narrative tracks the coming of the Portuguese, Dutch, English, Danes, and French as traders, the rise of prominent coastal entrepôts, and the manner in which Odisha's maritime space acquired a sharper international profile through factory networks, competitive monopolies, and changing routes of exchange.

A major analytical strand is the privilege-and-permission regime that made trade operational: the procurement of *farmans*, *parwanas*, *nishans*, and *dastaks* from Mughal authorities, the negotiation of customs exemptions, and the everyday strategies- presents, brokerage, rivalry, and repeated confirmations- through which companies sought commercial advantage. Alongside this, the article surveys internal and seaborne trade, major imports/exports, and Odisha's maritime linkages with regions across Asia and Europe, mapping commodity circulation and exchange patterns within and beyond India.

Importantly, the article also widens the actor-frame beyond the companies by examining the roles of local merchants and brokers, private traders, interlopers, and free merchants, and by noting the operational mechanisms of procurement and finance (including advance/credit practices and bullion

flows). The concluding emphasis is on consequence: maritime commerce as a driver of monetization of the rural economy, the growth of urbanization, the rise of merchant entrepreneurship, and accompanying socio-cultural changes– showing late medieval maritime Odisha not as a mere after-echo of ancient glory, but as a distinct historical economy shaped by institutions, permissions, and competitive trade.

Rajat Kanta Dash's "A Study on the History of Boat and Ship Building in Odisha" delineates indigenous traditions chronologically since ancient times, drawing on existing literature and evidence– sculptural as well as physical. It highlights typologies of vessels, crafts, terminology, and navigational technologies practiced by maritime communities through the ages. The author undertakes an archaeological-hermeneutic analysis to decode boat-building processes. Materials used for building boats and ships are identified region-wise, with detailed classification and nomenclature. Continuities and changes in boat/ship building across time are also discussed. The article does not merely narrate a craft tradition; it assembles a genealogy of making– where knowledge is stored in hands, tools, timber choices, design principles, and intergenerational apprenticeship. Boatbuilding appears here as a regional technology: neither primitive nor incidental, but a practical intelligence shaped by coastal ecology, riverine conditions, and the demands of movement and trade. By foregrounding construction itself, the essay quietly repositions maritime history away from grand claims and toward a sturdier question: what technical capabilities made oceanic and coastal connectivity possible in the first place? The sea, in this frame, is not an abstract "route"; it is a stress test that a vessel must survive– and therefore a discipline that shapes communities of craft.

Kanhucharan Padhy's "Maritime Heritage of Kalinga: The Overseas Trade of Ganjam District Under the British Raj" provides a chronological note on ports and overseas maritime activities from early times to the modern period. It discusses the commercial geography linking Odisha with South and Southeast Asia and examines British occupation of South Odisha, including undivided Koraput and Ganjam districts. The essay focuses on regional ports, maritime activities, articles of import and export, commodities, and price structures during the British period. The maritime potential of Ganjam is illustrated, alongside the causes behind the decline of ports and the consequent weakening of Ganjam's overseas maritime connections. This presentation shifts the emphasis from social fabric to imperial management- toward the re-scripting of exchange. By selecting Ganjam under the British Raj as the focal aperture, the essay treats "overseas trade" not as a timeless regional virtue but as an arena of contested regulation, profit extraction, and altered circuits. The coastal district becomes a diagnostic site where older maritime dispositions encounter colonial governance: commercial rhythms are re-channeled, incentives redistributed, and the meaning of "overseas" reframed by imperial priorities. This is the bridge's political economy lesson. Where Dash recovers indigenous lineages of craft and community, Padhy exposes the historical moment when trade becomes a more explicitly governed and asymmetrical system- an infrastructure of power as much as an infrastructure of movement.

Sunil Kumar Biswal's "Odias in Malaysia: Migration, Memory, and the Preservation of Cultural Roots" delves into the migration of Odia labourers to Malaysia (formerly Malaya) during the late 19th and 20th centuries CE. It throws light on their living conditions, unfamiliar climate and environment, and experiences of social isolation. The article examines the

Odia diaspora's preservation of language, literature, and culture, as well as the changed political landscape after the independence of India (1947) and Malaysia (1957)- yielding a dual identity: politically Malaysian and culturally Odia. The author analyses contemporary revival and cultural assertion amid challenges posed by globalization, linguistic dominance, and generational change. In essence, Biswal's observations contemplate the hinge by following maritime mobility beyond the shoreline and into the moral archive of the Diaspora. Migration is not treated as a footnote to trade but as a second theatre where maritime heritage is conserved and re-authored. "Memory" and "preservation" here are not sentimental terms; they name a set of practices- ritual, language, community organization, and everyday cultural maintenance- through which people carry Odisha with them, and then negotiate what must be retained, what can be adapted, and what is inevitably transformed. The article thus widens the section's definition of "technology": not only ships and trade systems, but the social techniques by which identity survives displacement. The sea becomes an agent of rearrangement, and the migrant community becomes an institutional form- an informal archive that keeps cultural roots alive under unfamiliar skies.

Taken together, these essays construct a four-part bridge: craft-capability (how movement is built), social identity (who moves and at what cost), colonial political economy (how exchange is governed), and diasporic inheritance (how mobility sediments into memory). Each piece modifies the next. Boatbuilding supplies competence; colonial history demonstrates how competence and agency are constrained by power; and Diaspora reveals their long afterlife. The section's implicit manual is therefore not about nostalgia but about transmission- how skills travel, how families endure separation,

how systems re-code trade, and how people remember what systems attempt to erase.

What lingers from Section III is an insistence that “the bridge” is not metaphor alone; it is real historical engineering, assembled from timber and labour, caste and ritual, tariffs and routes, prayers and language. Maritime heritage here is shown as something made, lived, governed, and carried- craft before romance, structure before slogan, memory before amnesia.

Section IV, captioned “*Policy and The Blue Economy (The Present)*,” is the volume’s point of contact with the now. After Foundations (the deep past) and the Bridge (regional legacies as working continuities), this section treats the maritime domain as an active policy field- where institutions do not merely “support” the sea but attempt to design it: through frameworks, incentives, regulatory choreography, and public investment choices that either convert coastal advantage into durable prosperity or squander it into scattered projects and short-lived headlines. In this register, the “Blue Economy” is not a slogan; it is a governance problem with measurable consequences. The section functions as a policy workshop: it asks what it would mean to move from inherited maritime possibilities to deliberately engineered maritime outcomes, with the sea treated as infrastructure, livelihood system, and strategic frontier at once.

Nishanth S. S., in “Policy Frameworks for Developing Odisha’s Maritime Sector,” analyses Odisha’s Port Policy 2022 by highlighting the Government’s strategic goals, key objectives, and corresponding strategies. The primary focus is on: (i) augmentation of cargo-handling capacity, (ii) development of non-major ports and connectivity infrastructure, (iii) development of coastal shipping and inland waterways, (iv) port-led development and creation of a maritime ecosystem,

(v) technological interventions in the maritime sector, (vi) sustainable maritime development, and (vii) implementation and monitoring processes. The author proceeds to review the role of the Odisha Maritime Board (created in March 2022) in terms of objectives, functions, and challenges. The essay throws light on port infrastructure development, promotion of coastal shipping and inland waterways, maritime tourism potential, environmental sustainability, creation of a skilled maritime workforce, and Odisha's engagement with the Sagarmala Programme- a flagship Government of India initiative aimed at port-led development. Nishanth's presentation therefore sets the conversation within the grammar of the state- how policy is assembled, sequenced, and made implementable. Its primary move is to treat "maritime development" as a coordinated system rather than a portfolio of disconnected initiatives. It sharpens attention to the enabling architecture behind visible outcomes: institutional roles, regulatory clarity, planning logics, and the interlocks between ports, logistics, coastal industry, fisheries, skills, and environmental safeguards. In doing so, it repositions "frameworks" as invisible scaffolding that disciplines ambition- aligning investment with capability, capability with human capital, and human capital with predictable rules. The sea becomes, in this account, a domain that demands administrative coherence: a space where fragmented governance produces bottlenecks, and where clear policy choreography can reduce transaction costs, manage risks, and invite long-horizon investment.

Sasmita Rani Shasini, in "Odisha's Contribution to India's Blue Economy," analyses Odisha's blue-economy potential through a comprehensive blueprint. The focus is on the transition from an ocean economy to a sustainable blue economy, key government initiatives such as the Deep Ocean Mission and the Sagarmala Programme, the O-SMART scheme, and integrated

coastal zone management. The article also delineates the India–Norway Task Force on Blue Economy for sustainable development and national fisheries policies. It concludes with a brief reflection on Odisha’s maritime history and its contribution to India’s blue-economy trajectory. Shasini’s presentation thus widens the aperture from sectoral design to strategic placement. Rather than treating Odisha as an isolated case, it situates the state as a contributor to India’s larger ocean-facing economic transformation. The analytical wager here is scale: Odisha’s coastline, ports, coastal communities, and maritime-linked industries are read as components within a national blue-economy trajectory— where regional strengths must be articulated as national assets, and where state-level decisions accumulate into national capacity. “Contribution,” in this framing, becomes an argument about positioning: Odisha not only benefits from the blue economy; it helps constitute it—through supply chains, coastal enterprise, maritime services, and the broader ecosystem linking ocean resources with industry, trade, and employment.

Read together, these two articles operate as complementary instruments in the same policy laboratory. One calibrates the internal mechanics of maritime governance— how frameworks convert intention into execution. The other models the external logic of maritime relevance— how Odisha’s choices plug into India’s blue-economy scale and strategic direction. The dialogue between them is productive: policy frameworks without national positioning risk becoming technocratic checklists; national contribution narratives without workable frameworks risk becoming aspirational rhetoric. By pairing the two, the section insists on a double discipline: design and direction, capability and alignment, governance and scale.

At the level of the section, an implicit manual emerges for “the present”: treat the maritime sector as an integrated

system; treat the blue economy as both opportunity and obligation; and treat policy as the craft that binds ports to people, growth to safeguards, and ambition to accountability. The present, these essays remind the reader, is where history is either capitalized or betrayed: the sea can become a corridor of prosperity or a theatre of extraction, depending on how rules are written and enforced.

What lingers from Section IV is a sober proposition: maritime futures are not discovered; they are built- through coherent frameworks, strategic positioning, and the patient alignment of institutions with livelihoods. Not policy as proclamation, but policy as machinery- tested in implementation, accountable in outcomes, durable in public value.

Section V, captioned "*Innovation and Future (The Future)*," is the volume's forward edge: the point where maritime heritage is no longer treated primarily as memory or documentation, and policy is no longer treated primarily as the state's present-tense toolkit, but where both are reworked as design material for what Odisha could plausibly become. The section is best read as a laboratory of futures- an arena in which the coastline is interpreted not merely as geography but as a platform, and where "innovation" is understood in its older, harder meaning: the disciplined remaking of practice, the upgrading of capability, the deliberate reduction of fragility. Here, the future is not imagined as a break from tradition; it is imagined as continuation with intelligence- new uses, new standards, new forms of maritime competence, built on the accumulation of older know-how.

Aparna Mukherjee, in "The Importance of Odisha Ports in the Blue Economy of Odisha- Past, Present, and Future," briefly throws light on Odisha's important ports since ancient times, maritime routes linking Odisha with South and Southeast

Asia, and voyages by ship. The author indicates the causes behind the decline of ports, focusing on geomorphological and environmental changes, political-administrative and economic factors, technological and navigational limitations, and religio-cultural shifts. The essay then examines the role of modern Odisha ports in the development of India's blue economy: transformation of existing ports, port infrastructure, expansion of trade, fisheries, and industrial growth. Challenges such as environmental degradation, overfishing, resource depletion, limited technology and infrastructure, policy gaps, and the shortage of skilled workforce are highlighted. Alongside recommendations for the growth of the blue economy in Odisha, the author outlines areas of future research viz. fisheries, biotechnology, pharmacy, marine tourism and resource management, oceanic renewable energy, shipping, trade, and policy. The article anchors the section in the strategic infrastructure question: ports as Odisha's hinge between land and sea, between regional production and global circulation. Its primary move is temporal and integrative- it braids past, present, and future to show that ports are not static sites but evolving instruments of statecraft and development. Ports appear not merely as cargo terminals but as governance-intensive ecosystems- requiring coordination across logistics, hinterland connectivity, industrial clustering, environmental management, resilience planning, and the institutional discipline to prevent long-term capacity from being sacrificed to short-term expediency. By insisting on ports as continuity across time, the essay also carries a sober warning: without anticipatory planning, port-led growth can reproduce older patterns of extraction and exclusion, even under new "blue" branding. The future, then, is treated as a design problem- how to make port development economically catalytic, socially legible, and administratively sustainable.

Aaditya Kumar's "Indigenous Boat Building Traditions and Maritime Technology" discusses boat and ship-building technology and the progress of naval engineering, drawing on practices followed indigenously and abroad through the ages. Interventions of modern techniques such as AI and 3D printing are highlighted in relation to shipbuilding. Special focus is given to the development of oceanic and inland waterways of Odisha as an economical, eco-friendly, and energy-efficient mode of transport- contributing to the blue economy of Odisha in particular and India in general. The author details ancient Odishan methods of making seafaring vessels (Tankia, Patia, and Catamaran) that continue into the present day. Advances in technology and their incorporation in vessel-making receive special emphasis for understanding transformation in shipbuilding and safe seafaring. Aspects such as environmental cleanliness, sustainable infrastructure, lowering operating costs, and the challenge of pollution are addressed, alongside reflections on inadequacies in maritime safety precautions during natural calamities. The line drawn between traditional boat-building and modern vessel-making, for achieving sustainable economic growth for all concerned, is refreshingly instructive for understanding Odisha's maritime culture. It can be surmised that Kumar's study shifts attention from large infrastructure to embedded technique- from the macro-architecture of ports to the micro-architecture of craft. The essay recovers indigenous boat-building as a living technology system rather than a folkloric residue. Its deeper analytical work is to reposition tradition as a repository of engineering intelligence: accumulated solutions to local waters, winds, materials, maintenance realities, and community labour regimes. Here, "innovation" is reframed most sharply. Instead of importing novelty as a prestige object, the essay invites a different pathway: upgrading from within-

documenting, standardizing where appropriate, protecting what is ecologically and culturally adapted, and translating artisanal knowledge into contemporary maritime capability. In effect, it treats craft as RandD conducted over generations: a form of practice-based science that can still teach modern planning how to build with constraints rather than in denial of them.

The pairing is deliberate and productive. Ports represent scale, capital intensity, and the politics of coordination; indigenous boat-building represents adaptability, distributed knowledge, and the ethics of continuity. One is the state's visible maritime face; the other is the community's tacit maritime competence. Read together, they stress-test an easy assumption that the future is only a matter of bigger infrastructure or newer technology. The section quietly argues the opposite: Odisha's maritime future will depend on how well it can connect the mega and the granular- how ports relate to coastal livelihoods, how maritime growth relates to skill formation, how "development" relates to knowledge that already exists but is rarely treated as knowledge.

Taken as a whole, Section V offers a future-oriented manual with two complementary rules. First: build maritime capacity as an ecosystem, not as isolated assets- ports, logistics, industry, environment, labour, and governance must be designed to work together. Second: treat indigenous technological memory as capability, not nostalgia- because resilience is often inherited before it is engineered. What lingers from this section is a composite ethic of maritime modernity.

Prof. Lakshmi Narayan Raut

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The editors remain indebted to all the contributors who have kindly transformed their presentations into well-researched articles for inclusion in this volume. We further acknowledge, with sincere thanks, the valuable assistance rendered by Mr. Yash Sharma, Ms. Sonali Dalai, and Mr. Chinmaya Singh in the preparation of the press copy and the technical processing of the manuscript.

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SECTION - I

INVITED GUEST LECTURES

Situating Odisha in Maritime Traditions

Bhartruhari Mahtab

When we speak of Odisha's maritime traditions, we are not merely invoking a decorative memory of the past. Every year, we speak of Bali Yatra; we recall our seafaring ancestors; we remember the ships that once moved across the bay and the ocean; and we take pride in a history of trade and commerce which, as historians tell us, continued for nearly fifteen hundred or sixteen hundred years. But the basic question remains: where is that maritime tradition today? Where has it gone, and how did a society with such a long ocean-facing history lose that older strength?

This was one of the fundamental ideas that gave shape to the Odisha Research Centre. The thought was simple, but its implications were large: if Odisha could once connect itself with distant coasts, cultures, and markets through the sea, then the history of that achievement, its decline, and its possible revival deserve serious study. This idea was nurtured with deep interest by our Education Minister, Shri Dharmendra Pradhan, who felt that Odisha needed an institution capable of examining such questions with academic seriousness and future-oriented purpose.

Therefore, as we gather here to discuss maritime activity, blue economy, and the way forward, we must begin not with celebration alone, but with inquiry. We have spoken often of our hoary past, of Bali Yatra, of ancient ships, of overseas commerce, and of Odisha's connections with Southeast Asia. But the more difficult question is why that inheritance weakened, what forces interrupted it, and how, in independent India, we can recover not only the memory of that culture but also the capability that once sustained it.

It is not only because of two hundred years, or one hundred and fifty years, of British rule, or around three hundred years of Mohammedan subjugation, torture, or exploitation- but where has it all gone? And how can, in this independent India, we revive that culture?

These were the stray thoughts whenever we got time to discuss our state, the challenges that this generation- the present generation- is facing, and how to bring a new future for this state, for this province, and also vis-à-vis the nation. It was from these thoughts that the idea of forming a research centre emerged. Subsequently, he became the Minister for Education. Then perhaps, just after COVID, we could find some time to work on this. And I am truly thankful that he nurtured that seed, and that it is now blossoming.

Hardly two years have passed, and he is so passionate about this centre. At one point of time, an idea also came to his mind: "Should we call it Odisha Research Centre, or should we give it a more national outlook?" My logic was that if it is Odisha Research Centre, it can still engage with national institutes and undertake research of national importance. Since it is stationed in Bhubaneswar, let us name it Odisha Research Centre. Across our country, there are research centres named after their locations- Madras Research Centre, Mumbai Research Centre. Why should we not have Odisha Research Centre? Even Hyderabad has its own kind of research centre.

And he saw to it that this should not survive only so long as he remains the Minister of Education; it should survive for many, many years. We should bring in more academics, and it should become a vibrant centre. Luckily, although two or three dates had to be shifted, this is the final one. Before the end of March, before the close of the financial year, Chandi Babu could organise it today and tomorrow.

I am truly thankful to all of you who have gathered here to speak on our maritime activities, the blue economy, and the way forward. Rightly, Chandi Babu has said: “To delve into the past and draw encouragement is one thing. To proceed to the future, to prepare a plan, and to make society think along that line is another.” And here, that convergence is taking place.

Odisha has been blessed by nature. Odisha has also been exploited by nature. There was a time when Pandit Jawaharlal Nehru came to Cuttack to address a gathering at Kila Maidan, as we call it, just after a very severe flood. He had asked the public, “When floods are ravaging your area, why do you live there? Why don’t you shift to higher ground?” He used to interact with the public in this manner, and there was a tremendous uproar against the Prime Minister at that time because he had touched a very sensitive nerve of our people.

We have lived with nature, as Mr. Tripathy has just now mentioned. We have lived with nature. We do not compromise with nature. We do not compromise with our interests either. But we have learnt how to live with the kind of nature that has been given to us; we have lived with that.

There are a number of valleys in this area that we call Odisha today. The boundaries have shifted many times. Today we have a specific boundary, and we say that we have a coastline of four hundred and eighty kilometres. There was a time when the coastline extended much beyond this. Keeping that in mind, history has to be written.

Our boys and girls were getting married into Tamil society, into the different kingdoms of what we call Tamil Nadu today. Even today, some of my Tamil friends ask: “Why is it that all the princes of Kalinga or Odisha used to marry in our land?” I think that is something which Odisha Research Centre can find out.

Why that name itself- Gundicha? She is from that area. There were many such examples- not only Padmavati, about whom there are many folk tales and stories. But even this relationship -was it only through land?

And here, while I was speaking to Virendra Tiwari Ji, when the mention of the Andaman Islands came, these are some stray thoughts that came to my mind. In ancient literature, there is no mention of the Andaman Islands. Why? The reason, which I believe, is that most of our seafarers were travelling along the coast—along the eastern coast of our Indian peninsula—or they went beyond present-day Bangladesh and Myanmar to the other side. So those were the kinds of ships that were available then; they were not venturing into deeper waters in the way steamships did later. The Portuguese first discovered the Andamans, then subsequently the French, and then the British came there. The Andamans remained undiscovered by our ancient mariners.

But then how were they going to Southeast Asia? What type of ships were they building? How could they trade with Thailand, with Champa as it was called in those times? What relationships did they have with Chinese traders? And how do we find traces of Roman coins here in our state?

These are certain questions- the gaps, as Chandi Babu has very rightly mentioned, are still there, and those gaps need to be filled. What type of trade were they conducting? The hinterland was the main source.

The idea of Ashoka attacking Kalinga during that period- 261 BCE- was it to control the ports and maritime activities that were then under the control of the Jains of Kalinga? Repeatedly we hear, and even eminent historians say, “Who was the king? There was no king, because this was a Janapada. It was ruled

by an elected body. It had a huge army to protect its ports and maritime activities.” And was it also because of the iron ore that Odisha, even today, possesses? The finest iron was being produced in this state. Elephants were also being captured and used in warfare.

There were many reasons why Magadha attacked. And Magadha itself was a landlocked state. Odisha was not subjugated by Magadha, not even by Chandragupta. But many times, history throws before us a number of questions, and today we find very little answer to them. Yet, as the mind delves into these reasons, one can explore what those reasons might have been.

That is why I believe that when we sail through time, as the topic rightly says, we are trying to bridge ancient routes. And those ancient routes begin with a very basic question: who built the ships? Who were they?

One question that even today surprises me is this: Cuttack- I come from Cuttack- has been ravaged repeatedly by many marauders. Not only Firoz Shah Tughlaq, who destroyed the grand Jagannath Temple of Cuttack and converted a large number of people to Islam, but later also Afghan rulers from Bengal ravaged Cuttack. Yet what we see today- or what existed till 1947, that is, until independence- is that there were certain settlements, as we call them, Sahis, which had existed earlier and still continued. They did not run away. Why? Some people got converted; some did not. Their own religion and practices were maintained. Why?

The reason, I believe- and I think historians will have to concur on this- is that there are three castes which are very strong in Cuttack. In today's parlance, they are the Yadav or Gowda caste, the Hadi caste, and the Kaivarta caste. These are three major communities with very large settlements.

Bada-bada Sahi Cuttack re achhi. Ae mane kemiti rahile? Kahin Cuttack chadiki gale nahi. Karan jie bhi asile, those who came, they wanted their service. They did not disturb them. It did not disturb their administration. It did not disturb their revenue collection. They maintained them. Even today, if one wants to win from the Cuttack seat, one has to take care of these three castes. No matter how much we may say that Odisha politics is not run by caste, I know that for the last thirty years these are the three castes that have dominated.

The Brahmins ran away. Those who used to engage in warfare also ran away, or got converted. But these three castes continued because they were deeply involved in shipping and maritime activity. You need strong-armed people, strong young men, to run ships.

And as Cuttack is the starting point of the delta, from where you have a connection with the hinterland, it is through Cuttack that movement happens. Through Cuttack you go to Sonapur- and in between to Kantilo or Baideshwar to begin with. Baideshwar was the first point, Kantilo the second, Boudh the third, and Sonapur the fourth. Once you move upward- Hirakud Dam came much later, as you know- even beyond that they had different kinds of boats which would go and collect materials, not only forest produce or minor forest produce, but many other things.

All that had to come to Cuttack. There it had to be segregated, and then moved through different kinds of ships. Some goods had to go through the river Prachi or towards Chilika, and others through the Mahanadi to Paradip. These were different kinds of vessels that carried goods and people. After crossing the waves for three kilometres, or perhaps seven kilometres at the most, the cargo would again be transferred to bigger ships.

Who built these ships? And the greater question, which still remains a gap, is this: who built them? Timber was available, certainly- but were these entirely wooden ships? Odisha had a unique maritime tradition. I think subsequently Mr. Singh, or Dhananjay Ji, may discover through other methods whether these were only timber ships, just as balsa wood was used in South America, in Peru, to build ships that were very strong and yet very light. We did not have balsa wood here.

Leather was there, and leather was stitched and used to protect the wood. That technique, Sanjeev Sanyal is presently working on- trying to understand what exactly those ships were like. When Biju Patnaik was Chief Minister, as we all know, an attempt was made to prove the route through which our sailors travelled from our coast to Indonesia. Of course, at that time they had radar, and monitoring was also being done. But when our sailors travelled earlier, there was no radar. The compass came into use only after the fourteenth or fifteenth century CE. Before that, they read the weather. They read the current. Just imagine the science involved in that. That is another aspect. At some other point of time, we can also have a workshop on this: how to read the sea current, how to read the weather, and what mechanisms were then available.

Talking about the builders of ships, I do not find anyone- even on the Andhra coast or in the Coromandel delta—who built ships of the nature that comes to our mind in the context of Odisha. Yes, there are some shipbuilders even today on the Kerala coast.

And while speaking of the coast and beach tourism, one thing I have noticed is this: you can spend hours and hours on the western coast of our country on the beach, but if you spend even half an hour on the eastern coast- anywhere, not only in Odisha, even in Chennai, even in Madras- your whole

body becomes sultry. That is one of the main reasons why beach tourism has not been encouraged in our region in the same way. But water sports, of course, can be.

There are two words that have intrigued me: Angkor Wat. Locally they pronounce it in their own way, and the French wrote it down in the Latin alphabet in theirs. But if you close your eyes and say it to yourself, do you not hear “Angkor wat?”— and then perhaps “Omkar”? Angkor Wat is dedicated to Vishnu, and Omkar, Om, is also invoked in Vaishnava thought. It is a Vishnu temple, though later Shaiva elements also entered the complex. And what a tremendous engineering skill it represents. Tathagata Satpati once went there and returned and told me about the engineering sophistication with which it was built. It is not only a temple. As has already been mentioned, it is a repository of the arithmetic and geometry of our ancient knowledge. It is also a protected dam to conserve rainwater and, through a network of channels, irrigate the fields. That is how the temple was built. It served two purposes: one, to preserve faith and develop the human mind; second, to sustain economic life and society.

In our country, temples have performed two functions. I shall come to that in a moment.

Why did our maritime activity collapse? Was it because the north and the centre witnessed repeated attacks from Central Asia? Did society begin to feel that it had to protect itself, and therefore all able-bodied persons stayed back? A country, a civilization, which had once been so vigorous in maritime activity suddenly decided that it would not allow its able-bodied youth to move beyond the shores. This is exemplified even in Mahatma Gandhi’s *My Experiments with Truth*, where there is that single line: “My mother said, ‘Once you cross the shore, you will be outcaste.’ Think over it.” How did Indian society

reach that point- that a society once so deeply seafaring, so eager to connect with different parts of the world, came to decide that one should never venture into the waters? That once you crossed the shore, you would become an outcaste?

Why did the mindset of such a society change in that way? I believe it had multiple reasons. These are the kinds of questions that, I think, the research centre can in due course collect material on from many quarters.

Temple, as I can say in Odia,

"Astha o biswas ra kendra hauchi mandira."

A temple is the centre of faith and trust. Faith in the celestial being. Trust that whatever wealth I have, if I deposit it in the temple, it will remain safe. I will get it back. Anyone who misuses it will be punished by the Lord.

All temples- not only in our part of the country, but across the coast- were banks. People deposited their wealth there not only for safekeeping. They deposited it so that they could draw upon it in times of need. At the same time, temples also financed maritime activity. Were there banks, as such? Or was the king the bank? No. The temple was the bank.

And that, I think, is one of the major reasons why temples were repeatedly attacked and looted. Of course, one part of it was to destroy our faith. But the major reason was economic. That is why the Somnath Temple was invaded. It was the bank of Gujarat. Konark was the bank of Odisha. Once that temple collapsed, the bank collapsed.

In economic terms, one can say that once the bank collapses, the economy collapses. You cannot build ships. You cannot recruit men to work on them. You cannot bring goods for exchange and trade. And that is the main reason, I believe, that we lost our maritime trade.

These are my conjectures. But all this has to be assembled as resources so that we may understand why Arab sailors survived European onslaught and competition, while we failed. Why did we fail? We failed because we did not have proper banks in the modern sense. Our banks were our temples. We deposited all our wealth there.

These are some of the things that I believe deserve deeper inquiry.

But what is there for the future? The Prime Minister made a clarion call in 2014, and it opened my mind. Because since my childhood, whenever I opened a geography book or even a history book, I would see a map of India connected by Myanmar, China, Pakistan, the Soviet Union- here Iran, here Thailand, here Singapore. But the coastal area of eastern Africa was never shown on that map. He said, "India is not connected by land alone. Our boundaries are not only through land. We also share boundaries through the sea." Perhaps, coming from a coastal state himself, he looked towards that other horizon as well.

Our connection with Myanmar continued for a very long time. Gopalpur was the point from where people used to go to Burma. But somehow, it slipped from our collective mind. We forgot that they too were our immediate neighbours. Now is the time to rebuild those relationships.

During one of my visits as a tourist, I had gone with my family to Bangkok. There I saw a beautiful dramatic presentation. Some of you may have seen it as well. In a theatre, on certain days, they also enact the same ritual that we do here- *jemti ame kahanti sola danga (kadali patua danga), dipa tie rakhibe, pana tie rakhibe, gua tie rakhibe, rakhi ki taku pani re bhasei debe*. They continue doing that in the same way as we

do here. Are there other coastal states in our country where society continues this? I am yet to know of any. Nobody does it in quite the same way. We do it. The same is done in Thailand. The same is done in parts of Indonesia. The same is also done in Vietnam. That establishes our connection.

And very rightly, Professor Kanungo just now mentioned that when we speak with so much pride of our relationships, how do they look upon them? That is indeed a very important question. I have seen this, and I have met many people there. Because of our long disconnect, a new narrative has been fed to them. We have to recognise their pride. We have to appreciate their culture.

But when we say that the *momos* they sell are in some sense linked to our *manda pitha*, and that perhaps we inherited such food forms too— *Amara ethi chhena poda deiki manda pitha hauchi, amara ethi kakara madhya hauchi, amara ethi enduri pitha madhya hauchi*—all this becomes new to us when we think of what our sailors may have brought back. *Amara boitalu boli jahaku ame Bhadrak re kahu ki Balasore re kahu, eade Cuttack re ebam Puri re kakharu boli kahanti. Kakharu ta dui prakarara achhi*. Many things may have come from there. Many things were inherited through these contacts. And that is how this connection can be rebuilt.

Whenever we go to Bali and see the grand statue of Garuda, one naturally feels elated. And there are similar stories in Cambodia. I could go on speaking about this for quite some time, but let me cut it short.

The basic question is how to develop the blue economy. Connectivity through ports and the development of ports—especially in Odisha—has been very much on the mind of the present government.

Mr. Tripathy spoke about the time it took to build Dhamra Port. But have we, at any point, discussed how much time it took to build Paradip? When Paradip first became a minor port to export iron ore to Japan, that was in the late fifties. Subsequently, when Jawaharlal Nehru went to lay the foundation stone of the port, Biju Patnaik hoped it would be taken over by the Union Government. But that never happened during his tenure. It did not happen during Biran Mitra's tenure either. It continued to remain a minor port during the tenures of Sadasiva Tripathy, R.N. Singhdeo, and Nandini Satpathy as well.

In 1978, when Nilamani Routray was Chief Minister and there was a Janata Party government in Delhi, it finally became a major port. And then it got entangled in trade union rivalries, and that continued for another five years. Not a single major investment came. It was repeatedly exploited by different vested interests. Paradip gradually came into its present position only in the nineties. And we should all be happy that during that time, Subrat was there. We have seen how it has progressed, and today it is one of the largest revenue-generating ports in the country. And there is still greater scope.

What is now being contemplated— and some of it has already begun to fructify—is the connection of road networks to different ports. Not only Dhamra: near Dhamra, a textile park is coming up. A petrochemical hub is also very much there in Paradip. Astarang is in the pipeline, and national highway connectivity to Astarang is also progressing. Hopefully, in a few months, you will hear more about it. The idea is also to build up Gopalpur. Rail connectivity and other systems also have to move in synchrony.

But when we speak of the blue economy, is it only fisheries? The Prime Minister also raised another idea: that we have a number of uninhabited islands in the ocean. These can be

developed as tourist destinations. Indians can go there, and visitors from other countries can also come. There are many possibilities that can be developed.

And here I remember that very recently one of the greatest poets of our time, Ramakanta Rath, passed away. One of his major contributions—apart from poetry and literature—was the establishment of a marine school at Paradip. Once, as I heard from Ramakanta Babu himself, he told Biju Patnaik: “You speak of maritime heritage and our people, but do you have a school? Our boys and girls have to go to Bombay.”

I think we need more such academies, where our boys and girls can be trained and can enter the merchant navy. I remember—I do not know why—that in the school where I studied, we had only a naval wing. There was no Air Force wing, no Army wing—only the naval wing. As students, we used to make model ships and engage in all such activities.

Somehow, from that day onwards, I developed a love for shipbuilding and for all work associated with ships and marine activity.

I believe this is a new beginning. There are some very good write-ups that will be discussed today and tomorrow. I have already taken much of your time, and I should stop now.

Harnessing the Ocean, Governing the Coast: Odisha's Blue Economy Between Natural Capital, Connectivity, and Inclusive Growth

Sanjay Gupta

(A policy-analytic synthesis based on the address and presentation by Shri Sanjay Gupta)

Abstract

The discourse on Odisha's blue economy has too often remained suspended between two inadequate registers: a cultural invocation of maritime heritage and an infrastructural imagination centred on ports, corridors, and coastal investment. Both registers identify important dimensions of the littoral economy, yet neither is sufficient to explain how blue growth may become institutionally durable, ecologically tenable, and socially inclusive. Drawing on the address and presentation of Shri Sanjay Gupta, this chapter argues that Odisha's maritime future must be conceived not as a singular developmental thrust, nor as a collection of disconnected flagship interventions, but as an integrated policy formation. Its central claim is that the real challenge lies less in discovering new marine opportunities than in constructing a governance architecture capable of coordinating ecology, infrastructure, livelihoods, energy transition, and regional connectivity. Such a framework requires a movement away from extractive dependence and toward a diversified portfolio in which natural-capital conservation, minor-port ecosystems, aquaculture, offshore wind, ecotourism, and maritime-linked hinterland integration are treated as mutually conditioning domains. The chapter therefore recasts the blue economy not as a rhetoric of expansion, but as a question of state capacity, spatial planning, and long-term stewardship.

Reframing the Blue Economy: From Extractive Imagination to Ecological Political Economy

The blue economy is frequently invoked as a future-oriented developmental horizon, yet in practice it is often reduced to a technocratic vocabulary of marine extraction, port expansion, and coastal commercialization. Shri Sanjay Gupta's intervention is valuable precisely because it unsettles this reduction. In his formulation, India's coastal economy has historically remained disproportionately shaped by extractive sectors, particularly mining-linked coastal activity and conventional capture fisheries. This observation is not merely descriptive. It identifies a deeper historical pattern in which marine and coastal spaces are governed primarily as sites of resource withdrawal rather than as complex socio-ecological systems requiring long-duration stewardship.

That distinction is foundational. Once the coast is conceptualized principally as a zone of extractive value, ecological degradation appears as an unfortunate but secondary consequence of development. Gupta's analytical cue reverses that hierarchy. Pollution, shoreline erosion, habitat degradation, and climate-induced volatility are not collateral phenomena situated outside the economic system; they directly reorganize the material conditions within which maritime growth is expected to occur. Flood buffering, shoreline stabilization, carbon retention, fish-breeding habitats, and estuarine integrity are not "green" supplements to development. They are part of the physical substrate without which ports, fisheries, tourism circuits, and coastal settlements become progressively more precarious.

In Odisha, this insight acquires particular force. The coastline is not simply an economic frontier awaiting intensified utilization. It is an arena in which ecological

systems, fishing communities, port ambitions, tourism aspirations, and climate exposure intersect in unusually dense ways. A viable blue-economy strategy therefore cannot proceed from the assumption that growth and ecological security are separable policy domains. Rather, it must begin from the recognition that the economy of the coast is already ecological in its foundations, and that any serious developmental imagination must be organized accordingly.

The Governance Deficit: Fragmentation, Weak Coordination, and the Problem of Institutional Form

If the first error in blue-economy discourse lies in the naturalization of extraction, the second lies in the assumption that sectoral expansion can substitute for institutional coherence. Gupta's diagnosis of the governance deficit is, in this respect, the most analytically consequential part of his intervention. The challenge confronting Odisha is not simply one of investment insufficiency, but of fragmented institutional form. Maritime governance is dispersed across multiple jurisdictions, regulatory frameworks, and sectoral silos, often without adequate mechanisms of coordination either vertically between the Union and the State, or horizontally across departments such as ports, fisheries, tourism, environment, renewable energy, inland transport, and disaster management.

The consequences of this fragmentation are neither abstract nor merely procedural. Port development may advance without sufficient integration with coastal regulation norms or habitat protection requirements. Fisheries administration may remain isolated from tourism planning and marine conservation frameworks. Disaster management may be treated primarily as a post-event or episodic response, while long-term coastal spatial planning

remains underdeveloped. Inland-waterway thinking, coastal shipping, and hinterland logistics may be discussed in adjacent policy spaces without being designed as a unified mobility system. What emerges, therefore, is not an absence of policy, but an overabundance of unintegrated policy: overlapping mandates, incoherent incentives, informational asymmetry, delayed decision-making, weak enforcement, and planning structures unable to apprehend the coast as a whole.

Gupta's call to "get it right this time" must be understood in precisely this context. His insistence on a more service-oriented governance model signals the need for a qualitative shift in the role of the state. Maritime governance cannot remain confined to licensing, clearance, and fragmented regulation. It must also supply the informational and institutional infrastructure on which coordination depends: reliable oceanographic data, standardized environmental observations, coastal hazard mapping, fisheries intelligence, and spatial planning tools capable of informing both policy elites and local communities. A state that does not generate and circulate such knowledge cannot govern the littoral effectively; it can only react to it belatedly.

The larger point is methodological as much as administrative. Odisha's blue economy is not likely to fail for want of resource endowment. It is far more likely to falter where institutions remain unable to mediate trade-offs between ecology and infrastructure, between local livelihoods and regional corridors, and between sectoral ambition and spatial limits. The central developmental question, therefore, is not whether opportunities exist, but whether the administrative form of the state is capable of integrating them.

Diversification as Strategy: Constructing a Blue-Economy Portfolio

One of the strengths of Gupta's intervention lies in its refusal to collapse the blue economy into a singular developmental engine. Rather than investing analytic and political energy exclusively in large ports or maritime logistics, he outlines a five-part investment portfolio. This portfolio-based approach is significant because it resists monocausal thinking and reorients blue-economy discourse toward diversification, risk distribution, and social breadth. The point is not simply to identify multiple sectors, but to recognize that Odisha's maritime future will depend on how these sectors are coordinated as a system.

The indicative return ratios associated with several of these sectors should not be treated as precise forecasts within the Odisha context. Their real value lies elsewhere. They signal, heuristically and politically, that sectors often dismissed as secondary—ecosystem restoration, small-scale coastal infrastructure, aquaculture, renewable marine energy, ecotourism—may in fact generate layered economic, social, and ecological gains when embedded in a coherent governance framework. The chapter now turns to these sectors not as isolated opportunities, but as elements of an integrated maritime developmental logic.

Natural Capital and the Productive Value of Ecological Stability

Gupta's emphasis on mangroves, sea grass, and analogous ecosystems is one of the most important conceptual correctives in the entire framework. These ecological formations are conventionally treated as objects of protection external to the "real" economy, as if conservation exists only in a compensatory or moral register. The more analytically robust position is to recognize them as productive natural

capital. Their value lies not merely in biodiversity preservation—important as that is—but in the economic work they perform through storm buffering, erosion control, habitat support, carbon retention, and fisheries sustenance.

This shift in framing has major policy consequences. Once ecosystems are understood as economically generative rather than administratively residual, conservation ceases to appear as a developmental constraint. It becomes instead a precondition for long-term coastal viability. For Odisha, this is particularly salient in deltaic and estuarine zones where ecological deterioration carries immediate implications for settlement security, local livelihoods, and infrastructural resilience. A serious blue-economy strategy would therefore integrate natural-capital reasoning into mainstream planning through restoration priorities, coastal accounting methodologies, and appraisal systems that register the economic value of ecological integrity. Without such recognition, policy continues to privilege visible infrastructure while systematically discounting the environmental conditions that make infrastructure governable and durable.

Minor Ports, Jetties, and the Politics of Distributed Maritime Infrastructure

A second crucial element in Gupta's portfolio is his insistence that the blue economy cannot be reduced to major-port development. The preoccupation with large ports is understandable, given their visibility, capital intensity, and geopolitical symbolism. Yet it also narrows the developmental field by making maritime growth appear synonymous with a few concentrated nodes of infrastructural power. Gupta's corrective is to shift attention toward minor ports, smaller harbours, jetties, landing points, and marinas—that is, toward

the distributed infrastructure through which the coast is actually inhabited and economically mediated.

This distributed approach matters for at least three reasons. First, it expands the territorial reach of maritime development beyond elite enclaves and major logistics hubs. Second, it connects more directly with artisanal fishing communities, small-scale transport operators, ferry networks, and localized tourism ecosystems. Third, it opens a practical route for thinking about decarbonization not only at the scale of national shipping regimes, but at the level of coastal support systems, localized mobility, and service infrastructure. In this sense, smaller coastal infrastructure is not a minor supplement to major development. It is one of the principal means by which blue growth can acquire social depth.

For Odisha, such an approach is also politically significant. It avoids the familiar pattern in which coastal development becomes spatially concentrated while peripheral settlements remain linked to growth only rhetorically. If maritime policy is to be inclusive in any substantive sense, it must move through these granular nodes where every day coastal economies actually operate.

Aquaculture and the Reorganization of the Food-Livelihood System

Gupta's observation that "natural catch is really going down" points toward a wider structural transition. Capture fisheries, already under pressure from ecological degradation, market demand, and livelihood dependence, cannot indefinitely sustain both food security and income expectations at current levels. The policy implication is not the abandonment of capture fisheries, but the recognition that Odisha must invest far more systematically in cultivated fisheries and aquaculture.

The significance of this shift is not purely sectoral. It reorganizes the geography of the blue economy itself. Aquaculture extends the maritime developmental field inland, linking coastal and non-coastal districts through production systems, feed chains, cold storage, processing infrastructure, and distribution networks. In this sense, the blue economy becomes less a literal descriptor of marine space and more a developmental category encompassing a wider food-livelihood ecosystem. Gupta's gesture toward western Odisha is especially important here. It suggests that the blue economy need not remain confined to the coastline as a territorial strip; it can be translated into an integrated state-level strategy for protein security, employment generation, and economic diversification.

This inland extension matters conceptually because it dislodges a simplistic geography of maritime development. It reminds us that the blue economy is not only about proximity to the sea, but about the ways in which marine-linked sectors can be embedded in broader regional production systems.

Offshore Wind and the Energy Question in Marine Spatial Planning

If offshore wind appears less immediately developed in Gupta's account than some of the other sectors, that does not diminish its strategic significance. On the contrary, its importance lies precisely in the fact that it compels a different order of thinking about the coast. Once energy infrastructure enters marine space at scale, ocean planning can no longer be understood exclusively through the lenses of transport, fisheries, or tourism. It must confront the question of competing spatial claims in a more explicit manner.

For Odisha, offshore wind represents a potential point of articulation between maritime policy and India's wider energy

transition. Yet the strategic value of offshore wind will depend on whether it is planned as part of an integrated marine spatial framework. Poorly sited infrastructure may generate conflict with navigation routes, fishing grounds, or ecologically sensitive habitats. Carefully designed infrastructure, by contrast, could help broaden the developmental grammar of the coast, linking energy transition with industrial strategy and marine planning. Offshore wind therefore matters not only as an energy source, but as a test case for the state's ability to mediate complex trade-offs across sectors whose temporalities, constituencies, and regulatory logics do not automatically align.

Ecotourism, “Beach Culture,” and the Question of Socially Embedded Stewardship

Gupta's comments on ecotourism and the absence of a mature “beach culture” in Odisha should not be mistaken for a superficial call to replicate already commodified tourism models. Read more carefully, they amount to a critique of developmental underutilization and an argument for reconfiguring economic incentives around preservation rather than extraction. Odisha possesses considerable ecological and scenic assets—Bhitarkanika, Chilika, Gopalpur, and related coastal landscapes—yet these have not yet been consolidated into a tourism economy that is both economically viable and institutionally disciplined.

The developmental promise of ecotourism lies in its capacity to generate employment while altering the local economy of value. Where extractive uses degrade the very resource base on which they depend, well-governed ecotourism can make environmental preservation economically legible. Gupta's observation regarding women's participation in tourism-linked sectors is particularly important, because it directs attention toward the distributive and gendered dimensions of coastal

development. But this promise is contingent, not automatic. Tourism can be inclusive and conservation-oriented only where it is governed through carrying-capacity norms, waste-management systems, habitat safeguards, and credible local benefit-sharing arrangements. Otherwise, the invocation of “beach culture” risks becoming a shorthand for unregulated coastal commodification. The real task is not imitation, but institutional design: the construction of an Odisha-specific tourism model in which ecological value and livelihood creation reinforce rather than negate one another.

Connectivity and the Littoral as Developmental Interface

Connectivity occupies a pivotal position in Gupta’s framework, and rightly so. Yet its importance must be understood in a deeper sense than the mere facilitation of movement. Connectivity, in this account, is the infrastructural and spatial principle through which otherwise disconnected sectors may be assembled into a coherent developmental field. Ports, fisheries, tourism circuits, inland waterways, processing hubs, and hinterland production systems do not automatically generate a maritime economy simply by coexisting. They require connective design.

At the state level, this means that coastal infrastructure must be linked to interior districts through logistics, storage, processing, labour mobility, and water-based transport systems where feasible. The blue economy cannot remain territorially trapped at the shoreline. Its viability depends upon whether coastal assets can be integrated with inland economic geographies in ways that expand value chains rather than isolate them. This is particularly relevant in Odisha, where the developmental challenge is not merely to intensify activity at the coast, but to ensure that coastal growth is articulated with wider regional mobility and production systems.

At the larger scale, Gupta's suggestion that eastern Indian ports should be imagined in relation to BIMSTEC, ASEAN, and emerging transregional corridor architectures is analytically fertile, though it requires measured formulation. Odisha need not be rhetorically inflated into a singular geopolitical pivot in order to recognize that its coastline can be positioned more actively within a wider Bay of Bengal and Indo-Pacific economic geography. The more prudent claim is that Odisha can function as an eastern gateway or strategic connector if port development, coastal shipping, inland integration, and regional trade thinking are aligned. This is not a matter of symbolic aspiration. It is a question of whether the littoral can be governed as an interface— between coast and hinterland, between domestic logistics and external trade, and between regional identity and larger corridor formations.

Conclusion: Stewardship, State Capacity, and the Future of Maritime Development

What finally emerges from Shri Sanjay Gupta's framework is not a celebratory narrative of maritime possibility, but a more demanding proposition: that Odisha's blue economy will be determined less by the abundance of opportunity than by the quality of institutional mediation. The sea, in this account, is not a blank frontier awaiting developmental inscription. It is a complex ecological and economic domain whose productive use depends on how intelligently the coast is governed.

This is why the chapter's central argument must be stated with some precision. Odisha's maritime future cannot be secured through isolated sectoral investments, nor through a narrow fixation on extractive growth, nor through the accumulation of disconnected schemes administered in parallel. It requires a diversified and internally coherent policy architecture. Natural capital must be treated as foundational

rather than ornamental. Minor ports and local coastal infrastructure must be recognized as engines of distributed participation rather than appendages to major ports. Fisheries must be reorganized through cultivated systems where ecological and economic conditions demand it. Offshore wind must be incorporated into marine spatial planning rather than appended to it. Ecotourism must be designed as a stewardship-linked livelihood strategy, not merely promoted as an aspirational industry. And connectivity must be conceived as developmental integration rather than as transport in the narrow sense.

The normative conclusion is clear. The true measure of blue growth cannot be the rate at which marine and coastal spaces are opened to intensified extraction. It must lie instead in whether growth is organized around resilience, social breadth, ecological intelligence, and institutional discipline. Odisha's maritime question, therefore, is ultimately a question of governance. It is about whether the state can move from exploiting the coast episodically to stewarding it strategically. Only within such a shift does the blue economy become more than a slogan of expansion; it becomes a framework for durable and equitable development.

Reimagining Odisha's Maritime Destiny: Oceans, Heritage, and the Blueprint for a Blue Economy

Subrat Tripathy

Introduction: Revisiting A Legacy of Wisdom and Inspiration

Standing amidst distinguished parliamentarians, academicians, and cultural leaders offers more than an opportunity to share ideas- it becomes a moment of reflection. The presence of Hon'ble MP Shri Bhartruhari Mahtab, a statesman steeped in intellectual rigor and historical consciousness, invokes memories of guidance, mentorship, and the values embedded in Odisha's heritage. His contributions to parliamentary processes and national discourse serve as an inspiration to revisit our cultural anchors, especially the maritime legacy that once defined the Kalinga identity. This article draws from that lived sense of history and responsibility to explore oceans, trade, ecological stewardship, and Odisha's economic aspirations.

Humanity and the Oceans: A Paradox of Progress

Humanity today is capable of sending interstellar missions beyond the solar system yet remains surprisingly limited in exploring the depths of its own oceans. Over 70% of Earth's surface is covered by water, but only a fraction of the marine world has been meaningfully studied. This paradox reveals a gap in our understanding of natural systems that fundamentally shape climate, weather patterns, biodiversity, and global trade. Oceans are not merely vast water bodies- they are engines of civilization. They have dictated the rise and fall of empires, facilitated cultural exchanges, and

remain the primary routes for global commerce. Recognizing this power is essential for shaping future economic and environmental policies.

The Maritime Soul of Odisha: Reclaiming the Kalinga Sahasika

Odisha's identity is inseparable from its maritime past. The ancient Kalinga Empire was known not only for its valour but also for its mastery of navigation, shipbuilding, and overseas trade. The historical ports of Kalinga served as a gateway to Southeast Asia, facilitating the exchange of ideas, religions, and goods. The transformative Kalinga War of 261 BCE marked a turning point in world history, leading Emperor Ashoka on a path of peace and spreading Buddhism across Asia through maritime routes. This heritage is not merely a nostalgic reference. It represents a sophisticated economic and cultural ecosystem shaped by the sea. Reviving the Kalinga Sahasika, or the seafaring spirit of ancient Odisha, is central to restoring the state's global cultural presence and economic potential.

Ancient Trade, Culture and Global Influence

Odisha's maritime engagements shaped entire regions. The architectural designs of Bali's courtyard houses mirror those found along Odisha's coasts, a testament to centuries of cultural exchange. Chinese travelers, Roman traders, and Greek geographers like Ptolemy documented Kalinga's thriving ports and extensive inland waterways. These accounts describe Odisha as a hub of trade, craftsmanship, and philosophical learning. Odisha's rivers—Subarnarekha, Budhabalanga, Baitarani, Brahmani, Mahanadi, Daya, Prachi, Rushikulya—acted as natural highways connecting the hinterland to the sea, enabling the movement of spices, textiles, metalwork, and sacred knowledge. This network created one of the earliest, most vibrant ocean-linked civilizations of the ancient world.

Oceans as the Arteries of Global Trade

Today, oceans continue to be the backbone of global commerce. More than 90% of international trade is transported through maritime routes. Strategic passages like the Suez Canal and Panama Canal influence geopolitical relations and global economic flows. In India, the maritime economy is even more significant: 95% of trade by volume and over 70% of trade by value moves through ports. For Odisha, with its long coastline and natural harbours, the ocean remains an unparalleled opportunity- a gateway to economic expansion, industrial growth, and global integration.

The Blue Economy: Science, Sustainability and Opportunity

The concept of the blue economy integrates ocean-based resource utilization with ecological responsibility. Oceans generate half of the world's oxygen, store vast quantities of carbon dioxide, and host ecosystems- mangroves, salt marshes, sea grasses- that absorb carbon at rates far exceeding terrestrial forests. Beyond environmental services, the blue economy includes fisheries, maritime logistics, renewable ocean energy, tourism, biotechnology, and marine research. As climate change reshapes global priorities, the blue economy emerges as a sustainable development frontier with immense potential for Odisha.

Port Development and India's Maritime Renaissance

Modern port-led development in India traces its roots to economic liberalization and the rise of public-private partnerships (PPP). Odisha pioneered this transformation with early initiatives like the Dhamra Port project. Today, Paradip Port stands as India's leading government-operated port, powering mineral, coal, and energy logistics across eastern and central India. Meanwhile, Dhamra Port is rapidly ascending into the

league of India's top maritime gateways, demonstrating the effectiveness of efficient infrastructure, strategic planning, and sustainable operations. These ports are not isolated units- they form the backbone of a larger economic ecosystem involving industry, transport, employment, and regional development.

Sagarmala and Odisha's Port-led Future

The national Sagarmala programme envisions India's resurgence as a maritime power through four pillars: port modernization, port connectivity, port-led industrialization, and coastal community development. Odisha is poised to be the biggest beneficiary. With ports of Suvarnarekha, Dhamra, Paradip, Astarang and Gopalpur/Bahuda Muhan, the state can unlock industrial corridors, logistics hubs, fisheries clusters, and export-led growth zones.

Ecology and Economy: A Model of Coexistence

Dhamra Port's coexistence with Bhitarkanika's estuarine crocodiles and Gahirmatha's olive ridley turtles is a testament to responsible development. Guided by global conservation frameworks such as the IUCN, the port demonstrates that infrastructure and ecology can thrive together when governed by scientific planning, community engagement, and strict environmental norms.

Employment, Tourism and Cultural Revival

Maritime growth extends far beyond trade. Opportunities in shipbuilding, marine engineering, logistics, and coastal tourism can generate thousands of jobs. Adventure tourism at historic sites like False Point Lighthouse or underwater explorations of marine wrecks can elevate Odisha's tourism appeal. Culturally, Odisha's ancient silk trade with Rome reminds us of

the craftsmanship and economic sophistication of its people. Reviving such heritage-driven industries can enrich both the economy and cultural identity.

India's Global Trade Ambition

With India's share in global trade hovering around 1.8%, enhancing logistics efficiency is crucial. Lower logistics costs, better port connectivity, and technology-driven port operations will allow Indian exports to compete globally. Odisha's maritime infrastructure will play a central role in achieving these national goals.

Conclusion: PPP as People, Planet and Prosperity

PPP must evolve beyond public-private partnership into a holistic philosophy- People, Planet, and Prosperity. Odisha's maritime revival, rooted in the legacy of Kalinga yet aligned with modern sustainability principles, holds the potential to reshape the state's destiny. With its natural coastline, historical identity, and strategic vision, Odisha stands ready to lead India into a dynamic blue economy future.

Sailing Through Time: Odisha's Maritime Heritage and Blue Economy Futures

Pralay Kanungo

I thank Professor Chandi Prasad Nanda, the Director of the ORC, for inviting me to speak at the inaugural session of this conference. At the outset, I must confess that initially I have been reluctant to join because of my non-engagement with this field of research. I have finally accepted the invitation for various reasons.

First, ORC is a novel vision and imaginative initiative of India's Education Minister Dharmendra Pradhan; Odisha needed such an institution for long and all researchers working on Odisha have an obligation to support this project. While applauding the Minister for his insight and initiative, I take this moment to offer him my deep condolences on the 13th day of the sad demise of his father Dr. Debendra Pradhan, who was extraordinary politician- honest, modest and humane. As a researcher, I had the privilege of interacting with him in the 1990s and would like to appeal the ORC to undertake research on life and times of such rare Odia politicians like Dr. Pradhan.

Second reason which propelled me to participate today is the desire to be enlightened by the patron of the ORC, Bhartruhari Mahatab, a different brand of politician who makes Odisha proud being an intellectual-politician and distinguished parliamentarian of great respect and repute. While being critical of dynasty politics in South Asia, we should not overlook the contributions of some good dynasts. Bhartruhari Babu is an excellent example of a good dynast, being the worthy inheritor of the intellectual legacy of his father

Shri Harekroushna Mahatab, the builder of modern Odisha. I was again privileged to have some cherished moments with the senior Mahatab during my childhood.

Third, my spontaneous wish to meet my former JNU colleague Professor Dhananjay Singh, the young scholar secretary of the ICSSR, and use this opportunity to felicitate him for his dynamic intellectual leadership and request him to pay special attention to the incipient ORC, ensuring its emergence as a robust intellectual space in Odisha and beyond.

Besides the sere sons, I have also come here to learn from the distinguished co-panelists, Mr. Tripathy and Mr. Gupta and other learned scholars.

Today, I will neither speak about *Periplus* and Ptolemy and ancient Odisha's contact with the Roman world, nor about the archaeological findings like Roman bullion and rouletted ware at Manikapatna, Palur, Radhanagar and Sisupalgarh, nor about how Buddhist monks of Odisha transmitted esoteric Buddhism to Southeast and East Asia and cult of Amoghapasa, nor about similarities in art and sculpture between Odisha and Vietnam. Instead, I would prefer to spell out some broad perspectives on Odisha's maritime heritage and the Blue Economy.

Heritage and History

First, what is maritime heritage? Heritage is not confined to beingness or materiality with a timeless essence. Rather, it is articulated as a discourse, process, work, and performance. Heritage is a socio-cultural process, connecting an object to a practice, factoring in people's experiences in relation to sites and regions. Heritage is not only about the past and things, but a process of engagement- an act of communication- and an

act of making meaning for the present. As Director Nanda has rightly said, the whole idea is how to link past, present, and future. Hence, while understanding Maritime heritage, we have to look not only at the past, not only at the thing, but also how actually the past relates to the present, and what is its future.

As heritage and history are intertwined, in order to understand maritime heritage, we need to understand the trajectories of Indian historiography which we inherited since our independence. In the 1950s, some of our brilliant nationalist historians focused on Indic languages, Persian chronicles, archaeology, epigraphy, primarily highlighting the personalities and careers of rulers and dynasties which provided a nationalist lens to look at our great civilizational roots and glorious past with pride.

In the sixties, under the influence socialist ideas, the narrative shifted its focus from dynasty to state institutions, political structures, revenue system, agrarian relations, trade and economic activity. In the seventies, Marxist historiography further accelerated debates on nature of the Indian state, feudalism, mode and relations of production and fragmented polity. Simultaneously, other historians, engaging with the disciplines like anthropology and sociology, while retaining the focus on state, shifted historical focus from state-society relations to state formation.

Maritime Heritage: A Complex and Contested History

While engaging with maritime heritage, it is crucial to read, understand and analyses our past using appropriate lens, tools, sources and methods; for instance, state formation may be a useful vantage-point to understand Odisha's maritime

history and heritage. In the eighties, Indian historiography took an interesting turn, when historians like B.D. Chattopadhyaya, and particularly Herman Kulke, introduced an integrated or a processual model, which emphasized on agrarian expansion, urban transformation, localization, and regional state formation. In this model, the early state was neither conceived as a pre-given entity as in nationalist historiography, nor interpreted as a fragmented polity as in Marxist historiography. Instead, the state, more importantly, manifested a continuous process of development from below.

One of my co-panelists spoke passionately and eloquently about the glories of Odisha's civilization and maritime history. While appreciating the spirit behind his observations, I would be a little cautious in understanding of our glorious past. Whenever we refer to Odisha's/India's relationship with Southeast Asia, often there has been an underlying assertion of a kind of transplantation theory: that we have transplanted civilization in Southeast Asia- be it culture, or trade or temple- or all of this. This so-called transplantation theory would never be endorsed by Southeast Asians. As our historiography imbibed a nationalist pride in us, similarly, postcolonial Southeast Asian historiography celebrates its own glorious past. Thus emerges an imminent contestation between the two paradigms: when we talk of transplantation, they insist in dignity, autonomy and agency. So, while doing research on our maritime past, we need to be sensitive to such conflicting perceptions.

Thus, it is important to highlight those present historians, rather than searching for structural similarities and developmental convergences, talk more of connected history, which seeks to explore the connections and contacts between

geographically separated regions. This of course does not mean that there are no convergences in art, architecture, culture and religion between Bali and Odisha or Vietnam and Odisha; I found many similarities when I was in Bali. But while saying so, we need to refrain from asserting transplantation, transmission and Hinduization; looking history through a sensitive prism would be more sensible, more effective, and more acceptable. Historians and social scientists, instead of glorifying the so-called 'Colonization'/ 'Indianization' thesis, need to underline that what "Indianization" actually facilitated was not converting things into Indian, but the transformation and consolidation of already existing indigenous ideas, institutions and practices.

Today, Indian Ocean studies have emerged as a new academic discipline across western universities and a debate is taking place around the relative agency that various stakeholders exercised in the process of cultural transmission; thus, this agency part is more important to understand and reflect. The important question in this context is not how Indian influence arrived in Southeast Asia, but how far its influence came to dominate the culture of the region.

Herman Kulke, working extensively on Odisha, makes a very pertinent point: that the experience of local societies receiving impetus towards state formation by "Indianizing" elites was not unique to Southeast Asia, but also applied to the eastern and southern regions of the South Asia. In the post-Gupta period, similar developments were taking place on both sides of the Bay of Bengal-Southeast Asia on the one hand and South Asia's East Coast and Deccan on the other were experiencing "Indianization"- Sanskrit inscriptions, Hindu temples, social

stratification, and the spread of intensive wet-rice agriculture. Thus, the socio-political development of eastern India during the first half of the first millennium CE resembles in many respects the development in parts of Southeast Asia, indicating a social “nearness” or convergence on both sides of the Bay of Bengal. Hence, in lieu of the theory of Indianization, Kulke proposes “a complicated network of relations, both between various parts of each of the two great regions and between the two regions themselves.”

Thus, instead of “transplantation”, the relationship should be seen through a continuous and complex set of networks of relations within and between the regions, by mutual processes, which linked both sides of the Bay of Bengal. This historiography will lead us to understand how the trading system was complex, how it evolved, how multi-circuited systems developed. It may not actually be point-to-point contact between two ports, rather a journey through multiple points. Odias could go to Sri Lanka, or to the Andaman, or to Burma, finally moving to Southeast Asia.

Coast and Hinterland

While trying to understand and interpret our maritime past the other important point which needs clarity is the relation between the coast and the hinterland, which has critical implications for the present-day of identity politics. Today, identity gets invoked in various ways- both positive and negative. Historically, the coast has not always been the origin of everything; looking for epicentric origin in Odisha is a problematic proposition. Take for example the discovery of semi-precious stone beads from many coastal sites. As there was no reserve of gems in coastal areas, obviously they

came from the hinterland. Hence, the hinterlands played a significant role in the maritime history of Odisha; hence, a holistic understanding should not be either coastal-focused or coastal-centric. Of course, the coast played a seminal role with the convergence of large rivers, internal navigation and the deltas. Still, we don't come across the terms like *vanik*, *svesti*, *gosthi*, *srenis*— the trader guilds and we need to explore more to know the nature of Odisha's trade guilds and their connection to other guilds at different regions.

Pushpagiri Mahavihara: Global Knowledge Corridor

There are many other areas of research in maritime heritage which need our immediate attention. A plethora of available sources highlight the exchange of ideas, knowledge, religion, language, culture, goods and people between Odisha and Southeast and East Asia. As knowledge played a crucial role in this exchange, Odisha was obviously a knowledge society. This was manifested in the emergence of Pushpagiri Mahavihara, constituting the complex Buddhist Diamond Triangle (Lalitgiri-Ratnagiri-Udayagiri), which flourished as a great knowledge corridor and attracted thousands of students from East and Southeast Asia. Chinese traveller Xuan Zang recorded it as *Pu-sie-po-ki-li*. Strangely, while other ancient Buddhist centres like Nalanda, Vikramashila and Taxila (Pakistan) have been conferred with modern universities, Pushpagiri, having a more glorious past than the rest on many respects, has been conveniently forgotten.

In this context, I appeal to the Indian Education Minister Shri Dharmendra Pradhan, a passionate champion of Odia *Asmita*, to establish a Global University at Pushpavihar, which will be a befitting tribute to ancient Odisha's glorious past. In fact,

revival and reinvention of Pushpagiri as a Global University will link the past, present and future of our maritime heritage and propel our future development. This will give an impetus for intensive research on archaeology and architecture, art and culture, language and literature, religion and philosophy, trade routes and sadhava traditions, coastal temples and shrines, besides embarking on oceanography, skill development digital technology.

Blue Economy

Finally, before I wind up, I would briefly touch upon the Blue Economy, which has already been extensively and brilliantly analysed by my co-panellists. The World Bank defines it as “the sustainable use of ocean resources for economic growth, improved livelihoods, and jobs while preserving the health of ocean ecosystem.” This crisp yet comprehensive definition embraces multiple sectors and stakeholders, covering a wide area of oceanic sustainability, ranging from sustainable ecosystem and fisheries to health protection and pollution prevention. It is claimed that the blue economy is a mission where the developmental needs and aspirations of coastal and island population can be reconciled with cosmopolitan concerns of ocean sustenance and the capitalist growth axiom all at once. But there are a couple of challenges to this claim.

First, such exhaustive targets involving multiple sectors, actors and areas would require collaboration across borders and sectors. Though experts suggest that the state-corporate kind of PPP model achieve these objectives, yet this method needs a judicious scrutiny before adoption.

Second, blue economy confronts two competing paradigms: the prospects of growth and development, and threats to vulnerable spaces that need protection. The critics argue that the blue economy accelerates economic development for the benefit of the rich and powerful at the expense of the poor and marginalized: “Under the guise of sustainable development, it has become a project focused on sustained development.” Hence, there is a challenge how to reconcile these two paradigms.

I think the future of Odisha’s blue economy depends on the narrative of growth, innovation, and transformative potential. The Odisha Government needs to launch a blue economy mission- a strategic initiative- which would act as a catalyst for substantial economic expansion, with the overarching objective of inclusive growth, job creation, social equity, and environmental justice.

SECTION - II

Foundations and Archaeology (The Past)

Odisha and the Khmer World: Maritime Migration and Cultural Rapprochement

Patit Paban Mishra

Introduction

Odisha as the Civilizational Nucleus of a Transoceanic World

Long before the rise of modern nation-states and rigid territorial boundaries, the Bay of Bengal sustained a vast maritime world in which ideas, peoples, commodities, and sacred traditions circulated freely. Within this oceanic system, Odisha—ancient Kalinga—occupied a position of exceptional cultural and strategic significance. Facing the eastern seas, endowed with navigable rivers, and animated by a powerful maritime tradition, Odisha functioned not as a peripheral region but as a civilizational nucleus that shaped the cultural destinies of Southeast Asia, particularly the Khmer world of Cambodia. The present study argues that Cambodia's religious geography, political theology, and monumental art cannot be fully understood without recognizing Odisha's formative role in the making of a transoceanic cultural sphere.¹

Historiography has long spoken of "Indianization" to describe the spread of Indian culture into Southeast Asia. While this term has served as a useful analytical category, it often masks regional specificity and reduces complex maritime interactions into a generalized diffusion from an undifferentiated "India." Such an approach overlooks the fact that different regions of the Indian subcontinent contributed differently to Southeast Asia's cultural formation. Odisha, with its distinctive synthesis of Śaivism, Vaiṣṇavism, Buddhism, Tantric traditions, and maritime commerce, constituted a unique civilizational source

whose imprint is clearly discernible in Khmer religion, kingship, architecture, and ritual life.²

Kalinga's maritime orientation is attested in literary sources, inscriptions, and archaeological remains. From early historical times, its coastline was marked by ports such as Palura, Tamralipti, and later Kalingapatna, which served as nodal points in the Bay of Bengal trade network. These ports connected Odisha not only with Sri Lanka and the eastern coast of India but also with Myanmar, the Malay Peninsula, Sumatra, Java, and Cambodia.³ Odishan merchants exported textiles, precious stones, aromatics, ivory, and horses, while importing spices, metals, and luxury goods. Alongside commodities travelled monks, Brahmanas, ritual manuals, iconographic models, and political ideas.

The Bay of Bengal thus functioned as Odisha's cultural highway. It was not a barrier but a connective medium through which Odisha projected its religious and intellectual traditions. R. C. Majumdar's pioneering studies on Indian colonies in the Far East already recognized the significance of eastern India in Southeast Asian cultural formation.⁴ Later scholars such as George Coedès and O. W. Wolters emphasized the selective and creative reception of Indic culture by Southeast Asian societies.⁵ What remains insufficiently stressed, however, is Odisha's specific role as a generator of religious-political models that were absorbed and monumentalized in Cambodia.

The Khmer world emerged within a cultural environment already receptive to sacred kingship, mountain worship, and serpent symbolism. These indigenous traditions resonated deeply with Odishan religious cosmology. In Odisha, Śiva was worshipped as Girīśa and Mahendra, the lord of mountains, while Viṣṇu and Jagannātha embodied cosmic sovereignty. Buddhist institutions flourished alongside Brahmanical

cults, producing a plural religious culture that was uniquely adaptable. This pluralism made Odisha an ideal cultural transmitter to Southeast Asia, where similar syncretic traditions prevailed.⁶

Cambodia's early kingdoms of Funan and Chenla arose within this maritime framework. Chinese sources speak of Brahmanas arriving from India and establishing dynastic legitimacy through marriage and ritual authority. The Kauṇḍinya legend, which narrates the union of an Indian Brahmana with a Nāga princess, symbolizes not conquest but cultural synthesis.⁷ The serpent, water, and mountain motifs central to Khmer mythology find striking parallels in Odisha's tribal and Tantric traditions, suggesting a shared symbolic universe that facilitated cultural transmission.

The Angkorian period marked the culmination of this Odishan–Khmer dialogue. Jayavarman II's establishment of the Devarāja cult on Mahendra Mountain in 802 CE represented the fusion of sacred geography and kingship. The very choice of Mahendra as a sacred mountain evokes Odisha's Mahendra range, long associated with Śaiva worship. The Devarāja ideology, identifying the king with Śiva through the consecration of a royal *liṅga*, closely parallels Odishan concepts of sacral kingship, where political authority derived from ritual alignment with cosmic order.⁸

Vaiṣṇavism further strengthened this cultural bridge. In Odisha, Viṣṇu evolved into Jagannātha, the lord of the universe and the sovereign of the land. The ideology that kings were sons or representatives of Viṣṇu found architectural expression in the Jagannātha temple at Puri. In Cambodia, Angkor Wat embodied a similar political theology, where Sūryavarman II was posthumously identified with Viṣṇu and his temple conceived as a cosmic abode.⁹

Buddhism formed a third pillar of this transoceanic world. Odisha's Buddhist centres at Ratnagiri, Lalitagiri, and Udayagiri were active nodes in an international network linking Nalanda, Sri Lanka, and Southeast Asia. Khmer Mahāyāna Buddhism under Jayavarman VII reflects ideological continuities with eastern Indian Buddhist kingship models, where rulers were portrayed as Bodhisattvas committed to compassion and merit.¹⁰

Thus, Odisha must be seen as an architect of a maritime civilizational world rather than a marginal participant. Cambodia, in turn, was not a passive recipient but a creative partner that monumentalized Odishan ideas through stone, sculpture, and sacred space. The relationship between Odisha and the Khmer world was therefore one of cultural reciprocity rooted in the shared medium of the Bay of Bengal.

Odisha and the Bay of Bengal Maritime System: Ports, Navigation, Trade, and Cultural Mobility

The maritime vitality of ancient Odisha formed the backbone of its transoceanic cultural influence. Odisha's coastline, stretching along the Bay of Bengal, was dotted with flourishing ports that connected eastern India with the wider world of Southeast Asia. These ports were not merely commercial outlets; they were gateways through which religious ideas, ritual specialists, artistic idioms, and political models travelled to regions such as Cambodia. The Odishan maritime system thus constituted the infrastructural foundation of the Odishan–Khmer cultural relationship.¹¹

Among the earliest and most celebrated ports was Tamralipti, located at the mouth of the Ganga. Though geographically associated with Bengal, Tamralipti functioned as a major entrepôt for eastern India as a whole, including

Odisha. Chinese pilgrims such as Fa-Hien and Xuanzang describe Tamralipti as a thriving harbor from which ships sailed to Sri Lanka and Southeast Asia. From here Odishan merchants, monks, and Brahmanas embarked on long-distance voyages, carrying with them sacred texts, ritual knowledge, and trade commodities.¹²

More directly associated with Odisha was the port of Palura, mentioned in classical sources as one of the principal maritime outlets of Kalinga. Archaeological remains around modern-day Palur and nearby coastal sites suggest extensive overseas contact. The Periplus of the Erythraean Sea and later Sanskrit texts refer to Kalinga as a region renowned for shipbuilding and navigation.¹³ The fame of Kalinga's mariners was such that even Roman and Southeast Asian traders sought Odishan ships and sailors for long voyages.

Odishan ships were constructed with advanced techniques suitable for open-sea navigation. Literary traditions, folk memory, and archaeological evidence point to the existence of large sea-going vessels capable of carrying heavy cargo across the Bay of Bengal. The annual *Boita Bandāṇa* festival of Odisha, still celebrated today, commemorates this maritime heritage. It symbolizes the departure of ancient Odishan traders who sailed to distant lands, including Suvarṇabhūmi and Kambuja.¹⁴ This living tradition preserves Odisha's collective memory of its oceanic past and confirms the continuity of maritime consciousness.

Trade formed the material foundation of Odisha's maritime outreach. Odishan merchants exported textiles, ivory, semi-precious stones, forest products, and, most significantly, horses. Chinese chronicles mention the export of Indian horses to Southeast Asia, where they were prized for warfare and royal processions.¹⁵ The horse trade played a vital role in

establishing diplomatic and political ties between Odisha and early Cambodian kingdoms such as Funan. The presence of horses strengthened royal power and symbolized sovereign prestige, thus reinforcing Odisha's political-cultural influence.

Alongside commerce travelled religious specialists. Odishan Brahmanas, well-versed in Vedic ritual, Tantric practices, Śaiva theology, and Vaiṣṇava philosophy, crossed the seas as ritual experts and political advisers. Their role in legitimizing kingship through consecration ceremonies made them indispensable in Southeast Asian courts. George Coedès has emphasized that Indian Brahmanas in Southeast Asia were primarily agents of political ideology rather than missionaries of faith.¹⁶ In the Odishan context, this role was intensified by the region's strong tradition of sacral kingship.

The Odishan maritime network also facilitated the movement of Buddhist monks and texts. Odisha's great Buddhist centers at Ratnagiri, Lalitagiri, and Udayagiri were closely linked with Nalanda and with maritime routes to Sri Lanka and Southeast Asia. From these sites, monks embarked on sea voyages to Cambodia, carrying Mahāyāna and Vajrayāna doctrines. The Buddhist dimension of the Odishan maritime world thus complemented its Brahmanical traditions, making Odisha a pluralistic transmitter of sacred knowledge.¹⁷

The Bay of Bengal therefore functioned as a sacred-commercial continuum, not a mere trading zone. Odishan merchants and monks travelled together, creating a cultural economy in which religion, commerce, and diplomacy were intertwined. Kenneth R. Hall has rightly argued that early Southeast Asian states emerged within maritime trading networks where ritual authority and commercial power reinforced each other.¹⁸ Odisha exemplified this pattern, acting as both economic engine and cultural architect.

In Funan, the earliest Cambodian polity, Chinese sources record the arrival of Indian Brahmanas and the establishment of dynastic legitimacy through ritual authority. The envoy Kang Tai speaks of sacred rites, Sanskrit culture, and royal consecrations.¹⁹ While earlier historians referred to this broadly as “Indian influence,” a closer reading suggests that eastern India, especially Odisha and its neighboring cultural zones, provided the principal models of political theology. The emphasis on mountain worship, *liṅga* consecration and serpent symbolism align closely with Odishan religious geography.

Odisha’s Mahendra Mountain deserves special attention in this context. In Odisha, Mahendra was revered as a sacred Śaiva centre long before the rise of Angkor. The Gangas of Kalinga worshipped Śiva as Gokaṛṇeśvara and Mahendra Girīśa.²⁰ The Cambodian Mahendra Mountain, where Jayavarman II instituted the Devarāja cult, appears not as an isolated coincidence but as a deliberate replication of Odishan sacred geography. The transference of sacred mountain symbolism reveals how maritime movement translated Odisha’s religious cartography into the Khmer landscape.

The Devarāja cult itself reflects Odishan ritual logic. In Odisha, kingship was never purely secular. The ruler derived authority from ritual alignment with Śiva or Jagannātha. Similarly, in Cambodia, the king’s sovereignty was anchored in the consecration of a royal *liṅga* that embodied divine presence. D. C. Sircar has shown that *liṅga* worship in eastern India possessed strong political overtones, linking divine power with royal legitimacy.²¹ Cambodia adopted and monumentalized this ideology.

The Odishan maritime system thus operated on three interlinked levels:

- I. Economic – through trade, shipping, and horse commerce
- II. Religious – through Brahmanical and Buddhist mobility
- III. Political – through models of sacred kingship and ritual sovereignty

This triadic structure explains the durability and depth of Odisha's influence in Cambodia.

Maritime mobility also shaped Khmer art and architecture. Sculptors, architects, and iconographers often travelled with merchants and priests. John Guy has demonstrated that artistic styles in Southeast Asia evolved through selective adaptation of Indian regional forms rather than direct copying.²² Odisha, with its refined temple aesthetics and iconographic grammar, served as one of the most influential sources. The transmission of artistic templates was thus inseparable from maritime trade routes.

The Odishan merchant communities in Southeast Asia gradually formed diasporic networks. They married into local elites, sponsored temples, and supported religious institutions. These communities did not remain foreigners; they became integral to Khmer society. O. W. Wolters has described this process as "localization," where external cultural elements were reshaped by indigenous structures.²³ Odisha's contribution therefore matured within Khmer genius, producing one of the most sophisticated civilizations of Asia.

The continuity of Odishan maritime consciousness is evident not only in texts but also in ritual memory. The *Boita Bandāṇa* festival symbolizes Odisha's historic engagement with the sea. It reminds us that maritime activity was not episodic but a defining feature of Odishan civilization. Cambodia represents one of the most luminous destinations of this Odishan oceanic world.

Thus, Odisha's maritime system must be recognized as the infrastructure of civilization that enabled the rise of Khmer sacred kingship, monumental architecture, and religious synthesis. Without the Bay of Bengal network sustained by Odishan sailors, traders, monks, and Brahmanas, the cultural world of Angkor would not have assumed its distinctive form.

From Kalinga to Kambuja: Early Political Contacts and the Formation of Khmer Kingship

The early political history of Cambodia, particularly during the Funan and Chenla periods, must be situated within the wider Odishan maritime world. The Bay of Bengal did not merely connect markets; it created a corridor for political ideas, ritual technologies, and models of kingship that profoundly shaped Khmer state formation. The presence of Indian Brahmanas, the use of Sanskrit, the establishment of sacred mountains, and the ideology of divine kingship all reflect Odishan patterns of political theology transmitted through maritime mobility.²⁴

Chinese chronicles, especially the accounts of Kang Tai and Zhu Ying, provide valuable insights into the early political structure of Funan. They describe a kingdom where Indian Brahmanas performed ritual functions and where Sanskrit cultural practices were already established.²⁵ The famous Kauṇḍinya legend, in which a Brahmana arrives from India and marries the Nāga princess Soma, symbolizes the fusion of Odishan Brahmanical authority with indigenous Southeast Asian cosmology. Rather than a story of conquest, it represents a narrative of ritual legitimation and cultural synthesis.

This pattern closely resembles Odishan political culture. In Odisha, kingship was deeply embedded in sacred geography and ritual authority. Rulers derived legitimacy not only from lineage but from their association with divine power mediated

by Brahmanas. The same mechanism appears in Funan and later in Chenla. The ruler's authority was sanctified through Brahmanical rites, the installation of sacred objects, and genealogical claims linking the dynasty to divine origins.²⁶

The maritime movement of Odishan Brahmanas played a decisive role in this process. Trained in ritual manuals, Tantric practices, and Śaiva theology, they carried a political theology that fused divine power with royal authority. Coedès observed that Southeast Asian rulers sought Brahmanas primarily to legitimize kingship, not merely to introduce religious doctrines.²⁷ Odisha, with its long tradition of sacral kingship, provided a ready-made ideological framework for emerging Khmer polities.

Chenla marked a significant transition from maritime-oriented Funan to a more territorially grounded state. Yet even here, Odishan influence remained strong. The rulers of Chenla emphasized Śaiva worship, erected liṅgas, and identified themselves with divine power. In Odisha, Śiva was already the supreme deity of kingship, worshipped under various names such as Girīśa, Mahendra, and Tribhuvaneśvara. The Cambodian cult of Śiva under titles like Bhadreśvara and Girīśvara echoes this Odishan religious lexicon.²⁸

The establishment of the Angkorian state under Jayavarman II represents the climax of this Odishan–Khmer political dialogue. Jayavarman II's consecration on Mahendra Mountain in 802 CE was not merely a political event but a cosmic ritual. By instituting the Devarāja cult, he anchored Khmer kingship in sacred geography and divine authority. The selection of Mahendra as the sacred mountain strongly suggests an Odishan prototype. In Odisha, Mahendra Mountain had long been revered as a Śaiva centre associated with divine power and royal legitimacy.²⁹

The Devarāja cult identified the king with Śiva through the consecration of a royal liṅga. This liṅga was not an abstract religious symbol; it embodied the sovereignty of the state. Such an ideology finds close parallels in Odisha, where the king was viewed as the earthly representative of Śiva or Jagannātha. D. C. Sircar has emphasized that in eastern India, Śaiva liṅga worship was inseparable from political symbolism.³⁰ Cambodia adopted and monumentalized this Odishan political theology on an unprecedented scale.

The role of Brahmanical lineages in Angkor further strengthens this argument. The office of royal priest was hereditary, often transmitted through maternal lines, reflecting indigenous Khmer social structures but combined with Odishan ritual authority. The Brahmana Hiranyadāma, who conducted the consecration of Jayavarman II, was versed in Tantric texts such as *Vrah Vinaśikha*, *Nayottara*, and *Śiraścheda*. These ritual manuals have close affinities with Tantric traditions flourishing in eastern India, including Odisha.³¹

The Tantric dimension of Odishan Śaivism played a crucial role in shaping Khmer ritual kingship. In Odisha, Tantric Śaivism coexisted with tribal and Brahmanical traditions, producing a flexible ritual system well-suited for political adaptation. This flexibility enabled Odishan priests to integrate Khmer indigenous beliefs—such as Nāga worship and ancestor cults—into a broader Śaiva framework. The result was a uniquely Khmer form of sacred kingship rooted in Odishan ritual logic.

The political geography of Angkor mirrors Odishan sacred geography. Just as Bhubaneswar functioned as Ekāmra Kṣetra, a landscape saturated with Śaiva symbolism, Angkor emerged as a monumental sacred city organized around temple-mountains and water reservoirs. These waterworks symbolized cosmic oceans, while the central towers represented

Mount Meru. This cosmological urbanism reflects Odishan architectural philosophy, where temples were conceived as microcosms of the universe.³²

The Khmer rulers did not merely adopt Odishan models; they expanded them creatively. Angkor Wat, Angkor Thom, and Bayon represent monumental reinterpretations of Odishan sacred architecture. Yet the underlying grammar of cosmic kingship, divine sovereignty, and ritual space remained unmistakably Odishan in inspiration.

Odishan political theology also influenced the symbolic representation of kings. In inscriptions, Khmer rulers were described using Sanskrit epithets that associated them with gods, cosmic order, and moral virtue. Such titulature was common in Odishan inscriptions, where kings were praised as protectors of dharma and earthly manifestations of divine will.³³

The role of Odishan maritime routes in transmitting this political ideology cannot be overstated. Kingship in Cambodia was shaped not through isolated migration but through sustained cultural dialogue supported by trade, pilgrimage, and scholarly exchange. The sea made Odisha and Cambodia neighbours in a civilizational sense.

Thus, the formation of Khmer kingship was not an isolated Southeast Asian phenomenon but part of a wider Odishan oceanic world. Odisha provided not only religious symbols but a complete political theology that linked sovereignty with sacred geography, ritual authority, and cosmic order. Cambodia transformed this theology into one of the most enduring systems of sacred kingship in world history.

Odishan Śaivism, the Devarāja Cult, and Sacred Geography

The religious heart of the Odishan–Khmer connection lies in Śaivism. Odisha was one of the most important centres

of Śaiva worship in eastern India, where Śiva was venerated not only as a metaphysical absolute but also as a political deity embodying sovereignty and cosmic order. The sacred landscape of Odisha, especially Ekāmra Kṣetra (Bhubaneswar), Mahendra Mountain, and Ranipur-Jharial, reveals a deeply rooted tradition in which kingship, geography, and divinity were inseparable. This Odishan model of sacred kingship profoundly shaped the religious and political institutions of the Khmer world.³⁴

In Odisha, Śiva was worshipped under multiple epithets such as Mahādeva, Girīśa, Tribhuvaneśvara, and Gokaṛṇeśvara. These names reflect the association of Śiva with mountains, territory, and universal sovereignty. The cult of Śiva as Tribhuvaneśvara—Lord of the Three Worlds—found a powerful resonance in Cambodia, where Śiva was worshipped under titles like Bhadreśvara and Girīśvara. The Cambodian inscriptions repeatedly identify Śiva as the supreme deity who legitimized royal authority.³⁵

Mahendra Mountain in Odisha occupies a particularly significant place in this transoceanic sacred geography. From early historical times, it was revered as a Śaiva centre and associated with divine kingship. The Gangas of Kalinga worshipped Śiva as Gokaṛṇeśvara on Mahendra Mountain, viewing it as a sacred axis that linked heaven and earth.³⁶ When Jayavarman II established the Devarāja cult on Mahendra Mountain in Cambodia, he was effectively transplanting an Odishan sacred template into the Khmer world. The choice of the same sacred name, Mahendra, cannot be dismissed as accidental; it reflects a conscious cultural memory preserved through maritime transmission.

The Devarāja cult itself represents the culmination of Odishan Śaiva political theology in Cambodia. By consecrating

a royal *liṅga* and identifying it with Śiva, the Khmer king asserted his sovereignty as divinely sanctioned. In Odisha, *liṅga* worship had long been associated with political power. The *liṅga* symbolized not only cosmic generative force but also royal authority. D. C. Sircar has shown that in eastern India, especially in Odisha, the *liṅga* functioned as a marker of territorial sovereignty and dynastic legitimacy.³⁷ Cambodia adopted this ideology with remarkable creativity, making the *liṅga* the central emblem of the state.

The ritual specialists who institutionalized the Devarāja cult in Cambodia were heirs to Odishan Tantric Śaivism. The Brahmana Hiranyadāma, who consecrated Jayavarman II, employed Tantric ritual manuals that have close affinities with eastern Indian Śaiva traditions. Tantricism in Odisha had developed as a synthesis of tribal cults, Brahmanical ritualism, and metaphysical speculation. This integrative character made Odishan Tantricism especially adaptable to Southeast Asian religious environments, where indigenous spirit worship and ancestor cults were prominent.³⁸

Another striking parallel between Odisha and Cambodia lies in the worship of Śiva's footprints. In Cambodia, inscriptions mention the installation of Śiva's footprints as sacred symbols. This practice was associated with the Paśupata sect of Śaivism. In India, worship of Śiva's footprints is extremely rare but is notably found at Ranipur-Jharial in western Odisha. The presence of this uncommon cultic form in both regions strongly suggests a direct Odishan connection.³⁹

The Paśupata tradition itself had strong roots in eastern India. It emphasized ascetic discipline, ritual purity, and devotion to Śiva as the supreme lord. Its transmission to Cambodia indicates not merely generalized Indian influence but a specific Odishan Śaiva lineage. The Cambodian

adoption of Paśupata symbolism demonstrates how Odisha's specialized religious traditions travelled through maritime routes and were integrated into Khmer sacred institutions.

Sacred geography formed another crucial bridge. In Odisha, the landscape was transformed into a cosmic map through temples, mountains, rivers, and pilgrimage centres. Ekāmra Kṣetra was conceived as a microcosm of the universe, filled with hundreds of Śiva temples. Similarly, Angkor became a sacred city organized around temple-mountains, reservoirs, and axial alignments. The architectural grammar of Angkor mirrors Odishan cosmological urbanism, where sacred space was designed to replicate the structure of the cosmos.⁴⁰

Water management further strengthens this parallel. In Odisha, rivers and tanks were considered sacred and were integral to temple complexes. In Angkor, the vast barays (reservoirs) symbolized the cosmic ocean surrounding Mount Meru. This symbolic hydrology reflects Odishan ritual geography, where water represented purification, fertility, and cosmic order. The Khmer adaptation of these ideas resulted in one of the most sophisticated hydraulic civilizations of the ancient world.

The integration of tribal elements into Śaiva worship also unites Odisha and Cambodia. Odisha's religious culture had long absorbed tribal deities and transformed them into manifestations of Śiva or Śakti. Jagannātha himself evolved from tribal origins into a pan-Indic deity. Cambodia similarly absorbed Nāga worship, ancestor cults, and local spirit traditions into a Śaiva-Brahmanical framework. This shared genius of synthesis enabled Odishan religious ideas to flourish in the Khmer world without erasing indigenous identities.

Odishan Śaivism thus provided Cambodia with:

- I. A model of sacred kingship
- II. A cosmological understanding of territory
- III. A ritual technology for political legitimacy
- IV. A symbolic language for art and architecture

The Devarāja cult was not an isolated Khmer invention but the highest expression of Odishan Śaiva political theology translated into Southeast Asian monumental form. Cambodia gave this ideology stone, scale, and permanence; Odisha gave it structure, meaning, and ritual depth.

Through maritime movement, Odisha transmitted a sacred vision of kingship that shaped Cambodia's political culture for centuries. The Bay of Bengal served as the channel through which Odishan Śaivism became the backbone of Khmer sover

Vaiṣṇavism, Jagannātha, and Angkor Wat: Odishan Political Theology in the Khmer World

While Śaivism formed the ritual backbone of Khmer sacred kingship, Vaiṣṇavism provided Cambodia with an equally powerful political theology, one that emphasized cosmic order, royal protection, and the moral responsibility of the ruler. Odisha occupied a pivotal place in the development of Vaiṣṇava ideology in eastern India, especially through the cult of Jagannātha at Puri. This tradition, which fused tribal religiosity, Brahmanical metaphysics, and royal sovereignty, became one of the most influential religious-political models transmitted across the Bay of Bengal. Its conceptual echoes are unmistakable in the Khmer worship of Viṣṇu and in the architectural grandeur of Angkor Wat.⁴¹

In Odisha, Viṣṇu was not worshipped merely as a metaphysical deity but as the living sovereign of the land.

Jagannātha, identified with Viṣṇu-Nārāyaṇa, came to embody the idea of divine kingship. Odishan rulers described themselves as sons, servants, or representatives of Jagannātha. Political authority was thus grounded in devotional submission to a supreme divine ruler. This ideology transformed kingship into a sacred trust, making governance an extension of divine will.⁴²

The Jagannātha cult was also deeply inclusive. It absorbed tribal deities, Tantric elements, and Brahmanical theology into a unified religious framework. This capacity for synthesis mirrors the Khmer religious genius, where Nāga worship, ancestor cults, and Brahmanical gods were merged into a coherent sacred order. The Odishan model therefore offered Cambodia not a rigid theology but a flexible religious grammar capable of cultural integration.

One of the most striking parallels between Odisha and Cambodia is the concept of Cakratīrtha. In Odisha, Puri was regarded as Cakratīrtha, a sacred site associated with Viṣṇu's Sudarśana Cakra. The worship of sacred footprints and the symbolism of divine movement were central to Jagannātha ritual. In Cambodia, similar practices appear in the worship of Viṣṇu's footprints and in the dedication of temples such as Cakratīrthasvāmin. These parallels suggest a direct transmission of Odishan Vaiṣṇava ritual geography into the Khmer world.⁴³

The institution of *calanti-pratimā* (moving images of divinity) further strengthens this connection. In Odisha, Jagannātha and his symbols are ritually moved during festivals, emphasizing the dynamic presence of the deity in public space. Cambodia adopted a similar ritual logic in the Devarāja cult, where a movable liṅga or sacred image embodied royal sovereignty. The concept that divinity travels with the king and protects the realm reflects an Odishan understanding of living, mobile sacred power.⁴⁴

Angkor Wat stands as the monumental expression of Khmer Vaiṣṇavism and reveals deep Odishan conceptual inspiration. Built by Sūryavarman II in the twelfth century, Angkor Wat was dedicated to Viṣṇu and conceived as a cosmic temple representing Mount Meru surrounded by the cosmic ocean. In Odisha, temple architecture had already evolved to express similar cosmic symbolism, where the śikhara represented Mount Meru and the temple complex mirrored universal order. The Jagannātha temple at Puri embodied this theology of cosmic kingship, where Viṣṇu-Jagannātha ruled as the lord of space and time.⁴⁵

Sūryavarman II was posthumously identified with Viṣṇu, just as Odishan kings were symbolically united with Jagannātha. This identification transformed the king into a cosmic guardian whose rule sustained universal harmony. Claude Jacques has noted that Angkor Wat functioned both as a royal mausoleum and a cosmic monument. Such a dual function closely parallels Odishan temple ideology, where temples served simultaneously as religious centres and political symbols.⁴⁶

The iconography of Angkor Wat reinforces this connection. Bas-reliefs depicting the churning of the ocean of milk, scenes from the Rāmāyaṇa and Mahābhārata, and images of Viṣṇu in his cosmic forms reflect a Sanskritic imagination nurtured in Odisha. In Odisha, the epics were ritually recited, sculpturally represented, and integrated into temple worship. The Khmer adaptation of these narratives followed Odishan narrative grammar while expressing local artistic genius.⁴⁷

Vaiṣṇavism in Cambodia did not replace Śaivism but complemented it, just as in Odisha. The synthesis of Śiva and Viṣṇu, visible in the Hari-Hara iconography, appears in both regions. This theological harmony was a hallmark of Odishan religious culture and was carried into the Khmer world as a model of religious coexistence.⁴⁸

The Jagannātha ideology of inclusive kingship also shaped Khmer political morality. The ruler was not merely a conqueror but a dharmic protector responsible for justice, prosperity, and ritual order. This ethical dimension of kingship is evident in Khmer inscriptions that describe kings as protectors of religion and patrons of sacred institutions. Such rhetoric follows Odishan political theology, where kingship was inseparable from moral duty.⁴⁹

Thus, Vaiṣṇavism provided Cambodia with a vision of kingship grounded in devotion, cosmic responsibility, and ritual legitimacy. Odisha transmitted not only Viṣṇu worship but a comprehensive ideology of sacred sovereignty. Cambodia monumentalized this ideology through Angkor Wat, transforming Odishan political theology into one of the greatest architectural statements of the ancient world.

In the Odishan–Khmer maritime world, Vaiṣṇavism functioned as a bridge between devotion and power, between temple and throne, between cosmic order and earthly governance. Odisha supplied the conceptual framework; Cambodia supplied the monumental form.

Conclusion

Kauṇḍinya, the legendary founder of the Funanese dynasty, should be understood not as a vague “Indian Brahmin” but as a culturally specific Brahmin sailor from Kalinga, the ancient land of Odisha. This conclusion emerges from a convergence of genealogical, epigraphic, literary, maritime, and cultural evidence. The very name Kauṇḍinya refers to a recognized Brahmin *gotra*, historically prominent in eastern India, especially in Odisha and adjoining regions. Inscriptions from Odisha record Brahmins of the Kauṇḍinya lineage occupying important ritual and administrative positions, confirming the deep-rooted presence of this gotra in Kalinga.

Southeast Asian epigraphic evidence strengthens this identification. The Vo Cạnh inscription, the earliest Sanskrit inscription of the region, refers to the “Kauṇḍinyakula,” the family of Kauṇḍinya, indicating that Funan’s ruling dynasty consciously traced its legitimacy to a specific Brahmin lineage. The later Mỹ Sơn stele venerates “Vrah Kauṇḍinya” as a dynastic ancestor, showing that this memory was preserved for centuries. Chinese historical records, particularly the *Liang Shu*, narrate how Kauṇḍinya (Huntian) sailed across the sea, subdued and married the Nāga princess Soma, and founded a new kingdom. This confirms that Kauṇḍinya was remembered as a historical founder, not merely a mythical hero.

Odisha provides the most coherent geographical and cultural context for such a figure. Kalinga was a major maritime power with active ports and well-established sea routes to Southeast Asia. Monsoon winds naturally carried ships from the Odisha coast toward the Gulf of Thailand, making Funan an accessible destination for Odishan sailors. Moreover, Odisha was a strong centre of Śaivism and Nāga worship, precisely the religious traditions that defined early Funanese culture. The marriage of Kauṇḍinya with Soma symbolized a synthesis of Brahminical Śaiva authority and indigenous serpent cults, a pattern deeply familiar in Odisha’s own religious history.

Thus, Kauṇḍinya emerges as a Brahmin sailor-merchant-prince from Odisha, whose maritime skill, ritual authority, and cultural adaptability enabled him to establish political legitimacy in a foreign land. His Odishan origin transforms the story of Funan from a generalized “Indian” migration into a chapter of Odisha’s transoceanic civilizational expansion.

The history of the Khmer civilization, when viewed through an Odisha-centric lens, appears not as an isolated Southeast Asian phenomenon but as the monumental flowering of a

transoceanic cultural process rooted in the Bay of Bengal world. Odisha, ancient Kalinga, functioned as one of the principal civilizational engines of this maritime sphere. Its ports, sailors, merchants, monks, and Brahmanas created enduring cultural corridors through which religious ideas, political ideologies, and artistic forms circulated between South and Southeast Asia.

Kauṇḍinya stands at the threshold of this history as the first identifiable Odishan agent in the political formation of Cambodia. His voyage across the sea symbolizes the outward movement of Kalinga's sacred kingship. Through him, Odisha transmitted not merely ritual practices but a complete political theology that united kingship, divinity, and territory. His marriage with Soma inaugurated a model of cultural synthesis that became the foundation of Khmer civilization: Brahminical authority merged with indigenous cosmology, producing a uniquely Southeast Asian form of sacred sovereignty.

Odisha's Śaiva tradition provided Cambodia with the ideological architecture of divine kingship. The Devarāja cult, the consecration of the royal *linga*, the sanctification of Mahendra Mountain, and the fusion of state and temple were all rooted in Odishan Śaiva political theology. Cambodia monumentalized these ideas at Angkor, transforming Odisha's sacred concepts into stone, city-plans, and ritual geography of unmatched grandeur.

Vaiṣṇavism added a complementary dimension to this process. Odisha's Jagannātha tradition, with its vision of the deity as sovereign ruler and protector of the land, shaped a devotional-political model that found monumental expression in Angkor Wat. Just as Jagannātha ruled Odisha as a living king, Viṣṇu ruled Angkor as the cosmic guardian of Khmer sovereignty. In both regions, kingship was conceived as service to a supreme divine authority.

Buddhism completed this sacred triad. Odisha's Buddhist centres and monastic networks connected the Bay of Bengal to Cambodia's Mahāyāna and Theravāda traditions. The Buddhist kingship of Jayavarman VII, portraying the ruler as Bodhisattva, echoed the Odishan synthesis of compassion, sovereignty, and sacred responsibility.

Thus, Odisha, Kauṇḍinya, Śaivism, Vaiṣṇavism, Buddhism, and Khmer monumental civilization form a single historical continuum. The Bay of Bengal was not a boundary but a cultural artery. Odisha was not a peripheral contributor but a civilizational nucleus. Cambodia was not a passive recipient but a creative partner that gave monumental form to Odishan ideas.

Together, they constituted a transoceanic cultural world in which religion, power, art, and maritime mobility fused into one of the most remarkable chapters of Asian history.

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Early Maritime Contacts of Odisha along the East Coast of India: Prospects of Further Maritime Archaeological Research

Sila Tripathi

Abstract

Archaeological, epigraphical, numismatic, and other historical sources indicate that, like the ports in other coastal states of India, the ports of Odisha played a significant role in transmitting Indian culture to regions overseas. Over time, however, a combination of natural and manmade factors such as weak leadership, economic decline, invasions by neighbouring kingdoms, coastal erosion, sea-level fluctuations, tectonic shifts, natural disasters, sedimentation, and the formation of sandbars and dunes led to the gradual decline of these ports and their associated trade networks.

Exploratory efforts have unearthed traces of maritime activity scattered across the hinterland and onshore areas. Yet, underwater heritage along this coast remains largely unexplored. Notably, several shipwrecks of later periods still await investigation. In light of these findings, there is a pressing need for systematic maritime archaeological explorations encompassing both onshore and offshore domains along the Odisha coastline to uncover evidence of seafaring traditions and trade from past centuries.

Keywords: Maritime archaeology, shipwrecks, ports, contacts, Odisha

Introduction

During ancient and medieval periods, the region now known as Odisha encompassed a much larger territory and was historically referred to as Kalinga, Utkala, and Odra Desa. Between

the 11th and 16th centuries, the name Kalinga gradually fell out of common usage, giving way to the evolving nomenclature of Odra Desa, later transformed into Uddisa, Udisa, or Odia, and eventually anglicised as Orissa, now officially known as Odisha since 2011. Since the early centuries of the Christian era, Odisha has undergone multiple phases of cultural and historical development. Odisha, historically known as Kalinga, held a prominent place in the maritime legacy of India, serving as a vital conduit for the dissemination of Indian culture across distant regions. Through extensive archaeological excavations and explorations of various sites in Odisha supplemented by epigraphical records, numismatic evidence, and literary sources spanning different eras and researchers have been able to reconstruct the region's rich history of trade networks, cultural exchange, and maritime activity.

The geographical location of Odisha played a pivotal role in the expansion of maritime activities. Bordered by the Bay of Bengal and the Indian Ocean, the region emerged as a vital hub for international trade, commerce, and cultural exchanges. Its extensive littoral stretch offered ideal sites for port development, while the fertile river deltas naturally served as sheltered harbours. Major rivers such as the Ganga, Mahanadi, Vamsadhara, and Godavari fostered dynamic inland trade routes. The hilly terrain of Western Odisha contributed valuable, precious and semi-precious stones, enriching overseas trade. Moreover, the accessibility of the region enabled traders from northern India to reach the ports of Odisha without significant hindrances.

Ports of Odisha

Odisha was known for numerous ports and trading centres that were comparable to those in other coastal regions of India. Ptolemy's *Geography of Ancient India* (circa 150 CE) references

several prominent and flourishing ports within Odisha. Likewise, Arab and Persian chroniclers have documented vibrant maritime hubs of the region. Interestingly, Khalkatapatna, the only known port not mentioned in any of these historical sources, the remains of the port came to light during the construction of the marine drive connecting Puri and Konark. The Archaeological Survey of India (ASI) and CSIR-National Institute of Oceanography have carried out explorations and excavations and premeditated the causes of the decline of Khalkatapatna port (Sinha 1992, Sila Tripathi et al 2015).

Identification and documentation of unknown ports

The account of Ptolemy (150 CE) CE highlights several prominent ports of Odisha that maintained overseas trade relations, including Nanigaina (Puri), Katikardama (Kataka/Cuttack), Kannagara (Konarak), and the river mouths of Manada (Mahanadi), Tyndis (Brahmani), Dosaron (possibly Baitarani), Adams (possibly Subarnarekha), Minagara (possibly Jajpur), and Kosamba (likely Pipili or Balasore) (McCrindle, 1985). Although Ptolemy identified the aforementioned sites as ports and trade centers, archaeological evidence of maritime activities has not been found at some of these locations. Moreover, Ptolemy also did not refer to other significant maritime centres such as Manikapatna, Palur, Che-li-ta-lo, Kalingapatnam, and Pithunda, which also played substantial roles in the seaborne trade region (Sila Tripathi 2002). Later, Arab and Persian sources from the 9th and 10th centuries CE offer valuable insights into the maritime activities of Odisha. Writers such as Ibn Khurdadhbah, Ibn Rusta, and the anonymous author of the *Hudud al-'Alam* refer to major ports and regions active during the Bhaumakara Dynasty. These include Mahisya (Midnapore), Jharkharo (possibly the hilly tracts), Odisha proper, and Ganjam in southern Odisha. In the adjacent

Telugu-speaking Andhra region, notable ports mentioned are Kalinganagar, Keylkan, Al-Lava, and Nubin, although several of these remain unidentified (Panigrahi 1981).

Following the 15th century CE, several ports in Odisha, such as Balasore, Pipili, Ganjam, Harishapur, Chandabali, and Dhamra, emerged as important nodes in maritime activity, particularly during the colonial period. While some of these ports rose to prominence for specific durations, they later declined or lost relevance over time (Sila Tripathi, 1997). Given that many coastal trade centres remain unidentified, it is imperative to undertake systematic exploration and archaeological excavations across the eastern coastline, spanning from the Ganges to the Godavari. Such efforts would significantly contribute to uncovering the lesser-known maritime history of India at large and Odisha in particular.

Archaeological Evidence

Archaeological excavations at Sisupalgarh, Jaugada, Tamralipti, Palur, Manikapatna, Khalkatapatna, Salihundam, Dantapur, Kalingapatnam and some sites along Chilika Lake have revealed significant evidence of overseas contacts from the early centuries of the Common Era through the medieval period. Similar findings from Chandraketugarh and Tamralipti in West Bengal, and Dharanikota in Andhra Pradesh, include artefacts dating to the 2nd – 1st centuries BCE. The presence of Northern Black Polished Ware (NBPW), Rouletted Ware (Begley 1983), Knobbed Ware (Sila Tripathi et al 2019), and semi-precious stone beads underscores the importance of early maritime trade between India, the Red Sea coast, and Southeast Asia (Sarma 1990–91; Sila Tripathi 2017). Many such pottery types have been found at sites across Odisha. Although Rouletted Ware was once considered a marker of Indo-Roman trade and thought to be imported from the Roman Empire, recent

research suggests this pottery was locally manufactured (Begley, 1983). Furthermore, discoveries such as Roman/Indian bullae and iron caltrops at Sisupalgarh indicate indirect contacts with Roman contexts (Ghosh 1989; Lal 1984, Mohanty and Smith 2008). Sisupalgarh has undergone multiple excavations (Lal 1984; Mohanty et al, 2007), while Jaugada was last examined around six decades ago (Ghosh 1989). Sites like Asurgada, Talapada, Gaurangapatna, Kankaikuda, Lathi (Mohanty et al, 2016; Mohanty et al, 2018; Vaidya et al., 2024; Thakuria et al., 2017) and Radhanagar reveal similar findings, including fortified structures with gateways (Patnaik 2022). Collectively, these excavations illustrate the existence of coastal trade networks extending from Bengal through Odisha and Andhra Pradesh to Tamil Nadu, active since the 6th century BCE and continuing thereafter. To deepen our understanding of trade and cultural exchanges along the eastern littoral, a thorough re-examination of findings from earlier excavations is essential.

Epigraphical and Numismatic Sources

The Major Rock Edicts of Asoka at Dhauili and Jaugada played a crucial role in enabling the coastal trade route from Tamralipti to the Andhra coast. The Hathigumpha inscription (1st century BCE) records that King Kharavela defeated the southern confederacy and secured pearls, precious stones, and jewels from the Pandya king, an achievement made possible through the existence of maritime trade networks (Jayaswal 1983). Evidence of inscriptions in the Kharosthi script along the lower Bengal coast, including one discovered during excavations at Manikapatna, further highlights these coastal connections. Similar findings at Sembiran in Bali, where Kharosthi-inscribed potsherds were unearthed, point to active maritime trade between Odisha and Bali (Ardika Bellwood, 1991).

Inscriptions from the Malayo-Indonesian region frequently refer to "Kling," a term widely believed by scholars to denote the people of Kalinga. The Kaladi inscription, dated to 909 CE, references *wagga kilalan* a category of foreigners comprising Kalingas, Aryas, Sinhalese, and Dravidians. Additionally, Indonesian inscriptions identify foreign traders as *Banyaga*, which included the same groups and a merchant guild known as *banigrama*.

Numerous coin discoveries across Odisha attest to its historic trade interactions with foreign regions. Four Roman dinars, three of Augustus and one of Tiberius were unearthed under uncertain conditions at Kotapad, while 23 gold coins surfaced from Gumada. These eight coins, dating between the 1st century BCE and 2nd century CE, are largely imitative, with only one being an original Roman issue (Turner 1989, Sila Tripati and Behera 2019). Excavations at Sisupalgarh, Manikapatna, and Radhanagar have also revealed Roman bullae amulets featuring Roman portraits worn as locketts (Patnaik, Mohanty and Smith 2008). In addition, Khalkatapatna yielded one complete and two fragmentary copper coins bearing Chinese legends and featuring a central square perforation, datable to the 14th century. A notable find from the Manikapatna site includes a 12th century Sri Lankan copper coin inscribed with the legend "Simad Sahasamalla" (Sila Tripati et al., 2015).

Literary Sources

Ancient maritime legacy of Odisha is marked by its robust overseas trade and enduring connections with distant lands. The strategic prominence of Kalinga in seafaring commerce is underscored in Kalidasa's *Raghuvamsha*, where the ruler of Kalinga is honoured with the title *Mahodadhipati*, the Lord of the Ocean (Nandargikar 1948; Behera 1999). Furthermore, in verse 6.57, the epic evocatively references the Indonesian

Archipelago through the term *Dvipantara*, famed for its fragrant breezes, redolent with the scent of cloves:

*anena sardham viharamburaseh tiresu talivana marmarresu
dvipantaranvita lavanga puspeih apakrtasveda
lava marudbhih*

The *Aiyamanjusrimulakalpa* refers to "all the islands of the Kalinga Sea" (*Kalingodresu*), implying that the present-day Bay of Bengal was once known as the "Kalinga Sea," dominated by Kalinga's maritime fleet of Kalinga (Behera 1977). Additional sources such as the *Sankha Jataka*, *Samudra Jataka*, and *Mahajanaka Jataka* describe trade routes from central India, specifically from Benaras to Tamralipti where merchants embarked on voyages to Southeast Asian regions. The *Mahavamsa* records Emperor Ashoka dispatch of missionaries to Sri Lanka from Tamralipti, highlighting the prominence of the site as a gateway for religious and cultural exchange. The *Vessantara Jataka* portrays Kalinga as a thriving hub of commerce and industry, exporting rice, fine textiles, ivory, diamonds, and other valuable goods to distant lands.

Buddhist literature attests to Odisha's sustained contact with Sri Lanka from as early as the 5th century BCE, leading to enduring political and cultural ties. The engagement of Odisha with China is noted in the travel accounts of Xuanzang, who documented the commercial dynamism of its people. In 790 CE, Subhakara Simha identified as Sivakara or Subhakara of the Bhaumakara dynasty and referred to in Chinese records as the prince of Wu-ta (Odra) journeyed to China with a collection of Tantric Buddhist texts (Mitra, 1971; Sila Tripathi 2000). Notably, he had earlier sent a manuscript to the Tang emperor, reflecting ongoing scholarly and diplomatic exchanges. Later, in 1225–26 CE, *Chu-fan-chi* by Chau Ju-Kua records Kalinga's maritime trade and organisation. He describes two distinct

types of vessels that plied the sea routes between Kalinga and the Chinese port of Canton.

Art and Sculptural Evidence

Buddhism has served as a crucial cultural link between Odisha and Southeast Asia, as revealed through comparative studies of their respective Buddhist art traditions. Excavations at Ratnagiri, Udayagiri, and Lalitagiri in Odisha have unearthed significant remains of Buddhist sculptures, including Buddha heads that display stylistic affinities with those from Central Java, particularly in terms of robust form, expressive modelling, and facial features. Similarly, images of the Buddha and Bodhisattvas at Borobudur in Indonesia reflect traits closely aligned with those found in Odisha (Behera 1977). Notably, the Bodhisattva figures from Chandi Mendut in Java exhibit attributes placed on elongated lotus stalks, a characteristic that echoes the stylistic conventions of Lalitagiri. Similarly, the famous Indian animal friendship story of a monkey and crocodile is depicted on the potsherd of Mantai of early historical period. The same story has been narrated on the walls of the Mukteswar temple of Bhubaneswar shows the contacts of Odisha and Sri Lanka (Mohanty 2013).

The depiction of a giraffe an African animal on the walls of the 13th century Konark temple suggests maritime trade links, possibly involving Arab merchants who may have transported such animals to the eastern coast of India. Historical records indicate that in the early 15th century, the Chinese admiral Zheng He, who travelled to East Africa, brought a giraffe as tribute to the Ming court (Sila Tripathi 2000). Odisha's maritime legacy is further illustrated through boat sculptures found in temple architecture at Puri and Bhubaneswar, as well as reflecting the historical period seafaring tradition and pride (Sila Tripathi *et al.*, 2018).

Studies on Boatbuilding Technology of Odisha

The boatbuilding traditions of Odisha trace their origins to the earliest phases of navigation in the Indian subcontinent. Over time, diverse indigenous craft designs have emerged in Odisha and across India, each tailored to the unique seabed topographies around the seas in India. Southampton University, UK and CSIR-NIO, Goa has carried out studies on the traditional boats of the East Coast of India, including Odisha (McGrail, 2003; Blue *et al.*, 1997; Sila Tripathi, 2015; 1995; Raut and Sila Tripathi, 1993). In continuation of those studies, additional data will be collected on the construction of other traditional boats of Odisha, including their construction pattern, availability of raw materials, labour resources, etc. This study aims to deepen the understanding of how Odisha's traditional boat designs have influenced similar practices in other parts of India and beyond. Furthermore, undertaking a comparative analysis of Odisha's maritime craftsmanship with other regional boatbuilding traditions is essential to tracing intercultural exchanges and technical adaptations across time and geography.

Study on Stone Anchors of Odisha

Marine archaeological explorations along the coastline of India have revealed a variety of stone anchors from several locations including Goa, Malwan, Vijaydurg, Lakshadweep, Dwarka, Bet Dwarka, Somnath, and Kannur on the west coast, as well as Rameswaram on the east (Sila Tripathi 2014). Investigations at Chilika and Manikapatna further uncovered stone anchors (Sila Tripathi and Patnaik, 2008 and Sila Tripathi, 2021), with the specimen from Manikapatna exhibiting typological affinities to those found on both coasts. In contrast, the anchors discovered in Chilika appear to be distinct in form and function, suggesting usage specific to the region.

Despite these findings, the stone anchors of Odisha remain understudied, underscoring the need for targeted coastal exploration to document and interpret their characteristics. Such research is vital for identifying their provenance, dimensions, typology, and application. In order to understand the provenance of the Indo-Arabian stone anchor of Manikapatna, geochemical and isotopic analysis of the stone was carried out, and the analysis confirms that the stone belongs to the Palitana region of Gujarat and the anchor is made of basalt (Sila Tripathi et al., 2022). Additionally, iron anchors recovered from the Balasore region and housed in the Odisha State Museum have been studied and published (Sila Tripathi, Patnaik and Acharya, 2014). Continued exploration may yet uncover further examples, contributing to a broader understanding of anchoring technologies in the maritime history of the region.

Suggestions for Further Studies

The decline of ports and maritime trade centres of Odisha likely resulted from a convergence of factors. These included invasions by neighbouring kingdoms, adverse economic shifts, and geological changes such as tectonic activity, shoreline alterations, sea level fluctuations, and coastal sedimentation. Despite this downturn, Odisha's maritime heritage endures through a range of socio-cultural festivals that actively commemorate and preserve these traditions.

Proposed Initiatives for Reconstructing Odisha's Maritime Heritage

1. Mapping Ancient Shorelines

Systematically tracing historical period coastline of Odisha to identify locations of undocumented ports, shedding light on long-lost maritime hubs.

2. Analyzing Coastal Migration Near Konark

Utilize of satellite imageries to study shoreline changes around the Sun Temple at Konark, offering insights into its maritime connections and historical relevance.

3. Comprehensive Field Explorations

Undertake detailed explorations of both coastal and inland regions of Odisha to bring together a holistic maritime history through archaeological and historical evidence.

4. Establishing a Maritime Research Institute

Set up a dedicated research institute in Odisha focused on preserving, studying, and showcasing the region's maritime heritage. This facility would document a diverse array of artefacts such as anchors, coastal structures, historical sites, and shipwrecks while promoting interdisciplinary collaboration among historians, archaeologists, oceanographers, and cultural researchers. Its mission would be to ensure long-term protection and public accessibility of Odisha's maritime legacy for future generations.

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Changing the Gaze: Tapping Sources from Southeast Asia to explore Maritime History of Odisha

Umakanta Mishra

Traditions, i.e. repeated practices of the community, is very often represented as having great antiquity, which on historical probing, prove out to be of very recent origin (Hobsbawm). Bali *yatra* on the 'in the historic lower Bali *Yatra*' ground on the river Mahanadi in Cuttack, is one such recent tradition. It has been represented as a commemoration of ancient maritime voyage of the sadhavas, the lower Bali *Yatra* ground, projected as historical ground has, in fact, come up in the last decade out of the old course of the river Mahanadi. The association of Bali *Yatra* (more like a big market fair) with the maritime trade of ancient Odisha could find its narrative salience because of the convergence of the day of the inauguration of the festival with the Kartika Purnima (bright full moon day in the month of the Kartika). On this day people of coastal Odisha sails votive plantain boat on various water bodies with betel nut, betel leaf and ritual candle lamp of ghee and cotton placed on the boat. As part of observing the votive boat sailing, the devout utter words such as "*aa, ka, ma, bai, ... paa gua tora, barshaka daharma mora*". Historians gave a spin to these few letters by associating them with the rhythm of monsoon and sailing calendar of the ancient maritime traders. In fact, these words first find its mention in the Mahabharata of Sarala Das in 15th century CE in which Kunti as part of performing obsequious rituals to her dead husband, uttered these words. The month of Kartika is associated with the dead people and boat represents a safe passage from this world to the next world. This vital relation between the month of Kartika and votive

boats sailing is missed out in the regional history narrative of the historians of the region who projected a religious practice as a commemoration of the glories of ancient mercantile maritime communities of Odisha. Political identity building from early 20th century CE onwards saw history being used as material resource to justify the prowess of a community, even though such prowess was only anchored to the past. Meaning-making of the 'tradition' assumes various spectacular visual forms in these post-modern times by the post-colonial state, which bolsters its image and claim to govern by giving an image makeover to an 'old' (recent) 'tradition'.

Such spectacular affective political affinity makes research of maritime tradition of Bay of Bengal difficult. Rhythm of monsoon, long coastline and coastal communities of sailors, boatmen, row give the region a certain unity. This unity of maritime space of Bay of Bengal was broken by cartographic boundary of the present in the form of nation-state and sub-region. Nation-states and subregional nation project the material resources of the past to bolster national identity. The construction of maritime prowess of the Cholas or Kalinga, therefore, was embroiled in the issue of identity claim. While there is no easy way out to extricate history or practice of history wiring from this political process, practicing historians, should move beyond the old material resources of the past and generate new ones and make their own pudding of the past.

However, maritime history researches of Odisha have merely repeated the old writings. Medieval Odia literature, few archaeological evidence have not been adequate to write a cogent maritime history of Odisha. Hence, one needs to change the gaze. Our gaze needs to be shifted to the other sides of the shores i.e what we find in Southeast Asia or in

Chinese Sources. The rest of the present write up cites few instances how looking at the sources from Southeast Asia, China and Sri Lanka shed important light on the presence of people from Kalinga area in the Indian Ocean region.

Sartorial Shift in East Java and Presence of Kalingan Traders

There were several crests and troughs in the Indian Ocean trade throughout the historical period. In the early historical period, there was a surge in contact and exchange in the Bay of Bengal network which was proved from the distribution of the archaeological evidence, such as Rouletted ware, Knob Ware, monochrome glass beads from the Bay of Bengal sites such as Arikadmedu (Tamil nadu), Sisupalgarh (Odisha), Sembiran and Pakung in Bali, etc. There was a trade boom in the 10th century which lasted up to 13th century CE. This trade fuelled by textile trade. The warp-weft cloth, called *patola/ikat/Bandha* was introduced from India to Java at the end of the first millennium. The Javanese sources refer cloths with gold and silver cotton and colored silk thread inserts the epigraphic records of Java reveal great degree of specialization in textile industry referring to groups such as bleachers or dyers, cloth merchants who supplied threads or pre-patterned cloth. Javanese consumerism in the tenth through thirteenth century era included kraton (royal) members as well as the social elites. The Odishan merchants participated in this textile boom and possibly played a role in the sartorial shift to *Bandha/ikat/warp-weft* textile in Java. The paper deals with the nine epigraphic records from Java from 10th–13th century CE, which list the name of foreign merchants in the Javanese market, of which the most constant was the name of Kalinga, even though the name of other regions of South Asia and elsewhere kept changing throughout these three centuries.

A shift in clothing pattern occurred in the 11th century CE Java. The Javanese textile style changed after Airlinga shifted the capital to East Java in 11th century CE. From that period onwards, the Javanese society ceased to wear locally produced bark cloth. It was displaced by cotton textiles secured in the marketplace. Cloth specialists of Java, inspired by the Indian and Chinese imports, emerged to weave and market *songket* warp-weft cloth known as *ikat/Bandha* in Odisha. The existing statuary as well as the epigraphic record support the sartorial shift to warp-weft textile (called *bandha*) in 10th–11th century Java, which was most likely introduced from India (Christie 1993: 192–193; Christie 1999; Guy 1998). In the metallic bronze statues, one finds plain-coloured cloth decorated with a scattering of small six or eight-petalled flowers, similar to those found on the stone Ganesa sculpture from the Central Javanese temple (Bernet Kempers 1959: plate 39; Pullen 2021). In some others, the flowers are reduced to patterns of dots encircling central rings or dots as one find today in Pashapali designs of the textile of Odisha. There are numerous epigraphic records which reveal increasing specialization in textile in Java. Certain textile also emerged as a major marker of social status (Christie 1993: 181–211). In this sartorial revolution in Java, the Indian foreign merchants possibly played major roles. The epigraphic records of Java refer to the tax-paying foreign merchants. There are references to tax-farmer (*wargga kilalan*) foreign merchants in the epigraphic sources who came to Java to trade in various items. These inscriptions, contained list of various trading groups participating in the Indian Ocean trade. The name of Kalinga remained constant throughout this period from 10th to 13th century CE.

Ubiquity of Kalinga in the Javanese Inscriptions

The presence of foreign merchants, especially those acting

as tax farmers, is attested to by the second half of the ninth century in the Javanese inscriptions. Lists of *wargga kilalan* (tax farmer) groups appear in nine inscriptions, ranging in date from 840 to 1305 CE. All of these inscriptions are charters connected with communities located away from the coast. These nine inscriptions stand apart as they provide evidence of the changing pattern of Asian trade. They refer to various regional participants from South Asia in Java, such as Kalinga, Cola, Dramila, etc. This list is to be distinguished from the large number of inscriptions that merely contain vague references in tax collecting lists to *juru kling* (head of the Indian/foreign community)-and later occasionally also the *juru barata* and *juru cina* (heads of the Indian Ocean/and Chinese communities).

The earliest original inscription to contain such a list is that of Kalirungan from the Yogyakarta region in central Java, dated 883 CE. The list of foreign members of the *wargga kilalan* (tax-farmer group) of that time included mainland Southeast Asians from Campa (Champa in Vietnam), Remman (Ramanya desa in Mon lower Burma) and Kmira (Cambodia), while the listed South Asians came from Kling (Kalinga) and Pandikira (in Karnataka) on the eastern India and southern India, from Aryya (Aryapura/Ayyavole) near Goa on the west coast, Singhala (Sri Lanka).

The Palebuhan inscription of 927 CE which concerns a community on the banks of the Solo River near Madiun refer to names such as Singhala, Pandikira, and Rammana. Other names are not visible.

Then there was a boom in textile and inscriptions of 11th century CE onwards reflect the changing pattern of the Sian trade. Four original inscriptions containing lists of foreigners survive from the eleventh century. The Cane inscription of

1021 CE from the Brantas delta region, belonging to the period of king Airlinga lists foreigners from Kling (Kalinga), Aryya (Ayavole), Singhala (Sri Lanka), Pandikira (Karnataka), Drawida (south), Campa (Vietnam), Remen (Lower Burma), and Kmir (Cambodia) (Brandes 1913: Inscription Lviii). The inscription of Patakan from the same district, contains an identical list. It is important to notice that the cholas had replaced the Pallavas and had been inflecting their maritime arc with the maritime expedition against Sri Lanka and Sri Vijaya by Rajaraja and Rajendra Chola. The Cane inscription therefore refers to the arrival of the Dravidas in it.

By the mid-11th century CE when the Turun Hyang and Garaman inscriptions were written, two changes had occurred in the lists: Drawida had been replaced by Colika(Chola), and Pandikira by Karnataka. The Garaman inscription of 1053 CE adds to the list the name Malyala (the Malaya-speaking region of the southwestern Malabar coast (Brandes 1913: Inscription Lxiv; Boechari).

Hiatus and Reappearance of Foreign Merchants in the Majapahit Period

There was a hiatus in the reappearance of these foreign merchants in the Javanese inscriptions until they reappear in the late 13th and early 14th century CE. The Balawi inscription (Poerbatjaraka 1936: 78) of 1305 CE of the early Majapahit period contains a list of tax farming foreigners. The list reads as follows: ... *warggakilalan*: Kling, Aryya, [...], Singhala, Karnataka, [...], Cina (China), Campa (Champa), Mandifi(?), Caremin (Ramanyadesa), Kmir(Cambodia), ...

It is important to note that the Balawi inscription does not refer to the Cholas. Instead, it refers to Sina (China). The Chola Power had declined by then. On the other hand, the Cina (Chinese) appeared for the first time in the list of tax-paying

merchants of Java. It is important to note that the Chinese Junk moved beyond the South China Sea to enter into the Indian Ocean water for the first time in the Song period. The Chinese official of south Song dynasty of 13th century, Chao Ju-kua in his work (*Chu-fan-Chih*), states that Chu-lien (identified possibly Kalingapattinam or Cormandel was approachable from Kunlin (Quilon) or from Pagan (Hirth 1896: 489-90). It also possibly refers to Singhbhum area as possible source of iron.

Beyond Trade: The Cultural Connection of East Java and Kalinga in 13th Century CE

While the above discussion clearly reveals the importance of Kalinga in the trade of the Indian Ocean between 10th-13th centuries CE, the relations between Java and Kalinga was not restricted to trade alone. It is important to note here that the king of Singhasari dynasty, Kertangara expanded his power in the Southeast Asian water by defeating the Srivijaya in 1290 CE. This brought him in conflict with Kublai Khan of China, who sent emissary to Kertanagara with a message to submit to him. This was in the year 1292 CE, facing an impending invasion from Kublai Khan and internal revolt, Kertanagara consecrated Bhairava and Chamunda temple at Singhasari. The Chamunda image inscription of this consecrated image was done by Kertanagara to achieve victory in the war. There was no evidence of Chamunda worship in Java before it. What was the source of Chamunda cult for Kertanagara? Odisha was a major centre of Kapalika-Kaula form of Saiva-Sakta religion in which Chamunda was the main deity. Did Kertanagara import the Chamunda cult from Odisha at a time when there was also the presence of the taxpaying foreign merchants from Odisha in east Java? I found striking paleographic similarities between the letters of the Kendupatna Copper plates of Narasimhadeva II and the Nagari letters on the Buddhist statues of Candi

Jago temple, which was constructed by Kertanagara in 1267. It is noteworthy to mention that Kertanagara attempted a revival of Sanskrit in Javanese inscriptions in late 13th century. This was borne from Candi Jago image inscriptions of various Buddhist deities, including of Amoghapasa Lokeshvara (Mishra: Forthcoming).

Kalinga Dynasty in Pollonarawu (12th–13th Centuries CE): Exploration in Diplomacy, Trade and Politics in the Bay of Bengal in the Aftermath of Chola Invasion of Rajaraja and Rajendra Chola

This section focuses on the Kalinga dynasty rule in Pollnarwu in the aftermath of the Chola invasion and occupation of Sri Lanka 11th century CE. A number of Ganga princes of Kalinga established their rules in Sri Lanka. The Kalinga rule in Sri Lanka happened in the dynamic of powerplays for control of trade routes amongst the important powerful kingdoms of the period. The Kalinga dynasty rule in Pollanarawu was preceded by intense competition between Cholas and Eastern Gangas for supremacy of both Andhra region and Sri Lanka in the time of eastern and Imperial Gangas who established Cult of Jagannatha and Gajapati kingship in Odisha.

A trade boom occurred in the Indian Ocean between the early 10th and mid-12th centuries CE. This expansion in maritime traffic in the Indian Ocean was driven by an increasing demand for textiles, spices, Chinese demands of luxury goods and a proactive trade policy of leading powers of the contemporary times. Trade precipitated a series of diplomatic and geopolitical moves by the actors of the Indian Ocean littoral and China.

The period witnessed new powers which assumed control of contemporary civilisations: the Fatamids in Egypt, the Colas in South India, the Sailendra empire in Java controlling the crucial

Mallaca strait, the Burmese at Pagan, the Ly in North Vietnam, the Khemer at Angkor and the Sung dynasty in China. The peninsular South under the Colas witnessed a surge in trading activities under the organized guilds. The Chinese, beginning with the Tang but especially under the Sung, started moving out of the South China Sea to the strait of Mallaca to play a more direct and active role in the maritime commerce of the period. Further it is during the Sung that the Chinese concept of Middle Kingdom began to be followed more earnestly. The Chinese records refer to number of southern kingdoms (referring to regions west of South China Sea) paying homage and acknowledging the Chinese interest and sphere of influence in the region. The Chinese *junk* was increasingly seen in the Indian Ocean.

The Cholas invaded Sri Lanka under Rajaraja Chola in 993 CE, which finally resulted Chola occupation of Anuradhapura in 1017 CE. The Cholas shifted the capital from Anuradhapura to Polonnaruwa and ruled for nearly 53 years. Polonnaruwa was named as Jananathapuram by the Cholas. This occupation fuelled counter alliance between Sri Lanka and Kalinga, which was an important maritime power in eastern India. The relations between Sri Lanka and Kalingas in the backdrop of Chola invasion and Chola threat is the subject matter of the present study.

Kalinga Dynasty in Sri Lanka in the Backdrop of Chola Invasion in (12th -13th Centuries CE)

The eastern state of Odisha was an important player in the Indian Ocean trade and cultural transaction from early historical time. The monochrome glass beads found from Sisupalgarh and sites of Southeast Asia, such as from Sembiran in Bali, Beikthano in Thailand attest to transaction between the two regions in early Christian era. The Kaundinya

Brahmana tradition in Funan and Champa area of Cambodia and southern Vietnam respectively and the presence of Kaundiniya brahmanas in the inscriptions of Pitrabhakta dynasty of South Odisha made R. C. Majumdar to argue for Odisha's participation in the cultural developments of Funan and Champa in 2nd century CE. The Chinese Annals also refer to Murunda rule in 3-4th century CE in Champa area. The Murunda king's gold seal has been found from Sisupalgarh as well.

Sri Lanka, located on a favourable sea current of the Indian Ocean, acted as an important player in the Indian Ocean trade. Traders of Kalinga from Port of Tamralipti took the coastal route to reach Sri Lanka and from there, embarked to Southeast Asia. North Black Polished Ware, Rouletted wares have been found all along the eastern coast of India up to Anuradhapur in Sri Lanka attesting to the presence of a coastal route in early historical period. From the days of Vijaya, Kalinga played an active role in Sri Lanka. The highpoint of this relation was the transfer of tooth relic by Guhasiva in 4th-5th century CE. The Buddhist dharanis found from Abhayagiri in Anuradhapur on the one hand and Buddhist monasteries of Odisha, namely from Ratnagiri, Udayagiri, and Lalitagiri are same and point out to the Buddhist cultural transaction between eastern India and Sri Lanka.

Sri Lanka and Kalinga: Pollonarawu Period (11th-13th Centuries CE)

Matrimonial alliance between Kalinga and Sri Lanka started at the end of Anuradhapur period around late 10th century CE. King Mahinda IV (956-972 CE) of Anuradhapura chose a princess from Kalinga. Their sons, King Sena V and King Mahinda V ruled Sri Lanka. King Mahinda V suffered defeat at the hand of the Cholas and was banished to Thanjavur

in 1017 CE. In the aftermath, the Capital was shifted from Anuradhapur to Pollanaravu. After the Chola Presence in Pollanaravu was over, Kalinga was successful in establishing a Kalinga dynasty in Pollanaravu. According to the Ceylonese chronicle, the *Mahavamsa*, king Vijayabahu I restored the Ceylonese kingdom and ruled over the island with Pollanaravu as the capital. He had married to Tilokasundari of Kalinga. This marital alliance led to series of subsequent marriages between the Kalinga royal houses and Sri Lankan kings at Pollanaravu. The Kalingas allied with the Sri Lankan kings and the Pandyas matrimonially to checkmate the rising power of the Cholas. King Nissanka Malla was the greatest of Kalinga dynasty kings ruling from the capital at Pollanaravu. He ruled over Sri Lanka for nine years from 1187 to 1196 CE. He came to the Island from Kalinga at the invitation of King Parakramabahu I. He was in fact a nephew of Parakramabahu I. After the death of Parakramabahu, Vijayabahu became the king of Pollanaravu and Nissankamalla became Viceroy. Vijayabahu was assassinated by Mahinda VI, who ruled for five days after which Nissankamalla became the king.

The Kalinga dynasty ruled over Sri Lanka with Pollanaravu as capital up to from 1187 to 1236 CE with periodic interlude of rule of the Ceylonese kings and Pandya (1212-15 CE). These rulers had direct blood relations with the Gangas, who had unified entire Odisha and patronized Cult of Jagannatha.

Kalinga Dynasty in Pollanaravu (From the Ceylonese Chronicle Culavamsa (Part II))

The Ceylonese chronicle, the *Culavamsa* gave the following list of Kalinga dynasty rulers in Pollanaravu.

Nissanka Malla (1187–96)

Vira Bahu I (1196) (immediately assassinated on the same day)

Vikramabahu II (1196)

Chodaganga (1196–97) (nephew of Nissanka Malla)

Interlude (Ceylonese Rulers)

Lilavati (1197–1200) (Cecylonese)

Kalinga Dyansty

Sahassa Malla (1200–02) (His coins have been found from excavation of Manikpatna excavation)

Kalyanavati (1202–08)

Dharmasoka (1208–09)

Anikanga (1209)

Interlude (Ceylonese Rulers)

Lilavati (1209–10)

Lokissara (1210–11)

Lilavati (1211–12)

Parakrama Pandya (1212–15)

Kalinga Dynasty

Kalinga Magha (1215–36)

Epigraphic Evidence of Kalinga Dynasty in Pollanarawu

The Galpota stone inscription, the Pollonaravu Hata-Da-ge Vestibule Wall inscription, Kirti-Nissanka Malla Slab Inscription of Nissanka Malla (Epigraphia Zeylanica edited by Wickremasinghe) give detailed genealogy of the Kalinga King Nissanka Malla and his Kalinga association. These inscriptions bring out the following facts:

- i. He was born in Kalinga in noble Jambudvipa
- ii. He was born to Queen Paravati and Sri Jayagopa of Okkaka family of Kalinga
- iii. He grew up in the midst of royal splendour, and being invited by the great king of the Island of Lanka, his senior kinsman, to rule over the Island of Lanka which is his by right of lineal succession of kings, he landed in Lanka in great state.

- iv. He sent emissaries to the country of Kalinga and caused many princesses of the Lunar and Solar dynasties to be brought over. And for his own son, the sub-king Vira-Bahu Llahapa, he secured royal maidens, and increased the royal family.
- v. His chief queen was a Kalinga Princess whose name was Subhadra Mahadevi of the Gangavamsa, as well as his own son the sub-king and his daughter [the princess] Sarvanga Sundari,
- vi. Nissankamalla's numerous inscriptions remind the people of the story of the Vijayan colonization of Ceylon as given in the *Dipavamsa* (ch. ix. 1-31) and in the *Mahavamsa* (ch. vii) and to impress upon them the theory that Vijaya was a prince of the Kalinga-Cakravarti-kula and that, therefore, the throne of Ceylon belonged only to this dynasty. For instance, he describes himself as Sri Sim.ha-puresvara Lamkesvara Kalinga Cakravarttin-vahanse in Vatatage Vestibule inscription of Pollanaruwa
- vii. He was a great patron of Buddhism and gave donation at Rohuna, Anruradhapura and Dambulla.
- viii. Who were the Ganga rulers in Odisha during the Kalinga dynasty period of Pollanaravu
- ix. It was during the rule of Anantavarman Vajrahasta V in the mid eleventh century that the Eastern Gangas started emerging as a major military power challenging the authority of the Somavamsi Dynasty at their northern frontiers and allying with their arch rivals, the Kalachuris. After a series of victories in battle and making land grants to three hundred Brahmin families in his kingdom, Vajrahasta V assumed the titles as Triakalingadhipati (lord of the three Kalingas) and Sakalakalingadhipati (lord of complete Kalinga) challenging the centralized authority of the Somavanshis

and laying the foundation to an imperial era for the Eastern Gangas. In the later years of the century, Devendravarman Rajaraja I defeated the Somavanshi king Mahasivagupta Janmenjaya II completely while challenging the Cholas in battle, along with establishing authority in the Vengi region. The Cholas were defeated by Rajaraja I and Chola princess, Rajasundari, was married off to the Eastern Ganga king as a goodwill gesture for settlement of affairs between the Cholas and the Gangas. Subsequently Codagangadeva ascended the throne in 1078 and ruled up to 1147 CE. Did Nisanka Malla come in contact with Codagangadeva? There is an interesting legend in Bhubaneswar.

Lingaraja Temple Legend of Nissanka Malla

During the Ganga period (12th century CE to 14th century CE), Natamandira and the *bhogamandapa* were added to the Lingaraja temple and so also the *Vrsa-stambha* (the bull pillar), which now stands in front of the *bhogamandapa*. This pillar bears at the top not only a brishava (bull)—the mount of Siva but Garuda—the mount of Visnu. This deliberate superimposition continues in the crowning members (above the *kalasa*) of the Lingaraja temple. The crowning members of the Lingaraja, seen from a distance, are the *ayudha* (weapon) and *pataka* (flag). The *ayudha*, which would have been originally a *trisula* (trident) a symbol of Siva was replaced by half-disc and a half-trident. The tradition says that a man at the order of a Ganga king climbed to the top of the *sikhara* in the dead end of the night and pulled down the original *ayudha* and replaced it by above composite *ayudha* proclaiming deliberate syncretism. The man is said to have been granted tax-free lands and was given the title Nisankamalla (the fearless hero) which is still borne by his descendants now in Nuapalli village area in Bhubaneswar (K.C. Panigrahi. 1986. *History of Orissa*).

The above discussion points in the aftermath of the relative decline of the Cholas in 12th century CE, the Kalinga under Eastern Gngas gained ascendance in the eastern littoral of India, who unified different subregions in Odisha and created Gajatpati kingdom in Odisha in 12th century CE. They established a Kalinga dynasty in the Pollnarawu in Sri Lanka. The Kalinga dynasty continued from the time of Nissanka Malla to the period of Kalinga Magha.

Some Research Questions

- i. There is need to study the relations of the Chola, Kalinga and Sri Lanka from the Middle of 11th century to 13th century CE.
- ii. Such a study should focus on the political, architectural and religious activities of Kalinga dynasty, especially the construction of Vatadage with four Buddhas in four sides.
- iii. The study should explore on the possible relation between four Dhyani Buddha s in four cardinal directions in Vajrayana Buddhism and alignment of four Buddhas in the Vatadiges of Pollonarawu. Moreover, the study will focus on stands of Vajrayana Buddhism centring around Abhayagiri Vihara in the second Lambakana period.
- iv. Pigraphists should explore the orthographic peculiarities in the inscriptions of Pollanarvu period and its possible influence on the evolution of Odia language. It is important to highlight that orthographically in many Ceylonese inscriptions of Pollonarawu period, one comes across words like *purbba* (line. 5) for *purva*, *samurddha* (l. 9) for *samrddha*, *akrata* (l. 35) for *akrta*, *bya* (l. 35) for *vya*: (KIRTI-NISSANKA-MALLA SLAB-INSCRIPTION). These orthographical peculiarities are also found in Odishan inscription and language, suggesting the use of the same pronunciation and writing in two regions.

- v. In this dynamic relation, Burma and Cambodia also played key role in the politics of Sri Lanka. Role of tooth relic, Golden Buddha image, and marital alliance played key role. The Pagan period of Burma from 11th century CE (from Anwratha's time) and Cambodia under Khmer also had actively involved in the affair of the Sri Lanka. The convergence between Devaraja cult of Cambodia and Gajapati kingship in Odisha, King Anwratha's bringing of the tooth relic from Kalinga and Sri Lanka (described in the *Glass Palace Chronicle* of Burma) and numerous diplomatic missions between Cambodia and Sri Lanka, including matrimonial alliance underscore the medley of hectic activities of these powers in the contemporary politics involving Sri Lanka and Kalinga.

Burma and Kalinga Connection

Burma

In Burma Buddhism arrived much later in 5th–6th century CE in Pyu period even though the Chinese annals record the presence of Buddhism in Burma in 3rd century CE. Important Buddhist centres in 6th century CE in Burma included Pyu capital Srikshetra and Hmawza near old Prome (Aung 1968) and Beikthano (Aung Thaw 1972: 181–199)¹. Pagan became an important centre of Buddhism little later and gained prominence under the Mon ruler, especially during the famous rule of king Anwartha. The Pagan phase saw the emergence of Buddhism as the most important religion of Burma. The emergence of Buddhism was also coincided with the unification of lower Burma with the Upper Burma. River Irrwady acted as an artery of communication linking the maritime world of the Indian Ocean through the Lower Burma with the Upper Burma on the one hand and Yunan in China on the other (Stargardt, *JESHO*, 14 1971:38–62). this unification

of Burma was couched in religious as a mission to bring all relics of Buddha to Pagan, which were lying scattered throughout (ibid.).

However, what is noteworthy is the close convergence of three interrelated phenomena– development of an overland and maritime trade link in Burma connecting India with mainland Southeast Asia and China through Burma, emergence of Buddhism as the state religion and evidence of contact between Burma and various units of India, including Orissa. Influence of Challenge-style architecture is evident in early Paganese architecture (Kulke 2000). Anwrahta's siding with Challenge prince in his struggle against the Cholas and travel of Tooth relic legend from Challenge, as described in Burmese *Glass Palace Chronicle* also attest close connection between Challenge and Orissa (to be discussed later). Many votive clay seals and sealings from Bodh Gaya and Sarnath are found in Pagan (Cunningham) indicating Burmese pilgrimage to important Buddhist centres. Burmese interests in Buddhism were highlighted by the Kyansittha's (successor of Anwartha) mission to Bodh Gaya to repair the famous temple of Bodh Gaya (Cunningham, n.d).²

Buddhism in Burma tried to adapt and appropriate indigenous cults– prominent being the Nat worship. The Good Nats were treated as Bodhisattvas attending on the Buddha and were assigned in Buddhist temples places as attendant god (Dutt, S. (1966) *Buddhism in East Asia*, ICCR, Delhi: 65).

In order to explore these dimensions, there is the need to go for a shift in our approach. The changed approach should involve (i) studies of sources of the regions, (ii) collaboration between Southeast Asian and Odisha scholars, (iii) the need for a Consortium, (iv) adequate research grants and (v) team work.

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¹ Beikthano in the middle of the Irrawady valley have unearthed traces of stupa with similarities with that of Nagarjunakonda. See Aung Thaw (1972), *Historical Sites in Burma*, Rangoon.

² Cunningham, A (n.d) Mahabodhi or the Great Buddhist Temple under the Bodhi Tree at Buddha Gaya, Varanasi, Varanasi Indological Book House (reprint)

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Relocating the Maritime Heritage and Linkages of Early Odisha: A Study of Archaeological Sources, Texts and Traditions

Benudhar Patra

The maritime tradition of India is as old as its civilization. The Indian subcontinent, being surrounded on three sides-on the west, south and east respectively by the Arabian sea, the Indian Ocean and the Bay of Bengal- was endowed with a conducive atmosphere for the growth of overseas activities and maritime trade. Its long coastline, since a very ancient time has been studded with a number of natural ports, port towns and trade emporiums. From the earliest times, India's strategic position thus, accorded her with opportunities to play an important role as a first class maritime power. Odisha being situated in a very suitable strategic position, since time immemorial, had reputation for its overseas trade and seafaring activities, and as such played a prominent role in the transoceanic commerce and maritime history of India.

Odisha in ancient times was a great maritime power. It is believed that it was powerful and prosperous because of its maritime trade and overseas colonies¹. It became a great maritime power because of its location on the vast coast of the Bay of Bengal (*purbambudhi*). Along with a long coastline it was also bestowed with several perennial navigable rivers such as the Mahanadi, the Vaitaranai, the Suvarnarekha, the Rushikulya, the Mahendratanaya, the Vamshadhara, and the Nagavali, which provided an ideal environment for sea voyages. The seamanship and navigation developed in this region [ancient Odisha] probably earlier than anywhere else in India². Its coast was studded with a number of flourishing ports and port towns such as Tamralipti, *Che-li-ta-lo* (Manikpatna),

Khalkattapatna, Dosarene, Palur, Kalingapatnam, Pithunda etc. The people of ancient Odisha were brave sailors and navigators and it was due to their martial character and maritime adventure that they have been spoken in the Sanskrit literature as *Kalingah sahasikah* (the brave Kalingans)³. They had free access to the sea-trade and were aware of the fact that goddess of wealth favours the brave (*sahase sri prativasati*). So great was the fame of Kalinga as a maritime power in ancient times that illustrious poet Kalidas, in his *Raghuvamsha*⁴ has extolled its king as *mahodadhipati* (the Lord of the Sea). The *Aryamanjushrimulakalpa*⁵, a *Mahayana* Buddhist text of seventh century CE describes the modern Bay of Bengal (*mahodadhi or purbambudhi*) as the *Kalingasagara* (the Kalinga Sea) or the sea dominated by the people of Kalinga.

The people of ancient Odisha had overseas trade and civilizational linkages with different parts of the world. They had contact with both the west and the east. In the west, they had contact with the Roman Empire, Africa and the Arabian countries while in the east they had contact with the countries of southeast Asia and Sri Lanka. The contact was in multifaceted fields, i.e., via trade, missionary activities and political invasions. In the process, Odishan culture, customs, religious beliefs, ideas, languages, script and manners, etc., were disseminated in those lands where settlements were made by Odia merchants, missionaries and political adventurers. Odisha, in ancient times, however, had brisk commercial and cultural contact with the Southeast Asian countries such as Java, Bali, Sumatra, Borneo, Funan (Cambodia), Champa (Vietnam), Siam (Thailand), Burma (Myanmar) etc.

Notwithstanding all these, hitherto many aspects of the maritime heritage of early Odisha are remained unexplored

and unattended. In the present paper, an endeavour has been made to trace out the maritime activities of early Odisha or Kalinga as reflected in archaeology, text and traditions.

Archaeology: Exploration and Excavation

The archaeological remains unearthed by explorations and excavations at various sites of Odisha throw valuable light on its maritime activities. They helped to a great extent in relocating and reconstructing the maritime heritage of ancient Odisha. On the basis of discovery of archaeological artifacts like the polished shouldered adzes from various Neolithic sites of Kuliana, Kuchei and Baidyapur in the Mayurbhanja district which have close technological affinities with those of South-East Asia, the maritime activities of ancient Odisha can be traced back to the Neolithic period. But the coming of these excavated tools from Southeast Asia through overseas route is yet to be testified; the possibility of their introduction into India through land-route via northeast India cannot be ruled out. The bar-celts, discovered from Sankarjung (Lat. 20° 51' 11" N and Long. 84° 59' 48" E) in the Angul district of Odisha, which are considered to be the earliest musical instruments in India, in structure, were similar to those in Vietnam.⁶ The discovery of bone implements, harpoons and polished stone adzes from Golabai Sasan (Lat. 20° 2' 10" N and Long. 85° 34' 36" E) in the Khordha district indicate a culture where people possibly lived on fishing, and probably building boats. Further, the recovery of a sizable number of adzes for wood working gives the positive indication that Golabai was a boat building centre.⁷

The discovery of rouletted ware, which is regarded as an important evidence for Indo-Roman trade from Shishupalgarh (Lat. 20° 13' 30" N and Long. 85° 51' 30" E) near Bhubaneswar⁸ proves ancient Odisha's maritime contact with the Roman world. The excavations at Bamanghati in the Mayurbhanja

district of Odisha and Tamluk in the Midnapur district of West Bengal (Tamluk known as Tamralipti in ancient times was in the geographical limits of Odisha) also testify to the flourishing maritime trade of ancient Odisha. A large number of rouletted wares have been discovered from the ancient port site of Tamralipti, which were probably brought there by the Roman merchants. A horde of fine gold coins of the Roman origin have also been discovered from Bamanghati area of the Mayurbhanja district.⁹ All these findings suggest trade relations of ancient Odisha with the Roman Empire. The excavation at Barabati fort¹⁰ (Lat. 20° 29' N and Long. 85° 52' E) situated on the right bank of the river Mahanadi at Cuttack also provide us welcome light on the maritime trade and overseas activities of the people of ancient Odisha. A few shreds of Chinese ceramics have been also discovered from Barabati.

The excavations at Lalitagiri, Udayagiri, Ratnagiri and Langudi, the four great Buddhist sites, have established sculptural link of Odisha with the South-East Asia and China. The discovery of relic caskets from a *stupa* at Lalitagiri has been the most significant one in this connection. These caskets cover four-in-one and kept systematically one inside the other. It is a feature alien in the soil of Odisha but common in China, which indicate that there was good interaction between ancient Odisha and China.

The archaeological excavation that has unearthed a number of ports like Tamralipti, *Che-li-ta-lo*/ Manikpatna, Khalkattapatna, Palur/ Dantapura etc., also confirm ancient Odisha's maritime activities on a firm footing. The material evidences discovered from the recent archaeological excavations at Manikpatna (Lat. 19° 1' 43' N and Long. 85° 1' 36'E), in the northern tip of the Chilika Lake and Khalkattapatna (Lat. 19° 01' 52' N and Long. 86° 0' 02' E) on the left bank of the

river Kushabhadra near Konarak in the Puri district provide us sufficient clue of Odisha's overseas contact with far off countries. The discovery of Chinese celadon ware, Chinese coin, white porcelain, blue, white and brown glazed porcelain shreds, Roman rouletted potteries and fragments of amphora, knobbed ware, Burmese potteries, Ceylonese coins, Siamese potteries, Indonesian terracotta, egg white Arabian pottery, moulded ware, stamped ware, decorated ware, kaolin ware etc., at Manikpatna testify to its international character having trade link with far off countries like Rome, China, Burma (Myanmar), Siam (Thailand), Funan (Cambodia), Champa (Vietnam), Indonesian islands (Java, Sumatra, Bali and borneo), Sri Lanka, Arabian countries, etc. The excavation at Khalkattapatna has revealed the existence of a brick jelly floor which might have served as a loading and unloading platform.¹¹ The pottery recovered from here consists of Chinese celadon ware, Chinese porcelain with blue floral design on white background, egg white glazed ware and glazed chocolate ware, all of foreign origin.

The recent archaeological discoveries in Sri Lanka, Indonesian Islands, Thailand, Vietnam, Myanmar and from other places, also have thrown new light on maritime and civilizational connections of Odisha with these countries. The material remains brought to light from Ban Don Ta Phet in Thailand in the forms of semi-precious stone and glass beads, knobbed base, bronze vessels etc., tangibly indicate the brisk commercial contact of Odisha with Thailand. The knobbed ware pottery for the first time was identified at Shishupalgarh. I.C. Glover¹² says that these knobbed base vessels were associated with the Buddhist rituals.

The inscriptions and numismatic evidences also shed some authentic light on the maritime enterprises of the

people of ancient Odisha. The Hathigumpha Inscription (c. first century BCE) of Kharavela indirectly refers to the existence of a navy. The very location of the Ashokan Edicts at Jaugada, a place far away from the actual scene of the war i.e. Dhauli is an indication of its association with the port of Palur, a well known ancient port of Odisha. An inscription (Kumurang Plate of Dandi Mahadevi) of the Bhaumakara period (c.736 CE to c. 940 CE) refers to an ocean related tax called *samudrakarabandha*. The Tugu Rock Inscription¹³ of western Java (c. fifth century CE) says that a river called Chandrabhaga, regulated by a canal named probably after the Chandrabhaga river of Odisha flowing near Kanarak. The Kuki Copper Plate (c.840 CE)¹⁴ of Java speaks of potters and all sorts of servants of inner apartments hailing from *Kling* meaning Kalinga (ancient Odisha). Finding of the Roman gold coins from Shishupalgarh, Bamanghati, Tamralipti, and the depiction of ships on a few Andhra-Satavahana coins¹⁵ of second and third centuries CE corroborate to the fact that the east coast, especially the Odishan coast had brisk maritime trade with the foreign countries.

The maritime pride of ancient Odisha also inspired the artists to depict boats in their sculptures and paintings. The earliest representation of boats is noticed in a sculptured frieze collected from the vicinity of the Brahmeswar temple, Bhubaneswar, now, preserved in the Odisha State Museum. The frieze depicts two boats, one is fully represented and in the second one only the frontal part is shown. In the first boat, it can be noticed that there is a standing elephant in the front part of the boat. In the centre of the boat, two persons are represented being seated, and two sailors are shown with oars in the rear end steering the boat. The second boat, which is not completely shown, depicts a standing elephant on its frontal portion. Below the boats, graphic depiction of waves

with aquatic and amphibious animals can be observed. From this depiction, it may be inferred that probably the sculptural panel depicts the transportation of elephants from ancient Odisha to other countries. Further, the sculpture justifies at least two points that the boats of ancient Odisha were well built and were big and strong enough to carry elephants, and that elephant was an item of export among many other items. The panel may be dated back to c. ninth century CE. Near the same Brahmeswar temple, another interesting slab containing an eight armed image of Mahishamardini Durga is lying under a banyan tree having representation of a boat below the pedestal of the goddess. The goddess is supposed to have been engaged in a fierce sea-battle with the ferocious demon Mahishasura.

At Bhubaneswar, a temple is called *Vaital deul* after the peculiar form of its roof resembling a ship or boat capsized.¹⁶ At Konarak, on the *beki* (parapet) of the *jagamohana* (audience hall or hall in front of the sanctum) of the Sun temple, the *Martanda Bhairavas* are shown as dancing in ecstasy on a boat. The depiction of a giraffe, exclusively an African animal in the sculpture of the Sun temple, Konarak positively indicates that ancient Odisha had overseas commercial link with Africa. Its depiction in the temple suggests that in those days either many people of Kalinga had gone to Africa and saw the live giraffe or a giraffe was brought to Odisha by some merchants enabling many to see it. A boat in chlorite stone depicted on the *bhoga mandapa* (hall of offering) of Lord Jagannath temple at Puri (c. 12th century CE) represent the *nava keli utsava* (rowing festival) of Lord Jagannath. A close study of the art of Khandagiri-Udayagiri caves also reveals the use of West Asian decorative elements such as honey suckles, acanthus, stepped melons, winged animals etc. The depiction of boats in the sculptures and paintings of Odisha indicate the

association of the people of Odisha in the overseas activities. There is also no doubt about the fact that the design of those Odishan monuments and sculptures must have come to the minds of their artists, not out of complete imagination, but from the memory of the scenes of the ships of those times, which they might have witnessed in the locality during their life times.

Texts: Sanskrit, Pali and Odia

Though limited in number, the literary texts in Sanskrit, Pali and Odia language helped immensely to relocate the maritime tradition of ancient Odisha. They refer to the overseas activities and sea-borne trade of early Odisha. The *Brahmanda purana*¹⁷ refers to frequent sailing of a large number of boats by the people of Kalinga on the Chilika Lake. The *Jatakas* refer to various places of Southeast Asia with whom Kalinga had a brisk relation, commercial as well as cultural. The Ceylonese chronicles (the ancient historical records of Ceylon or Sri Lanka) like the *Mahavamsa*, the *Dipavamsa*, the *Chulavamsa*, the *Dathavamsa*, and some other Buddhist Pali works furnished valuable evidences regarding the sea-borne trade and maritime activities of Kalinga. The *Mahavamsa*¹⁸ refers to the voyage of Vijaya from Sihapura (Simhapura) to Lanka (Ceylon). According to this chronicle,¹⁹ Vijaya's great grandmother was the daughter of the king of Kalinga and was married to the king of Vanga (Bengal). The *Dathavamsa*²⁰ records that the sacred tooth-relic of Buddha was taken from Dantapura of Kalinga to Ceylon. The *Chulavamsa*²¹ mentions that king Vijayabahu of Simhala (Ceylon) (c. 1054-1109CE) married a Kalinga princess, named Trilokasundari. The *Mahaniddesa* (c. third century BCE) tells us that ships from Tamralipti and Palur called at Sada, anchoring en route at Gumpā.²² The *Mahayana* Buddhist text *Aryamanjusrimulakalpa*²³ (c. seventh century CE) describes the modern Bay of Bengal as Kalinga sea (*Kalingodreshu*), meaning

all islands in the Kalinga sea. The Jain text *Uttaradhyayana sutra*²⁴ mentions Pithunda as a sea coast port town of Kalinga which was under the sway of emperor Kharavela. So great was the fame of Kalinga as a maritime power in ancient times that, in the fourth/fifth century CE, Kalidas, an illustrious poet and great dramatist of Sanskrit literature, in his *Raghuvamsa*²⁵ has described the king of Kalinga as *mahodadhipati* (Lord of the Ocean). In the same work (in connection with the sea shore of Kalinga) he also mentions *dvipantaras* (Indonesian Archipelago) from which breezes, filled with the scent of cloves blew. “*Arena sardham viharamburaseh tioresue talivana marmaresu dvipantararanvitalavanga pushpeih apakrtasveda lava marudbhih.*”²⁶ Li-Yen (c. seventh and eighth centuries CE), a central Asian monk has equated the term *dvipantara* with *k'un-lun*, which seems to have stood for Kalingan settlements in the Southeast Asia.²⁷ The *Dasakumaracharita* mentions about the coming of the *Yavanas* to the Kalingan port of Tamralipti. It was due to their maritime adventure that the people of Kalinga have been spoken in the Sanskrit literature as *Kalingah sahasikah*²⁸ (brave Kalingans).

Sarala Das in his *Mahabharata*, Narasimha Sena in his *Parimala kavya*, Yasowant Das in his *Tika Govinda Chandra* and *Kaivarta Gita*, Upendra Bhanja in his *Lavanayavati*, Dinakrushna Das in his *Rasa Kallhola*, Fakir Mohan Senapati in his works and a host of others have made significant mention about the glorious maritime activities of ancient Odisha. In the *Lavanayavati*,²⁹ poets laureate Upendra Bhanja has mentions “*bahitra lagilaasi Sinhala dwipare...*” meaning a large ship or merchant boat arrived and anchored at the island of Sri Lanka (Simhala Island) which clearly indicates the overseas communication between Odisha and Ceylon or Sri Lanka. This phrase highlights the historical maritime trade links between Kalinga (ancient Odisha) and Sri Lanka.

Folk Lore, Folk Songs and Oral Traditions

The folklore, folk songs and oral traditions of Odisha provide us some valuable information on the extinct but glorious overseas commerce of Odisha. Folklore is described as the pulse of the people. It makes our social and cultural life active and vibrant. The folklore in fact, constitute an integral part of our cultural tradition. They form a dynamic cultural reservoir that preserves the region's collective memory, socio-cultural ethos and aesthetic sensibilities. The references contain in folk lore and folk songs like *bole hun ti, kuhuka mandala chadhei katha, sadhava jhia, sadhabara sanapua, kuhuka karat, saudagara charipua, jehu chintai para manda* etc., are related to the maritime activities of Odisha. The narrations made in the story of the Khulanasundari have considerably reflect the daring and glorious role of the Odia mariners. In the stories and legends, the activities of the maritime merchants, their fabulous wealth and style of their life pattern have been highlighted. But the tales like these are the common property of all nations, and according to some scholars³⁰ no reliance can be placed on them for showing the maritime greatness of the people in the past.

Chakradhar Mahapatra,³¹ in his collection of folk songs has frequently used the terms related to the ocean, seas, navigation and maritime trade. He has mentioned the proverbs through folklores and folk songs, which reflects the maritime tradition of ancient Odisha. Some of them are as follows:

"majhi dariare budei delahe bapa"

"mote theli dela majhi daria bou lo"

"peli deuchha mote atala sindhu"

"bada dadankara kapata thila dele dariaku peli"

"bhanga nabare basei mote dariare dela

bhasei tuma hrude dayananhi...."

"aai kathaku, naa peli deli Kalikataku"
"naee panharai meena, dadara dangare
ke dela chinha bapa ghare gala dina"
"su-ba-bahila-boita chalila"
"nabata khataichhi akata sindhu jale"
"boitu satabhai naile bahudi"
"boita charipakhe mu bulili bedhae"
"chaita sita jaya boita"³²

Most of the above lines, however, reflect the perilous aspects of the maritime trade. Probably these folklores were composed and developed in the society when there was decline in the maritime activities of Odisha. Nevertheless, substantially it refers to one thing that maritime trade definitely was there in Odisha during the ancient period. It is pertinent to mention here that on the basis of literary texts attempt can be made to trace out the problems and prospects of the maritime heritage of ancient Odisha. On the basis of literary texts ports, port towns and hinterland can be identified. The literary texts also very much helpful to trace out the overseas trade, trade routes and commodity structure of ancient Odisha. Navigation and ship-building technology of ancient Odisha have also been reflected in the literary texts. The literary texts also throw light on the cultural and civilizational linkages between ancient Odisha and Southeast Asia.

Traditions, Customs, Fairs and Festivals

Numerous references to the overseas activities and sea-voyages of Odisha can be found in the *bratakathas* (the story portion of the worship) read out in the celebration of traditions, fairs and festivals that have come down to us since antiquity. The *brata* or semi-religious observances, which have passed into the bone and marrow of the people, provide us some information about the sea voyages. These reflect the

maritime glory of by gone days and played a vital role in preserving the reminiscences of the glorious but lost maritime heritage of ancient Odisha. Such traditions and festivals are the *khudurukuni osha*, *kartika purnima boitabandana utsava*, *akash deepa* etc., which unquestionably evoke the memories of a proud tradition of ancient Odishan people in the sea-faring activities. The *kartika purnima* which falls (October-November) during the blowing of the north-east monsoon wind, otherwise known as 'retreating monsoon' wind was considered as an auspicious day to start voyages for trade.³³ All these tells us about the *sadhavas* of Odisha who constituted a prosperous community. The *sadhavas* not only had such maritime contacts rather they made Odisha a rich and prosperous kingdom through it. The *sadhavas*, however, did not belong to a particular caste but constituted a class including people from different castes interested in maritime trade. Among other traditions and festivals observed in Odisha, the *Satyanarayana puja* or *Satyapir puja*, the *bhodua bhodei osha* on the full-moon day of *bhadra* (August-September) in the *bratakatha* of which there is the description about the richness of Lakshyashree *sadhava*, *dutia osha* (the worship of Dyutivahana or sun god) on the second day of dark fortnight in the month of *ashwin* (September-October), the *kharakharai osha* celebrated particularly in the Ganjam district, the *Shanischara mela*³⁴ (the worship of Saturn planet), the *Trinatha mela*³⁵ (the worship of the Trinity- Brahma, Vishnu and Maheshwar (Siva) etc., performed by the *saudagaras* (*sadhavas*) after their return from distant islands are some other ceremonies which also evoke the glorious maritime past of Odisha. The fishermen (*keutas*) living in the coastal areas of Ganjam, Khordha, Puri, Jagatsinghpur, Kendrapara, Bhadrak and Balasore districts of Odisha celebrate the *chaiti punei* or *chaitra purnima* (full-moon day of *chaitra*, March-

April) as their most important festival. On this day they worship goddess Basulei and performed *ghodanacha* (horse dance). This festival of the fishermen community is closely connected with the maritime activities.

The *Chandana Jatra* in which God Purushottam (Jagannath) and Lord Lingaraj are associated with boat rowing and some of the festivals and ceremonies of western Odisha i.e., *dalkhai osha*, *kalasiosha*, *karma* festival etc., also preserves the lost maritime activities of the hoary past. The *Shirisubanathee brata* observed by the Odia speaking people of Singhbhumi region, which once formed a part of Odisha, also throws some light on the maritime activities of the past. Thus, traditions, rituals, fairs and festivals celebrated in different parts of Odisha contain the living proof of the glorious maritime history of the past. The descriptions in different stories are not merely figments of imagination but come out of practical experiences and direct involvement of the people in the past.

Marine Goddesses and Gods

Sea gods, goddesses, and the shrines dedicated to them on the bank of rivers and on the sea shore helps in a great way in reconstructing the maritime history of ancient Odisha. Maritime activities on high sea were very risk and dangerous. The mariners had to face often the dangerous of cyclone, heavy storm, sea piracy and ship-wrecking. To overcome such dangers of cyclones, tornado, sharks, piracy, ship-wreck etc., the seafarers had to depend on God almighty for protection. In acknowledgement of help, they sought, which came readily in times of danger, the maritime community built temples and shrines at the port sites. At the time of the commencement of their journey the sailors also took the blessings and grace of divine powers for successful voyages and to escape

perils in the sea. The marine sailors normally worshipped and prayed goddess Mangala before starting their voyage to far off countries. The marine archaeologists who are in search of clues for locating submerged ports and sunken ships, first searches shrines of sea gods and goddesses and seek references in local traditions and festivals of the sea, which sometimes provide a clue in this connection. There are abundant references in the ancient literature of India to the construction of religious structures near ports. In Odisha, it is noticed that at every dangerous point and confluence of rivers and along the sea-coast there are innumerable images of goddesses, smeared with vermilion that are believed to protect the sailing ships in their perilous voyages. In most of the places, temples are dedicated to these goddesses. It was believed that this female deity in the form of *shakti* could quell the storm and protect the ship from the dangers of the voyage. The mariners, thus, for the safe journey propitiate her (the female deity) before starting on their voyages. In the *Brahmavaivarta Purana*, it is stated, "in the sea of the world, the goddess Durga herself, like a dexterous pilot, takes over the worshippers of Kṛṣṇa to the other side of the sea on the boat of the divine faith."³⁶ It was this belief that led to the establishment of Mangala temples at the ancient sea-ports, *apheterions* (point of departures) and even on important river banks. There are eight famous Mangala temples noticeable at different parts of Odisha. They are Mangala at Kakatapur, Ramchandi near Konarak, Sarala at Jhankada, Bhagabati at Banapur, Charchika at Banki, Harachandi near Asureswar (Puri), Samalai at Sambalpur and Hingula at Talcher. The merchants before setting out for sea trade, besides these Mangalas also worshipped other goddesses at their respective places of embarkation. Some of the marine goddesses starting from the north Odisha in sequence order are as follows: Lankeswari³⁷

near village Miragadi in the Balasore district; Nimakali at the heart of Balasore town;³⁸ Gardanaikani (one of the eight *nayikas* or attendants of Chandi) at Balaramgarhi, site of a medieval port of Odisha; Jahaja Mangala in Balimunda Panchayat; Pattanamangala of Narendrapur (Chhatrapada) in Bhadrak district; Dakeshwari at Chandabali; Dhamarai at Dhamara; Dariya Ramachandi located in the Jambu Island near Paradeep; Baliharachandi near Brahmagiri in the Puri district; Ramachandi on the shore near Konarak; Mangala at Kakatapur; Chamunda (Vaital) temple at Bhubaneswar; Ugra-Tara at Bhushandapur, district of Khordha; Kalijai in the midst of the Chilika lake; Narayani near Khalikote in the Ganjam district; Bhagabati at Banapur; Harachandi, Ramachandi and Jayachandi on the right bank of the river Rushikulya at a distance of about 5 km from Ganjam (town); Kandhuni near Ganjam (town); Gangeisuni or Gangachandi at Mansurkota, near Gopalpur-on-sea; Siddha Bhairabi at Mantridi in the Ganjam district; Viraja on the bank of the river Vaitarani; Charchika (at Banki) and Bhattarika (at baramba) on the bank of the river Mahanadi; twin Goddesses Taratarini on the bank of the river Rushikulya and Goddess Ghanteswari (dedicated to the goddess of Bells) of Chipilima, near Sambalpur on the river bank of Mahanadi in Western Odisha.

Besides these *shakti pithas* (shrines or sacred places of the goddesses), some socio-religious festivals in which goddesses are propitiated are also linked with the maritime tradition of ancient Odisha. Goddess Mangala who is worshipped during the *khudurukuni osha*, goddess Basuli or Baseli (horse-headed tutelary deity of the fisherman community or the Kaibartas) on the *chaitra purnima* (full-moon day of *chaitra*, March-April) by fishermen communities of the coastal Odisha are also closely associated with the maritime activities. The fishermen community (Kaibartas or Keutas) worship the Goddess Baseli

with much grandeur and performed the Ghodanata (horse dance) in honour of Goddess Baseli. Hence, the marine goddesses have occupied a prominent in tracing out the maritime history of ancient Odisha.

Foreign Accounts: Classical Accounts

The accounts of foreign travelers, pilgrims, geographers and navigators who came to India at different stages of history help us in numerous ways in reconstructing the maritime history of ancient Odisha. The foreign accounts like the accounts of Pliny, *Periplus of the Erythraean Sea*, the geography of Ptolemy, the accounts of the Chinese travelers like Fa-Hien, Hiuen Tsang and I-Tsing, the Perso-Arabic geographers have played very essential role in tracing and relocating the maritime heritage of ancient Odisha in the historical perspective. Gaius Plinius Secundus (CE 23-79), better known as Pliny or Elder Pliny, a Roman scholar, in his book *Natural History (Naturalis Historia)*³⁹ places Kalinga (ancient Odisha) on the sea coast. He says: "the tribes called Calingae are nearest the sea... The royal city of the Calingae is called Parthalis. Over their king 60,000 foot soldiers, 1000 horsemen, 700 elephants keep watch and ward in precinct of war." The *Periplus of the Erythraean Sea (Periplus Maris Erythrei)* refers to a place in ancient Odisha called Dosarene, nearby a bay, which had a good breed of elephants called *Bosare*.⁴⁰ The ivory yielded in Dosarene was known as *dosarenic*. The Bay described by *Periplus* could be none other than the Chilika lake whose mouth was probably wide enough to make it a Bay and Dosarene could be somewhere on the Chilika coast. *Periplus* also refers to three types of vessels, i.e., Cotymba, Sangara and Colandia.

Calaudius Ptolemaeus (c. 100-170 CE), commonly called Ptolemy, in his Geography has refers to a number of ports and rivers with their location mentioning longitudes and latitudes.

He has also made profuse reference to the coast of Kalinga. According to him, Paloura (Palur) was an important port of ancient Odisha and the point from which the Gangetic Gulf began.⁴¹ The Paloura of Ptolemy has been identified with modern Palur in the Ganjam district of Odisha. The Arab and Persian geographers who belongs to c. ninth and tenth centuries CE, have furnished valuable accounts about the coast of Odisha. The earliest geographical work in this connection is of Ibn Khurdadbih's, '*Kitab al-Masalik Wa'l-Mamalik* (*The Book of Roads and Kingdoms*) which deals with routes and distances and covers regional, descriptive and economic geography. He has furnished interesting and valuable accounts of the east coast, especially of the Andhra-Odisha coast, starting from the estuary of the Kudafarid to Abina.⁴² Text XIII and XIV of his work described:

"(XIII) From Babattan to al-Sinjili and Kabashkan, it is one day's journey. It grows rice, and from there to the mouth of the Kudafarid, it is three *farsakh*; and from there to Kaylkan, al-Lawa and Kanja, it is two days' journey and it has wheat and rice. From there to *Samundar*, it is a journey of ten *farsakh*. It has rice, and aloes wood is brought here from a distance of fifteen to twenty days' journey by means of a river from Kamrun (Kamarub) and other places.

(XIV) From *Samundar* to *Urshin*, it is twelve *farsakh*. This is a great kingdom and has elephants, beasts of burden and buffaloes. It has abundant provisions, and its king is highly honoured. From *Urshin* to *Abina*, it is four days journey, and this place also has elephants."

Of the above mentioned geographical names, Kudafarid, Kaylkan, Kanja, *Samundar* or *Smndr* and *Urshin* or *urshfin* have respectively been identified with the river Godavari, Calingam or Kalingapatnam in Andhra Pradesh, Ganjam, Samundra (the

sea) and Odisha (a region around Puri), though, al-Lawa and Abina still remains unidentified.

The anonymous author of *Hudud-al-Alam* (*the Regions of the World*), a geographer of c. 10th century CE mentions in a continuous series five geographical names, such as *N. MYAS*, *HARKAND*, *Urshin*, *S.M.ND. R* and *ANDRAS*.⁴³ His mentioned geographical names like *Urshin* or *Urshfin*, *Smndr* and *Andras* like that of Ibn Khurdadbih have respectively been identified with Odisha, *Sumudra* (the sea) and the *Andhras* (modern Andhra Pradesh). *N. Myas* and *Harkand* though poses some difficulty, tentatively can be identified respectively with *Mahisya*, which would have been pronounced by the people as *Mahis* and Jharkhand, which is still a general geographical name for the hilly tracts of Odisha. Besides referring to certain places, both Ibn Khurdadbih and the anonymous writer of *Hudud-al-Alam* provide us a long list of products and export commodities of ancient Odisha like elephants, ivory, pepper, rotang, cotton, white conch (*sapid muhra* or *shankha*), aloes wood, sandal wood, camphor, nutmeg, cloves, cardamom, coconut, cloth made of herbs, cotton velvets etc. Ibn Khurdadhbih also mentions that the elephants were “carried in fresh water (evidently in rivers) to *S.M. nd. R* (*samudra* or the sea) from places 15–20 days distant from there.”⁴⁴ Alberuni (11th century CE) has referred to some islands in the Bay of Bengal and places in South-East Asia. He speaks of *Arku-tirtha*, *Uwaryahar* and *Urdabishau* as being situated southward towards the coast from the Tree of Prayaga (Allahabad) and gives their distance from the sacred tree as 12, 40, 50 farsakh respectively.⁴⁵ *Arku-tirtha* of Alberuni has been identified with *Arkatiirtha* or Konarak to which Ptolemy has referred to as *Kannagara*. It was a great centre for the maritime trade of ancient Odisha. *Uwaryahar* and *Urdabishau* represent *Uriya-dhara* or *Uriya-desa* and *Urdhva-Visaya* respectively.

Marco Polo (13th century CE), a Venetian, regarded as the prince of the great travellers from the western world has made references to China, Chinese seas, Indian Ocean etc. in his description. Moroccan traveller Ibn Battuta (1342 CE), who went to China in a Sultani mission, passed through southern India, Sri Lanka, and Bengal enroute to Peking⁴⁶ during which he was supposed to have the chance to touch the ports on the coast of Odisha.

Chinese Pilgrims Travel Accounts

The accounts left by the Chinese pilgrims and travelers constitute a significant source in reconstructing the early maritime history of Odisha. Fa-Hien (c. 399-414 CE), Hiuen Tsang (c. 629-645 CE) and I-Tsing (c. 671-695 CE), the three great Chinese travellers left behind them eyewitness accounts which they had acquired from their personal observation. Besides shedding light on the social conditions, religious thought and the Buddhist antiquities of India of their day, they supply us with some authentic information regarding the ports, port-cities and the sea-borne trade of the eastern coast of India. Fa-Hien, after his extensive visit in India sailed for his homeland from the Odishan port of Tamralipti in early October 411 CE in a large merchant vessel.⁴⁷ Hiuen Tsang (c. 629-645 CE) has vividly referred to some important places of Odisha, like *Tan-mo-lih-ti* (Tamralipti), *Wu-Tu* (Odra or Odisha), *Pusie-po-ki-li* (Pushpagiri/Langudi), *Che-li-ta-lo*, *Kong-Yu-t'o* (Kongoda), *Ka-leng-ka* (Kalinga), south Koshala, etc.⁴⁸ Among these, Tamralipti, and *Che-li-ta-lo* which has been identified as Manikpatna were two major ports of ancient Odisha. I-Tsing sailed from China for India in c. 671 CE and arrived at Tamralipti in 673 CE.⁴⁹ He has not visited Odisha, except Tamralipti and even has not referred to any of its cities or ports, yet what is significant in his visit to India is that he for the first time, so far

our knowledge is concerned, used the overseas route across the Bay of Bengal from Ka-Cha, a port of Sribhoja to Tamralipti and vice versa in his journey.

Caste Tradition, Place Names and Titles/Surnames

The caste tradition, place names, titles, and surnames adopted by the people of different castes and communities also contain the living account of the maritime glory of ancient Odisha. Places are named not without any consideration or reason but because of some genuine reasons and legends behind them. Different places in Odisha like *boitarakuda*, *boita pahada*, *boitakuda* (located on the bank of the Prachi river) or *jahaja-kuda*,⁵⁰ *jahaja-pariya* (ship field), *boitabhanga tutha* on Kushabhadra river at Bishnupur⁵¹ etc., are evidently named after the importance attached to them in connection with the ships in particular and the maritime activities in general. Outside Odisha, in the far off countries there are a number of Odishan names such as *shrikshetra* in Burma, *kalinga udyana* (Kalinga garden or park), *kalinga vana* (forest of Kalinga) of Nishanka Malla in Ceylon (Sri Lanka), Mahendra Mountain and Mahendra Tanaya river in Bali and a canal named Chandrabhaga in Java which are doubtlessly named after the places, mountains and rivers of Odisha and prove ancient Odisha's overseas cultural contact with these countries. The profuse use of the term '*Kling*' (Kalinga), *Keling* (Kalinga), *Kun-lun* (Kalinga) etc., in Indonesian islands supplemented the logic in this connection.

In the Odishan tradition, it is assumed that *yava* (*jaba*) and *barley*, two crops produced in Odisha, were probably imported from the Indonesian islands of Yava (Java) and Bali in ancient times. Similarly, *boitikakharu* or *boitalu* (one kind of pumpkin) cultivated in Odisha, according to K.C. Panigrahi,⁵² was a sea-borne vegetable and brought to Odisha from foreign

countries in *boitas* or boats. The vegetable has acquired a permanent place among the vegetables used in the temple of Lord Jagannath at Puri, indicating its entry into Odisha at a remote past. Some scholars argued that *boitalu* was purely an Odishan production and because of its durability, the sailors and merchants who sailed for weeks and months together could take this vegetable as food in their ships. However, whatever may be the reason, it can be argued that *boitikakharu* or *boitalu* was closely associated with the *boita* (flotilla) and could bear the name as it was carried in *boita*. Similarly, the vegetables and fruits like *lankamaricha* (chilly of Lanka), *lankaamba/lankabhali* etc., might have been imported from Sri Lanka. *Bali yatra* (voyage to Bali), a festival (mentioned earlier) celebrated every year on the bank of the river Mahanadi at *gadagadia ghat* of Cuttack tangibly indicate the trading voyages of the Odishan merchants to the island of Bali.

The titles like *Mangaraja*, *Nayak*, *Mahanayak*, *Boetei* or *Boitial*, *Kandara* or *Majhi*, *Jali*, *Dalei*, *Tarei*, etc., prevalent in the Odishan society, bear connection with the maritime activities. The titles like *Mangaraja* (helmsman), *Nayaka* (Na+yaka= *Nayaka* or one who controlled the boat or ship), *Mahanayak* (*mahanavik* or captain of the ship) are adopted by the *khandayatas* or the *kshatriyas*. The entry of the *sabatas*, a section of the *brahmanas*, indicates the involvement of the *brahmanas* in the maritime activities. The title of *Sabata* is supposed to have been derived from the word *sadhava* (the merchant). They also acted as the security officers of the ships. According to another view, the present day Sahu title is derived from the word *sadhava*. The *sadhavas* for their honest business initially became popular as *sadhu* and subsequently as Sahu. The *sadhavas*, however, did not belong to a particular caste rather they constituted a prosperous community or class including the people from

different castes such as Brahmanas, Kshatriyas, Vaishyas and others, who were interested in maritime trade and commerce. The *sadhavas* had idea about the pros and cons of the maritime trade, invested money in it and had required knowledge about the far off countries with whom they had trade and commercial linkages.

The *samals* (belonging to a caste known as *khandayatras*) acted as the superintendent of *samalia* ships (defensive ships) during the time of sea-voyage. The persons bearing the titles like *boitral*, *kandara*, *majhi*, *jali*, *dalei*, *tarei* etc., generally belong to the so called low castes in the society because they were associated with manual labour and sailing of ships. The persons who were responsible for rowing the boats were known as *kandaras* or *majhis*.⁵³ However, some high caste people like the *khandayatras*/ *kshatriyas* are also having the titles of *majhis*, *dalais* etc. The word *boita* was invariably used for sea-going ships and those whose occupation was that of sailors in sea-going vessels were known as *boitral*s. The *kewtras*/*keutras* (fishermen) were traditional boatmen. A branch of *kewtras* bear the title of *jali* on the ground of their association with *jala* (fishing net) whose occupation was fishing in the Chilika Lake and on the shore of the Bay of Bengal. *Tarei* (a section of *kewtras*) were also associated with the maritime trade, particularly the overseas trade of Odisha. The word *tari* means a kind of sea-going vessel or ship used in ancient times and the person who was engaged in these activities was known as *tarei*. There is also a caste called *palia* who lived in the coastal villages of Ganjam and their main duty was to control the *pala* or the sail of the ships in the sea. Similarly, on the coastal villages there lives a low caste called *bauri*. The word *bauri* means the sea coast and it appears that the people who acted as the coastal guards were named as *bauris*. The terms like *boita*, *naba*, *sadhava*, *sadhavani*, *manga*, *nabika* etc., which

are abundantly referred to in the Odia literature also testify to the pristine maritime heritage of Odisha.⁵⁴ On the basis of the aforementioned sources we can, therefore, conclude that Odisha in early times was a great maritime power and had very vibrant maritime activities. The foregoing analysis though surfaces many aspects of the maritime heritage of ancient Odisha, still many more aspects are there to be revealed through further vigorous research and exploration.

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Unveiling Maritime Trade of Kalinga Through Literary Lenses: A Study of Ganjam

Sujit Kumar Panda

History and literature are inseparable part of each other. History is the record of the past and literature is the mirror of the society. Thus, both are two sides of one coin. Literature plays significant role while writing the early history of Odisha. Even some scholars argue on the authenticity of literature but it is needless to say that the literature acts as a reliable source of information for historical writing. In fact, the early history of Odisha without literature would be incomplete due to paucity of ample evidences. From a careful study of the literature, we could able to get a lot of data on maritime trade of Kalinga. Hence, an endeavor has been made to focus the maritime trade of Kalinga with a special reference to Ganjam through literature and foreign accounts. Our legends inform that in distant past Kalinga had outstanding sea route trade with Southeast Asian countries like Subarnabhumi (Burma), Subarnadwipa (Sumatra), Narikeladwipa (Nikobar), Karpuradwipa (Baro), Javadwipa (Bali) and Ratnadwipa (Simhala). The sea trade was considered as the most profitable source of business by the people of Kalinga. The *Sahitya Darpan* of Biswanath Kabiraj mentuins *Kalingaha Sahasikaha* which clearly shows the martial bravo and maritime adventure of the people of Kalinga.

Origin

It is not so easy to determine the origin of the maritime activities of Kalinga. It seems that by the middle of the 6th century BCE, Kalinga enriched with enormous wealth through maritime trade. When Magadhan imperialism was at the

height of power, the people of Kalinga persistently resisted the supremacy of Magadha. It was definitely an indication of the maritime opulence of ancient Kalinga. In 350 BCE Kalinga was subjugated by Mahapadma Nanda, the founder of Nanda dynasty in Magadha. At that time Kalinga lost her independence, but economically remained prosperous under the Nanda rule. Raja Mahapadma Nanda took great pain for escalation of irrigation projects to eliminate famine in Kalinga. He used the Kalinga coastlines for growth of sea trade with neighbouring countries. Many pre-Mauryan black polished potteries and punch-marked coins having four symbols found at Asurgarh in Kalahandi and Sonepur district indicate the flourishing economy of Kalinga during the Nanda rule. Koutilya, a learned taxilan pandit adorned the court of king Chandragupta Mourya of Magadha in his book *Arthasashttra* determines the climate and time from Ashada (June) to Kartika (October) for smooth navigation such as "*Saptaha Brutamasadham Kartikam Chantarantara, Karmikam Pratyayam Dadyat Nityam Chanikamabahet*".

Subsequently, Kalinga declared her sovereignty when Magadha was in a state of internal disarray. The invasion of Alexander, the Great and the rise of Chandragupta Mourya under the strict supervision of Koutilya created political turmoil in the history of Magadha.

By taking the advantage of the chaos that prevailed in Magadha, Kalinga declared her independence and tried to build her strength as an overseas power. However, history further reveals that the animosity between Kalinga and Magadha developed to a great extent during the reign of Asoka. The Tibetan account of Lama *Taranatha* mentions that the hostility between Kalinga and Magadha due to sea-route trade was the root cause of Asoka's invasion over Kalinga.

In the early part of the 1st century BCE Kalinga became independent under the Chedi Chief Mahameghavana Kharavela. Meanwhile, Kalinga achieved unprecedented growth in military capability and economic strength. Therefore, the long-standing enmity of Kalinga with Magadha since the rule of Mahapadma Nanda to the end of Bruhaspati Mitra, the entire episode establishes the sound maritime potency of Kalinga.

The great epics the *Ramayan* and the *Mahabharat* illustrate the merchandise of Burma and the Malaya peninsula. The Buddhist Jataka, *Brihatkatha* highlights the maritime glory of ancient Kalinga. The *Arjyamanjushree Mulakalpa* a Mahayana Buddhist text refers to all islands in the Kalinga Sea or "Kalingadro" identified with the Bay of Bengal. The *Agni Purana* highlights some islands in Southeast Asia. The *Niddesa* a Buddhist text of 2nd century CE and the *Koumudi Mahochhav* a Sanskrit treatise disclose sea-voyage experience of a navigator.

During the time between Ashok and Kharavela the boat building activities in Odisha is found mentioned in *Dathavamsa* translated from Ceylonese sources in 310 CE¹ It records that Dantakumar and Hemamala saw the ship with the planks strongly fixed the big mast well fixed the big ores guided by skilful captain which was of its own record going to Lanka and was occupied by merchants. Again verse 56, notes that the ship with banners moved by wind quickly reached the port of Lanka.

The Roman geographer Pliny in his *Natural History* mentions Kalinga on the sea coast. It is a fact that *The Periplus of the Erythraean Sea* is the earliest work to support the maritime trade of Kalinga. The Allahabad *Prasasthi* of Samudragupta refers to Ceylon and other islands.

Kalidas, the author of *Raghuvamsa* described the maritime glory of Kalinga and addressed to the king of Kalinga as *Mahodadhipati*² or the Master of the Sea. The author has stated Sunanda the companion said to the princess Indumati that if you want to marry with Hemangada, the King of Kalinga (*Mahodadhipati*) you will get the aroma of cloves from his body because the cloves are imported to his kingdom far off islands.³ In *Avigyaana Sakuntalam* the poet narrates the word 'Chinansukamiba' which indicates the trade of Kalinga with China. During Bhoulmakara rule, Pragnya the author of *Gandabyuha* visited the royal court of China.

In *Charyagiti* Doha dated back in between 6th century to 10th century CE reflects beautiful narration of maritime trade in distant past. Among the 84 *Sahajia Siddhasadhakas* one Kambalapada in his song No. 4 (as compiled by Dasgupta) reveals about navigation.⁴

Soni Bhariti Karuna Navi, Rupa thoi Mahiki thavi
(*Nahika thavi-Bagchi*)

Bahatu Kamali gaana Kainsen, Khunti upadi melili Kachhi
Bahatu Kamali Sadguru puchhi (Dasgupta 1962:44)

Dasgupta's translation means: "I have (says Kambala) pulled the peg up and torn the rope of the boat.... and Kamali is steering forward seeking at every step the instructions of the wise preceptor." Similarly in song No. 38 Saraha (transliterated) indicate ores fitted with the boat and the process of navigation. To quote:

Kaa Gabadi Khanti Mana keduala, Sadguru Bani Dhara Patavala
Chia Thirakari Dharahure Nahi. Ana Upaye Parana jai

Kanhu Pada or Kanhupa indicates in Doha No. 11, that boats were fitted with ores. Similarly, Dombipada says in verse No. 8 to ply in the middle path. Such as- *Vama Dahina Chapi Mili*

Mili Mariga, Vatata Milila Mahasukha Sariga. He has further spoken about the ores fitted to the boat and instructs about tie up of the boat in the mani *mula*. He has further instructed that the boats are to be kept vigilantly dry by throwing out the percolating water so that water may not enter through the joints. He further informs that boats are fitted with wheels and masts (*Pulindas*) and states to ply the boat without being negligent by looking to the sides. In song No. 49 Bhusukapada states that he steered the thunder boat through the canal of lotus: "*Vaja Nava Padi Paua Khale Vahiu, Adaa –Vangale Klesa Lutiu. Adaa –Vangale* may be *Adda Mangaale* otherwise it will be difficult to make the verse meaningful. Bhusukapada notes about the plying of boats in the rivers which further provides reference to inland navigation in Odisha.

The *Brahmanda Puran* reveals how the *Sadhavas* of Kalinga were able to demarcate the direction at night or in bad climate in sea voyages. The text follows as:

Ganga Sagara Chineshu Jadruchhaya Tada Gatihi, Desha deshanta Drabyani Bahanto Janti Ke Piba, Jala Nimne Tub a Kechit Majjane Gupta Kousale, Lukayitaha Bhutapurbam Mahaschharjya paramgataha, Kurma Jantram, Lacha Jantram, Matchya Rupam tu Pakhikam, Hraspam Kastamaya Deham Tamrapatta Surakhitam, Lohachakragata Nimne Chakrabyuha Samanwitam, Bayu Nala Parinabdam Sankocha Bistara Karam, Bistrutou Majjanam Gneyam Sankocha Bhasa Manakam, Dipane Jalane Chaiba Chakrabuhadi Chalane, Kutane Photane Bapi Bholane Prerana Charet.

The *Jagamohan Ramayan* of Balaram Das, *Manasa Mangala* of Bansi Das corroborate the maritime prosperity of Kalinga. The *Adi Parba* and *Sabha Parba* of the *Mahabharata* composed by Sarala Das also reflect the maritime trade of Kalinga. The poet writes:

"Kartika Masa Sukla Pakshya Budhabara je Purnami, A, Ka, Ma, Bai Snahan Dina Gangaku gale Kunta Bhoja Swami, Se Ganga Snahanaku Bhisma je Aile, Kuntabhoja Raja Sange Maitra hoile."

An interesting account of Navigation is found mentioned in the historical *kabya Gangavansanu Charitam* of Basudeva Rath Somajaji⁶ in 1762 CE. The author illustrates the sea journey of Vidyarnava and Lilavati from Varunapattanam (Baruan) to Purusottam Kshetra Puri to take a glimpse of the world-famous Car festival. On the way the couple met with the river Mahendratanaya at Varuna Pattanam and Chilika Lake. Vidyarnava narrates the bravo of Odia sailors how they face the challenge during natural calamity to cross the high tides for trade and commerce only to relax his frightened wife. While returning from Puri to Vijayanagaram, the couple witnesses many trade centers such as Khallikote, Vikrampur, Athagada, Kodala, Langalaveni Raghunath Sagar, Pittala on the bank of the river Rushikulya, Ghodahada, Paralakhemundi. Vidyaranya describes Chilika Lake as a sea of thousand boats.

Another outstanding Sanskrit treatise 'Yukti Kalpataru' edited by I. C. Sashtri defines the construction method of sea boats. The 'Tilakamanjari' of Dhanapala 'Kalasvarupakulaka' of Jinnadatta Suri, 'Acarangasutra' Part II, Upamiti Bhavaprapancha Katha deal with various ships and tread in high sea. In a Sanskrit text 'Bruhat Samhita' of Gupta period, Pandit Barahamihara who adorned the court of Chandragupta-II or Vikramaditya and esteemed as a jewel among the nine jewels of Gupta royal court wrote – 'Athba Sammudra Tire Kusala-gata Ratnapota Sambodhe, Dhananichula-lina Jalachara –sita Swagasababalikruto Panto. In the work 'Trikantha Kosa' Gajapati Purusottam Deva made references of many ships.⁷

Poet Dhoi, the court poet of King Laxman Sen of Bengal mentions in his work *Pabanadutta* that Randhran Hatwa Jananidhipabadhu gadha godabari kana, Kalingasyanusara Nagarim nama tam Rajadhani.

The poet Dinakrushna Das, in his literary product 'Prastabasindhu'⁸ has vividly narrates the construction style of sea boats. The author says –

*"Se Luha Katai Karatapata, Naba Khanjibaku Gadhai Kanta,
Dui Munda pata bhitare pase, Jesane Naracha Dehare Base."*

In his work *Rasakalola* the poet Dinakrushna Das⁹ draws clear picture of maritime trade. He compares the pathos of his life with the life of a sailor or trader. To quote:

*Kastu Tariba Pain, Priti Boita Nei, Tumbha Sanga Sindhure
Meli, Kula Sila Bebhara Sabu Eka Prakara, Ambara Karina
Ajhal, Hey Krupanidhi, Kichhi Kala Banijya Kalu, Kete Sukhare
Dina Nelu, Kansa Duta Batasa, Kala ta ea be Nasa, Dekhu
Dekhu Dukha Ku Galu Hey.*

The book *Paikakheda* of Kanheibara Champatiroy Chudamani¹⁰ refers that there were nine types of sea boats such as Pandia, Chotamukhi, Surachaturi, Kusarajapur, Lanjua, Khaijanga, Gangaprasad, Nadia, Khudupa mostly used in Kalinga. Among them the boats like Pandia and Chotamukhi were frequently used for trade. To quote:

*"Bohitra Pandia, Chotamukhi, Banijare Aha sara Parakhi,
Samare Nahoi, Samare Ate Sura chaturi*

*Puna suna Rajapur Lanjua, Khaijaga,
Gangaprasad Thia, Nandia Khudupa, Guru Amana,
Suna kahiba guna Sabadhana,*

Lanjia je Charu, Duru disai Jenhe Mahameru."

In *Parimala Kabya* poet Narasingha Sena beautifully wrote the sea voyage journey of a Ratnakara Sadhaba to Ceylon. In this literary work the poet indicates the trade of kalinga with Simhala or Ceylon. To quote:

*Kumaraku Gandharba Kalaka bege kola,
Dhari Nei pakaila Samudra ra Jala
Kumara nidra bhajila pakaiba bele,
Bali nama dhari kande padin se jale
Boila sadhuta tahin sunasi kumara,
Ajahun tu Dharmaputra Hoilu AAmara
Boita re Basai Sadhuta ghenigala,
Simhala Dwipare ghare prabesha hoila.*

Another popular work *Trinath Mela* narrates about the maritime trade of Kalinga. It further states that God Trinatha was also a sea trade deity in ancient days. The book refers that¹¹

*“Amante eka soudagara, Naba ghenina Dariara,
Naba Chalai Jouthila, Swarnabhadra Kule hela”.
Nabaku Kulare Khatai, Se sthane Mililaka Jai,
Boila Suna Sarbajana, Trinatha Boli kisa Nama,
Sata Nouka a Je more, Lagichi Nadira Kulara,
Bhalare farena Asibi, Gruhare sukhare Milibi,
Jebe mu subhe nabe jibi, Prabhunku pancha Mela devi”.*

Another popular folklore is available in connection with the marine adventure of Kalinga. To quote:

*“Sadhava Pujai Kali Khambeswari, Simili dipu Biota Asibani feri
Lanka dipe Jhala Chindi je Baula Batasa, Amapa Daria re mo
Sadhava anaswasa”.*

Thus, many popular stories like Topai, Khulana Sundari still in Odisha are the sea voyage evocative of primitive days. In the month of Bhadraba and Aswin the people of Odisha observe

Khudurukuni Osha and Nisa Mangalabara Osha with extreme devotion to appease Goddess Mangala who is said to be a sea trade deity. This Osha represents the story of a merchant family. The story of adventure on the sea narrated in popular folk tale like Kuhukamandala Chadhei, Chari Mahajanapua, ample references about trade and shipping. The ancient History of Odisha reveals that Madhaba worship was prevalent during Sailodbhava rule. Madhaba was the presiding deity of Sadhabas who used to remember His name for auspicious journey. Hence, Madhaba was a trade deity of Sadhabas. Thus, "*Madhava Madhava Vishnu Madhava Madhava Hari, Smaranti Sadhaba Nityam sarba Karjye su Madhaba*". There are certain customs like "Kartika Purnima" which appears to be the reminiscent of ancient sea-voyages. On the full moon day of Kartika people floating miniature boats made of the barks of the plantain tree or paper boats with the lamps burn inside the ferry. In every evening of the month of Kartika people lighted a lamp called *Akasadipa* which is attached on the edge of a high pole. It shows light to the navigators for finding of direction and helps them while they were in maritime trade. In ancient days it was mostly used by the Odia traders to know about their sea route.

In ancient time the rivers of Kalinga like Rushikulya, Bahuda, Nagavali, Vansadhara, Mahendratana bore the route for the inland navigation. Many towns were flourished on the river banks such as Palur , Jougada, Ganjam on Rushikulya, Kalinganagar on Vamsadhara to witness the glory of past.

The foreign account '*Si-yu-ki*' written by Hyun-Tsang, the account of Roman geographer Ptolemy, and Ceylonese work *Dathadhatuvamsa*, *Lalitavistar* shows the existence of a good number of ports in ancient Odisha. A critical review of the maritime history of Kalinga reveals that Kalinga had oversea

contact since time immemorial. The Burmese tradition says that Kalinga had close maritime relation with Burma in ancient days. G. E. Gerini has remarked that the people of Kalinga established colonies in Burma much before Kalinga War.¹² Historian B. C. Mazumdar has traced its origin prior to advent of Buddhism. It is believed that the evolution of Hindu culture in the island of Bali and establishment of Sri Vijaya Empire in Sumatra traced its origin to the Kalingan maritime contact. Vijaya, the first King of Srilanka had also Kalingan origin.

The maritime history of Kalinga would be incomplete unless a clear reference is being made in relation to the prominent ports of Kalinga. In primitive days Kalinga was famous for her natural resources and profuse sea-ports. Among the natural ports Che-li-ta-lo was a great historic port of Kalinga found mention in the accounts of Chinese pilgrim Hiuen T-sang who ascertains that the port Che-li-ta-lo was situated to the south east of the Wu-Tu country. But, the identification of this port is still a matter of controversy. A. Cunningham at first identified it with Charitrapur but, later he changed his view with Puri.¹³ Historian M. Julien has identified it with Charitra. Waddle locates it with Nendara in the Mahanadi delta. Basing upon the view of Sarala Das scholars have identified it with Chandrabhaga. Some also opined with Tirtol or Chatrapur or Manikpatna.

Similarly, another prominent sea port of Kalinga was Tamralipti identified with the modern Tamluk in the Midnapur district of West Bengal once a part of Odishan Empire during 7th century. It was a Dronimukha port in nature located at the confluence of the river Rupa Narayana and Bay of Bengal. The *Mahabharata*, *Markendeya Puran*, *Vayu Puran*, *Bruhatsamhita* of Barahamihira and *Natyasashtra* of Bharata, *Arthasashtra* of Koutilya. The literary work of Gunadhya's *Baddakha* and Dandin's '*Dasakumar Charita*' record the ancient sea voyages

from the port of Tamralipti. The *Kathasaritasagara* of Somadeva traced its origin from 4th century B.C. The *Dasakumarcharita* of Dandin depicts the coming of the Greeks to this port. The Chinese traveler Fa-hien, Huiien-Tsang, I-Tsingh referred to Tamralipti as a port locates on the broad way a place suitable for embarkation bound for China.

The ancient maritime trade of Kalinga has also been reflected in modern Odia literature. Poet Nanda Kishore Bal in his poem *Nauri O Batoi* draws a beautiful message to society. When a passenger at the evening expresses his helplessness and requested to the ship sailor to cross the river, the ship sailor straightly refused him not to hope any kind of help due to heavy flood in the river. but when he heard everything the pathos of passenger finally, he agreed to help him by facing any kind of nature's challenge and shown his cosmopolitan nature. In the words of poet;

*Bhauri Khelai Fena Chabakai Ghora garajai Nai,
Akata Panire Ahula Namane Kemante naba nebain.
Barasu pachhake ghora barasare bahu pachhe khara
baa Sua pani pachhe tadi nei jou talaku talaku naa
Padu pachhe mote ghora bipadare parikari debi tote
Dayamaya hari dine dayakari uddharibe bhai mote.*

While remembering the hoary past of Kalinga, poet Nilakantha Das narrates the maritime trade of Kalinga in the following manner.

*Taranga re Kheli Tarani puni tekiba pala,
sarada gagane bouda pari heba bahara
Kahin gala kahin Bornio kahin Masala dwipe,
jiba bhasi sukha sapane mani bahe samipe
Chilka garabhe uthiba sata biota Bhasi,
Arunita dekhi baruni pate jatia nasi*

The poet again presets the picture of maritime trade in his literary work *Konark*. There he made indication of some ports of Kalinga viz. Tamralipti, Chelitalopur, and the piracy activities prevalent during the ancient times. To quote:

*Kaberi puline Nrupati kehu Arati sange,
Jujhi Kousale melile Tari Nadi Tarange,
Tamraliptipura bidrohe kehu ekaki Bira,
Banijye Boite Adari hele Arati chara
Ingita Chalane Banike Tarabari Asphali,
Kaibarta kirati tekile jala dasyu samhara.*

The poet further says with pacifistic voice

*Kebe ba Boita lagiba Banga sagara kule,
Odia nabika Rasibe Tamralipti mandale
Tamralipti chhadi uthiba tari simhala tate,
Utkala Kamala Hasibe punya Jaitra mukute
Banijya Bijaya unmade puni konarka feri,
Swadhina Bilase Rasiba Dekhi e pura Siri.*

The picture of sea voyage trade is also available in the literary work of Mayadhar Mansingh. The author in his work *Sadhaba Bohu* depicts the feelings of the *Sadhaba pua* while far away from his family members in a lucid manner. To quote him:

*Sadhaba pua mu Boitare mo jibana,
Sagara lahari gani sare jaubana
Dhrubatara chahin sukhai akhira pani,
Kane chiri katu suna rupa jhanajhana
Pita mo deshara kubera nagara setha,
Ghare dhare mani pradipa kanaka nagara pitha
Dasadasi dehe sunachhita pata sadhi,
Jachaka mananka seba hue abirata.*

*Nangara pakare nangara pakare Majhi,
Eita sekula seita saudha raji
Kule bhida tari AAsare malada Majhi
Bohiana kule manika banika raji.*

The poet further writes that :

*Jaya go Boita rani Salila Sundari,
Ambha lagi ana dhana Kahun garbhe bhari,
Purna kara ganta ghara,
Tumbha lagi puri uthe bhabana ambhara*

A renowned Poet of modern period named Gyanindra Barma in his work *Bole Hun Ti* made a beautiful description of sea voyage life.

*E kiba Sadhaba Kuha Sumatra ra Loke, Se dina je gale daki
Manikyara asha kipari chanchala ete teji dia aaji.*

In the famous work *Kalijai* of Pandita Godabarisha Mishra, the pathos of a bride who became waterly grave on the way while marching to her in-law's house is mentioned. The bride with her father faced a fatal accident and died there alone. The poet narrates:

*"Bhala Kari Naa Bahare Nauri Jhia Ku Maduchhi Dara,
Gade gada loka Chain Basi Thibe Jhia jiba Sasughara.*

The glorious maritime trade of Kalinga is also visible in the literary work of the renowned patriotic poet Gopabandhu Das. The poet was in the quest of highlighting the maritime glory of the past. He wrote with much repentance:

*Kahin gala sehi Hajila atita Kahin gala sehi uddam sangita
Jalapathe kahin Bideshi Gamana Kahin
purba khyati kahin purba dhana*

Kathre rahichhi sabu aji jae, Sadhabani bohu biota bandae

Maritime Trade of Ganjam:

The maritime activity of Ganjam is one of the fascinating chapters of Odishan history in general and in the history of Ganjam in particular. Even though the people of Ganjam contributed much in the field of maritime trade but still the subject is in a state of darkness. In ancient days Ganjam was an essential part of Kalinga. Hence, an attempt has been made to unveil the maritime glory of Ganjam at a glance. The account of Ibn Khurdadhbih of 9th century CE refers to the word 'Kanja'. The word Ganjam has been derived from the Persian term "Gang-I-Am" which means common market place or a granary of food grains. But this statement is baseless on historical point of view because the French landed on Ganjam in 1571 CE. Prior to their arrival, the word Ganjam has been mostly available in the medieval literature i.e. *Adiparva* of the *Mahabharata* written by Sarala Das. The poet writes:

*"Se Deshe Chudanga Chakrabarti Raye,
Tara Bhubane Nakula Kalaka Bijaye,
Kalinga, Balanga Je Udanga Banga Desa,
Ganjam Trihuta Adi Desaje Bisesa"*

Some scholars argued that the word Ganjam has originated from the word "Ganj" means trade hub like Motiganj, Raniganj and Baliganj. During the colonial rule the region was under the Madras Presidency. Hence, it may be pronounced as Ganjam due to south-Indian influence. The view has no historical authenticity because the word Ganjam has been commonly found in *Adiparva* of the *Sarala Mahabharata*. Secondly, during Ganga and Gajapati rule the political boundary was extending from the river Rushikulya to the river Godavari. Hence, the concept as believed by some scholars that the original word 'Ganja' later turned in to Ganjam due to Telugu influence is groundless.

The maritime history of Ganjam can be traced back to the 4th century B.C. It is believed that the vast sea coast and natural ports of Kalinga imbibed Asoka to conquer Kalinga for expansion of maritime activity. The Jougada Edict of Asoka which is far away from Dhouli is an indication of its link with the Palur port of Ganjam. Thus, it is argued that the location of Asokan edicts at strategic point like Jougada in Ganjam, Amaravati of Andra Pradesh, Girnar of Gujrat clearly indicate the commercial importance along with the trans-oceanic trade. It has been known from the Hatigumpā inscription that Kharavela entitled as “Kalingadhipati” or Master of Kalinga. He took vengeance the past mortification of Kalingan defeat at Kalinga war by asserting his imperial lordship over a major part of the Indian sub-continent including Ganjam.

During the reign of Kharavela ‘Pithunda’ was a flourishing sea port town of Kalinga. The Hatigumpha inscription reveals that Pithumdam was a metropolis subjugated by Kharavela in his 11th regnal year. It was a significant port of Ganjam, locates somewhere near Chicacole of Andra Pradesh. The *Jaina Uttaradhyāyana Sūtra* reveals that Pihumda was a sea coast port town of Kalinga. The merchant of Champa had good trade relation with Pihunda.¹⁴ Ptolemy refers it Pytindra locates on the sea coast in between the mouth of the Maisolos (River Godavari) and the Manda (River Mahanadi).¹⁶ Hence, Pithumdam of Hatigumpha inscription, Pytindra of Ptolemy and Pihumda of *Jaina Uttaradhyāyana Sūtra* are one and same. It was also a famous centre of Jainism.

After the fall of Chedis, Kalinga was under the Kushan dominion. In view of detection of various Kushan gold coins and imitative Puri-Kusan coins, scholars opined that in distant past Kalinga was under the Kushan dominance. The excavation of numerous Kushan coins from Jougada site reveals their wider

circulation. Thus, the Kushans used the port of Ganjam as an outlet for their overseas trade.

Thereafter, Ganjam came under the over lordship of Satabahanas. After the accession of Gautamiputra Satkarni, the lost glory of the Satvhanas was restored. Kalinga was occupied by Gautmiputra satkarni in the early part of the 2nd century CE and thus began the first rule of a Vedic Kshatriya on the state. Satvahanas are often ascribed to fully implement the Varnashrama philosophy of the Vedic society in Odisha. For them Varnashram was the bedrock of social organization. They took extreme care in saving it from contamination. Brahmins, the champion of the Vedic-Dharma achieved considerable ascendancy under the Satavahana rule. Also, many sub castes based on occupation were added to the social structure. They were the patron of maritime trade for which credit goes to them for the earliest depiction of a boat in a coin. They must have used the ports of Ganjam like Palur, Pithunda etc. It is quite logical that the maritime port could have attracted the eye attention of the Satabahanas because at that time Palur was only significant port of international repute. Kalinga remained under the fold of Satvahnas till the rule of Yajnasri Satakarni. After his death in 202 CE, Kalinga declared her independence.

Thereafter, Kalinga ruled under the Murundas. A golden coin of Sisupalgarh excavation and Bhadrak Rock Inscription of Ganabhadra depicts that the Murundas ruled over coastal Odisha during 3rd Century CE The prominent Murunda King Maharajadhiraj Dharma Damodara swept his suzerainty over Magadha. The role of Murundas in the field of maritime trade was significant has been proved by the geographical accounts of Ptolemy, who has left a vivacious description of the port Palur. The Asanapatta Rock Inscription inform

that King Satru Bhanja of Naga dynasty ruined Debaputra Murundas occupied North and South Tosali. Thereafter, some small kingdoms like Mathara, Basistha, and Durjaya affirmed their independence. However, Pistapura was the capital and well-known trade town of Kalinga during the rule of Durjayas.

Thereafter, the political destiny of Ganjam was under the control of Guptas. The Guptas were famous for their maritime activities. The Allahbad Prasasthi written by Harisena affirmed the Southern campaign of Samudra Gupta who conquered small kingdoms of Ganjam like Kottura identified with Kothor of Paralakhemundi, Pistapuram with Pithapuram of Andrapradesh, Kaural with Kulada of Ghumsur, Erandapalli with Endipalli of Andhra Pradesh and Mahakantar identified with forest tract of Ganjam and Koraput region. He established link with the ports of Ganjam through his southern expedition. After his death his successors must have used the ports of Ganjam. This fact is also corroborated by the accounts of Fa-Hien who visited India during the reign of Chandragupta-II.

After fall of the Guptas, Visakha Varman founded historic Mathara kingdom with its capital at Sripur near Paralakhemundi. His son Uma Varman extended his territory towards Svetaka identified with modern Chikiti of Ganjam. During the Mathara period the overseas activities of the Ganjam coast was rapid. The rulers of Mathara encouraged both inland trade and out land trade as a result of which many trade towns like Pistapura, Devapur, Simhapura, were developed. Thereafter, the eastern Gangas conquered this land. King Indravarman I established the Ganga dynasty by defeating King Indrabhattak of Vishnukandin. He settled his capital at Kalyanapur next shifted to Dantapura. His period of rule between 498 CE to 562 CE, is said to have been one of the most prosperous periods in the history of Odisha. Raja Hasti Varman who assumed the title of

“Lord of all Kalingas” (sakala Kalinga) shifted his capital from Dantapur to Kalinga Nagar. His worthy son Indra Varman-II has issued the Paralakhemundi Charter. However, the eastern Gangas also patronized Maritime trade and frequently used the reputed port Palur.

After the decline of the Eastern Gangas, Bighraha dynasty rose in Kalinga. We know it from Copper Plate of Sailodbhava king Dharmaraja that one Prithvi Bighraha was his overlord. The Sumandala Copper Plate of Prithvi Bighraha Kalinga as a Rashtra has found mention. This dynasty was financially strong due to sound maritime trade.

Subsequently, Sailodbhavas emerged in the political scenario of Kangoda. The word Kangoda meant a land consisting of part of Kalinga and part of Odra. Ganjam was its capital.¹⁵ Dr. D.C. Sarkar argues that for some time the Sailodbhavas were maintaining their capital at Padmakholā near Khallikote. The Kangoda Mandala says Ganjam Copper Plate comprised of Ten *Vishayas* including the Krushnagiri *Vishaya* wherein the village Chhavilkhiya has been identified with Sabuliya near the port Palur. The Sailodbhavas were patron of maritime trade utilized Palur port extensively. The credit for establishing colonies and founding the famous Sailendra dynasty in the Subarnadipa traditionally goes to the Sailodbhavas. They hugely utilized the Palur port and Dosarene.

It is pertinent to mention here that the port Dosarene was a significant port of Ganjam. Historians have different opinions regarding its identification. The *Periplus of the Erythraean Sea* describes that the sailor proceeded eastward from Masalia and reached the Bay to reach Dosarene which had a good breed of elephant called Bosare. Basing on the view of the *Periplus of the Erythraean Sea*, Moti Chandra identified it with Tosali. B. Srivastav remarks it as a *janapada* of which Dantapur was the

capital. However, the Bay mentioned here could be no other than Chilika. It is corroborated in the accounts of Chinese traveler Huen-Tsang, who has described that in the 7th century CE Kongoda was famous for production of dark-coloured elephants. AS per the legend in the *Brahmanda Puran*:

*Chilika Hrade Srahasamtu Sunapatah Jalagamini,
Tamrachhaditaha Bai drutaha Sahasra Janadharakaha,
Bahu chakranwitaha sighro jantragah chalakasritaha,
Baniya karane saktah tripancha sikharakrutah,
dwipantara gatayatah java Malaya Simhale”.*

The Ceylonese work *Dathavamsa*, the *Kurudhamma Jataka*, *Kumbhakara Jataka*, *Chula Kalinga Jataka*, *Kalinga Boddhi jataka*, the Jaina text *Uttradhyayana Sutra* refer to Dantapur was once the capital of Kalinga. The *Yudjoga Parva* and *Drona Parva* of *Mahabharata* narrates to Dantakura as the capital of Kalinga¹⁶ which could be same as Dantapura. Pliny speaks to Dandagula as the capital of Kalinga. The earliest reference to Dantapur is seen in *Mahagovinda Suttanta* of Digghanikaya, a Buddhist text wherein it has been mentioned as the capital of Kalinga. The Buddhist *Jatakas* describe Dantapur as the capital of Kalinga during the period of Buddha where King Dantavakta was ruling.

The book *Sutrakrutanga*¹⁷ and *Avidhana Rajendra* 20 reveals that once queen during her state of pregnancy requested to Raja for making a ivory cot for sleep. Raja Dantavaktra accordingly ordered for collection of huge ivory. A similar request was also made by the wife of Dhanamitra, a Sadhaba of Kalinga. Hence, Sadhaba Dhanamitra with the help of his friend Drudhamitra collected more ivory secretly. When king heard about it, he imprisoned Dhanamitra. Later, the ruler released him after knowing the truth. It is called as Dantapur due to the availability of ivory cot.

Historians have divergent views regarding the identification of Dantapura. A. Cunningham (1871), a prominent historiographer identified it with Rajmundry on the bank of river Godavari. B. V. Krishna Rao (1929) traced it with Dantavuram, an old ruin city near Amuldalavalse and Chicacole station and later it was supported by historian Satya Narayan Rajguru (1968). Hunter identified it with Puri the land of Jagannath where tooth relic of Buddha was kept. Kanungo identified it with Danta near Tekkali in Srikakulam district of Andrapradesh. Sylvain Levi and J. Prazyluxy have identified it with Paloura of Ptolemy. According to them the word Paloura was of a Dravidian origin. In Tamil language Palu means Danta or tooth and Ura means Pur or city. Hence, Paloura means tooth city or Dantapur.

According to S. Levi, the name as an Austro-Asiatic word could be associated with the term meaning elephant tusk as an important item and that from Danta tooth of the elephant the word Dantapura has been derived. As such, the Kangoda region in which Palour was situated has been referred to a place of breeding good elephants by the anonymous author of the *Periplus of the Erythraean Sea* as well as by Hiuen Tsang. Historian S. Levi thus believed that Dantapur of Buddhist literature Dandagula of Pliny with Paloura of Ptolemy were one and the same.

G. E. Gerene has identified Paloura of Ptolemy with modern Palura, a village under Ganjam Tahasil of Ganjam district. A close study of the *Dathavamsa* clearly depicts that after the Mahaparinirvan of Buddha, the left canine tooth of Tathagata was carried out by a Buddhist monk Khemathera from Kusinagar to Kalinga and handed over it to Brahmadatta, the ruler of Kalinga who erected a magnificent Chaitya at Dantapur and installed the tooth there. The worship of tooth relic was continued by Kasiraja and Sunanda the son

and grandson of Brahmadatta during their respective rules. Thereafter, Guhasiva another Buddhist ruler of third century CE of Kalinga continued the tooth worship. But he transferred the sacred tooth of Buddha to Srilanka by his daughter Hemamala and Dantakumar for safe preservation avoiding the wanton attack of king Khiradhara. The *Dathavamsa* mentions that the Ceylonese king Kittisri Meghavarnam erected a grand chaitya at Anuradhapura in 310 CE enshrining the tooth relic of Buddha. At present nothing is at Polura-Dantapur except the temple Bateswar and Anleswar of seventh century CE which stands as mute testimony to the sea trade of this region. A pillar-like structure on the top of the hillock with the marking of a lamp at the top is being worshipped as a Siva lingam in its broken form presently.

Thereafter, the Gangas established ascendancy in this region and Kalinga Nagar was their capital. Like the early native rulers, the Ganga monarchs of Odisha encouraged the sea borne trade. For that reason, the sea borne trade reached its zenith during Ganga rule and become the backbone of the prosperity of Kalinga in general and Ganjam in particular. The Ganga rulers were frequently much utilized river Vamsadhara, Rushikulya and Godavari for trade and commerce. At the same time the traders carried their articles through these pilgrims' routes. The Gangas were replaced by the Suryavamsi Gajapatis. After the death of Bhanu Deva-IV, the last issueless ruler of Ganga dynasty, Kapilendra succeeded to throne being the founder of solar dynasty. Thereafter, Purusottam Deva, Prataparudra Deva ruled over Odisha successfully. The Gajapati kings gave to the country a long line of rulers and their descendents occupied considerable territorial possession in Odisha including Ganjam. During Gajapati rule maritime trade also developed in a wide range. After the death of Prataprudra Deva in 1532

CE the supremacy of Gajapati family gradually declined and the political fate of Odisha sealed forever at the battle of GohiriTikiri in 1568 CE when Mukunda Deva the last Hindu king of Odisha lost his life while fighting with Suleman Karrani.

Like Palur, Barua was another noteworthy early seaport and famous trade center of Ganjam found mention in the account of Ptolemy. It is about 33 miles away from Brahmapur now in Andra Pradesh. The holy river Mahendratanaya originates from Mahendra hill falls in the Bay of Bengal near Barua. The main items of export from Berua were coconuts, coir ropes, coir yarn etc. Basudeva Somajaji the author of *Gangavansanucharitam* has described that he went to Puri from Berua, a port of Ganjam by a boat and returned on land route to Khallikote after crossing Chilika in a boat in the year 1762 AD. Likewise Sonpur was another notable sea port of Ganjam. Once it was the chief shipping center for the navigators but due to sand bar formed by river Bahuda creates obstacle for shipping for which the port lost its importance. The excellent qualities of edible oysters found here which were exported from this port. Kalingapatnam was another remarkable port of Kalinga situated at the mouth of river Vamsadhara in the Srikakulam district of Andra Pradesh. The name Kalingapatnam means the city of Kalingans. Once upon a time it was the capital city of Kalinga. The archeological excavation suggests that it was a fortified city since 3rd century BC.

Apheterion was another flourishing sea port of Ganjam found in the account of Ptolemy has identified by Gerini as Gopalpur of Ganjam, just a little below the mouth of Rushikulya. It is no other than Mansurkota of Gopalpur. However, this port remains closed during Second World War.

During the British era Ganjam was under the Madras Presidency. They occupied Ganjam in 1768. However, after

centuries of neglect attempt has taken to rejuvenate the coast link with import and export of merchandise. The mouth of river Rushikulya at Potagada was cleared in the eighties of the 19th centuries for bringing German steel for construction of the Bengal–Nagpur Railway line. Colonel Minchin the legend behind the Aska Sugar factory exported sugar to Europe through this port till the advent of Bengal–Nagpur Railway.

As to the overseas exports the first shipment of polempore (kind of rayon fabric locally called *patta*) was sent to Europe in 1771 CE and in 1779 CE Palempore become so popular in England that the Court of Directors wrote to the Company's Government for sending more of the fabric to England. The existence of graveyards in between the fort of Potagada and Jayashree Chemical Ltd. reveals the maritime activities of Ganjam during colonial Period. These graveyards exhibit the death of crew men and captains of different foreign ships who were buried there. The fort Potagada reveals the fact that the fort was a place of shelter for soldiers to fight the sea pirates to save the vassals. There exists a tunnel from the fort to the mouth of the river. During second half of 20th century laborers were sent to Burma through the Haripur Bandar near Gopalpur. In a Suanga a character would sing¹⁸ –

*"Jouchi Jadua Maa Rengama Desa,
Tanka Pathaibi gori Masakumasa,
Rengamare Bahuta Mera,
Mera charipakha Khaja pasara."*

(One addressing to his wife O', Mother of Jadua, I am going to Rangoon; I shall send money to you every month).

The marine activity of Ganjam was not less significant in the maritime history of Odisha. The literary sources also prove maritime potency of Ganjam. The people of Ganjam were

said to be worshipped many goddesses like Ramachandi, Harachandi, Bhairabi etc and the Telgu inhabitant of coastal belt worshipped Ellama, Mutyallama Gourama as trade deity. Goddess Bhairabi was the Goddess of sea trade and famous as the presiding deity (Ista Devi) of Sadhabas who were on sea voyages from the nearby ports to different island countries like Java, Sumatra, Bali, Indonesia, etc. Still today the Sadhabas of the area are called as Sahukaras (wealthy trader) of Sahubrahmins are doing business of Patta (silk), Matha (Resam) and textiles in name of Siddha Bhairabi.¹⁹ The spinster daughters of Sadhaba Sahu Brahmins before puberty dressed up with variety of flower garlands, precious ornaments, and new sarees observe “Nata Puja” on the day of Nata Panchami which falls after 4 days of Aswina Amabasya. The *Puja* continue still Mahastami.

On that day the spinsters worshipped Lord Siva at sea coast or water tank establishing a Baluka Linga for the safe return of the voyagers. Similarly, another Osha called as Kharakharei Osha widely observed by spinsters of Ganjam in the month of Chaitra with a hope for the safe return of voyagers. They recite a folklore which attests the maritime tradition of our past. *Kharakharilo Barabarilo De Barasapani, Nai Nala Badhi Hou Nabudumo Mani, Kanima Kanima Ulei Ulei Aa, Ulibanki Ulibanka Ratiki Jagia, Boita Aile Bapa Joda Boda Deba, Patakana Nakanotha Bhai Saanpiba.*

The maritime trade of Ganjam with foreign countries also referred by the great Poet of Odisha named Upendra Bhanja in his literary work *Labanyabati*. To quote him:

*Bohitra Lagila jai Simhala Dipare,
Sadhaba Jubati mane Ati Pramodare,*

Gale Boita Bandai, Arghyathali kare sarbe hulahuli dei.

The poet further depicts the list of export commodities like *Chinansuka, Hira, Nila, Moti, Manikya, Agaruchandan, Atara, Karpura, Chua, Kasturi, Haritala, Surjakanti Mani*, etc.

*Mesha chakshyu Nila Brahmajati Hira,
Tara Mukuta Kukuta Dimba Para,
Achhi sumanikya Padmaraga mani
Astabakra prabala hi panti panti
Chandrakanta Pasana Nilendri mani,
Laxmi Narayan Sila nohe gani*

The highhandedness of pyrot in ancient time also reflected in the literary works of Upendra Bhanja. He writes in *Labanyabati*:

*Ati daridra mu Bahitra banija karichhi Upaya Balare,
Bhala Manda achhi ki kapalare, daiba se tuhi,
Se tote gochara, Dayare laga kulara, sundari, mara taskara
gheni dara achhi Pranadhana lutibaku Jagichhi,
Asta satwika anachasa pabana Chhadma Bhrame pakauchhi.*

Another literary work *Prastaba Chintamani*²⁰ of 1786 written by Nilambara Vidyadhara a royal blood of Khallikote family clearly and categorically mentions about the maritime trade of Ganjam. That book refers 76 types of cotton sarees and polempore (kind of rayon fabric locally called *patta*), 40 types of curry powders. The natural coastline was the main factor for the prosperity of maritimetime trade of Ganjam. The sea voyages of the people of Ganjam indicates the peaceful commercial intercourse with different regions contributing not only to the prosperity of Ganjam but also to the exchange of cultural heritage. Since early times the social order of the area has been dominated by merchants. Various social titles generally associated with the maritime trade such as Sahu, Sabat, Majhi, Samala, Sunari, Teli, Gudia, Palia, Kumuti, (Kalinga Vaishya) are very commonly found in this area even today.

The popular folk lore goes like: *Mahuria, Gadi gadi gala Khadi, Ganja muhanare Boita Jodi, Bania Dhadiki dhadi.*

The goods were carried on through the water route. Heavy things like timber, building stone, coal, iron and other mineral ores were also sent by water route. The river Vamsadhara, Rushikulya and Godavari were frequently utilized for trade and commerce. The Anantagiri Inscription of Gunthur informs that the people used the circular basket boats or Puttis to cross the river. The adventurous spirit of the native, abundant material for export, the patronization of native rulers, existence of famous ports and skilled artisans greatly supported the growth of trade and commerce of Ganjam in ancient times. However, the maritime history of Ganjam began to perish gradually after the advent of the British rule in Odisha.

Impact of Maritime Trade

To conclude with, it is significant to discuss the impact of maritime trade on Kalinga kingdom through ages. As a result of flourishing overseas trade many changes have been noticed. Many ports, cities, market places, trade hobs having international reputes were opened. It contributed to the development of financial condition of people as well as the state economy. It eradicated unemployment. People got jobs and could be able to sustain their livelihood with pleasure. It created a group of merchant community named Sadhaba irrespective of caste. Due to sea voyages reciprocation of language, literature, art and culture was attainable. People became acquainted with lathan, balti, kerosine etc. which are exported goods. It eradicated certain blind beliefs and superstitions. The prevailed superstition like to cross the sea was to loss the religion became vague as the trade became universal irrespective of caste, colour and religion. It developed many folk tales, folk literatures and folk theaters like *Bharata*

Leela of Dinabandhu Das (Mohany) of Kalynapur Ganjam and *Purnananda Dharma* of Purnananda Swamy of Hansapur. Such a glorious past began to diminish by the passage of time due to the reasons like political instability of Kalinga, attack of Kalinga by Mahapadmananda, the consequence of Kalinga War, ruin of Hindu imperialism, civil clash among the Gangas and Gajapatis, lack of political patronage in the later period, frequent invasions of Muslims, weak successors after Suryavamsi Gajapatis, monopoly of Europeans, their exploitive nature of trade policy and highhandedness of pyrots. No less the frequent natural calamities contributed to the decline of maritime activities of the people of Ganjam.

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SECTION - III

Regional Legacies and Technology (The Bridge)

A Study of Odisha's Sea-Faring Legacy and Colonialism in South and Southeast Asia: The Impact of Odia Culture in Southeast Asia.

Prativarani Barik

Abstract

The Odia people, renowned for their adventurous spirit, were seasoned seafarers who navigated the vast oceans, forging vibrant trade connections with distant lands in South and Southeast Asia. Their magnetic personalities captivated the local populations, leading to the establishment of flourishing colonies that echoed with the essence of Odia culture. This qualitative study examines the remarkable seafaring endeavours of traders from Odisha, illuminating their successes in embedding Odia traditions and practices abroad. Rich data were meticulously gathered from diverse sources, including archives, libraries, scholarly books, magazines, and online platforms, and analysed through the lens of self-determination theory. The analysis revealed a fascinating narrative: from ancient times through the medieval period, these intrepid traders ventured into the heart of South and Southeast Asia, establishing their own colonies. Their success was not merely rooted in trade; it was their profound cultural richness and remarkable administrative prowess that truly set them apart. The findings reveal a tapestry of influence wherein the Odia traders significantly shaped the socio-economic and spiritual lives of the communities they encountered. As they established their cultural footprints abroad, the essence of Odia culture flourished, intertwining with local traditions. Moreover, the thriving Blue economy of Odisha played a pivotal role in ensuring the region's tranquillity and prosperity, fostering an environment in which the Odia identity could flourish across South and Southeast Asia.

Keywords: colonialism, identity, Asmita, Culture, Trade.

Kalinga was historically home to bustling seaports such as Tamralipti, Palur, and Pithunda, which thrived on international trade. These ports were linked by major highways running through the region, connecting key towns and facilitating commerce¹. The trade routes from Kalinga established vital links with South and West India and extended to major cities in North India. Archaeological discoveries, including ancient coins and ruins of old structures, confirm the existence of these historic trade routes².

During Ashoka's reign, the administrative hubs of Tosali and Samapa prospered within the Mauryan Empire, as evidenced by a network of carefully constructed roads. These routes were probably connected to other provincial capitals, all leading to the central imperial city of Pataliputra.

During Kharavela's reign, Kalinganagari, now known as Sisupalagarh, demonstrated its strategic importance through well-maintained roads linking it to Assaka along the southern bank of the Krishna River. To the north, routes connected to important cities such as Mathura, Pataliputra, and Rajagriha, while pathways also extended westward towards the scenic Nasik region. These ancient routes served as vital arteries for trade and connectivity, remaining active for centuries.

The discovery of Kushan coins at sites in Ganjam, Puri, and Cuttack indicates the presence of an ancient trade route that crossed the Mahanadi River and its tributaries. This route connected settlements such as Kalinganagari and Kayema Hill, extending beyond the Brahmani and Vaitarani Rivers before reaching Bhadrak. From there, it likely travelled to Sitabinji in Keonjhar, then to Khiching and the hills of BamanGhati and Bahalda, ultimately connecting to historic cities like Gaya and

Pataliputra. An inscription from Allahabad highlights Kalinga's link to the Jumna Valley through South Kosala and Korala, with evidence of trade dating back to pre-Aryan coins in Sonapur. Despite the development of new routes, these ancient paths were crucial for the exchange of goods and ideas across a vibrant landscape. Odisha has a rich history as a maritime commerce hub, with its influence extending from the Ganga River to the Godavari across various periods. The excavations at Lalitgiri, Udayagiri and Ratnagiri, the Buddhist sites have established sculptural link with South– East Asia and China. The discovery of a relic casket from a stupa in Lalitgiri has been the most significant one in this connection. These caskets cover four-in one, kept systematically one inside the other is a feature common in China³.

Odisha's prosperity was deeply tied to its lively maritime trade, which not only generated wealth but also influenced its cultural identity. The Kalinga people, proud and resilient, developed their unique identity—Odia *Asmita*—far from home, distinguished by their particular character. Celebrated for their bravery and strong spirit, the Kalingans undertook perilous sea journeys, often risking their lives without advanced scientific methods or the best ships available at the time. This courageous spirit is remembered in Indonesian history, where they are affectionately called Kalinga Sahasika⁴—the brave Kalingans. Their enduring legacy of fearless exploration and relentless pursuit of trade continues to inspire generations.

The earliest recorded maritime activities of Kalinga date back to Emperor Ashoka's invasion. A key reason for this invasion was Ashoka's aim to control Kalinga's important sea ports, especially Tamralipti, a major trading centre. As Magadha was landlocked, it sought to extend its power through these strategic coastal gateways.

The placement of the Asokan Edicts at Jaugada, away from the Dhauli battlefield, reflects an intention to connect with Palur, a key port city in Kalinga. This highlights the importance of trade during that time. Scholars emphasize that the Edicts' locations at significant sites like Jaugada, Amaravati, and Girnar illustrate their role in a vast maritime trade network. Kalinga's maritime history is linked to Emperor Ashoka's conquest, with a focus on major seaports such as Tamralipti. As a landlocked region, Magadha aimed to expand its influence through coastal trade routes. The Edicts' proximity to Dhauli reinforces their connection to Palur, showcasing the vibrant trade that shaped Kalinga's economy.

Sources for Odisha's Sea Faring Trade Activities

There are numerous references to Kalinga's maritime activities. The *Aryamanjusri Mulakalpa*, a Mahayana text, describes the Bay of Bengal as the Kalingan Sea (Kalingadresu)⁵. Kalidasa, in the *Raghuvamsa*, describes the king of Kalinga as Mahodadhipati (Lord of the Sea)⁶.

Near the impressive Brahmeswar temple, a detailed frieze vividly illustrates boats transporting elephants, emphasising grandeur and historical trade routes. Another exquisite sculpture, initially from Konark and currently housed at the Indian Museum in Calcutta, depicts a boat gracefully rowed by four individuals. Inside this ornately decorated vessel, a regal figure sits beside a large elephant, underscoring the remarkable strength of ancient Odisha's ships, which could transport such magnificent animals.

At Konark, the Jagamohana's parapet vividly depicts Martanda Bhairavas dancing on elaborately carved boats, their movements lively and rhythmic. Inside the prominent Bhogamandapa of Puri's Jagannath Temple, a striking boat sculpture carved from fine chlorite stone reflects the period's

craftsmanship. Similarly, at Bhubaneswar's Lingaraj Temple, a notable boat carving features a woman steering her vessel with an elegant oar, symbolising both grace and strength.

Interestingly, one of the sculptures at Konark depicts a scene: a giraffe perched in a boat, a striking reminder that this majestic creature, native to Africa, was known to the Kalinga. This intriguing connection suggests the possibility of vibrant exchanges and reciprocal visits between distant lands, weaving a rich tapestry of cultural interaction.

Recent archaeological excavations at the historic sites of Tamralipti, Khalkattapatna, and Manikpatna have not only unveiled these locations as vibrant international trading ports of antiquity but also illuminated the remarkable maritime heritage of Ancient Odisha. The unearthing of exquisite Roman gold coins, intricately designed rouletted Roman ware, delicate Chinese pottery, and ornate Chinese celadon ware from these sites provides compelling evidence of flourishing foreign trade routes that once thrived in this region.

Recent excavations at ancient urban centers like Sisupalgarh, Jaugada, Manmunda, and Asurgad in Mayurbhanj and Dhenkanal districts have emphasized their importance as trade hubs. Findings at Sisupalgarh include exquisite rouletted ware, clay bulls resembling Silenus, a remarkable gold medallion of a Kushana king, and a 3rd century Brahmi inscription with a Roman legend.

In the Bamanghati region, ancient Roman coins have been found, indicating active trade. Significant Buddhist sites such as Lalitagiri, Udayagiri, and Ratnagiri have yielded sculptural artifacts, notably a relic casket from Lalitagiri, revealing strong artistic ties with Southeast Asia and China. These discoveries enrich our understanding of ancient trade routes and cultural exchanges.

The earliest foreign record of the Odisha coast dates back to the 1st century in the Erythrean Sea. Geographer Ptolemy mentioned the port of Palur in the 2nd century, while Fa-Hien described Tamralipti, a vital port to Ceylon, in the 5th century. The 7th-century traveler Hiuen Tsang referred to Che-Li-Ta-Lo as an important trade port. In subsequent centuries, Arab and Persian geographers noted Odisha's exports, such as elephants and pepper. Tamralipti emerged as Kalinga's leading port, connecting to trade routes with regions like Burma and the Malayan Peninsula. Today, known as Tamluk in West Bengal, this historic port was a launching point for Kalingan sailors and traders, significantly enhancing the region's cultural diversity and commerce



(Ancient Port Tamralipti)

It is well referenced in the *Mahabharata*, in various Indian and Ceylonese texts, and Chinese and Graeco-Roman sources, and is also referred to in other sources.

The port of Tamralipti stands as a prominent historical beacon, featured in the epic Mahabharata and in a range of Indian and Ceylonese texts, as well as in the writings of Chinese and Greco-Roman scholars. The illustrious geographer Ptolemy, in his extensive works, referred to it as Tamalities⁷, a name that resonates with its significance as a crucial hub along ancient trade routes. Renowned Buddhist

monks such as Fa-Hien, Hiuen Tsang, and I-Tsing chronicled their journeys to this bustling port, illuminating its rich cultural tapestry and highlighting its role as a center of spiritual and commercial exchange.

The ancient treatise *Arthasastra* teems with references to Tamralipti, underscoring its stature as a key player in maritime trade dynamics. Ptolemy's *Geography* once again bears witness to Tamralipti's legacy, echoing its maritime prowess through the name Tamalities. Excavations in Tamluk have unveiled a trove of fascinating artefacts, including a glittering gold coin adorned with Graeco-Roman motifs, intricate pottery shards, and terracotta figurines of Roman origin, all bearing testimony to its vibrant international connections.

The discovery of rouletted ware and unique items such as sprinklers further illustrates Tamralipti's interactions with the Roman Empire. Dandi's *Dasa Kumaracharita* recounts accounts of Greek merchants arriving at this thriving port, while the *Kathasasaritasagara* vividly depicts Tamralipti as both a bustling port and a vital trade hub, flourishing from the 4th to the 12th century. Beyond Ptolemy, the writings of Fa-Hien, Hiuen Tsang, and I-Tsing continue to illuminate this remarkable location. Fa-Hien himself regarded Tamralipti as a resilient Buddhist maritime settlement, embarking on a seven-day voyage aboard a merchant vessel to Ceylon⁸, capturing the spirit of adventure that defined this significant port in its heyday. Hiuen Tsang portrays Tamralipti as a lively port city with a circumference of forty yojanas. He estimated the sea distance from the Nicobar Islands to Tamralipti at roughly 900 to 960 miles, usually a 15-day voyage on the clear waters. It is thought that a major reason for Ashoka's powerful invasion of Kalinga was the strategic aim to capture the important port of Tamralipti.

From this lively harbour, Mahendra and Sanghamitra set out for Ceylon, carrying the sacred teachings of Buddhism on a transformative journey. The *Mahavamsa*, an ancient chronicle, notes that at that time, travelling from Tamralipti to Ceylon was surprisingly quick, taking just 7 days. The *Datha vamsa* narrates the touching story of Hemamala, daughter of King Guhasiva of Kalinga. She travelled with her husband, Danta Kumara, from this prominent port, carrying the sacred tooth relic of the Buddha- a journey of deep spiritual importance⁹. The renowned author of the *Periplus of the Erythraean Sea* described Tamralipti as a splendid trading hub, strategically located at the mouth of the Ganges. This vibrant city was famous for its bustling markets filled with garments made from fine, intricate fabrics¹⁰. They are celebrated for their stunning appearance and detailed craftsmanship, earning them a reputation as a jewel of ancient trade.

Hiuen Tsang described Che-li-Ta-Lo and ManikPatna as significant ports of Kalinga, located in the Wu-Ta (Odra) region. The town covered over 20 li (approximately 5 miles) and served as a hub for travellers and traders arriving by sea. Nearby, there were closely packed Buddhist monasteries with tall structures and artistic images. Hiuen Tsang visited the city and noted that from there, he could see a glowing light about 20,000 li away, coming from the Buddha's tooth relic in Ceylon. Cunningham¹¹ identified Che-li-Ta-Lo as Charitrapura and also as Puri.

Fergusson incorrectly identifies Che-Li-Ta-Lo as Tamralipti. Dr Waddel strongly disputes this, connecting it with the expansive landscapes of the Mahanadi delta. In this fertile area, a tributary of the Mahanadi is known as the Chitratola River. Although the name Che-Li-Ta-Lo no longer appears on modern maps, Waddel convincingly associates it with

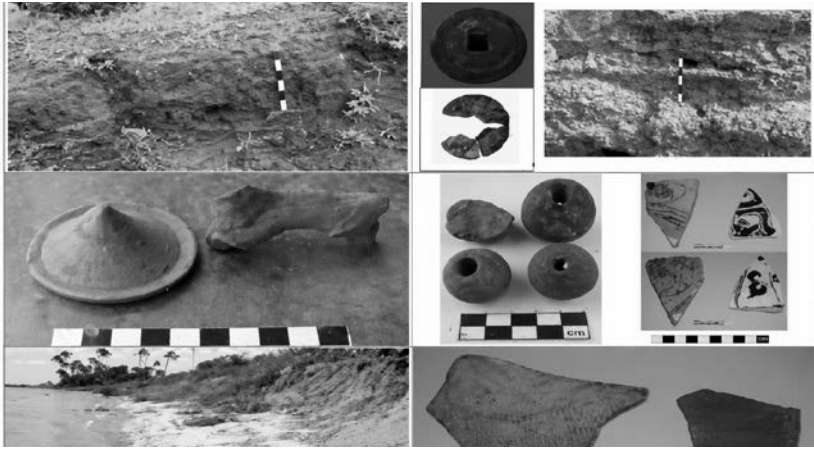
Chitratola, placing it near the small village of Nendara, directly opposite the Kendupatna lock on the Kendrapara Canal.

A stretch of sand covers the riverbed near Nendara, possibly a remnant of a former port. The identities of Puri and Nendara remain uncertain, as Nendara is located inland and does not extend to the sea, challenging claims that Ceylon was visible from there. However, Nendara is surrounded by ancient Buddhist monuments, indicating its historical significance and suggesting the ocean has receded over time. In contrast, Puri, noted by A. Cunningham, is on the shoreline but lacks nearby Buddhist relics, setting it apart from the rich history of Nendara.

K.S. Behera¹² has described Chhatragarh in the vicinity of Chilika as one of the probable locations of Hiuen Tsang's Che-Li-Ta-Lo. This is not free of problems either. Neither does the place contain a Buddhist monument, nor is it on the seashore. It is on the coast of Chilika, which has been described as a Bay of Hiuen Tsang. One of the intriguing locations proposed by scholars for the historical site of Che-Li-Ta-Lo may be near the town of Konark, nestled along the left bank of the Kushabhadra River. This coastal gem, known as Chandrabhaga, boasts breathtaking vistas where the river meets the expanse of the sea, and it is adorned with a rich tapestry of Buddhist viharas that whisper tales of ancient spirituality.

At the mouth of the Kushabhadra River lies the ancient port of Khalkattapatna, a treasure trove of archaeological wonders that some believe might hold the key to the identity of Che-Li-Ta-Lo. The revered poet Sarala Dasa, in his 15th century CE masterpiece, the *Sarala Mahabharata*, describes the river Chitratola, which once flowed to the shores of Chandrabhaga¹³, lending credence to Waddel's identification of Che-Li-Ta-Lo as Chitratola. When paired with Sarala Dasa's mention of Chandrabhaga and the excavations at Khalkattapatna,

these elements form a compelling narrative pointing toward a singular location steeped in history. (Khalkattapatna Port).



(Khalkattapatna Port)

However, when weighing these arguments, the most promising candidate for identifying Che-Li-Ta-Lo may be the modern port of Manikpatna¹⁵. Recently unearthed through archaeological excavations, Manikpatna has been confirmed as an international port from antiquity, extending toward the sea and standing almost at the shoreline. While it may lack the surrounding Buddhist monuments, its significance as a bustling port could certainly have caught the attention of the renowned traveller Hiuen Tsang.

The name Manikpatna itself is a modern designation, derived from the Kanchikaveri expedition spearheaded by Purusottam Deva, with ties to the evocative Manika-Gauduni. Thus, if Manikpatna has indeed occupied a prominent place as a port throughout the annals of history, it is likely that Hiuen Tsang himself wandered through its thriving hub, soaking in the rich tapestry of sights and sounds of this ancient maritime locale.

Sadhavas, Ship, Ship-building Techniques and religious beliefs associated with Maritime Trade activities

The Kalingan merchants engaged in overseas trade were known as Sadhavas, a term that carries rich historical significance. This term is believed to derive from 'Sadhu,' reflecting an honourable connection to the world of *byabasaya*, or business. In this context, Sadhava comes to symbolise 'honest businessmen'—individuals whose integrity and craftsmanship were as revered as their mercantile skill.

Some scholars contend that the word Sadhava derives from "*Sarthabah*," a term denoting maritime traders in Ancient India. This connection suggests that Sadhava may be a colloquial evolution of *Sarthabah*, encapsulating the essence of those early seafarers who ventured into distant waters in pursuit of trade. Regardless of their exact origins, the modern titles Sahu and Sahukar—both denoting businessmen—are undoubtedly linked to this ancient lineage, a testament to the enduring legacy of trade and commerce in the region.

The Sadhavas were not confined to a single caste; instead, they emerged from a diverse array of communities, united by their audacious spirit and financial means. A journey across the vast and treacherous seas demanded immense bravery and substantial wealth. Those daring enough to embark on such adventures were known as Sadhavas, a term that encompassed individuals from various castes who ventured into the unknown. Among these seafarers, the Vaishyas stood out, serving as a vital link in overseas trade and commerce. The lure of lucrative profits drew people from diverse backgrounds into this bustling profession, making it a melting pot of cultures and castes. This intermingling is reflected in the widespread use of the title "Sahu" among Brahmins, Kshatriyas, and

Vaishyas alike in Odisha, highlighting the cooperative spirit of those engaged in maritime pursuits.

As overseas ventures expanded, a varied group of individuals played crucial roles in their success. The Kandaras or Majhis, often from lower castes, skillfully rowed the boats with resilience. As maritime trade became more intricate, people from higher castes started to participate more, eager to join the growing commerce. Terms such as Mangaraj, Boitia, and Mahanayak appeared, indicating that Kshatriyas assumed vital roles, including as helmsmen and captains, steering through both difficult and profitable waters. This evolving caste and trade landscape illustrated a society in which bravery and ambition transcended social boundaries.

The Sadhavas, along with maritime traders, enjoyed a highly regarded position in their society, ranked just below the topmost classes. Many literary works and folk tales depict the Sadhavas as the third social stratum, beneath kings and their influential ministers. Their substantial wealth provided luxury and boosted their social standing. This affluence also enabled their sons to establish connections with the offspring of royalty and military officials, such as the prominent Rajapua, Mantripua, Sadhavapua, and Katualapua. Their social standing was so high that they frequently married into royal families, reflecting the close links between commerce and nobility. These unions thrived on the Sadhavas' wealth, which afforded access to elite circles. Yet beneath this surface of wealth and prestige, a concerning reality emerged: family relationships were often tense and fragmented.

The prolonged absences of male members on trading expeditions created significant discord within their families. Historical texts highlight how such absences led to distress for entire households. The legend of Taapoi reflects the socio-

economic impact of society's relentless pursuit of wealth through overseas trade, often neglecting the domestic strife that followed. The story of the Sadhavas serves as a reminder of the fragile balance between ambition and obligation, illustrating how the quest for prosperity can overshadow family bonds.

In the vibrant fairs and exuberant festivals of Odisha, one frequently encounters intricate representations of boats, each conveying cultural significance and artistic craftsmanship. During the Kartika Purnima celebration, delicate boats crafted from banana stems float gracefully upon the waters, creating a mesmerising spectacle. The renowned "Bada Osha" of the Sambalpur region also features intricate boat drawings, enhancing the festive ambience with its artistic flair. At the heart of this celebration lies *Boita Bandana*, a cherished tradition where devotees honour boats, recognising their vital role in maritime heritage. The *Khudurukuni Osha* is associated with the Taapoi legend¹⁶ is celebrated during the month of August /September. This was meant to welcome back the Sadhavas. During the *Khudurukuni Osha*, young, unmarried girls, or newly married women, worship the goddess Mangala as a gesture of gratitude for the safe return of their family members.

The *Chandan Yatra* of Lord Jagannath extends this connection, linking the revered deity to the art of boating. During this auspicious event, the *Chalanti Pratima*, or the representative deities, embark on a serene boating journey across the shimmering waters of Narendra Sarovara, inviting devotees to join in the experience

Historical records reveal that the Kalinga people possessed remarkable shipbuilding expertise, crafting sturdy vessels capable of transporting cargo and majestic elephants, such as those famously taken to Konark. These ships were meticulously

designed for safety and splendour, suitable for carrying royal figures, and showcasing the region's craftsmanship, as exemplified by the grand Jagannath temple.

The writings of travellers such as Fa-Hien further illuminate the scale of Kalinga's maritime prowess. According to his accounts, the ship that ferried him from Tamralipti to Ceylon was a colossal vessel, capable of vessels for accommodating 200 passengers and taking a remarkable seven days to reach its destination. Such accounts indicate that the ships were not only spacious enough to accommodate a substantial number of people but also well equipped to carry provisions for long-distance voyages.

Odisha's maritime history narrates a story of exploration, resilience, and deep-sea connection, dating back to an era when ships journeyed across vast oceans for weeks to reach distant destinations like Indonesia. The tradition of shipbuilding remains a key element of Odisha's cultural identity, blending age-old customs with innovative practices. This rich cultural tapestry is vividly displayed in local fairs and festivals, where detailed boat representations often symbolize cultural values and artistic skill. During Kartika Purnima, delicate banana-stem boats sail gracefully on water, captivating viewers. The famous *Bada Osha* festival in Sambalpur also features elaborate boat artwork, adding artistic beauty to the celebration. Central to these festivities is *Boita Bandana*, a beloved tradition where devotees honor boats, acknowledging their importance in maritime heritage.

The *Chandan Yatra* of Lord Jagannath highlights the deity's connection to boating. During this festival, the *Chalanti Pratima*, or symbolic deities, take boat rides on Narendra Sarovara, inviting devotees to join them. Historical records show that the Kalinga people were skilled shipbuilders, crafting transporting

cargo and even elephants to Konark. These ships reflected regional craftsmanship and were used for royal transport, as noted in the Jagannath temple. Travelers like Fa-Hien documented Kalinga's maritime prowess, describing voyages from Tamralipti to Ceylon. Odisha's maritime history is rich, showcasing a long tradition of exploration and resilience in shipbuilding.

Ancient shipbuilders had a deep understanding of their craft, including knowledge of various materials and the specific properties of different woods essential for building ships. *Vriksha Ayurved*¹⁷, the respected Science of Plant Life, offers detailed classifications of various woods along with their unique qualities, reflecting this wisdom. The *Yukti Kalpataru*¹⁸, authored by the renowned Bhoja, remains a timeless guide in Indian shipbuilding and is often regarded as a sacred text. It not only specifies the types of wood suitable for shipbuilding but also provides a detailed classification of ships based on size and purpose. This comprehensive knowledge likely served as a standard reference for shipbuilders across India.

In Odisha, numerous boat-building centres still operate in the coastal districts. The Balasore coast is renowned for its *clinker boats*; a regional speciality not found elsewhere on the eastern coast.

Additionally, locations such as Pathara and Nairi along the Chilka coast feature well-established centres that produce seaworthy boats.

The Kalingan traders, navigating the vast seas, were often caught in a web of uncertainty. Their voyages, marked by both promise and peril, were fraught with challenges due to their limited navigational tools and scant understanding of scientific methods. Each journey became a gamble influenced by the unpredictable forces of nature, igniting a constant

undercurrent of fear; the spectre of shipwreck loomed large in their minds.

During these turbulent times, traders found solace and confidence in their faith, seeing religion as a beacon amidst their uncertainties. Sailing was more than a trade; it held sacred significance. They invoked deities, fervently praying to various Gods and Goddesses for the safety of their ships, bountiful harvests, and successful trading ventures.

Religious rituals permeated every aspect of their maritime activities. The selection of wood for building sturdy ships was a solemn affair, often accompanied by prayers and offerings. The very act of embarking on a journey was marked by rituals to secure divine favour, while the day of return was celebrated with gratitude and devotion. Each of these moments—the initiation of a voyage, the choice of materials, and the joyous homecoming—was deeply intertwined with personal piety.



Goddess Mangala was a prominent deity among many, known by different names. She symbolized protection and prosperity, serving as a symbol of hope during traders' voyages. Their worship practices and rituals demonstrated a deep link between spiritual beliefs and the risky realities faced at sea. For Kalingan traders, the sea was more than a trading space;

it was a domain where faith and the physical world blended, nurturing their ventures through uncertain waters.

Colonization in South and Southeast Asia and Odia Asmita in Foreign Lands

The spread of Indian culture to Southeast Asia, China, and Japan stands out as a significant historical achievement. Often referred to as Greater India or Further India, this cultural exchange involved large-scale migration and has left a lasting impact on the identities of both regions. Recently, scholars have debated the nature and process of Indianization in Southeast Asia, with historian G. Codes noting that Indian trade in Southern Asia dates back to the early Christian era, marking an important period of economic interaction.

Chinese literary sources indicate a close relationship between Odisha and China in the early 8th century CE. Subhakara Simha, a renowned scholar from Odisha, visited the Chinese emperor's court and translated a Buddhist text into Chinese. Additionally, in 795 CE, the monk Prajna brought a Buddhist manuscript autographed by the Wu-Che king, often identified as the Bhaumakara monarch Sivakara Deva.

On the other hand, G. C. Berg advances a more aggressive view, arguing that the dissemination of Indian culture in Southeast Asia was largely facilitated by Indian warrior emigrants. These individuals, through their conquests and the establishment of political dominions in the region, played a crucial role in embedding Indian cultural elements within local frameworks.

F.D.K. boch suggests that Indian influence in Indonesia was mainly driven by local initiative rather than outright imposition from India. He believes that Indonesians willingly adopted Indian cultural elements for their own reasons. This view

underscores the complexities involved in cultural exchange during Southeast Asia's Indianisation process. Likewise, the Greater Indian theory, promoted by historians H. Kulke and D. Rothermund, emerged during the Indian independence movement to reaffirm India's historical importance and to argue that India could have established colonies in antiquity, challenging the notion of India as solely a colonial victim.

Established in Calcutta in 1926, the Greater India Society played a key role in promoting this theory, aiding discussions on India's historical reach beyond its borders. R.C. Mazumdar, a prominent figure, supported this idea by publishing comprehensive studies of ancient Indian colonies in East Asia. However, in recent times, numerous scholars across Southeast Asia have challenged the theory, questioning its accuracy and significance. They advocate for a more nuanced understanding of the region's historical connections.

The evidence for any direct political influence from India in South-East Asia is notably sparse. Typically, one would expect a conquering prince or his successors to commemorate their achievements through inscriptions etched in stone or other enduring materials. However, the absence of such records raises questions about the nature of the connections between these regions and India.

Instead, what stands out are the Sanskrit names taken on by the rulers of various South-East Asian kingdoms. These names indicate that these monarchs were more inclined to adopt Sanskrit cultural and linguistic elements in their identities than to directly borrow the names of specific Indian rulers. This trend highlights a complex interaction of cultural exchange rather than straight forward political domination.

Furthermore, the Vaishya theory offers a compelling explanation for Indian colonisation in this region. It suggests

that Indian traders and merchants—mainly from the Vaishya, or business, class—played a key role in spreading Indian culture, religion, and social structures across South-East Asia, rather than the influence being solely due to military conquest. This approach provides a more detailed understanding of how Indian influence gradually integrated into these societies.

Trade played a vital role in early interactions among diverse cultures. Indian merchant guilds established trading outposts in Southeast Asia, facilitating economic transactions and cultural exchange. Although one might expect Hindu civilisation to flourish along the coast due to trade, evidence indicates that significant centres are located in Indonesia's interior. Notable examples include the lush Kedu plain and the culturally rich Prambanan plains in Java, reflecting the complex interplay of trade, cultural diffusion, and geography.

The Brahmins, along with Buddhist and Jain monks, were instrumental in spreading Hindu culture throughout Southeast Asia. They were not only religious scholars but also well-versed in ancient texts like the *Dharmasastras*, *Arthasastra*, and *Silpasastra*. Serving as spiritual guides and advisors to local rulers, they helped shape governance and improve administrative systems. Their influence fostered a rich cultural synthesis that integrated local traditions with Indian wisdom, contributing to the development of unique languages and administrative practices that continue to resonate today.

J.C. Van Leur, a prominent Dutch scholar, was the first to emphasize the significant role of the Indonesian element in historical processes. He brought attention to the remarkable skill and bravery exhibited by the Indonesian people throughout their history. The earliest inscriptions from Indonesia reveal that trade, agriculture, and craftsmanship flourished long before significant external influences emerged in the region.

Indonesian rulers actively promoted cultural exchange by inviting Indian Brahmins, encountered via traders, to their courts. These Brahmins facilitated the spread of Indian culture, customising it to local contexts and enriching Indonesian society. Early colonisation efforts by India were inspired by Kalinga, with a prince reportedly dispatching 20,000 families to Java, leading to prosperous settlements. Evidence shows that Kalinga rulers also controlled parts of Ceylon and established dynasties there. Prominent Ceylonese kings such as Vijaya and Nisanka Malla had Kalingan origins or royal connections, which shaped political and cultural developments in Java and Ceylon and fostered enduring cross-cultural relations.

In the heart of central Java existed a prominent Hindu kingdom known to the Chinese as “Holing” or “Kalinga.” This kingdom played a significant role in the cultural and political landscape of Southeast Asia. Nearby, the capital of present-day Burma, known today as Prome, was historically referred to as Srikshetra for a considerable period, reflecting its status as an important urban center.

The Sailendras were the most famous dynasty to rule Sumatra, known for their architectural and cultural accomplishments. They coexisted with the Sailodbhavas of Kalinga, and some researchers propose they might be related. This possible link shows a complex web of connections among these dynasties, impacting trade, culture, and politics. The Kalinga community was crucial to the history of Greater India, managing important maritime routes that enabled vibrant cultural interactions throughout the region.

Traders relied on the monsoon seasons for voyages, using a land route through north-eastern India to South and South-East Asia. The Odia people established Odia Asmita across South and South-East Asia, with Odisha's ports facilitating

trade with Myanmar's Menam Valley. Notably, merchant brothers Tapassu and Bhallika from Okkalaba became the first disciples of the Buddha, bringing his hairs to be enshrined beneath the Shwe Dagon Pagoda in Yangon. By the 5th century CE, Buddhism had significantly influenced Myanmar's culture, especially the Theravada sect. Gold plates inscribed with Pali texts were discovered at Maunggan, and Eastern Indian teachers often visited Myanmar to teach Pali. Mahayana and Tantric Buddhism also spread from Odisha and Bengal.

Hinduism is practised in Myanmar, with influences evident in the region's names and culture. The ancient Pyu people had their capital at Sriksetra, named after Puri. The area between Yangon and Pegu was known as Ukkala, while the Mons, or Talaings, settled in lower Burma, creating Ramannadesa with Triglypton as their capital.

There are notable connections between the two regions in art and architecture. For instance, hairstyles and clothing reflect the Odishan style, and bas-reliefs on pagodas resemble early medieval Odishan art. The Ananda Temple, built by King Kyan Zittha (AD 1048-1113), mirrors the Hara Parvati of the Vaital Temple in Bhubaneswar. This temple features terraces, spires, and latticed windows characteristic of Odishan design. Additionally, eighth-century coins bearing symbols such as Nandi and Trisula are reminiscent of the Ganga empire of Kalinga.

The pottery of Sisupalgarh in Odisha bears similarity to bronze vessels from Thailand, indicating pre-Christian contacts, while excavations at Don Ta Phet revealed semi-precious stones and glass beads, further supporting this cultural exchange.

In ancient Odisha, elephant tusks were significant trade items. An Indian ivory comb from the Chansen area of Thailand features a Srivatsa motif similar to the Hathigumpha inscription

of Kharavela. The Thai royal ploughing ceremony resembles Odisha's Akshaya Trutiya festival, marking the agricultural cycle around April or May. Another Thai festival, Loi Krathing, introduced during King Rama Khamheng's reign, involves floating boats with candles, akin to Odisha's *Boita Bandana*. Additionally, the worship of Mal Kongka in Thailand parallels the veneration of Khambeswari in Odisha.

The Brahmanical religion was dominant in Campa, with a focus on the worship of the Hindu trinity. Sakti worship was also common there. Campa was known as a Hindu temple city because of its eight temples. Saivism and Vaisnavism gained popularity in Cambodia, with Kaundinya introducing Siva worship. By the 5th century CE, Siva was worshipped under various names like Bhadresvara, Girisa, Tribhubaneswara, and Maheswara. Gunavarman, the son of the Funanese king Jayavarman (484-514), honoured Visnu's footprints and built the Chakratirthaswami Visnu temple at Thap-Moi in the plain of Des Jongs. Puri is called Chakratirtha, and Lord Jagannatha is known as Chakratirthaswami.

In everyday life, rituals, customs, and public ceremonies continue to reflect Indian influence in Laos. The architecture of That Luong closely resembles that of medieval temples in Odisha. Similarly, the pillars of Wat Phra Keo reflect Odishan stylistic elements. In language, script, and literature, Sanskrit and Pali have had a significant impact. Many Lao words derive from Indian origins, including Kumara, Sri, Rusi, Shanti, Pranam, Champa, Sabha, and others. Certain similarities with Odishan customs are evident in rituals performed at birth and death in Laos¹⁹. After the death of a family member, the rest perform rituals in the presence of a Brahmana.

The buffalo sacrifice at *Wat Phu* may have been influenced by the custom of animal sacrifice in some Odisha temples. In

the Baisi ceremony, the chief, called Brahma, is chosen from the village elders and performs Buddhist and Hindu rites on occasions such as the New Year, the arrival of important visitors, and marriages. The form of greeting to learned persons and religious teachers is by joining hands at the level of the heart, which is very much akin to *Pranam*. Even the habit of betel chewing evokes this common practice prevalent in Odisha and other parts of India.

Borobudur, a significant example of Javanese art, is a large Buddhist stupa built between 778 and 824 CE by King Visnu and Samartunga. It features nine terraces and a central bell-shaped stupa, with Buddha sculptures similar to those from Odisha. Located between Java and Lombok, Bali exhibits strong Indian cultural influence, as evidenced by discoveries such as Indian rouletted ware in Sembiran. As trade expanded, Hinduism, including the worship of gods such as Siva and Vishnu, became more prevalent. Sanskrit slokas blended Buddhism and Saivism, reflecting a mythological tradition in which Siva and Buddha are regarded as brothers. Daily rituals often include addressing God as Jagannatha, showing links to Odisha and Southeast Asia.

Conclusion

Odisha engaged in maritime voyages to establish trade relations with distant lands, particularly Southeast Asia, exporting commodities such as elephants, textiles, and diamonds²⁰. This led to the spread of Odisha's culture. Archaeological surveys in western Odisha are needed to determine if semi-precious stones were mined and exported in ancient times. At Sisupalgarh, 180 beads were discovered, including materials like carnelian, onyx, and glass. Recent findings highlight the presence of various precious and semi-precious stones such as diamonds, rubies, and garnets in western Odisha²¹.

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Revisiting The Maritime World of Late Medieval Odisha

Lakshmi Narayan Raut

Maritime history generally refers to the study of human interactions with the sea and the oceans in relation to trade, navigation, exploration, and the life and culture of coastal communities, as well as cultural exchanges overseas. It also includes the study of shipbuilding techniques, climatology, sea routes, naval power, and warfare.

Situated on the shore of the Bay of Bengal and possessing all the advantages necessary for the development of maritime activity, ancient Odisha, or Kalinga, was known across the world from time immemorial for her material culture, art, architecture, sculpture, religion, folklore, fairs and festivals, and, above all, the Odishan knowledge system.

With respect to the ancient period, Odisha's maritime culture, overseas connections, cultural exchanges, and shared maritime traditions have already been studied in considerable detail on the basis of classical texts, literary sources, archaeological and sculptural evidences, and foreign accounts. Here, an attempt is made to focus on certain aspects of the maritime world of late medieval Odisha as reflected in indigenous and foreign sources.

Medieval Odisha may be studied in two distinct phases, namely: (i) the early phase, which includes the period of the Hindu ruling dynasties spanning the seventh to the fifteenth centuries CE; and (ii) the late phase, which includes the period of Afghan and Mughal rule over Odisha, that is, between the sixteenth century and the first half of the eighteenth-century CE.

Under the influence of the Renaissance and the geographical discoveries of the fifteenth century CE, the nation-states of Europe were inspired by a new spirit of adventure in distant and hitherto untrodden lands. This brought the traders of those countries into direct contact with India. The Portuguese, the first to arrive, were followed by the Dutch, the English, and the French, all of whom established trading settlements in different parts of India. The emergence of ports and the establishment of European commercial settlements on the eastern coast of India during the late medieval period substantially enriched its maritime heritage and commercial culture.

Ports and European Settlements on the Odisha Coast

The Portuguese

The Portuguese were the first to establish commercial settlements at Pipli on the coast of Odisha in 1514 CE.¹ Francisco Pelseart, William Bruton, and Thomas Colley described Pipli as a famous port town. It is not known whether they obtained any sanad from Prataprudra Deva, the then Gajapati ruler. It appears, however, that the Portuguese took advantage of the prevailing political confusion and established themselves at Pipli, situated about four miles from the mouth of the river Subarnarekha. Prataprudra Deva, being by nature both generous and religious-minded, was constrained to accept the fait accompli. According to the statement of Pies, the Portuguese traveller, "he, the Raja of Orissa was sympathetic to foreigners." In 1636, the Portuguese obtained permission from Mutaqad Khan, the Nawab of Cuttack, to establish an additional residency at Pipli. Pipli flourished as an important European commercial settlement, and the Portuguese monopolised trade on the coast; their fleet commanded the entire seaboard from Chittagong to Odisha for nearly a century, that is, from 1514 to 1615 CE.² After establishing themselves at Pipli,

the Portuguese searched for other footholds for the expansion of their trade. They moved further northwards and founded a settlement at Hijli, situated at the mouth of the Rusulpur river. The exact date of their settlement at Hijli is not known. However, Ralph Fitch, De Laet, F. S. Manrique, and Peter Mundy mention Hijli as an important port of trade. The Portuguese settlement at Balasore, situated on the river Barabalanga, has been dated to 1625 by J. J. A. Campos.³ It appears that Pipili could not, in commercial terms, play as important a role as Balasore did. S. Master informs us that in December 1676 the English leased the land on which the Portuguese houses at Balasore were situated.⁴

The Dutch

The Portuguese monopoly of trade was challenged by the Dutch, who entered the Bay of Bengal and handled a considerable amount of commerce in Odisha from their factories at Pipli, Balasore, and Harispur (Harishpurgarh), situated at the mouth of the river Patua, as well as from ports on the Gingelley coast extending from Jagannath (Puri) to the Godavari delta.⁵ The exact date of the Dutch arrival in Odisha has yet to be definitively established. Thomas Bowery observed that the Gingelley coast was "commodious for navigation's sake enjoying many pleasant and good harbours."⁶ As the factory records indicate, the Dutch carried on considerable trade from the ports of the Gingelley coast. Another important centre of Dutch commerce was Pipli. The actual date of the arrival of the Dutch factors at Pipli is 1626, more than a century after the arrival of the Portuguese. In 1636–37, the Dutch shifted their trade from Hugli to Pipli because of impediments created by the local governing authorities and the existing monopoly of trade. At Pipli they also faced opposition from Muslim merchants. By obtaining grants from

the emperor, the Dutch succeeded in making the Pipli factory their “stable and profitable concern” by 1639. Their trade at Pipli flourished. John Marshall, writing of the years 1668–1672 Ce, described this factory as a “handsome” one.⁷ The Dutch seem to have demolished their factory at Pipli by 1676 Ce.⁸ Campos opined that the Dutch opened trade at Balasore in 1625, but he cited no authority in support of this view. The Dutch settlement at Balasore was less advantageously situated than that of the English, who established themselves there in 1633. However, S. Master, in 1676, referred to the Dutch factory at Balasore as a “handsome square building.”⁹ By 1676, Balasore had emerged as one of the six factories under the Directorate of Bengal, and the chief of the factory was Vankewell.¹⁰ Another Dutch centre was Harishpur (Harishpurgarh). Peter Mundy refers to Harsepoor as a port.¹¹

The English

The establishment of English trading settlements in Odisha dates back to the 1630s of the seventeenth century Ce. Regular English attempts to open trade with Odisha and Bengal seem to have commenced with the voyage of the Hopewell in July 1631 under the charge of Thomas Robinson, who had been sent from Masulipatam to Pipli. Owing to difficulties in crossing the bar at Manikpatam, however, they returned to Masulipatam. The second venture, undertaken by the ship Pearl in August 1632, proved no more successful. The acute scarcity of cloth and provisions caused by war, pestilence, and famine; the high cost of food grains in Masulipatam; the general scarcity of piece-goods caused by the mortality of weavers in Gujarat and the Deccan; and the complete expulsion of the Portuguese from Hugli in September 1632 encouraged the English to undertake further ventures in maritime trade in Odisha and Bengal by establishing factories in ports and commercial

centres. The opportunity for conducting lucrative private trade was an additional incentive.

John Norris, the English Agent at Masulipatam, sent a party of eight Englishmen northwards in search of trade facilities. The group consisted of two merchants—Ralf Cartwright, the leader, and Colley—and six sailors, one of whom was William Bruton, quarter-master of the ship Hopewell. Expecting rich profits, they took a country junk, a locally manufactured boat, sailed along the Odisha coast, and anchored at Harssappore (Harispurgarh), situated in the extreme south-east of Cuttack district at the mouth of the river Patua, on 21 April 1633. Here they encountered Portuguese opposition; thereafter, passing through Kosida, Balikuda, Benahara, and Jagatsinghpur, they reached Cuttack with their belongings and merchandise. Cartwright and Bruton met the governor of Odisha, who resided at Malcandy (Mukanda Deva's palace) in Fort Barabati. They carried presents for the then governor, Mutaqad Khan (Mirza Maki, 1632–1641), in order to obtain permission for customs-free trade in Odisha. The English merchants succeeded in procuring a parwana, dated 5 May 1633, from the Mughal governor granting them the right to trade free of all customs, to purchase land, to erect factories, and to build or repair ships in the province of Odisha.¹² From Cuttack, the English proceeded to Hariharpur, situated near present-day Jagatsinghpur, and began trade operations there. William Bruton described Hariharpur as “very full of people, six or seven miles in campus, containing many merchants and plenty of all things and at least three thousand weavers that are house-keepers, besides all other that do work, being bound or hired.”¹³ Leaving Colley in charge of Hariharpur, Cartwright, along with two other Englishmen, Edward Peterford and William Withal, left for Balasore on 16 June 1633 and established a factory there

at the invitation of Mir Qasim, the governor of the district.¹⁴ The governor granted the English 12 batis of land in the present Barabati area, which was then rising into an important port.¹⁵ Cartwright founded the principal factory in Barabati, protected on one side by the river Barabalinga and on the other sides by moats. Until the 1690s, there is no reference to the foundation of any other English factory in Odisha. The English also attempted to establish a factory at Ganjam, for which the initiative came from the Chief and Council at Vizagapatam. The authorities of Fort St. George observed in 1694 that the Company had forbidden the establishment of any such settlement. Yet it appears that in 1747–48 John Andrews was acting as President at the Ganjam factory, which had become an important English commercial settlement with a resident, a council, artillery, and troops.¹⁶ As regards the Cuttack factory, we have no details prior to 1708. Alexander Hamilton, writing in 1708, informs us that the English had a “fine factory” there and that its walls were still standing during his visit to that place.¹⁷ The English also had a factory at Balaramgarh, nine miles east of Balasore. Owing to Maratha depredations near Balasore, the English shifted their factory from that place to Balaramgarh in 1794.¹⁸ There has been disagreement among scholars regarding the establishment of an English factory at Pipli. It appears, however, that English ships did go there on commercial missions. In addition, the English maintained trade relations with the ports of the Gingelley coast, extending between Godavari and Jagannath Puri.

The Danes

The Danes attempted to found a factory at Balasore in 1633 and succeeded in establishing their trade centre there in 1636. The settlement consisted of about seven acres of land and came to be known as Dinemardanga. Ships of considerable burden

arrived there annually from Europe.¹⁹ In spite of difficulties at home, the irregular arrival of ships in the Bay for commercial purposes, and the troubles they faced from the local governor and the Mughal authorities, the Danes continued their trading activities at Balasore. Through the efforts of Wilke Wygbert, the chief of the Danish factory, the Danes secured in 1676 a *parwana* from Nawab Shaista Khan for customs-free trade in Odisha and Bengal; its provisions were similar to those of the *parwana* granted to the English.²⁰ However, the trade of the Danish company did not prosper to the same extent as that of the other European companies, the principal reasons being the lack of support from the home government and continued conflict with local authorities until the seventies of the seventeenth century Ce

The French

The first attempt to establish a factory in 1673 was unsuccessful because the French ship *Flamond* was attacked and captured by the Dutch. The *parwana* granted by Shaista Khan to the French in 1674 for trade in Bengal and Odisha was also of little use because the Company's condition at the time was too weak to take advantage of the opportunity. Nevertheless, in expectation of assistance from the French East India Company for the establishment of trade settlements, Duplessis acquired sites for settlements at Decca, Kasimbazar, Hugli, and Balasore.²¹ A fresh attempt was made by Desland, Director of the French Company in Bengal. He obtained a farman from Aurangzeb in 1693 for trade in Bengal, Bihar, and Odisha. Customs were to be paid at the rate of three and a half per cent. To secure this grant, the French had to pay Rs. 50,000 to the emperor and Rs. 10,000 to the governor of Murshidabad.²² In the absence of an exact date, it is presumed that the French founded their settlement at Balasore after 1693 Ce In comparison with the

factories of other European powers, however, it was of minor importance, though within Odisha it remained the principal French centre. During the period of Maratha raids (1712–1751 Ce), they had to evacuate the Balasore factory in 1744 Ce, and after 1765 they discontinued regular trading operations. Only private merchants continued some business. The French maintained the factory chiefly for the despatch of letters from Bengal to Pondicherry. Although we do not have detailed information, the French also maintained a subordinate factory at Mohanpur, a village in Midnapore district.

The Ostend Company

The trade of the Ostend Company of Austria in Odisha was negligible. In June 1719, the first Ostend ship came to Balasore for trade under the French flag. In 1726, Khwajah Saffur (Safar), described as an American merchant, introduced the Ostenders to the *faujdar* of Balasore, who permitted them to build a factory there. We possess only limited information about the activities of the Ostenders in Odisha.²³

European Companies and Trade Privileges

For the conduct of trade and commerce in India, the European companies needed to secure official permission. In order to obtain exemption, in part or in full, from customs and transit duties, and also to remove administrative obstacles, the companies repeatedly sought *farmans* from the emperors, *nishans* from the princes, *parwanas* from the subahdars and other officials, and *dastaks* from the *diwans*. Although such grants often provided only temporary relief, they were indispensable. The factors and officials of the companies, in pursuit of these permissions, had to offer presents and even bribes, and often entered into competition with one another before different authorities.

As already mentioned, the Portuguese were the first to open trade with Odisha during the second decade of the sixteenth century. Although we have no information regarding their having obtained any *sanad* from the then Gajapati ruler, Prataprudra Deva, they nevertheless succeeded in establishing their commercial settlement at Pipli. In 1636, the Portuguese obtained permission from Mutaqad Khan, the Nawab of Cuttack, to establish an additional residency there. For Portuguese trade in Odisha during the sixteenth century, however, no further recorded permission has come to light.

For the conduct of trade, the Dutch obtained a considerable number of *farmans* and *parwanas* from the Mughal emperors, provincial governors, and other officials. The known grants relating to Odisha and Bengal are: (i) *Farman* of Aurangzeb, 1662; (ii) *Parwana* of Rashid Khan, 1674; (iii) *Parwana* of Ziaullah Khan, 1708; (iv) the joint *Parwana* of Farrukhsiyar, Sarbuland Khan, and Ziaullah Khan, 1708; (v) *Parwana* of Farrukhsiyar, 1708; (vi) *Farman* of Bahadur Shah, 1708; (vii) *Farman* of Jahandar Shah, 17012; (viii) *Farman* of Farrukhsiyar; (ix) *Parwana* of Murshid Quli Khan; (x) *Farman* of Muhammad Shah, 1729; (xi) *Parwana* of Shujauddin Muhammad Khan, 1730; (xii) *Parwana* of Qamruddin Khan, the grand wazir of the empire, 1737; and (xiii) *Parwana* of Alivardi Khan, 1744. It may be noted that the *Farman* of Farrukhsiyar and the *Parwana* of Murshid Quli Khan mentioned above are implied in the *Parwana* issued to the French in 1722. The French, in fact, petitioned Murshid Quli Khan for trade privileges similar to those enjoyed by the Dutch.²⁴

The English were the most successful in procuring trade privileges from the Mughal authorities. They obtained three *farmans*, three *nishans*, sixteen *parwanas*, and one *dastak* relating to Odisha and Bengal. These were: (i) *Parwana* of Mutaqad Khan, 1633; (ii) *Farman* of Shah Jahan, 1650; (iii)

Nishan of Shah Shuja, 1651; (iv) *Nishan* of 1656; (v) *Parwana* of Mir Jumla, 1660; (vi) *Parwana* of Shaista Khan, 1664; (vii) *Parwana* of Tarbiyat Khan, 1668; (viii) *Parwana* of Safi Khan, 1671; (ix) *Parwana* of Saf Shikhan Khan, 1672; (x) the second *Parwana* of Shaista Khan, 1672; (xi) *Parwana* of Rashid Khan, 167 Ali Rz4; (xii) *Parwana* of Mirza Muhammad Saleh, 1678; (xiii) *Nishan* of Prince Azam, 1678; (xiv) *Farman* of Aurangzeb, 1680; (xv) *Parwana* of Shaista Khan and Haji Safi Khan, 1682; (xvi) *Parwana* of Safid Muhammad Khan, 1682; (xvii) *Parwana* of Ibrahim Khan, 1691–2; (xviii) *Dastak* of Ali Reza, 1700; (xix) *Parwana* of Sarbuland Khan, 1709; (xx) *Parwana* of Khan Jahan Bahadur, 1712; (xxi) *Parwana* of Murshid Quli Khan, 1714; and (xxii) *Farman* of Farrukhsiyar, 1717.²⁵

Of the trade privileges granted to the Danes we possess little information, although they began commercial operations in the thirties of the seventeenth century Ce As is evident from the English factory records of 1676, Shaista Khan issued a *Parwana* to the Danes, and its provisions were similar to those of the *parwana* granted to the English.²⁶ The grant entitled the Danes to trade in Bengal and Odisha free of customs duties.

The French, as noted, entered into trade in Odisha during the seventies of the seventeenth century Ce They also obtained several privileges from the Mughal authorities for the smooth conduct of trade. These included: (i) *Parwana* of Shaista Khan, 1674; (ii) *Farman* of Aurangzeb, 1693; (iii) *Parwan* of Ibrahim Khan and Kefayet Khan, 1693; (iv) *Parwana* of Ibrahim Khan, 1694; (v) *Nishan* of Muhammad Azim-us-Shan, 1698; (vi) *Parwana* of Shaik Arab Khan, 1699; (vii) *Farman* of Farrukhsiyar, 1718; and (viii) *Parwana* of Murshid Quli Khan.

The Ostend Company

As already pointed out, the Ostend Company had only a very limited trade presence in Odisha. In 1726 Ce, the *faujdar* of

Balasore permitted the Ostenders to erect a factory. Beyond this, no further information regarding their expansion is available to us.

It is important to observe that European maritime activity in Odisha, Bengal, and Bihar—that is, eastern India—rested on the procurement of trade privileges. These provisions generally included: (i) permission for the erection of factories; (ii) payment of customs duties—normally three and a half per cent, and in some cases specially two and a half per cent—“according to the ancient use” for carrying merchandise to any place, and sometimes on an annual payment of Rs. 3,000 by the companies; (iii) in some cases, permission for factors to carry on trade without payment of customs duties; (iv) the grant of the right to mint coins at certain places; (v) instructions to local and subordinate officers not to hinder trade by demanding customs and anchorage charges, but rather to assist the factors in the smooth conduct of trade; and (vi) repeated confirmation of privileges already granted to the companies.

In spite of the fact that the European trading companies had official permission, trade in this region was not smooth and remained attended by difficulties. Rivalry among the companies for monopoly, impediments in the transport and passage of merchandise by ship, extortion by local merchants, and heavy bribery for repeated confirmation of privileges all affected the conduct of commerce

A review of the trade privileges obtained by the European companies shows that, for the smooth conduct of trade and in order to escape the vexatious demands of various taxes imposed by local Mughal officials, all the companies had to secure official permissions in the form of *farmans*, *parwanas*, and *nishans* from the imperial and provincial authorities, as

applicable. Bribery, or the offering of presents, appears to have been a common feature. Factories were established at places readily accessible to their ships. The nature of exported and imported commodities remained broadly similar across the companies. All European factors relied on local merchants for collecting merchandise from the places of production. The system of giving *dadnis* for procuring required commodities worked effectively in late medieval Odisha. The European factors financed their purchases by importing European goods and bullion or rials of eight, by utilising the profits of Asian trade, and by resorting to local borrowings. Both currency and barter continued to operate during this period.

Internal Trade

Odisha, with her agrarian and industrial surplus, carried on extensive intra-provincial, inter-provincial, and foreign trade during the late medieval period. Rice, being cultivated in abundance, formed the major item of export from Odisha to different parts of India as well as to regions outside India. Balasore, together with the ports of the Gingelley coast, emerged as major rice-exporting centres. There was a regular supply of rice to Bengal, Masulipatam, Pulicat, Narsapur, and Fort St. George. Other principal items of export from Odisha were butter, sugar, turmeric, saltpetre, cotton yarn, tafetas, raw silk, sannoes, tincall, coarse oil cloth, and gingelley seed (sesame seed). Gingham, millas, iron, stone dishes, stone cups, copper pipes, salt, grains, ginger, sandalwood, long pepper, short pepper, and brass plates were also exported from Odisha.

It is worth referring here to some evidence concerning the export of commodities from Odisha. Rice and paddy were important items transported in seven *junks* (large eastern ships) from Odisha to Masulipatam in February 1629.²⁷ Rice

was one of the commodities that the English ship Thomas carried from Balasore to Masulipatam and the adjacent regions in March 1634. In the fifties of the eighteenth-century CE, rice continued to be one of the articles exported from Odisha to Bengal. In 1679, S. Master, then Agent of the English at Fort St. George, found on the river near the Dutch factory at Narasapur many vessels engaged in the rice trade of Gingelley.²⁸ Rice was also exported to Modapallam, a suburb of Narasapur. The English factors from Balasore exported rice to Fort St. George. Gram was another article exported from Odisha to Fort St. George. Job Charnock, the English factor, proposed to despatch a ship laden with merchandise of which gram was one.²⁹ From Odisha, butter and gingelley seed were exported to Pulicat and Masulipatam.³⁰ In March 1634, the English ship Thomas carried sugar worth 4000 *pagodas* (a gold coin of South India) from Balasore to Masulipatam.³¹ Odishan cloths, namely *cassas* (plain good-quality muslin), *ambarees* (linen striped with white silk), *hammams* (cloth of thick stout texture), *sannoes*, *gingghams*, *oramals* (rumals), and cotton yarn, found favourable markets in Bihar and Golconda.³² Ahmedabad imported women's clothes from the eastern provinces, including Odisha, during the twenties of the seventeenth century CE.³³ Another item of export to Bengal and Patna was salt.³⁴ In the fifties of the eighteenth century CE, iron and stone plates were exported to Bengal.³⁵ Some European commodities, such as lead and broadcloth, brought by the English to Balasore were sent to Patna for sale in the thirties of the seventeenth century CE.

There are references to the import of rice and tobacco from Bengal, salt and spices from Pulicat, and saltpetre from Patna. The import of rice in the middle of the eighteenth century may have been due to exceptional circumstances caused by Maratha invasions. Schorer, a Dutch factor at Masulipatam

(1608-1614), refers to the import of salt into Odisha in the early seventeenth century CE. As we know, Odisha exported salt to other parts of India in the middle of the same century. Saltpetre was imported into Odisha from Patna and exported onwards to Europe for military purposes. In the mid-seventeenth century, the Dutch used to import saltpetre from Patna and its neighbourhood to Pipli, where they refined it before exporting it to Europe. The English reported in 1659 the import of saltpetre to Balasore.³⁶

External Trade

Odisha's maritime commercial geography during the late medieval period extended to many countries of Asia and Europe through the participation of five European trading companies. The factors controlled the whole of external trade by establishing contact with the merchants and producers of different articles of investment in Odisha. The sixteenth, seventeenth, and first half of the eighteenth-century CE may thus be regarded as the period of their dominance.

Cesar Frederike, writing in the sixties of the seventeenth century CE, mentioned that every year in the ports of Odisha about twenty-five or thirty ships, both large and small, were laden with rice, various kinds of "bombast clothes" (cotton wool or cotton cloth), gingelly oil, large quantities of butter, lacca (lac), long pepper, ginger, mirabolans, and large quantities of herba cloth. F. S. Manrique informs us that Odisha was one of the twelve kingdoms of "Bengala" much frequented by foreigners, and that more than one hundred vessels were loaded every year in the ports of "Bengala" with rice, sugar, oil, wax, and similar articles.³⁷ However, both travellers are silent about the destinations and sizes of these vessels. From the ports of Balasore and Pipli, as many as twenty-six foreign sailing ships were recorded in the season 1634-1644. Details

regarding their destinations, tonnage, and merchandise are not given.

The maritime activities of Odisha during the period under review extended to countries such as Persia, the Maldiv Islands, Malaysia (Junk-Ceylone or Janselone, and Malacca), Burma (Pegu and Tenassarim), Indonesia, Sumatra, Batavia, China (Macao), and Ceylone in Asia. Her trade contact with Europe extended to the ports of England. With regard to St. Helena in Africa, however, we have only a single reference, which does not clearly establish that trade with St. Helena was a regular feature of medieval Odisha.

The Portuguese traders brought from Malacca and Macao spices, woollen cloth, tin, lead, quicksilver, and vermilion, and purchased at Pipli many kinds of white cotton cloth, muslin, butter, rice, gingelley seed, and similar goods. Further, the Portuguese and the Arakanese pirates carried on slave trade. They were accustomed to sell slaves at Pipli, and boys or other persons brought through this port were sold in far-off countries.³⁸

Odisha maintained trade contact with Malacca and Junk-Ceylone (Janselone) by sending articles such as butter, oil, and gingelley seed. The Portuguese from Biplibundar (Pipli) carried butter and gingelley seed to Malacca in the twenties of the seventeenth century CE³⁹ Butter and oil also reached the Junk-Ceylone islands from the coast of Gingelley during the seventeenth century CE⁴⁰

Ralph Fitch, who travelled in eastern India in 1585-1586, informs us about the export from Odisha of rice, sugar, butter, cloth, and long pepper. Ships from Sumatra came to the port of Hijli and carried to Sumatra large quantities of rice, sugar, butter, and cloth of "cotton wool."⁴¹

Odisha had extensive maritime contact with the Maldivian Islands. Alexander Hamilton, writing in 1708, observes that the Maldives had to depend on Odishan rice, as it was not produced there. He further informs us that Odisha supplied butter and cloth to the Maldives. In the eighties of the eighteenth-century CE, Abbe Raynal refers to the export to the Maldives of rice, coarse cloths, and some silk stuffs.⁴²

Odisha imported cowries and coir from the Maldivian Islands. Ibn Batuta (1333–1346) refers to the import of cowries from the Maldives to Bengal.⁴³ T. Bowery (1666–1679) informs us that six or seven ships belonging to the Nawab of Bengal and the merchants of Balasore, Pipli, and Hugli went every year to the Maldives to bring cowries and coir. A parwana issued by the king of the Maldives mentions that the Dutch at Balasore enjoyed, between 1740 and 1772, exclusive privileges in the trade of cowries brought there by Maldivian merchants.⁴⁴ As is well known, cowries circulated as money in medieval Odisha; the region therefore depended on the Maldives for their supply.

Rice and muslin constituted important items of export to Pegu and Tenassarim from the ports of Pipli and Balasore. Odisha imported elephants and lead from Tenassarim. Thomas Bowery informs us that the ships belonging to the Nawab of Bengal and the merchants of Balasore, Pipli, and Hugli went every year to Tenassarim to bring elephants.⁴⁵ Khemchand, a merchant of Odisha, brought a considerable number of elephants for trade at Balasore in 1680.

The king of Siam maintained a trading unit at Balasore for commercial purposes. The factors sent by him in 1672 carried on trade in elephants and lead. They kept a large stock of lead in the Balasore factory, which was purchased by merchants. In 1679, two great ships of the king of Siam brought elephants from Tenassarim to Balasore.⁴⁶

The maritime connection between India and Ceylone is well known from ancient times. During the period under review, Ceylone received supplies of rice from Odisha. Thomas Bowery mentions that ships of considerable burden were plying from the ports of Balasore and Pipli on trade missions to Ceylone. Odisha, as Bowery further noted, imported elephants from Ceylone. In the forties and sixties of the seventeenth century CE, the Dutch factors exported rice from their factory at Pipli to Ceylone. Streynsham Master and his associates found, on 9 September 1679, two ships from Jafnapatam in Ceylone unloading elephants at Balasore. Other articles imported from Ceylone included elephant tusks, areca nuts, cinnamon, and conch shells.⁴⁷

In the seventeenth century Ce, Odisha exported rice and muslin to Achin.⁴⁸ There is only one reference to the supply of rice from Odisha to St. Helena. In 1676, the English authorities at Balasore made arrangements to send rice to St. Helena.⁴⁹

The Dutch carried on extensive trade in Odisha. Textile goods, silk, saltpetre, wax, rice, sugar, butter, opium, and other commodities formed the basis of their trade there. These commodities were exported from Odisha to different countries of Asia and Europe. In April 1653, two Dutch ships from Balasore left for Basra and Gombroon carrying Odishan goods. Apart from cowries from the Maldives, however, we have no clear references to the other commodities that they imported into Odisha.

The Dutch founded the city of Batavia (Jakarta) in 1619 and simultaneously settled Dutch families in the Spice Islands, providing them with sufficient slaves to facilitate the supply of spices. In order to feed the increased population of these islands, as well as of Batavia, the import of food grains became indispensable, since local supplies were inadequate.⁵⁰ Odishan

rice was exported to Batavia either through Coromandel or directly. The total quantity of rice exported from Coromandel to Batavia during the twenties, thirties, and fifties of the seventeenth century CE appears to have come from Odisha.⁵¹ Valentyn, writing in the twenties of the eighteenth-century CE, informs us that, besides rice, Odisha exported from the port of Pipli sugar, butter, cotton cloth, and silk cloth to Batavia.⁵²

Odisha's chief articles of export to Persia through the European traders were cloth, sugar, and iron. In 1642–1643 CE, the EIC factors at Balasore sold or bartered glasses, knives, lead, broadcloth, and similar goods for *gurras*, *sannoos*, *cassa* (textile goods), sugar, iron, and gingham, all except the last being intended for Persia.⁵³ In 1644 CE, the Surat factors sent to the Balasore factors one chest of rials with orders to provide for Persia 150 bales of sugar, 10 or 12 bales of *gurras*, and the same quantity of coarse *sannoos*.⁵⁴

As already mentioned, Odisha's trade with Europe was mainly confined to the ports of England. The general practice of shipment to England was that cotton goods and cotton yarn from Balasore and the neighbouring centres, together with goods procured from Hugli and Patna, were embaled in factories; and, in accordance with the orders of the East India Company, the various articles were loaded on English ships that came annually and anchored in Balasore Road. From there, they sailed in November or December to Masulipatam or Fort St. George and, after being finally laden and made ready there, set out on their voyage to England towards the end of January.⁵⁵

The commodities exported from Odisha to various parts of Europe included textile products of different varieties, namely *ginghams*, *sannoies*, *rumals*, *gurrahs*, *mulmuls*, *casses*, *hammams*, *nillaes*, *salampures*, *calicoes*, *peniascoes*, silk

rumals, cotton yarn, sugar, saltpetre, turmeric, iron, wax, and opium. Cowries, which were imported into Odisha from the Maldivian Islands, were also exported from Odisha to Europe. The commodities imported from Europe into Odisha included broadcloth of various colours, scarlet, gold and silver bullion, rial of eight (Spanish dollar), copper, quicksilver, lead, vermilion, coral, glasses, knives, brimstone, spelter, ivory, sappan wood (used for dyeing), and articles of luxury.⁵⁶

We are in want of references that would throw light on the articles the French imported into Odisha from Europe in order to finance their trade. It appears that they used bullion for this purpose. From the *parwanas* that they secured from the Mughals, it is known that the articles in which they traded in Odisha included sugar, linen, silk, wax, and saltpetre.⁵⁷

Local Merchants, Private Traders and Interlopers in Trade

The factors of the European companies had to engage Indian brokers, or local merchants and entrepreneurs, for their commercial transactions. These merchants were influential in their own right and were not only very rich⁵⁸ but also often played a dominant role in contemporary politics, in addition to assisting the foreign companies in their commercial pursuits. In Odisha during the late medieval period, they played an important role in interstate as well as seaborne commerce

The local merchants of Odisha belonged to both Hindu and Muslim communities. The factory records and travel accounts of the contemporary period refer to Khemchand (Chimcham), Chintaman Shah (Chintamund), Suraj Shah, Hira Shah, Kalyan (Calliun), Rajaram (Roojiram), Ram Narayan (Narain), Gangaram, and Gopal as the principal merchants or brokers. All of them were Hindus.⁵⁹ The factory records also refer to Muslim merchants of Balasore with whom the English entered into trade contracts in 1684, though their names are not mentioned.⁶⁰

The merchants of Odisha carried on trade with different parts of India as well as with foreign countries. To cite a few examples, merchants of Balasore sent iron, stone plates, rice, and other commodities to Calcutta in the sixties of the eighteenth-century CE. Their imports from Calcutta consisted of tobacco and certain other articles. Sometime before 1684, a gumastah of Khemchand purchased huge quantities of *cassas* at Dacca. A commercial ship belonging to the merchants of the Gingelley coast was burnt by the Portuguese in the Road of Pulicat in the early twenties of the seventeenth century CE. In the thirties of the same century, Manrique found at Pipli a ship belonging to the local shiqdar being sent to Cochin laden with merchandise. The merchants of Odisha also carried on trade with Asiatic countries. T. Bowery refers to merchants of Balasore and Pipli sending their ships for purposes of trade. In March 1680, Khemchand brought elephants from Tennasserim to Balasore in his ship.⁶¹

The local merchants or brokers acted as intermediaries between the European factors and the local producers. The former depended on them both for the supply of articles of investment for export and for the sale of commodities brought into Odisha. The English factors used to give *dadni* (advances) to these *dadni* merchants or *dalals* against proper security, and these merchants were bound to supply commodities within the stipulated time, mostly to the English.⁶² As the English had to compete with other European factors in eastern India, they had to remain constantly alert with regard to their brokers, weavers, artisans, and primary producers, who were often lured away by rival factors. At times, the English factors even entered into direct engagements with indigenous artisans in order to procure articles of investment.

The local merchants of Odisha also acted as a powerful link between the EIC and government officials, local Rajas, and

prospective purchasers. To cite one example, in 1673 the Hugli factors instructed the Balasore factors that Malik Kasim, the “governor” (local officer in charge), must either pay cash for the guns he wished to purchase from the English Company or have Khemchand purchase them on his behalf in order to avoid difficulties.⁶³ Rich brokers such as Khemchand and Chintaman Shah also assisted the English financially, charging three per cent interest, and at times as high as 15 to 18 per cent, on transactions.

The local merchants were subject to internal customs duties as well as other exactions. During the subahdarship of Shaista Khan, they had to make contributions towards strengthening naval defence⁶⁴ Merchants of the Gingelley coast, especially those belonging to Hindu communities, sometimes had to make additional payments. There are also references to fraudulent trade practices among merchants and to occasional financial extortions by the *nawabs* and *faujdars*. Brokers thus had to reconcile the private financial interests of Muslim officials with the trade interests of the European factors.

The prosecution of private trade by Mughal officials, factors of the European companies, interlopers, and free merchants was a characteristic feature of commercial life in late medieval Odisha. Its volume was considerable, involving substantial loss to the companies concerned and immense profit to private traders. Odisha was no exception to this practice. Indeed, it was the prospect of private trade that lured the English factors to open trade centres in Odisha and Bengal.

Private trade, or *sauda-i-khas*, on the part of Mughal officials meant the monopolisation of trade not only in many precious articles but also in most of the necessities of life on behalf of the governor. Merchandise was purchased monopolistically at the centres of production or at the ports

of lading, and retail dealers were then compelled to buy these goods at enhanced prices.

Private trade by the servants of the EIC served as a supplement to their low salaries. Not only lower-level servants but also prominent figures such as Sill (once selected Agent for the coast of Coromandel), Francis Day (a member of the Council at Masulipatam), and Streynsham Master (Agent at Fort St. George) engaged in trade on private account. They were not, however, allowed to encroach upon the Company's monopoly. They were prohibited from importing from India such goods as indigo, calicoes, cinnamon, cloves, cardamom, benjamin, saltpetre, pepper (black or white), nutmegs, maces, and cotton yarn. For export from England, the prohibited commodities were broadcloth, lead, quicksilver, vermilion, coral, and elephant's teeth.⁶⁵ The Company nevertheless gave legal sanction to protect private trade. In conducting such trade, the Company's servants sometimes borrowed money on the security of Company funds and even obliged the Company to repay the same. In order to facilitate private trade, the servants of the EIC secured an order, in the fifties of the seventeenth century CE, suspending the then prevailing custom of giving large presents to local Mughal officers.⁶⁶ To regulate or suppress the excesses of private trade, the authorities of the Company in England framed general rules from time to time, and it is likely that the Company's servants in Odisha had to abide by them. Besides this, we find references to measures adopted by the English authorities to prevent the smuggling of prohibited goods. On 28 April 1679, the Bay Council laid down three rules to regulate private trade. First, trading in prohibited goods and making contracts with weavers employed by the Company were prohibited. Second, the servants of the EIC were to conduct private trade—receipt, packing, and despatch of goods—inside the factory and not in premises specially hired

for the purpose. Third, investments for private trade were not to be made in places where the Company's weavers resided without obtaining the prior sanction of the Chief of the factory. Yet these rules failed to control private trade because of the lukewarmness of the Company's home authorities and the half-heartedness of its servants in India in enforcing them. Moreover, the tricks of the trade and the corruption of both English and Indian supervisors and guards enabled private traders to continue their business.⁶⁷

A brief note on the trade of the interlopers and free merchants will not be out of place here. Interloping was an encroachment upon the trade monopoly of the EIC and amounted to direct competition. Both associations and individuals who took part in those branches of eastern trade over which the EIC had been granted monopoly rights by royal Charters were called interlopers.

Associations and individuals were active in Balasore during the period under review. "The Governor and Company of Merchants," formed in 1600 CE, was granted monopoly of trade in the eastern waters for fifteen years, and this monopoly was retained in the Charters of 1609 and 1657. In 1635, a rival body known as "Courten's Association" was formed in London for trading with China, Japan, the Malabar Coast, and other areas of the East Indies where the EIC had not yet established factories. Besides these corporate bodies, private individuals also carried on trade with Odisha. The interlopers' ship *Alum* came from England to Balasore on 4 August 1654, although it could not do much business. Thomas Pitt, an interloper, established his headquarters at Balasore in 1674. For seven years he carried on lucrative trade in the Bay of Bengal as far as the Persian Gulf. Another interloper ship, *William and John*, reached Balasore in October 1680 and left that port on

9 November 1681.⁶⁸ In 1683, three interloper ships—William and John, Lumely Castle, and Constantinople—came to Balasore under the command respectively of Captain Read, Captain Alley, and Captain Smith.⁶⁹ Another interloper ship, Seymore, arrived at Balasore in October 1693, though its activities are not known. Yet another ship, Antilope, came to Balasore on 19 August 1696 for trade under the supercargo Edward Clive.⁷⁰ Interlopers remained active in Balasore in 1697, after which we have no references to their trade. This may have been due to the formation of two other rival mercantile associations, namely the Scottish East India Company (1695) and the English Company (1698), which absorbed merchants who used to undertake ventures in defiance of the original EIC monopoly in the East Indies. It should also be noted that the trading operations of the interlopers were facilitated by the connivance, and at times the actual partnership, of the Company's own servants in India. In 1684, the EIC appointed Chintaman Shah in place of Khemchand as their chief merchant at Balasore because the latter had done business with the interlopers. The interlopers also received encouragement and active support from local officials and merchants.⁷¹

With regard to the role of free merchants in late medieval Odisha, it may be said that their activities were not unlawful, since they did not encroach upon the monopoly of the EIC while trading between India and neighbouring countries. The free merchants belonged to different nations; their number was small and the volume of their trade in Odisha was limited during the period under consideration. There are references to some Dutch and Portuguese free merchants who brought goods from China to Balasore in 1673 CE⁷² We also find that, in 1666 CE at Balasore, there were English traders who were not in the service of the EIC. They owned ships and, after the arrival of ships at Balasore, procured prohibited goods from

them and stored these goods in their houses.⁷³ In order to control and regulate the activities of free merchants, the EIC framed various rules. In 1662 Ce, Sir Edward Winter, then Agent at Fort St. George, wrote to the factors at Hugli that no privately owned vessel should be permitted to trade in any port without the Agent's permission. In 1676, those residing at Balasore were informed of the Company's order that they should reside at Fort St. George or Madraspatam and should neither build nor purchase houses elsewhere. If the free merchants obeyed these rules, they were to be allowed to trade in the Indies, except in Tonquin, Formosa, and certain other places, under the protection of the Company. Some Englishmen agreed to abide by these rules, some asked for time to make the necessary preparations, while others ignored the Company's instructions and continued their trade in Bengal.⁷⁴ In 1679, the Hugli Council laid down rules regarding the granting of passes to free merchants concerning residence at Fort St. George and the registration of their trade, though the details are not known. Further, they were debarred from approaching the local governor or other Indian officials directly for the smooth passage of their goods, except through the Chief of the factory, and from colouring their goods in order to secure passage through the custom house without payment of duties.⁷⁵

The foregoing discussion of the participation of different communities makes it imperative to raise a pertinent question about the role of Odia sadhabas in the maritime trade of late medieval Odisha, so often invoked in Odia literature, folk songs and tales, sculptural representations and maritime rituals. In the factory records, travel accounts, diaries, and correspondence of the time, we do not find the names of Odia local merchants who participated in seaborne commerce. This absence of names in contemporary European documents is striking. There is, however, definite evidence indicating investment in

shipping by the Raja of Kanika. The English record mentions that a ship in his name was ready for a voyage from Balasore to Masulipatanam in 1681 CE⁷⁶ In the same year, another ship in his name is also recorded to have arrived at Balasore.⁷⁷ Dutch sources mention a ship of the Raja of Odisha sailing for the Maldives.⁷⁸ A French document mentions the merchant Nayananda Pati, who, in partnership with the President of the Council of Chandannagore, freighted the ship Phuljhari in 1729.⁷⁹ The surname of this merchant suggests that he was an Odia Brahmin trading from Chandannagore. On the basis of such circumstantial evidence, we may suggest that the lack of direct evidence in European documents should not lead us to conclude that Odias played no role in the maritime activities of medieval Odisha. The European records mention only those merchants who were linked to European commercial interests. Moreover, apart from the major port towns, many river estuaries along the Odisha coast were also places of maritime significance. From the writings of Fakirmohan Senapati, it is evident that the ship-owning merchants of Balasore in the mid-nineteenth century CE were Odias.⁸⁰

The maritime heritage of late medieval Odisha can be delineated through her Eurasian trade connections. The coming of European companies and the erection of their factories on the eastern coast of India contributed in large measure to the rise of merchant entrepreneurs at the regional level. Odisha's seaborne commerce was deeply influenced by the arrival of European factors, private traders, interlopers, and free merchants. Port towns and commercial centres such as Balasore, Pipli, Hijli, Harispur, Cuttack, and the ports of the Gingelley coast earned international reputation through the exchange of agrarian and industrial surplus. Odisha's commercial geography extended to Persia, the Maldives

Islands, Malaysia, Burma, Ceylone, Indonesia, and China in Asia; to England in Europe; and to St. Helena in Africa. Odisha did not fall among the deficit areas of the Indian subcontinent in respect of agrarian and industrial production. On the contrary, many places within and outside India depended upon her commodities. Odisha's maritime activities brought about conspicuous social and economic changes. The rise of merchant entrepreneurs stimulated the existing pattern of production, and the movement of manufacturers from rural areas to industrial towns and cities became a notable feature of economic life. The process of urbanisation in medieval Odisha may, in part, be attributed to such developments.

The influx of bullion and its impact on economic life were no less important. Although the pattern of agrarian economy did not undergo any radical change, medieval Odisha was gradually moving away, if not completely, from the barter system and was slowly but steadily heading towards the monetisation of rural commodity production. This change encouraged the growth of money-lending and money-changing activities and also contributed to the rise of merchant capital in the urban economy.

Another important development was the sudden increase in the demand for luxury goods among the affluent sections of society. Consequently, the import of luxury goods from outside Odisha increased. This process appears to have benefited the merchant class, which was gradually coming to dominate the urban economy. The peasant, by contrast, was compelled to sell his agricultural produce at a cheap rate in order to obtain cash, yet that meagre income could scarcely fetch him the comforts of urban life. Thus, the increasing role of money considerably widened the gap between rural and urban society.

The labour-creditor relationship between artisans and merchants in Odisha belongs to this period of history. In such a relationship, the artisan class remained at the mercy of the merchants, since the latter were able to establish direct control over the entire process of production. The manufacturing class was therefore economically exploited by this agency, which purchased its products at marginal prices and prospered at the expense of the producer.

The social significance of Odishan maritime activities was no less profound. With the rise of European settlements, the coastal areas soon came under the influence of a cosmopolitan life with its attendant vices. Prostitution, slavery, drinking, and intoxication received encouragement. Contact with foreign traders made the people acquainted with new articles such as *chabi*, *balti*, *sabun*, *alpin*, *lantern*, and *mej*. Vegetables and fruits such as potato, papaya, cashew nut, and *kamranga* entered the food habits of the people of this region. The growth of Luso-Indians and the beginnings of missionary activity also seem to belong to this period of Odisha's history. At the same time, the cultural heritage of Odisha was undoubtedly enriched through her vibrant maritime transactions.

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A Study on the History of Boat and Ship Building in Odisha

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Abstract

Odisha, located in the eastern part of India, boasts a coastline of 480 kilometres and is enriched by numerous rivers that flow through the state. This geographic advantage has made Odisha a prosperous maritime trading state since ancient times. As a result, traditional boats are commonly seen throughout the region's rivers and seas. The people of Odisha have historically excelled in the art of building boats and ships for use on rivers, lakes, canals, and open oceans. Existing literature highlights a variety of traditional boats, including Pota (dugout), Nouka (boats), Bhela (rafts), Chapa (canoes), and Padhuas. The ocean tides and river currents give rise to distinct characteristics of the boats found along the northern coast of Odisha compared to those on the southern coast. This paper provides a detailed overview of Odisha's indigenous boats and ship-building traditions from ancient times. It covers their terminology, the various types of vessels crafted for maritime expeditions, and the navigational technologies used for seafaring. Local traditions and existing literary sources have been referenced to explore Odisha's unique boat construction styles and technologies.

Keywords: *Odisha, craftsmanship, Boat and Ship-building, Maritime Trade, Navigation.*

Introduction

The history of boat construction is as ancient as the relationship between humanity and the ocean. It is widely believed that sailors predated farmers and potters. During prehistoric times,

humans likely used watercraft to navigate rivers and seas. It is estimated that humans began to explore the oceans around 60,000 years ago when sea levels were lower. Individuals utilised buoyant rafts to traverse these waters. The advent of civilisation marked the beginning of the construction and use of traditional boats for maritime travel, commerce, fishing, and warfare. The Harappans are recognised as the first sailors of the Indian subcontinent, engaging in trade with the Sumerians and the Mesopotamians. Evidence from seals, vessels, and pottery found in Harappan sites confirms that these inhabitants had the knowledge and skills to construct and operate boats. Substantial evidence of ship-building, navigation, and maritime activities exists throughout ancient history. Images of boats and ships can be found on coins, ¹Seals, ²terracotta seals, ³pottery, amulets, caves, ⁴paintings, ⁵graffiti on potsherds, ⁶sculptures, temple walls, ⁷stupas, ⁸hero stones and other architectural forms. ⁹These depictions suggest that boats were used for marine trade, fishing, and transport across rivers, lakes, and seas during different historical periods. Many traditional boats have been present throughout the Indian subcontinent, including coastal regions. Indian epics and regional literature reference various types of vessels and their uses. Like other coastal states in India, Odisha is rich in references to traditional boats.

Decoding Boat-Making Process: An Archaeological and Hermeneutical Analysis

While archaeological excavations in Odisha have not yet provided evidence of water transport, numerous examples of watercraft can be illustrated on the sculptural panels that adorn the temple walls throughout the region. Noteworthy sites featuring these depictions include the 'Ratnagiri Mahavihara in Jajpur from the 8th to 9th century, the Brahmeswar Temple

in Bhubaneswar from the 10th century, the Jagannath Temple in Puri from the 12th century, the Sun Temple in Konark from the 13th century, Suvadisa in the Bhadrak district from the 14th to 15th century, the Marichi Temple in Ajodhya, Balasore district, from the 15th century, and the Jagannath Temple in Deokund, Mayurbhanj district, from the 19th or 20th century.¹⁰ The earliest representation of a boat in Odishan art can be traced back to the 10th-century Brahmeswar Temple in Bhubaneswar. The panel, currently located in the Odisha State Museum in Bhubaneswar, depicts ships transporting an elephant. A relief from the 12th-century Bhoga Mandap of the Jagannath temple in Puri depicts a ceremonial boat. The sculpture of the 13th century found in the Konark temple's Jagamohan parapet depicts *Martanda-Bhairava* dancing on a boat. The sculpture from Konark, located in the Indian Museum in Kolkata, depicts four men rowing a boat with a royal figure seated alongside an elephant. A similar sculpture can be found in the Victoria and Albert Museum in London. It depicts a boat with a canopy positioned just behind the middle and supported by substantial, column-like structures. Under the canopy, there is a royal figure holding a bow. The boat also features three rowers and a helmsperson, each wearing conical headgear. Sculptures in Odisha depict boats, suggesting reverse clinker construction techniques. The reverse clinker technique is still used today, as evidenced by a boat painting by B. Solvryis from the early 19th century. Currently, reverse clinker boats are found along the northern coast of Odisha, specifically between the Dhamra and Subarnarekha rivers. However, this method is not applied to boat building on India's southern and western coasts. Nonetheless, similar boats continue to be found in present-day West Bengal and Bangladesh.

Kalidasa, the great poet of ancient India, has mentioned the king of Kalinga in the *Raghuvamsam* as the *Mahodadhipati*

or Lord of the Sea.¹¹ The Buddhist scripture *Aryamanjushrikalpa* mentions that all the islands of the Kalinga Sea represent Kalingodesu. Similarly, the eastern sea, including the Bay of Bengal, was once known as the Kalinga Sea, and many Kalinga ships sailed in it. The Chinese traveller Fahien documented the presence of several tall-masted, large sail-equipped vessels in Kalinga, each capable of accommodating up to 200 individuals at once in the 4th century CE¹² As per his description, A small boat was tethered to the larger flagship, which served as a lifeboat in case of an accident aboard the main vessel. The Periplus of the Erythrean Sea (60–100 AD) describes wooden boats used along the coast of Coromandel. It details vessels made from logs with plank sides, outrigger boats, and twin canoes that were connected. Additionally, it mentions the use of masula boats around the Coromandel Coast.¹³ Pliny the Elder (23 to 79 AD) mentioned using log boats in India, which are still used today. Mookerji (1912) notes that the earliest depiction of a planked ship can be found on the east entrance of the Sanchi Stupa, built in the 2nd century BC. However, no concrete evidence of plank boats was recorded until the 16th century. Duarte Barbosa (1480 to 1521) described sewn boats travelling from Malabar to the Red Sea. Additionally, Balbi wrote about ships on the Coromandel coast that operated in the surf zone, transporting goods and passengers between the mother ship and the shore.¹⁴ Thomas Bowery (1669 to 1679), a spice merchant and sailing master, described catamarans in his writings. He noted that these vessels were constructed from four to six pieces of wood tied together, with the central piece being longer than the others. Catamarans were propelled using paddles.¹⁵

The *Yuktikalpataru*, also known as *Vrksayurveda*, mentions the construction of sewn boats that do not use iron nails. This construction method is similar to that found in Masuli boats.¹⁶ Avoiding iron nails is due to concerns that submerged

magnetic stones in the sea could attract them. Consequently, ships designed for sea voyages are sewn together using fibres and ropes. According to myth, Raja Bhoja noted that iron nails could come loose from any ship passing near a magnetic mountain. *Yuktikalpataru* lists various vessels used for maritime navigation in Odisha: *Tariksh*, *Plava*, *Bariratha*, *Tarandhuha*, *Bhelak*, *Nuah*, and *Bahana*.

The *Datha Dhaturvamsa* mentions that the Tooth Relic of Gautama Buddha was transported from Dantapura in Kalinga to Sri Lanka using a large sewn plank ship.¹⁷ The ship featured a broad, high mast and was crewed by skilled sailors. Dantakumar and his queen travelled to Sinhala by boat from the port of Tamralipta. The *Trikandasesha Purushottamdev* Dictionary lists various boat names used for sailing in Odisha's rivers and for coastal navigation. Dinakrishna Das' *Prastavasindhu* details different types of boats, their construction and carrying capacities. The poet Upendra Bhanja's *Prema Sudhanidhi* describes various kinds of boats designed for joy and entertainment journeys. The Chary Padas, or Doha songs Kambalapda, referred to vessels laden with merchandise and indirectly alluded to ship operations.¹⁸

The scholar Zhu Fan Zhi from the Sung Dynasty of China provided a detailed account of the thriving maritime trade networks established by the ships of Kalinga, referred to as Kia-ling, in his note 'Records of the Foreign People' in the early 13th century. In the early medieval period, the traveller Al-Masudi observed the operation of sewn boats along the Indian coast. These boats were constructed by tying planks together with rope and coconut fibre. The work titled *Tilakmanjari* describes how broken planks were tightly secured, and it was the chief sailor's responsibility to check all the knots before the vessel set sail. Additionally, the holes in the boats were filled with wax and cotton.

Additionally, four palm-leaf manuscripts from the Jayadeva Museum in Bhubaneswar contain images of boats showcasing different sizes and depictions of sailors. Out of eight boats illustrated, six are of the same type, while one features a bird's face, another an elephant's face, and the two remaining ships are adorned with different figures on their prows. Although five boats share a similar construction, the other three differ. Notably, four out of the eight boats were propelled by women, which is significant.

The forests of Odisha provided ample timber necessary for constructing ships and boats. Iron and fabric were readily available for this purpose. Moreover, numerous shipwrights living in various regions of Odisha contributed to a robust workforce of shipbuilders. During medieval times, Balasore and Harispur, in particular, were significant hubs for ship-building and repair in the Middle Ages. In the 17th century, William Bruton, a Britisher, noted that Balasore was a coastal town where ships were built.¹⁹ Vessels were constructed in Balasore for commercial and military purposes, making it a significant hub for ship-building in the region. In 1634, the English East India Company needed a small vessel to transport goods to larger ships in the Bay. They acquired an unfinished ship of around 100 tons from the Governor of Balasore and expedited its construction. This vessel was named Thomas.²⁰ Balasore was also a location where repairs were conducted on commercial ships. In 1638, the agents from Masulipatam, Thomas Dark and Richard Hudson, instructed Thomas Godfray, the Master of the Coaster, to go to Balasore to refit Thomas.²¹ *Paik Kheda*, written by Kanhai Champati Ray in the 17th century, highlights the Paiks' war traditions, including their naval warfare practices. It also discusses the organisation and training of the Odia navy, noting that nine different types of warships were utilised in the maritime force. The battleships among them were

Lanjua, Rajpura, Chaturi and Nandia. Historian R.D. Banerjee asserts that Kalinga maintained a naval fleet to protect commercial vessels at sea.²² Several works, including the *Odia Mahabharata* by Sarala Das, *Parimala Kavya* by Narasimha Sena, *Tika Govinda Chandra* by Yosawant Das, *Lavanyavati* by Upendra Bhanja, and *Rasa Kollola* by Dinakrushna Das, reference maritime terminology such as *Boita, Naha, Nouka, Sadhava, Sadhavani, Manga, and Nabika*.²³ Near the Deuli Matha, by the sea in Kakatpur, there stands a tall sand stupa called Boita Kud. It is believed that boats used to dock here in ancient times.²⁴ The coastline of Odisha featured several ports, ranging from Tamruk to Chilika. Key ports along this coast included Subarnarekha, Narekha, Sarago, Chhaluya, Balasore, Lochanapur, Chadaman, Dhamra, etc.²⁵ Unfortunately, the Odia merchants who traded by sea did not leave behind much documentation of their activities. However, glimpses of their journeys can be found in various historical sources. The memory of their travels to distant lands is still preserved today. Each year on Kartik Purnima, the people of Odisha commemorate these traders by floating boats made of paper and banana leaves in rivers and ponds.²⁶

Types of Boats and Their Classification

Traditional boat and ship-building in a particular location depends on the availability of facilities to assemble essential resources such as steel, fuel, fabric, and lumber.²⁷ Timber was a crucial resource during the Ancient and Middle Ages, allowing vessels to be built wherever suitable wood was accessible. In Odisha, the availability of these materials supported boat growth and ship-building. The Odisha State Maritime Museum indicates that literary references and specific writings, such as Arnaba Vihara Vilas and Ratnakara Vihara Vilas, highlight a robust legacy of boat construction in ancient Odisha, including riverine and maritime ships. *Yuktikalpataru*, which King Bhoj

authored, is widely considered to be the most well-known treatise about ship-building in India. The above book classifies the ships of Kalinga into two main categories:²⁸

- A. Samanya (traditional boats) that navigate rivers, lakes, canals or coastal areas.
- B. Vishesha, Arnab Pota, or Boita (specialised ships) are much larger and designed for deep-sea navigation.

References to wooden ship-building by King Bhoja can be found in the Madala Panji. It suggests that Odisha adopted the same boat and ship-building techniques outlined by King Bhoja in his work, *Yuktikalpataru*. Based on this text, Radhamukunda later authored an English book, *Bharatiya Arnab Pota*. The identification of wood is crucial when it comes to building a boat. According to *Ayurveda*, there are four types of trees,²⁹ namely:

- 1. Brahmin is light and soft and can be easily fixed with other types of wood.
- 2. Kshatriya is light and strong and cannot be easily fixed with other types of wood.
- 3. Vaishya-soft and heavy.
- 4. Shudra- strong and heavy.

In this order, the right tree is selected to build a boat.

According to the construction, Samanya, or standard boats, are divided into 10 types.³⁰

Sl. No.	Name of the Boat	Length (in cubit)	Width (in cubit)	Height (in cubit)
1	Kshyudra	16	4	4
2	Madhyama	24	12	8
3	Bhima	40	20	20

4	Chapala	48	24	24
5	Patala	64	32	32
6	Dirgha	88	36	36
7	Bhaya	72	44	44
8	Patraputa	96	48	48
9	Garvara	112	56	56
10	Manthara	120	60	60

The unique ship Vishesha, also known as Arnab Pota or Boita, was explicitly built for sea travel and is further divided into two types.³¹:

1. Dirgha (long or large ship)
2. Unnata (advanced ship)

Dirgha ships are further divided into 11 types:

Sl. No.	Name of the Ship	Length (in cubit)	Width (in cubit)	Height (in cubit)
1	Dirgha	42	21/4	21/4
2	Dirghika	32	4	16/5
3	Tarani	48	6	24/5
4	Lola	64	8	31/5
5	Chatwara	80	10	8
6	Gamini	96	12	47/5
7	Tari	112	14	56/5
8	Janghali	128	16	64/5
9	Plabini	144	18	72/5
10	Dharani	160	20	16
11	Begini	176	22	108/5

Unnata or advanced ships are further divided into five types:

Sl. No.	Name of the Ship	Length (in cubit)	Width (in cubit)	Height (in cubit)
1	Urdha	32	16	16
2	Anurdha	48	24	24
3	Subarnamukhi	64	32	32
4	Garbhini	80	40	30
5	Manthara	96	48	48

At that time, it was customary to decorate ships and provide various facilities to increase passengers’ comfort. Gold, silver, copper, and alloys of these three metals were used to decorate the vessel, giving four types of colours.³²

- i. Four-masted ship (white colour)
- ii. Three-masted ship (red colour)
- iii. Two-masted ship (yellow colour)
- iv. One-masted ship (blue colour)

The faces of the ships were of various shapes. These ships had cabins or rooms. Boats with cabins are divided into three types:

- a. Sarba Mandir: The royal treasury, equines, and ladies were transported aboard such vessels.
- b. Madhya Mandir: The monarchs utilised these vessels for travel, particularly during the monsoon season.
- c. Agra Mandir: These vessels were primarily used in warfare, while individuals travelled in them during summer and winter.³³

The Process of Boat and Shib-building

In Odisha, the construction process for boats and ships involves several essential steps. The following boat-building

method is mentioned in the *Prastabsindhu*, written by the poet Dinakrishna.³⁴

- i. First, the type of wood is carefully selected, along with the appropriate amount of ageing for optimal quality. High-quality wooden planks are arranged for use in the construction.
- ii. The planks are cut to the desired dimensions and shaped accordingly for finishing.
- iii. The wooden planks are bent by heating and applying pressure at specific intervals to create curves and particular shapes. Planks are gradually joined using internal support to achieve the required breadth, side inclination, and other features.
- iv. Iron nails fix the joints, and waterproofing ensures durability.
- v. Once the boat has been shaped and sized according to specifications, it is moved to the waterfront to facilitate floating.
- vi. Before the boat's departure, a series of rituals are conducted as part of the tradition.

Different Types of Boats in Odisha

Notable boats mentioned in Odia literature are *Pota*, *Nouka* (boats), *Bhela* (rafts), *Chapa* (canoes), *Padhuas*, *Nouka*, *Danga*, *Catamaran* (Teppa), *Padhua* (Masula), *Patiya*, *Salti*, *Sabado*, *Kusli* and *Patua*. These traditional vessels serve not just as a means of transport; they are an integral part of the culture, providing access to the lush shores of the Bay of Bengal, the calm coastal waters of Odisha, the winding rivers, and the beautiful Chilika and Ansupa lakes.

Nauka or Danga

Nouka or Danga is a clinker-type boat that does not have ribs, a stem, a stern or frames.³⁵ Its maximum length is 14.30 meters,

its width is 2 meters, and it is 50 to 60 centimetres deep. The planks used in its construction are 1 to 1.25 inches thick. Both iron and wooden nails are utilised in building the boat. The length of the minimum plank determines the specifications for the various parts of the boats.³⁶ Nails are spaced 5 to 6 inches apart, with joints requiring a spacing of 3 inches. Local artisans measure the length of the Nouka using their hands, fingers, and feet. The Nouka or Danga is constructed using traditional techniques that emphasise simplicity. Planks are arranged horizontally. During the building process, a specific plank section is heated for a certain amount of time to prevent warping. Once sufficiently heated, the plank is shaped using wooden and metal bars, making it suitable for planking. The planking technique is straightforward and involves cutting the planks into sections, sometimes arranged in an overlapping pattern. Cotton is applied during the nailing process to ensure the boat is watertight. The outer planks of the boat are exceptionally sturdy. The lowest plank is called the *tali*, while the two lower side planks are called *dasi*. The *dasi* extends from the *tali* on both sides, with the ends of both the *tali* and *dasi* bent upwards. Each side extends approximately five cubits wide, a process known as *seka*. The lower side plank is *bedha*, which connects to the upper side plank of the boat known as *hahuti*. These planks are secured with *khera*, which are thin, small planks. Additionally, six horizontal planks, called *poland*, are placed between the *hahuti* to enhance structural rigidity. The wooden pegs that secure the *poland* to the outer surface of the *hahuti* are known as *khila*. *Jata* refers to the tapered ends of the Nauka. The planks that surround the boat are called *chapundi* and are used for movement. The sizeable triangular plank at the front is marked as *muhal*, which is intended for sitting. The boat's front part is called *agamanga*, while the rear part is called *pachhamanga*. The boat is used for transporting

passengers and cargo, as well as for fishing. It can carry five to six quintals of freight. It is a traditional boat found in Chilika Lake and is suitable for the environment of Chilika.

Potas

Potas (dugout) are Bishesha boats, specialised vessels in lakes, rivers, and seas. They are widely used in calm and shallow waters and for maritime trade. *Potas* possesses regional names such as *Nouka*, *Kathua*, *Sapei* or *Sapudanga*, and *Dengi*.³⁷ A dugout or canoe can be constructed from a single tree or wood, dug out or scooped from its trunk. As carved directly from a wooden trunk, they are much more durable than other traditional boats. It resembles the narrow feeding trough traditionally used for cattle in the countryside, known as the Kunda or Dangi. Their shape resembles a long tube, and their bottom resembles a half circle. It is more useful in shallow and motionless waters than river currents that are rushing, yet its utilisation during floods has been seen in several regions in Orissa. Smaller boats, also known as Huli Danga, are a consequence of the same evolution. Adzes are used to hollow out the interior of palm or coconut trees, and then the bark or the outer skin section of the trunk is removed. The lower or outer section of the canoe is shaped like a sphere. The prow, which is the front part of the canoe, protrudes from the vessel's butt end and is designed to help propel the canoe forward. Fishermen primarily use this canoe, although it occasionally accommodates a few passengers. However, it can be challenging to control, making it more prone to capsizing in moving water. Additionally, it is not suitable for ocean use. *Potas* are most effective in tranquil and shallow waters.

Catamaran

A catamaran is a boat constructed from logs of identical dimensions, roughly or beautifully shaped, and secured

together by lashing.³⁸ It is a long, narrow raft made of several pieces of wood tied together and propelled by paddles, sometimes using a triangular oar. In northern Odisha, it is referred to as *Teppa*; on the southern Odisha coast, it is called *Katamaran*,³⁹ which means wooden oar. Generally, catamarans are found from the coast of Odisha to Cape Comorin in Sri Lanka. The middle piece of wood is longer than the others, and the structure is typically made from light woods such as *Albizia stipulata* and *Erythrina indica*. This construction helps the catamaran achieve positive buoyancy, ensuring it never sinks. The logs are loosely connected, allowing water to escape as waves splash over the board. Catamarans, used for fishing, are flat and broad and designed without side walls. Catamarans are usually between 4 and 5.5 meters long and are operated by 3 to 5 people. In favourable weather conditions, fishermen can catch fish 8 to 10 km from the coast using catamarans. These boats are utilised in all seasons.

Bhela

Bhela resembles a catamaran and is used in some regions of Odisha, particularly in confined and shallow waters. The middle timber of the raft is fixed at the bottom, while other timbers are tied slightly above it, creating a sloped front and back. This design allows the boat to cut through waves smoothly. Oars propel it, and due to its lightweight construction, it never sinks. The timbers are tied together so that water entering the boat is automatically released through small gaps.⁴⁰

Chapa

Multiple catamarans are connected to form a larger platform, enabling the transfer of additional goods and allowing the vessel to undertake longer voyages. This boat type is called *Chapa* in southern Odisha and *Dui Dulia* in northern Odisha.⁴¹ Chapas are larger boats used for transporting goods and

travelling at sea. The construction style of Chapa boats provides indirect evidence of boat-building technology in Odisha. The bottom of a Chapa is shaped like the English letter “U,” and wooden cages, known as Pakhi, are attached to both sides. The wood in these boats is joined through stitching. Chapas are notably used during the Chandan Yatra festival in Odisha, and historical texts like the Madala Panji describe how Lord Jagannath was transported to Chilika to protect them from attacks by Muslim forces. Nonetheless, the flat outboard of Chapa was deemed inadequate for maritime voyages or fishing activities in the open sea.⁴²

Masula

The traditional *Masula* boats, a hallmark of coastal craftsmanship, grace the waters from Odisha to Karaikkal. Known locally as *Padhua* or Padua, these vessels are distinctive not only for their function but also for their intricate construction.⁴³ Measuring between 6 and 8 meters in length, they possess a flat bottom and are uniquely designed without a keel or frame. Instead of sails or masts, they rely on the skilled hands of their sailors, who use round paddles or large oars to navigate. The artistry of Masula boats lies in their construction, a stunning assembly of wooden planks stitched together in a zigzag pattern, bonded by coir made from coconut or palm fibres, and occasionally using cotton for added strength. Each Padhua boasts specific dimensions of 8 meters long, 2.5 meters wide, and a mere 1.5 centimetres deep, with planks of 5 centimetres thickness. The careful alignment of the bottom planks ensures the structure is functional and aesthetically pleasing. These boats are a common sight along the picturesque Coromandel Coast, where they dance on the waves, especially during favourable weather when they are used for enchanting beach sailing. As the availability of teak

wood dwindles and prices climb, skilled boat builders have turned to robust mango (*Mangifera indica*) and resilient sal (*Terminalia tomentosa*) woods, enhancing the durability and longevity of these remarkable vessels in the vast sea.⁴⁴

Patia

Patias are the fascinating counterpart to *Masula* boats, crafted in a unique reverse clinker style. This design helps them navigate the waters and enhances their beauty and functionality. In Odisha, based on their size and carrying capacity, these boats are known by two other names: *Botala* and *Dang*. Commonly found in the Balasore and Bhadrak regions and weaving through the serene waters of the Subarnarekha River near the West Bengal border, patias are an essential part of the local fishing culture. Tailored for various purposes, patias come in three main types: those driven by sails or oars for navigation at the river's mouth, others designed for fishing near the shore using oars, and motorised versions venturing into the deeper seas. Traditionally built from sal wood, these boats are now often reinforced with thick tar, skillfully affixed inside and out to ward off pesky insects and ensure resilience. With the rising cost and decreasing availability of sal wood, many builders have adopted a robust alternative called *babla*, which lends strength while maintaining flexibility. The design features of Patias reveal an elegant silhouette; their stern and stem rise almost vertically, bestowing a bold character. Variations in length, width, and depth depend on their specific design crafted for seafaring journeys, often adorned with rectangular sails that catch the wind flawlessly.⁴⁵

Constructing a patia is an art form, beginning with carefully placing the plank keel. Artisans then link the planks together in a chain, meticulously forming the hog, which rises beautifully above the keel to create a striking stem and stern. The

construction process culminates as the eighth plank is fitted and bound, typically requiring a collection of 16 to 18 planks to bring each *patia* to life, ready to brave the open sea.

Padhua or Kosala

Brajnath Badjena's *Samar Tarangini* mentioned the *Sulupa* boat, later identified as the *Padhua* or *Kosala* boat. It was historically used for trade and commerce. These boats were found in western Odisha and are named after the ancient region of *Kosala*. It is believed that the people of *Kosala* used this boat in ancient times to navigate the Brahmani, Mahanadi, and Baitarani rivers. The planks of the *Padhua* or *Kosala* boat were joined using stitching, similar to a caravel. The joints were connected with wooden nails and secured with palm and coconut fibre ropes. Long branches and bamboo were used for reinforcement on both sides. In the seventeenth century, a mast was added to allow the use of sails, enhancing its functionality.⁴⁶

In the picturesque landscapes of western and central Odisha, two distinctive types of traditional boats gracefully traverse the waters: the *Kusli* and the *Patua*. These vessels, elegant in their design and purpose, are primarily employed for transporting goods along the region's rivers. Though they may differ in appearance, their craftsmanship reveals a substantial similarity in construction. The *Patua* boat stands out with its charming roof, offering a sturdy shelter for cargo and crew, safeguarding them from the elements as they navigate the waterways. In contrast, the *Kusli* boat is open, embraced by the air and water, allowing a more direct connection with the surrounding environment.

Flat-bottomed vessels such as *Patila*, *Purgua*, *Malangi*, and *Hola* load and unload goods from the mother ship moored in the sea. The typical keeled caravels constructed in North Odisha are *Chuat*, *Dinghi*, *Salti*, and *Sabado*. The sails of these

vessels are built from wood, and both the sails and the ship exhibit diverse forms. Rectangular sails are employed for *Chuat* and *Dinghi*, whereas lug sails are utilised for *Salti* and *Sabado*. *Chuat* and *Dinghi* traverse 20 to 30 kilometres from the shore in both favourable and poor weather conditions, whilst *Salti* and *Sabado* are utilised during the tranquil seas from October to February. All traditional boats of Odisha include triangular, rectangular, and lug sails equipped with oars and pedals.

Conclusion

The design of boats and ships has recently evolved significantly. Traditional sails and oars have been mainly replaced by motor-driven engines, diverging from materials like wood, fibre, or synthetics. In Odisha, boats can be categorised into two geographical regions: northern and southern. In the north of Odisha, reverse-rigged and flat-bottomed vessels are common, while catamarans and paduas dominate in the south region. The traditional boats found along the shores of Odisha, Bengal, Andhra Pradesh, and Tamil Nadu share similarities; however, the materials and methods used for planking and caulking their hulls differ. Boat construction in Odisha, much like marine commerce, has ancient roots. A water transport system has existed since antiquity, connecting the sea, lakes, rivers, and canals. As a result, boat manufacturing in Odisha has flourished, but there is limited information about the production of boats, ships, and their prototypes in the region. Therefore, it is essential to investigate Odisha's historical practices surrounding boat and ship-building. The structure and design of traditional Odisha boats have remained unchanged for several centuries. Various conventional boats have been documented across different regions of India, reflecting the unique coastal landforms, wind patterns, and current dynamics. Hence, a detailed ethnological examination of boats and ships in this region is necessary.

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Maritime Heritage of Kalinga: The Overseas Trade of Ganjam District Under the British Raj

Kanhucharan Padhy

Odisha, anciently known as Kalinga, was a great maritime and formidable politico-military power on the east coast of the Indian peninsula in the hoary past. She possessed a large sea-faring population and a band of daring and adventurous sailors and seamen, who traversed countries and islands, situated beyond the immediate and distant seas and oceans continuously. The ocean played an important role in the life style of the people who dwelt on its shores. The unique geographical position of Odisha, as the meeting ground of the North and the South and its location near the ocean provided an excellent opportunity to its inhabitants for trans-oceanic commerce¹. The region had a distinct identity of its own as 'Kalinga', which once covered not only coastal Odisha but also the adjoining tracts of West Bengal and Andhra Pradesh. In the wider sense, ancient Kalinga comprised the major part of the eastern India, from the Ganga to the Godavari².

In the past, Kalinga people had distinct personality of their own. They were known for their daring ventures and dynamic spirit. The adventurous sea-men of Kalinga, inspite of various hazards, reached distant land across the sea. So great was the fame of Kalinga as a maritime power that Kalidasa in his *Raghuvamsam*, referred to the king of Kalinga as the "Lord of Ocean"³. It seems that Kalinga dominated the Mahodadhi (Eastern Sea). Kalinga was an important zone of commerce with significant influence over the eastern sea. Chilika, Konark, Puri, Tamralipti, Dhamra, Palur, Ganjam and Chelitalo were the chief ports of maritime importance⁴. They remind us the

maritime trade with far off countries. Odisha, famous for its long coastline could earn name and fame in making cultural and commercial contacts with the countries across the seas. With the passage of time, crushed with the vagaries of nature and being uncared for through the political processes. Odisha's maritime spots were lost though of course, gave birth to new spots of importance during the period from 16th to 19th century.

Being situated on the shore of the Kalinga Sagar i.e. Bay of Bengal and having enjoyed all the privileges to develop maritime activities, Odisha from time immemorial had her reputation as a sea-faring country⁵. In the glorious ancient period ships helped the people of Kalinga in establishing colonies in the Indian, Archipelago⁶. It is said that the people of Kalinga were the pioneers in colonising the far-off lands of Sumatra, Java, Indonesia, Burma, Siam. and other places⁷.

The people of Kalinga maintained commercial intercourse with the islands of Bali, Java, Sumatra, Borneo and Malaya collectively known as Suvarnadvipa⁸. The *Brahmandapurana*⁹ mentions that the Chilka lake was full of hundreds of boats and they were travelling to Java, Malaya, Simhala, Ganga Sagar and China.

The glories and prosperity of ancient Odisha was probably due to her foreign trade and commerce with the distant lands¹⁰.

So long the Hindu kingdom of Odisha was independent and Hindu kings gave encouragement and offered royal patronage, the maritime trade was very thriving and considerably added to the national wealth of the country. With the advent of the Muslims to Odisha (from the year 1568 CE), the centre of gravity, being changed, some of the Southern ports of Odisha, including Chilika and Chitrotpala lost their former glories¹¹. The northern ports, particularly Balasore, Pipili and Harishpur came

to much more prominence than before. The reason for such change lies in the change in the political situation.

Odisha's trade and commercial activities during the 16th and 17th centuries, received great encouragement with the establishment of European factories situated on the Bay of Bengal and having a favourable geographical situation, rich in good navigable rivers and ports, Odisha attracted a number of European trading nations like the Portuguese, Dutch, Danes, English and the French¹². The above-mentioned Europeans had erected their trading settlements in Odisha and gradually Balasore, Pipili, Harihapur, grew into prominence as important commercial and naval centres on the north Odisha coast¹³. The Portuguese were the first among the Europeans who had their trading settlement on the Odisha coast. In the annals of Odishan history, the 17th century was a period of momentous changes in her relation with the European mercantile nations, marked by the gradual decline of the Portuguese and the increasing commercial penetration by the Other Europeans¹⁴.

Upto 1568 CE Odisha was ruled by Hindu kings. Odisha was under Muslim rulers from 1568 CE, to 1751 CE Odisha's stupendous and magnificent art and architecture bear ample testimony to the great material prosperity that Medieval Hindu Odisha enjoyed. The maritime activity and the overseas trade guaranteed sound economy to the people. In spite of occasional misgovernance, oppression and disorder, the maritime trade was in flourishing condition during Muslim rule¹⁵. Odisha had been famous for its industrial products and finished goods which attracted the attention of English, French, Dutch, Danes, and Portuguese traders. These European traders had established their trade centres and factories in the coastal districts of Odisha. In the 17th century, Pipili, Cuttack and Balasore were the main gateways of Odisha's maritime trade¹⁶.

The European merchants who settled down at the ports of Odisha, were generally interested in the foreign trade. But for doing so, they had to ally themselves with the powerful local merchants of Odisha such as Khemchand, Chintaman and a few other who possessed great financial strength, and worked as leaders of the mercantile group at Balasore¹⁷. But it is worthy of note that these influential merchants had to obtain the active cooperation of other merchants of lesser importance. It seems, right from petty dealers down to the big European companies were all tied together in the trade structure of Odisha¹⁸. The emergence of European traders and their subsequent settlements on the Odisha coast in the 16th and 17th centuries are important events in the mercantile history of Odisha.

The first settlement of European traders took place in the year 1514 CE when the Portuguese merchants were permitted by Prataprudra Deva to trade in Odisha¹⁹. Their first settlement grew up at Pipili. Prataprudra Deva remained in power from 1497 CE to 1533-34 CE. The terms and conditions of the Portuguese are not known. But the fact remains that it was through them, the Odia traders discovered their link with the markets of Europe. However, the availability of textiles and other commodities attracted other European companies in the next century. The Dutch began to trade at Pipili in 1625 CE. But owing to excessive Portuguese influence, they could not thrive in that place. Subsequently they shifted their settlement to Balasore in 1633 CE. Balasore became the most important port of Odisha in the 17th century. Although the English were in a dominant position at Balasore, yet all the European companies including the French and the Danes had their establishments there. A number of other ports such as Pipili, Haripur and Ganjam are worthy of being mentioned.

Despite disturbed political condition and frequent changes of ruling families, trade and commerce in Odisha seem to have flourished without much interruption. In the evolutionary process the maritime trade activities developed rapidly. The English settlements at Haripur and Balasore in 1633 Ce and 1642 Ce respectively, marked a turning point in Odisha's foreign trade. In fact these two harbours formed the basis of the future greatness of the East India company in Bengal. The commercial ventures of the Danes, the Dutch, and the French also helped the ports of Odisha play an important role in its coastal trade.

It is true that by the middle of the 16th century Ce maritime trade of Odisha had dwindled due to natural causes²⁰. The freaks of nature, treacherous currents, the silting of the sands at the river mouths and loss of spirit of adventure of the people were some among them. From the year 1568 Ce Odisha suffered from the political rule of the Afghan, Mughals, Marathas and the British through successive ages. The political subjugation became a formidable barrier to the revival of the sea trade of the merchants of Odisha. In the 17th century Odisha's sea-borne trade passed into the hands of the European merchants as they enjoyed the patronage of the Muslim rulers.

With the coming of the European merchants and the establishment of European factories during the period under review, Odisha's trade and commerce with many countries of Asia and Europe took a different dimension. The European players viz., the English, the Portuguese, the Dutch, the Danes, and the French controlled the whole of Odisha's external trade by establishing contact with the Odishan merchants and producers of different articles of investment²¹. Amongst all the Europeans the English had a better share in the external trade of Odisha.

British Occupation of South Odisha

South Odisha in the British period meant south of modern Odisha consisting of the erstwhile undivided districts of Ganjam and Koraput. As early as in 1511 Ce this region was invaded and occupied by Ibrahim Kutabshah, Sultan of the kingdom of Golkonda in the south, and since then it remained under Golkonda till 1687²². It remained under the Mughal emperor of Delhi and the Nizam of Hyderabad from 1687 to 1753 Ce. The French kept it under control from 1753 to 1759 Ce.

It is to be noted that in 1765 Ce the Northern circars were granted to the English by the Mughal emperor's *Firman*, dated the 12th August 1765, but it was not until 12th November 1766, that Nizam Aly, and the Subedar of the Deccan agreed to ratify this *Firman*, by actually ceding the country to the English²³. The East India company got its first foothold in South Odisha on 12th November 1766. South Odisha remained under the British from 1766 Ce to 1936 Ce in Madras Presidency. Ganjam was the northern most district in the British Madras Presidency. In ancient times it was known in many names such as "Kongoda", "Khinjali *Mandala*" and as 'Kalinga' as well. It was bounded on the north by Cuttack and Puri districts of the Bengal Presidency, on the east by the Bay of Bengal, and on the south and west by the Vizagapatnam district. The British always preferred to establish, their factories either near the river mouth or a bay fit for swift move during any trouble.

They always wanted to connect up all the main British ports of India by establishing a number of small factories between the ports of Calcutta and Madras. They established their factories at Balasore, Hukitola, Dhamara, Paradeep, Ganjam, Sonnapur, Baruva, Vizagapatnam, Masulipatnam, Calingapatnam and many other places²⁴. However, Ganjam was the only British factory in Odisha and Madras which the

British had made a direct headquarter²⁵. Ganjam was placed in the Srikakulam district, and Koraput was placed in the Vizagapatnam district for administrative point of view under the British for some time. The word 'Ganjam' is a Persian one which means a common place or "Granary of the world" in English²⁶. The two places Ganjam and Koraput served as major viable centres of Trade and Commerce in South Odisha, also the major gateway between the hills and plains in the matter of trade and business.

Ports of South Odisha

On the Coromandal coast of India a good number of ports had come up and continued to exist in the nineteenth century. They were Gopalpur, Ganjam Sonnapur, Baruva, Pundi, Bavanapadu, Calingapatnam and Chilika.

Gopalpur Port

Gopalpur (or Mansurkota) worked as the chief port of Ganjam district under the British. It was a flourishing port-town on the south of the famous harbour and port-city of Dantapur or Palur, the capital of Kalinga-Kongoda, in ancient times²⁷. When Ibrahim Qutab Shah, the Sultan of Golkonda, invaded and occupied south Odisha (the erstwhile undivided Ganjam and Koraput districts) right from the Chilika Lake in 1571 Ce, the town near the meeting place of the river Rishikulya with sea (i.e., Bay of Bengal) was known as "Ganj-e-Am" or "Ganjam", meaning common market place in Turko-Persian, and he also renamed the port town of Gopalpur as "Mansurkota"²⁸. Mansurkota remained under Golkonda from 1571 Ce till 1687 Ce in which year the Golkonda kingdom was invaded and occupied by the Mughal emperor Aurangzeb Alamgir. The Golkonda kingdom was changed into *Subah* or province and a *Subedar* or a Governor was appointed to look after the administration of the province. The *Subedar* was also designated as Nizam in

1687 Ce and Mansurkota remained under his governorship till 1753 Ce in which year all the northern districts of the provinces, called *Uttar Sarkars* including the Srikakulam *Sarkar*, were granted as *Inam* to French General DeBussy²⁹. Mansurkota remained under the French authority from 1753 Ce till 1759 Ce. In 1766 Ce it came under the British authority. The French had built the second fort in Ganjam with which Mansurkota had maintained close rapport and contact. Similarly, it remained under the Ganjam Fort under the British from 1766 Ce onwards as a functional port establishing trade and commerce with Burma and other South – East Asian countries till the end of the British rule in 1947 Ce³⁰. Mansurkota was renamed as Gopalpur under the British.

Gopalpur was the chief port of Ganjam district, which lay in 19°31' north latitude and 85°0' east longitude. It was situated at a distance of 9 miles by road from Berhampur. It was a pleasant place of residence for the Europeans. The supply of fish was abundant. Several bungalows were set up by Europeans or residents and holidaying European merchants. When a terrible famine occurred during 1866 Ce, a large number of people became homeless and destitute. A cluster of *Chhatragharas* or Alms houses were set up around Gopalpur for providing relief and alms to the poor, which were, meticulously maintained and supported by the European community. A public bungalow was set up to supervise the charity by the European community,

The port of Gopalpur was nothing more than an open roadstead similar to other ports on the eastern coast of the Madras Presidency. It called for the steamers of the British India steam Navigation company. Merchandise and other goods were landed on the beach close to the custom Houses owned by F.J.V. Minchin³¹. There was a port officer exercising

power to collect sea customs and to maintain law and order. He exercised Magisterial powers as well as the powers of the justice of peace for cases occurring on the ships as well as in and around the port area. A light House was maintained from where light was exhibited at night time from its Flag staff, which was visible at a distance of 13 miles. The limit of the port on the North-East or Mansurkota side was at a distance of 1160 yards from the Custom house and on the South – West side at a distance of 600 yards from it; to seaward the distance or the boundaries of the port extended to where a depth of 12 Fathoms reached³². No ballast might be discharged by ships within a depth of 12 fathoms. The depth of water in the anchorage varied from 8½ to 9½ fathoms at low water. The rise and fall of the tide was about 6 feet. During the months of April, May and October, more especially the surf was frequently so high that communication between the shipping and shore was interrupted for days together, but it was generally possible in the early part of the day.

Gopalpur was a place of large and growing importance. There was no accommodation for the passengers, traders, and shippers who were often obliged to spend a day or two at the port. Hence it was considered that a public bungalow was more required at Gopalpur than at any other places of the Madras Presidency. However, the estimate for construction of a Traveler's Bungalow at the port of Gopalpur amounting to Rs.2,100 was sanctioned. An estimate amounting to Rs.4,050 for adding an upper storey to the existing customs building, was sanctioned in November 1883³³. In the course of time the sea beach and the town of Gopalpur was dotted with a large number of bungalows of both Europeans and Indians. Almost all the twenty-one Zamindari Rajas of Ganjam raised their bungalows there³⁴. Even some of the leading Maharajas of

India including the Maharaja of Nepal had their bungalows in the town. The maritime trade of south Odisha was practically handled by the Gopalpur port. However, the decline was invariably noticed both in the value of imports and exports at the Gopalpur port after 1900 Ce

Ganjam Port

The Ganjam port was another important port of Ganjam district. It was about 39 miles north-east ward of Gopalpur. It used to lie on the Rushikulya river, but in the consequence of the river gradually shifting, the limits of the port have been changed from time to time³⁵. The river formerly emptied itself into the sea close to the port, but its present mouth is nearly three quarters of a mile farther north. The limits of the port of Ganjam, within which passengers and cargo may be embarked, were fixed from the godowns formerly belonging to M/s Shand and Co., on the south to Kappagantula Ramaiah's godowns on the north³⁶. Ships usually anchored in the roads abreast of the fort in eight or nine fathoms, about two-miles from shore. The conservator of the port at Ganjam was also Superintendent of Sea Customs. T. J. Malt by wrote about the Ganjam port that "Once this was the chief port of the district, now it is a rare thing for a ship to come there, and it is also difficult to understand why it has been so thrown into the shade by Gopalpur, unless it be that the latter has had the advantage of British enterprise to bring it forward"³⁷. Over Gopalpur, Ganjam had the advantages that boats could be loaded in quiet water at the custom house, and that they can be of greater capacity than boats that have to be dragged up out of the surf loaded³⁸. It is said that the anchorage was not so good, and that there was generally more sea, but with larger boats, one would suppose that the sea would not matter, and for anchorage Gopalpur itself was not very good.

Sonnapur Port (Sonnapuram)

The Port Sonnapur lies in latitude 19°6' north and longitude, 84°47' east. The Port was marked by a white obelisk and a white column each 50 feet high. At 120 feet north by east from the column was the flag staff, and between them was the custom house. The Bahuda river falls into the sea at Sonnapur and formed with the sea, sandy bars which offered great obstruction to shipping. The trade that formerly went to Sonnapur was gradually finding its Baruva³⁹. Excellent edible oysters were found here which were much appreciated by the European residents of the district. During the hot weather Sonnapur was a pleasant place to camp at as the sea breeze renders the heat tolerable. It was two miles from the Surla salt factory and fourteen from Berhampur with which it was connected by a branch road leading into the high road between Ichhapur and Berhampur.

Baruva Port (Anglice Barwah)

The Baruva port lies in latitude 18°51' north and longitude 84°35' east and was 33 miles distant from Berhampur by road. The port was marked by two columns, black and white, 50 feet high, built on a site 15 feet above the sea, bearing north-west from the usual anchorage. The black one must be altered for it was invisible at sea at any distance South West of Baruva there are large topes of coconut trees. Baruva formed part of the proprietary estate of that name. A good deal of coconut oil was made in the neighbourhood and the trade of the port was increasing⁴⁰. Previously Baruva was in the district of Ganjam during the British period. But after 1936 Ce it remained in Srikakulam district of Andhra Pradesh.

Bavanpadu Port

Bavanpadu was a small port in British Ganjam. It lies in latitude 18°34' north and longitude 84°20' east. It is 23 miles away from,

north east of Calingapatam. The port was marked by a column, coloured black and white, 50' feet high at 6' feet above the sea⁴¹. The usual anchorage was with this beacon bearing north west. This place is also no more now in Ganjam district. It is now in Srikakulam district of Andhra Pradesh.

Pundi Port (Anglice Poondy)

Pundi was the minor port in latitude 18°40' north and longitude 84°26' east and was under the sea custom's Superintendent of Calingapatam, in the Chicacole Division⁴². It stood at the mouth of the Mahendratanya river having several rocks projecting a considerable distance seaward from north-east $\frac{3}{4}$ east. The port was marked by a white obelisk, 50 feet high on a hillock, 19 feet above the sea. As a few yards east of it was the flag staff 75 feet high, and north of it at the same distance was the Traveller's bungalow⁴³. As the obelisk, flag staff and bungalow thus stand together on the hill, this port could not well be mistaken by ships at sea, The anchorage was with the obelisk bearing north-west by west.

Calingapatam Port

The Calingapatam port stood on the south bank of the Vamsadhara river. The sandy point forming the south bank of the river was in latitude 18°19' north and longitude 84°7'30" east. A light house, 64 feet high stood on the point, and the town was between the south bank of the river. A reef or rocks extended from the shore- half a mile seaward. In passing vessels ought not to approach nearer than 8 fathoms. The best anchorage was in $6\frac{1}{2}$ to 7 *fathoms*. Calingapatam was the only port which had any shelter, and which was not a perfectly open roadstead and unprotected between Coringa 150 miles south and Dharma in the north. Communication between the shore and shipping was but rarely interrupted and the landing was much uncertain than at Gopalpur. During the monsoons a large

number of native vessels lie up in the river Vamsadhara⁴⁴. The greatest depth of water over the bar was 14 feet 6 inches and for 220 yards there was depth of 12 feet. In 1882 Ce a fortnightly port of call for the coasting steamers of the British India steam Navigation Company. Calingapatam was connected by means of a good metalled road with Chicacole⁴⁵, from which its distance is 16 miles. It was the residence of a few European merchants. When Ganjam was under the Madras presidency, the Calingapatam port was in the district of Ganjam. But presently it is in Srikakulam district of Andhra Pradesh.

The Chilka Lake

The Chilika Lake, the largest brackish water lake in India is situated in the eastern coast of Odisha. It has stretched over the districts of Puri and Ganjam. It is a lagoon and its mouth is opening into the Bay of Bengal. It is pear shaped having its wider end towards the north-east and the conical end towards the south and “is the largest open lagoon in Asia and the second biggest in the world”⁴⁶. It is situated between latitude 19°28’ and 19°54’N and longitudes 85°67’ and 85°35’E on the east coast of India. The area of the lake fluctuates in different seasons. During the summer the lake water occupies an area of about 906 sq.kms. and swells into about 1165 sq. kms. towards the peak of monsoon season⁴⁷. The average depth of the lake was from 5 to 6 feet and scarcely anywhere exceeded 12 feet. In the past it was a great centre of maritime activities for the people of Odisha. From different ports of this lake sailors, navigators, traders, sailed their ships to far off countries. The Chilka lake has been referred to as a ‘Bay of the Sea’ by Hiuen Tsang, the Chinese pilgrimage in the 7th century Ce⁴⁸. Chilika was also one of the important ports of Kalinga. Ships sailed from here to Burma, Ceylon, China, Java, Sumatra and other places⁴⁹. During the British period the Chilika lake was also an important

waterway between the Madras Presidency and city of Puri belonging to the Bengal Presidency⁵⁰. A tidal canal connected the lake with the Rushikulya river in Ganjam and was navigable throughout the year. Large quantities of grains were imported from Odisha across the lake and along this canal and in return, salt was exported⁵¹. Kalpura Ghat, a village on the Chilka lake, was an important centre of trade. Boats from the Madras Presidency unloaded their cargoes here and returned home with rice and other exports from Odisha⁵². Rambha a small village near the South end of Chilka lake was also another principal place of landing for the goods. Here food items arrived at an average of 67,078 *maunds* of rice and 8,54,136 *maunds* of paddy per annum. Hiuen Tsang describes that Kangoda, which was on the sea side contained many rare precious commodities and produced large dark coloured elephants which were capable of long journey⁵³. These elephants might have been used as the means of transport of commodities to various ports of the Chilka coast which served as a natural harbour⁵⁴. The Chilka lake was not only a centre of maritime enterprise but also a boat and ship building centre of ancient Odisha⁵⁵. The trade of Chilka was carried on in boats quite peculiar to the lake and in some respects well suited to it. They were made of planks without ribs or keels, and perfectly flat bottomed with perpendicular sides. This form was necessary in the unimproved state of the landing places as the lake was very shallow at the edges, except where rocky knoll formed the bank; and in such position's goods could not be landed safely from breaking wavers. The bed of the lake was all of the softest mud, and the slope from the shore was so light, but for the rise and fall of the tide, loaded boats could not approach the most favourable landing places within several hundred yards, and when the rise of the tide was light, the boats could only be unloaded by the carts being driven into the lake to meet

them. Since time immemorial, Chilka lake had been one of the greatest fish supplying centres in India⁵⁶. All sorts of fish were caught in plenty in this lake.

Fish curing was taken up at Chilka. In the 19th century, boiled and dried fish of Chilka was sent to Burma market⁵⁷. But trade through the Chilka lake considerably declined with the opening of the Bengal – Nagpur railway⁵⁸. The glory of the port had already been lost now. The Chilka lake is the food-bowl of the fishermen who live around it and fishing has become their profession since long. The Chilka lake, which was an important trading centre of the days, has already lost its glory.

The ports of Ganjam played a leading role in the sea-borne trade of India. References are many in the travel accounts of the Europeans and the factory records to the mercantile marine of South Odisha. Ceasar Frederike⁵⁹ in his travel account mentions that every year in the ports of Odisha about 25 or 30 ships big as well as small were laden with rice, gingelly, salt, oil, ginger, lac, long pepper etc. The ports viz., Gopalpur, Ganjam, Baruva, Bavanapadu, Pundi, Calingapatam, Sonnapur, and Chilka were the main centres of maritime trade of south Odisha. Of all the ports, the Gopalpur port or Mansurkota was the principal trading centre. The Chilka zone in particular was the hub of sea faring activity. Trade relations with numerous countries made Odisha commercially and materially rich and prosperous.

The ports of Ganjam which provided an ample scope for carrying trade with the over-seas countries gradually declined towards the end of the year Ce 1900. The decline was invariably noticed both in the value of imports and exports, particularly at the Gopalpur port after 1900 Ce It was due to the competition of railway companies which offered special low rates for transport of goods by rail. The railways monopolized the export

and import trade of Odisha after 1900. After 1930, imports and exports were practically confined to the coasting trade between Calcutta and Chandballi, and between Madras and Gopalpur. In this way the ports of South Odisha lost their past glory at the dawn of twentieth century.

Export and Import Trade

Ganjam District of Odisha provided a congenial climate for growth and development of both internal and external trade. There was much scope for trade of all kinds of indigenous products. But the old age chronic poverty of the people stood on the way of the improvement of native trade. No native trader was found having considerable influence over the trade of South Odisha. All rich traders came in from outside and exercised their monopoly hold on the trade of Ganjam.⁶⁰ Ganjam during the British period presented a picture of herself as an India in miniature by being the nerve centre of trade and commerce of not only of Odisha but of the country as a whole. Being a great reservoir of vast unexplored natural wealth, it was bound to play an inevitable vital role in the varied economic activities of south Eastern and Western India in a major way. And as such the region of Ganjam has carved out a special place of pride and importance in the annals of Odishan and Indian history and culture and commerce during the British period.

The maritime trade of British Ganjam or undivided Ganjam was practically handled by the Gopalpur port. British and French ships visited five important ports of Odisha in the 19th century. They were visiting false point, Puri, Balasore, Chandballi and Gopalpur at regular intervals. The vessels of British India steam Navigation and Co. Ltd., and Scindia Steam Navigation and Co. Ltd., and the Asiatic Navigation and Co. Ltd., were engaged in carrying on export and import trade with these

ports.⁶¹ The vessels of the first two companies had regular services between Gopalpur and Rangoon for cargo and passengers.⁶²

Gopalpur port was a place of large and growing importance. A considerable quantity of food grains and salt exported from this port came from the Garhjats. Several traders visited princely states and purchased the crops upon the fields. They too sent their agents to remote villages to collect the grains by paying advances to the cultivators. Rice was shipped overseas to Ceylone and Mauritius and sugar was obtained from the latter island by merchants who kept up a connection with Mohammadan traders controlling the sugar industry there.⁶³ But with these exceptions trade both import and export was carried on chiefly with Calcutta and Madras. The principal imports were cottoning twist, piece goods, gunny bags, and kerosene oil. The principal articles of export from Gopalpur and other ports of South Odisha were paddy, salt, fish, hide and skin, horns, oil seeds, sal wood, and sleepers.⁶⁴ The East India Company levied sea anchorage duty at different sea ports of the region. In 1788, the board of revenue considered this duty with a view to induce greater use of small craft and freight for external trade. The goods of which sea custom realized were paddy, rice, salt, coarse grain and others. These were realized at the ports of Ganjam, Gopalpur, Sonnapur and Calingapatam. The amount collected from different ports of Ganjam in different years were as follows.⁶⁵

Sl. No.	Years	Rupees	Annas	Paise
1	1784-85	17399	4	2
2	1785-86	11626	1	2
3	1786-87	10261	5	0
4	1787-88	10474	1	4
	TOTAL	49760	11	8

But when the traders used cargo to export their goods, they were charged half of the above rates. No other customs levied on them. From them the anchorage levied in the roads at different ports of the district were as under.⁶⁶

1	For 3 mast vessels	Rs.30
2	For 2 mast vessels	Rs.25
3	For 1 mast vessels	Rs.17.8.0
4	For 1 boat	Rs.5

This type of duty the traders had to pay when they used a cargo. The rates of custom on merchandise during the years 1784-1788 were as follows.⁶⁷

		Rupees	Annas	Paise
1	Paddy per <i>garce</i>	2	2	2
2	Coarse rice per <i>garce</i>	4	3	3
3	Fine rice per <i>garce</i>	1	9	3
4	Candoolo per <i>garce</i>	3	14	3
5	Oil seeds per <i>garce</i>	4	15	3
6	Nat cheney per <i>garce</i>	2	11	3

Cloth, silk cloth, wax and other goods by weight were charged at 3.3/4th on valuation.

No *russooms* or fees exclusive of the company's duties were charged at any of the seaport of Ganjam district⁶⁸. The company government usually suspended collection of import duty on grain during the harvesting season. In 1791 CE the government abolished port duty on the coast, both for export and import goods, with a view to encourage trade and increase the company's possession. Besides it, the company

government had levied ‘land custom’ known as ‘metapesha’ on all goods exported from and imported into the district⁶⁹. The company government collected a duty on the export of food grains from different ports of southern Odisha. Between 1815–20 CE, they collected Rs.66,425 at Ganjam port, Rs.1,74,296 at Baruva port, Rs.5,73,186 at Calingapatam port, Rs.1,74,296 at Mansurkota or Gopalpur port⁷⁰. The sea coast in Ganjam port was favourable for navigation and the bulk of trade through the ports of this area was encouraging. The most important items of export from Ganjam port were paddy, raw rice, or *Aarrua* rice and boiled rice The following statement⁷¹ would offer a picture of the export trade that Ganjam port had during 1827 CE to 1832 CE All value were mentioned in rupees.

Sl. No.	Year CE	Value of paddy	Value of raw rice	Value of boiled rice
		exported	exported	exported
1	1827	100656	96893	38244
2	1828	167133	358529	—
3	1829	150294	1919949	370416
4	1830	106800	254723	237916
5	1831–32	66176	117962	112404

In addition to this amount, the company government received Rs.24,669.11.5 in the year 1834–35 CE and Rs.15906.7.3 in the year 1835–36 CE respectively as the sea customs. In 1854 CE the British government of India attached much importance to the native fibre. At this time a deficiency being felt in the supply of flax and hemp in the English market, demand for fibrous substances of substitution became great. Among the great variety of Indian fibres, specimen of some were examined and found an honourable mention in the London exhibition of 1851 CE Before this year many of the fibrous substances

were wasted in large quantities from ignorance of their use. The company government wanted to improve free trade and transport of such necessary substance But unfortunately, the people of Ganjam failed to realize the importance of this native fibre. It was sure that they could have easily developed their economy to a great extent. Sea fish was available in plenty in Ganjam district. In November and December, the fishermen caught plenty of sea fish in Ganjam. In the 19th century boiled and dried fish or *Sukhua* of Chilka and Ganjam were sent to Burma and Rangoon market⁷².

Name of the ports									
Year	Barua			Calingapatam			Ganjam		
CE	Rs.	Anna	Paise	Rs.	Anna	Paise	Rs.	Anna	Paise
1850-51	55	3	0	588	12	2	457	1	8
1851-52	15	10	6	619	7	10	278	9	0
1852-53	25	4	6	170	13	9	207	1	6
1853-54	30	9	6	832	13	8	384	11	6
1854-55	29	4	0	434	4	1	455	13	6
	Gopalpur			Poondy			Sonnapur		
CE	Rs.	Anna	Paise	Rs.	Anna	Paise	Rs.	Anna	Paise
1850-51	553	1	8	279	11	11	140	15	0
1851-52	369	10	6	277	10	5	97	4	6
1852-53	453	14	3	302	5	3	120	14	3
1853-54	345	12	6	231	5	5	222	12	0
1854-55	349	3	0	384	1	7	86	4	6

The Great Movement of 1857 had caused an adverse effect on the trade and commerce of the country. For this the company government had sustained heavy loss in revenue. It compelled the government to seek increased resources to meet the exigencies. In the pre-famine period,

the export of the district exceeded to the volume of imports. But in 1866, during the severe famine period, the quantity and value of imported grain was more than of export. From this table⁷³ the decrease of export during the said period is clearly evident.

	Import		Export	
	Quantity	Value in rupees	Quantity	Value in rupees
	in maunds	anna and paise	in maunds	anna and paise
1862 CE	10,262	20,424-0-0	6,30,695	12,61,390-0-0
1863 CE	24,327	48,634-0-0	11,97,924	23,95,848-0-0
1864 CE	21,481	61,833-0-0	5,51,340	15,21,920-0-0
1865 CE	1,20,716	7,96,233-0-0	1,01,071	4,93,013-0-0
1866 CE	32,977	1,36,966-0-0	1,767	56,500-0-0

Even in the year of famine, the British Government did not give up collection of duty on imported and exported grains⁷⁴.

In 1878-79 trade of the district had attained normalcy and some articles such as raw cotton, coir and wine were need from import duties⁷⁵.

The following table⁷⁶ has shown the import and export of merchandise and treasure from the ports of Ganjam district for the year 1878-79 CE and 1882-83 CE

	1878-79 CE		1882-83 CE	
	Import	Export	Import	Export
1. Trade with foreign countries	28801	1099802	8936	1743194
a.Merchandise in rupees	10030	-	-	-
b.Treasure in rupees				

2. Trade with foreign ports of India	1193	7048	1352	603
a.Merchandise valued in rupees	-	-	-	-
b.Treasure in rupees	-	-	-	-
3. Trade with the British ports in other presidency	737014	406981	954891	1295052
a.Merchandise valued in rupees	20030	5000	-	-
b.Treasure in rupees	-	-	-	-
4. Trade between the presidency	241405	1021261	530759	1392814
a.Merchandise valued in rupees	51700	-	-	-
b.Treasure in rupees	-	-	-	-
5. Total	1008423	2535092	1494398	4431663
a.Merchandise valued in rupees	32030	5000	-	-
b.Treasure in rupees	-	-	-	-
c.Percentage	89%	-	-	-

The total number of vessels⁷⁸ which entered and cleared at all the chief ports of the districts in 1882-83 CE were as under.

Ganjam	External Trade	Internal Trade
Vessels entered	140	138
Tons	183416	181631
Vessels	20	170
Tons	17177	213888

From the port of Gopalpur rice was exported to Ceylone in exceptional case⁷⁷. The import and export of Ganjam for the year 1888-91 were as follows⁷⁸.

	1888-89	1889-90	1890-91
Export in Tonns	475	-	16215
Import in tons	-	3100	-

The average export and import of Ganjam for the period 1898-1903 was valued at Rs.100940. These included goods such as grains rice, sugar, gingelly, hide, skins and coir manufactures.

Thus, overseas trade and maritime activities of south Odisha is one of the fascinating subjects of Odishan history. It was great in power and resources on account of its maritime trade as it possessed a vast coast line along with a better climatic advantage to her credit. An enormous amount of natural resources, the abundant forest wealth, the agricultural products from the fertile soil, and the horn and ivory works were the backbone of the overseas trade. A number of suitable ports viz., Gopalpur Port, Ganjam Port, Sonnapur port were the principal shipping centres for the navigators. The overseas trade has given profuse economic affluence to Ganjam over the years. Its decline had direct bearing on economic potentiality leading to the abandonment of the flourishing sea ports and maritime activities. Climatic changes, sea level fluctuations, coastal erosion, coastal sedimentation etc. played significant role in the destruction of the ports of Ganjam. Gradually the ports of south Odisha, especially the Gopalpur port had declined after Ce 1900 which caused great damage to the overseas trade of South Odisha.

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Odias in Malaysia: Migration, Memory, and the Preservation of Cultural Roots

Sunil Kumar Biswal

By the early twentieth century, the global political order was dominated by the British Empire, whose territories stretched across continents. India occupied a central position within this empire, functioning not only as an administrative hub but also as a vast reservoir of labor. Wherever the British colonial economy demanded workers—on plantations, in mines, or on infrastructure projects—Indian laborers were transported across seas under colonial systems of recruitment.

One of the most significant destinations of this labor migration was Malaysia (then Malaya), where the expansion of rubber plantations in the late nineteenth and early twentieth centuries generated an enormous demand for manual labor. While the majority of workers came from South India, particularly Tamil- and Telugu-speaking regions, a notable section also originated from Odisha. Though smaller in number, these Odia laborers played an important role in plantation economies and left behind a distinct cultural imprint.

Early Migration and Conditions of Life

The Odia laborers who arrived in Malaya around the turn of the century faced extreme hardship. Transported by ship and settled deep within forested plantation zones, they encountered unfamiliar climates, harsh working conditions, and social isolation. Housing was basic, healthcare was inadequate, and labor was physically demanding. Compounding these difficulties was the natural environment itself—dense jungles inhabited by wild animals, including tigers. Community memories still recount how many early settlers lost their lives in encounters with wildlife.

Despite these dangers, the Odias demonstrated remarkable resilience. With limited resources but strong communal bonds, they adapted to their surroundings and gradually stabilized their living conditions. Over time, plantation settlements evolved into enduring community spaces, where social life extended beyond work to include cultural and religious practices.

Cultural Preservation in a Minority Context

What distinguishes the Odia diaspora in Malaysia is its sustained effort to preserve linguistic and cultural identity despite numerical disadvantage. Compared to Tamil and Telugu communities, Odias were fewer in number and lacked institutional dominance. Yet, from an early stage, they recognized that cultural survival depended on deliberate action.

A significant step in this direction was the presence of Odia teachers within plantation settlements. These teachers established small schools that taught children the Odia language, literature, and basic cultural values. Education thus became a central instrument of cultural continuity. Language, in particular, functioned as a repository of memory, linking younger generations to Odisha despite physical separation.

Alongside education, Odia festivals, rituals, and musical traditions continued to be observed. Religious practices associated with Odisha, adapted to local circumstances, provided emotional and spiritual cohesion. These practices transformed plantation spaces into sites of cultural reproduction rather than mere zones of labor.

Independence and the End of Colonial Mobility

The political landscape changed fundamentally with the independence of India in 1947 and Malaysia in 1957. The dissolution of the British Empire brought an end to free

movement of labor between colonies. Migration from India slowed and eventually ceased.

By this time, many Odia families had already established permanent roots in Malaysia. Choosing to remain, they acquired Malaysian citizenship and integrated into the emerging nation-state. This transition marked a shift from a migrant labor identity to that of a settled diaspora. Importantly, integration did not entail cultural erasure. Instead, Odias navigated a dual identity—politically Malaysian, culturally Odia.

Contemporary Revival and Cultural Assertion

In recent decades, the Odia community in Malaysia has become increasingly conscious of the challenges posed by globalization, linguistic dominance, and generational change. Younger members, educated primarily in Malay and English, risk losing fluency in Odia. In response, community-led initiatives have emerged to revive language and cultural practices.

Efforts to reintroduce Odia learning through informal classes, cultural associations, and family-based transmission have gained momentum. Festivals and cultural programs are now consciously framed as tools of intergenerational engagement rather than routine observance. These initiatives reflect an understanding that cultural identity must be actively maintained rather than passively inherited.

Kalinga History Group has been re-establishing links with the Odia diaspora of Malaysia by having regular interactions, conducting online Odia classes for interested Odias across Malaysia, publishing their stories in newspapers, creating audio visual documents on online platforms.

Prominent Odias of Malaysia who have contributed to such revival journey are Mr.Rengadhar Naik of Pedas, Mrs.

Padmini also from Pedas, Mr.Pitamboro Naik from Johr Bahru, Mr.Panchanan Sahoo from Ipoh.

Odisha Research Center also conducted an online meet with Odia diaspora which was attended by members of Kalinga History, many prominent persons from Odisha and also above named Odias from Malaysia.

Conclusion

The history of Odias in Malaysia illustrates a broader pattern of diaspora resilience under colonial and postcolonial conditions. From early migration under exploitative labor systems to contemporary efforts at cultural revival, the Odia community has demonstrated a sustained commitment to preserving its roots in Odisha. Their experience challenges simplistic narratives of assimilation and highlights the role of language, education, and collective memory in sustaining cultural identity across generations.

In this sense, Malaysian Odias stand not merely as descendants of colonial laborers but as custodians of a transnational cultural heritage—one that continues to connect Southeast Asia with eastern India more than a century after the first migrations.

SECTION - IV

Policy and The Blue Economy (The Present)

Policy Frameworks for Developing Odisha's Maritime Sector

Nishanth S S

Introduction

Odisha's ties to the water are firmly ingrained in its history, with ancient kingdoms such as Kalinga renowned for their maritime achievements. The state now boasts a 480-kilometer coastline along the Bay of Bengal, which provides a significant opportunity for economic expansion by promoting the growth of its maritime industry (State Maritime Board). This coastline already has critical ports such as Paradip, a major port under the Union Ministry of Shipping, as well as the non-major ports of Dhamra and Gopalpur, both of which play important roles in regional trade and commerce (Odisha Minerals). The state's abundant natural resources, including iron ore, emphasize the need for excellent port infrastructure to enable the export of these items and the import of key raw materials like coal, and bauxite. Odisha's government has built a robust policy framework to stimulate investment, promote sustainable development, and ensure the integrated growth of its maritime ecosystem, recognizing the sector's great potential. This framework aspires to build Odisha as a major marine hub on India's eastern coast by exploiting the state's historical ties to the sea as well as natural resources.

Overview of the Odisha Port Policy 2022

The Odisha Port Policy 2022, officially notified on November 19, 2022, under notification number 3242, outlines the state government's strategic goal for the comprehensive improvement of the maritime industry (Odisha Port Policy 2022). The 2004 plan has been superseded by this improved

approach, which better addresses shifting dynamics and new opportunities in the maritime environment. The primary goal of the 2022 policy is to establish a comprehensive maritime ecosystem in Odisha, which includes not just port facilities but also associated areas such as shipping, interior waterways, and maritime tourism. The policy is intended to remain in effect for five years from its announcement date or until a new or amended policy is declared. (Odisha Port Policy 2022).

The Odisha Port Policy 2022 is guided by several key objective (Odisha Port Policy 2022):

- **Augmentation of Cargo Handling Capacity:** A primary aim is to significantly increase the overall cargo handling capacity within Odisha's ports to meet the growing demands of trade and industry.
- **Development of Non-Major Ports and Port Connectivity Infrastructure:** The policy emphasizes the strategic development of non-major ports along the coastline and the establishment of robust connectivity infrastructure, including road, rail, and inland waterways, to ensure efficient cargo movement.
- **Development of Coastal Shipping and Inland Waterways:** Recognizing the potential of these modes of transport, the policy seeks to promote and develop both coastal shipping and inland waterways as integral components of the state's maritime network.
- **Port-Led Development and Creation of a Maritime Ecosystem:** The policy envisions ports as catalysts for broader economic development, fostering the creation of a comprehensive maritime ecosystem that includes industries, logistics services, and other related activities.

- **Technological Intervention in the Maritime Sector:** Embracing technological advancements is a key focus, with the policy aiming to integrate modern technologies into various aspects of the maritime sector to enhance efficiency and competitiveness.
- **Sustainable Maritime Sector Development:** The policy underscores the importance of environmentally responsible growth, promoting practices that ensure the long-term sustainability of the maritime sector and minimize ecological impact.
- **Policy Implementation and Monitoring Process:** A clear framework for the implementation and ongoing monitoring of the policy's effectiveness is established to ensure its objectives are met. (Odisha Port Policy 2022).

To achieve these goals, the policy outlines several priorities and strategies: encouraging private sector participation in port development, augmenting cargo handling capacities, improving connectivity, promoting coastal shipping and inland water transport, establishing Coastal Economic Zones (CeZs), developing allied infrastructure and services, promoting marine tourism, fostering a ship breaking and recycling industry, encouraging technological advancements.

Table 1: Key Objectives and Strategies of Odisha Port Policy 2022

Key Objective	Corresponding Strategies
Augmentation of Cargo Handling Capacity	Encouraging greenfield and brownfield port projects, utilizing BOOST and ROT models
Development of Non-Major Ports and Port Connectivity Infrastructure	Promoting private participation through competitive bidding, facilitating land acquisition, establishing a Logistics Cell

Development of Coastal Shipping and Inland Waterways	Adopting a hub and spoke model for coastal cargo, developing inland waterway routes, providing fiscal incentives
Port-Led Development and Creation of a Maritime Ecosystem	Creating Coastal Economic Zones, developing Integrated Maritime Coastal Regional Plans
Technological Intervention in the Maritime Sector	Promoting research and development in innovative maritime technologies
Sustainable Maritime Sector Development	Implementing a Green Port Plan
Policy Implementation and Monitoring Process	Establishing the Odisha Maritime Board as a single-window agency

The Role of the Odisha Maritime Board

The Odisha marine Board (OMB), which was officially created on March 28, 2022, plays a critical role in the execution of Odisha's marine policy framework. Recognizing the need for a more streamlined and concentrated approach, the OMB has been established as the single-window body in charge of the holistic development of both ports and inland waterways throughout the state. This consolidation of authority intends to improve efficiency in planning, directing, and carrying out maritime development efforts, while also encouraging greater private sector participation in the process. The state government's Chief Secretary serves as the board's chairperson, demonstrating the board's high level of governmental control and attention to performance (Government of Odisha. *Odisha Port Policy 2022*).

The Odisha Maritime Board is entrusted with a wide array of functions and powers to effectively drive maritime development in the state:

- **Strategic Planning:** The OMB is tasked with developing an integrated 'Maritime Master Plan' in consultation with experts, providing a long-term vision and roadmap for the sector's growth.
- **Investment Promotion:** The board will have a dedicated technical wing to continually assess potential for new cargo generation and identify promising investment opportunities within the ports and inland waterways sectors.
- **Infrastructure Development:** The OMB is responsible for evolving an integrated approach that covers all aspects of port and infrastructural development, ensuring a cohesive and well-coordinated expansion of maritime facilities.
- **Financial Empowerment:** The board is empowered to receive funds from the Government of India, providing it with the necessary financial resources to support its various initiatives and projects.
- **Contractual Authority:** The OMB is authorized to enter into contracts with consultants, developers, and financial institutions, enabling it to leverage external expertise and secure necessary partnerships for development projects.
- **Partnership Facilitation:** With the approval of the Government of Odisha, the OMB can enter into Memoranda of Understanding (MoUs) and Concession Agreements, fostering collaborations and attracting private investment.
- **Regulatory Oversight:** Subject to the approval of the government, the OMB is vested with the powers to impose, review, and modify existing port charges in the minor ports, allowing for dynamic adjustments based on market conditions and operational needs.
- **Capital Participation:** Again, with government approval, the OMB can enter into agreements for capital participation

with the Government of India Ministries and other major ports, facilitating strategic alliances and resource sharing.

- **Market Analysis:** The board will undertake “Traffic Studies” to accurately identify the likely cargo volumes from the hinterland states, coordinating with various ministries of the Government of India to gain a comprehensive understanding of trade flows.
- **Private Sector Engagement in Inland Waterways:** In alignment with the policies of the Ministry of Shipping, Government of India, the OMB will plan and implement strategies to attract private sector investments into the development of inland waterways (Government of Odisha. Odisha Port Policy 2022).
- **Investment Facilitation for Ports and Industries:** The OMB will conduct surveys and techno-economic feasibility studies to facilitate private sector investment in the development of both ports and port-based industries.
- **Navigation Regulation:** The board is empowered to regulate and control navigation within the limits of the port and its approaches, ensuring safety and efficiency of maritime traffic 2.
- **Supervisory Control:** The OMB will exercise supervision and control over all works related to the ports within the state, ensuring quality and adherence to development plans.
- **Inland Waterway Development Planning:** The board will initiate development plans and frame guidelines for non-nationalized inland waterways within the state.
- **Licensing and Regulation:** The licensing and regulatory functions pertaining to port infrastructure, services, and non-nationalized inland waterways are vested with the OMB (The New Indian Express. “Assembly Passes Bill to Create

Odisha Maritime Board for Port Development." February 24, 2021).

The extensive authority and responsibilities entrusted to the Odisha Maritime Board underscore the state government's strong commitment to proactively shaping and driving the growth of its maritime sector. By acting as a central coordinating body, the OMB aims to create a conducive environment for investment, innovation, and sustainable development in this crucial domain.

Developing Port Infrastructure

Odisha's marine development strategy is heavily focused on increasing and improving its port facilities. The Odisha Port Policy 2022 clearly prioritizes increasing cargo handling capacity across the state's ports, identifying it as critical to fulfilling the expanding demands of local and international trade. One critical component of this plan is the emphasis on building non-major ports with active private sector participation. The government has identified 14 suitable places along the coastline for the construction of these non-major ports. Dhamra and Gopalpur are already functioning and contribute to the state's freight handling capacity. Furthermore, the state administration has announced the construction of two new sea ports in Inchuri and Bahuda, intending to significantly expand its freight handling capability. (Odisha Port Policy 2022)

The policy specifies an organized approach to port project development, with stages ranging from initial identification and conceptualization to development, operation, project structuring, concession durations, and licensing. This systematic approach is intended to provide clarity and assistance to potential investors and developers. Recognizing that efficient port operations rely substantially on reliable

connectivity, the strategy also highlights the importance of developing port connectivity infrastructure, such as roads, rail, and inland waterways. This multimodal approach ensures that cargo is evacuated from ports seamlessly and that access to hinterland markets is efficient, thereby increasing Odisha's maritime sector's competitiveness. The strategic development of non-major ports aims to harness the full potential of Odisha's coastline, dispersing economic advantages more equitably throughout diverse coastal districts and catering to a diverse range of cargo types. This approach moves beyond a singular reliance on major ports, fostering a more decentralized and resilient maritime network. The strong emphasis on multimodal connectivity underscores the understanding that well-integrated transportation links are crucial for the success of port infrastructure, ensuring smooth and cost-effective movement of goods (Odisha Port Policy 2022).

- **Challenge:** Delays caused by land acquisition battles and environmental concerns, particularly in environmentally sensitive coastal locations.

Countermeasure: Accelerate land acquisition, encourage community participation, and implement sustainable port development practices.

- **Challenge:** Some planned port sites face limited connection via road, rail, and inland waterways.

Countermeasure: Improve last-mile connection with dedicated freight corridors, multi-modal transportation hubs, and greater inland waterway integration.

Promoting Coastal Shipping and Inland Waterways

The Odisha Port Policy 2022 focuses a strong emphasis on developing coastal shipping and inland waterways as efficient and ecologically beneficial sources of transport. To boost

coastal shipping, the program proposes using a hub and spoke approach to manage freight flow along the state's coastline. This strategy tries to improve cargo flow by connecting main hub ports to smaller feeder jetties. Furthermore, the policy asks for the establishment of dedicated infrastructure at RO-PAX (Roll-on/Roll-off Passenger) ports to allow the transportation of both passengers and freight along coastal routes. (Odisha Port Policy 2022).

Regarding inland waterways, the strategy recognizes the importance of investing in the systematic development of critical infrastructure such as fairways, terminals, and navigational aids. The Directorate of Ports and Inland Water Transport, which reports to the Commerce and Transport Department, is in charge of monitoring the sector's development and regulation. This department is actively involved in providing and monitoring inland water transportation services, particularly in locations without significant road or rail connectivity. To promote safety and operational efficiency, the Government of Odisha has developed the "Odisha Boat Rules-2004" for the registration and inspection of all types of boats in the state. Furthermore, in accordance with the national Inland Vessel Act 2021, the state is developing its own Inland Vessel Rules to streamline and control transportation and trade on its inland waterways. The strategic focus on coastal shipping is consistent with national goals of reducing reliance on land-based transportation for cargo transit, providing a more sustainable and potentially cost-effective option. The hub and spoke model propose a well-thought-out strategy for increasing the efficiency of coastal logistics. Similarly, the development of inland waterways gives a chance to improve connectivity to remote locations, create regional economic integration, and provide a viable transportation option where other modes are limited. (*Directorate of Ports and Inland*

Water Transport). The Odisha government, in partnership with the Inland Waterways Authority of India (IWAI), is planning to connect Talcher to major ports such as Paradip and Dhamra through the state's inland canal network. This effort attempts to increase transportation efficiency and sustainability while lowering emissions. IIT Madras is developing the master plan for this project in conjunction with IWAI. (*Cargo Connect*. "Odisha to Connect Talcher with Major Ports via Inland Waterways, Boosting Sustainable Transport.").

- **Challenge:** Inadequate Roll-on/Roll-off Passenger (RO-PAX) services and cargo-handling infrastructure hinder coastal shipping.
- **Countermeasure:** Invest in dedicated RO-PAX terminals and cargo-handling facilities at ports and river terminals
- **Challenge:** Delays in inter-agency coordination between state and central government bodies (e.g., IWAI, Odisha Maritime Board).
- **Countermeasure:** Set up a single-window clearance system to streamline approvals and attract private investment.
- **Challenge:** Industries still prefer road and rail transport due to established networks and quicker delivery times.
- **Countermeasure:** Offer freight subsidies, integrate multimodal transport systems, and improve last-mile connectivity.

Unlocking the Potential of Maritime Tourism

Recognizing the economic and social benefits of tourism, the Odisha Port Policy 2022 clearly mentions marine tourism as a significant component of its maritime development plan. The policy calls for the development of different tourism-related facilities and activities along the state's coastline.

This includes promoting cruise tourism and establishing the infrastructure required to attract cruise lines and passengers. Furthermore, the program emphasizes the development of marinas and multi-purpose harbors that can accommodate recreational boating and other maritime leisure activities. To offer a complete framework for the growth of this sector, the policy asks for the drafting of a coastal tourist master plan, which will most likely include mapping possible tourism development locations.

The policy also includes attempts to improve existing tourism assets, such as the redevelopment of the State nautical Museum in Cuttack to world standards, with the goal of showcasing Odisha's rich nautical legacy and attracting visitors. To enhance adventure tourism, the policy calls for the reform of criteria for adventure water sports, which will ensure safety while promoting these activities. As part of its efforts to explore new tourist opportunities, the government aims to perform feasibility studies for seaplane connectivity, which might open up access to inaccessible coastal locations and provide unique tourism experiences. The establishment of Coastal Regulation Zone Guidelines is also stated in the context of boosting marine tourism, suggesting a commitment to sustainable and responsible development that takes into account the biological sensitivity of coastal areas. (Odisha Port Policy 2022).

- **Challenge:** CRZ (Coastal Regulation Zone) restrictions and environmental concerns may delay projects.
- **Countermeasure:** Adopt eco-friendly tourism models (floating hotels, solar-powered ferries) and conduct Sustainable Tourism Impact Assessments.
- **Challenge:** Odisha's maritime tourism potential is under-promoted compared to Goa or Kerala.

- **Countermeasure:** Launch aggressive digital campaigns, participate in global tourism expos, and establish Odisha as an exclusive maritime heritage destination.
- **Challenge:** Heavy reliance on peak seasons (October–March) affects year-round tourist flow.
- **Countermeasure:** Introduce monsoon tourism packages (eco-tours, backwater experiences) and off-season festivals to sustain visitor interest.

Incentivizing Investment and Growth

To fulfill its ambitious maritime sector development goals, the Odisha government has included a number of financial incentives and regulations in the Odisha Port Policy 2022. The strategy aggressively supports private sector engagement in the development of non-major ports by utilizing well-defined project models such as Build, Own, Operate, Share, Transfer (BOOST) for greenfield projects and Rehabilitate, Operate, and Transfer (ROT) for brownfield projects. Recognizing the long-term nature of port investments, the policy includes provisions for potentially extending commercial port concession periods for two further periods of no more than ten years each, based on merit, for a total of fifty years. Developers of captive jetties, which serve specific industrial units, may also be eligible for incentives as outlined in the applicable Industrial Policy Resolution (IPR) of the Government of Odisha, provided they meet the specified eligibility criteria (Odisha Port Policy 2022).

The strategy also addresses the critical issue of land acquisition, with the Odisha Maritime Board (OMB) promising to facilitate and assist port promoters and developers in acquiring land for their projects. To further promote the development of a comprehensive maritime ecosystem, the OMB intends to establish land banks near ports to

house critical logistics infrastructure like as Free Trade and Warehousing Zones (FTWZs), storage facilities, and Inland Container Depots (ICDs). The policy also mentions the creation of a unique incentive package aimed primarily at encouraging the construction of port support infrastructure. To support the expansion of coastal shipping, the strategy offers incentives for coastal goods handled at non-major ports and jetties inside the state.

Similarly, the strategy emphasizes the need to promote inland waterway development and includes provisions for fiscal incentives for developers, consignees, and end-users in the early stages of these projects (Odisha Port strategy 2022). Beyond the sector-specific incentives under the Port Policy, Odisha's larger Industrial Policy Resolution (IPR) 2022 provides a wide range of monetary incentives for investments in a variety of sectors, including maritime-related companies. Furthermore, the state government has launched the GO SWIFT (Government of Odisha - Single Window for Investor Facilitation and Tracking) platform to speed up the approval and clearance procedure for industrial projects, especially those in the maritime sector. (Odisha Industries (Facilitation) Act 2004). This comprehensive approach to incentivizing investment, combining sector-specific benefits with broader industrial and regulatory support, aims to create a favorable environment for the growth and development of Odisha's maritime sector.

The policy provides capital investment subsidies to developers of non-major ports and related infrastructure. The exact percentage and limits are aligned with the state's Industrial Policy Resolution (IPR) 2022, which offers: 20% subsidy for Priority Sectors, 30% subsidy for Thrust Sectors, disbursed over five years.

100% exemption on stamp duty for land registration related to port development projects. 100% exemption for a specified period, enhancing operational cost efficiency. 100% reimbursement, limited to 200% of the cost of plant and machinery, providing significant financial relief. (*India Briefing*. "Investing in Odisha State in India: Economic Outlook and Opportunities." Accessed March 17, 2025).

- **Challenge:** Despite attractive incentives, the pace of investment in Odisha's maritime sector remains slower than expected due to bureaucratic hurdles and lengthy approval processes.
- **Countermeasure:** Strengthen the Single-Window Clearance System under the Odisha Maritime Board (OMB) to fast-track approvals and reduce red tape.
- **Challenge:** While ports are being developed, supporting infrastructure (road, rail, warehousing) is still inadequate, discouraging investors.
- **Countermeasure:** Accelerate last-mile connectivity projects and establish maritime industrial clusters to provide integrated facilities.
- **Challenge:** Land disputes and environmental regulations can delay port projects and deter investors.
- **Countermeasure:** Implement a transparent land acquisition policy with stakeholder engagement and streamline Environmental Impact Assessments (EIA) without compromising sustainability.

Ensuring Environmental Sustainability

The Odisha Port Policy 2022 places a high priority on safeguarding the environmental sustainability of maritime activities in the state. The policy expressly supports

environmentally friendly approaches in all elements of port activities, operations, and management, taking into account the coastal region's ecological sensitivity. In accordance with this commitment, the policy establishes Coastal Regulation Zone Guidelines to ensure that development activities are carried out in an environmentally appropriate manner. Furthermore, the strategy calls for the implementation of a Green Port Plan (GPP), which is anticipated to include steps to lessen the environmental impact of port operations. (Odisha Port Policy 2022)

Existing ports in Odisha, such as Dhamra and Gopalpur, have already demonstrated adherence to environmental rules and implemented numerous sustainability initiatives. These include acquiring the relevant environmental permissions, conducting environmental impact studies, and executing pollution control measures. For example, Dhamra Port has implemented measures to conserve water, handle hazardous trash, and create a green belt. Gopalpur Port likewise prioritizes environmental compliance and has done thorough investigations to reduce its ecological impact, including the creation of a large green belt area. Environmental Impact Assessments (EIAs) for port development projects are important, especially in environmentally sensitive areas, because they assist detect and minimize any environmental hazards. This focus on environmental sustainability reflects a global understanding of the need to balance economic progress with the preservation of natural resources, particularly in coastal ecosystems. Integrating environmental considerations into the policy framework not only minimizes potential harm but also contributes to the long-term viability and social acceptance of maritime development projects in Odisha (Environmental Statement 2023-24 – *Dhamra Port*).

Odisha's renewable energy policy targets achieving 10 GW of renewable energy capacity by 2030, focusing on sectors like green hydrogen and green ammonia to support sustainable industrial growth. (*State Renewable Energy Policy 2022*).

- **Challenge:** Increased maritime trade may lead to oil spills, ballast water discharge, and air pollution from heavy port traffic.
- **Countermeasure:** Enforce stringent pollution control measures (e.g., zero-discharge zones and wastewater recycling).
- **Challenge:** Displacement of coastal communities due to port projects can lead to livelihood loss and protests.
- **Countermeasure:** Implement fisheries protection zones to safeguard traditional livelihoods.
- **Challenge:** Ports still rely heavily on conventional energy sources, increasing their carbon footprint.
- **Countermeasure:** Promote solar, wind, and tidal energy integration at ports.

Building a Skilled Maritime Workforce

Recognizing the importance of a competent workforce for the marine sector's growth and success, Odisha is actively investing in a variety of skill development and capacity building initiatives. The Odisha Port Policy 2022 predicts the creation of job opportunities by establishing a ship breaking and recycling industry in the state. The Odisha Maritime Academy, based in Paradip, is a crucial institution in this attempt, providing specialized training courses for aspiring sailors. The academy offers a Pre-Sea General Purpose Rating Training course, which aims to develop well-educated, trained, and disciplined sailors capable of fulfilling the needs of modern commerce ships. (*Odisha Maritime Board Management*)

Odisha is also taking part in the national Sagarmala Programme, which comprises Coastal District Skill Development Programs. Phase I of this initiative in Odisha is complete, and Phase II is currently being implemented, with an emphasis on improving skills in coastal areas (Government of India, "Sagarmala Programme"). Furthermore, discussions have focused on the proposed India Maritime Centre (IMC), which is designed as a hub for maritime research, training, and capacity building, indicating the state's commitment to growing competence in this subject. The Directorate of Ports and Inland Water Transport also intends to strengthen the Crew Training Institute at Chandabali, focusing on delivering modern and improved technical training for inland vessels. (*Directorate of Ports and Inland Water Transport*) The state's broader "Skilled in Odisha" initiative also contributes to workforce development across various sectors, including maritime. In addition to the Odisha Maritime Academy, other maritime training institutes exist in Bhubaneswar and other locations, offering a range of courses and programs. These collective efforts underscore Odisha's understanding that investing in human capital is essential for creating a robust and competitive maritime sector, ensuring a pipeline of skilled professionals to support its growth.

- **Challenge:** Skilled maritime professionals migrate to states like Gujarat, Maharashtra, and Tamil Nadu due to better opportunities.
- **Countermeasure:** Create competitive salary packages and incentives for maritime professionals and develop Odisha-based shipping companies and ship repair yards to generate local employment
- **Challenge:** Maritime companies and educational institutions do not have strong collaborative programs to ensure students are industry-ready.

- **Countermeasure:** Develop internship and apprenticeship programs with Odisha's ports and shipyards
- **Challenge:** Odisha lacks dedicated maritime training centers offering port operations, shipbuilding, logistics, and offshore engineering courses.
- **Countermeasure:** Establish Maritime Training Institutes in collaboration with the Odisha Maritime Board (OMB) and Upgrade existing ITI and polytechnic colleges with maritime-focused curricula.

Table 3: Key Maritime Skill Development Initiatives in Odisha

Initiative/Institution	Description
Odisha Maritime Academy	Provides pre-sea training courses, including the General-Purpose Rating course, in Paradip
Coastal Districts Skill Development Program (sagarmala)	Implemented in two phases to enhance skills in coastal communities.
Proposed India Maritime Centre (IMC)	Envisioned as a hub for maritime research, training, and capacity building
Crew Training Institute, Chandabali	Focuses on providing technical training for inland vessels.
Skilled in Odisha Initiative	State wide program for workforce development across various sector.

Odisha and the Sagarmala Programme

Odisha is an active participant in the Sagarmala Programme, the Government of India's flagship initiative to promote port-led development throughout the country. Odisha will implement 53 projects worth over ₹54,000 crore to improve infrastructure for port-led industrialization, port modernization,

port connectivity, coastal community development, and coastal shipping and inland waterways. These projects are being carried out by a variety of entities, including central ministries, the Inland Waterways Authority of India (IWAI), Indian Railways, state governments, and major ports. The Ministry of Ports, Shipping, and Waterways is also giving partial finance for numerous projects in Odisha through the Sagarmala plan. (Government of India. *Sagarmala Programme*). Notably, the Sagarmala initiative is also supporting Odisha's Coastal Districts Skill Development Program. At sessions of the National Sagarmala Apex Committee (NSAC), Odisha has continuously emphasized its commitment to marine development and highlighted key projects such as the Odisha State marine and Waterways Master Plan (OSMWMP), which aims to improve connectivity and encourage trade. The state has also stressed its commitment to developing national waterways, promoting shipbuilding and repair facilities, and leveraging its coastline for long-term economic growth, all of which are consistent with the Sagarmala Programme's goals. Odisha's active involvement in the Sagarmala Programme offers it with access to vital central government financing, technical expertise, and a comprehensive national framework to guide its marine development activities. (*Commitment to Maritime Development at NSAC Meeting*. March 2025)

In March 2025, discussions during the National Sagarmala Apex Committee (NSAC) meeting emphasized Sagarmala 2.0, focusing on port modernization, multimodal connectivity, and coastal development. This underscores Odisha's commitment to advancing its maritime infrastructure in alignment with national objectives.

Recent Developments and Regulatory Landscape

The regulatory landscape governing Odisha's maritime sector is constantly changing, with recent initiatives aimed at updating and reinforcing the present structure. One notable development is the Draft Odisha Marine Fishing Regulation (Amendment) Act, 2024, which aims to amend the Odisha Marine Fishing Regulation Act of 1981. The primary goal of this amendment is to maintain ecological balance by encouraging ethical fishing practices and enforcing stronger regulations in the state's marine fishing sector. The draft act includes several essential measures, such as new definitions for phrases like 'Deep Sea Fishing Vessel' and 'No Fishing Zone' to provide greater clarity. It also proposes limitations on fishing activities, including the prohibition of damaging tactics such as night fishing using lights. Furthermore, the amendment provides marine conservation strategies such as encouraging sea ranching and establishing artificial reefs to boost fish production and biodiversity. It also imposes stronger licensing and registration requirements for fishing vessels, as well as higher safety standards, such as required GPS and vessel tracking devices. The draft act also creates governance and monitoring institutions, such as district-level management advisory committees and fishing harbor associations. Finally, it establishes sanctions and enforcement procedures to ensure compliance with the new regulations. The Odisha government aggressively solicited public opinion on this draft amendment, emphasizing its commitment to inclusive and participatory regulatory development. (*Government of Odisha. Draft OMFRA Fishing Regulation (Amendment) Act 2024.*)

The government has opened the draft for public consultation, inviting stakeholders, including fishermen, environmentalists, and the general public, to provide feedback. The consultation

period is concluded on 25th January 2025. Feedback can be submitted via designated platforms such as Civis, which has facilitated a WhatsApp chatbot for this purpose.

- **Challenge:** Fishermen may oppose new restrictions on night fishing, licensing rules, and vessel monitoring, fearing income loss.
- **Countermeasure:** Conduct awareness campaigns to educate fishing communities on the long-term benefits of sustainability.
- **Challenge:** Limited surveillance capacity may lead to illegal fishing activities and non-compliance with GPS tracking requirements.
- **Countermeasure:** Deploy modern surveillance systems like satellite tracking and drones to monitor fishing zones. Strengthen the Odisha Marine Police Force and provide them with better resources and technology.
- **Challenge:** Mandating GPS devices and Aadhaar-based IDs may financially burden small-scale fishermen.
- **Countermeasure:** Provide subsidized GPS systems for traditional fishing boats and Offer interest-free loans for fishermen to upgrade their vessels and equipment.
- **Challenge:** Stricter licensing and registration rules may sideline traditional fishers who rely on informal practices.
- **Countermeasure:** Ensure simplified registration processes for small-scale fishers and Allow exemptions or relaxed norms for non-mechanized boats under the new law.

Conclusion and Recommendations

The policy framework for the development of Odisha's maritime sector, anchored by the Odisha Port Policy 2022 and

the proactive role of the Odisha Maritime Board, presents a comprehensive and forward-looking strategy. The state's commitment to leveraging its extensive coastline and natural resources is evident in its focus on expanding port infrastructure, promoting coastal and inland shipping, and unlocking the potential of maritime tourism. The active participation in the national Sagarmala Programme further strengthens this framework by providing access to funding and a broader strategic direction.

However, for Odisha to fully realize its maritime ambitions, certain aspects warrant continued attention. While the policy emphasizes environmental sustainability, rigorous enforcement of environmental regulations and proactive engagement with environmental stakeholders will be crucial, especially as new port projects are developed. Ensuring timely completion of the ambitious infrastructure projects listed in both the state policy and the Sagarmala Programme will necessitate good inter-departmental coordination and project management. Attracting sustained private investment remains critical, and the state should continue to improve its incentive systems and expedite regulatory processes to make it more appealing as an investment destination. Furthermore, long-term success will require ongoing monitoring and evaluation of policy implementation, as well as a willingness to adjust to changing global and national maritime trends. By addressing these issues, Odisha can strengthen its position as an important marine hub on India's eastern coast, contributing considerably to the state's economic growth and the country's blue economy.

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Odisha's Contribution to India's Blue Economy

Sasmita Rani Shasini

Abstract

The Blue Economy denotes the sustainable utilisation of oceanic resources for economic advancement. India, with a coastline over 7500 km, harbours significant potential in its coastal and marine resources, offering chances for economic development, employment creation, and technological innovation. Odisha, with its 480 km coastline, is perfectly positioned to leverage the extensive potential of India's Blue Economy, particularly in light of its historical significance in marine trade and the cultural and spiritual heritage it represents. The varied habitats, including as mangroves, coral reefs, and estuaries, along with extensive agroclimatic zones, provide significant opportunities for biotechnology research and startup enterprises, rendering Odisha an optimal site for Blue Economy efforts. The State is also ideal for sustainable tourism techniques that utilise Odisha's maritime heritage and resources. The historical, cultural, and maritime connections with South Asia and Southeast Asia can serve as a foundation for enhancing India's economic and diplomatic engagement with these nations, thereby bolstering India's external security and enriching our cultural ties. Odisha can significantly contribute to achieving India's national objectives, enhance connectivity with neighbouring states, and exert influence in adjacent regions. This article contends that Odisha ought to formulate a comprehensive blueprint to capitalise on the economic development in the Bay of Bengal region and use its historical maritime connections to enhance India's leadership role in the area.

Keywords: Blue Economy, Maritime Commerce, Cultural and Spiritual Heritage, Maritime Security

Introduction

The oceans are essential life support systems for the global community on Earth. It supplies about fifty percent of the oxygen we inhale, along with the water and sustenance necessary for our survival, underscoring its significance in food security. Additionally, fishing in the ocean serves as a crucial source of livelihood security for roughly one in ten individuals worldwide. The ocean offers habitats with abundant biodiversity and is crucial for ecological equilibrium. It moderates the Earth's climate, controls precipitation, and sequesters carbon, hence managing conditions for humanity. The ocean is essential to the global economy, facilitating nearly 90 percent of international trade via maritime transportation¹. The ocean additionally fosters tourism and serves recreational reasons. Given their ecological, social, and economic significance, oceans must be managed in an integrated manner to ensure sustainable utilisation. Scholars have recently assessed the economic value of both marketed and non-marketed ecosystem services provided by the oceans. The oceans provide approximately 21 trillion USD annually to human welfare, in contrast to a global GNP of around 25 trillion USD. Approximately 60% of this value is derived from coastal and shelf systems, while the remaining 40% originates from the open ocean. Furthermore, the oceans account for roughly 60% of the total economic value of the biosphere (Costanza et al., 1997)². Historically, oceans serve as unifying aspects that facilitate cultural exchanges and collaborations across numerous coastal nations³. Therefore, recognising its importance, nations must develop ocean governance policies that depart from the conventional perspective of viewing oceans solely as resources to be

aggressively exploited and commercialised. There is a necessity for enhanced global engagement to rehabilitate ocean health for the sustainable utilisation of its resources.

Transitioning from Ocean Economy to Sustainable Blue Economy

The water economy encompasses all economic activities associated with the water, including offshore oil and gas extraction, marine equipment and construction, container shipping, shipbuilding and repair, cruise tourism, port operations, and marine energy production. It encompasses the ocean's natural resources and the ecosystem services it offers, ranging from fisheries to carbon sequestration. The oceans encompass three-quarters of the Earth's surface, harbour 97% of its water, and constitute 99% of the planet's living area. Over the past 50 years, the expansion of oceanic economic activities has accelerated, with the ocean economy currently valued at approximately US\$1.5 trillion. This may escalate to US\$3 trillion by 2030, with substantial additional expansion anticipated, especially in offshore wind, marine aquaculture, and seafood processing. The Ocean Economy, or Marine Economy, encompasses economic activities with use values, whereas the Blue Economy incorporates non-use values. Use value refers to the direct utility of a good, indicating the presence of a market and a clearly established monetary worth. Non-use values pertain to the indirect or intrinsic benefits of the Ocean to humanity, as well as the advantages that its preservation will confer upon society.

The ocean economy primarily aims to optimise economic advantages. This frequently results in ecological deterioration and resource exhaustion, adversely affecting marine ecosystems and the communities reliant on them. The phrase 'blue economy' has gained widespread usage, however its

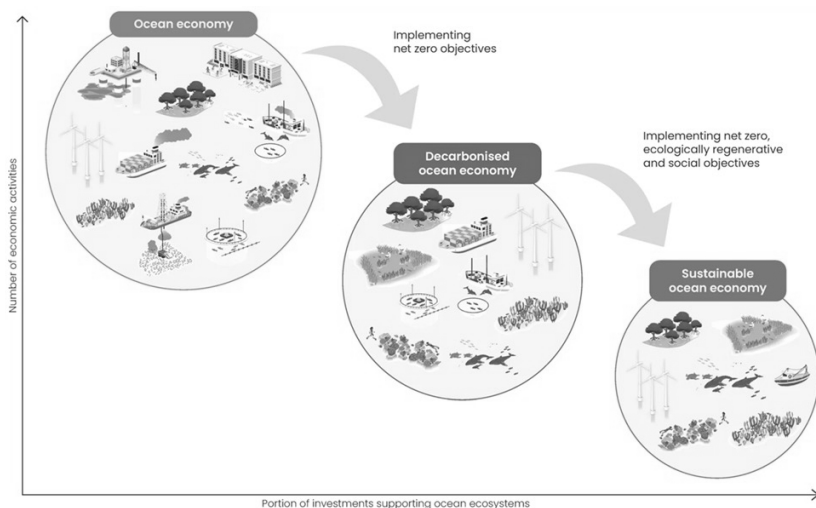
conceptualisation varies among stakeholders and nations. It encompasses ocean-related economic activity governed by sustainable principles. As a more ambitious and comprehensive perspective of the ocean economy emerges, which combines economic growth with environmental sustainability and social equity, alternative terminology is being adopted in lieu of 'blue economy,' including 'sustainable ocean economy,' 'sustainable blue economy,' and more recently, 'regenerative blue economy.'

The World Bank describes the blue economy as the sustainable utilisation of ocean resources for economic growth, enhanced livelihoods, and employment, while maintaining the integrity of ocean ecosystems. The European Commission characterises it as encompassing all economic activity associated with oceans, seas, and coasts. It encompasses a broad spectrum of interconnected established and growing sectors.⁴

The Common wealth of Nations regards it as "an emerging concept that promotes improved stewardship of our oceanic or 'blue' resources." Conservation International states that the "blue economy" encompasses economic advantages that may not be commercially exploited, including carbon sequestration, coastal defence, cultural significance, and biodiversity. The Centre for the Blue Economy asserts that the term is now globally recognised with three interconnected yet distinct interpretations: the overall economic contributions of oceans, the imperative to ensure the environmental and ecological sustainability of marine resources, and the ocean economy as a potential growth avenue for both developed and developing nations. A United Nations representative recently characterised the Blue Economy as an economic framework that includes various sectors and associated

policies that collectively influence the sustainability of ocean resource utilisation. The UN observes that the Blue Economy will contribute to the attainment of the UN Sustainable Development Goals, particularly Goal 14, which pertains to "Life Below Water".⁵

A categorization of maritime economic activities



India's Blue Economy 2.0

India is fundamentally a nautical nation, and its coastline has been the epicenter of significant maritime activity for ages. The Indus Valley civilization, located in the western regions of India, goes back to 3,300 BC. Today, a dry dock at Lothal in Gujarat, originating from 2,200 BC, still exists. Seafarers embarked from these minor ports to voyage to remote harbors in Mesopotamia, ancient Egypt, and the eastern coast of Africa. On India's eastern coast, the maritime kingdoms of Kalinga, Cholas, Pandyas, and Cheras navigated to distant nations in Southeast Asia, establishing commerce and cultural connections. Even now, in many Southeast Asian nations, one

can observe remnants of Indian cultural heritage in language, architecture, rituals, and traditions.⁶

India possesses an extensive coastline measuring 7,500 kilometres, with its exclusive economic zones (EEZ) spanning over 2.2 million square kilometres. India hosts 12 major ports, more than 200 other ports, 30 shipyards, and a robust network of various maritime service providers. Nine of India's 28 states are situated along the coast, and the nation encompasses 1,382 islands. The coastal economy comprises more than 4 million fishermen and individuals from coastal areas. The extensive maritime interests position the blue economy as a significant contributor to India's economic development. The blue economy, centred on sustainability and socioeconomic welfare, has the potential to catalyse the next significant increase in GDP.⁷

The 14th Sustainable Development Goal pertains to the conservation and sustainable utilisation of oceans, seas, and marine resources. It promotes the sustainable development of ocean strategies to enhance productivity and preserve oceanic health. This seeks to advance climate-resilient initiatives and sustainable development in coastal regions. Marine ecosystems are confronting unparalleled threats from climate change, pollution, and overexploitation, necessitating immediate coordinated efforts to protect the health and resilience of ocean resources.⁸ Maritime renewable energy sources, including offshore wind, floating solar arrays, and wave and tidal power, possess significant potential to enhance energy independence and assist nations in achieving their emissions reduction targets.

Investment in sustainable fisheries and aquaculture will generate employment opportunities and enhance food security and economic equity. Sustainable and transformative tourism

can serve as a vital foundation for the enduring economic recovery of coastal nations, while simultaneously supporting the ocean, wildlife, and the many individuals reliant on these resources.⁹ Maritime transport significantly contributes to the worldwide market through containerships, tankers, and ports, while coastal tourism serves as the predominant employer in ocean-related industries. The trade prospects are very bright as eighty percent of global trade occurs via maritime routes; forty percent of the world's population resides in coastal regions, and over three billion individuals rely on the oceans for their livelihoods.

The Blue Economy is poised for substantial expansion in the next years. Shifting from an agricultural sector towards a more sustainable economy will pose significant challenges. This necessitates that governments collaborate to ensure the sustainability of blue economies, sharing research and expertise. In India, the sector constitutes the sixth metric of the government's 'Vision of New India by 2030'.¹⁰ the Blue Economy policies are designed to secure long-term economic benefits to fulfil broader objectives of growth, employment generation, equity, and environmental conservation.

Principal Government Initiatives Pertaining to the Blue Economy

Deep Ocean Initiative

It seeks to advance methods for deep-sea mining and the extraction of rich resources such as polymetallic nodules, which contain manganese, nickel, copper, and cobalt, from the seabed. Odisha, due to its coastline and maritime interests, may engage in the extraction and processing of these resources. Additionally, it seeks to develop a crewed submersible, designated Matsya 6000, capable of transporting

three individuals to a depth of 6,000 meters for exploration and scientific inquiry.¹¹ A system will be established to observe and model ocean conditions, facilitating future estimates of climatic variables such as sea level changes and cyclone strength. Odisha, due to its susceptibility to climate change effects such as sea-level rise, could both gain from and contribute to these services. In addition to biodiversity conservation and resource discovery, it will examine deep-sea flora and fauna, including microbes, and investigate the sustainable utilisation of bio-resources. The research institutions in Odisha, such as the Institute of Life Sciences in Bhubaneswar, could make substantial contributions to this area. The mission encompasses the advancement of technology for sustainable energy production from the ocean and desalination methods. Odisha, possessing an extensive coastline, may investigate and adopt these technologies to fulfil its energy and water requirements. The development of underwater vehicles and robotics constitutes another essential aspect of the task. Odisha may contribute to the design, development, and operation of these technologies. Odisha's 2036 vision encompasses sustainable growth, technological leadership, and universal prosperity, aligning with the objectives of the Deep Ocean Mission. The Deep Ocean Mission offers a substantial potential for Odisha to enhance India's scientific progress, economic development, and sustainable practices while tackling its own issues with climate change and resource management.

Sagarmala Initiative

The Sagarmala Programme is a premier effort of the Ministry of Ports, Shipping and Waterways, embodying a strategic vision of the Government of India to revolutionise the marine sector. Sagarmala seeks to harness India's vast coastline, navigable waterways, and important maritime trade routes

for port-led development and the enhancement of coastal communities. Sagarmala aims to improve the efficiency of the logistics sector by decreasing logistical expenses for domestic and international trade. The program seeks to optimise logistics and enhance the competitiveness of Indian exports by utilising coastal and waterway transportation, hence reducing the necessity for substantial infrastructure investments. Sagarmala recognises critical possibilities to enhance logistics, increase port efficiency, and foster coastal community development through extensive research and strategic planning. By doing so, Sagarmala not only fortifies the maritime industry but also enhances India's overall economic growth and global competitiveness. Odisha has 50 projects valued at about 54,000 crore,¹² designed to modernise ports, improve connectivity, foster industrialisation, and develop coastal towns.

Sl.No	Project Name	Theme
1	New ICD Development in Jharsuguda	Port Connectivity
2	Multi Modal Logistics Park at Paradip Port	Port Connectivity
3	Construction of fishing harbour at Chandipur	Coastal Community Development
4	Doubling of rail line from Bhadrak to Dhamra Port	Port Connectivity
5	Double rail track from Gopalpur Port to Chatrapur	Port Connectivity
6	Doubling of line from Rajatgarh to Barang	Port Connectivity
7	Decongesting RV line - 2nd line Raipur - Titlagarh -203 Km	Port Connectivity
8	3rd and 4th line from Budhapank-Salegaon via Rajatgarh	Port Connectivity

9	Doubling of line from Sambalpur to Talcher	Port Connectivity
10	Doubling of line from Titlagarh to Sambalpur	Port Connectivity
11	New Line from Angul to Sukhinda	Port Connectivity
12	New Line from Haridaspur to Paradip	Port Connectivity
13	Third line from Sukhinda Road to Jakhapura	Port Connectivity
14	New line from Jharsuguda to Barpalli	Port Connectivity
15	Bhadrak - Nergundi 3rd Line	Port Connectivity
16	3rd line from Jakhapura to Haridaspur	Port Connectivity
17	New Railway line bridge between Jajpur and Sukinda Road stations	Port Connectivity
18	Banspani-Daitari-Tomka-Jakhapura	Port Connectivity
19	3rd and 4th line between Jarapaada - Budhapank with flyover at Talcher	Port Connectivity
20	3rd line in balance section between Bhadra - Vizanagagram	Port Connectivity
21	Talcher-Bimlagarh	Port Connectivity
22	Greenfield Electronics manufacturing Cluster in Infovalley Bhubaneswar Industrial park- Khurda District	Port led Industrialization
23	Pipeline from Paradip to Hyderabad	Port Connectivity
24	Coastal Districts Skill Development Program - Phase I -Odisha	Coastal Community Development
25	Coastal Districts Skill Development Program - Phase 2 -Odisha	Coastal Community Development
26	Road Connectivity from Gopalpur Port to NH-5 from Chhatrapur	Port Connectivity

27	Road Connectivity to Dhamra Port - Four laning of Jhamujhadi-Dhamra road	Port Connectivity
28	4 to 6 laning of NH-53 connecting Paradip port	Port Connectivity
29	Road cum Flyover serving as 2nd exit to the Paradip port	Port Connectivity
30	Development of Gopalpur- Barkul- Satapada and Tampara as coastal circuit in Odisha	Coastal Community Development
31	RFID - Paradip	Port Modernization
32	2 nos of Harbour mobile cranes - Paradip	Port Modernization
33	Deep Draft Iron Ore Export Berth on BOT basis - Paradip	Port Modernization
34	Multi Purpose Berth to handle clean cargo including container on BOT basis at Paradip port	Port Modernization
35	Mechanisation of EQ1- EQ2 and EQ3 Berths on BOT basis - Paradip	Port Modernization
36	Development of IWT Terminal at Paradip Port	Port Modernization
37	New Deep Draft Coal Import Berth on BOT basis at Paradip	Port Modernization
38	LPG Terminal at South oil jetty in Paradip	Port Modernization
39	Capital Dredging of BOT basin - Paradip	Port Modernization
40	Mechanisation of CQ1 and CQ2 berths on BOT basis - Paradip	Port Modernization
41	New Mega Port at Outer harbour- Paradip	Port Modernization
42	Development of Rail Connectivity for BOT berths at Paradip [JSW is implementing the project]	Port Connectivity
43	Heavy Haul Rail Corridor for Salegaon to Paradip Port	Port Connectivity

44	Develop NW5 -Talcher to Dhamra and Paradip on Brahmani and Mahanadi Rivers Phase-1 -from Pradip-Dhamra to Pankapal	Port Connectivity
45	Development of Smart Industrial Port City -SIPC Paradip	Port led Industrialization
46	Barithengarh-Ratnagiri chord rail line to haridaspur-paradip main line	Port Connectivity
47	River mouth dredging of Mahanadi at Paradip fishing harbour	Coastal Community Development
48	Connectivity of IOHP and MCHP at PPT	Port Modernization
49	Development of Western Dock Basin -2 Captive berths for port dependent industries	Port Modernization
50	Container scanners - PPT	Port Modernization

(<https://sagarmala.gov.in/stateofgovt/list-projects-odisha>. Ministry of Ports, Shipping and Waterways, Government of India, 30.09.2019)

O-SMART

This pertains to the Ocean Services, Modelling, Applications, Resources, and Technology (O-SMART) Scheme. The Union Cabinet authorised it in August 2018, and the Ministry of Earth Sciences implements it¹³. The initiative seeks to enhance ocean research and establish early warning weather systems by concentrating on ocean development activities, including services, technology, resources, observations, and science, while supplying the essential scientific and technological foundation necessary for the execution of various components of the Blue Economy. It would produce and consistently refresh data on Marine Living Resources and their interaction with the physical environment in the Indian Exclusive Economic

Zone (EEZ). Monitoring seawater pollution levels for health assessments of India's coastal waters and generating shoreline change maps to evaluate coastal erosion caused by natural and anthropogenic activities are additional aims of the Scheme. It will produce and distribute a collection of user-focused ocean information, advisories, warnings, statistics, and data products for societal benefit. In addition to creating high-resolution models for ocean forecasting and reanalysis systems, it will also formulate techniques for the validation of satellite data for coastal research. Procurement of Coastal Research Vessels (CRVs) for coastal pollution surveillance, advancement of technologies for harnessing marine bioresources, production of freshwater and oceanic energy, and development of underwater vehicles and technologies; establishment of a ballast water treatment facility; and exploration of polymetallic nodules (MPN) from a water depth of 5500 meters over an area of 75,000 square kilometres. The km allocated to India by the United Nations in the Central Indian Ocean Basin, as well as the research of petrol hydrates, are included in the project.

Integrated Coastal Zone Management

Integrated Coastal Zone Management (ICZM) is a methodology designed to sustainably oversee coastal regions by acknowledging the interrelation of social, economic, and environmental elements. It is a dynamic and iterative methodology encompassing planning, decision-making, management, and oversight of coastal activities. Integrated Coastal Zone Management aims to preserve biodiversity, regulate pollutants, and alleviate the effects of climate change on coastal ecosystems. It seeks to enhance livelihoods, upgrade infrastructure, and promote economic activity responsibly, while mitigating risks related to natural disasters such as

erosion, flooding, and storms.¹⁴ It aims to enhance the quality of life for coastal communities by facilitating resource access, fostering social fairness, and enriching cultural heritage.

The Integrated Coastal Zone Management Project (ICZMP) has been executed along two segments of the Odisha coast, specifically from Gopalpur to Chilika and from Paradeep to Dhamara, with support from the World Bank. OSDMA has successfully executed and finished 14 Multipurpose Cyclone Shelters (MCS) within the project region, ensuring no environmental or social degradation occurred. The initiative has fortified the community by providing a corpus fund, standardised emergency equipment at the shelter level, and enhancing capacity via various training programs. The project expenditure was approximately Rs.14.60 crores.

The project has been implemented primarily in three components such as Construction of Multipurpose Cyclone Shelters, Capacity building and acquisition of emergency equipment and institutional endeavours.¹⁵

India-Norway Task Force on Blue Economy for Sustainable Development

The India-Norway Task Force on Blue Economy for Sustainable Development is a collaborative project founded in 2019 to enhance cooperation between India and Norway on sustainable management and development of ocean resources.¹⁶ It emphasises the development and execution of collaborative efforts pertaining to the blue economy, encompassing aspects such as marine pollution, ocean energy, and integrated ocean management. To formulate and execute collaborative efforts between India and Norway in the blue economy sector. The alliance encompasses activities focused on marine debris, integrated ocean governance and research, oceanic

energy, and sustainable shipping practices. The two nations are collaborating on initiatives such as addressing marine pollution, enhancing port infrastructure, fostering sustainable fisheries and aquaculture, and investigating ocean energy. The blue economy is a priority for both nations, and the task group demonstrates their dedication to the sustainable use of marine resources. Odisha can play a significant role in this partnership and benefit from the international experience.

National Fisheries Policy

The National Fisheries Policy, established by the Indian government, seeks to sustainably advance the fisheries sector. It consolidates multiple extant policies, including the National Policy on Marine Fisheries (2017), the Draft National Inland Fisheries and Aquaculture Policy, and the Draft National Mariculture Policy.¹⁷ The policy emphasises the augmentation of fish production and productivity, the promotion of responsible and sustainable practices, and the conservation of fish genetic resources. It also underscores the modernisation of the value chain, enhancement of post-harvest management, and promotion of value-added goods. Eco-friendly Manufacturing and Efficiency. The policy seeks to enhance fish production and productivity via responsible and sustainable methods in both capture and aquaculture fisheries. It advocates for efficient fisheries resource management using an Ecosystem Approach to Fisheries (EAF), while also modernising fishing techniques, diversifying fishing methods, and encouraging sustainable aquaculture practices. The policy aims to enhance the value chain by minimising post-harvest losses and encouraging value-added fish products. The policy prioritises the preservation of indigenous fish genetic resources and their corresponding habitats and ecosystems.

Enhancing access to institutional credit for small and marginal fishermen and aquaculturists, prioritising it as a lending focus, specifically aims to bolster the livelihoods of local communities. The strategy is executed by multiple government initiatives, including the Pradhan Mantri Matsya Sampada Yojana (PMMSY) and the Fisheries and Aquaculture Infrastructure Development Fund (FIDF). The National Fisheries Policy aims to establish a resilient and sustainable fisheries sector in India, guaranteeing food security, fostering economic development, and preserving aquatic resources for future generations.¹⁸

Odisha possesses a flourishing fishing sector, ranking as the fourth largest fish producer in India. The state possesses considerable freshwater and brackish water resources, significantly enhancing both inland and marine fish output. Odisha's fishing sector, characterised by a substantial fishing population and numerous government programs, is integral to the state's economy and sustains many livelihoods.

The Odisha Fisheries Policy, 2015, seeks to quadruple inland fish production and enhance exports, emphasising both horizontal and vertical aquaculture expansion. A substantial community of fishermen (1,480,704) depends on the fishing sector for their sustenance, with many engaged in both marine and inland fisheries. Although the industry has experienced growth, challenges like as reliance on intermediaries and the necessity for infrastructure enhancement remain. The government is diligently advancing the development of fishing harbours, processing facilities, and endorsing technology such as recirculatory aquaculture systems.¹⁹ With this thriving fishery sector, Odisha can contribute significantly to the Blue Economy of India.

The Maritime History of Odisha

The maritime history of Odisha, India, along the eastern coastline, dates back to the 8th–6th century BCE, if not before. Odisha functioned as a port from the early historical era through the mediaeval period.²⁰ Numerous historians, academics, and observers have documented in their writings and travel accounts that the merchants of Kalinga demonstrated expertise in commerce and formed a formidable maritime force. Several regional literatures including the Brah-manda Purana (10th century CE), mentioned about the maritime activities of Chilika and even in ancient times, ships sailed from Chilika to Bali, Java, Malaya, Ceylon and other countries.²¹ The islands of Southeast Asia, such as Sinhala (Sri Lanka), Malaya, Bali, Java, and Sumatra, retain remnants of the most remarkable religious, cultural, and artistic traditions of ancient Kalinga. Consequently, the Kalinga merchants established colonies in several Southeast Asian nations. The remembrance of the Kalinga triumph persists in other locales, such as Java and Sumatra. The residents of Kalinga demonstrated expertise in navigating and possessed a comprehensive understanding of updrafts and downdrafts. A thorough examination of ancient history demonstrates that no other province in India exhibited such an extraordinary abundance of inventive accomplishments in sea trading. The Bay of Bengal was historically referred to as the “Kalinga Sagara,” with the ruler of Kalinga holding the esteemed title of “*Mahodadhipati*,” signifying their dominance over the sea. Kalinga's strategic geographical location, characterised by many rivers, harbours, and closeness to the ocean, fostered an optimal setting for marine ventures known as Samudra Yatra. This rich maritime history of Odisha can be explored while developing a holistic policy to harness the Blue Economy of India.

Odisha's Contribution to India's Blue Economy

Odisha, featuring a formally acknowledged coastline of 574.7 km across six districts—Ganjam, Puri, Jagatsinghpur, Bhadrak, Kendrapara, and Baleswar—presents significant opportunities to advance India's Blue Economy. The state possesses a continental shelf area of around 26,000 square miles. kilometres. The coastal region is traversed by several rivers, including the Mahanadi, Brahmani, Baitarani, Devi, Budhabalanga, Subarnarekha, Rushikulya, and various minor tributaries. A substantial volume of sediments affects freshwater flow and delta formation processes. The coastline is generally orientated obliquely to the global wind system, resulting in robust littoral currents and constituting one of the greatest littoral drift regions globally. The magnitude of sand displacement is substantial. Other significant characteristics of the Odisha coast include mangroves, estuaries, and associated sedimentary and sandy habitats such as sand dunes. Odisha's substantial mineral richness positioned it as one of the earliest states to export mineral ore through the modernisation of its port sector, facilitating industrial and infrastructure growth. The Blue Economy of Odisha should be viewed in conjunction with the advancement of hinterland and inland industries, taking into account its mineral resources. To lead in aquaculture advancement and fisheries extension to guarantee food security, enhance the welfare of fishermen, and generate jobs. Odisha may contribute to India's Blue Economy through many sectors, including seafood parks, desalination plants, transport and logistics infrastructure, solar parks, wind energy, port-based manufacturing, petroleum, and chemicals and petrochemicals investment. The Odisha Maritime Board has designated 14 ports for Odisha, in addition to inland riverine ports and waterways. As the gateway to Eastern India, the State necessitates substantial investments and an inclusive

economic vision to capitalise on the prospects presented by the Blue Economy. The 'Odisha Industrial Development Plan: Vision 2025'²² seeks to attract investments amounting to Rs. 2.5 lakh crore, asserting the potential to create direct and indirect employment opportunities for 30 lakh individuals.

Obstacles to the Blue Economy of Odisha

In conjunction with the opportunities presented by the Blue Economy, there are notable obstacles that policymakers and stakeholders must consider while formulating policies to leverage the Blue Economy sector. Odisha's blue economy confronts substantial problems, including environmental deterioration, insufficient infrastructure, and the effects of climate change. Overfishing, marine pollution, and climate change effects such as rising sea levels and ocean acidification jeopardise marine ecosystems and coastal livelihoods. Moreover, inadequate infrastructure such as ports and cold storage, along with deficiencies in technology and investment, obstruct the sector's potential. Unsustainable fishing practices, such as bottom trawling, decrease fish stocks and destroy marine environments, posing difficulties to the livelihood stability of fishing communities. Additional plastic garbage, industrial effluent, and other pollutants infiltrate coastal seas, adversely affecting marine life, tourism, and recreation, while also presenting considerable obstacles to Coastal development and unsustainable aquaculture are obliterating essential marine habitats such as mangroves and coral reefs. The problems presented by climate change, including rising sea levels, ocean acidification, and extreme weather events such as intensified cyclones, floods, and heat waves, can inflict substantial damage on coastal infrastructure, fisheries, and aquaculture. The constrained port capacity, antiquated infrastructure, and insufficient cargo handling facilities, along

with inadequate cold storage capabilities, impede maritime trade and logistics. Continued disorganisation among various government departments and stakeholders may hinder the execution of blue economy efforts. The necessity for proficient personnel and technological acumen to facilitate sustainable development in the blue economy is imperative. The blue economy may intensify pre-existing inequities if not meticulously regulated. Coastal communities, especially women, may experience displacement, loss of livelihoods, and restricted access to resources.

Conclusion

The oceans are the collective inheritance of humanity. Their significance and contribution to sustaining human life are only now being fully acknowledged. Ecological sustainability, economic efficiency, and social equity must be integrated as collective goals to effectively preserve the oceans as humanity's shared inheritance. The oceans are crucial to humanity's survival and should not be exploited as if they are limitless. The notion of a 'blue economy' is emerging as a novel paradigm that seeks sustainable development of oceanic resources. Utilising the seas in accordance with a blue economy necessitates the efficient exploitation of marine resources while minimising environmental damage and maintaining the sustainable development of oceanic ecosystems.

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SECTION - V

Innovation and Future (The Future)

The Importance of Odisha Ports in the Blue Economy of Odisha- Past, Present and Future

Aparna Mukherjee

Abstract

This study examines the pivotal role of Odisha's ports in India's Blue Economy development, focusing on their historical evolution, contemporary significance, and prospects. Odisha, with a coastline of over 480 kilometers and strategically located ports such as Paradip, Dhamra, and Gopalpur, has long served as a maritime gateway to Southeast Asia. The research investigates the transformation of these ports from ancient trade hubs in the Kalingan maritime era to modern infrastructure supporting industrial growth, trade, and fisheries.

Methodology

A multidisciplinary approach was adopted, combining historical analysis, secondary data review, and qualitative case studies. Archival research traced the region's ancient maritime connections, while port performance statistics and government policy documents were analyzed to assess current economic impact and future potential. Interviews with port authorities, naval historians, and stakeholders from the shipping and fisheries sectors provided further insights.

Key Findings

Historically, Odisha's ports were integral to India's ancient maritime trade with South and Southeast Asia, and beyond, indicating early contributions to a proto-Blue Economy.

In the present context, Paradip Port is significantly contributing to India's maritime logistics and coastal industrial corridors.

Emerging private ports such as Dhamra are playing a vital role in deep-draft capacity, multi-modal connectivity, and support for renewable energy logistics.

Policy frameworks like Sagarmala and the PM Gati Shakti scheme have unlocked strategic opportunities for Odisha's ports.

The future of Odisha's ports in the Blue Economy hinges on integrated development—linking sustainable fisheries, marine biotechnology, offshore energy, and ecotourism with port infrastructure.

The study concludes that Odisha's ports are potential pillars of India's maritime sustainability agenda. Their alignment with Blue Economy principles could make Odisha a leader in maritime South Asia.

Keywords: Odisha Ports, Blue Economy, Sustainable Development, Sagarmala, Coastal Infrastructure, Marine Economy, Indian Ocean Trade.

Odisha's coastline shaped trade and economy for thousands of years. Let's explore the role of Odisha's ports in the blue economy in the past, present, and future.

I. The Past: The Golden Age of Odisha's Maritime Trade

The ancient Kalinga traders were known as the Sadhus and Sadhabas (Sea Traders). They sailed to Southeast Asia for maritime trade and played a major role in the spread of Indian culture, Hinduism, and Buddhism in Indonesia, Thailand, Cambodia, and other Southeast Asian Countries. Even women went on voyages, they were known as Sadhhvis.

Famous ancient port cities like Tamralipti, Palur, Pithunda, Manikapatna, Dantapur, Puri, Chi-li-talo, Kalingapattanam, etc. were key ports and major trading hubs. These ports connected

Odisha to China and Southeast Asia. During Ashoka's time (3rd century BCE), Kalinga had a strong naval presence in the Kalinga Sagar (Bay of Bengal).

Below is a brief description of some of the ancient Port towns of Kalinga:

Tamralipti

Tamralipti (modern day Tamluk in West Bengal) was the most famous among all the ancient major sea ports on the eastern coast of India. In the ancient and medieval period, it was in the Kalinga Empire. There are frequent references in the *Jatakas* about sea voyages from Tamralipti to Suvarnabhumi. Tamralipti had deep influence on trade with the Southeast Asian archipelago and mainland countries of that region since the pre-Christian era. Tamralipti appears in various *Puranas*, *Jatakas*, Buddhist and Jain literatures. Tamralipti is mentioned in the writings of various foreign writers like the author of the *Periplus*, Ptolemy, Pliny, Fa-Hien, Hsuan-Tsang and I-Tsing¹. Tamralipti was a port as well as an emporium from the fourth to twelfth century C.E. Tamralipti had the great advantage of being well attached with the rest of India in both waterways and land routes. Merchants brought here commodities from various parts of India for overseas and inland trade. According to *Periplus* Gange was the capital of Gangaride. Gange was identified with Tamralipti. It was a great trade emporium. Pearls, Gangetic spikenard, muslins of the finest quality, which were known as Gange were available at Gange². Vessels called Colandia were used to transship commodities. The Yue-Chi people used to export horses to Southeast Asian countries from Tamralipti.

Before the fifth century B.C.A. Tamralipti was connected with Sri Lanka and ports of Gujarat. From Tamralipti Emperor Asoka's daughter and son, Sanghamitra and Mahendra sailed

for Sri Lanka with the Bodhi Plant. I-Tsing, during his visit to India (seventh century C.E.) arrived at Tamralipti from Canton (China). He proceeded to Bodhgaya from Tamralipti. On his return journey to China he again boarded the ship from Tamralipti. The Dudhpani Rock Inscription assigned to eighth century C.E, referred to a route from Tamralipti to Oudh. In ancient times Tamralipti was situated on the land between the sea mouth of river Ganga and the Bay of Bengal. In the Pali texts references of frequent voyages from Tamralipti were given. The *Mahabansa* refers to the voyage of Prince Vijaya to Sri Lanka with his seven hundred followers from Bengal. Tamralipti was a connecting link between India and Southeast Asia. The *Milindapanha* and *Mahaniddesa* refer to Tamraliptata as an important trade centre and port especially to take sea voyages to Southeast Asian countries.

It is not possible to suggest a particular time as to when the downfall of Tamralipti happened; though it can be safely assumed that as a consequence of the river Ganga shifting its course and the mouth of the river Swaraswati getting gradually silted up, Tamralipti ceased to function as a port.

Palura

The famous ancient port. Palura is now a village in the Chatrapur area of Ganjam. In the *Jatakas* it was mentioned as the capital of Kalinga. Legend says the sacred tooth relic of Buddha have been taken to Sri Lanka from here. A place to the south of Palura has been mentioned as an apheterion or point of departure for voyaging to Myanmar in Ptolemy's Geography. Ptolemy equated Palura with Dantapura on linguistic grounds³. In Dravidian word pal and ur means tooth and city respectively. Hence Palura means city of tooth i.e. Dantapura. There is a tenth century Bateswara Mahadeva temple on the sea shore of Palura, which was worshipped by the merchants for safe

journey across the sea. Sea voyages to Malay Peninsula were undertaken from here. Palura may have been a busy port until twelfth century C.E. because Chinese articles of this period have been discovered from archeological excavations of this region⁴. Main items of import of Palura were camphor, sandalwood, tin, copper and zinc. Items of export consisted of diamond, pearl, ivory, silver, textiles, elephants etc.

Pithunda

In the Jaina *Uttaradhyana Sutra* there is a reference of Pithunda Port. It was also mentioned in the Hathigumpha inscription of Kharavela and Ptolemy's *Geography*. According to Ptolemy Pithunda lies midway between the mouth of the river Mahanadi and Godavari. Pithunda therefore is supposed to be located near Chicacole and Kalingapatnam to the South of Dantapur. The Sea Voyagers of Champa used the port of Pithunda.

Apart from these, other ports of Odisha worth mentioning are Manikpatna, Chilika, Konark, Pipili and Balasore.

Sea Routes

The ancient port of Tamralipti was one of the earliest ports from where one could board the ship for Southeast Asia. There were at least three sea routes from Tamralipti to China and Southeast Asia. In the first route, the ships set sail from Tamralipti and reached Srilanka from where they took the route of Nicobar islands to reach the straits of Malacca or Sunda. From Sumatra and Java, the sea route went along the Malay coast, touching Pattani, Singora, Ligor and Oc eo., thereafter taking the coast of Vietnam to reach Chio-chi port of Vietnam and Canton of China. This seems to have been a popular route for the merchants of India. In the Fifth Century

C.E. Chinese pilgrim Fa-Hien on his return journey from India boarded a ship from Tamralipti and reached Sri Lanka after fourteen days and fourteen nights⁵. From Sri Lanka he reached West Java. Thereafter, he sailed for Canton in 413C.E. with two hundred Hindu merchants.

In the second route the ships proceeded from Tamralipti to Malay Peninsula along the coasts of Bengal and Myanmar touching the shores of Chattagram of lower Bengal and Arakan. There was a hint of this route in the *Mahajanaka Jataka*. The Arabian and Portuguese traders of the medieval period frequently used this route for travelling from Chattagram to Lower Myanmar.

The first information about the third sea route was obtained from Ptolemy's Geography. According to him the ships having set sail from Tamralipti reached the Odishan port of Palura and diagonally crossed the Bay of Bengal to reach Malaya, Java and Sumatra.

There was another sea route, which was followed for trading with China. The ships started from the coasts of Orissa and Andhra and sailed through Bay of Bengal to reach the Irrawaddy valley of Myanmar.⁶ Thereafter the traders followed the Salween and Mekong rivers to reach the upper Yangtse basin of China

A traveller from Indo-China would travel to Malay Peninsula to board the ship for outward journey across the sea. This is attested by the Chinese texts of third century C.E. During the second century C.E. an Indian traveller reached Funan and told the king of Funan about India. The king of Funan sent his relative Su Wu to India as an emissary. Su Wu travelled up to Takkola, a port in the Malay Peninsula from where he embarked on a ship for Tamralipti and met the Indian King.

The Bahitras (Ships for sea voyages).

Information on the shipbuilding activity of Odisha are found in books like *Jalayana*, *Bhahitra kirti*, *Vaibhava and Visaka nidesa*. Harishpur, Pipli and Balasore became well-known centres of shipbuilding in Odisha in the seventeenth century. In the Odishan temples, various images of ships and boats adorn the temple walls. On the *Vogamandapa* of the Jagannath temple at Puri a sculpted image shows four women sailing a boat. In a sculpture of the Konark temple, a boat was shown with a royal person sitting at the centre and an elephant at the bow. Scenes of Ghantakarna Bhairavas dancing on a boat were sculpted on the portals of the roof of the Jagamohana of the Konark temple. In the museum of the history department of Sambalpur University, a picture in the palm leaf manuscript of the *Bhagavata Purana* composed by Brajanatha Bodajena in (730-99 C.E.), shows Raja Satyabrata sitting on a royal boat accompanied by his family.

Goddess Durga and Tara were the presiding deities of the sailors voyaging to distant lands. Goddess Tara rescued sailors who were shipwrecked. She could change her colour according to her wish. She was green or white when calm and changed to yellow, blue or red when angry. On the back slab of the image of Tara of Ratnagiri (late eighth century) images of eight great sea disasters were carved. Three shipwrecked sea voyagers were depicted as praying to the Goddess Tara to save them from drowning in the sea.

Between 200 BCE and 1000 CE, Odisha's maritime trade was at its peak and these ports were thriving. These ports had a remarkable contribution to the blue economy back then. Trade in textiles, spices, ivory, gems etc. made Odisha a wealthy region. The exports from Odisha consisted of diamond, iron, copper, bronze, bell metal items, medicinal plants, spikenards,

spices, aromatic rice, corn, cotton, cotton textiles, ivory, betel leaves, betel nuts and even horses and elephants.

The imports from Southeast Asia consisted of spices, sandal wood, sandal pastes, cloves, raisins, betel, silk, tin, porcelain, jades, gold, aloe wood, camphor, etc. Maritime connections boosted cultural and economic exchanges.

Due to the contact with Kalinga the Indians in Indonesia are known as Kling and the term Orang Kling is used for people of Kalinga origin,

There are several legends about the establishment of Hindu empires in Java and Bali by the people of Kalinga. One of the legends says about twenty thousand families were sent to Java by the prince of Kalinga, there the people multiplied and prospered. The name of their prince is Kano⁷.

Every year in the early morning of *Kartik Purnima* (October–November), it is a custom of the people of Odisha to take a dip in the river and float in the river miniature boats made of plantain bark with a burning earth lamp inside it. This ritual is known as Bali Yatra. This is a continuation of a ritual that has its roots in the ancient period when the Sadhabas of Kalinga sailed to Bali in the early morning of Kartik Purnima. Similarly, in Bali, *Masakapankapesih* ceremony is observed, where small children float boats with burning candles and offer fruits with the belief that they will be sent to their original homeland in Kalinga.

Decline of the Ancient Ports

The ancient ports flourished but declined later during the medieval period. New Ports and Port towns such as Pipli, Balasore, Hijli and Harishpur emerged as ports and port towns but suffered a gradual decline. This decline can be attributed to a combination of natural, political, economic,

and technological factors. The following points outline the major causes:

i. Geomorphological and Environmental Changes

Silting of Ports and River Mouths: Many ancient ports of Odisha such as Tamralipti, Manikpatna, and Palur gradually lost navigability due to heavy silting of river mouths and change of river routes like the Ganga, Swaraswati, Mahanadi, Subarnarekha, and Dhamra.

Shifting of Coastlines: Geological processes such as deltaic expansion and shoreline changes altered the coastal geography, rendering several ports landlocked or difficult to access.

Cyclones and Floods: Frequent cyclones, storms, and floods caused destruction of port infrastructure and discouraged maritime activity.

ii. Political and Administrative Factors

Invasions and Warfare: Repeated invasions by the Muslim rulers in the 13th and 14th centuries, especially during the Ganga and later Surya dynasty periods, disrupted trade networks and damaged port cities.

Decline of Maritime Dynasties: The fall of powerful maritime dynasties like the Kalingas, Eastern Gangas, and the Bhaumakaras led to a decline in state-sponsored naval expeditions and trade missions.

Neglect by Colonial Powers: During early colonial times, the British East India Company focused more on developing ports like Kolkata and Chennai, ignoring Odisha's ports.

iii. Economic and Trade Shifts

Rise of Alternate Trade Routes: The emergence of overland trade routes and the prominence of other coastal ports in

Bengal, Andhra, and Tamil Nadu diverted commerce away from Odisha.

Shift in Global Trade Networks: With the advent of the Portuguese and later European traders, the global trade dynamics shifted to suit their geopolitical and economic interests, bypassing many traditional Indian ports.

Loss of Overseas Markets: The decline of cultural and trade links with Southeast Asia (e.g., Sri Lanka, Java, Bali) led to a fall in demand for Odishan goods like textiles, ivory, and spices, etc.

iv. Technological and Navigational Limitations

Lack of Modern Shipbuilding Facilities: As maritime technology advanced, Odisha could not keep pace with the development of larger and stronger ships that required deeper harbours.

Poor Port Infrastructure: Compared to Western ports, the ports of Odisha lacked organized infrastructure like docks, warehouses, and customs services in later periods.

v. Religious and Cultural Shifts

Decline in Sea Voyaging Spirit (Kalapani Taboo): Over time, social and religious beliefs such as the taboo of Kalapani (crossing the sea) discouraged overseas travel among Odias, contributing to the collapse of maritime activity.

Reduced Patronage of Maritime Art and Culture: With shifting royal and societal focus to inland activities and temple-building, maritime art, architecture, and traditions lost state support.

The decline of Odisha's ancient and medieval ports was not caused by a single event, but rather by a complex interplay of natural changes, political instability, economic redirection, technological lag, and cultural evolution. While once vibrant

centres of trade and cultural exchange, these ports faded into obscurity by the early modern period, leaving behind archaeological traces and folklore that testify to their former maritime glory.

The Present: Odisha's Ports Driving Modern Growth

Following are the major ports of Odisha now:

Paradip Port – One of India's largest ports, handling coal, iron ore, and crude oil.

Dhamra Port – A deep-sea port crucial for bulk cargo and international trade.

Gopalpur Port – An emerging player in coastal shipping.

Subarnarekha Port (upcoming) – Expected to boost trade further.

The Paradip Port Authority (Central Government) and private players like Adani (Dhamra Port) play a big role in this context. Post-1990s liberalization saw increased investments in ports. Since last few decades, Odisha became a maritime hub for minerals, steel, and energy exports. Contribution of these ports may be grouped in the following fields as follows:

Employment: Thousands of jobs in logistics, shipbuilding, and fishing.

Fisheries and Aquaculture: Odisha is a major exporter of shrimp and seafood.

Renewable Energy: Ports are being used for offshore wind and solar projects.

Coastal Tourism: Chilika Lake, Puri and Konark attract millions of visitors.

Contributions from these ports are vital for a sustainable growth of the blue economy of Odisha now.

The Future: Odisha's Role in the Global Blue Economy

Government policies, private investments, and global trade trends will determine growth of the future. Human resources in the form of engineers, entrepreneurs and workers will drive innovation. Paradip Port expansion will increase cargo capacity. Subarnarekha and Astharang Ports can handle more international trades. Port-led industrial hubs for shipbuilding and oil refineries etc. will pave the way for the bright future of the blue economy of Odisha. By 2035, Odisha could be one of India's top states in the blue economy and by 2050, Odisha's ports might rival global giants like Singapore and Dubai.

To ensure a sustainable blue economy we require among many other things:

Eco-friendly ports with reduced carbon footprints.

Better coastal protection to prevent erosion and pollution.

Investments in marine biotechnology for sustainable fishing etc.

Challenges in the Blue Economy of Odisha

The Blue Economy of Odisha, with its vast coastline, rich marine biodiversity, and significant port infrastructure, holds immense potential for sustainable growth. However, several challenges continue to hinder its effective development.

i. Environmental Degradation:

Marine ecosystems in Odisha are under increasing stress due to pollution, unregulated fishing, coastal erosion, and habitat destruction. The discharge of untreated waste, oil spills, and plastic debris poses serious threats to coastal biodiversity. Climate change further exacerbates the situation by increasing sea surface temperatures, altering fish migration patterns, and contributing to rising sea levels.

ii. Overfishing and Resource Depletion:

Unsustainable fishing practices, lack of enforcement of marine laws, and the use of destructive gear have led to overexploitation of fish stocks. This not only threatens marine biodiversity but also jeopardizes the livelihoods of traditional fishing communities who depend heavily on coastal resources.

iii. Weak Infrastructure and Limited Technology:

Many fishing harbours, landing centres, and related facilities in Odisha remain underdeveloped. Cold chain systems, modern boats, navigational aids, and seafood processing technologies are either lacking or outdated. This limits the value addition and export potential of marine products.

iv. Socioeconomic Inequity:

The benefits of the blue economy are unevenly distributed. Traditional fishers, who form a major part of the coastal workforce, often lack access to credit, training, and markets. Displacement due to coastal industrial projects, port expansions, and aquaculture farms also leads to social unrest and marginalisation of vulnerable communities.

v. Institutional and Policy Gaps:

There is a lack of integrated coastal and marine spatial planning in Odisha. Coordination between departments related to fisheries, environment, ports, and tourism is often weak, leading to fragmented policy implementation. Additionally, data on marine resources, ecosystems, and socio-economic aspects are insufficient or outdated, hampering effective decision-making.

vi. Natural Disasters and Climate Risks:

Odisha is highly prone to cyclones, floods, and storm surges, which regularly damage marine infrastructure and

disrupt livelihoods. Building resilience to such disasters is a critical challenge for sustainable development in the Blue economy sector.

vii. Limited Private Sector Participation and Investment:

Private investment in marine biotechnology, coastal tourism, offshore renewable energy, and other emerging sectors of the blue economy is limited in Odisha. This is largely due to regulatory uncertainties, high risks, and a lack of incentives or infrastructure support.

viii. Lack of Skilled Workforce

From the ancient *Sadhabas* to the modern mega-ports, Odisha's maritime history is a story of resilience and vision. The blue economy isn't just about ports—it's about people, jobs, and our future. If we work wisely, Odisha can lead the way in sustainable maritime growth!

By addressing these challenges through sustainable planning, multi-stakeholder collaboration, and inclusive policies, Odisha can unlock the true potential of its Blue economy while safeguarding its marine resources for future generations.

Recommendations for the Growth of the Blue Economy in Odisha

The Blue Economy of Odisha has great potential to contribute to sustainable development, economic growth, and livelihood generation. To harness this potential, a range of strategic and inclusive measures must be adopted.

i. Promote Sustainable Fishing Practices:

Regulating fishing through scientific stock assessments, seasonal bans, and community-based monitoring can ensure the long-term sustainability of marine resources. Training

fishers in eco-friendly gear and practices can reduce bycatch and protect marine biodiversity.

ii. Strengthen Marine Infrastructure:

Upgrading fish landing centres, cold storage units, processing facilities, and transport networks will improve the efficiency and profitability of marine activities. Developing modern ports and deep-water harbours can enhance maritime trade and attract investment.

iii. Improve Coastal and Marine Governance:

An integrated coastal zone management (ICZM) approach should be adopted, involving coordination between different departments and stakeholders. Clear policies, updated data systems, and effective enforcement of environmental regulations are essential for balanced development.

iv. Invest in Research and Innovation:

Encouraging scientific research on marine ecosystems, oceanography, and new sectors like marine biotechnology and offshore renewable energy can diversify the Blue Economy. Collaboration with academic institutions and marine research centres should be promoted.

v. Support Traditional Coastal Communities:

Efforts must be made to protect the rights and livelihoods of traditional fishing communities. This includes access to education, health services, financial support, skill development, and alternative income opportunities such as eco-tourism and aquaculture.

vi. Promote Climate-Resilient Infrastructure:

Given Odisha's vulnerability to cyclones and sea-level rise, investments in climate-resilient infrastructure—such as early

warning systems, cyclone shelters, and green coastal buffers—are crucial. Coastal zoning regulations should be enforced to avoid unplanned development.

vii. Foster Blue Tourism and Marine Services:

Odisha's rich natural and cultural coastal heritage can be used to develop eco-friendly tourism, including beach tourism, scuba diving, bird watching, and maritime museums. This will generate income and employment while conserving marine resources.

viii. Encourage Public-Private Partnerships :

Bringing in private sector participation through clear regulatory frameworks, fiscal incentives, and risk mitigation measures can boost investments in port development, logistics, ocean energy, and value-added marine industries.

ix. Strengthen Education and Capacity Building:

Introducing Blue Economy topics in school and college curricula, and organizing training programs for stakeholders—such as fishers, entrepreneurs, and local administrators—can build awareness and enhance local capacities.

x. Develop a Comprehensive Blue Economy Policy for Odisha:

A state-specific Blue Economy policy, aligned with India's national strategy and Sustainable Development Goals (SDGs), can guide coordinated efforts in planning, investment, and implementation across sectors.

In conclusion, the growth of Odisha's Blue Economy depends on a holistic, inclusive, and environmentally responsible strategy. Through integrated planning, community participation, and sustainable practices, Odisha can become a model coastal state in India's maritime development.

Scopes of research on the Blue Economy of Odisha

The Blue Economy of Odisha has significant research potential due to its extensive coastline (over 480 km along the Bay of Bengal), rich marine biodiversity, and evolving policies. Here are some key research scopes:

i. Fisheries and Marine Resources Management

Sustainable fishing practices and their economic impact

Marine biodiversity conservation and its role in Odisha's economy

Impact of climate change on fish populations and livelihoods

Potential of deep-sea fishing and mariculture

ii. Coastal and Marine Tourism

Ecotourism development along Odisha's coast (Chilika Lake, Bhitarkanika, Puri, Gopalpur, etc.)

Impact of tourism on marine ecology and local communities

Sustainable tourism models for Odisha's coastal belt

iii. Ports, Shipping, and Trade

Role of Paradip, Dhamra and Gopalpur ports in Odisha's economy

Potential of Odisha as a maritime trade hub in the Bay of Bengal region

Inland water transport and connectivity for economic growth

iv. Renewable Energy from the Ocean

Offshore wind and tidal energy prospects along Odisha's coast

Feasibility of wave energy and ocean thermal energy conversion (OTEC)

Policy and investment needs for blue energy development

v. Climate Change and Coastal Resilience

Impact of rising sea levels and coastal erosion in Odisha

Cyclone preparedness and disaster management strategies

Role of mangrove restoration and wetland conservation in climate adaptation

vi. Marine Biotechnology and Pharmaceutical Research

Exploration of marine bio-resources for pharmaceutical and industrial applications

Algae and seaweed farming for biofuel, food, and cosmetic industries

Potential of Odisha's marine organisms in biotechnology innovation

vii. Socioeconomic and Policy Aspects

Blue Economy and its impact on coastal communities' livelihoods

Gender dynamics in Odisha's fishing and coastal economy

Policy frameworks for sustainable marine resource management

A multidisciplinary research approach combining economics, marine sciences, climate studies, and social sciences can provide valuable insights into Odisha's blue Economy.

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Indigenous Boat Building Traditions and Maritime Technology

Aaditya Kumar

Introduction

Shipbuilding refers to the process of constructing ships and other floating vessels. In the modern era, this activity primarily takes place in specialized facilities known as shipyards. Those who practice this craft, called shipwrights, belong to an ancient profession that predates recorded history. In many nations throughout history, ships were the epitome of technological progress. Shipbuilding frequently needed the greatest level of engineering and artistry prior to the introduction of sophisticated land-based technology. To support this field, a number of industrial advances were introduced. For instance, Dutch shipyards greatly increased their productivity in the early 17th century by using windmill-powered mechanical saws to cut timber. The early application of logarithms (created in 1615), Oceania, also changed the design process, which allowed shipbuilders to generate precise curves for hull shapes and accurately scale these curves in the mould loft. The construction and repair of both commercial and military ships fall under the discipline of naval engineering, while boat building refers specifically to the making of smaller vessels. Ship breaking, on the other hand, is the process of dismantling ships that have been decommissioned. The settlement of Australia, which is thought to have occurred between 50,000 and 60,000 years ago, is associated with the earliest evidence of maritime transportation by modern people (O'Connor, Sue; Hiscock, Peter (2018). *The Peopling of Sahul and Near Oceania*).

It is highly likely that rafts, perhaps with sails, were needed for this voyage. Important developments occurred in areas

like the Mediterranean and Maritime Southeast Asia when maritime technology advanced beyond basic rafts. The construction of boats and early ships with watertight hulls—an advancement above the crude "flow-through" structure of rafts—was made possible by these regions' warm waters and groups of intervisible islands.

The ancient Egyptians constructed ships by joining planks edge to edge, securing them with tenons fitted into mortices. A similar method was used throughout the Mediterranean, with the key difference being the addition of dowels to hold the tenons in place. These early shipbuilding techniques followed a "shell-first" approach, where the outer hull was assembled first, and structural reinforcements were added afterward. Over time, this method gave way to carvel construction in the Mediterranean, while clinker construction remained prevalent in Northern Europe. However, shipbuilders in some northern regions did use flush-planked designs for certain parts of vessels, such as the bottoms of cogs (McGrail, Sean (2014). *Early ships and seafaring*).

Ship building techniques from Northern Europe and the Mediterranean started to converge by the late 15th century. As sailing technology advanced, the previous quarter rudder was eventually supplanted by the centerline-mounted rudder, and carvel construction became common in the North. Three-masted ships with square sails on the main and fore masts and a fore-and-aft sail on the mizzen became common during this time.

As new materials and construction techniques were developed, ship design continually improved. By the middle of the 18th century, iron was being utilized for more than simply nails and bolts; iron knees and other structural elements were becoming widely used. The lack of "compass timber," a naturally

curved wood that allowed shipbuilders to form shapes without cutting against the grain, which could damage the structure, contributed to the growing usage of iron. Iron dominated shipbuilding by the middle of the 19th century, and finally steel and iron were used to build complete ships, which was a major change in maritime engineering.

Although deep sea fishing is a vital source of income for many coastal communities, it is hampered by a number of operational issues that jeopardize efficiency and safety. Frequent maritime mishaps have sparked grave worries about fishing vessels' readiness and safety procedures. Unpredictable ocean currents, high-velocity winds, and cyclones are examples of adverse weather conditions that increase these hazards and frequently result in life-threatening circumstances. Deep sea missions are especially prone to accidents because of their length, remote location from land, and lack of emergency assistance. The poor maintenance of fishing boats, which frequently continue to function past their ideal lifespan without the necessary repairs or improvements, exacerbates these risks. Additionally, depending only on one fuel source limits operating flexibility and makes a system more vulnerable to fuel shortages or mechanical breakdowns. These ongoing difficulties highlight how urgently the deep-sea fishing industry needs extensive safety protocols, advancements in technology, and legislative changes.

Objective

Our main focused is based on the supply and demand of the maritime trade and cause of lack of advance technology followed by how are modern interventions affecting indigenous boat-building practices. Also, the advancement of ships using AI and 3D printing models for various research purpose, AI provided ship water pressure strength measurement system

and the evolution of the basic fuel planning to the Dual fuel engines. The youth specially those who use to live in coastal state shall be provided with the basic Naval architect knowledge so that they can develop a knowledge which will help them in future even with the advance subject with the collaboration of the Indian Navy and the state govt. Focusing on the development of coastal water and inland waterways in order to develop economy, time proficient to trade. In order to improve the sustainability, efficiency, and safety of deep-sea fishing vessels, this study intends to investigate and use contemporary structural and technical solutions. Among the particular goals are to improve the endurance and structural integrity of fishing vessels by strengthening them with contemporary 3D printing technology. to improve ship stability in choppy waters by including gyroscopic stabilizers, which prevent rolling motions. to create and put into use an application that automatically sends distress messages during deep sea operations in response to depth or emergency conditions. to use bulbous bow designs and twin hulls to increase the buoyancy and resistance of the vessel. to assess the viability and advantages of alternative energy sources, such as solar energy and electric propulsion, for dependable and sustainable deep sea fishing operations. With its vast river system, deltas, and lengthy coastline, Odisha has a great opportunity for the growth of inland waterways as a substitute for other forms of transportation. Major rivers including the Mahanadi, Brahmani, and Baitarani flow through the state and can be efficiently used to create an integrated inland water transport (IWT) system. In addition to relieving the strain on the road and rail systems, the development of these waterways would provide a more economical, ecologically friendly, and energy-efficient form of transportation. In Odisha, inland water transportation can improve accessibility to isolated locations,

increase regional trade, and make it easier to move industrial and agricultural products. It may also create new avenues for eco-friendly passenger transportation and tourism. With an emphasis on Odisha, the main goal of this research study is to investigate and suggest creative, sustainable, and safety-oriented solutions to improve the effectiveness, resilience, and economic potential of India's small-scale maritime and inland waterway sectors. Four main topics are covered in this paper: inland canal development, alternative fuels, vessel stability, and maritime safety.

In order to reduce reaction times and save lives in emergency situations, it first examines the pressing need for reasonably priced distress warning systems for small fishing boats. It next suggests a smartphone application that activates underwater and transmits real-time GPS coordinates to rescue authorities. Second, in order to lower operating costs, lessen their negative effects on the environment, and encourage long-term sustainability, the study advocates for fishing boats and ferries to switch from diesel-based fuels to alternative, environmentally friendly energy sources like electricity, solar, and hybrid systems.

A vessel stability and presents gyroscopic stabilizers as a useful and efficient technique to make small and medium fishing boats safer in choppy seas. This lowers the chance of capsizing and increases operating safety in general. The study concludes by highlighting the strategic and financial advantages of improving Odisha's inland waterways through structured governance, green (electric and solar) boats, and contemporary infrastructure. In order to increase employment, support coastal livelihoods, and enhance connectivity between ports and railroads, it promotes the integration of safety technology, public transportation networks, and

taxation laws. The overall purpose of the project is to provide a thorough strategy for converting inland and coastal water transportation into a safer, cleaner, and more economically viable system that complies with worldwide sustainability standards and national development goals.

The maritime history of Odisha is closely connected with her economy through the ages. It is fascinating to focus on the various methods which were used by the ancient sailors in seafaring.

1. Tankai Method

Stitching hardwood planks together instead of nailing them together is a 2000-year-old shipbuilding technique that gives ships flexibility and longevity and reduces their vulnerability to shoal and sandbar damage. Kalinga's Historic Maritime Connections: Historically referred to as Kalinga, Odisha was connected to Sri Lanka, Java, Sumatra, Bali, and Burma (Myanmar) by established maritime trading routes. Because tankai-built boats could endure lengthy voyages and rough seas, they were frequently utilized for these expeditions ("Stitched Shipbuilding Method (Tankai Method)," *PW Only IAS*, accessed).

1.1 Patia boats

One of the most important indigenous boats in Odisha is the Patia boat, which has long been used for fishing, trading, and coastal navigation. These vessels, which were built by expert boat builders utilizing traditional methods, were essential to Odisha's maritime history, especially in linking the area with Southeast Asian nations like Thailand, Indonesia, and Sri Lanka. Large wooden boats with a broad, flat-bottomed hull are referred to as "patia"; these boats are perfect for deep-sea travel as well as shallow coastal waters. In the past, Patia

boats were constructed from teak, mango, and sal wood and were secured together with natural fiber ropes and wooden pegs rather than iron nails. By preventing corrosion, this method increased the vessels' resilience in salty waters. The construction process involved hand-carved hulls with intricate curved prows, reflecting Odisha's ancient shipbuilding expertise. The Patia boat was an essential part of Odisha's maritime legacy, supporting trade, fishing, and naval power for centuries. While the rise of modern boats has led to their decline, efforts to revive traditional shipbuilding practices and integrate them into heritage tourism may help preserve this rich cultural tradition. (Mishra J. Nov 2019).

1.2 Catamarans

A catamaran is a kind of multihulled boat with two equal-sized parallel hulls. Catamarans have been utilized for millennia, especially in the maritime cultures of South and Southeast Asia, Polynesia, and the Indian subcontinent, due to their stability, speed, and efficiency. The Tamil word "kattumaram," which means "tied wood," is where the name "catamaran" comes from. It describes the basic raft-like boats that early Tamil sailors utilized. The Tamil word "kattumaram," which meaning "tied wood" or "logs bound together," is where the name "catamaran" originates. The Austronesian-speaking peoples of Southeast Asia were the first to create these boats, which then spread throughout the Pacific Islands and the Indian Ocean. For generations, the coastal economy of Odisha has relied heavily on catamarans. The livelihoods of fishermen, traders and coastal communities have been sustained by these twin-hulled boats, which are regionally modified from conventional boat-building techniques. Catamarans continue to contribute significantly to Odisha's maritime economy through their use

in transportation, tourism and fishing. (Paul van der Velde, 2019) The "tied logs" wisdom. South East Asian trade began in about 500 BCE, when sailors from south-east India and Ceylon began reaching out to the islands of Indonesia. Trading comes with the exchanging of different culture with the technology in south-east India people who used to travel for long distances on their hand made boat. It was just not only the trade but also the exchange of culture and technology. Ancient sailors relied on locally available materials such as Sal wood, Teak, and bamboo for boat-building due to their durability, availability, water resistance and ease of construction. These boats are very cheap, efficient and safe to use by local fishers and sailors. Because the raw materials are easily available across regions, it was too easy to replace any part if there was any requirement.

Medieval Odisha played a crucial role in shaping the cultural, economic and commercial landscape of the region to the present facilities and technology which the region has. From small fishing boat to giant merchant vessel the journey was actually too much long. Specially with the type of boat which was used for the sailing during ancient time with less technology, still they were able to sail a long distance. These boats are still in use but in very short distance and with limited purpose, but this limited purpose is the backbone of their earning. Fishing in India is a major sector within the economy of India contributing 1.07% of its total GDP. The fishing sector in India supports the livelihood of over 28 million people in the country, especially within the marginalized and vulnerable communities. India is the third largest fish producing country in the world accounting for 7.96% of the global production and second largest producer of fish through aquaculture, after

China. For all of these local handmade boats are using India's boat technology has evolved from **simple wooden rafts to sophisticated mechanized fishing vessels**. While traditional boats still play a crucial role in **sustaining small-scale fishers**, modern technology is **enhancing productivity and efficiency**. However, the balance between **technological progress and ecological sustainability** will determine the future of fishing in India. (Government of India, 2024).

Modern advances in technology have fuelled many recent innovations in varied fields. In every aspect of life, the progress in technology has helped man make headway. The making of boat and the technology behind it also has been going ahead in full thrust in step with the progress in technology. From better construction techniques, enhanced by 3D printing, modern robotics, artificial intelligence and virtual reality to making better ships keeping environmental regulations and sustainability in view, modern shipbuilding and the maritime industry as a whole is in for a makeover with recent advances in technology made possible by continuous research and development. In this article, we talk on the most innovative technologies that have a major hand in the transformation of modern shipbuilding.

Boat accidents due to bad weather is not unique now a days specially during the deep sea fishing the question comes about the safety during voyage specially during the cyclone and low-pressure area due to high tides and winds boats can be capsized means upside down. Because of that many fishermen lost their life when we compare this situation with cargo ships then they have various rescue devices like EPIRP, Emergency Position Radio Indicating Beacon. And SART, Search

And Rescue Transponder which helps seafarers for rescue operation and save their life. But what about the safety of life of fishermen and normal people who go for small voyage, they don't have any system like that if any boat accident happens due to bad weather. It takes too much time to rescue the people, by the time when rescue team or coast guard reach that place it's already too late and this happens because of failing to know the correct position of the accident. So what we can do is we can make a software which we can install in the mobile of the fisherman which activates after reaching a certain depth under water. Once it gets activated, it can send distress signal with the coordinate of that place in Longitudes and Latitudes to the nearest rescue authority. The coast guard in every 5 minutes can coordinate and continuously track which will help rescue authorities to reach in time and save lives.

In the boat generally people are using oil fuel but it is the time to think as fishing and local ferries is the livelihood for many families and to run this advantage for long period we have to start thinking for alternative fuel which will be budget friendly and also will take care of environment as well. Because they are readily available and have a high energy output, oil-based fuels like diesel are commonly utilized in boats. But with rising fuel costs, deteriorating environmental conditions and the worldwide movement toward sustainability, this reliance must be re-examined. For thousands of coastal people, fishing and local ferry services are their main sources of income. To ensure the long-term sustainability of this industry, a move toward cleaner, more economical energy sources is necessary. In addition to lowering operating costs, alternative fuels viz. electricity, solar energy, and hybrid systems can drastically reduce greenhouse gas emissions and water

pollution. Small-scale fishing communities can become more resilient by adopting such environmentally beneficial methods and minimize the carbon footprint of coastal and inland water transportation while adhering to national and international environmental standards. Additionally, funding alternative fuels creates opportunities for innovation, employment growth and the construction of sustainable infrastructure, all of which enhance the region's overall economic and environmental well-being.

Stability of the fishing boat is the big concern of the safety if the boat is not stable it will surely get capsized. In cargo vessel they have Ballast Tanks for giving stability to ship as required they fill water in the ballast tanks and distribute the weight of the ship in required direction with respect to the cargo loaded and also after discharging of full cargo to secure ship from all dynamic forces such as Surging, Swaying, Yawing, Rolling, Pitching, Panting including sagging and racking. All of these can make the ship unstable. The ballast tanks can be used which make the ship stable in all conditions. So, the boat Gyroscopic Stabilizers are a possible technological solution to increase fishing vessels' stability in choppy waters. A high-speed rotating gyroscope installed inside the boat is used in these systems to produce angular momentum. The gyroscope considerably lessens the rolling motion when the vessel starts to roll as a result of wave motion by applying a counteracting torque in the opposite direction. Gyroscopic stabilizers, as opposed to conventional stabilizing fins, work well even at zero or very low speed, which makes them perfect for fishing boats that frequently operate at low speeds or while stationary during deep sea operations. These devices increase stability, which lowers fatigue and the chance of accidents in bad

weather while also improving crew comfort and safety. Small and medium-sized fishing boats equipped with gyroscopic technology may be able to reduce the operating risks associated with choppy maritime conditions, which would ultimately lead to safer and more effective fishing methods.

Inland waterways and development of small trade boats by focusing more on safety and security can boost the economy of all coastal states. They have the advantages to cover more distance with less amount of the time. But the inland waterways need initial investment for development and after that we need a proper body to maintain and administer the rules and regulations. Situated on India's eastern coast, Odisha boasts an extensive system of inland waterways that are essential to the state's commerce and transportation. Numerous rivers in the state, including the Mahanadi, Brahmani, Baitarani, Subarnarekha and Rushikulya have the capacity to provide inland water transportation (IWT). The National Waterway-5 (NW-5) is the most well-known and strategically significant. It connects Talcher with Dhamra and Paradip ports via the East Coast Canal and the Brahmani, Kharsua and Mahanadi rivers. Of the roughly 623 kilometers of this river, a sizable section is located in Odisha. The purpose of NW-5 is to make it easier to transport goods including fertilizer, coal, iron ore and agricultural items. To make these waterways more effective and navigable all year round, the government is collaborating with the Inland Waterways Authority of India (IWAI) to provide infrastructure like jetties, terminals and navigation facilities. In addition to being an economical and ecologically beneficial mode of transportation, Odisha's inland waterways have the potential

to strengthen the state's economy by fostering industrial development and improving access to outlying areas. When we combine ideas like electric boats, solar boat with this, it will be a best way to grow the middle-class economy who are dependent on fishing and ferries. Proper authorities can be made for employing people for public transport by using the inland waterways. When we combine the idea of safety feature it will boost the level of trust of public and proficiency. As international trade of India is increasing, we have very good opportunities to earn revenue by developing inland waterways system while loading or discharging of the cargo. We have the world's largest rail network and we can use it for better connectivity from the ports.

Key arguments

Now according to the time when people got money, they started buying mechanically advanced boats which are much safer and more fuel efficient. Economy boats are now coming with engine and light materials like fibre glass. If we talk about heavy wood boats, people still use it but now it is too much time consuming. So, taking care of their budget, common fishermen are advancing their profit.

Inland waterways have a lot of advantages. We can see this in the countries like USA, China and Italy. USA transports approximately 630 million tonnes of cargo annually. (Maritime Administration "Working for America") and we know USA as a superpower because of the easy transport route. If we see in India, we have only 111 waterways including 5 existing and 106 new which is very less. We need to increase the number of inland waterways. There is the absence of a proper administrative body to focus on research and development of

these waterways. If we talk about coastal states like in Odisha, total waterway of only 588km is present which is very less as per the availability of the resources.

New technology enhanced the safety and security of water transport. We can take the example of Double Hull ship for better stability. The Double Bottom tanks are now being used onboard to provide stability to ship and maintaining stability was not easy in case of wooden boats.

Results and Findings

In recent years, MSC Mediterranean Shipping Company has made investments in LNG-fuelled vessels in the different sectors, it operates within. In 2022 MSC saw its first five newbuilding dual-fuel LNG capable container vessels in operation. (MSC, 03/08/2023). The results of this study highlight how vital it is for the small-scale maritime industry, especially local ferry operators and fishing communities, to switch from traditional oil-based fuels to alternative, sustainable energy sources. Diesel is still the most widely utilized fuel because of its high energy output and ease of use, but in the long run, it is not a sustainable option because of its growing costs, environmental impact, and incompatibility with international sustainability goals. The ongoing reliance on oil fuels not only adds to the financial burden but also considerably contributes to air and water pollution for thousands of coastal communities whose livelihoods depend on fishing and ferry services. There are two benefits in switching to alternative fuels like solar energy, electricity, and hybrid systems: lower running costs and less of an impact on the environment. Small-scale communities can reduce their carbon footprint and comply with national and international environmental regulations by

utilizing these cleaner energy options. Additionally, there are wider socio-economic advantages to investing in alternative fuel technology, such as the creation of jobs, local innovation and the growth of sustainable energy infrastructure. When taken as a whole, these developments strengthen coastal population resilience.

Government should come with different ideas and experiment to actually measure in what part we need to work for development. We can introduce a new subject in school boards that is basic Naval Architecture. Odisha is a coastal state, if the students have the basic knowledge of their superpower they can definitely learn and contribute to the economy. Advanced knowledge in this field should be provided to the student who have interest and motivation.

The results of this study show that there is a serious lack of maritime safety precautions for local boaters and small-scale fishers, especially during unfavorable weather events like cyclones and low-pressure systems. Although modern emergency equipment like SART (Search and Rescue Transponder) and EPIRB (Emergency Position Indicating Radio Beacon) is installed on commercial and cargo ships, traditional fishermen are largely unable to afford and are unaware of this life-saving technology. This discrepancy increases the number of fatalities during boat accidents and delays rescue efforts. According to the study, the inability to pinpoint the exact position of the accident in real time is one of the main causes of unsuccessful rescue efforts. Accordingly, the suggested mobile-based software system solution offers a useful, affordable invention catered to fishermen's requirements. After being installed on mobile

devices, the application would automatically activate when it detected a specific underwater depth, signifying capsizing. When activated, it would continuously transmit coast guards and rescue agencies in the area distress messages with GPS coordinates every five minutes. This technology has the potential to significantly shorten emergency response times, improve rescue teams' situational awareness, and eventually prevent numerous fatalities that would otherwise result from delays and a lack of location data. Thus, this study emphasizes how urgently vulnerable maritime communities require affordable and easily available safety technology.

This study demonstrate how crucial vessel stability is to guaranteeing fishing operations' safety, especially in choppy seas. Due to their lack of sophisticated equipment, tiny fishing boats are more susceptible to capsizing from dynamic maritime forces such rolling, pitching, yawing, and surging than large cargo vessels that use ballast tanks to regulate and maintain stability by redistributing weight. Gyroscopic stabilizers are a possible technological solution to this stability issue in small and medium-sized fishing boats, according to the study. These devices counterbalance the rolling motion brought on by waves by creating angular momentum using a high-speed spinning gyroscope. Gyroscopic stabilizers are perfect for fishing vessels that frequently operate at low speeds during deep-sea fishing activities because, in contrast to typical stabilizing fins, they remain effective even while the boat is motionless or moving slowly. Gyroscopic stabilization can improve overall working conditions on board by lowering the risk of capsizing, increasing crew safety and reducing tiredness brought on by constant rolling. Additionally, implementing such technologies could revolutionize small-

scale fishing methods by making them safer and more effective, particularly during unfavorable weather conditions. These results back up the suggestion that adding gyroscopic stabilizers to fishing boats can be a crucial step in upgrading the industry and guaranteeing the long-term sustainability and safety of fishing-related jobs.

Along with the development of new waterways, there should be the development of the quality of the boats which are used for various purposes. In February 2014, at least 31 picknickers drowned in Hirakud reservoir of Mahanadi as the boat, which they were travelling in and was overloaded with 135 people, capsized on its way back from an island. The picnic was organised by the Lions Club of Sambalpur. Several passengers jumped off the boat in panic. Later, the state government arrested the Lions Club president over negligence that resulted in the tragedy. (Hindustan Times, 2024). Such types of accidents are common now a days in the absence of administrative bodies with proper management system. The Government of Odisha can provide technically advanced boats which is safe for water communication and transportation. In one hand the government is spending money on developing roadways which is obviously needed but it can be also done for the development of waterways by procuring good quality boats. Further, teamwork will boost the economy and importance.

Boat building and maritime technology are undergoing a transformation, thanks to artificial intelligence (AI), which is enhancing design, production, sustainability and efficiency. AI-powered solutions improve navigation, anticipate maintenance requirements, optimize hull designs and automate shipbuilding procedures. AI is becoming increasingly important in the

conventional and contemporary boat-building industries as the need for better performance.

Conclusion

From traditional boat-building methods like the Tankai method and Patia boats to contemporary developments in navigation and vessel design, shipbuilding and marine technology have been integral parts of Odisha's history. Nonetheless, the industry has significant obstacles to overcome, such as hazards to fishermen's safety, environmental issues, and inefficient use of inland waterways. In order to improve maritime safety, operational effectiveness, and economic growth in Odisha's coastal and inland water transport systems, this study investigates sustainable options. The urgent need for reasonably priced safety features in tiny fishing boats is one of the main conclusions. Traditional fisherman do not have access to dependable distress alarm devices, in contrast to commercial vessels that are outfitted with EPIRBs and SARTs. The suggested mobile application has the potential to save lives by drastically cutting down on rescue response times by automatically transmitting GPS coordinates during emergencies. Furthermore, adding gyroscopic stabilizers to fishing boats can increase stability in choppy waters, reducing the chance of capsizing and improving crew safety. The dependence on fossil fuels, which raises operating expenses and pollutes the environment, is another significant issue. By switching to alternative energy sources like solar power, electric propulsion, and hybrid systems, fishing and ferry operations can become more environmentally friendly and meet international requirements. The viability of such

advances for small-scale vessels in India is demonstrated by the success of dual-fuel engines in international shipping. An important economic potential is presented by the development of Odisha's inland waterways, especially National Waterway-5 (NW-5). The state may increase trade, lessen traffic, and generate jobs by deploying green boats, upgrading infrastructure, and setting up a specialized regulatory agency. Odisha should take a cue from nations like the USA and China, who have shown how effective inland water transportation can boost regional economies and logistics. Lastly, shipbuilding can undergo a revolution in design, maintenance, and fuel efficiency by incorporating AI and 3D printing. Innovation can be stimulated and future marine professionals can be developed through educational programs like teaching basic naval design in schools. In summary, the maritime industry in Odisha is caught between tradition and modernity. The state can guarantee safer, greener, and more lucrative water transportation by implementing smart infrastructure, renewable fuels, and sophisticated safety measures. In order to preserve Odisha's rich maritime legacy and turn its waterways into a vibrant economic asset, there is the need to have cooperation between the government, academic institutions and local communities.

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