

Unlocking Inclusive Cross-Border Trade through Transboundary River Corridors:

Strategic Opportunities in the Brahmaputra–Meghna Basin

Insights from the Jinjiram, Simsang,
and Wah Umngi Rivers



Promoting
Inclusive Growth



Driving Regional
Connectivity



Building Resilient
Communities

A Research Report
by Quantive Advisory LLP

Unlocking Inclusive Cross-Border Trade through Transboundary River Corridors: Strategic Opportunities in the Brahmaputra-Meghna Basin

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Abbreviations

BBIN	Bangladesh-Bhutan-India-Nepal
BIWTA	Bangladesh Inland Water Transport Authority
FMCGs	Fast-Moving Consumer Goods
GOI	Government of India
IWAI	Inland Waterways Authority of India
IWT	Inland Water Transport
LCS	Land Customs Station
MoU	Memorandum of Understanding
NEI	Northeast India
NHIDCL	National Highways & Infrastructure Development Corporation Ltd.
NW	National Waterway
PIWTT	Protocol on Inland Water Transit and Trade
Ro-Ro	Roll-on/Roll-off
SHGs	Self-Help Groups

Acknowledgement

This report, *Unlocking Inclusive Cross-Border Trade through Transboundary River Corridors: Strategic Opportunities in the Brahmaputra–Meghna Basin*, is the culmination of extensive field research, stakeholder consultations, and analytical work undertaken to examine the untapped potential of the Jinjiram, Simsang, and Wah Umngi rivers as catalysts for inclusive cross-border trade, regional connectivity, and sustainable livelihoods between India and Bangladesh.

The study would not have been possible without the generous support and cooperation of the numerous stakeholders who shared their time, knowledge, and experiences throughout the course of the research. We extend our sincere gratitude to government officials, local administrations, border management authorities, trade associations, transport operators, community leaders, women's Self-Help Groups (SHGs), entrepreneurs, fisherfolk, boat operators, and residents from both India and Bangladesh whose invaluable insights greatly enriched this study.

We are especially grateful to the riverine communities living along the Jinjiram, Simsang, and Wah Umngi rivers for openly sharing their experiences, aspirations, and challenges. Their perspectives have been central to shaping the recommendations presented in this report and reaffirm the importance of placing local communities at the heart of regional connectivity and development initiatives.

We also acknowledge the contributions of subject matter experts, researchers, and field investigators whose dedication and rigorous efforts ensured the quality and credibility of this publication. Their commitment to evidence-based research, stakeholder engagement, and policy analysis has been instrumental in developing a comprehensive understanding of the opportunities and challenges associated with these transboundary river corridors.

Finally, we express our appreciation to everyone who directly or indirectly contributed to the successful completion of this study. It is our hope that the findings and recommendations presented in this report will contribute meaningfully to informed policy dialogue, strengthen India–Bangladesh cooperation, promote inclusive economic opportunities, and support the sustainable development of border communities across the Brahmaputra–Meghna Basin.

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Project Team

Executive Summary

India and Bangladesh share a long history of river-based trade, mobility, and cultural exchange. Smaller transboundary rivers once supported vibrant local economies by enabling the movement of agricultural produce, fish, forest products, handicrafts, and essential goods between border communities. However, the disruption of traditional trade routes after Partition, declining navigability, ecological degradation, inadequate infrastructure, and restrictive border arrangements gradually reduced their economic role. This study examines the potential of three such rivers, the Jinjiram, Simsang–Someshwari, and Wah Umngi, to support inclusive cross-border trade, sustainable livelihoods, and stronger regional connectivity across the Brahmaputra–Meghna Basin.

The findings show that all three rivers continue to hold economic and strategic relevance, although their development potential differs. The Jinjiram can function as a supplementary community-oriented trade corridor linked with Mankachar, Dhubri, and the broader Brahmaputra waterway network. The Simsang offers potential for seasonal small-scale navigation, regulated trade in local products, livelihood restoration, and eco-tourism around Baghmara. The Wah Umngi presents the strongest opportunity for multimodal connectivity by combining road transport in Meghalaya with Bangladesh's navigable inland waterways and access to larger markets such as Sunamganj, Dhaka, Narayanganj, and Chattogram.

Across the three corridors, field consultations revealed persistent demand for local cross-border commerce. Farmers, fisherfolk, boat operators, traders, women's Self-Help Groups, and small entrepreneurs remain dependent on river-based livelihoods and informal market linkages. Women play a particularly important role in horticulture, dried fish processing, weaving, handicrafts, bamboo products, spices, and household enterprises. However, limited customs facilities, weak last-mile connectivity, fragmented production, and the absence of formal small-trade mechanisms restrict their access to larger markets.

The continued movement of coal, timber, bamboo, agricultural products, fish, and consumer goods through informal channels reflects not only enforcement gaps but also the inadequacy of existing formal trade arrangements. A purely enforcement-led approach is therefore unlikely to address the underlying economic drivers. Simplified customs procedures, operational Land Customs Stations, regulated border ghats, expanded border haats, and small-consignment trade facilities are required to gradually formalise legitimate commerce.

Revival of these corridors must also address serious environmental concerns. Sedimentation, bank erosion, pollution, declining fish stocks, and unregulated extraction of coal, sand, and boulders have weakened river ecosystems and reduced livelihood security. Any infrastructure intervention should therefore be preceded by hydrological, environmental, and commercial feasibility assessments. Selective dredging, river training, fisheries restoration, watershed management, and stronger regulation of resource extraction should form part of an integrated river management strategy.

The study recommends a differentiated and phased development approach rather than a uniform river-navigation programme. Immediate priorities should include technical studies,

trade-demand assessments, environmental baselines, and institutional coordination. Medium-term interventions should focus on restoring critical navigation stretches, modernising customs and market infrastructure, establishing aggregation and storage facilities, and supporting women-led enterprises. Longer-term investments should integrate viable corridors into wider multimodal trade networks.

Ultimately, revitalising the Jinjiram, Simsang, and Wah Umngi should not be viewed merely as a transport initiative. It represents an opportunity to formalise local trade, strengthen women-led value chains, restore river ecosystems, improve border livelihoods, and deepen India–Bangladesh cooperation. With targeted investment, proportionate regulation, bilateral coordination, and community-centred planning, these rivers can emerge as inclusive and sustainable corridors of regional development.

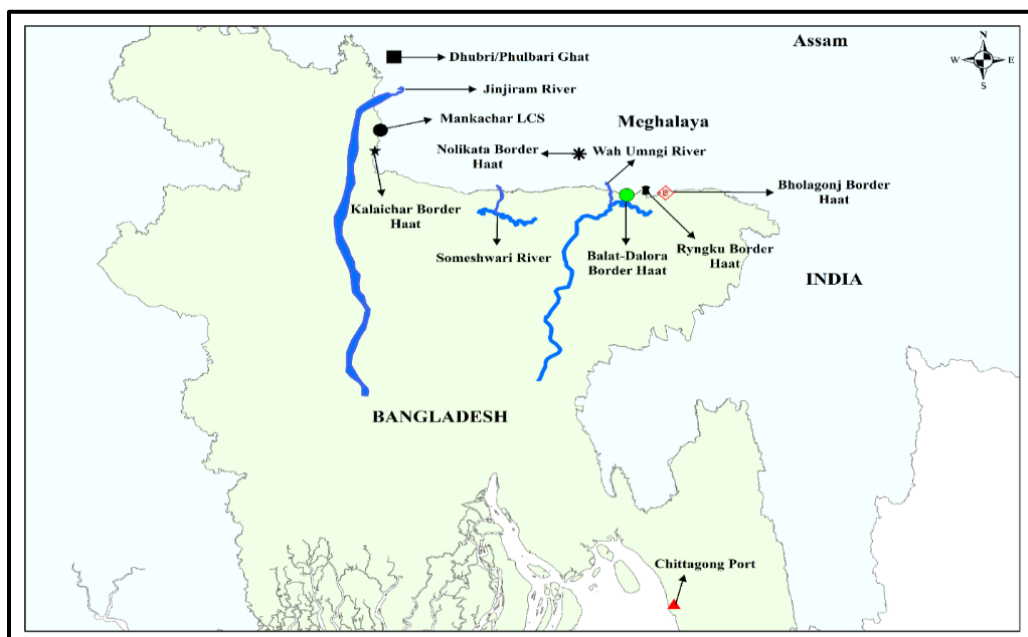
1

Introduction

India and Bangladesh share a long-standing history of river-based trade and connectivity, with inland waterways serving as the principal arteries of commerce, mobility, and cultural exchange across the Bengal region for centuries. Prior to the Partition of the Indian subcontinent in 1947, an extensive network of rivers, including the Ganges, Brahmaputra, Meghna, and their numerous tributaries, facilitated the seamless movement of people and goods between Assam, Bengal, and East Bengal (present-day Bangladesh). Agricultural produce, jute, timber, spices, textiles, coal, and other commodities were routinely transported through these waterways, underpinning regional economic integration and supporting the livelihoods of millions of riverine communities.

The geopolitical changes following Partition, compounded by the emergence of new international borders and subsequent political developments, significantly disrupted these historically integrated river transport networks. Riverine trade experienced a prolonged period of decline due to restricted cross-border movement, inadequate investment in inland water transport infrastructure, and limited institutional coordination. Recognising the strategic importance of restoring waterway connectivity, India and Bangladesh signed the Protocol on Inland Water Transit and Trade (PIWTT) in 1972. Since then, the protocol has been periodically renewed and expanded to include additional routes, ports of call, and categories of cargo, reflecting the growing commitment of both countries to strengthening regional connectivity, facilitating trade, and promoting sustainable economic cooperation.

Figure 1: Overview of the Study Area



Source: Generated by Authors

Today, the PIWTT encompasses 21 operational river routes, connecting major inland ports such as Kolkata, Haldia, Dhubri, Narayanganj, Ashuganj, and several others. Inland waterways have emerged as an increasingly important component of bilateral logistics, offering a cost-effective, energy-efficient, and environmentally sustainable alternative to road transport, particularly for bulk cargo movement. Beyond reducing transportation costs and easing congestion on road networks, inland waterways contribute to improved last-mile connectivity and enhance market access for remote and underserved border regions.

For India's Northeastern Region (NER), river connectivity through Bangladesh holds strategic significance. Given the geographical constraints of the Siliguri Corridor and the region's relative remoteness from mainland India, inland waterways provide an opportunity to reduce logistics costs, improve supply chain efficiency, and strengthen economic integration with domestic and international markets. As bilateral cooperation has deepened over the past decade, river-based trade has witnessed steady growth, reinforcing its role as a key pillar of India–Bangladesh economic partnership and regional connectivity initiatives.

India and Bangladesh are connected by 54 transboundary rivers, the majority of which form part of the Brahmaputra and Meghna river basins. While only a limited number of these waterways currently support formal inland navigation, many smaller rivers possess considerable historical, socio-economic, and strategic significance. Prior to the establishment of international boundaries, these rivers functioned as vital transport corridors, particularly across the remote and geographically challenging landscapes of Northeast India and present-day Bangladesh. Small country boats and bamboo rafts facilitated the movement of agricultural products, forest produce, fish, and locally manufactured goods, sustaining vibrant local economies and fostering long-standing social and cultural interactions between communities on both sides of the border.

Importantly, these riverine economies were inherently inclusive. Women played a central role in local production systems and market networks by processing agricultural products, preparing dried fish, producing handicrafts and textiles, managing household enterprises, and participating in local markets and barter-based trading arrangements. Their contribution was particularly pronounced in the matrilineal societies of Meghalaya, where women have traditionally been key economic actors and custodians of household livelihoods. Consequently, river-based trade extended beyond economic exchange, serving as an important mechanism for community resilience, social cohesion, and women's economic participation.

Despite this rich historical legacy, many of these smaller transboundary rivers gradually lost their economic relevance following Partition due to the disruption of traditional trade routes, declining navigability, inadequate investment in infrastructure, and the absence of coordinated institutional mechanisms to facilitate cross-border commerce. As a result, several historically active river corridors remain underutilised despite their continued importance to local livelihoods and their potential contribution to regional connectivity.

Against this backdrop, this study examines the opportunities for promoting inclusive cross-border trade through three historically significant yet relatively underexplored transboundary rivers: the Jinjiram River in Assam, a tributary of the Brahmaputra; the Simsang (Someshwari) River in Meghalaya; and the Wah Umngi River in the East Khasi Hills of Meghalaya. Although these rivers presently experience limited navigability and minimal

formal commercial activity, they once served as important local transport and trading corridors connecting communities across India and Bangladesh.

Figure 2: A Transboundary River Between India and Bangladesh



Source: Captured by the Authors

The study adopts a community-centred approach to understand both the historical role and contemporary relevance of these rivers in supporting local economies. Drawing upon extensive field visits, stakeholder consultations, and qualitative interactions with traders, fisherfolk, boat operators, women's Self-Help Groups (SHGs), community leaders, and government officials on both sides of the border, the research documents local experiences, perceptions, and aspirations regarding the revival of these river corridors.

Beyond examining their historical significance, the study assesses the opportunities and constraints associated with restoring these waterways as engines of inclusive economic development. Emphasis is placed on women's participation in river-based value chains, recognising their longstanding contribution to fisheries, agriculture, handicrafts, food processing, and micro-enterprises. The research further explores the potential role of improved river infrastructure, enhanced border trade facilities, multimodal connectivity, and supportive policy interventions in strengthening livelihoods, promoting formal trade, and reducing dependence on informal cross-border commerce.

Ultimately, the report argues that revitalising these smaller transboundary river corridors should not be viewed solely as a transport or trade initiative. Rather, it represents an opportunity to advance regional economic integration, improve connectivity in border areas, promote gender-inclusive development, strengthen environmental stewardship, and deepen India–Bangladesh cooperation. By combining infrastructure development with community-led planning and institutional collaboration, these rivers can once again serve as important conduits for sustainable trade, shared prosperity, and resilient border economies across the Brahmaputra-Meghna Basin.

2

Jinjiram River: Reconnecting a Forgotten Trade Corridor

The Jinjiram River, a major tributary of the Brahmaputra originating in the Garo Hills of Meghalaya, represents one of the most promising yet underutilised transboundary waterways for strengthening localised cross-border trade between India and Bangladesh. Flowing through the West Garo Hills before forming part of the natural boundary with Assam's Dhubri district, the river enters Bangladesh near Mankachar, where it is locally referred to as the Kalo (Black) River or Jinjiram. Historically, the river functioned as an important transport corridor, facilitating the movement of agricultural produce, forest resources, fish, and essential commodities between communities on both sides of the border. Beyond its commercial significance, the river also served as a vital social and cultural link, sustaining livelihoods and fostering long-standing interactions among riverine populations.

Figure 3: The Jinjiram River



Source: Captured by the Authors

Despite its historical importance, the Jinjiram has experienced a gradual decline in navigability over the past several decades. Changes during the Brahmaputra, extensive sediment deposition, bank erosion, and inadequate maintenance have substantially reduced its carrying capacity. Nevertheless, sections of the river remain seasonally navigable during the monsoon months, enabling the transportation of small consignments such as agricultural

produce, rice, vegetables, construction materials, and other locally traded goods using country boats.

The Kukradanga Ghat, situated near the India-Bangladesh border, once functioned as an important ferry crossing connecting Dhubri, Mankachar, and adjoining settlements. However, ferry operations and Roll-on/Roll-off (Ro-Ro) services have diminished considerably due to deteriorating infrastructure, shallow river channels, and limited institutional support. Despite these constraints, Dhubri continues to serve as a strategic inland trade hub where commodities originating from the Garo Hills and adjoining regions are consolidated before being transported through road and inland water transport networks.

Figure 5: Loading Activities at Kukradanga Ghat



Source: Captured by the Authors

The persistence of informal river-based trade demonstrates that the Jinjiram continues to possess economic relevance for border communities. Farmers, fisherfolk, boat operators, and small traders remain dependent on the river for their livelihoods despite the absence of formal trade infrastructure. Targeted investments in river restoration, channel dredging, navigation aids, and the modernisation of the Mankachar Land Customs Station (LCS) could significantly improve the river's viability as a local trade corridor. Such interventions would reduce transportation costs, improve market accessibility, and generate new economic opportunities for communities across Meghalaya, Assam, and northern Bangladesh.

2.1 Historical Identity and Local Perspectives

An important finding emerging from the field research relates to the differing local perceptions regarding the identity and present condition of the Jinjiram River. Interviews conducted across both India and Bangladesh revealed considerable ambiguity surrounding the river's nomenclature and continuity.

Many residents in Assam and Meghalaya believe that the original Jinjiram River has largely disappeared owing to changes in the Brahmaputra's course, heavy siltation, and declining water flow. Conversely, several communities argue that the river survives under a different name, maintaining that the Kalo River entering Bangladesh near Kuri village is, in fact, the downstream continuation of the Jinjiram. In northern Bangladesh, particularly within the Roumari and Rajibpur regions, local communities commonly identify the river as Jinjiram only after the confluence of the Kalo River within Bangladeshi territory.

These contrasting narratives illustrate the complex historical evolution of the river and underscore the importance of incorporating local knowledge into future river management and connectivity planning. Rather than viewing these differing accounts as contradictions, they reflect the dynamic geomorphological changes that characterise transboundary river systems in the Brahmaputra basin.

2.2 Community Perspectives and Historical Livelihoods

To better understand the river's historical significance and contemporary relevance, extensive field consultations were undertaken with a wide range of stakeholders, including fishermen, boat operators, traders, women's Self-Help Groups (SHGs), community leaders, and government officials from both India and Bangladesh.

Stakeholders consistently described the Jinjiram as a once-thriving economic corridor that supported local transportation, fisheries, and small-scale cross-border commerce. Community members highlighted that the river historically facilitated not only the movement of goods but also sustained social interactions between neighbouring settlements across the international border.

Field interactions in the Rowmari-Rajibpur region of Bangladesh provided particularly rich insights into the historical livelihood systems associated with the river. Elderly residents recalled a period when the Jinjiram supported abundant fish populations, making fisheries the principal source of income for many households. Fishing activities were largely undertaken by men using traditional boats and nets, while women played an equally important role in post-harvest processing, particularly in producing dried fish (*Shutki*), which was subsequently traded in markets such as Mankachar in India. Women frequently returned from these trading trips carrying food grains, household necessities, and other essential commodities, creating a vibrant local barter economy that contributed significantly to household incomes and women's financial participation.

Figure 6: Interaction with the Stakeholders in Bangladesh



Source: Captured by the Authors

These historical accounts illustrate that riverine trade was inherently community-driven and gender-inclusive, with women playing a central role in local value chains long before formal cross-border trade mechanisms emerged.

2.3 Declining Livelihoods and Economic Consequences

The partition of the Indian subcontinent and the subsequent tightening of border controls fundamentally altered the socio-economic landscape of the Jinjiram basin. Traditional trade routes were disrupted, while declining navigability further constrained the movement of goods and people.

Community members attributed the deterioration of the river to multiple interacting factors, including heavy sedimentation, uncontrolled embankment construction, declining water flows, and increasing levels of pollution. Collectively, these changes have severely affected aquatic biodiversity, resulting in a sharp decline in fish populations and undermining the economic viability of traditional fishing livelihoods.

During stakeholder consultations, elderly fishermen noted that until three or four decades ago, fishing in the Jinjiram provided stable incomes capable of supporting entire households. Today, however, many reported struggling to catch even one to two kilograms of fish per day, rendering fishing economically unsustainable. Consequently, a significant proportion of younger community members have migrated to urban centres or overseas in search of alternative employment. Women, who previously generated income through fish processing and cross-border trade, increasingly depend on low-paying employment, including domestic work and garment manufacturing in Bangladesh's urban centres.

The decline of the river has therefore extended well beyond environmental degradation, contributing to reduced household incomes, outward migration, loss of traditional occupations, and increasing socio-economic vulnerability among riverine communities.

2.4 Opportunities for Revitalising Cross-Border Trade

Despite these challenges, local stakeholders on both sides of the border expressed strong optimism regarding the future potential of the Jinjiram River. Communities consistently identified river restoration, ecological rehabilitation, and improved navigation as prerequisites for revitalising local economies.

Residents advocated for a coordinated programme of de-siltation, river training, pollution control, and channel management to restore year-round navigability. They further emphasised the need for bilateral cooperation between India and Bangladesh to ensure sustainable management of the river system.

Consultations with traders in Mankachar and Dhubri similarly highlighted the commercial potential of reviving the river as a supplementary inland trade route. Given Dhubri's established connectivity with Chilmari in Bangladesh through the Brahmaputra, stakeholders viewed the Jinjiram as an opportunity to facilitate localised cargo movement, particularly for agricultural products, fisheries, forest produce, and other low-volume commodities that currently rely on more expensive road transport.

In addition to economic gains, respondents recognised the broader environmental benefits associated with increased inland water transport. Compared with road-based freight, river transport offers significantly lower logistics costs, reduced fuel consumption, and lower greenhouse gas emissions, making it a more sustainable mode of transport for regional trade.

Stakeholders also recommended establishing border ghats, strengthening Land Customs Station (LCS) infrastructure, and expanding border haats along the river corridor to facilitate regulated cross-border commerce. Such measures would help formalise existing informal trade, reduce illicit cross-border activities, expand market opportunities for local producers, enhance women's participation in regional value chains, and strengthen people-to-people connectivity between India and Bangladesh.

The findings indicate that although the Jinjiram River has experienced decades of ecological degradation and institutional neglect, it continues to possess significant potential as a catalyst for inclusive cross-border trade, sustainable livelihoods, and regional economic integration. Unlocking this potential will require coordinated investments in river restoration, trade infrastructure, institutional cooperation, and community-centred development planning.

Simsang River: Unlocking Sustainable Cross-Border Trade and Community Livelihoods

The Simsang River, known as the Someshwari River after entering Bangladesh, is one of the most significant transboundary rivers connecting Meghalaya with the northern districts of Bangladesh. Originating in the West Garo Hills of Meghalaya, the river traverses the Garo Hills before flowing southward across the international border into Bangladesh's Netrakona district, where it eventually joins the Kangsha River, a tributary of the Meghna River Basin. As the largest and longest river in the Garo Hills, the Simsang plays a vital role in supporting ecological systems, sustaining local livelihoods, and linking communities across the international border.

Throughout its course, the river passes through several important settlements, including Baghmara, the administrative headquarters of South Garo Hills district. Located approximately 113 kilometres from Tura and near the India–Bangladesh border, Baghmara has historically functioned as an important centre for trade, tourism, and local commerce. On the Bangladeshi side, the Someshwari flows through Durgapur, Kalmakanda, and neighbouring areas before branching into distributaries that ultimately connect with the Surma River through the extensive haor wetland system of northeastern Bangladesh.

3.1 Physical Characteristics and Navigation Potential

The navigability of the Simsang River is highly seasonal. During the dry season, typically between December and May, water levels decline substantially, rendering large stretches of the river unsuitable for navigation. Seasonal water scarcity has been further aggravated by excessive sedimentation, riverbed degradation, and extensive coal and sand extraction, all of which have altered the river's natural hydrological characteristics.

During the monsoon months, however, increased water discharge restores navigability across several sections of the river, allowing country boats and small vessels to operate between settlements in India and Bangladesh. This seasonal navigability presents an opportunity for developing community-based inland water transport systems capable of supporting local trade and improving accessibility in remote border areas.

Figure 7: The Simsang River



Source: Captured by the Authors

Although rocky upper reaches and fluctuating water depths currently constrain commercial navigation, the river possesses considerable potential for small-scale river transport, particularly if complemented by targeted investments in river training, channel improvement, dredging, and ecological restoration. Such interventions would not only improve transportation efficiency but also contribute to strengthening regional connectivity, promoting sustainable tourism, and enhancing economic cooperation between India and Bangladesh.

3.2 Historical Role in Cross-Border Trade

Historically, the Simsang–Someshwari river corridor served as an important trade route connecting the Garo Hills with the Netrakona region of Bangladesh. The river facilitated the downstream transportation of timber, bamboo, fuelwood, and other forest products harvested from the surrounding hills. Communities on both sides of the border relied extensively on the river for exchanging locally produced goods, making it an integral component of the regional economy long before the establishment of formal international boundaries.

Figure 8: Extraction Activities



Source: Captured by the Authors

Field consultations indicate that although formal riverine trade has largely diminished, the underlying commercial linkages continue to exist. The river remains an important transport corridor for local communities, reflecting the enduring economic relevance of this transboundary waterway.

3.3 Informal Trade and Governance Challenges

One of the most significant findings of this study relates to the persistence of informal cross-border trade along the Simsang River. Stakeholder consultations revealed that the river continues to be used for transporting coal, timber, bamboo, and other natural resources across the international border outside formal customs procedures.

Several enforcement actions undertaken over the past decade illustrate the scale of these activities. In 2015, the Border Security Force (BSF) intercepted multiple bamboo rafts transporting coal, timber, and bamboo towards Bangladesh, while earlier operations similarly uncovered unauthorised movement of forest products through the river corridor. These incidents demonstrate both the continuing commercial importance of the river and the limitations of existing institutional mechanisms for regulating cross-border trade.

Figure 9: Coal Extraction Activities Along the Simsang River



Source: Captured by the Authors

Rather than viewing these activities solely through an enforcement lens, they also highlight an underlying demand for accessible, low-cost trade routes among border communities. The prevalence of informal trade suggests that existing infrastructure and regulatory arrangements remain inadequate to accommodate legitimate local commerce.

Strengthening formal trade infrastructure through improved customs facilities, regulated river transport, and expanded border markets could help channel existing economic activity into formal value chains while reducing revenue losses and improving environmental governance.

3.4 Livelihoods and Local Economic Dependence

The Simsang River continues to serve as a critical livelihood resource for communities residing along its banks. One of the most distinctive economic activities associated with the river is coal lifting, whereby residents collect coal deposits naturally transported downstream from upstream mining areas. Although largely informal, this activity provides an important source of income for thousands of households across the Garo Hills.

In addition to coal, the river supports fishing, small-scale agriculture, sand extraction, and local transportation, forming an integral part of the rural economy. However, increasing dependence on unregulated resource extraction has also generated significant environmental concerns. Excessive coal lifting and sand mining have accelerated riverbed degradation, increased sedimentation, and contributed to declining fish populations, thereby threatening the long-term sustainability of river-dependent livelihoods.

The findings suggest that formalising river-based economic activities, alongside stronger environmental management, offers a viable pathway for balancing livelihood security with ecological conservation.

3.5 Women's Economic Participation and Cross-Border Value Chains

The study highlights the important contribution of women entrepreneurs and Self-Help Groups (SHGs) in supporting local economies within the Simsang River basin. In and around Baghmara, women cultivate commercially valuable crops such as betel nut, bay leaf, black pepper, and other spices that enjoy substantial demand in neighbouring Bangladeshi markets. Many SHGs are also engaged in producing handicrafts, handloom textiles, bamboo products, and other value-added goods that possess significant cross-border market potential.

Similarly, communities in Bangladesh produce vegetables, dried fish, bamboo handicrafts, textiles, and traditional food products that are highly sought after in Indian border markets. These complementary production systems demonstrate the existence of natural cross-border value chains that remain largely underdeveloped due to institutional and infrastructural constraints.

Figure 10: Traditional Bamboo Rafts Used for River-Based Trade



Source: Captured by the Authors

Despite the presence of a Land Customs Station (LCS) at Baghmara, stakeholders reported that the facility remains either non-operational or functions only intermittently. Consequently, a substantial proportion of local trade continues to occur through informal channels. Communities on both sides of the border expressed strong support for restoring formal riverine trade mechanisms that previously facilitated legitimate commercial exchanges while supporting local livelihoods.

3.6 Opportunities for Sustainable Regional Development

Beyond its trade potential, the Simsang River presents significant opportunities for promoting sustainable tourism and diversified rural livelihoods. Baghmara has emerged as an important tourism destination owing to its scenic landscape, biodiversity, and cultural heritage. The river itself offers opportunities for developing eco-tourism, community-managed boating services, cultural cruises, recreational fisheries, and homestay-based tourism initiatives that could generate additional income for local communities.

At the same time, restoring the ecological health of the river remains essential. The decline in fisheries and aquatic biodiversity resulting from uncontrolled mining activities and environmental degradation has significantly affected river-dependent households. Targeted interventions, including river restoration, regulated extraction of natural resources, fisheries management, and watershed conservation, would contribute to rebuilding ecosystem services while supporting more resilient livelihood systems.

3.7 Strategic Outlook

As a transboundary river connecting Meghalaya with Bangladesh's Meghna Basin, the Simsang occupies a strategically important position within the broader regional connectivity landscape. Revitalising this river corridor offers an opportunity to simultaneously strengthen bilateral trade, improve rural livelihoods, promote gender-inclusive economic development, and enhance environmental sustainability.

Realising this potential will require coordinated action by both India and Bangladesh. Priority interventions include restoring navigability through selective dredging and river management, operationalising trade infrastructure such as the Baghmara Land Customs Station, expanding border haats, improving multimodal transport linkages, and establishing institutional mechanisms for joint river management.

These measures would transform the Simsang River from a largely informal trade corridor into a regulated, sustainable, and inclusive economic asset capable of supporting long-term regional development and strengthening India–Bangladesh economic cooperation.

4

Wah Umngi River: A Strategic Corridor for Multimodal Cross- Border Connectivity

The Wah Umngi River, also known simply as the Umngi River, is a strategically significant transboundary river originating in the East Khasi Hills of Meghalaya before flowing southward into Bangladesh. The river traverses several settlements, including Umpung and Balat, before reaching Lalpani near the India–Bangladesh border. Upon entering Bangladesh, it continues through Kalipur and eventually joins the Surma River, one of the country's major inland waterways that provides connectivity to important commercial centres, including Sunamganj, Narayanganj, and Dhaka.

Figure 11: The Wah Umngi River



Source: Captured by the Authors'

Although relatively modest in size, the Wah Umngi occupies an important geographical position within the broader Brahmaputra–Meghna basin. Its location offers unique opportunities for integrating road-based transport networks in Meghalaya with Bangladesh's extensive inland water transport system, thereby creating a multimodal trade corridor capable of improving regional connectivity and facilitating local economic development.

4.1 Physical Characteristics and Navigation Constraints

The physical characteristics of the Wah Umngi River vary considerably between its Indian and Bangladeshi stretches. Within Meghalaya, the river flows through rugged and undulating terrain, limiting navigability across much of its course. Only a relatively short section approaching the international border passes through flatter terrain that is potentially suitable for navigation.

Figure 12: The Wah Umngi River During Winters



Source: Captured by the Authors'

The river is also highly seasonal. During much of the year, particularly in the dry season, water levels decline substantially, leaving several stretches shallow or nearly dry. Conversely, the monsoon season results in a dramatic increase in river discharge, often leading to flooding, bank erosion, and changes in channel morphology. These seasonal fluctuations have been exacerbated by extensive sand and boulder extraction, which has altered the riverbed and accelerated environmental degradation.

Figure 13: Low Water Level of Wah Umngi River



Source: Captured by the Authors

Despite these constraints on the Indian side, the river becomes considerably wider and deeper after entering Bangladesh, supporting navigation by small and medium-sized vessels. Its eventual confluence with the Surma River provides direct access to Bangladesh's inland waterway network, creating opportunities for integrating road transport from Meghalaya with river-based freight transport in Bangladesh.

This combination of road connectivity in India and navigable waterways in Bangladesh presents a strong case for developing the Wah Umngi as a multimodal logistics corridor linking remote border communities with larger regional markets.

4.2 Economic Significance and Cross-Border Trade Potential

The Wah Umngi River flows through an economically important border region where agriculture, horticulture, and small-scale trade constitute the primary sources of livelihood. One of the most significant commercial centres along the river is Balat, located in the West Khasi Hills of Meghalaya. Over the years, Balat has emerged as a growing centre for agricultural production, particularly of high-value crops such as betel nut, oranges, bay leaves, and other horticultural products.

Adjacent to Balat lies the Balat–Dolora Border Haat, an important institutional mechanism established to facilitate regulated local trade between India and Bangladesh. The border haat has played an important role in promoting legal cross-border commerce, improving market access for rural producers, and strengthening socio-economic interactions between neighbouring communities.

Women constitute an important component of the local economy. Field interactions revealed that many women are actively engaged in handicrafts, weaving, bamboo-based products, and other household enterprises that generate supplementary incomes and supply local markets. The border haat has provided these women-led enterprises with valuable opportunities to

access consumers across the international border, thereby enhancing household livelihoods and encouraging greater economic participation.

4.3 Complementary Cross-Border Value Chains

The study also found strong complementarities between production systems on both sides of the border. While communities in Meghalaya primarily produce horticultural crops, bamboo products, handicrafts, and forest-based commodities, communities in Bangladesh contribute vegetables, freshwater fish, bamboo crafts, textiles, including traditional *lungis*, and processed food products that enjoy considerable demand in Indian border markets.

These complementary production patterns create a natural foundation for developing integrated cross-border value chains. However, the absence of adequate trade infrastructure has prevented these opportunities from being fully realised.

Despite the operational success of the Balat-Dolora Border Haat, stakeholders consistently highlighted the absence of a permanent Land Customs Station (LCS) as one of the principal constraints to expanding formal trade. Owing to Balat's relative remoteness, approximately 100 kilometres from Shillong, and limited access to larger commercial centres, residents often depend on products sourced from neighbouring Bangladeshi markets. In many instances, these exchanges continue to occur through informal trading channels.

4.4 Informal Trade and Institutional Gaps

Field consultations conducted in Bangladesh indicated that the Wah Umngi River continues to be used for the movement of goods across the border outside formal regulatory mechanisms. Stakeholders reported that Indian products are frequently transported into Bangladesh through informal routes before being distributed to interior markets using the country's established inland water transport network.

The persistence of these informal trade flows highlights the existence of genuine commercial demand that is currently inadequately served by formal infrastructure. Rather than eliminating trade, existing institutional constraints have encouraged economic activity to shift towards unregulated channels.

Figure 14: Extraction Activities Along the Wah Umngi River



Source: Captured by the Authors

Stakeholders on both sides of the border expressed broad consensus regarding the need to formalise this corridor through improved customs infrastructure, enhanced river transport facilities, and stronger bilateral institutional cooperation. Such interventions would not only facilitate legitimate trade but also improve transparency, increase government revenues, and reduce dependence on informal cross-border transactions.

4.5 Opportunities for Multimodal Connectivity

Among the three rivers examined in this study, the Wah Umngi presents perhaps the strongest opportunity for developing a multimodal transport corridor. While navigation within India remains constrained by topography, the river's downstream connectivity to Bangladesh's inland waterways creates the possibility of integrating road transport from Meghalaya with river transport in Bangladesh.

Developing this corridor would allow agricultural produce, horticultural products, handicrafts, bamboo products, and other locally produced goods to be transported more efficiently to larger domestic and international markets through Bangladesh's well-established river transport network. Such a multimodal logistics model would significantly reduce transportation costs, improve market access for rural producers, and strengthen regional supply chains.

Stakeholders also emphasised the need to establish a multimodal land port capable of integrating customs, warehousing, road transport, and inland water transport facilities. Such infrastructure would support formal bilateral trade, stimulate local economic activity, generate employment opportunities, and create new markets for women-led enterprises and small producers.

Given the corridor's connectivity to major commercial centres such as Dhaka, Narayanganj, and Chattogram, the Wah Umngi possesses considerable potential to become an important gateway linking Meghalaya's border economy with Bangladesh's national logistics network.

4.6 Strategic Outlook

The findings of this study demonstrate that the Wah Umngi River represents far more than a seasonal transboundary watercourse. It offers a strategic opportunity to strengthen regional integration by combining multimodal transport, community-based trade, and inclusive economic development.

Realising this potential will require coordinated action by both India and Bangladesh. Priority interventions include conducting detailed feasibility assessments, improving river management practices, regulating sand and boulder extraction, developing multimodal transport infrastructure, establishing a permanent Land Customs Station at Balat, and strengthening institutional mechanisms governing cross-border trade.

Equally important is ensuring that future investments adopt a community-centred and environmentally sustainable approach. By integrating infrastructure development with ecological restoration, gender-inclusive livelihood programmes, and institutional cooperation, the Wah Umngi River can evolve into a model transboundary trade corridor that promotes economic resilience, strengthens bilateral cooperation, and enhances the livelihoods of border communities across the Brahmaputra–Meghna Basin.

5 Recommendations

The findings of this study indicate that the revival of the Jinjiram, Simsang, and Wah Umngi river corridors cannot be approached through isolated infrastructure interventions. Their future viability depends on a coordinated strategy that integrates river restoration, trade facilitation, multimodal connectivity, environmental governance, institutional cooperation, and community participation. Importantly, the three rivers differ considerably in terms of navigability, commercial potential, environmental condition, and infrastructure readiness. Accordingly, a uniform policy approach would be inappropriate. Each corridor requires a differentiated development model aligned with its geographical and socio-economic characteristics.

5.1 Adopt a Differentiated River-Corridor Development Strategy

The three rivers should not be treated as identical inland waterway projects. The Jinjiram is best positioned as a supplementary local trade and livelihood corridor linked to the established Dhubri-Chilmari route. The Simsang has stronger potential for regulated small-scale river trade, local value-chain development, and community-based tourism. The Wah Umngi, by contrast, is more suitable for a multimodal model integrating road transport in Meghalaya with navigable waterways in Bangladesh.

Government interventions should therefore be based on corridor-specific feasibility assessments rather than a general programme of dredging and infrastructure construction. These assessments should examine seasonal water depth, cargo potential, environmental carrying capacity, community dependence, border infrastructure, and commercial viability. Investment decisions should be guided by evidence on actual trade demand and livelihood benefits rather than by navigability alone.

5.2 Undertake Detailed Hydrological, Environmental, and Commercial Feasibility Assessments

Before undertaking large-scale capital investment, India and Bangladesh should jointly commission technical studies covering river morphology, sedimentation, seasonal discharge, erosion patterns, navigation windows, and ecological sensitivity. These studies should identify locations where selective dredging, channel stabilisation, river training, or bank protection may be justified.

A parallel commercial assessment should estimate potential cargo volumes, commodity flows, transport costs, seasonal demand, and the likely number of beneficiaries. The current evidence demonstrates strong local interest, but a detailed business case is required to establish whether particular routes can support commercially viable trade or should instead be developed primarily for livelihood, passenger transport, or tourism purposes.

Such assessments are particularly important because indiscriminate dredging may produce limited economic returns while creating additional ecological disruption. River restoration should therefore be targeted, scientifically informed, and linked to clearly defined economic and social outcomes.

5.3 Restore Navigability through Targeted and Ecologically Responsible Interventions

Selective de-siltation and channel improvement should be prioritised at critical bottlenecks rather than across entire river stretches. For the Jinjiram, priority locations may include stretches connecting Mankachar, Kukradanga, and the broader Dhubri river system. For the Simsang, interventions should focus on sections with demonstrated seasonal navigation potential near Baghmara and the Bangladesh border. In the Wah Umngi corridor, the emphasis should be on improving river access and transshipment infrastructure near the border rather than attempting to make the entire Indian stretch navigable.

River restoration measures should be accompanied by pollution control, fishery regeneration, watershed management, and bank stabilisation. Extraction of sand, boulders, coal, and other riverbed materials should be regulated through scientifically determined limits, transparent permits, and community-based monitoring. Without stronger environmental safeguards, infrastructure development may accelerate ecological degradation and further weaken river-dependent livelihoods.

5.4 Strengthen and Operationalise Border Trade Infrastructure

The absence or limited functionality of customs infrastructure is one of the principal reasons why existing commercial activity remains informal. The Mankachar and Baghmara Land Customs Stations should be assessed for modernisation and regular operationalisation, while the feasibility of establishing a permanent Land Customs Station or integrated trade facility at Balat should be examined on priority.

These facilities should be designed for the scale and nature of local trade rather than replicated from large land-port models. Simplified customs procedures, small consignment facilities, digital documentation, warehousing, inspection areas, and basic cold-chain infrastructure would make formal trade more accessible to small producers and traders.

At locations where full customs stations are not immediately viable, regulated border ghats and expanded border haats may provide a more proportionate solution. These mechanisms can formalise low-volume trade, reduce dependence on informal channels, and create a gradual pathway towards larger commercial operations.

5.5 Develop Multimodal Logistics Models

The development of these river corridors should be integrated with existing road, market, and inland water transport networks. This is especially relevant for the Wah Umngi, where the limited navigability of the Indian stretch does not eliminate the corridor's trade potential. Road-based cargo movement from Meghalaya could be linked to transshipment points near the border and subsequently transported through Bangladesh's inland waterways to Sunamganj, Narayanganj, Dhaka, and potentially Chattogram.

For the Jinjiram, better connectivity with Dhubri could create a feeder system linked to larger Brahmaputra-based routes. Similarly, the Simsang corridor could support seasonal movement of local agricultural and forest-based products while connecting producers in the Garo Hills with markets in Bangladesh.

Infrastructure planning should therefore include last-mile roads, jetties, loading points, storage facilities, customs infrastructure, and transport services as part of a single logistics system. Developing river infrastructure without corresponding road and market connectivity would substantially limit commercial impact.

5.6 Formalise Existing Informal Trade through Proportionate Regulation

The prevalence of informal trade across all three corridors reflects genuine market demand and the inadequacy of existing formal mechanisms. Policy should therefore move beyond an enforcement-only approach. While smuggling and illegal extraction require stronger oversight, legitimate small-scale commerce should be brought within a simplified regulatory framework.

A local border trade regime could permit approved commodities, limited consignment values, registered traders, designated routes, and simplified customs declarations. Such a model would enable governments to improve monitoring and revenue collection while reducing transaction costs for border communities.

Formalisation should be gradual and incentive-based. Excessively complex procedures or high compliance costs would merely push trade back into informal channels. The regulatory framework must therefore reflect the limited scale, seasonal nature, and livelihood orientation of trade in these river corridors.

5.7 Build Inclusive Cross-Border Value Chains

Women entrepreneurs, Self-Help Groups, fisherfolk, artisans, and small producers should be positioned as central participants in any future trade strategy. The study identifies considerable potential in spices, betel nut, bay leaf, oranges, dried fish, handloom products, bamboo goods, handicrafts, vegetables, and processed food products.

However, production capacity alone will not translate into sustainable trade without investment in quality control, packaging, branding, aggregation, finance, and market intelligence. Dedicated enterprise-support programmes should therefore be developed for women-led and community-based businesses. These programmes may include product standardisation, food-safety training, digital payments, export documentation, cooperative marketing, and buyer–seller linkages.

Women should also be represented in border-haats committees, river management institutions, trade facilitation bodies, and infrastructure planning processes. Their participation should not be confined to livelihood programmes; it should extend to decision-making and governance.

5.8 Establish Community-Based Aggregation and Market Facilities

Small producers face significant disadvantages because of fragmented production, low volumes, and limited bargaining power. Community aggregation centres should be established near major nodes such as Mankachar, Baghmara, and Balat. These centres could provide storage, grading, packaging, basic processing, and transport coordination.

For fisheries and perishable agricultural products, cold storage and insulated transport should be considered where commercially justified. For handicrafts, bamboo products, and textiles, common branding and market-development support could improve access to larger regional markets.

Producer collectives, cooperatives, and SHGs should be encouraged to manage or participate in these facilities. This would ensure that infrastructure investment directly benefits local communities rather than being captured by a small number of intermediaries.

5.9 Promote Sustainable Tourism and Diversified Livelihoods

Trade development should be complemented by livelihood diversification, particularly in environmentally sensitive areas. The Simsang corridor offers potential for community-managed boating, recreational fisheries, eco-tourism, cultural tourism, and homestays. Similar opportunities may exist around selected stretches of the Jinjiram and Wah Umngi.

Tourism development should remain small-scale and community-led, with clear environmental safeguards. Large, externally driven tourism projects risk placing additional pressure on fragile river systems while generating limited benefits for local residents. Training in hospitality, safety, guiding, waste management, and enterprise development would be essential.

Livelihood diversification is particularly important where environmental restoration requires restrictions on coal lifting, sand mining, or boulder extraction. Alternative income opportunities must be developed alongside regulation to avoid imposing disproportionate costs on vulnerable households.

5.10 Establish a Bilateral Institutional Mechanism for Smaller Transboundary Rivers

Existing India–Bangladesh cooperation on inland waterways primarily focuses on larger protocol routes and commercial ports. Smaller transboundary rivers require a dedicated institutional mechanism capable of addressing local navigation, trade facilitation, environmental management, and community livelihoods.

A bilateral working group could include representatives from inland waterways authorities, customs agencies, state governments, local administrations, border forces, environmental agencies, and community organisations. Its mandate should include data sharing, joint feasibility studies, infrastructure coordination, seasonal navigation protocols, environmental monitoring, and dispute resolution.

The institutional framework should also enable local-level coordination between district administrations and border communities. National-level agreements are necessary, but effective implementation will depend on regular operational cooperation at the corridor level.

5.11 Introduce a Phased Implementation Roadmap

A phased approach would reduce investment risk and allow interventions to be tested before large-scale expansion.

- **Immediate priorities: 0–2 years**

The initial phase should focus on technical feasibility assessments, hydrological mapping, environmental baseline studies, trade-demand analysis, and stakeholder consultations. Existing customs stations and border haats should be reviewed, while pilot community aggregation centres and simplified local trade procedures could be introduced.

- **Medium-term priorities: 3–5 years**

The second phase should include selective dredging, rehabilitation of key ghats, modernisation of customs facilities, development of jetties and transshipment points, and establishment of formalised local trade mechanisms. Capacity-building programmes for women-led enterprises, producer collectives, boat operators, and local traders should be scaled up.

- **Long-term priorities: 5 years and beyond**

Subject to demonstrated commercial and environmental viability, the corridors could be integrated into broader multimodal trade and regional connectivity frameworks. Long-term investments may include permanent land-port infrastructure, enhanced inland navigation systems, digital cargo tracking, and formal links with major Bangladeshi river ports and regional markets.

5.12 Establish Clear Monitoring and Accountability Mechanisms

Every intervention should be linked to measurable outcomes. Key indicators should include formal trade volumes, number of registered traders, participation of women-led enterprises, changes in household income, reduction in informal trade, navigation days per year, fishery recovery, erosion levels, and environmental quality.

Monitoring should involve local communities, particularly those whose livelihoods depend directly on the rivers. Public disclosure of environmental data, infrastructure progress, and trade performance would improve transparency and strengthen accountability.

The objective should not simply be to construct infrastructure, but to demonstrate sustained improvements in livelihoods, formal commerce, ecological health, and regional cooperation.

The Jinjiram, Simsang, and Wah Umngi rivers represent a neglected but strategically important dimension of India–Bangladesh connectivity. Historically, these waterways supported local trade, mobility, fisheries, and social exchange across what is now an international border. Although their formal commercial role has declined, the field evidence presented in this study demonstrates that they remain deeply embedded in the economic and social life of border communities.

The study also reveals that the decline of these river corridors is not attributable to a single factor. Reduced navigability, sedimentation, environmental degradation, fragmented infrastructure, restrictive border arrangements, and limited institutional coordination have collectively weakened their economic role. In the absence of accessible formal trade mechanisms, commercial activity has not disappeared; it has often shifted into informal and unregulated channels. This has resulted in revenue losses, environmental damage, livelihood insecurity, and missed opportunities for regional economic development.

At the same time, the evidence does not support the assumption that all three rivers can or should be transformed into conventional commercial waterways. Their physical characteristics, seasonal limitations, and local economic functions differ substantially. The Jinjiram is best viewed as a supplementary community-oriented trade corridor linked to the Dhubri–Chilmari waterway system. The Simsang offers potential for regulated small-scale trade, livelihood restoration, and eco-tourism, provided that resource extraction is brought under effective environmental governance. The Wah Umngi presents the strongest case for multimodal connectivity, combining road transport in Meghalaya with Bangladesh's navigable inland waterway network.

The policy challenge, therefore, is not simply to revive historical routes, but to develop viable twenty-first-century models of border connectivity suited to local conditions. This requires moving beyond stand-alone dredging projects and conventional port infrastructure. Future interventions must integrate ecological restoration, proportionate trade regulation, customs modernisation, last-mile connectivity, enterprise development, and community participation.

Women-led enterprises and small producers should occupy a central place in this transformation. Their contribution to fisheries, horticulture, food processing, weaving, handicrafts, and bamboo-based production demonstrates that inclusive trade is not an abstract policy objective but an existing economic reality. Strengthening their access to finance, aggregation, formal markets, logistics, and decision-making institutions would ensure that the benefits of connectivity are distributed more equitably.

Equally important is the need for deeper bilateral cooperation. Because these rivers cross political boundaries but function as shared ecological and economic systems, unilateral interventions will be insufficient. India and Bangladesh will need coordinated mechanisms

for feasibility assessment, river management, customs facilitation, environmental monitoring, and local trade governance.

Ultimately, the revival of these corridors should be judged not by the scale of infrastructure constructed, but by whether it improves livelihoods, formalises legitimate commerce, restores ecological health, and strengthens cooperation between border communities. With carefully sequenced investment, credible institutions, and community-centred planning, the Jinjiram, Simsang, and Wah Umngi rivers can evolve from marginal and informal spaces into resilient corridors of inclusive trade, sustainable development, and regional partnership across the Brahmaputra-Meghna Basin.

QUANTIVE

