NAVIGATION ALERT

Brazil's Northern Arc: El Niño Navigation Alert 2026

The possible formation of a Super El Niño in the second half of 2026 has placed the Amazon waterways at the centre of Brazil's logistics debate. This presentation outlines the risks, operational impacts, and legal implications for the shipping, port, commodities and insurance markets.

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The Northern Arc: Why This Alert Matters

53%

Soy & Corn Flow

The Northern Arc is responsible for handling more than 53% of the relevant soy and corn flow, according to ANTAQ sector estimates.

2026

Super El Niño Alert Year

The possible formation of Super El Niño in the second half of 2026 has placed Amazon waterways at the centre of Brazil's logistics debate.

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Effects to 2027

El Niño has potential effects extending into 2027, risking reduced rainfall, an extended dry season and historically low river levels similar to 2023.

2023

Precedent Drought

In 2023, historically low river levels affected navigation, supplies and cargo transportation across the region — a scenario that may repeat.

The El Niño Phenomenon and Amazon Waterways

Scientific Basis

A joint technical note issued by INPE, INMET, FUNCEME and CENSIPAM points to a high probability of El Niño conditions developing over the coming months. In the Amazon, that pattern is normally associated with reduced rainfall, lower river levels and narrower windows of navigability.

- The region has experienced severe droughts before — in 2015/2016 and 2023/2024, among the most severe ever recorded in the Amazon basin
- Both arose from the same broad climatic phenomenon now forming again
- Reduced water levels force vessels to operate with reduced cargo volumes, lowering logistics efficiency and increasing transportation costs

Wildfire Risk

The scenario also increases the risk of wildfires, especially during the most critical stage of the dry season, compounding the operational and environmental pressure on the region.

At the federal level, preparations include a situation room coordinated by the Chief of Staff Office, with the participation of several ministries and public agencies.

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The Northern Arc: Brazil's Principal Export Corridor

The Northern Arc is no longer a secondary corridor in Brazilian trade. It has become one of the principal outlets for the country's agricultural exports, and its performance depends, in large measure, on inland river navigation.

Barges, private terminals, transshipment stations, storage facilities, floating structures and oceangoing vessels are not separate pieces of infrastructure. They form one commercial and operational chain. When the river falls, the consequence is not merely local — it becomes a national logistics problem, ultimately affecting the competitiveness of Brazilian exports.

One Integrated Chain

From barge to terminal to oceangoing vessel — all linked

National Consequence

River disruption elevates costs and cargo stress across Brazil's entire export network

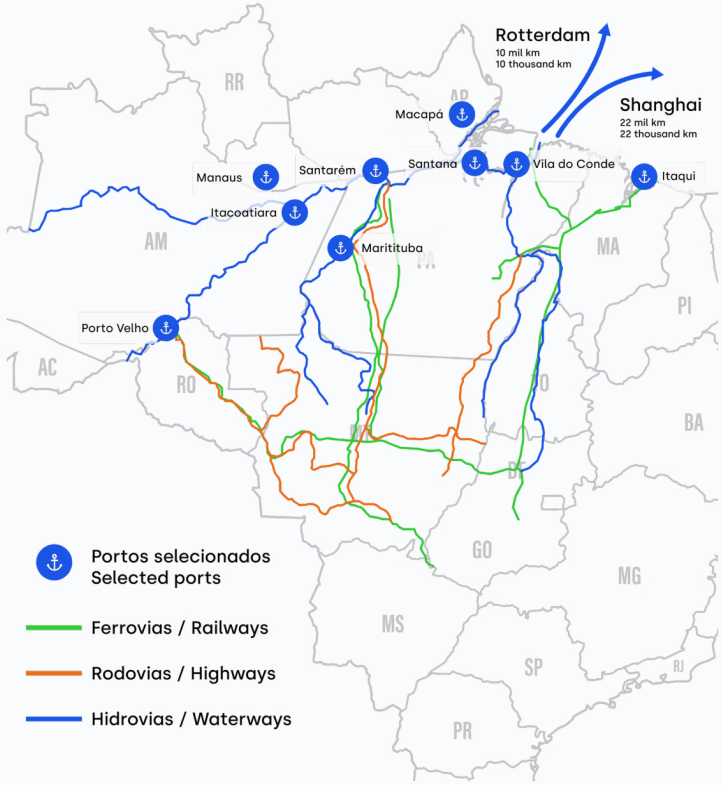
Export Competitiveness at Risk

Drought-driven inefficiencies directly affect the competitiveness of Brazilian agricultural exports

Strong 2025/26 Crop Expected

A large crop needs more than one reliable exit route — the Northern Arc cannot afford navigational failure

The Northern Arc consists of several key ports and distribution corridors located in Brazil's North and Northeast regions



The Northern Arc is projected to handle 50% of Brazil's national soybean outflow by 2030.

⚠ El Niño-driven drought could restrict navigability precisely during the peak export season, placing all of this volume at risk.

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Dredging: The Central Policy Debate

The sector has mobilised in defence of dredging — particularly maintenance dredging — as part of a broader case for logistical resilience. As Gabriela Costa of ATP (Association of Private Port Terminals) put it: dredging is not the creation of a new waterway; it is the maintenance of a waterway that already exists.

Tabocal Passage & Madeira Inlet

Key points of concern with significant sediment accumulation and strategic relevance for vessel access to Manaus, the Amazonas state capital.

Dredging by August

The Brazilian Association of Cabotage Shipowners has advocated for dredging works in critical stretches to be carried out as early as August — before the most severe period of the dry season.

TCU Audit Findings

The Federal Court of Accounts recently concluded an audit identifying weaknesses in planning, execution, governance, data collection and regulatory coordination of Brazil's waterway policy.

Soybean and corn production

*In millions of tons

Above the parallel 16° S:

2009	56
2024	178,9
Growth	**219,5%**

Below the parallel 16° S:

2009	52
2024	84,5
Growth	**62,5%**

Export of soybean and corn complex

*In millions of tons

Above the parallel 16° S:

2009	7.2
2024	55,1
Growth	**665,3%**

Below the parallel 16° S:

2009	36,2
2024	104
Growth	**187,3%**

The Political Dimension: Indigenous Rights and Dredging

The dredging debate has become politically sensitive. Following the mobilisation of Indigenous communities against Decree No. 12.600/2025 and the occupation of the Cargill terminal in Santarém, demands were made that dredging not proceed without adequate consultation and safeguards.

Revok...

Decree 12.600/2025

The Government subsequently revoked the decree and suspended or reconsidered measures connected with the proposed hydro waterway agenda.

Balan...

The Core Challenge

Brazil must reconcile social and environmental legitimacy with the operational reality that river transport depends on predictable maintenance, monitoring and navigability.

Brazil ...

TCU Conclusion

Brazil has a waterway system with significant economic potential, but one that remains underused and insufficiently supported by long-term public policy, increasing the so-called "Brazil Cost".

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Manaus: A Case Study in Vulnerability and Private Resilience

Manaus offers a useful illustration of both vulnerability and private-sector resilience. During recent droughts, navigation to the Port of Manau (second biggest contaienr terminal in TUE in Brazil) s was severely affected, and parts of the container supply chain had to be reorganised.

Private Sector Innovation

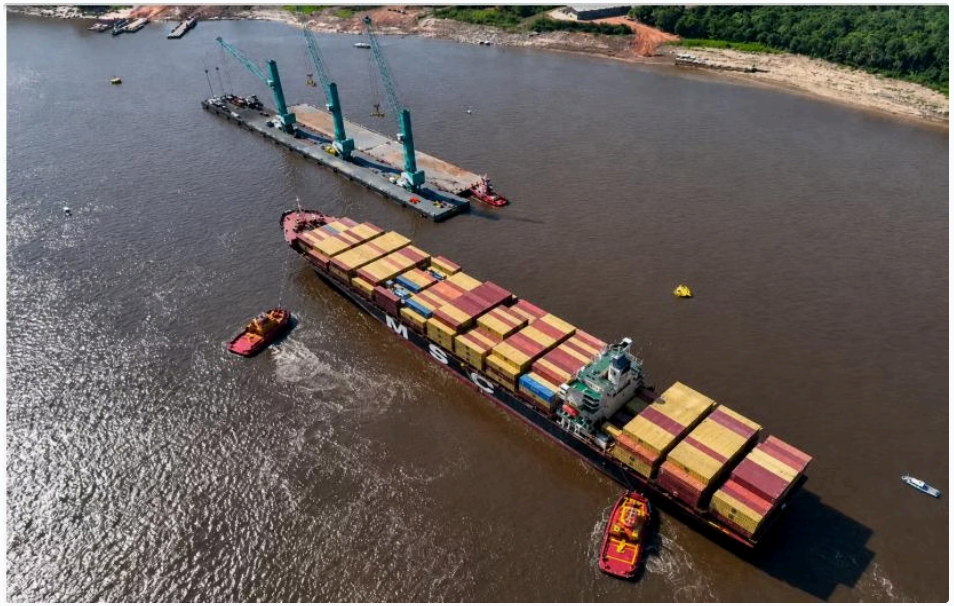
Companies such as Chibatão and Super Terminais developed floating piers equipped with cranes to allow container vessels to operate as far upriver as safely possible.

Transshipment by Barge

Onward transshipment by barge to Manaus was used when draft restrictions prevented normal continuation of the voyage — but this is not a substitute for ordinary navigability.

⚠ Transshipment by barge, emergency floating structures and temporary logistics arrangements involve additional cost, coordination, time, handling risk and contractual uncertainty. They are valuable contingency tools — not permanent solutions.

Aerial View: Container Operations on the Amazon



Aerial view of a large container ship (MSC SINGAPORE) navigating a river, being assisted by a barge equipped with cranes and tugboats — a contingency arrangement deployed during low-water periods.

A large container ship docked at a Northern Arc port with cranes loading or unloading containers under normal navigability conditions — the standard operations at risk from El Niño drought.

These images illustrate the operational contrast: contingency barge transshipment versus normal port operations. The former involves greater cost, coordination burden and contractual uncertainty.

Navigation Challenges During Drought Season

The seasonal drought periods present significant operational obstacles for shipping in Brazil's northern waterways. A possible Super El Niño would intensify these challenges significantly in the second half of 2026 and into 2027.

Reduced Water Levels

Dramatic drops in river depths during dry seasons restrict vessel draft and cargo capacity, forcing partial loadings and increasing per-unit shipping costs

Vessel Size Limitations

Only smaller vessels with reduced drafts can navigate during severe drought periods, creating bottlenecks and limiting economies of scale typically associated with maritime shipping

Shifting Navigation Channels

Drought conditions alter riverbeds and navigation channels, making existing charts unreliable and increasing grounding risks for vessels unfamiliar with local conditions

Extended Transit Times

Reduced speeds and daylight-only navigation restrictions during low water periods extend voyage durations, creating scheduling uncertainties and supply chain challenges

These challenges require specialised knowledge of seasonal variations and close collaboration with local pilots. Night-time navigation is frequently restricted during drought seasons, further limiting operational windows and requiring careful voyage planning.

Key Commodities and Operations: What Is at Stake

Agricultural Products

Soybeans and corn dominate exports. A strong 2025/26 crop means more volume seeking exit routes — the Northern Arc cannot afford to lose navigability.

Mineral Resources

Iron ore and bauxite from the Amazon region — also dependent on river navigation and subject to draft restrictions in low water conditions.

Petroleum Products

Growing segment with new terminal facilities. Fuel supplies to riverside communities are at critical risk during droughts, increasing security and logistical complexity.

Container Operations

Expanding at Belém and Manaus ports. Container supply chains at Manaus required full reorganisation in the 2023 drought — that risk now returns.

Fertilizer Imports

Significant growth supporting agricultural expansion. Import schedules and storage must account for possible access restrictions during the dry season.

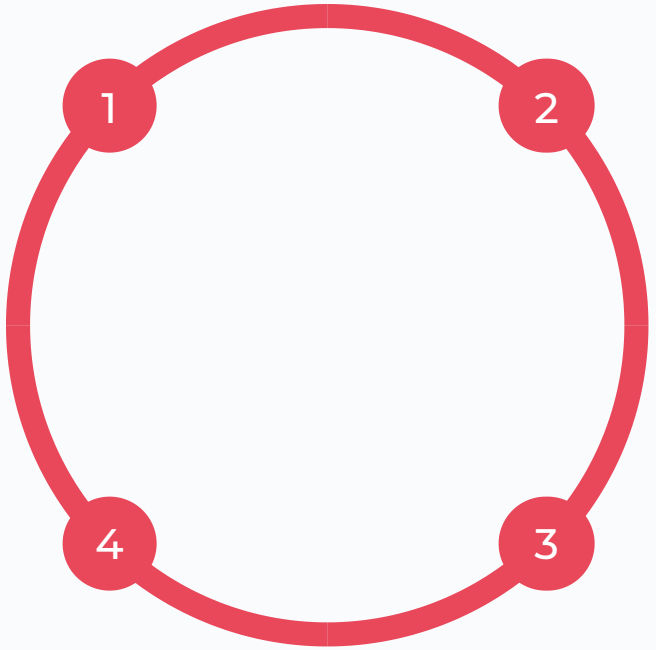
Key Ports Driving the Northern Arc

Itaqui (Maranhão)

Leading grain exporter; strategic location in São Luís (MA) providing access to agricultural regions via North-South railway. Does not use river navigation and will not suffer impacts.

Manaus / Additional Northern Ports

Itacoatiara (AM), Santana (AP), Salvador (BA) and Porto Velho (RO) collectively handling over 9M tons in 2023. Manaus especially vulnerable to draft restrictions during drought periods.



Barcarena/Vila do Conde (Pará)

Major bulk cargo hub; handles 20M+ tons annually. Strategic for aluminum, kaolin, and grain exports with direct access to the Amazon River system.

Santarém (Pará)

Key grain export terminal; Cargill annual capacity of 5M tons. Amazon River location connecting Brazilian agricultural heartland to global markets — site of recent Indigenous occupation over dredging.

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Cargo Under Stress: What Happens When the River Falls

Cargo Doesn't Disappear

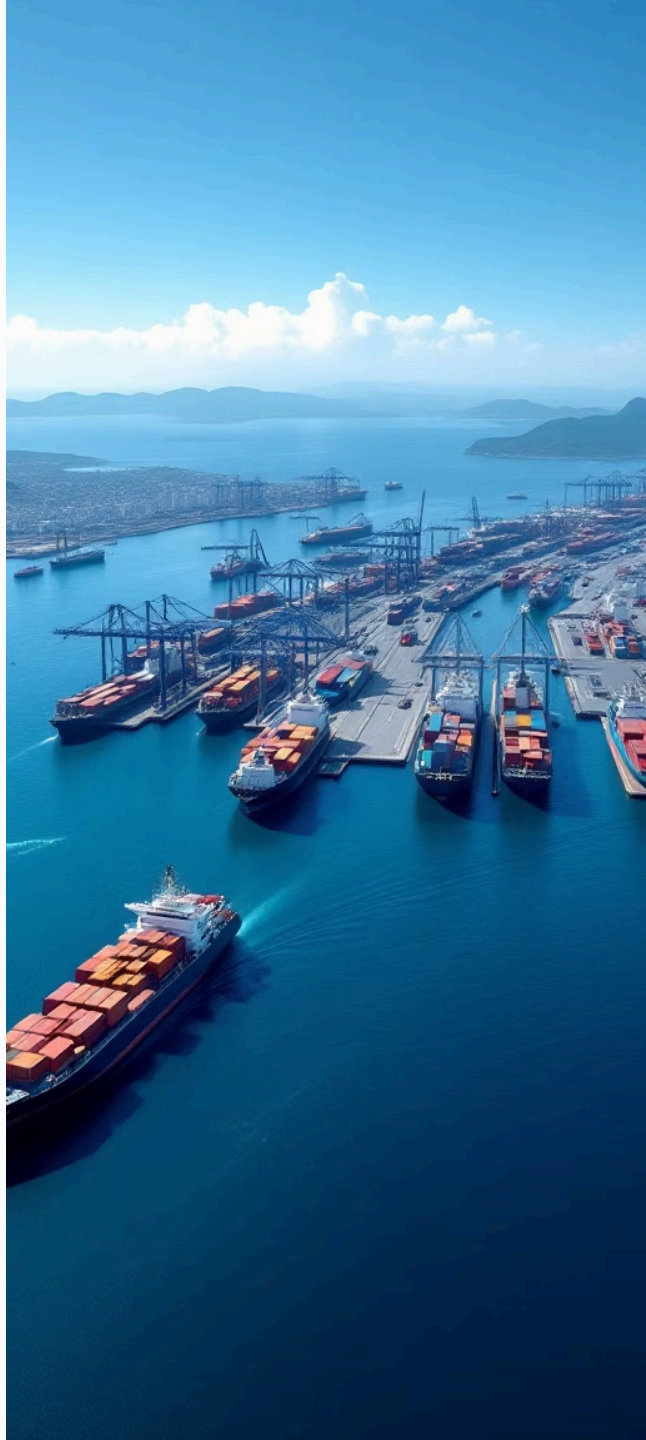
If the Northern Arc loses navigational capacity during the dry season, cargo moves under stress — seeking other corridors and increasing pressure on road and rail systems.

Freight and Storage Costs Rise

Elevated freight and storage costs alter contractual performance assumptions and may affect the timing and economics of export programmes.

Systemic Pressure

Road and rail systems absorbing displaced cargo face congestion, raising the "Brazil Cost" — the very inefficiency that the Northern Arc was built to reduce.



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Legal Implications: Contracts Under a Low-Water Scenario

Contracts Requiring Review

Contracts for carriage, terminal use, chartering, sale and purchase, logistics services and supply chains should now be reviewed with particular attention to drought-related restrictions.

Key Contractual Issues

Reduced draft, partial loading, transshipment, additional storage, deviation, waiting time, demurrage, force majeure, change in law, emergency measures, terminal congestion, and allocation of additional costs.

The Dispute Question

In disputes, the central question is often not whether the river was low, but whether the risk was foreseeable, whether the party relying on the event acted reasonably, and whether the contract allocated that risk clearly.

Operational Notices: What the Shipping Community Must Monitor

For the shipping community, the coming months will require closer scrutiny of multiple sources of real-time operational intelligence. In a low-water environment, contemporaneous records become essential.

Operational Notices & Circulars

Terminal circulars, notices to mariners, hydrographic data, draft recommendations and port authority communications must be tracked continuously.

Document All Decisions

Decisions on loading, lightering, transshipment, waiting, alternative ports and cargo scheduling should be properly documented from the outset to support any future claims.

Preserve the Evidential Record

Where costs are being passed down the contractual chain, the evidential basis for doing so must be preserved from the outset — contemporaneous records are the foundation of successful claims.

Anticipate, Do Not React

For terminals, shipowners, charterers, traders, insurers and cargo interests, drought risk should be addressed in advance — not debated after delays and additional costs have already accrued.

These documentation and monitoring requirements represent the practical risk management framework for all parties operating in the Northern Arc during a potential El Niño drought period.

The Value of Local Legal Expertise in a Drought Scenario

Rapid Claim Resolution

Local legal correspondents efficiently resolve common claims through immediate, in-person response across Brazil's northern ports — critical when low-water incidents occur with no warning

Preventing Escalation

Early intervention based on regional understanding allows drought-related issues to be addressed before they develop into costly disputes over demurrage, force majeure or cargo damage

Regional Nuance Expertise

Deep familiarity with local regulations, hydrographic conditions, cultural contexts, and business practices ensures appropriate handling of sensitive drought-related situations

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Conclusion: Acting Before the Water Falls

The Northern Arc can remain one of Brazil's most efficient and lower-emission logistics alternatives, but only if navigability is treated as a permanent commitment, rather than an emergency response.

This time, science has provided advance warning. Whether that warning is converted into logistical predictability will depend, to a very large extent, on whether dredging, monitoring and maintenance are dealt with now — before the water falls.

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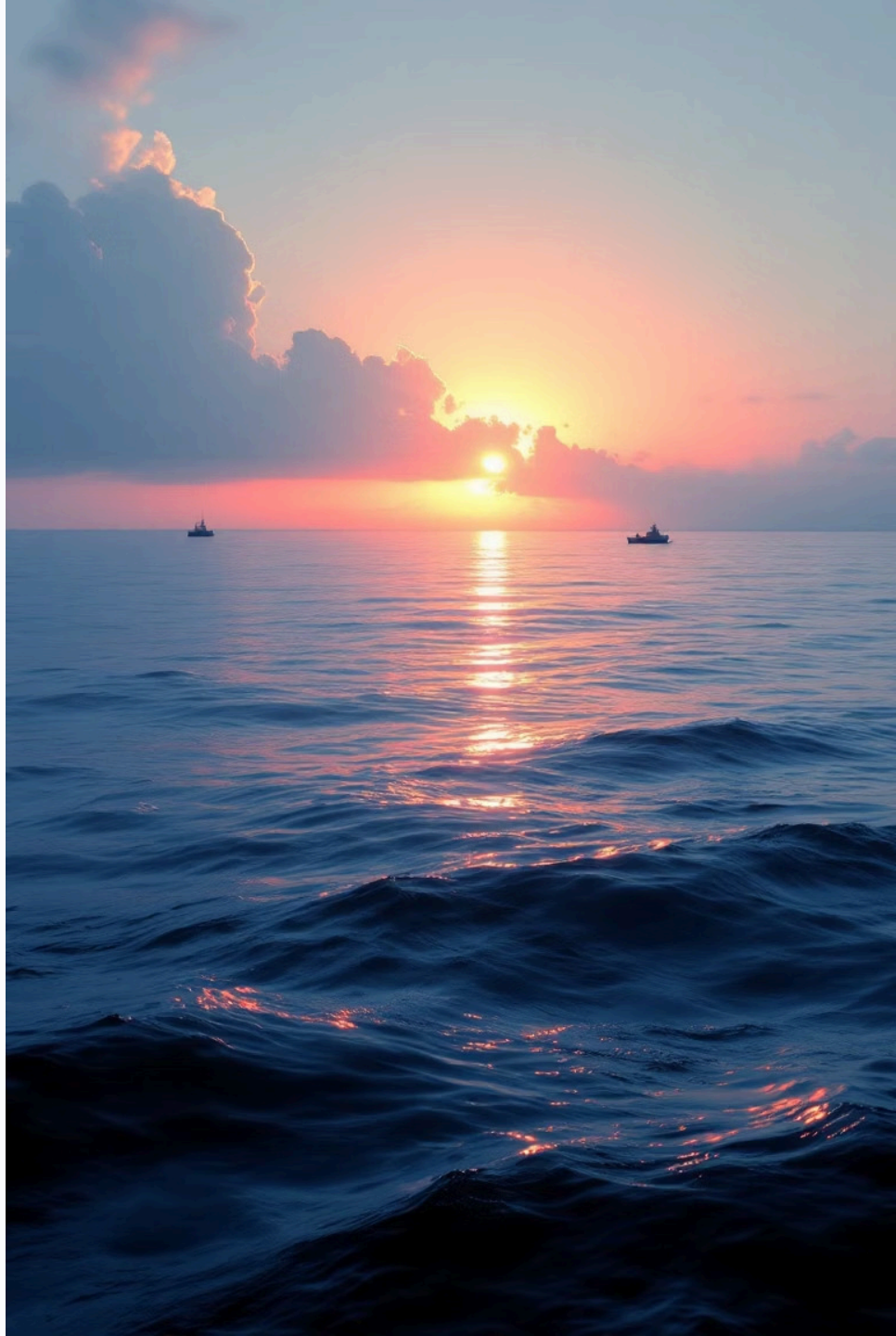

With 27 years of market experience and deep knowledge of the Northern Arc's culture and market dynamics, our operation extends beyond traditional legal practice.

Should you wish to assess the potential impacts of the Amazon drought scenario on transportation contracts, port operations, logistics costs or cargo supply and distribution strategies, our team is available.

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