

**Multi-year Expert Meeting on Transport, Trade
Logistics and Trade Facilitation
11th Session**

Maritime Transport in Times of Polycrisis

23-24 October 2024, Geneva

**Sri Lanka's Logistics and Maritime
Transport Sector amidst the Polycrisis**

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Sri Lanka

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Sri Lanka's Logistics and Maritime Transport sector amidst the Polycrisis

1. Overview of Logistics and Maritime Transport Sector in Sri Lanka

Sri Lanka's logistics and maritime sector is a vital component of the economy. The country's strategic location among the key marine and air navigation routes within the South Asian region makes the country a lucrative destination for global trade. Sri Lankan logistics services contribute to 2.5% of Gross Domestic Product (GDP). The industry provides full-time direct employment to over 40,000–50,000 people.

The Country transport infrastructure includes an extensive road network of 12,255 km, several expressways spanning 312 km, and a rail network of 1,561 km. Sri Lanka also has the highest road density in South Asia, with 173.9 km of roads per 100 square km of land, connecting all major seaports and airports.

Sri Lanka has three prominent ports Colombo, Hambantota, and Trincomalee that are integral to facilitating global shipping and trade. The Colombo Port stands as the largest and busiest facility, handling around 70% of the nation's cargo and serving as a crucial transshipment hub due to its deep-water capabilities. Ongoing expansion projects aim to enhance its capacity and operational efficiency. In the south, the Hambantota Port is designed for large vessels and plays a significant role in bulk cargo and oil shipments, aligning with the government's initiative to develop the region into an economic hub. Meanwhile, Trincomalee Port, a natural deep-water harbor on the east coast, primarily facilitates bulk cargo and Marine services, with potential for future development. Bandaranaike International Airport, located near Colombo, is the main international gateway, handling both passenger and cargo flights, with expansion plans in place to increase its capacity. Additionally, Mattala Rajapaksa International Airport, while primarily serving domestic routes, has potential for growth in cargo services. The country's logistics infrastructure is bolstered by a developing road and rail network that connects key ports and economic zones, complemented by several free trade zones that promote manufacturing and exports. Despite challenges such as infrastructure bottlenecks and competition from neighboring ports, there are significant opportunities for growth through investment, strategic partnerships, and technological advancements. The government of Sri Lanka is actively engaged in improving this sector, with the aim of strengthening country's position as a logistics hub in South Asia.

2. Sri Lanka's Logistics and Maritime Transport Landscape in the context of the Polycrisis.

Sri Lanka's maritime transport sector has been significantly impacted by a series of global disruptions, reflecting the broader challenges of a polycrisis characterized by COVID-19 pandemic, economic instability, environmental changes, and geopolitical tensions.

2.1 The COVID-19 Pandemic: Initial Shocks to Maritime Transport sector

The COVID-19 pandemic, which began in early 2020, had a profound impact on global trade and supply chains. Sri Lanka's maritime transport was no exception. Ports across the globe faced severe disruptions, and the Port of Colombo one of the busiest transshipment hubs in South Asia—saw a sharp decline in trade volumes as global demand fallen. Restrictions on movement, quarantine regulations, and workforce shortages all contributed to congestion in ports. Ships were delayed, and containers piled up, leading to inefficiencies in port operations.

The pandemic also led to unprecedented challenges in crew changes, with thousands of seafarers stranded at sea for extended periods due to travel restrictions. This led to operational difficulties for shipping lines, further affecting the efficiency of Sri Lankan ports. The unfavorable effects were felt across the logistics chain, as delays in shipping affected businesses dependent on timely imports and exports, particularly in critical sectors such as apparel and agriculture.

2.2 Geopolitical Tensions: Rising Costs and Uncertainty

Beyond the pandemic, global geopolitical tensions most notably the Russia-Ukraine war and Israel, Palestine conflict have added to the complexity of maritime trade. The conflict has led to significant disruptions in global shipping routes and an increase in fuel prices, which directly impact shipping costs. For Sri Lanka, which heavily relies on maritime trade, these disruptions have been particularly challenging.

The rise in oil prices, partly driven by geopolitical tensions, has made refueling at Sri Lankan ports more expensive. This, coupled with the depreciation of the Sri Lankan rupee amidst the country's ongoing economic crisis, has put additional pressure on the shipping industry. The cost of importing essential goods has risen, and exporters face increased freight charges, making Sri Lankan products less competitive in global markets.

Moreover, the redirection of shipping routes due to the war has altered traditional trade patterns. As the maritime industry navigates new routes and sanctions, countries like Sri Lanka, which rely on smooth and predictable trade flows, are forced to adapt to these uncertainties, leading to higher costs and logistical challenges.

2.3 Economic Crisis: A Strain on Maritime Infrastructure

Sri Lanka's maritime sector is also grappling with the country's own severe economic crisis. Since the year 2022, the nation has been facing a critical shortage of foreign reserves, resulting in difficulties in importing essential goods, including fuel. Fuel shortages have not only disrupted the daily lives of citizens but also affected the operational efficiency of ports and manufacturing sector. The vessels refueling in Sri Lanka have been forced to look elsewhere, impacting the country's revenue from bunkering services.

Furthermore, due to the economic crisis in Sri Lanka, there was food insecurity in the country as delay in the transportation of essential food and the delay in the import of food.

Additionally, the economic crisis has hindered much-needed investments in maritime infrastructure. Port expansion projects have slowed down, and maintenance of existing infrastructure has become challenging due to limited financial resources. The Port of Colombo, which has the potential to become a regional hub for maritime trade, risks losing its competitive edge to other ports in the region, such as those in India and the Middle East.

However, despite these challenges, Sri Lanka continues to be a key player in regional shipping. The Colombo Port remains a vital transshipment hub, handling nearly 70% of India's transshipment cargo. This underscores the strategic importance of the port, but also highlights the urgency of maintaining and upgrading port facilities to meet increasing demand and competition from regional ports.

2.4 Maritime Disaster: Ecosystem Degradation

Disasters like the X-Press Pearl vessel incident are commonly referred to as maritime disasters or shipping disasters. The X-Press Pearl disaster occurred in May 2021 when the container ship, sailing from India to Europe, caught fire while anchored off the coast of Colombo, Sri Lanka. The vessel was carrying a significant amount of hazardous cargo, including chemicals, which fueled the fire and complicated firefighting efforts. This unexpected incident resulted in substantial economic impacts on local fisheries tourism, and concerns over maritime safety and environmental protection.

2.5 Climate Change: Rising Threats to Maritime Operations

As an island nation, Sri Lanka is highly vulnerable to the impacts of climate change, which are becoming increasingly evident in the maritime transport sector. Rising sea levels and the increasing frequency of extreme weather events such as cyclones pose significant risks to port infrastructure and shipping operations. Unpredictable weather patterns can lead to delays in shipping schedules and disruptions in port activities, further exacerbating the challenges faced by the maritime industry.

In addition to operational disruptions, there is growing pressure on Sri Lanka to adopt greener, more sustainable shipping practices. International maritime regulations, such as those set by the International Maritime Organization (IMO), are pushing countries to reduce carbon emissions in the shipping industry. For Sri Lanka, this presents both a challenge and an opportunity. While transitioning to cleaner energy sources and implementing environmentally friendly practices will require significant investments, doing so could enhance the country's reputation as a sustainable maritime hub, attracting more business in the long run.

3. The role of alternative energy in decarbonizing the Maritime and Logistics sector

Alternative energy is crucial for decarbonizing Sri Lanka's maritime and logistics sector, which significantly contributes to greenhouse gas emissions. As global shipping trends shift towards sustainability, Sri Lanka has the opportunity to lead by integrating renewable energy solutions, such as biofuels, Green hydrogen, and wind power, into its shipping and logistics operations. By investing in green technologies and infrastructure, the country can reduce its carbon footprint, enhance fuel efficiency, and comply with international emissions regulations. Moreover, transitioning to alternative energy sources not only supports environmental goals but also fosters innovation and competitiveness within the sector. As Sri Lanka aims to position itself as a key player in the Indian Ocean trade routes, embracing alternative energy can drive

sustainable growth while protecting marine ecosystems and contributing to the nation's overall climate commitments.

Transport and logistics are responsible for approximately 25% of Sri Lanka's CO2 emissions, making this sector a top priority in the country's national de-carbonization strategy. While Sri Lanka has made strides in addressing private transport emissions by promoting the import and adoption of Electric Vehicles (EVs), the limitations of EVs in long-range travel and Heavy Goods Vehicle (HGV) operations due to the weight of batteries have led the nation to explore alternative solutions for sustainable transportation.

The Sri Lankan government has set a goal of achieving 70 percent renewable energy generation by 2030 and becoming carbon neutral by 2050. In order to achieve above goal Greenstat India (Pvt) Ltd in collaboration with Petroleum Development Authority in Sri Lanka published a green Hydrogen road map for Sri Lanka in September 2023 which they have highlighted some green initiatives that can be initiated in Sri Lanka. Considering the Sri Lanka's strategic position and sea area the marine based green hydrogen production is more feasible owing to the high offshore wind potential and wave energy in time to come. Sri Lanka has the potential to contribute to global de-carbonization effort by producing green hydrogen from excess renewable energy. The country has an abundance of excess renewable energy, including solar, wind, and hydroelectric power, and it could use this capacity to produce green hydrogen for domestic use and export. By doing so, Sri Lanka not only reduce its own greenhouse gas emissions, but also support the transition to a cleaner and more sustainable energy system globally.

Despite the numerous challenges presented by the polycrisis, Sri Lanka's maritime sector is not without opportunities. The country's strategic location at the crossroads of major shipping routes in the Indian Ocean remains a significant advantage. As global supply chains continue to adapt to the new normal, Sri Lanka can position itself as a key player in regional and global maritime trade.

To capitalize on this, Sri Lanka needs to focus on modernizing its port infrastructure, improving digitalization in logistics, enhancing connectivity and decarbonization strategies. Investment in smart port technologies, such as automation and block chain-based logistics systems, could improve the efficiency of port operations and make Sri Lanka more competitive in the global shipping industry.

Moreover, strengthening regional partnerships, particularly with neighboring India, could open new avenues for collaboration in maritime trade. India's growing economy presents a significant opportunity for Sri Lanka to expand its role as a transshipment hub, handling a larger share of India's imports and exports.

By leveraging its strategic location, modernizing its infrastructure, and embracing sustainability through de-carbonization strategies, Sri Lanka can navigate through the current uncertainty and position itself for future growth in the maritime sector.