

Malaysia Integrated Multimodal Transport System

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The Historical Context – Malaysia's Rail Heritage

1900s–1950s

RAIL BEGININGS IN MALAYA

Rail network in Malaya was established for tin, rubber, and port connectivity under the British administration. **Rail was the primary mode for long-distance cargo across Malaya.**

1960s–1980s

GROWTH OF ROLE OF RAIL FREIGHT

The industrial boom in Malaysia. **In the past**, major industries such as steel, sugar refineries, and cement plants had **direct rail sidings linking production to ports**, the true single handling efficiency.

1990s

ROAD BECAME THE MAIN MODE FOR TRANSPORT

- **Rapid highway development** led industries to shift to road transport.
- The North-South Expressway (PLUS) became the main mode for long-haul freight across Peninsula Malaysia.
- The **rail network was not ready for rail as the main mode** for long-haul freight.
- Many sidings were dismantled or left abandoned.

2000s

DECLINE OF RAIL FREIGHT

- **Rail freight volume declined sharply.**
- KTMB focused on passenger service. Lack of private interest in rail freight limited modernization, and lack of uptake reduced the role of rail freight.
- Road remained as the main mode for long-haul freight.

2022 - Present

RMK13 -

THE CALL FOR THE MODAL SHIFT FROM ROAD TO RAIL

- New policies with emphasis on modal shift, green logistics, and Public-Private Partnerships (PPP) to revive rail freight.
- **The network is now ready for the Modal Shift to occur.**

Why the Multimodal Transport System is required

Malaysia's freight landscape is at a critical crossroad.

- Over **99% of domestic freight moves by road**. The imbalance creates congestion, road damage, and rising logistics costs.
- Rail freight share has declined due to **underinvestment and lack of connectivity**.
- Malaysia's economic corridors from Northern Peninsula to Southern Peninsula need **multimodal solutions** to compete with regional countries such as Thailand and Singapore.
- The **13th Malaysia Plan emphasizes sustainable logistics and the "Road to Rail" modal shift as a national priority**.

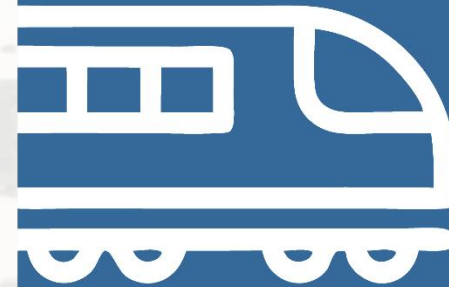
99%
Dependency



DOMESTIC FREIGHT BY ROAD

- Road transport has become the backbone of logistics in Malaysia
- Traffic congestion
- Road accidents
- Overloaded trucks
- Driver shortage
- Fuel subsidies
- High GHG emissions

Less than
1%

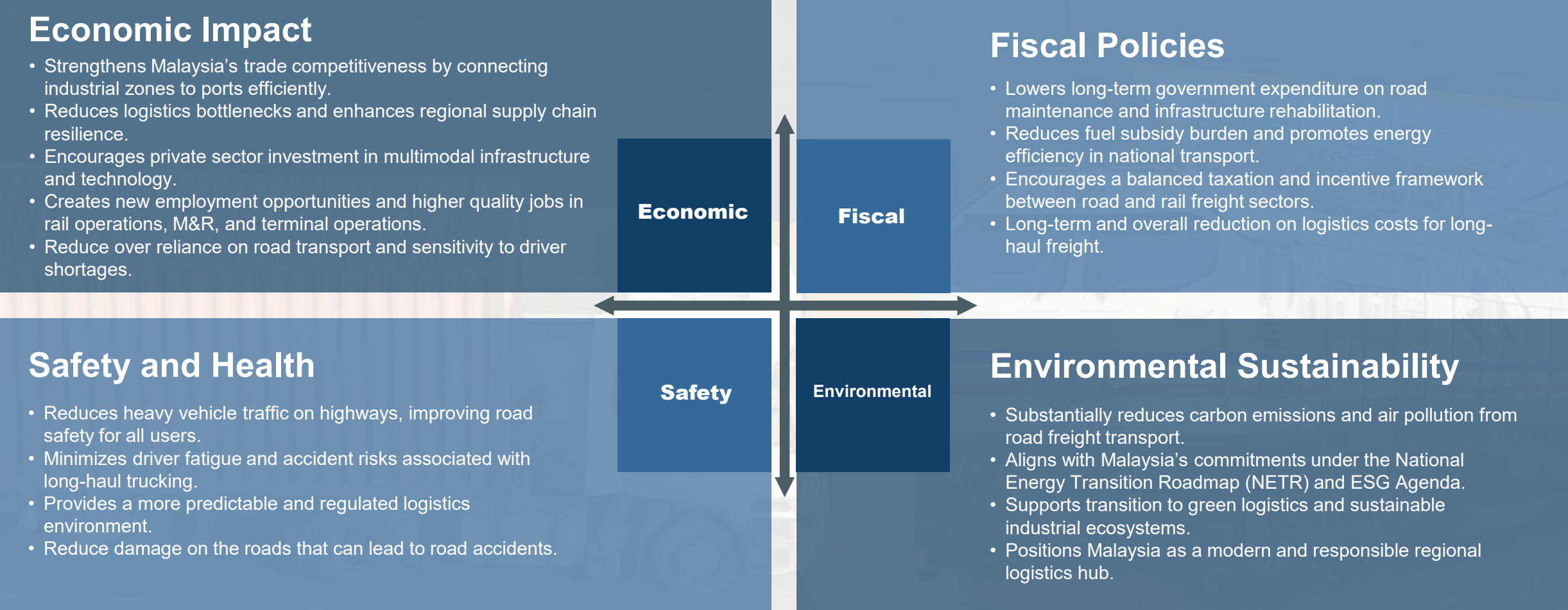


DOMESTIC FREIGHT BY RAIL

- Underutilization
- Abandoned tracks and limited network
- Lack of interests from industries
- Lack of investments from the private sector
- Insufficient locomotives and wagons
- Limited rail corridors
- Additional handlings costs
- No subsidies

Economic, Safety, Fiscal & Environmental Imperatives

Why the Multimodal Transport Matters - Four Dimensions of National Interest



What Type of Cargo Fits Rail?

The Right Cargo for the Right Mode

CATCHMENT PRINCIPLE: The rule of thumb for rail to be cost-effective is the **first and last mile (catchment distance)** — from factory to terminal and terminal to consignee should ideally not exceed **5% of the total rail journey**. Beyond this, cost and time advantages diminish, making road more competitive.

Suitable for Rail:

- **CONTAINERIZED CARGO:** Ideal for consistent, long-haul containerized movements between points, ports, and inland terminals.
- **BULK COMMODITIES:** Steel, cement, sugar, mineral ores, all can benefit from stable, high-volume rail capacity.

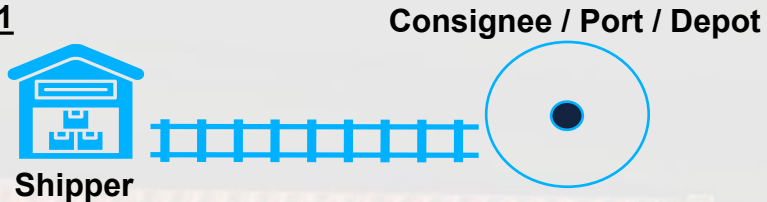
Challenges to Overcome:

- Limited **inland terminals and rail-linked industrial zones** constrain volume growth.
- Approximately every **300 km along the Peninsula hosts a major port**, presenting a natural competition for rail transport.
- **Short national rail network (~1,800 km)** limits connectivity across regions.
- Malaysia's natural **short geographical length** of 990km from North to South Peninsula Malaysia limits the economic viability of rail freight.
- **Double- and triple-handling inefficiencies** reduce time and cost competitiveness compared to road.



Understanding Integrated Multimodal Transport System

Model 1



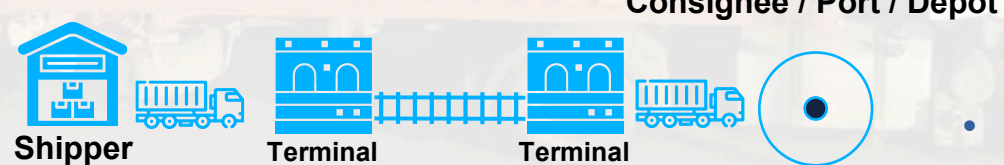
- **Single Handling:** Cargo is loaded once at the **origin site with siding** and unloaded once at the destination — the ideal, most efficient model.
- *For Point to Point cargo, it is competitive to road transport.*

Model 2



- **Double Handling:** Cargo is transported by road and transferred through an intermediate terminal before being loaded onto rail increasing operational steps and dwell time.
- *For Double Handling cargo, the minimum distance travelled by rail should be 150-200km with the first/last mile being less than 10km.*

Model 3



- **Triple Handling:** Cargo passes through multiple terminals or transfer points causing unnecessary cost, delays, and higher risk of damage or contamination.
- *For Triple Handling cargo, the first/last mile must be less than 10km and there must be return cargo for the train.*

International Comparison



Europe



USA



China

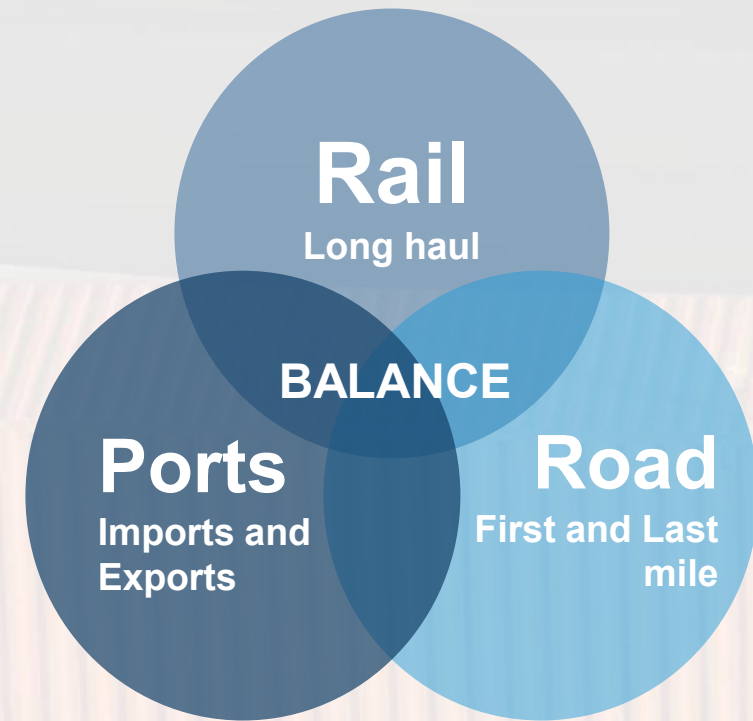


Malaysia

Factor	Europe / USA	China	Malaysia
Diesel Cost for Trucks	<p>USD 1.40–1.80/litre (≈ RM6.50–8.50)</p> <p>High fuel cost due to taxes and no subsidies, resulting in trucking being expensive</p>	<p>USD 1.00–1.20/litre (≈ RM4.50–5.50)</p> <p>No subsidies, regulated fuel pricing resulting in rail being more competitive</p>	<p>USD 0.63/litre (≈ RM2.93)</p> <p>Subsidized fuel resulting in trucking being artificially cheap</p>
Wagon Capacity	70–80 tonnes per wagon	90–100+ tonnes per wagon (heavy-haul)	49–64 tonnes per wagon (meter gauge)
Economies of Scale	1 block train = 80–100 trucks	1 block train = 100+ trucks	1 block train = 40–80 trucks
General distance travelled by rail	<p>Europe average 500km</p> <p>USA average 1000km</p>	China average 800km	<p>Peninsula Malaysia's entire geographical North–South span is only 990km</p>

The need to rebalance the freight spread

Correcting the Structural Imbalance Between Road and Rail



- **Current Imbalance:** Malaysia’s freight sector is dominated by road transport due to decades of road infrastructure prioritization and fuel subsidies that created **an artificial perception of low road transport costs**. This has created an uneven logistics cost structure that disadvantages rail.
- **Failure to fit the Catchment Principle:** For rail to be cost-effective, the first and last mile should ideally not exceed 5% of the total journey. Many industrial areas today fall outside this range, reducing rail’s competitiveness.
- **Policy Realignment Needed:** A positive drive by the Government to enforce of weight limits, the need to review of toll, limit the issuance of heavy vehicle permit, and introduction of fiscal incentives (e.g., ITA, DTD, SST exemption) can help correct structural imbalances.
- **Focusing on areas that can shift to rail:** The modal shift should occur in stages where focus are given to areas that can and should shift to rail transport immediately such as heavy and long-haul cargos.
- **Phases of fuel subsidy rationalization:** Fuel subsidy for trucks should be rationalized further to first and last mile deliveries only. Long-haul trucks should not be subsidized.
- **Outcome: A rebalanced system where road and rail complement each other — road for short-haul distribution and rail for long-haul bulk — will lower national logistics costs and enhance Malaysia’s supply chain.**

“The Government is targeting at least 10 per cent to be transported via rail with the improvements implemented under the 13th Malaysia Plan”

YB Anthony Loke, Minister of Transport
30 October 2025

Integrated Multimodal Transport System as the Core Driver of Malaysia's Freight Future

Unlocking Efficiency, Sustainability, and Growth through Modal Shift

Mode Optimization

- Rail should handle **all long-haul cargo exceeding 300 km**, where it offers economies of scale.
- **First- and last-mile transport by truck** should be kept below **5% of the total distance**, to maintain rail's cost advantage.
- Each mode performs where it is most efficient rail for bulk and heavy freight, road for short-haul and final delivery.

Fiscal and Policy Reforms

- Introduce **Double Tax Deduction (DTD)** for companies shifting cargo to rail.
- Approve **Investment Tax Allowance (ITA)** for rail-linked terminals and automation.
- Grant **SST exemptions for rail freight services**.
- **Increase the toll rates for heavy-vehicle and limit heavy vehicle permits** to encourage balance.
- Increase the barrier to entry for heavy vehicles – **professionalizing drivers, more regulations on overloading, stringent vehicle audits and checks**.

Modal Shift

Infrastructure Modernization

- Double-tracking, spur-line extensions, and inland container terminal (ICTs) must be **expanded near industrial clusters**.
- There **cannot be sections of the network that is not upgraded**.
- **Revive and reconnect abandoned** industrial rail sidings to reduce double-handling.
- **Develop multimodal terminals** as cargo collections points that combines rail and road access.
- Incorporate digitalisation, electric-powered handling equipment, and yard systems for operational sustainability.

Making Rail Attractive to Businesses

- **Guarantee service reliability** by maintaining predictable schedules and shorter transit times for key corridors.
- **Offer integrated logistics packages where rail operators collaborate** with trucking companies for first/last mile delivery, creating door-to-door solutions.
- Establish **priority rail freight corridors** with dedicated tracks or time slots for industrial cargo.
- Provide tariff incentives or loyalty programs for high-volume rail users (e.g. manufacturers, exporters).
- **Promote successful pilot projects and case studies** demonstrating cost savings and ESG advantages to build confidence among shippers.

The Path Forward – Collaboration for National Impact

Policy, Infrastructure, and Industry Must Move Together

Achieving Integrated Multimodal Transport System requires coordinated national effort aligning infrastructure, technology, and policy under one integrated vision. The transformation of Malaysia's freight landscape depends on collaboration between the Government, ports, industries, logistics players and private investors.



Policy & Regulatory Support

Government and Authorities

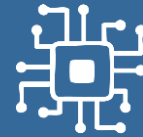
- Introduce **fiscal incentives** and **investment tax incentives** for rail-linked infrastructure investment.
- Allocate government land and grants for terminal and siding development.
- Include rail transport under Terminal Access Charge (TAC) incentive that promotes off peak spread by road into ports.



Infrastructure Development

Public and Private Development

- Accelerate **double-tracking and spur-line extensions** to major industrial zones.
- Ensure that is **no gaps in the rail network upgrade**.
- Establish new inland ports and multimodal terminals to shorten first and last-mile distances.
- Reconnect key industries through dedicated rail sidings to enable **single-handling** logistics.
- Increase the number of locomotives and wagons.



Technology & Sustainability

Elements of digitalisation & technology

- Encourage investments into **digitalisation and automation**.
- Promote **transparency of rail scheduling** and ease of monitoring.
- A **national recognition** of rail as a sustainable mode of transport.
- **Recognition to industries that switch to rail**.



Public-Private Partnerships (PPP)

Public and Private Participation

- **Encourage private sector participation** in rail terminal operations, bringing efficiency, innovation, and investment to national freight infrastructure.
- **Streamline regulatory processes** and provide faster approvals for private-led infrastructure and terminal projects to shorten implementation timelines.
- Offer targeted government support **including facilitation, tax incentives, and land allocation** to attract sustainable private investment into rail-linked logistics.
- Create **clear governance frameworks** that ensure transparency, accountability, and mutual benefit between public agencies and private partners.
- **Foster long-term partnership** continuity to maintain project stability and encourage reinvestment in innovation, safety, and ESG initiatives.

The Vision Ahead

Malaysia's Green Freight Future

Integrated Multimodal Transport as the Backbone of Malaysia's transport system

- With policy consistency, infrastructure investment, and industry collaboration, **Malaysia can transform its freight landscape and become a regional leader in green logistics.**
- The future of Malaysian freight will be defined by **integration road for reach, rail for range, and technology for reliability.**
- With the current upgrades of the double tracking network, additional locomotives and wagons, and the upcoming ECRL network, the **rail network is now READY for the modal shift.**
- Together, government, industry, and the private sector can shape a transport system that is **smarter, safer, and more sustainable** for generations to come.

“The multimodal transport system is not just about moving cargo but it's about moving Malaysia toward a cleaner, safer, and more competitive future”



**Thank
You**
