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### **Achieving the Aichi 2030 Declaration Goal 3 Economic sustainability: Policy Action Recommendations**

(Background Paper for Plenary Session 3: Review Goal 3 - Economic Sustainability)

#### **Final Draft**

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## Executive Summary

This background paper examines the progress, challenges, and policy recommendations for achieving Goal 3 of the Aichi 2030 Declaration, which focuses on achieving economic sustainability in the transport sector by 2030. This involves leveraging green investments, technology, and innovation to promote sustainable growth and employment while considering environmental and social impacts.

### Progress and Challenges:

- The transport sector's direct contribution to the GDP in the EST region has grown significantly, increasing its share of the global transport sector gross value added.
- Employment in the sector has also seen substantial growth, although the rate has slowed since implementing the SDGs.
- Investment in transport infrastructure remains low in some countries.
- The share of women employed in the transport sector is not improving at a significant rate.
- More comprehensive data is needed to fully assess progress and guide policy decisions.
- Several countries have implemented policies to improve economic sustainability, including targets for logistics costs, private investment in railways, and transport safety. The diverse policy landscape considered includes
  - **Enhancing employment opportunities:** through training, awareness campaigns, and improved working conditions.
  - **Improving freight transport:** by shifting to more sustainable modes and investing in efficient technologies.
  - **Promoting technological advancements:** including electric vehicles, renewable energy, and intelligent transport systems.
  - **Integrating lifecycle assessments:** to evaluate the full impact of infrastructure investments and technologies.

The paper proposes six key policy recommendations to achieve Goal 3, including:

- **Lifecycle-based infrastructure planning:** considering environmental and social impacts throughout the project lifecycle.
- **Investment in resilient infrastructure:** to adapt to climate change and evolving transport demands.
- **Multimodal transport integration:** to promote seamless connectivity and reduce reliance on single modes.
- **Incentivizing low-carbon technologies:** accelerating the transition to a more sustainable transport sector.
- **Economic resilience through sustainable transport:** aligning policies with economic and environmental goals.
- **Improving appraisal methods:** Incorporating wider economic benefits of transport investments into cost-benefit analysis to enable more informed decision-making.

By prioritizing these policy actions, countries can ensure that the transport sector contributes to sustainable economic growth and a more prosperous future for the EST region.

## Background

The economic sustainability of the transport sector emerges as a critical cornerstone in the pursuit of balanced and long-term economic growth. It ensures that transport systems are engines of sustained economic progress without compromising environmental integrity or resource availability. This involves strategic investment in resilient and efficient infrastructure that facilitates trade and mobility, fosters job creation, and promotes innovation in transport technologies. Adequate transport finance expanded employment opportunities within the transport sector, and ongoing infrastructure improvements are pivotal components in achieving this economic sustainability.

To strengthen engagements on this topic, the Aichi 2030 Declaration was adopted by 21 countries in 2021, inspired by the Sustainable Development Goals, the Paris Agreement on Climate Change, the New Urban Agenda, and other global agreements. The Declaration's Goal 3 refers to economic sustainability – *"By 2030, realize sustainable economic and employment growth by leveraging science, technology and innovation and green investments in quality passenger and freight transport infrastructure and services in a manner that fully incorporates environmental and social impacts throughout the lifecycle of the transport infrastructure and services"*.

Goal 3 of the Aichi 2030 Declaration aligns with SDGs 8.4, 9.1, 12.1, and 12.c by promoting sustainable economic growth through green investments in transport infrastructure. SDG 8.4 emphasizes efficient resource use in economic growth, which Goal 3 supports by integrating environmental considerations in transport. SDG 9.1 focuses on resilient infrastructure, aligning with Goal 3's aim for quality transport systems. SDGs 12.1 and 12.c advocate sustainable consumption and production, reflected in Goal 3's lifecycle approach to minimizing environmental and social impacts in transport.

This paper discusses the progress towards this goal, the remaining challenges, and potential policy pathways to ensure the transport sector's economic sustainability in Asia. This background report synthesizes information from the Asian Transport Outlook (ATO), combining official national and regional statistics with data from reputable international sources.

### I. Transport sector Gross Value Added as a share of GDP

Gross Value Added (GVA) gauges the value added to the economy by producing goods and services within a specific sector, like transport. From 2010 to 2022, the transport sector's GVA in the EST region experienced a robust annual growth of about 6.6%, increasing from USD 2.8 trillion to USD 6.1 trillion (UN, 2023). This growth also boosted the region's share of the global transport sector GVA, rising from 36% in 2010 to 41% in 2022. The transport sector's GVA as a proportion of the total GDP in the EST region held steady at approximately 6-8% during this period.

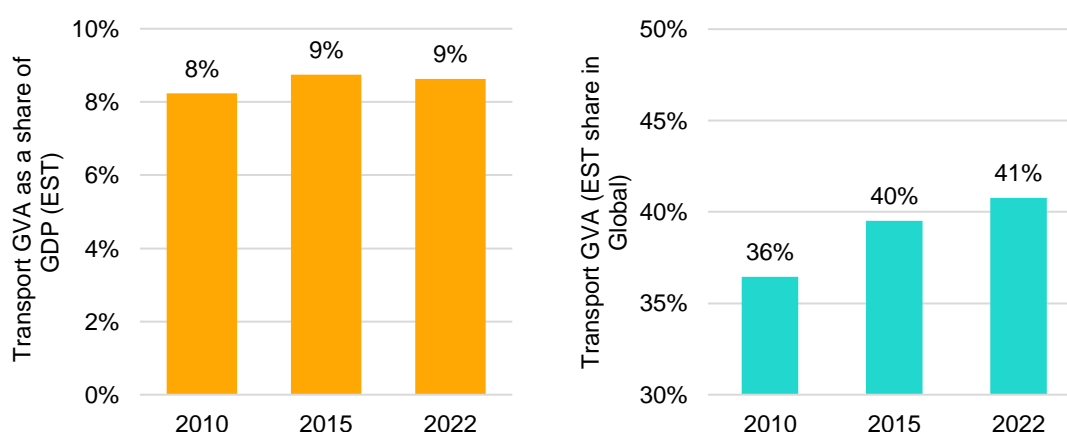


Figure 1(a): Transport GVA as a share of GDP (EST), (b) Transport GVA (Global share of EST)

Source: (UN, 2023)

## II. Transport employment

Between 2000 and 2015, the transport sector in the EST region experienced significant employment growth, increasing at an annual rate of 3%, surpassing the overall employment growth rate of 1% (ILO, 2024). This led to a rise in transport employment share within the EST region's total employment, increasing from 4% in 2000 to 6% in 2015 (ILO, 2024). However, following the implementation of sustainable development goals, the growth rate of transport sector employment slowed to 2% annually, while the overall employment growth rate continued at 1%. The total number of individuals employed in the transport sector within the EST region rose from 70 million in 2000 to 119 million in 2022 (ILO, 2024). These employment estimates do not include informal workers in the transport sector, who have a significant share in employment but are often not counted.

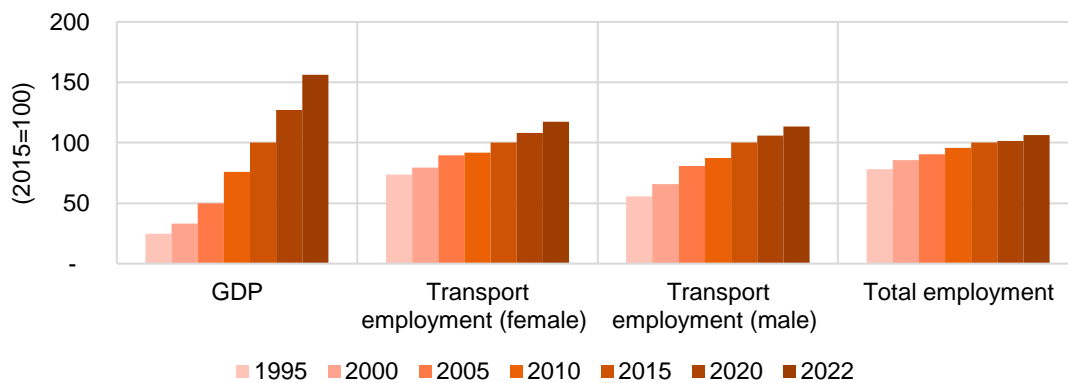


Figure 2: Growth of employment in the EST region (2015=100)

Source: (ILO, 2024)

The share of females employed in the transport sector in the EST region decreased from 14% in 2000 to 12% in 2022, mirroring a global decline from 17% to 15% during the same period (ILO, 2024). Since adopting the Sustainable Development Goals (SDGs), there has been minimal progress in increasing the share of women working in transport in this region. The share of females employed in the transport sector vis-à-vis the total female employment has remained stagnant at approximately 2% (ILO, 2024), suggesting that the transport sector is expanding its female workforce at the same pace as other sectors.

## III. Transport sector Government Investments

Investing in infrastructure is crucial for a well-functioning transport sector. Efficient transport systems bring economic and social advantages: they enable and boost market access and productivity, contribute to balanced regional development, generate jobs, facilitate labour movement, and strengthen community ties. This is often measured as the percentage of GDP that the government invests in transport infrastructure. It includes spending on building new transport systems and upgrading existing ones. However, comprehensive information across different periods, funding sources, and specific transport sub-sectors is limited. Current limited data indicates that the average capital investment and national government spending in transport, storage, and communications for the EST region (based on the average of the last five years) is only about **1.9%** of GDP (average) (WB, 2023) (Country Statistics). The variation is significant, with countries like Myanmar, Thailand, and Iran (Islamic Republic of) investing more than 4% while countries like Nepal, Pakistan, and Republic of Korea investing less than 0.5%.

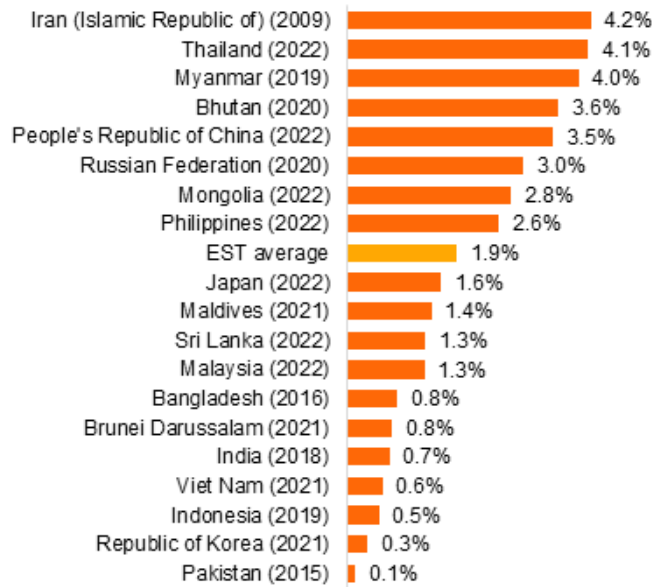


Figure 3: Capital investment/government expenditure in transport, storage, and communications (average of latest 5 years) as a share of GDP  
 Source: (WB, 2023) \*Nepal, Viet Nam, Brunei Darussalam, Maldives are sourced from Country statistics

#### IV. Infrastructure Financing by ODA and PPP

Official Development Assistance (ODA) investments in the region's transport sector have been increasing, with a growing preference for rail projects. The share of ODA allocated to rail has increased from 28% between 2002 and 2005 to 55% between 2016 and 2022 (OECD, 2024). However, in Public-Private Partnership (PPP) investments, the road subsector remains dominant, its share rising from 67% between 2002 and 2005 to 81% between 2016 and 2022 (WB, 2024). China and India together accounted for approximately 95% of all PPP investments in EST countries in 2022, demonstrating their significant role in the region's transport.

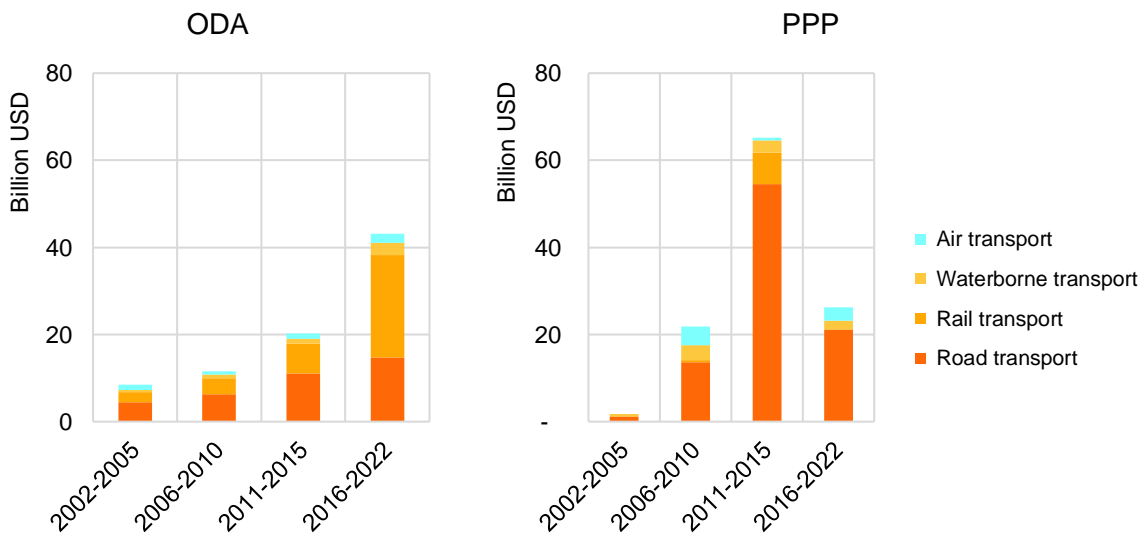


Figure 4: Investments in the transport sector (a) ODA, (b) PPP

Source: (OECD, 2024), (WB, 2024)

## V. Role of the Freight Sector

Freight transport in the EST region plays a pivotal role in economic sustainability by facilitating trade, connecting producers to consumers, and supporting supply chains across various sectors. The EST countries have made significant strides in logistics and supply chain capabilities, with 13 of 18 EST countries improving their Logistics Performance Index (LPI) rankings since 2016 (WB(b), 2024). Furthermore, 14 EST countries rank in the top half of the UNCTAD SFT Index (UNCTAD, n.d.) for the Economic pillar, demonstrating their commitment to sustainable freight transport practices and improving economic outcomes. This achievement highlights their focus on market access, trade competitiveness, and sustainable production and consumption factors.

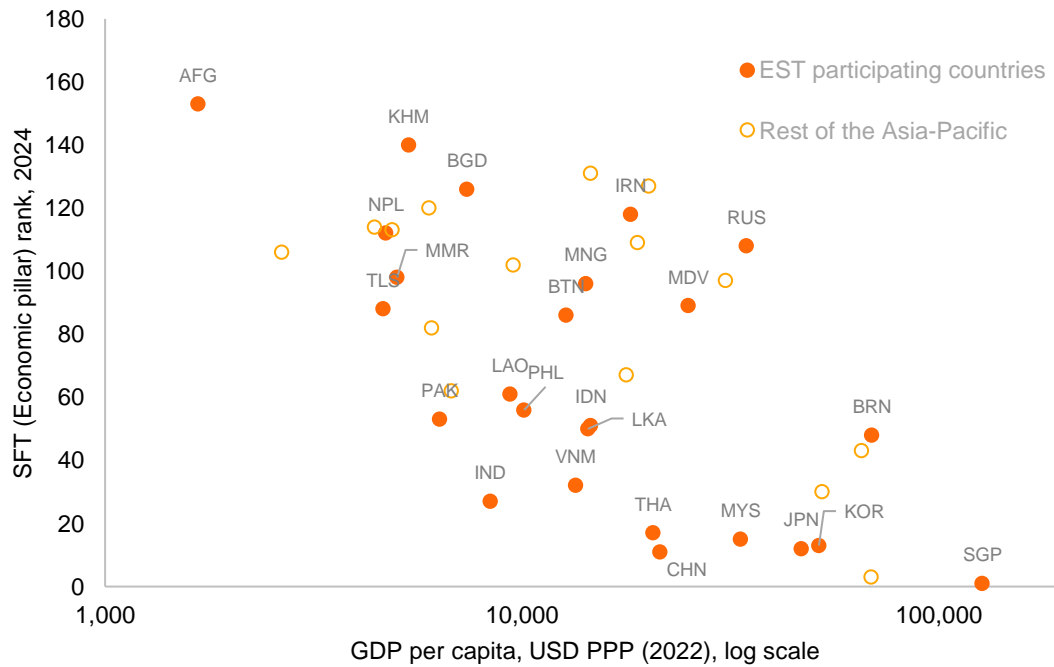


Figure 5: UNCTAD Sustainable Freight Transport (SFT) Index Score

Source: (UNCTAD, n.d.)

## VI. Policy Measures and Targets for Economic Sustainability in the Transport Sector

Various countries have implemented distinct economic sustainability targets within their transport sectors. For example, Indonesia aims to boost its maritime GDP contribution, attract more private investment in railways, and reduce logistics costs. Nepal aims to achieve growth in the transport, storage, and communication sectors by 2024. Sri Lanka emphasizes transport safety through targeted capital investment. Thailand has set targets for lower logistics costs and increased automotive innovation by 2027. Viet Nam aims to decrease logistics costs as a percentage of GDP by 2030. These examples showcase a wide range of policy measures aimed at achieving the transport sector's economic sustainability.

Table 1: Sample targets with an economic framework

Source: (Asian Transport Outlook, n.d.)

COUNTRY	POLICY DOCUMENT	YEAR PUBLISHED	TARGET	TARGET YEAR
<b>INDIA</b>	National Logistics Policy	2022	Reduce cost of logistics in India to be comparable to global benchmarks by 2030	2030
<b>INDONESIA</b>	Visi Indonesia 2045	2017	Maritime economic contribution to GDP will increase from 6.4 percent in 2015 to 12.5 percent in 2045.	2045
<b>INDONESIA</b>	National Railways Master Plan	2018	Fulfilment of strong railway funding supported by private investment with an investment target estimated to reach USD 65,063.00 million with funding contributions from the Government and investment from Business Entities	2030
<b>INDONESIA</b>	Development of National Logistics System Framework	2013	National Logistics Costs of the 2025 GDP declines by 5% from that of 2020	2025
<b>NEPAL</b>	The Fifteenth Plan (Fiscal Year 2019/20 – 2023/24)	2020	Transportation, storage and communication Gross Domestic Product and sector-wise value addition target (In 10 million rupees) = 37,122 (baseline 2018/19 = 22,135) Economic growth rate and sector-wise value addition target = 10.8% (baseline 2018/19 = 5.9%) Sector-wise contribution to the gross domestic product = 7.7% (baseline 2018/19 = 7.2%) Incremental capital-output ratio and total investment (At the constant prices of FY 2018/19) (In 10 million rupees) = 45740	2024
<b>SRI LANKA</b>	Sustainable Sri Lanka 2030 Vision and Strategic Path	2019	An allocation of 5 per cent of all transport sector capital investment should be allocated for transport safety improvements from 2020	>2020
<b>THAILAND</b>	The Thirteenth National Economic and Social Development Plan (2023-2027)	2023	The value of investment in automotive-related science, technology, research and innovation increases by 20 per cent per year.	2027
<b>THAILAND</b>	Action Plan on Thailand Logistics Development 2023-2027	2023	Transport cost to GDP reduces to 5 percent	2027
<b>THAILAND</b>	Strategies for the Development of Thailand's Transport System for a 20-Year Period (2018-2036)	2019	Logistics costs per gross domestic product (GDP) = Present (2016) 13.9% Target (2036) 11.9 percent transportation costs per gross domestic product = Present (2016) 7.5% Target (2036) 6.7 percent	2036
<b>VIET NAM</b>	National Logistics Master Plan - VNM	2016	Logistics cost equal to of GDP = 13 (Baseline = 18; 2020)	2030

Several EST countries are implementing diverse policy measures to enhance employment opportunities within their transport sectors. For instance, Bhutan empowers women by promoting entrepreneurship,

improving working conditions, and providing training and subsidies for women to drive electric vehicles (EVs). Malaysia aims to boost employment by establishing job centres near public transport hubs, facilitating more accessible access to job opportunities for individuals relying on public transportation. The Maldives is proactively attracting young people to the maritime industry by conducting awareness campaigns and collaborating with job centres to highlight employment prospects in this sector. In contrast, Sri Lanka is prioritizing the formalization of employment and the improvement of working conditions in the transport sector, including the automation of hazardous tasks to ensure worker safety. These varied approaches highlight the commitment of Asian countries to strengthen their transport sectors by creating more and better job opportunities for their citizens.

*Table 2: Selected transport employment related policy measures*

*Source: (Asian Transport Outlook, n.d.)*

<b>COUNTRY</b>	<b>POLICY DOCUMENT</b>	<b>YEAR PUBLISHED</b>	<b>POLICY MEASURE</b>
<b>BHUTAN</b>	Low Emission Development Strategy (LEDS) - Surface Transport	2021	Promote entrepreneurship of women. Improve working conditions and guarantee better payment to them. Build women's capacity to drive EV and give priority to female taxi drivers for subsidies on EV taxis.
<b>MALAYSIA</b>	National Physical Plan - Chapter 7 (Implementation)	2020	Create employment centres near Public Transport Transit Centres
<b>MALDIVES</b>	Strategic Action Plan 19-23	2019	Conduct awareness and information dissemination to school leavers on employment prospects and job opportunities within the seafaring industry. Coordinate with job centres to promote employment opportunities in the industry
<b>SRI LANKA</b>	Sustainable Sri Lanka 2030 Vision and Strategic Path	2019	Formalize such employment and to create decent work conditions including automation of unsafe and risky activities to ensure occupational safety for all employees in the transport sector by 2030
<b>THAILAND</b>	The Thirteenth National Economic and Social Development Plan (2023-2027)	2023	Establishing remedy measures for those affected by the shift to an EV industry such as operators and workers in the petrochemical businesses and farmers of biofuel crops. Setting measures to attract highly skilled Thai and foreign experts with benefits offered at the preliminary periods, such as tax benefits for high-skilled workforce in fields related to EV production, privileges in visa, residency and migration for foreign experts.
<b>TIMOR-LESTE</b>	Voluntary National Reviews 2023 - TLS	2023	Address the jobs-skills mismatch in key sectors – agriculture, tourism, blue economy and entrepreneurship. The country needs experts in various fields, including marine science, fisheries management, aquaculture, tourism, and maritime transport, to drive sustainable growth in the sector.
<b>BRUNEI DARUSSALAM</b>	Brunei Darussalam National Climate change Policy	2020	Enhance human capital and skill set through training and development programmes that upskill and reskill current capacities into technical field of EV



Several EST countries focus on improving intermodal infrastructure to enhance economic sustainability by reducing costs and environmental impacts. For instance, Cambodia aims to shift long-distance freight movement from trucks to trains, and Viet Nam is promoting the transformation of freight transport from road to railway, waterway, and coastal transport. Additionally, countries are investing in infrastructure and technology to improve the efficiency and sustainability of freight transport. Thailand is promoting a road-to-rail modal shift for freight transport, and Indonesia is developing freight trains and strengthening advanced logistics technologies. These measures collectively aim to create a more economically and environmentally sustainable freight transport sector, contributing to overall economic development.

Table 3: Selected freight improvement policy measures

Source: (Asian Transport Outlook, n.d.)

COUNTRY	POLICY DOCUMENT	YEAR PUBLISHED	POLICY MEASURE
<b>BANGLADESH</b>	Mujib Climate Prosperity Plan	2021	We will leverage PPP models to create green distribution networks for freight using integrated distribution facilities and electric vehicles to fulfil the freight demands of urban areas.
<b>BANGLADESH</b>	Eighth Five Year Plan	2020	Reduction of turnaround time for the port bound freight trains. Development of dedicated freight corridors.
<b>BHUTAN</b>	Economic Development Policy (2016)	2016	Develop inland container depots or dry ports including railway links together with supporting facilities such as customs, immigration, quarantine etc. at the border crossings
<b>BHUTAN</b>	Low Emission Development Strategy (LEDS) - Surface Transport	2021	Develop integrated transport hubs and warehouses for efficient distribution of goods and last mile delivery of goods using light trucks
<b>CAMBODIA</b>	Updated Nationally Determined Contribution - KHM	2020	Shift long distance freight movement from trucks to train
<b>CAMBODIA</b>	National Strategic Development Plan 2019-2023	2019	Promoting investment in logistics centres, warehouse, container terminal and dry port.
<b>INDONESIA</b>	Mitigation Action Outline on Truck Fleet Modernization Scheme in Indonesia	2021	Provide incentives for clean truck purchase and operation
<b>INDONESIA</b>	Strategic Plan for the Railway Sector 2020-2024	2020	Development of freight trains
<b>THAILAND</b>	Action Plan on Thailand Logistics Development 2023-2027	2023	The proportion of freight moved by rail to total freight volumes = An average of 7 percent (2023-2027)
<b>THAILAND</b>	Intended Nationally Determined Contribution (INDC)	2015	promote road-to-rail modal shift for both freight and passenger transport
<b>VIET NAM</b>	Decision 876/QD-TTg in 2022 approving the Action Program on green energy transformation, reducing carbon and methane emissions of the	2022	promote the transformation of freight transport modes from road to railway, waterway, coastal transport

COUNTRY	POLICY DOCUMENT	YEAR PUBLISHED	POLICY MEASURE
VIET NAM	transport sector issued by the Prime Minister National Logistics Master Plan - VNM	2016	Improve airfreight handling facilities at major and second-tier airports Develop air cargo complexes - Modern cargo terminal

Transport technologies reduce costs and enhance efficiency, supporting long-term economic growth while cutting emissions and fostering innovation. Countries across the EST region are integrating advanced technologies to improve transport sector sustainability. See below for some examples of this transformation in action.

*Table 4: Selected policy measures promoting advancement in technologies*

*Source: (Asian Transport Outlook, n.d.)*

COUNTRY	POLICY DOCUMENT	YEAR PUBLISHED	POLICY MEASURE
BANGLADESH	Automobile Industry Development Policy 2021	2021	The government will promote investments in research and development of commercially viable technologies such as electric powered cars including the batteries and charging stations. This will be done through setting up a 'Technology Acquisition Fund' to acquire technologies.
MYANMAR	Myanmar Climate change Master Plan	2018	Increase access to climate-resilient and low-carbon technologies and practices in the energy, transport and industry sectors.
PHILIPPINES	Maritime Industry Development Plan 2019-2028	2021	Deployment of enabling technologies Development of Science and Technology for Maritime Transport Applications
INDONESIA	Indonesia Blue Economy Roadmap	2023	Strengthening of advanced logistics technologies and systems to optimize supply chain management and reduce transportation costs.

Lifecycle assessment plays a vital role in ensuring the economic sustainability of the transport sector by evaluating the full impact of infrastructure investments and technologies. This approach is driving policy decisions across countries. Examples include the Maldives' promotion of sustainable aviation fuels, the Philippines' use of lifecycle analysis for climate-resilient infrastructure, and Bhutan's focus on lowering lifecycle costs through improved engineering.

*Table 5: Selected policy measures promoting lifecycle analysis*

*Source: (Asian Transport Outlook, n.d.)*

COUNTRY	POLICY DOCUMENT	YEAR PUBLISHED	POLICY MEASURE
MALDIVES	International Aviation Climate Ambition Coalition	2021	Promoting the development and deployment, through international and national measures, of sustainable aviation fuels that reduce lifecycle emissions and contribute to the achievement of the UN Sustainable

<b>COUNTRY</b>	<b>POLICY DOCUMENT</b>	<b>YEAR PUBLISHED</b>	<b>POLICY MEASURE</b>
<b>PHILIPPINES</b>	Philippine Development Plan 2023-2028	2023	Development Goals (SDGs), in particular avoiding competition with food production for land use and water supply. To ensure the cost-effective management of assets, the government will analyse the lifecycle, capacity, and utilization of infrastructure assets individually and collectively, with the view to optimizing government funds and targeting scarce resources to the most critical asset needs. The government will ensure that infrastructure assets will be efficiently and effectively maintained and rehabilitated, as necessary, to maximize their economic life.
<b>PHILIPPINES</b>	Philippine Development Plan 2023-2028	2023	Climate resilience will be mainstreamed in infrastructure planning and investment so that climate risks are considered and managed across all types of infrastructure and throughout the lifecycle of infrastructure assets and operations.
<b>THAILAND</b>	The Thirteenth National Economic and Social Development Plan (2023-2027)	2023	Developing CO2 capture technology, taking into consideration a product's entire lifecycle, and promoting technologies related to EV conversion as well as knowledge and technology transfer to local EV businesses.
<b>MALAYSIA</b>	National Transport Policy 2019-2030	2019	Adopt best practices for all transport infrastructure maintenance, particularly rail and road. For e.g. usage of high grade and low maintenance materials, practice risk assessment and life cycle asset management
<b>PAKISTAN</b>	National Transport Policy of Pakistan 2018	2018	Maintain the transport system at a level which preserves the value of all fixed and mobile assets by ensuring that all assets address future needs, minimizing the whole of life cycle cost and eliminating the maintenance backlog.

## VII. Policy recommendations

Hard infrastructure, especially roads, is a vital enabler of global mobility and economic development, facilitating trade, enhancing accessibility, and supporting job creation. However, to meet the sustainability requirements outlined in the Aichi 2030 Declaration, road infrastructure must evolve to align with both economic and environmental sustainability. The challenge lies in ensuring that transport systems deliver long-term economic value while minimizing environmental and social footprints.

The lifecycle of transport infrastructure, from planning to operation and eventual decommissioning, must be managed to ensure minimal adverse impacts. For instance, the extraction of resources such as those required for electric vehicle batteries must consider both economic benefits and environmental consequences. Sustainable materials and practices must be integrated into infrastructure development to avoid long-term environmental degradation that could hinder economic progress.

Economic sustainability in transport infrastructure is not just about financial efficiency but about investing in resilient, adaptable systems. Roads, as a fundamental component of the transport network, must be future proofed to withstand the impacts of climate change, shifting mobility patterns, and technological advancements. This includes building infrastructure that can support multimodal

transport systems, integrating public transportation, active travel options (such as cycling and walking), and the growing electrification of vehicles. By doing so, transport networks will contribute to long-term economic stability while safeguarding against disruptions.

Strategic planning must prioritize sustainability-focused infrastructure investments. Road networks should be designed to complement other transport modes, creating a seamless system that reduces emissions, lowers congestion, and improves operational efficiency. Aligning infrastructure with future mobility needs ensures that investments made today will continue to deliver economic benefits in the long term.

Furthermore, infrastructure investments present an opportunity for countries to capitalize on green technologies and innovation in transport, enhancing trade and fostering economic resilience. Sustainable transport policies will not only drive economic growth but also address critical challenges such as climate change and social equity, ensuring that transport systems contribute to a more sustainable and prosperous future.

### **Policy Recommendations**

1. **Lifecycle-Based Infrastructure Planning:** Implement policies that require lifecycle assessments for transport infrastructure projects. These assessments should account for environmental and social impacts at every stage, from resource extraction to construction, operation, and decommissioning. This approach ensures that long-term economic sustainability is achieved without compromising environmental integrity.
2. **Invest in Resilient Infrastructure:** Prioritize investments in infrastructure that can adapt to the changing climate and evolving transport demands. This includes upgrading existing road networks to improve their resilience against climate-related disruptions and integrating new technologies that enhance efficiency and reduce operational costs.
3. **Multimodal Transport Integration:** Develop policies that promote the integration of roads with other sustainable modes of transport. This includes expanding public transit, cycling, and pedestrian networks, as well as investing in infrastructure that supports electric vehicles and smart road technologies. This integrated approach will reduce emissions, ease congestion, and enhance economic productivity.
4. **Incentivize Low-Carbon Technologies:** Create financial incentives for the adoption of low-carbon technologies in the transport sector. Policies should support the development and deployment of electric vehicles, renewable energy infrastructure, and intelligent transport systems that can optimize road network efficiency and minimize environmental impacts.
5. **Economic Resilience through Sustainable Transport:** Align national and regional transport policies with economic sustainability goals. Focus on green investments in infrastructure to create jobs, stimulate innovation, and improve trade competitiveness. Such policies should aim to build a transport system that is both economically viable and environmentally sound, contributing to long-term economic growth while mitigating environmental risks.
6. **Prioritize improvements in appraisal methods such as cost-benefit analysis:** To achieve economic sustainability in the transport sector, policymakers should prioritize improvements in appraisal methods such as cost-benefit analysis. This involves recognizing and incorporating wider economic benefits of transport investments, such as increased productivity, reduced travel times, improved market access, and positive spillover effects on local economies. By considering these broader impacts, policymakers can make more informed decisions that promote efficient and sustainable transport systems, leading to enhanced economic growth and regional development.

By prioritizing these policy actions, transport infrastructure can become a driver of sustainable economic growth, aligning with the goals of the Aichi 2030 Declaration. When integrated with broader

multimodal transport systems and supported by innovative technologies, roads can deliver long-lasting economic and environmental benefits.

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