



Sustainable Freight Transport National Assessment for Fiji: Preliminary Findings

I. Background and introduction

1. Freight transport systems play a crucial role in fostering economic growth, enhancing trade competitiveness, and promoting sustainable development. Despite the strategic economic importance of freight transport for trade and development, the increased freight transport activity can give rise to negative externalities and sustainability challenges. Acknowledging the profound linkages between sustainable development and freight transport and logistics, the United Nations Conference on Trade and Development (UNCTAD) launched the Sustainable Freight Transport (SFT) Assessment for Fiji. This assessment provides a comprehensive analysis of the freight transport sector's present status, performance, opportunities, and challenges within the economic, social, and environmental pillars of sustainable development in the freight transport sector.

2. The SFT assessment for Fiji consists of quantitative and qualitative components, with a focus on maritime and road transport as the primary modes of freight transport in Fiji. The quantitative assessment is based on internationally comparable scores (UNCTAD SFT Index) and survey-based scores. For the internationally comparable scores, a total of twenty indicators have been identified from international data sources to measure SFT performance across the three sustainability pillars using the UNCTAD SFT Index methodology. These indicators are aggregated to generate internationally comparable SFT scores for 165 economies, including Fiji. For the survey-based scores, stakeholders from various sectors involved in freight transport were consulted for their perceptions of specific SFT performance aspects. Responses to the closed-ended questions in the stakeholder surveys are utilized to create quantitative scores for the maritime and road freight transport sectors, respectively.

3. This document presents preliminary findings on the challenges and strengths of Fiji's freight transport sustainability, derived from the quantitative assessment. The qualitative assessment, based on responses to open-ended questions in the surveys and results of stakeholder interviews, and the policy recommendations and action matrix underpinned by comprehensive analysis will be accessible in the final report of the SFT assessment for Fiji. Following consultation and validation, the final report of the SFT assessment for Fiji will be made available online.

II. SFT quantitative assessment result

4. The current section presents the key findings derived from Fiji's Rapid SFT assessment, focusing on the three pillars of sustainable development, namely economic, social, and environmental pillars. The assessment builds on two information sources, including international data sources (e.g., UNCTAD and World Bank) and stakeholder responses to a survey questionnaire. The subsequent section, titled "Internationally comparable SFT scores: UNCTAD SFT Index", delves into Fiji's SFT performance in comparison to global and SIDS averages. The results and analysis of the survey-based scores are detailed in the section below titled "Survey-based SFT scores".

1. Internationally comparable SFT scores: UNCTAD SFT Index

5. In the following analysis, the internationally comparable SFT scores (i.e., UNCTAD SFT Index) and their underlying indicators are used to assess Fiji's SFT performance in comparison to global and

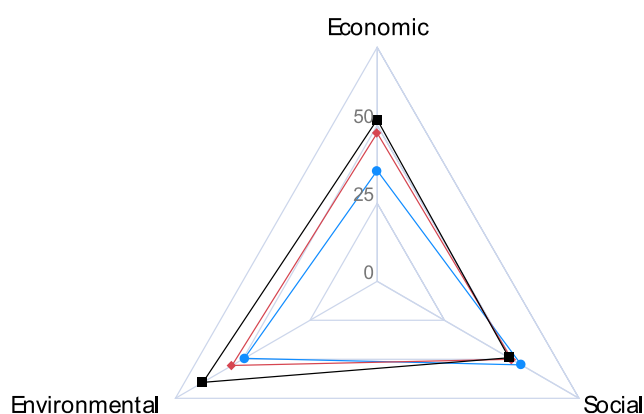
SIDS economies.^{1, 2} Compared to the world and the SIDS average scores, today Fiji ranks relatively low in terms of sustainable freight transport performance. Taking the overall score that combines economic, social, and environmental dimensions of sustainable freight transport, Fiji comes in the 112th position on a total sample of 165 countries (Figure 1). Fiji shows lower scores than the SIDS average scores, as regards the economic and environmental dimensions of freight transport sustainability. However, Fiji's score for social sustainability marginally surpasses the global and SIDS averages.

Figure 1: Fiji's SFT ranks and scores from international data sources, across the economic, social, and environmental pillars, in comparison to World and SIDS averages

Total rank	Economic rank	Social rank	Environmental rank
112	131	61	117

SFT scores from international data sources

● Fiji ● SIDS ■ World



Source: UNCTAD calculation based on twenty indicators from the international data source, 2024.

Note: Countries with the worst performance globally receive a score of 0, while countries with the best performance attain a score of 100. The SIDS average is calculated over 24 SIDS economies, which satisfy minimum data availability criteria. The definition of SIDS is based on UNOHRRLLS.

6. The low performance levels of Fiji's freight transport sector relating to economic sustainability stem from several factors, namely, insufficient transport infrastructure capacity and quality, low freight transport service productivity, and quality (Figure 2). As regards infrastructure, the density and the paved ratio of Fiji's road network in 2022 were 0.35 kilometres per square kilometre and 27.7 per cent, respectively, lower than the SIDS median (0.55 kilometres per square kilometre and 69.9 per cent; Table 1).³ SIDS economies tend to have higher road density and paved ratio compared to the global median

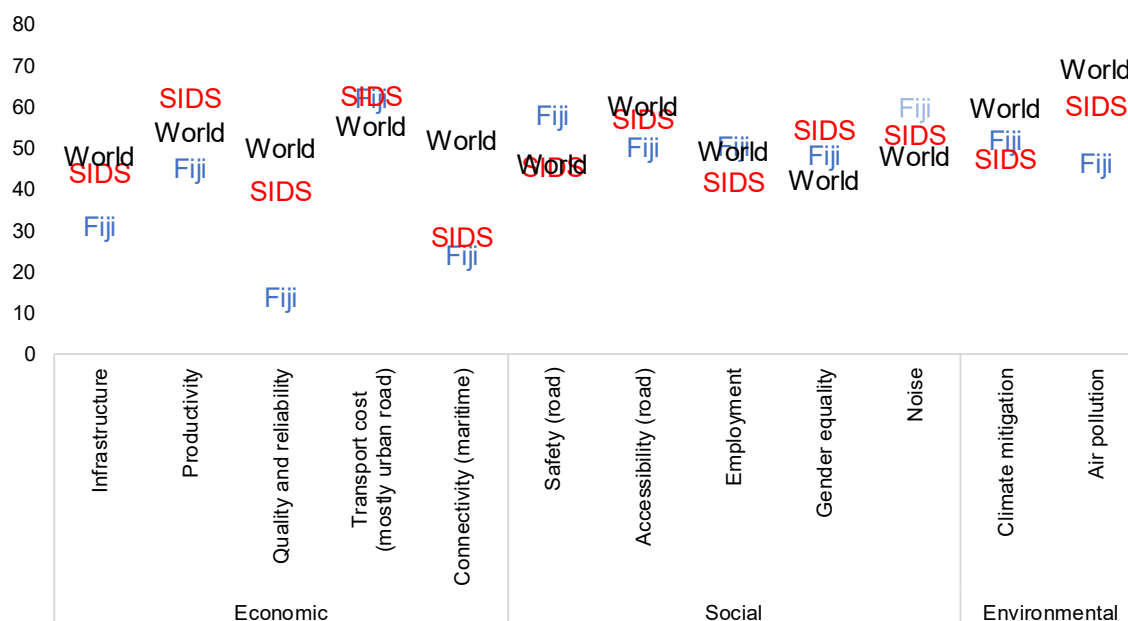
¹ The internationally comparable SFT scores are calculated with values of the underlying indicators in respective SFT areas. For example, the SFT score for transport infrastructure summarizes three indicators, namely, road density, road paved ratio, and infrastructure dimension of World Bank's Logistics Performance Index (LPI).

² When evaluating the underlying indicators for Fiji, UNCTAD methodology compares Fiji's values to median values of the world and African economies because the median is less influenced by skewed data and extreme values, making it a more reliable measure for this comparison. In contrast, average values are used for the comparison of the internationally comparable SFT scores, because the score calculation process addressed issues related to skewed distribution and extreme values. The censoring and log-transformation during the score calculation are supposed to address the skewness and extreme values.

³ International Road Federation (IRF), 2023

(0.29 kilometres per square kilometre and 67.9 per cent) partly due to their high population density and the small land areas. In Fiji, however, its unique geographical characteristics, specifically being an archipelago with more than 330 islands, including two main mountainous islands, have posed challenges to the expansion of the road network.

Figure 2: Fiji’s SFT scores from international data sources, across twelve elements of the economic, social, and environmental pillars, in comparison to World and SIDS averages



Source: UNCTAD calculation based on twenty indicators from international data sources, 2024.

Note: The connectivity score exclusively reflects the connectivity of the maritime transport sector, while the transport cost, safety and accessibility scores only pertain to safety or accessibility of the road transport sector, due to limited data availability. The noise score is not available in Fiji as the number of noise measurement sessions is fewer than the minimum criteria (20) set by UNCTAD and replaced by Oceania’s average. Countries with the worst performance globally receive a score of 0, while countries with the best performance attain a score of 100. The SIDS average is calculated over 24 SIDS economies, which satisfy minimum data availability criteria. The definition of SIDS is based on UNOHRLLS.

7. As for productivity, labour productivity of Fiji’s transport sector (including all transport modes with freight and passenger) was \$15,868 per employee in 2016, lower than the global median (\$19,494 per employee) and SIDS median (\$19,915 per employee).⁴ Labour productivity of road freight transport was particularly low, estimated at 31,216 ton-kilometres per employee in 2018-2019. The corresponding figures for the world and SIDS medians were 118,917 ton-kilometre/employee and 35,640 ton-kilometre/employee, respectively. As to quality and reliability, the assessment is based on logistics competence and quality and timeliness as defined under the World Bank Logistics Performance Index. Fiji achieved low scores (2.3 in both dimensions in 2023) compared to almost all other SIDS. In 2023 the lowest score in the world was 1.8 for logistics competence and quality while the lowest for timeliness was 2.1.

⁴ SIDS median is higher than global median partly because this indicator is influenced by the SIDS’ higher share of passenger air transport in transport sector than non-SIDS economies due to the tourism sector development.

8. The underperformance of Fiji's freight transport sector relating to environmental sustainability is largely explained by the high emission intensity of a critical air pollutant, particulate matter 2.5 (PM2.5). Over the 2016-2019 period, the average emission level of PM2.5 from Fiji's transport sector was 0.61 kilotons, higher than the SIDS median (0.28 kilotons). When considering the size of Fiji's transport activities, the intensity of PM2.5 emissions reaches 1.07 grams per dollar of economic value added. This figure significantly exceeds the global median of 0.49 grams per dollar and the SIDS median, of 0.72 grams per dollar.⁵

9. Under the social pillar, Fiji demonstrated a high level of safety performance. The road traffic death rate in 2019 was estimated at 9.8 per 100,000 people, which is lower than the world median (12.8 per 100,000) and the SIDS median (12.6 per 100,000).⁶ Fiji's transport employment score is also higher than the world and SIDS averages. Monthly earnings in Fiji's transport sector, one of the major indicators informing about the underlying labour conditions, was estimated at \$1,202 (purchasing power parity in 2019). These earnings were close to the world median (\$1,200) and higher than the SIDS median (\$949).⁷ However, Fiji's freight transport sector is lagging behind in terms of accessibility. Fiji's rural access index, measured as the proportion of the rural population who live within two kilometres of an all-season road, was 63.9 per cent in 2019. This percentage was lower than the medians at the world (72.0 per cent) and SIDS (67.6 per cent) levels.⁸

Table 1: Selected SFT-related indicators

	Fiji	World median (average)	SIDS median (average)
Economic pillar: Infrastructure			
---- Road density (km/km ²)	0.35	0.29 (0.83)	0.55 (2.07)
---- Road paved ratio (%)	27.7	67.9 (61.3)	69.9 (64.9)
---- Infrastructure (LPI score)	2.2	2.7 (2.9)	2.5 (2.6)
Economic pillar: Productivity			
---- Transport labour productivity (USD/employee)	15,868	19,494 (35,785)	19,915 (28,292)
---- Road freight labour productivity (ton-km/employee)	31,216	118,917 (180,822)	35,640 (49,812)
Economic pillar: Service quality and reliability			
---- Logistics competence and quality (LPI score)	2.3	2.9 (3.0)	2.6 (2.7)
---- Timeliness (LPI score)	2.3	3.2 (3.3)	3.1 (3.1)
Social pillar: Safety			
---- Traffic death rate (deaths per 100,000 people)	9.8	12.8 (15.0)	12.6 (13.7)
Social pillar: Accessibility			
---- Rural access index (proportion of the rural population who live within 2 km of an all-season road, %)	63.9	72.0 (70.2)	67.6 (69.1)
Social pillar: Labor conditions			
---- Transport sector monthly earnings (\$ in PPP)	1,202	1,200 (1,601)	949 (1,101)

⁵ European Commission et al., 2022

⁶ Institute for Health Metrics and Evaluation (IHME), 2020

⁷ International Labour Organization (ILO), 2024

⁸ Ibid

	Fiji	World median (average)	SIDS median (average)
Environmental pillar: Air pollution			
---- Transport sector PM 2.5 emission level (kt)	0.61	1.94 (12.5)	0.28 (0.54)
---- Transport sector PM 2.5 emissions per value added (g/\$)	1.07	0.49 (0.72)	0.72 (0.90)

Source: UNCTAD calculation based on international data source, 2024. Fiji's road density and pave ratio are sourced from Fiji Roads Authority, 2023.

Note: SIDS median and average are calculated over 24 SIDS economies, which satisfy minimum data availability criteria. The definition of SIDS is based on UNOHRRLLS.

2. Survey-based SFT scores

10. The scores, which are derived from feedback collected through the stakeholder survey questionnaire, reveal that Fiji's maritime freight transport system underperforms and struggles with high transport costs, accessibility and affordability (Figure 3). These challenges are largely attributed to Fiji's unique archipelagic geography and remoteness from major global trade routes as well as high fuel costs. The high fuel costs also contributed to the low transport cost score in the road freight transport sector. The maritime freight transport sector in Fiji is also viewed as falling short in sustainability areas, such as scenic beauty and cultural preservation, water pollution, and soil pollution. This suggests potential adverse impacts of the sector on Fiji's rich marine ecosystems, including coral reefs. On the other hand, the road freight transport sector is linked to poor performance relating to natural disaster resilience and air pollution.

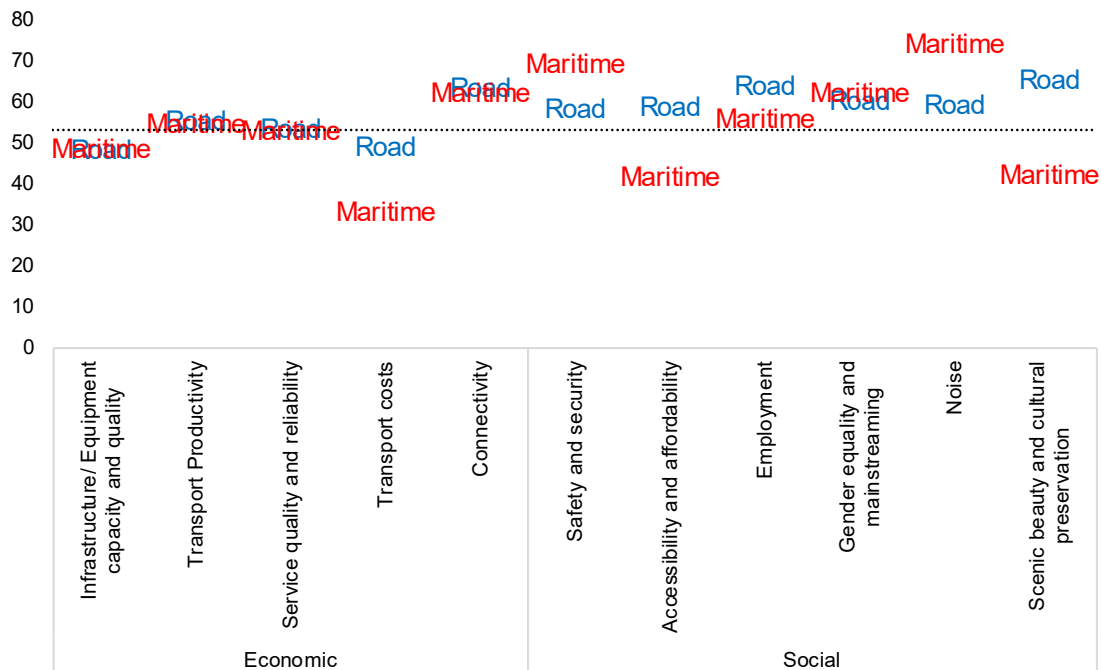
11. Both the maritime and road freight transport sectors perform relatively poorly in terms of infrastructure/ equipment capacity and quality and climate resilience and adaptation. Capacity constraints of port infrastructure (e.g., quays, warehouses, and storage parks) and poor quality of hinterland infrastructure (such as inland container depots and dry ports) as well as rural roads are identified as critical factors behind the sectors' underperformance. The low score for climate resilience and adaptation reflects the relatively high exposure of transport infrastructure to climate change and insufficient funding for climate adaptation.

12. The quality and reliability of freight transport services in Fiji demonstrate a performance that is on par with the average across other SFT categories. The incidence of cargo damages and losses is low within this category. However, road congestion, a key issue under this category, poses a significant barrier to enhancing the sustainability of road freight transport.

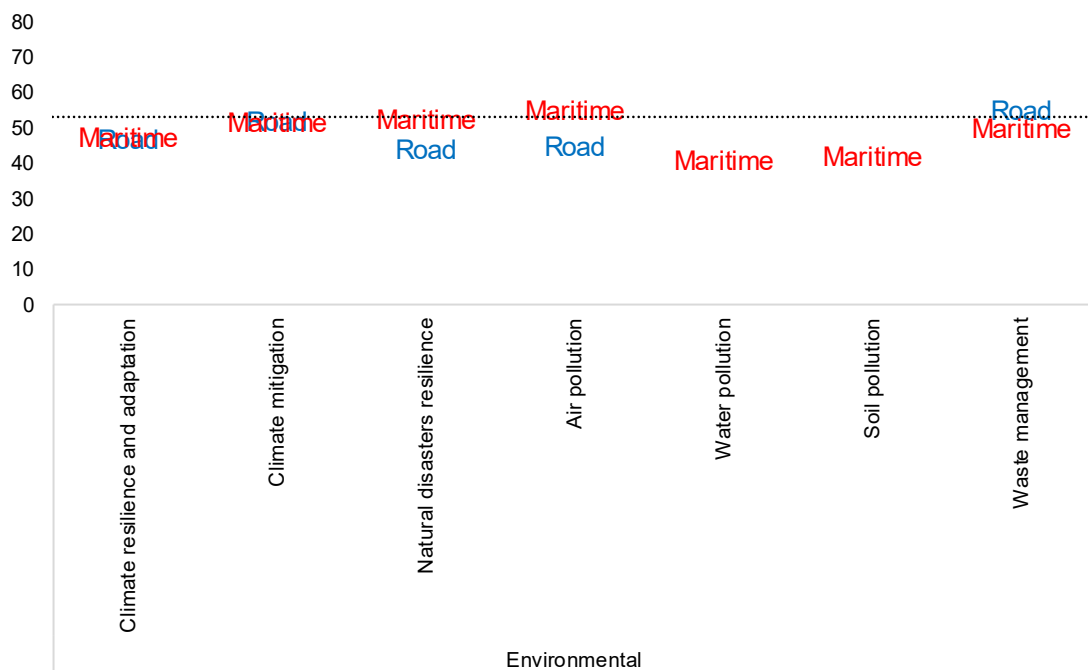
13. The survey-based scores confirm the good sustainability performance in terms of safety and security and employment, aligning with the results from the internationally comparable SFT scores above. They also indicate good performance in connectivity, gender equality, and noise dimensions of sustainability, for both road and maritime freight transport sectors. The relatively high connectivity scores reflect good inland terminal/ logistics connectivity to road networks and ports.

Figure 3: Fiji’s survey-based SFT scores across SFT categories, breakdown by mode of transport

Economic and social pillars



Environmental pillar



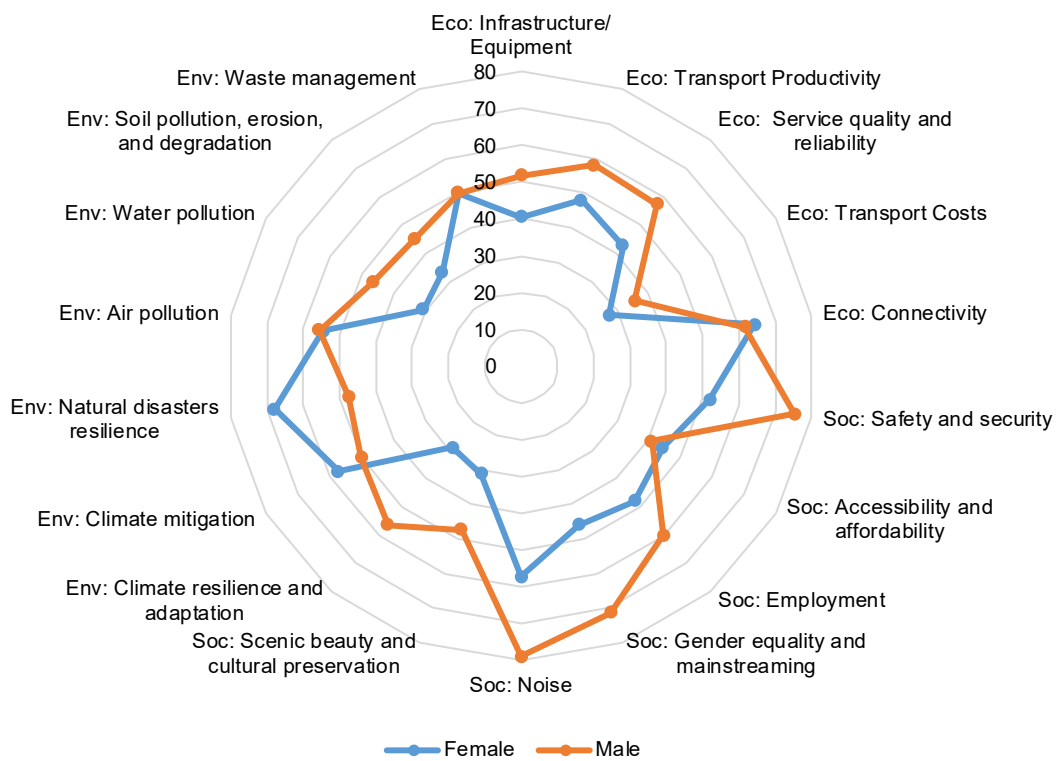
Source: UNCTAD secretariat calculations based on stakeholders’ responses to the survey questionnaire, 2024.

Note: The dotted horizontal line indicates the overall average of the survey-based SFT scores. Worst performance (where all stakeholders answered “major problem”) is indicated by a score of 0, and best performance is indicated by a score of 100. As slightly different questions are used for each transport mode, comparison across transport modes requires careful interpretation.

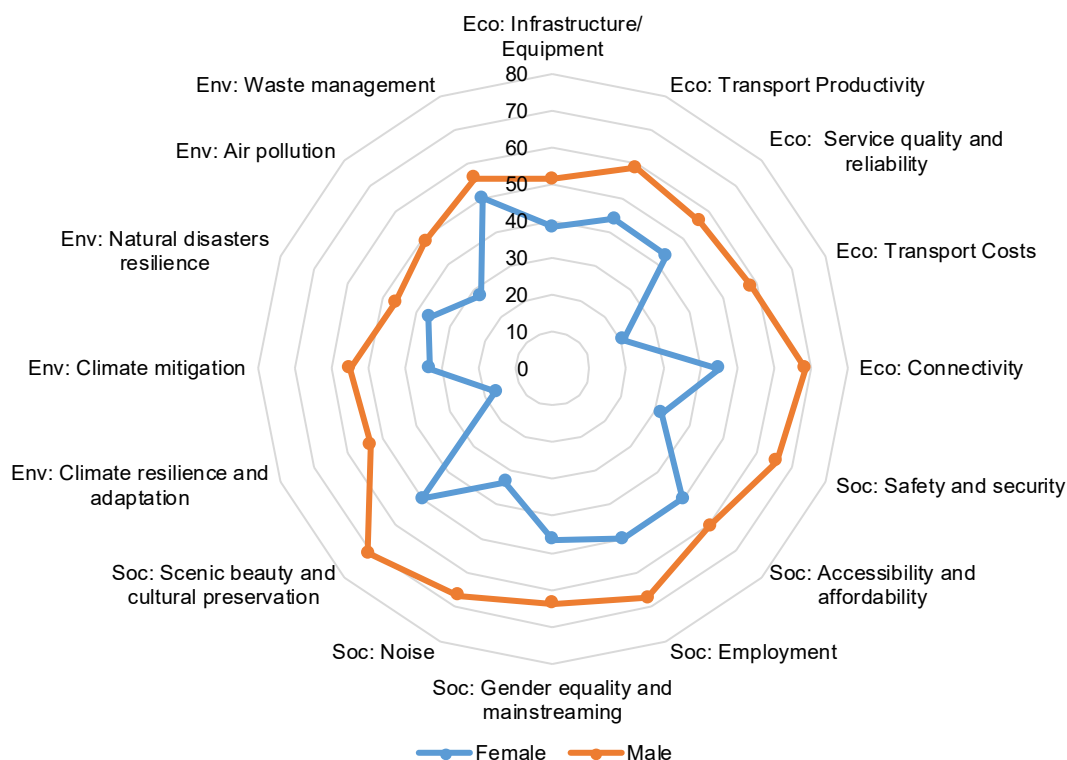
14. Survey responses highlighted significant differences in perceptions between female and male participants, as illustrated in Figure 4. Generally, male respondents seem to be more optimistic than female respondents in many sustainability categories. The largest divides prevail in terms of transport costs (road), connectivity (road), safety and security (road and maritime), gender equality (maritime), noise (road and maritime), scenic beauty and cultural preservation (road), climate resilience and adaptation (road and maritime), climate mitigation (road), and air pollution (road). These findings indicate a critical need for incorporating more female perspectives and ensuring their active participation and consultation in transport planning processes. This is essential to improve the sustainability performance of the freight transport sector.

Figure 4: Fiji’s survey-based SFT scores across SFT categories, breakdown by respondents’ gender

Maritime freight transport



Road freight transport



Source: Calculated by the UNCTAD secretariat based on stakeholders' responses to the survey questionnaire, 2024. Note: Worst performance (where all stakeholders answered "major problem" performance) is indicated by a score of 0, and best performance is indicated by a score of 100.

3. Summary of the quantitative assessment

15. The subsequent table summarizes the categories associated with sustainability where Fiji's freight transport demonstrates subpar performance. The evaluation draws from globally published data and recognized sources, including UNCTAD, ILO, and the World Bank, alongside insights gathered from the SFT survey questionnaire, which was conducted by the UNCTAD secretariat among Fiji's freight transport stakeholders. Among the underperforming areas identified, include the poor condition of rural roads and significant road traffic congestion in freight transport. In maritime freight transport, challenges encompass high international shipping rates and limited access to remote islands. Moreover, both sectors are burdened by the common problem of high fuel costs, which significantly increase transport expenses.

Table 2: Identified SFT challenges based on the quantitative assessment

SFT categories	Identified challenges
Economic pillar	
Infrastructure	<ul style="list-style-type: none"> • Low road network density and paved ratio, particularly in rural areas • Capacity constraint of port infrastructure (e.g., quays, warehouses, storage parks) • Low quality of hinterland infrastructure (such as inland container depots and dry ports)
Productivity	<ul style="list-style-type: none"> • Low labour productivity in road freight transport

SFT categories	Identified challenges
Transport costs	<ul style="list-style-type: none"> • High fuel costs impact on transport costs (maritime and road) • High freight rates for international shipping
Quality and reliability	<ul style="list-style-type: none"> • Road congestion • Low shipping company/ carrier schedule reliability
Social pillar	
Accessibility and affordability	<ul style="list-style-type: none"> • Low access to affordable all-weather transport and services for rural/ production areas • Low accessibility to rural/ outer islands and transport links to markets and ports
Scenic beauty and cultural preservation	<ul style="list-style-type: none"> • Insufficient implementation of proper programmes/coordination to preserve natural reserves/ biodiversity/ landscapes/ heritage sites (e.g., reefs, beaches, natural spaces) in the maritime freight transport sector • Insufficient implementation of strategies to promote port-city development and collaboration
Environmental pillar	
Climate resilience and adaptation	<ul style="list-style-type: none"> • Exposure of transport infrastructure/ facilities (particularly roads) to climate-related disasters • Insufficient availability of finance to implement climate resilience and adaptation strategies/ plans
Natural disasters resilience	<ul style="list-style-type: none"> • Insufficient implementation of strategies/ plans for emergency responses in the road freight transport sector
Air pollution	<ul style="list-style-type: none"> • High PM2.5 emission intensity from the transport sector, particularly from the road freight transport sector • Insufficient monitoring, evaluation and reporting on air pollution in the road freight transport sector
Water pollution	<ul style="list-style-type: none"> • Water pollution from port/ terminal operation (e.g., from dredging, ships) causing significant damages (e.g., water contamination, wastewater, leakages of toxic substances, sewage) • Insufficient implementation of regulations on water pollution in the maritime freight transport
Soil pollution	<ul style="list-style-type: none"> • Soil pollution, erosion, and degradation from maritime freight transport (e.g., soil acidification from emissions, soil contamination from port facilities) • Insufficient implementation of regulations on soil pollution, erosion and degradation in the maritime freight transport sector

Source: Compiled by the UNCTAD secretariat, 2024.

Note: Indicators that are performing the worst across all SFT indicators are highlighted with a bold font in the “identified challenges” column.

16. Conversely, the following sustainability categories/ indicators are recognized as excelling within road and maritime freight transport. Areas, where sustainability performance is particularly commendable, include the minimal occurrence of maritime accidents and road safety incidents, the creation of jobs, and the reduced noise pollution from maritime freight transport activities.

Table 3: Identified SFT strengths based on the quantitative assessment

SFT categories	Identified strengths
Economic pillar	
Connectivity	<ul style="list-style-type: none"> • Good inland terminal/ logistics connectivity to the road network and ports (e.g., transshipment capacities, terminal services and processes)
Social pillar	

SFT categories	Identified strengths
Safety and security	<ul style="list-style-type: none"> • Few maritime accidents in ports/ terminals as well as during short-sea voyage • Few security incidents during cargo handling and road transport (e.g., cargo thefts) • Sufficient implementation of safety measures in ports/ terminals (e.g., handling of dangerous goods, occupational safety measures, etc.)
Employment	<ul style="list-style-type: none"> • Job creation, particularly in the road freight transport sector • Job training for truck drivers
Gender equality	<ul style="list-style-type: none"> • Gender equality in labour conditions (e.g., working hours, promotion) in the maritime freight transport sector
Noise	<ul style="list-style-type: none"> • Low noise level from ports and other maritime freight transport infrastructure and operations (including vessels) • Sufficient implementation of regulations on noise levels from maritime transport

Source: Compiled by the UNCTAD secretariat, 2024.

Note: Indicators that are performing the best across all SFT indicators are highlighted with a bold font in the “identified strengths” column.

NOTE

Kindly be aware that the preliminary findings currently provide only the quantitative results of the SFT assessment for Fiji. The comprehensive final report, inclusive of qualitative analysis and policy recommendations, will soon be accessible online.

III. References

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