

UNECE

Sustainable Inland Transport Connectivity Indicators

Understanding the performance of road, rail,
inland waterway, and inter-modal transport systems



SITCIN



UNITED NATIONS

UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE

Sustainable Inland Transport Connectivity Indicators



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UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE (UNECE)

The United Nations Economic Commission for Europe (UNECE) is one of the five United Nations regional commissions, administered by the Economic and Social Council (ECOSOC). It was established in 1947 with the mandate to help rebuild post-war Europe, develop economic activity and strengthen economic relations among European countries, and between Europe and the rest of the world. During the Cold War, UNECE served as a unique forum for economic dialogue and cooperation between East and West. Despite the complexity of this period, significant achievements were made, with consensus reached on numerous harmonization and standardization agreements.

In the post-Cold War era, UNECE acquired not only many new member States, but also new functions. Since the early 1990s the organization has focused on assisting the countries of Central and Eastern Europe, Caucasus and Central Asia with their transition process and their integration into the global economy.

Today, UNECE supports its 56 member States in Europe, Central Asia and North America in the implementation of the 2030 Agenda for Sustainable Development with its Sustainable Development Goals (SDGs). UNECE provides a multilateral platform for policy dialogue, the development of international legal instruments, norms and standards, the exchange of best practices and economic and technical expertise, as well as technical cooperation for countries with economies in transition.

Offering practical tools to improve people's everyday lives in the areas of environment, transport, trade, statistics, energy, forestry, housing, and land management, many of the norms, standards and conventions developed in UNECE are used worldwide, and a number of countries from outside the region participate in UNECE's work.

UNECE's multisectoral approach helps countries to tackle the interconnected challenges of sustainable development in an integrated manner, with a transboundary focus that helps devise solutions to shared challenges. With its unique convening power, UNECE fosters cooperation among all stakeholders at the country and regional levels.

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TRANSPORT IN UNECE

75 INLAND TRANSPORT COMMITTEE

Today, UNECE services 59 United Nations inland transport conventions. Several of the Conventions are global either by design or because their success has caused them to grow beyond the UNECE region. In addition to negotiating the amendments to existing legal instruments, UNECE has been active in facilitating new legal instruments. Its normative activities are enhanced with developing methodologies, guidelines, and definitions on subjects such as transport planning, data collection and the

collection of transport statistics. UNECE functions with the support of the work of the Inland Transport Committee (ITC) and its 20 Working Parties which are in turn supported by more than 40 formal and informal expert groups and in cooperation with 11 treaty bodies (Administrative Committees). Annual sessions of ITC are the key moments of this comprehensive intergovernmental work, when the results from all subsidiary bodies and secretariat, as well as the UNECE Sustainable Transport Division, are presented to ITC members and contracting parties.

In addition to servicing ITC and its subsidiary bodies, the Division also services other intergovernmental bodies including the ECOSOC Committee of Experts on the Transport of Dangerous Goods and on the Globally Harmonized System of Classification and Labelling of Chemicals, as well as 11 treaty bodies of United Nations legal instruments and the TIR Executive Board. In cooperation with UNESCAP, UNECE Sustainable Transport supports the United Nations Special Programme for the Economies of Central Asia. It also annually alternates with UNESCAP as the secretariat to the SPECA Thematic Working Group on Sustainable Transport, Transit and Connectivity. In cooperation with the UNECE Environment Division and WHO Europe, the Division services the Transport, Health and Environment Pan-European Programme (THE PEP). It ensures the management and oversight of the Trans-European North-South Motorway (TEM) and the Trans-European Railway (TER) projects. Finally, since 2015, UNECE hosts the secretariat of the United Nations Secretary-General's Special Envoy for Road Safety and since 2018 the secretariat of the United Nations Road Safety Fund (UNRSF). Additionally, as part of the United Nations, the Division has been responsible supporting the accession and implementation of the legal instruments through policy dialogues, technical assistance, and analytical activities with the priority of promoting regional and subregional cooperation and capacity-building.



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ACRONYMS AND ABBREVIATIONS

ACI	Air Connectivity Index
ADN	Agreement concerning the International Carriage of Dangerous Goods by Inland Waterway
ADR	Agreement concerning the International Carriage of Dangerous Goods by Road
AETR	Agreement concerning the Work of Crews of Vehicles engaged in International Road Transport
AGC	Agreement on Main International Railway Lines
AGN	Agreement on Main Inland Waterways of International Importance
AGR	Agreement on Main International Traffic Arteries
AGTC	Agreement on Important International Combined Transport Lines and Related Installations
ASEM	Asia-Europe Meeting
ATP	Agreement on the International Carriage of Perishable Foodstuffs and on the Special Equipment to be Used for such Carriage
BCP	border-crossing point
CAREC	Central Asia Regional Economic Cooperation
CMR	Convention on the Contract for the International Carriage of Goods by Road
COTIF	Convention concerning International Carriage by Rail
ECLAC	United Nations Economic Commission for Latin America and the Caribbean
ESCWA	United Nations Economic and Social Commission for Western Asia
EoDB	Ease of Doing Business
GDP	gross domestic product
IFI	international financial institution
IFP	institutional focal point
IRI	International Roughness Index
ITF	International Transport Forum
IWW	inland waterway
LDCs	least developed countries
LLDCs	landlocked developing countries
LPI	Logistic Performance Index
LSCI	Liner Shipping Connectivity Index
NFP	national focal point
NCR	National Connectivity Report
OECD	Organisation for Economic Co-operation and Development
OGI	other government institution
PCI	Productive Capacities Index
RID	International Carriage of Dangerous Goods by Rail
SDGs	Sustainable Development Goals
SITCIN	Sustainable Inland Transport Connectivity Indicators
SWOT	strengths, weaknesses, opportunities, and threats
TIR	<i>Transports Internationaux Routiers</i> (International Road Transport)
TRACECA	Transport Corridor Europe-Caucasus-Asia
UNCTAD	United Nations Conference on Trade and Development
UNDA	United Nations Development Account
UNDP	United Nations Development Programme
UNECE	United Nations Economic Commission for Europe
VPoA	Vienna Programme of Action for Landlocked Developing Countries for the Decade 2014-2024
WTO	World Trade Organization



1. INTRODUCTION

Globalization has produced an exponential increase in the volumes of flows of persons and goods worldwide in the last decades. As a result, there is a growing need for governments to understand the performance of their transport systems enabling them to develop better informed policies.

The present study has been developed to address this challenge by designing a set of sustainable inland transport connectivity indicators (SITCIN) as part of a United Nations Development Account Project implemented from September 2018 - December 2021.

The project was managed by the United Nations Economic Commission for Europe (UNECE) and implemented with the support of two other regional commissions of the United Nations: the Economic and Social Commission for Western Asia (ESCWA) and the Economic Commission for Latin America and the Caribbean (ECLAC).

1.1 Landlocked countries

While of use to any country in the world, these indicators are expected to be of particular interest to landlocked and transit/bridging countries in designing and implementing an evidence-based transport policy framework that can promote sustainable transport connectivity at the national, regional and international levels and the implementation of transport-related SDGs.

As landlocked countries' trade and transport depends on transit through other countries, their competitive advantage can be threatened by additional border crossings, long distances from major markets and significant transportation costs and time and as a consequence can undermine their socio-economic development, human and social progress, and environmental sustainability. These consequences are even more severe when the landlocked countries are developing countries.

According to the Vienna Programme of Action (VPoA) for Landlocked Developing Countries for the Decade 2014-2024, landlockedness is a major contributor to the relatively high incidence of extreme poverty and structural constraints in landlocked developing countries.

Landlocked developing countries (LLDCs) as a group, constitute 32 countries across Africa, Asia, Central and Eastern Europe, and Latin America as depicted in Figure 1.

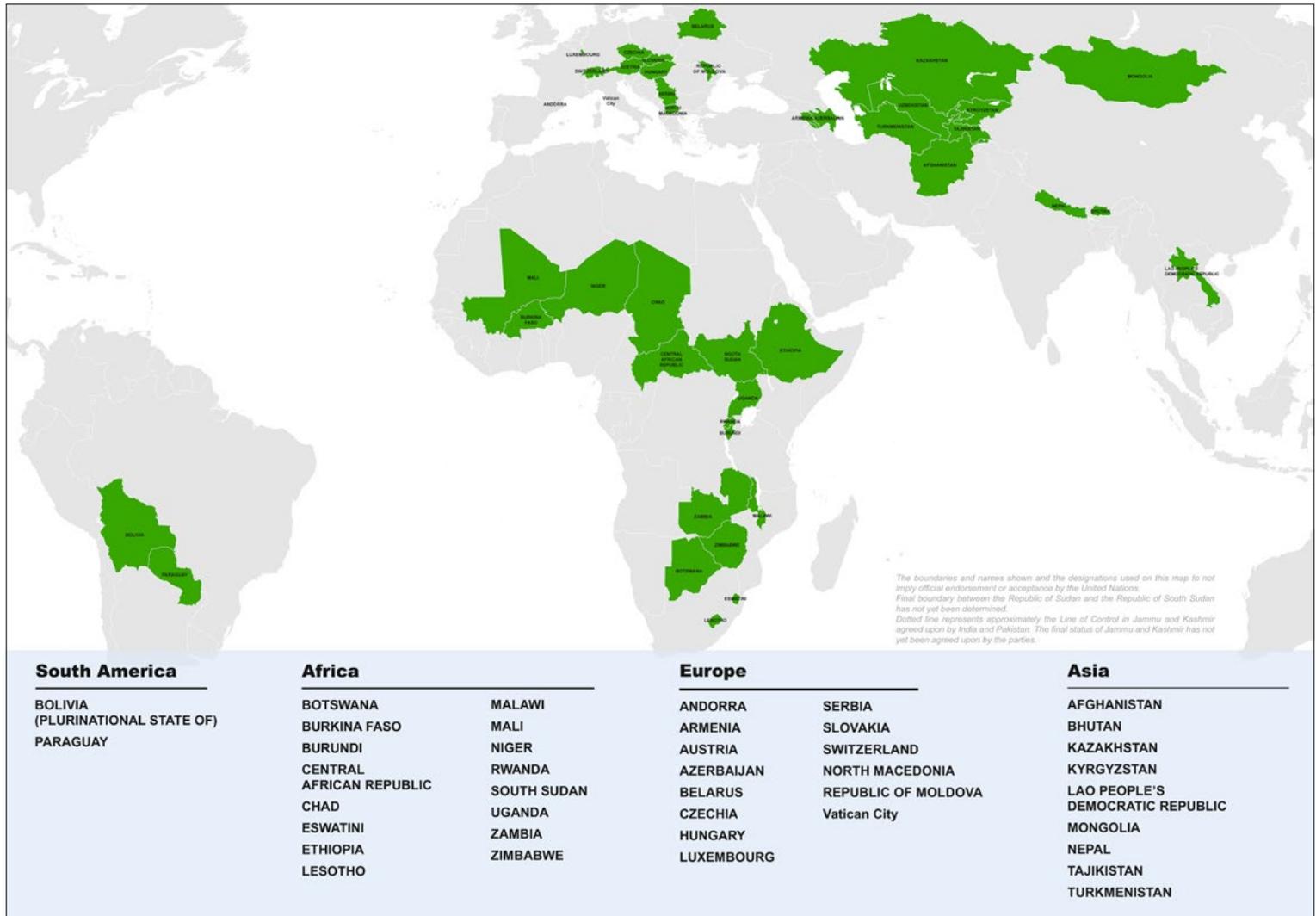
They have a population of around 533 million people (World Bank, 2020a) and are among the poorest of developing countries (seven of which are ranked at the bottom ten of the human development index (UNDP, 2020)), and more than half of them are also least developed countries (UN-OHRLLS, 2021). These have limited capacities and depend on a very limited number of commodities for their export earnings. The average GDP per capita (constant 2015 US\$) of LLDCs is just over US\$1,600 compared with the global US\$10,520 (World Bank, 2020b).

1.2 Inland transport connectivity

Inland transport includes road, rail, inland waterway and the intermodality that enables seamless vehicular transfer between them. It plays a crucial role in any country but even more so in landlocked and transit/bridging countries. The indicators provided here offer guidance on how to foster inland transport connectivity in LLDCs through providing a tool to measure and assess their inland transport system performance and degree of interconnectedness.

Connectivity is defined as "connectedness" in terms of transport, trade, customs and logistics processes. A developed inland transport connectivity system would allow transport modes and infrastructure to be well-interlinked. Efficient inland connectivity is necessary to address effectively the challenges arising from these countries' geographic location and the remoteness and isolation from world markets.

The most immediate benefits from better connectivity are improved accessibility in terms of reduced travel time and transportation costs. The fragmented infrastructure and supply chain to LLDCs create additional expenses and extended travel times. Properly designed transport policies for inland transport promoting sustainable transport connectivity can also strengthen these countries' competitiveness through facilitating trade within and across the regions and creating or reinforcing access to markets.

Figure 1. Landlocked countries

1.3 Aims and objectives

The main objective of the SITCIN project was to develop a tool to enable countries to measure their degree of transport connectivity, both domestically and bilaterally/sub-regionally as well as in terms of soft and hard infrastructure. The connectivity indicators will enable governments to evaluate and assess the following:

- The progress they are making towards achieving the transport-related SDGs and their commitments under the Vienna Programme of Action for LLDCs for the decade 2014-2024.
- Their efforts in implementing United Nations legal instruments relating to transport and their work towards harmonizing and standardizing rules and documentation, including through implementing international conventions on transport and transit and regional/bilateral agreements.
- The degree to which their inland transport system is inter-operable with the systems within their respective (sub-)region (inter-operable, e.g. in terms of harmonization of infrastructure standards and technical parameters, as well as in terms of coordination and integration of administrative procedures and regulatory regimes in place).





2. OVERVIEW OF AVAILABLE METHODOLOGICAL APPROACHES

Measuring and improving transport connectivity are important for facilitating trade and movement of people and goods, and for creating seamlessness of customs logistics processes. According to the World Trade Organization (WTO), trade facilitation concerns the simplification, modernization and harmonization of export and import processes. It has emerged as an important issue for the world trading system.¹

Several methodological approaches are used to measure the performance of countries in international transport and trade facilitation. Some of these are listed below. This literature review conducted at the outset of the SITCIN development process was meant to give initial ideas on what should be measured and considered when developing the inland transport connectivity indicators, and which issues are important and needed to be taken into consideration. It is worth noting that until today there was no set of indicators in place to measure inland transport connectivity, therefore SITCIN is the first of its kind and closes a methodological gap.

As SITCIN complements, ICAO's Air Connectivity Index and in the maritime sector, UNCTAD's Liner Shipping Connectivity Index, it is through this new tool that the inland transport sector transport now has its own assessment and evaluation mechanisms available for use by governments.

2.1 Logistic Performance Index

Logistic Performance Index (LPI) is an interactive benchmarking tool created by the World Bank to help countries identify the challenges and opportunities they face in their performance on trade logistics and what they can do to improve their performance (World Bank, 2018). The LPI indicates the easiness and efficiency of trade in a country, reflecting the perceptions of the international business community (freight forwarders

and express carriers) regarding how countries are globally connected through their main trade gateways.

The LPI is updated biennially and covers 160 economies. Data are collected through a survey in which respondents rate eight overseas markets on six core components of logistics performance from very low (1) to very high (5). These components are customs, infrastructure, ease of arranging shipments, quality of logistics services, timeliness, and tracking and tracing. Based on these, the LPI score is constructed using principal component analysis.

However, the LPI does not address the value added of supply chain management, seeing logistics from a mechanistic rather than economic point of view. Being less deterministic, it does not easily allow for the identification of specific remedial interventions.

Of the six core components, customs and infrastructure are of importance to SITCIN as they are directly related to international connectivity. Customs entails the efficiency of customs and border clearance management, while Infrastructure concerns the quality of transport infrastructure as well as ICT infrastructure.



¹ https://www.wto.org/english/tratop_e/tradfa_e/tradfa_e.htm

2.2 Ease of Doing Business

Ease of Doing Business (EoDB) is an index developed by the World Bank to define the ease of doing business in a country. It is measured by 11 sets of indicators representing 11 areas of business regulations. One of them is Trading Across Borders, which assesses the logistical processes of export and import. It measures the time (hours) and cost (\$) to export and import, associated with three sets of procedures — documentary compliance, border compliance and domestic transport — within the overall process of exporting or importing a shipment of goods. The time and cost for domestic transport, however, are not used in calculating the score.

The data are updated annually by local experts and cover 190 economies. Input from domestic entrepreneurs is used as a basis for measuring countries' performance. The index uses specific case study assumptions to allow for comparability across all countries. The ranking of Trading Across Borders is based on the distance to the frontier score of the eight indicators (World Bank, 2016). However, as this method focuses more on back-office procedures, as such it is not reliable for measuring real-time performance.

In September 2021, the World Bank Group decided to discontinue its *Doing Business* report.

2.3 Productive Capacities Index in least developed countries

The Productive Capacities Index (PCI) has been developed by the United Nations Conference on Trade and Development (UNCTAD). The index measures and benchmarks productive capacities in least developed countries (LDCs). It is stated that only by improving their infrastructure may LDCs be able to follow a path towards long-term growth that is sustainable and inclusive. Along with electricity and ICT, transport infrastructure is one of the major themes under which LDCs and their development partners are encouraged to take action. Concerning transport infrastructure, the following indicators can be extracted from the PCI:

- Density of rail lines, defined as the km of rail lines per million people; and
- Proportion of roads in LDCs that are paved.

The methodology used to construct the PCI can be summarized as follows:

- a. The basis of the index are various indicators that relate to the pre-determined goals, targets and actions. These indicators are candidate indicators.
- b. The ultimate decision on the indicators that make up the PCI is based on a few simple criteria:
 - i. only indicators for which data are available for more than half of LDCs are considered;
 - ii. countries with data for more than half of the main indicator categories are given a PCI score;
 - iii. none of the indicators that concern financing and investing in development of productive capacities are considered for the PCI.

2.4 Trade and Transport Facilitation in Southeast Europe

Even though the Trade and Transport Facilitation in Southeast Europe (TTFSE) project is not an index like LPI and EoDB, the indicators used in this regional programme (supported by the World Bank, the European Union and bilateral partners) can be adopted by SITCIN. The TTFSE project aims at streamlining procedures, reducing corruption and minimizing costs and delays at borders. The methodology used in the TTFSE is a participatory methodology to ensure a sense of ownership among the various stakeholders involved (national agencies, customs officials and transport operators) (World Bank, 2005).

The performance indicators include customs efficiency (e.g. total number of customs staff), border crossings indicators (e.g. truck examination, average border exit and entry time), and clearance time at inland terminals. In measuring border-processing time, the TTFSE uses a "black box" concept, whereby the processing time is defined as the time between a vehicle joining the queue in the country of exit and leaving for the other country after completing the formalities.

TTFSE time-series data are entered in a single database. Data were collected monthly over 72-hour periods on different days each month, over a period of 4 to 5 years. While this can measure change and improvement in the border-crossing performance, such a data collection method involves high costs.



2.5 Enhancing Connectivity and Freight in Central Asia

The report, *Enhancing Connectivity and Freight in Central Asia*, prepared by the International Transport Forum (ITF), is possibly the only publication that assesses transport connectivity and infrastructure needs, by applying three streams of analysis:

1. an assessment of the regional large-scale infrastructure programmes and of their capacity to improve connectivity
2. a benchmarking of the national freight transport policies against OECD best practices
3. a qualitative assessment of the countries' capability to design and evaluate freight-related policies.

These analyses are supported by a review of the literature, interviews with key stakeholders across all sectors, and information collected during fact-finding missions to five countries.

The methodological approach for measuring connectivity is a gravity-based model, which measures how many opportunities (defined as GDP) can be reached from each country relative to other countries. The explanatory components are calculated for road, rail and maritime transport modes and include distance, transport cost, travel time and border crossing time.

The report focuses on transport infrastructure, logistics and institutional capacity. The institutional capacity is represented by three dimensions that contribute to overall transport performance - planning, governance and regulation, and sustainability. A score from 0 to 5 is given to each dimension based mainly on qualitative assessments of transport policies and frameworks of the assessed countries.

The report provides a good approach to freight connectivity using data and information at the aggregate level.

2.6 ASEM Sustainable Connectivity

ASEM (Asia-Europe Meeting) Sustainable Connectivity is an initiative of the European Union that aims at providing a scientific-based contribution to the policy discussions in the framework of the ASEM on connectivity. The approach is to develop a framework of indicators that can be combined into composite indicators – i.e. aggregations of observable variables which aim to quantify complex concepts that are not directly observable. ASEM uses two types of data – country-level data and bilateral data.

The framework comprises 49 indicators grouped into two indexes: (1) Connectivity index, with 30 indicators, and (2) Sustainability index, with 19 indicators. The connectivity index is more relevant to SITCIN. It consists of the following five pillars along with some examples of indicators for each pillar (those in *italics* are related to bilateral data):

1. Physical: LPI, border crossings, *trade in electricity*, average connection speed.
2. Economic/financial: trade in services, *trade in goods*, *foreign direct investment*.
3. Political: *embassies network*, participation in international intergovernmental organizations.
4. Institutional: mean tariff rate, technical barriers to trade, *regional trade agreements*.
5. People-to-people: *trade in cultural goods*, tourist arrivals at national borders.

The ASEM Index mainly utilizes existing data available from various sources, such as the World Bank, United Nations, and WTO. Data availability is ranging from 80 per cent to 100 per cent for all indicators, as such no high-cost data collection and monitoring is involved. The index captures indirectly country's efforts to improve its transport connectivity such as infrastructure development and the development of related national regulatory framework.

2.7 Air Connectivity Index

Although air transport is not part of SITCIN, it is still useful to consider the Air Connectivity Index (ACI). Developed by the World Bank, this index measures connectivity in the global air transport network. The connectivity is defined as the importance of a country as a node within the global air transport system, which is closely correlated with important economic variables, such as

the degree of liberalization of air transport markets, and the extent of participation in international production networks.

The index captures the full range of interactions among all network nodes and takes into account the hub-and-spoke nature of the global air transport network. The approach is based on a rigorous network analysis framework. The method is applied to over 200 countries and the index itself is only calculated for the year 2007.

The ACI is a single numerical indicator capturing the various dimensions of performance. The index is determined using a simple gravity regression that corresponds to the total pull exercised by each country on the rest of the network. Its external validity is checked by comparing it with input and output indicators that are expected to be correlated with it, such as the WTO Air Liberalization Index and merchandise trade as a percentage of GDP, using a statistical correlation coefficient.

The advantage of the ACI is its simplicity; however, it is limited to air transport and does not cover the entire supply chain.

2.8 Liner Shipping Connectivity Index

The Liner Shipping Connectivity Index (LSCI), which was developed by UNCTAD, aims at measuring a country's level of integration into the existing global liner shipping network. It can also be considered as a proxy of the accessibility to global trade. It is computed based on five components: number of ships, container-carrying capacity, maximum vessel size, number of services, and number of companies that deploy container ships in a country's ports.

The index is calculated annually for each country. Each factor of a country is divided by the maximum value that has been achieved for that factor in 2004. The average of these factors is then divided by the maximum average for 2004 and multiplied by 100. The index generates a value of 100 for the country with the highest average index in 2004. The underlying data come from Containerisation International Online. Data on trade facilitation are drawn from research by private and international agencies.

The LSCI is based on facts and hard data, compared with, for instance the LPI, which is based on surveys of professionals. The LSCI is also based on a weighted average of capacity and utilization data. However, it is limited to liner shipping rather than the entire supply chain.

2.9 Conclusion

SITCIN builds further on methodological approaches and tools that have been developed over time to measure the performance of countries in international transport and trade facilitation. The indexes and methodological approaches described in the previous sections are meant to serve as a basis for SITCIN. These indexes and indicators have demonstrated improvements in measuring trade facilitation and transport performance. However, they do not allow to assess the performance and interconnectedness of inland transport systems nor the impact of “hard” and “soft” infrastructure development on connectivity at an adequate level of detail that depicts the performance of countries at strategic, tactical and operational levels. This is the goal that SITCIN aims to achieve and to provide a unified set of indicators that enable to measure inland transport connectivity across all modes.

Therefore, building further on what already exists, a set of additional indicators were developed as part of the process to evaluate both the institutional and legal situation, the quality of inland transport infrastructure, as well as the regulatory and administrative environment related to border crossings, customs and transit procedures. These indicators are aimed at:

- Appraising the quality of the administrative framework.
- Analysing the quality and effectiveness of transport and logistics infrastructure.
- Determining the robustness of the traffic infrastructure and management.
- Assessing the quality of the regulatory framework surrounding the transport of dangerous goods and perishable foodstuffs.
- evaluating efforts aimed at addressing climate change impacts by the transport sector.





3. PROJECT PHASES AND METHODOLOGY

The development of the connectivity index involves several phases, which are described in the following sections and presented in Figure 2.

Figure 2. Methodology of SITCIN

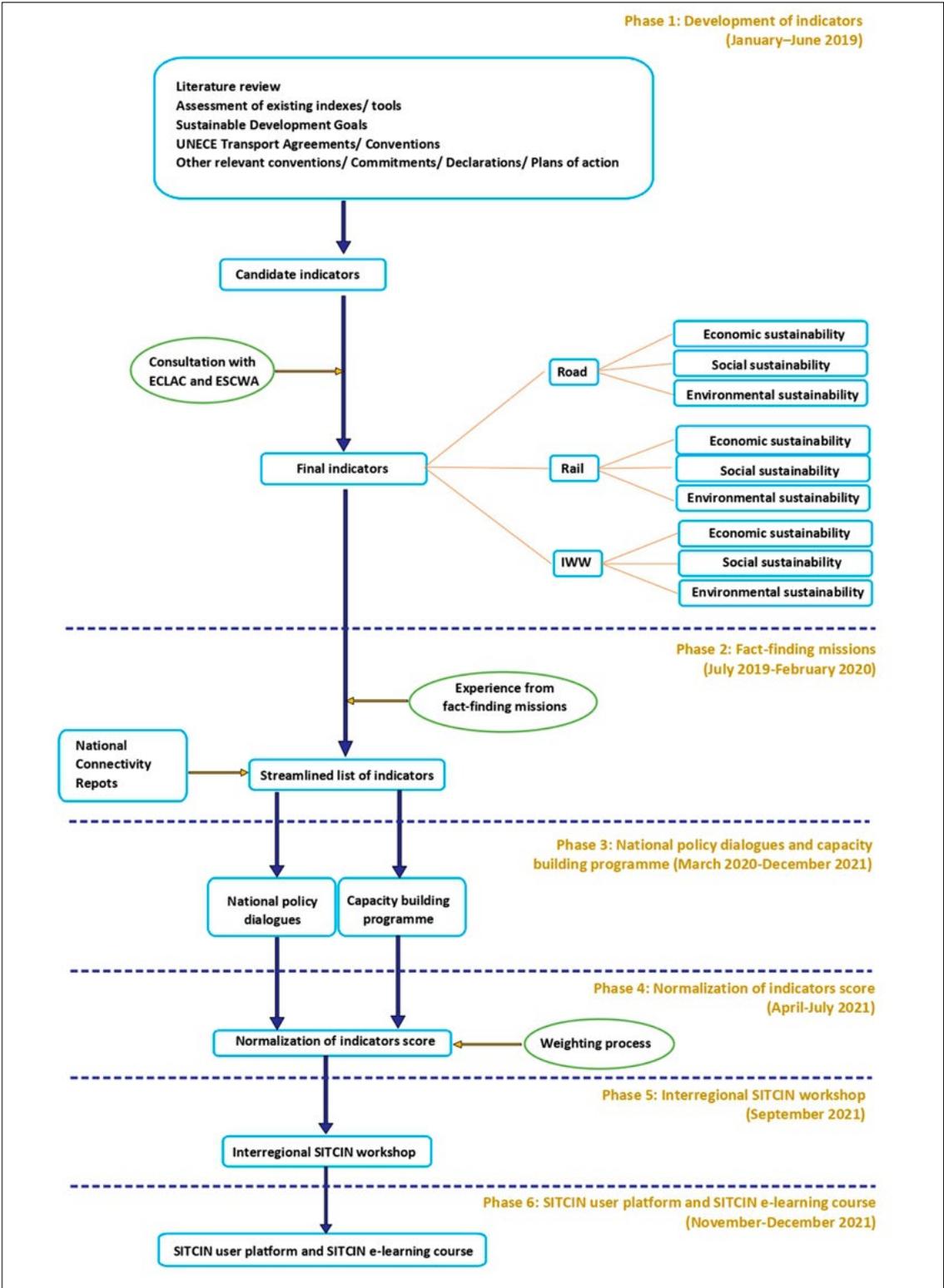


Figure 3. United Nations Sustainable Development Goals



3.1 Phase 1: Development of indicators

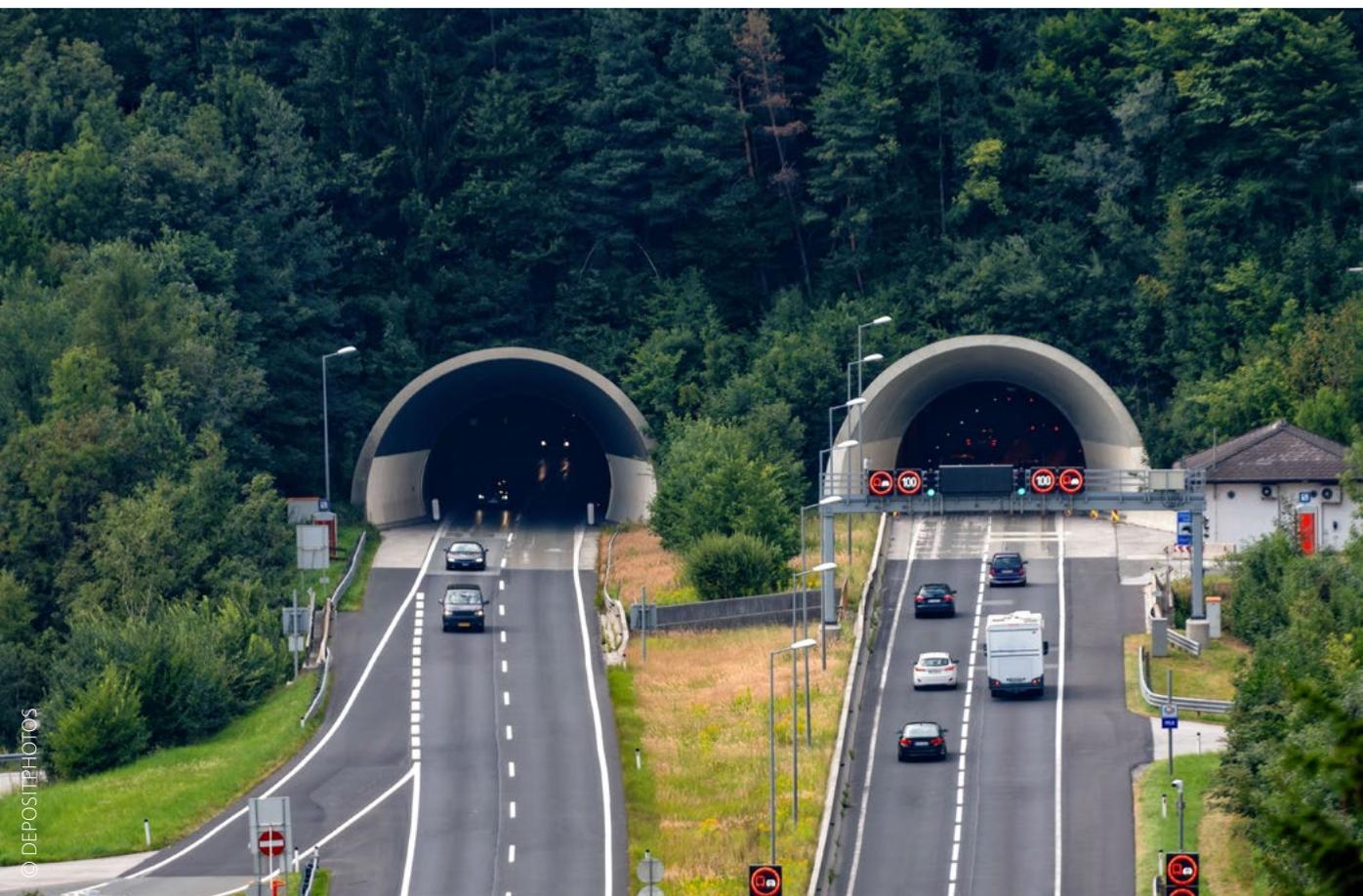
This phase started with identifying candidate indicators, involving a review of the literature, assessing the existing indexes and tools related to international transport and trade (as set out in chapter 2) while incorporating the SDGs relevant for transport connectivity, UNECE transport agreements and conventions, and other relevant conventions, commitments, declarations and plans of action. These agreements and conventions play an important role in identifying the indicators as they contain regulations, norms and standards to facilitate integration and cooperation among the member countries and to promote harmonization of these norms and standards in national laws and regulations.

3.1.1 United Nations Sustainable Development Goals

One of the purposes of the SITCIN project is to give countries the opportunity to report on their progress in achieving the UN SDGs. Although there is no stand-alone SDG on transport, transport is considered as a cross-cutting issue throughout the 17 SDGs. Table 1 highlights the SDG goals and targets related to transport. SITCIN can make these targets operational.

Table 1. Transport-related SDGs and targets

GOAL	TARGETS
3 Ensure healthy lives and promote well-being for all at all ages.	3.6 By 2020, halve the number of global deaths and injuries from road traffic accidents. 3.9 By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination.
7 Ensure access to affordable, reliable, sustainable and modern energy for all.	7.2 By 2030, increase substantially the share of renewable energy in the global energy mix. 7.3 By 2030, double the global rate of improvement in energy efficiency.
9 Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.	9.1 Develop quality, reliable, sustainable and resilient infrastructure, including regional and trans border infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all.
11 Make cities and human settlements inclusive, safe, resilient and sustainable.	11.2 By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons.
12 Ensure sustainable consumption and production patterns.	12.4 By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment.
13 Take urgent action to combat climate change and its impact.	13.2 Integrate climate change measures into national policies, strategies and planning.
14 Conserve and sustainably use of oceans, seas and marine resources.	14.1 By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution.
17 Strengthen the means of implementation and revitalize the global partnership for sustainable development.	17.14 Enhance policy coherence for sustainable development.



3.1.2 UNECE transport agreement and conventions

UNECE manages more than 50 international transport agreements and conventions, which provide an international legal framework and technical regulations for international road, rail, inland navigation and intermodal transport, as well as dangerous goods transport and vehicle construction.² These legal instruments are legally binding for the States that are Contracting Parties to them, and some of the instruments are also applied by countries in other regions. This framework has contributed to a high level of efficiency, safety, environmental protection and sustainability in transport through the harmonization of national regulations in a large and varied number of areas.

The following is a list of International UNECE transport agreements and conventions, as the most important source in developing candidate indicators:

a. Transport Infrastructure

- 1975 European Agreement on Main International Traffic Arteries (AGR), (entered into force on 15 March 1983)
- 1985 European Agreement on Main International Railway Lines (AGC), (entered into force on 27 April 1989)
- 1991 European Agreement on Important International Combined Transport Lines and Related Installations (AGTC), (entered into force on 25 June 1998)
- 1999 European Agreement on Main Inland Waterways of International Importance (AGN) (entered into force on 26 July 1999)

b. Border Crossing Facilitation

- 1975 Customs Convention on the International Transport of Goods under Cover of TIR Carnets (TIR Convention), (entered into force on 20 March 1978)

² http://www.unece.org/trans/about_us.html

- 1982 International Convention on the Harmonization of Frontier Controls of Goods, (entered into force on 15 October 1985)
- 1972 Customs Convention on Containers, (entered into force on 6 December 1975)
- 1954 Customs Convention on the Temporary Importation of Private Road Vehicles, (entered into force on 15 December 1957)
- 1956 Customs Convention on the Temporary Importation of Commercial Road Vehicles, (entered into force on 8 April 1959)
- 2006 Convention on International Customs Transit Procedures for the Carriage of Goods by Rail under Cover of SMGS Consignment Notes, (not yet in force)

c. Other Legal Instruments related to Road Transport

- 1970 European Agreement concerning the Work of Crews of Vehicles engaged in International Road Transport (AETR), (entered into force on 5 January 1976)
- 1956 Convention on the Contract for the International Carriage of Goods by Road (CMR), (entered into force on 2 July 1961), and the 1978 Protocol to the CMR and the 2008 Additional Protocol to the CMR concerning the electronic consignment note (e-CMR)

d. Transport of Dangerous Goods

- 1957 Agreement concerning the International Carriage of Dangerous Goods by Road (ADR), (entered into force on 29 January 1968)
- 2000 European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterway (ADN), (entered into force on 28 February 2008)

e. Transport of Perishable Foodstuffs

- 1970 Agreement on the International Carriage of Perishable Foodstuffs and on the Special Equipment to be Used for such Carriage (ATP), (entered into force on 21 November 1976)

f. Road Traffic and Road Signs and Signals

- 1968 Convention on Road Traffic, (entered into force on 21 May 1977)
- 1968 Convention on Road Signs and Signals, (entered into force on 6 June 1978)

g. Road Vehicles

- 1958 Agreement concerning the Adoption of Harmonized Technical United Nations Regulations for Wheeled Vehicles, Equipment and Parts which can be Fitted and /or be Used on Wheeled Vehicles and the Conditions for Reciprocal Recognition of Approvals Granted on the Basis of these United Nations Prescriptions, (entered into force on 20 June 1959)
- 1997 Agreement concerning the Adoption of Uniform Conditions for Periodical Technical Inspections of Wheeled Vehicles and the Reciprocal Recognition of Such Inspections, (entered into force on 27 January 2001)
- 1998 Agreement concerning the Establishing of Global Technical Regulations for Wheeled Vehicles, Equipment and Parts which can be fitted and/or be used on Wheeled Vehicles, (entered into force on 25 August 2000)

h. Inland Water Transport

- 1960 Convention relating to the Unification of Certain Rules concerning Collisions in Inland Navigation, (entered into force on 13 September 1966)
- 1965 Convention on the Registration of Inland Navigation Vessels, (entered into force on 24 June 1982)
- 1966 Convention on the Measurement of Inland Navigation Vessels, (entered into force on 19 April 1975)
- 2000 Budapest Convention on the Contract for the Carriage of Goods by Inland Waterway (CMNI), (entered into force on 1 April 2005)

3.1.3 Other Conventions, Commitments, Declaration, and Plans of Action

SITCIN also takes into consideration other conventions, commitments, declarations and plans of action relating to transport connectivity and trade facilitation. These include the following:

a. Vienna Programme of Action for Landlocked Developing Countries for the Decade 2014-2024

This is the principal programme of the United Nations that addresses issues relating to development of States that lack direct access to the sea. It does so through six priorities areas:

1. Fundamental transit policy issues
2. Infrastructure development and maintenance
3. International trade and trade facilitation
4. Regional integration and cooperation
5. Structural economic transformation
6. Means of implementation.

SITCIN covers priorities 1, 2, 3 and 4, and specific objectives and actions in each priority area.

b. Revised Kyoto Convention

The revised Kyoto Convention is the main trade facilitation Customs convention designed to harmonize and simplify customs procedures. It was developed by the World Customs Organization and entered into force on 3 February 2006. It is an update and revision of the International Convention on the Simplification and Harmonization of Customs Procedures (Kyoto Convention) adopted in 1973-1974.

c. Istanbul Convention

This Convention on Temporary Admission is entered into force on 27 November 1993. It facilitates temporary admission by simplifying and harmonizing procedures through adopting standardized model papers as international customs documents with international security.

d. Global Framework Plan of Action for Road Safety

This plan of action, developed by the United Nations Road Safety Trust Fund in 2018, aims to support national efforts for road safety and guide international assistance in order to meet the target 3.6 of SDG 3.

e. Regulation concerning the International Carriage of Dangerous Goods by Rail

This regulation is an appendix to the Convention concerning International Carriage by Rail (COTIF) that went into effect on 1 January 2019. It focuses on regulations surrounding the international carriage of dangerous goods by rail including procedural and transportation requirements and exemptions to ensure the safety during carriage.

3.1.4 Determining final indicators

The candidate indicators are then filtered by applying the following specific criteria. For an indicator to be selected, it had to be:

- Measurable (easily quantifiable);
- Relevant to the objectives, specific and consistent;
- Clear and understandable (unambiguous);
- Pertinent to the stakeholders (interest compatibility);
- Thought-provoking/ stimulate enquiry (promote productive questioning);
- Able to measure change (time series potentiality);
- In use internationally, for benchmarking purposes (comparable);
- Quantifiable by data that is generally and globally available or can be collected but should add only marginally to the cost of collecting data (data availability);
- Meaningful in the sense that it provides concrete results that can help assess the connectivity of a country (interpretable).

An adjustment of the indicators was undertaken based on consultations with ECLAC and ESCWA, the team of national and regional consultants and the National Focal Points appointed in each of the five pilot countries. The final indicators are presented in chapter 5.

3.1.5 Categorization of indicators

The indicators are structured based on the three inland transport modes: road, rail and inland waterway. The indicators of each mode are further categorized into three pillars of sustainability: economic, social and environmental. This categorization is adapted from "People, Planet, Profit", also known as the three Ps of sustainable development.

Pillar 1: Economic sustainability

The economic dimension refers to practices that support long-term economic growth without negatively impacting other aspects of development.

The key target for this dimension is “Enhancing efficient movement”.

The indicators under this pillar are grouped into the following thematic clusters: efficiency, cost, infrastructure, operations, inter-modality/combined transport, and ICT and intelligent transport system solutions.

Pillar 2: Social sustainability

The social dimension refers to sustainable traffic and transport systems with lower social costs, such as fewer accidents and fewer traffic delays.

The key target for this dimension is “Enhancing safety and security”.

The indicators under this pillar are grouped into the following thematic clusters: assessing adequacy of traffic rules enforcement, traffic infrastructure, vehicle regulations and administrative frameworks surrounding cross-border transport of perishable foodstuffs and of dangerous goods.

Pillar 3: Environmental sustainability

The environmental dimension refers to the reduction of greenhouse gas emissions, air pollutants and noise emissions.

The key target for this dimension is “Creating an environmentally sustainable transport system”.

The indicators under this pillar focus on evaluating measures aimed at reducing greenhouse gas emissions, air pollutants and noise emissions (including considerations such as alternative fuel share and average age of the vehicle fleet).

Figure 4. Three Pillars of SITCIN

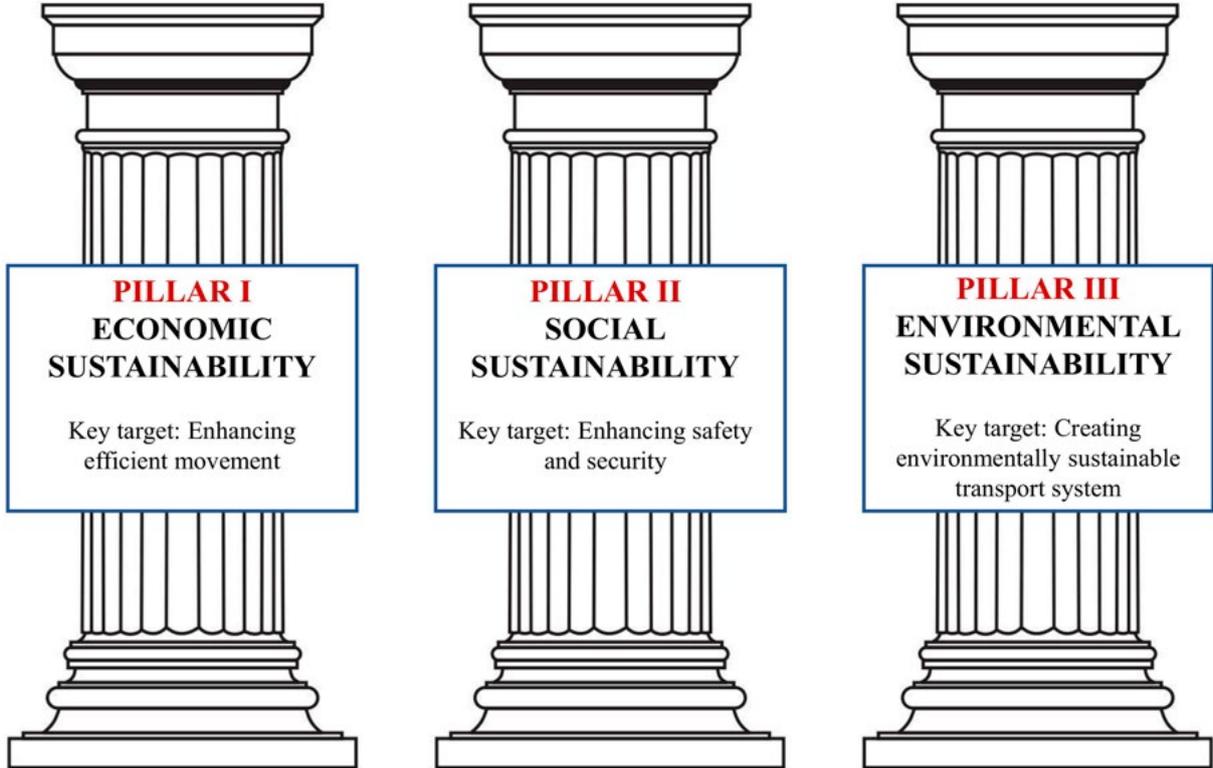
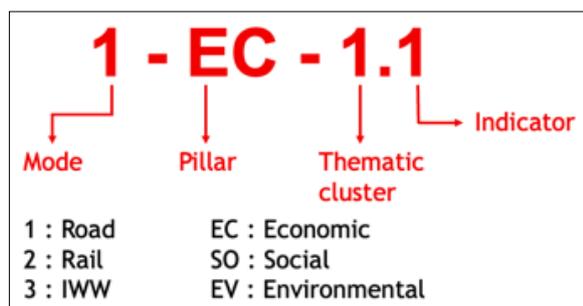


Table 2. Overview of indicators clustering

Mode	Pillar	Thematic clusters	Number of indicators
1 – Road	1 – Economic	1 – Efficiency	11
		2 – Time	5
		3 – Cost	6
		4 – Infrastructure	9
		5 – Operations	6
		6 – Intermodality/combined transport	4
		7 – ICT and ITS solutions	11
	2 – Social	1 – Road traffic rules/behaviour	18
		2 – Road traffic infrastructure	5
		3 – Vehicle regulations	5
		4 – Perishable foodstuffs transport	5
		5 – Dangerous goods transport (administrative)	19
		6 – Dangerous goods transport (infrastructure)	4
	3 – Environmental	1 – Fleet	6
		2 – Emission	6
3 – Infrastructure		1	
Total indicators for road transport			121
2 – Rail	1 – Economic	1 – Efficiency	9
		2 – Time	3
		3 – Cost	3
		4 – Infrastructure	4
		5 – Operations	10
		6 – Intermodality/combined transport	4
		7 – ICT and ITS solutions	4
	2 – Social	1 – Rail traffic infrastructure	7
		2 – Dangerous goods transport (administrative)	5
	3 – Environmental	1 – Fleet	3
		2 – Emission	2
Total indicators for rail transport			54
3 – IWW	1 – Economic	1 – Efficiency	3
		2 – Cost	5
		3 – Infrastructure	4
		4 – Operations	2
		5 – Intermodality/combined transport	2
		6 – ICT and ITS solutions	4
	2 – Social	1 – IWW traffic rules	2
		2 – Vessels regulations	5
		3 – Dangerous goods transport (administrative)	6
		4 – Dangerous goods transport (infrastructure)	2
	3 – Environmental	1 – Fleet	2
2 – Emission		3	
Total indicators for IWW transport			40
Total indicators of SITCIN			215

The numbering of the indicators is determined following the categorization mentioned above and pictured as follows.

Figure 5. Numbering system



In response to the COVID-19 pandemic, an additional set of 13 indicators has been developed enabling governments to evaluate their transport system preparedness for and resilience to future pandemics.

3.1.6 Assignment of scores

Except for verification indicators, the scoring of indicators is presented in the form of ordinal categorical data. This type of data, which is often obtained during sampling survey and experimental design, has ordered categories and the distance between the categories is not known.

The indicators are scored in descending order on a scale of 0 to 10. On this scale, level 0 is assigned for the worst scenario, for instance when a specific regulation does not exist. Level 10 represents an ideal scenario.

In some indicators, 9 or 8 is given for the best scenario, instead of 10. For these indicators, 1 (10 minus 9 points) or 2 (10 minus 8 points) additional points are available; for instance, when additional measures are implemented to achieve the promoted objective. An example of scoring an indicator is given in Box 1. The maximum score of each indicator is always 10.

Box 1. Application of Score Assignment

Example of indicators with score from 0 to 10

Indicator 1-EC-5.5: *Contract of carriage requirements*

Scoring:

- Globally harmonized (recognition of CMR): 10 points
- Regionally or subregionally harmonized: 8 points
- Bilaterally harmonized with common full contract conditions, arrangements for legal issues and consignment note: 6 points
- No common arrangements: 0 point

Example of indicators with additional score

Indicator 1-EC-1.3: *Inland clearance and control procedures*

Scoring:

- All control procedures take place at inland clearance stations: 8 points
- >4 control procedures take place at inland clearance stations: 6 points
- <4 control procedures take place at inland clearance stations: 4 points
- All control procedures take place at BCPs: 0 point
- Application of customs risk management system: + 2 points

Example of indicators without score (verification indicators)

Indicator 1-SO-1.1d: *Number of violations on speed limit*

Scoring:

Not applicable. This is a verification indicator.

Important notes

A. “Subregion” vs “region”

In many indicators, the scoring uses the terms “subregion(al)” and “region(al)”. The explanation is as follows:

- “Subregion” should be defined as a group of adjoining countries. In the case of Georgia for example, subregion should cover Georgia, Türkiye, Armenia, Azerbaijan and the Russian Federation. A SITCIN participant/country may exclude one of several adjoining countries in its assessment when harmonization and integration with those adjoining countries are not applicable due to major barriers such as political tensions and/or border closures. If the definition of subregion is applied to indicator 1-EC-5.5 (see Box 1), then “subregionally harmonized” is to be read as to whether the contract of carriage requirements applied in Georgia is harmonized with that in its adjoining countries.
- “Region” should be defined as a group of countries that are engaged in economic cooperation such as, for example, the Southern African Development Community. If this definition is applied to indicator 1-EC-5.5, then “regionally harmonized” is to be read as to whether the contract of carriage requirements applied in the country is in line with the standards and requirements set by the regional cooperation framework which the country participates in.

B. Determining the border crossing points to be assessed

When measuring border-crossing efficiency, a government using SITCIN should select one main border-crossing point (BCP) per each adjoining country, where “main” defines as the one that processes the highest cargo volume among all BCPs shared with this adjoining country. The total number of BCPs to be assessed in a country is to be limited to four. If a country has more than four adjoining countries, a selection has to be made by choosing the BCPs that together process 60 per cent of the total of international cargo volumes in the country. The score assigned to each indicator within the border-crossing efficiency thematic cluster should then be determined based on the average score of the selected BCPs.

C. Inapplicability of indicators

Some indicators might not apply to a country. For example, if a country has no tolling system, then for indicator 1-EC-7.11 (Application of Electronic Toll Collection systems), “Not applicable” should be selected in the scoring. The SITCIN platform will automatically exclude (not penalize) this indicator from the overall score.

In an ideal situation, if a country scores 10 in all indicators, the maximum score will be 1,842 points across the three inland transport modes: road (1,040 points), rail (436 points), and IWW (366 points).

3.2 Phase 2: Fact-finding Missions

Fact-finding missions to each of the five “pilot countries” (Georgia, Jordan, Kazakhstan, Paraguay and Serbia) were carried out in the period from July 2019 to February 2020. The purpose of these missions was twofold:

1. To present the SITCIN project to national stakeholders, explain the methodology, structure and rationale for the project and gather initial views and feedback on the national applicability of the indicators;
2. To collect the required data and information for validating the indicators, attribute a scoring and develop a comprehensive overview of the country’s degree of transport connectivity, through, for instance:
 - a. evaluating the institutional and legal situation, as well as the regulatory and administrative environment related to border crossings, customs and transit procedures;
 - b. appraising the quality of the administrative framework (including consignment and transport documentation regimes) surrounding road, rail, inland waterway and inter-modal transport;
 - c. analysing the quality and effectiveness of transport and logistics infrastructure;
 - d. determining the robustness of the road traffic management and road traffic infrastructure system;
 - e. validating the quality of the regulatory framework surrounding transport of dangerous goods and perishable foodstuffs by road, rail and inland waterways;

Table 3. Country borders visited during the missions

Pilot country	Date	Border crossing point	Mode	Adjacent country
Georgia	1 – 5 July 2019	Sadakhlo – Bagratashen	Road and rail	Armenia
		Red Bridge (Kirach-Mughanlo)	Road	Azerbaijan
		Gardabani	Rail	Azerbaijan
Jordan	6 – 9 October 2019	Al-Omari	Road	Saudi Arabia
		Aqaba Special Economic Zone / Aqaba Port Container Terminal and Port Authority / Freight Logistics Village and Truck Control System operations centre	Road and rail	Egypt / Israel
Kazakhstan	11 – 12 September 2019	Altynkol	Rail	China (People's Republic of)
		Khorgos Gateway Dryport	Road and rail	
	2 – 3 October 2019	Nur Zholy	Road	
		Kalzhat	Road	
Paraguay	10 – 14 February 2020	José Falcón-Clorinda	Road	Argentina
		Ciudad del Este – Foz do Iguacu	Road	Brazil
Serbia	18 – 20 September 2019	Horgoš	Road	Hungary
		Batrovci		Croatia
		Subotica	Rail	Hungary
		Šid		Croatia
		Novi Sad	IWW	Hungary / Croatia

- f. evaluating efforts aimed to reduce greenhouse gases, to control age and maintenance of road, rail and IWW fleet and to reduce air and noise emissions.

During each of the five scoping missions to pilot countries, extensive consultations took place with the government agencies in charge of transport, trade, customs, and border management, as well as road and railway transport infrastructure managers and haulers including, also representatives of logistics and freight forwarding associations and transporters. Together with the stakeholders, the project team determined which country borders were to be visited and assessed. The visited BCPs during the fact-finding missions are listed in Table 3 and the assessed BCPs for the NCR are indicated in chapter 4.

National Connectivity Report

The fact-finding missions were very important to initiate a National Connectivity Report (NCR) drawn up by the appointed national consultants in each pilot country. The report contains an assessment of the degree of a country's connectivity based on the final indicators template produced in phase 1. As part of the process, the consultants collected data and information available in the country, developed questionnaires and interviewed a wide spectrum of stakeholders from the private and public sectors. This exercise was meant to test the applicability of the indicators and to further fine-tune them.

A summary of each of the five NCRs is provided in chapter 4. All NCRs have been officially published in English and national languages.

Table 4. National policy dialogue and capacity-building events in the pilot countries

Pilot country	National policy dialogue	Capacity-building
Georgia	Tbilisi, 10 – 11 March 2020	<p>10-11 March 2021 (online), Capacity building webinar on intermodal transport and logistics – the roles of government and business to make freight transport more sustainable.</p> <p>12 March 2021 (online), Training webinar for the staff of the Land Transport Agency concerning the requirements for Dangerous Goods Safety Advisers under the UN Agreement concerning the International Carriage of Dangerous Goods by Road (ADR).</p> <p>25-26 November 2021 (online), Joint webinar on tunnel categorization provisions under the UN Agreement concerning the International Carriage of Dangerous Goods by Road (ADR) for Georgia and Serbia.</p> <p>30 November 2021 (online), Joint webinar on Periodic Technical Inspection and Roadside Technical Inspection under the 1997 Agreement for Georgia and Serbia.</p> <p>1 December 2021 (online), SITCIN institutionalization webinar (capacity building on use of the SITCIN methodology).</p>
Jordan	Amman, 31 March – 1 April 2021 (virtual)	13 October 2021 (in-person), Capacity building workshop on improving inland transport connectivity in Jordan (presentation of SITCIN results and proposal for future use).
Kazakhstan	Nur-Sultan, 4 – 5 March 2020 (virtual)	<p>9 December 2021 (online), SITCIN stock-taking and institutionalization webinar (capacity building on use of the SITCIN methodology).</p> <p>10 December 2021 (online), Webinar on Intermodal transport, and logistics – the roles of the government and business to make freight transport more sustainable.</p>
Paraguay	Asuncion, 9 June 2021 (virtual)	6 December 2021 (online), Webinar on best practice sharing between the Latin America and Europe regions on selected topics (including inland water transport, greening of vehicle fleets, use of Intelligent Transport Systems; and rail corridor development).
Serbia	Belgrade, 18 – 19 March 2021 (virtual)	<p>15–16 November 2021: training for officials of Ministry for Construction, Transport and Infrastructure on SITCIN indicators.</p> <p>25–26 November 2021: joint virtual trainings for Georgian and Serbian officials on ADR tunnel categorization.</p> <p>30 November 2021: joint virtual trainings for Georgian and Serbian officials on 1997 Agreement concerning the Adoption of Uniform Conditions for Periodical Technical Inspections of Wheeled Vehicles and the Reciprocal Recognition of Such Inspections.</p>



3.3 Phase 3: National policy dialogue and capacity building

In this phase, the draft NCRs compiled by the team of national consultants in phase 2 were submitted for endorsement at a series of National Policy Dialogue sessions which took place in the five pilot countries. During these dialogues, the needs for building the technical capacity of national stakeholders were also discussed. The capacity-building topics were determined based on the findings of the NCRs. For Georgia for instance, tailored webinars were held in order to grant public and private sector stakeholders access to:

- best practices and policy instruments for promoting the development of intermodal infrastructure and services (PPP models, government incentives, etc.);
- supply chain management and digital solutions in logistics;
- best practices and policy instruments for promoting green transport and logistics;
- ADR safety advisor training (transport of dangerous goods);
- ADR safety provisions for tunnels.

3.4 Phase 4: Normalization of indicators score

Based on the consultations with national stakeholders in the five pilot countries it became clear that for over-time/ cross-country level comparison and aggregation of data purposes, the indicators were to undergo a process of normalization. As an example, countries with different geographical conditions have different challenges in relation to transport infrastructure. Countries with mountainous terrain like Tajikistan for instance, will prioritize road over railway as this is financially more feasible. For such a country, developing inland waterway transport is also not an option as there are no navigable rivers.

On the other hand, rail and inland waterway transport are generally accepted as more energy efficient than road transport and, as such, contribute to the achievement of the SDGs. Therefore, the scoring system gives higher scores to countries that have higher rail and inland waterway freight shares than road. The normalization process was carried out to prevent SITCIN from penalizing countries that cannot develop certain infrastructure due to geographical and/or financial limitations. The normalization is done through a process of weighting, which reflects the general opinion of stakeholders gained during the consultative phases of the study.

Table 5. Available inland transport modes in United Nations Member States

Scenario	Road	Railway	Inland waterway (IWW)	Countries	Percentage (out of 193 countries)
1	✓	✓	✓	100	52
2	✓		✓	8	4
3	✓	✓		47	24
6	✓			38	20

As the indicators have been developed for universal use by any of the 193 United Nations Member States that might be interested, and considering that three different inland transport modes are evaluated in the project, theoretically there are eight different scenarios:

1. All modes are developed
2. Road and inland waterway are developed
3. Road and railway are developed
4. Railway and inland waterway are developed
5. Only railway is developed
6. Only road is developed
7. Only inland waterway is developed
8. None of them are developed

Scenarios 4, 5, 7 and 8 are purely hypothetical as there is no single United Nations Member State without road transport. Therefore, only four different possible scenarios are left: 1, 2, 3 and 6. Table 5 describes the number (and percentage) of countries that have specific transport modes at their disposal.

3.4.1 Weighting process

In order to keep fairness and to consider various circumstances and limitations that may apply at the national level (geographical, natural or financial factors), the following four layers of weightings are integrated in the evaluation methodology.

A. Transport mode fixed weights

Outlines the weightings attributed to each of the four scenarios. The choice of giving the highest weight to road and the lowest to IWW reflects the current situation in most countries in terms of cargo transport volumes transported by each mode.

Table 6. Transport mode fixed weights

Scenario	Road	Rail	Inland waterway
1 Road, Rail, IWW	0.6	0.3	0.1
2 Road, IWW	0.9	0	0.1
3 Road, Rail	0.65	0.35	0
6 Road	1	0	0

B. Thematic cluster weights

As outlined in Table 2, there are some 40 thematic clusters across the three different inland transport modes and the sustainability pillars, resulting in a total of 215 indicators. Each cluster may have a different impact on the degree of inland transport connectivity of a given country, based on their intrinsic importance for the efficiency and seamlessness of cross-border transport, trade and logistics operations. It is therefore necessary to assign a weight for each cluster. Clusters that have more influence in achieving the desired output and outcome should be given higher weights. For SITCIN, the weights are determined by expert knowledge and the insights gained during the national policy dialogues on the significance of each cluster and its urgency to be prioritized in order to improve transport connectivity, as well as the mandates of the UN SDGs and the Vienna Programme of Action. The weights assigned in the weighting process of the thematic clusters are: most important (1.2), important (1), least important (0.8), and socially/environmentally important (0.6). The weight assigned to each thematic cluster is outlined in Table 7.

Table 7. Thematic cluster weighting

Thematic cluster	Importance	Weight
1-EC-1: Efficiency	most important	1.2
1-EC-2: Time required at borders	most important	1.2
1-EC-3: Cost	most important	1.2
1-EC-5: Operations	most important	1.2
1-EC-7: ICT and intelligent transport system solutions	important	1
2-EC-1: Efficiency	most important	1.2
2-EC-2: Time required at borders	most important	1.2
2-EC-3: Cost	most important	1.2
2-EC-5: Operations	most important	1.2
2-EC-7: ICT and intelligent transport system solutions	important	1
3-EC-1: Efficiency	most important	1.2
3-EC-2: Cost	most important	1.2
3-EC-4: Operations	most important	1.2
3-EC-6: ICT and intelligent transport system solutions	important	1
1-EC-4: Infrastructure	most important	1.2
1-SO-2: Road traffic infrastructure	important	1
2-EC-4: Infrastructure	most important	1.2
2-SO-1: Rail traffic infrastructure	important	1
3-EC-3: Infrastructure	most important	1.2
1-SO-1: Road traffic rules/behaviour	social/environment	0.6
1-SO-3: Vehicle regulations	important	1
3-SO-1: Traffic rules	social/environment	0.6
3-SO-2: Vessels regulations	important	1
1-SO-4: Perishable foodstuffs transport	important	1
1-SO-5.1: General provisions for the transport of dangerous goods by road	important	1
1-SO-5.2: Training of personnel involved in the transport of dangerous goods	important	1
1-SO-5.3: Checks and other support measures to ensure compliance with safety requirements	social/environment	0.6
1-SO-5.4: Provisions concerning transport equipment and transport operations involving dangerous goods	important	1
1-SO-6: Dangerous goods transport – infrastructure/hardware requirements	most important	1.2
2-SO-2.1: General provisions for the transport of dangerous goods by rail	important	1
2-SO-2.2: Training of personnel involved in the transport of dangerous goods	social/environment	0.6
2-SO-2.3: Checks and other support measures to ensure compliance with safety requirements	social/environment	0.6
3-SO-3: Dangerous goods transport – administrative requirements	important	1
1-EC-6: Intermodality/combined transport	most important	1.2
2-EC-6: Intermodality/combined transport	most important	1.2
3-EC-5: Intermodality/combined transport	most important	1.2
1-EV-1: Fleet	most important	1.2
1-EV-2: Emission	social/environment	0.6
1-EV-3: Infrastructure	most important	1.2
2-EV-1: Fleet	most important	1.2
2-EV-2: Emission	social/environment	0.6
3-EV-1: Fleet	most important	1.2
3-EV-2: Emission	social/environment	0.6

C. Modal share weights

The purpose of this weighting is to take into account what portion of the total cargo volume is transported by each inland transport mode available in the country. As SITCIN considers three inland transport modes, there will be three priority levels of transport modes based on the modal share, as such weights are assigned relatively.

Table 8. Weights by modal share priority

Mode priority	Weight
1	1.0
2	0.9
3	0.8

Table 9 and Table 10 show examples of how to apply the modal share weights for Serbia and North Macedonia respectively, using the countries' freight transport data by mode in 2019 (ITF, 2021).

Table 9. Modal share weighting for Serbia

Mode	Freight volume (million tonne-km)	Mode priority	Weight
Road	8,175	1	1.0
Rail	2,861	2	0.9
IWW	727	3	0.8

Table 10. Modal share weighting for North Macedonia

Mode	Freight volume (million tonne-km)	Mode priority	Weight
Road	10,267	1	1.0
Rail	350	2	0.9
IWW	-	-	-

D. Geographical and financial limitations

This last layer of the weighting process is related to the specific reason for which one or two transport modes are not applicable in a given country. Governments can select three different options with relevant weights attributed to each (Table 11):

- a. **"No"**, which means there are no natural, geographical or financial limitations to develop the transport mode that is currently not in use in the country. In order to provide an incentive to the country to develop this particular mode of transport, all nominal points will be counted in the weighted maximum score and will be reflected in the country progress.
- b. **"Financial"**, which means that there are opportunities to operate this transport mode, which is not in use at the time of reporting, but it is not financially feasible to carry out the necessary infrastructure projects. This option may only be selected by developing or least developed economies.
- c. **"Geographical"** implies that a country has geographical or natural limitations that make it impossible to develop railway or IWW. As an example, if a country consists mostly of dry / sandy desert territory and currently only road transport is applicable, then "Geographical" limitation can be selected for IWW and "Financial" may be selected for railway transport.

Table 11. Weights considering limitations

Type of limitations	Weight
No	1.0
Financial	0.5
Geographical	0

3.4.2 Overall score and ranking

A country's overall inland transport connectivity score is the final score after the weighting process has been done. The formula below describes how the score is calculated. Besides the overall score, the automated SITCIN user platform (SITCIN.org) developed to make the SITCIN self-assessment process more user friendly, will also show a given country's progress against the weighted SITCIN maximum score.

Country overall score

$$= ((\sum \text{country score of each cluster} * \text{cluster weight}) * \text{transport mode fixed weight} * \text{transport mode priority}) + \text{normalization considering natural restrictions}$$

The SITCIN User Platform (see section 3.5.1) will offer four different rankings based on:

- a. Country overall score
- b. Road transport sector score
- c. Rail transport sector score
- d. IWW transport sector score

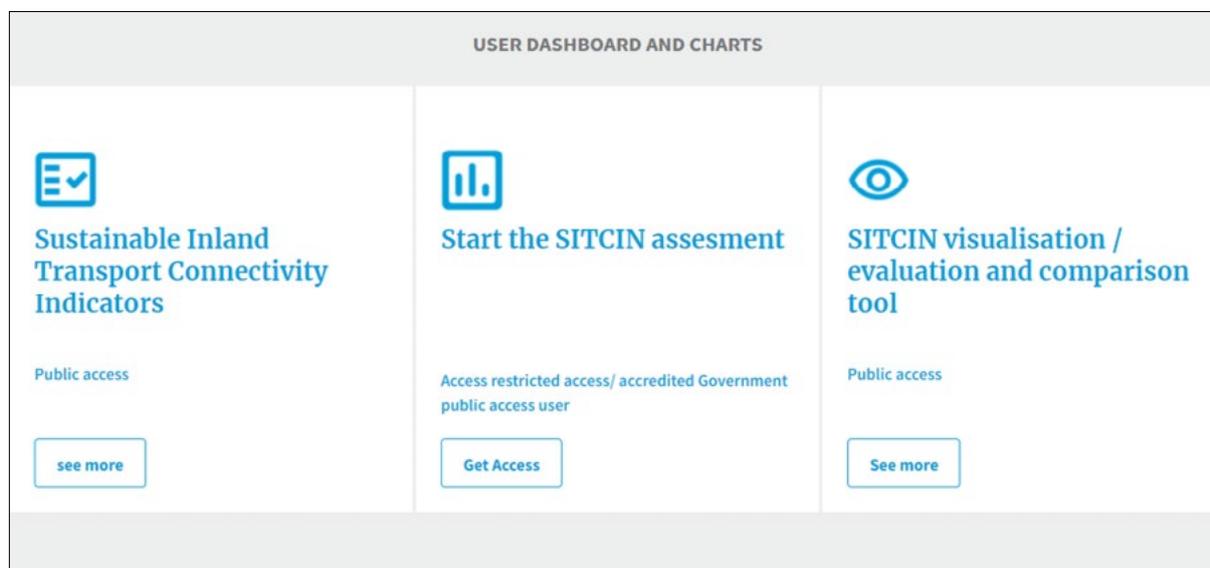
3.5 Phase 5: SITCIN sustainability

Feedback received from stakeholders has indicated that the sustainability of the SITCIN indicators and their continuous use by governments in the future required the development of a user friendly online SITCIN user platform that would allow interested governments to evaluate and assess their transport connectivity situation online. The pilot countries also noted that there is scope to deploy the SITCIN as a corridor assessment system whereby all or several countries on a specific transport corridor or route would go through the assessment process and based on the outcome of the process, corridor-wide challenges/ bottlenecks and opportunities could be identified in need of coordinated action.

To this end, a series of regional outreach meetings has been organized in December 2021, targeting officials in the Central Asia/ South Caucasus, South East Europe and adjacent regions aimed at explaining the SITCIN approach and methodology and encouraging its use at regional or subregional level.



Figure 6. Three central user dashboards on SITCIN user platform



3.5.1 SITCIN user platform

The multilingual SITCIN user platform (SITCIN.org) contains information, resources and tools, including:

- a. Information about the SITCIN project and the indicators, which can be accessed by the general public.
- b. An assessment tool, in the form of an online questionnaire, containing the 215 indicators and open data fields to be filled out by participating countries. This part can only be accessed by accredited governments. At the end of the assessment, the tool will automatically generate a country's NCR.
- c. A visualization/evaluation and comparison tool that is accessible for interested Government users wishing to evaluate their transport system performance over time and/ or compare their results with those of other countries in the region.

User functionalities

The users' level of access to certain information on the platform varies depending on their pre-defined roles. The six user categories are as follows:

1. National focal point

A National Focal Point (NFP) is a person appointed by UNECE, ECLAC or ESCWA to coordinate the SITCIN

data collection process nationally, with the following responsibilities:

- appointing and coordinating institutional focal points during the scoring process;
- granting and managing access to the platform to institutional focal points and other government institutions. An NFP will have access to a user management page to administer this authority;
- liaising with the related regional commission(s) on the monitoring and evaluation of the data collection process and progress;
- viewing and editing all the indicators scores of their own country during the scoring process.

An NFP will be the one who gives the final approval for the publication of the NCR.

2. Institutional focal point

An Institutional Focal Point (IFP) is a person appointed by the NFP for each government administration responsible for collecting SITCIN-related data and information. Based on these, IFPs should determine the score for each indicator. During the scoring process, IFPs will only be able to view and edit the information under their responsibilities. For example, thematic clusters 1-EC-1, 1-EC-2 and 1-EC-3 could be assigned to customs agencies. These will then fill out and edit data and score for the indicators of the thematic clusters assigned to them.

3. United Nations regional commissions

The platform will allow the involved regional commissions of the United Nations – UNECE, ECLAC and ESCWA – to monitor countries' progress on improving their transport connectivity and to utilize it as input for policy development. These three commissions will be able to view all data in the platform at any stage although the review process may only take place after the NCR has been submitted by the NFP.

4. Other users

Other users will have the same level of access to the information. They will only be able to see the scoring of the indicators once the NCR is published. These users include:

- other government institutions who might derive benefits from the data collection process;
- international financial institutions who can utilize the countries' performance on SITCIN as input for funding prioritization;
- general public.

3.5.2 SITCIN eLearning Course

An eLearning course on the SITCIN is available for government officials that are in charge of the data collection efforts to measure the indicators in their national context. The course is self-paced using informative texts, videos, voice-overs, case studies and quizzes. It contains the following topics:

- Introduction to SITCIN: background, rationale, and purpose.
- Description of the three pillars of SITCIN (economic, social and environmental) and the thematic clusters covered by each pillar.
- Introduction to the functionalities of the platform and the users.
- A step-by-step user guide to fill out the indicators assessment.

The course is currently available in English, French and Russian and translation in other languages may follow.

Figure 7. SITCIN eLearning course

The figure illustrates the SITCIN eLearning course interface across multiple devices. A hand holds a tablet showing the course menu with options: 'Sustainable Inland Transport Connectivity Indicators', 'Start the SITCIN assessment', and 'SITCIN visualization / evaluation and comparison tool'. A laptop displays the course content, including a lesson overview for 'The SITCIN User platform' and a diagram of the three pillars (EC, SO, EV) connected to icons of a truck, train, and ship. A smartphone displays a congratulatory message: 'Well done, you have completed your e-learning course!' with the UNECE logo and a circular graphic of the Sustainable Development Goals.



4. NATIONAL CONNECTIVITY REPORTS OF PILOT COUNTRIES

This chapter provides a summary of the NCRs of the five official pilot countries. In addition, the NCRs of Lebanon and the State of Palestine will also be included, as the indicators, upon the initiative of ESCWA, have also been tested there.

The NCRs do not take into account the weighting of geographical and financial limitations of the pilot countries (see section 3.4.1 D) as the reports were finalized before this weighting method was developed. In fact, the idea to normalize the scoring by taking into account geographical and financial limitations of the assessed countries is one of the lessons learned from the pilot phase.

A national connectivity report contains general information on the country's transport system and its performance in international trade based on international indexes (including LPI and EoDB), SWOT analysis and the country's SITCIN scores for six aspects:

1. **Border-crossing facilitation**, which covers the following thematic clusters under the Economic pillar: efficiency, time required at borders, cost, operations and ICT and intelligent transport system solutions.
2. **Transport infrastructure**, which covers the Infrastructure thematic cluster under the Economic pillar and Traffic Infrastructure under the Social pillar. It measures the availability, quality and safety of transport infrastructure in the country.
3. **Safety and security**, which covers the following thematic clusters under the Social pillar: road traffic rules/behaviour, vehicle regulations, IWW traffic rules and vessels regulations. It measures the extent to which safety and security of international transport in the country are maintained. The safety and security aspect relates to traffic rules and behaviour, and as such does not apply to rail. Therefore, there is no indicator assigned to rail under this aspect.

4. **Transport of perishable foodstuffs and dangerous goods**, which covers the perishable foodstuffs transport and dangerous goods transport thematic clusters under the Social pillar. It measures the extent to which safety of transporting perishable foodstuffs and dangerous goods is maintained.
5. **Intermodality**, which refers to the Intermodality thematic cluster under the Economic pillar. It measures the modal share of freight transport and share of multimodal/intermodal/combined cargo.
6. **Environment and energy**, which refers to the Environmental pillar. It assesses the extent to which a sustainable vehicle fleet is being deployed and the extent to which emission-reduction measures are applied.

The NCRs conclude with policy recommendations for governments, intergovernmental organizations, private sectors, and non-governmental organizations. The recommendations are grouped into various aspects such as: transport policy; facilitation, procedures and institutions; infrastructure; and environment and sustainable energy.



Documentary control of a truck by the Revenue Service of Georgia at a road BCP between Georgia and Armenia

4.1 Georgia

Located in the Caucasus region, on the coast of the Black Sea, Georgia is geographically well positioned as a gateway between Europe and Asia. It is strategically situated for easy access to most major European, Central Asian and Middle Eastern markets. Several international transport corridors are passing through the country, including TRACECA and CAREC.

In the Georgian NCR, only road and rail transport are considered as IWW is not developed in the country. As such, only 175 out of the 215 indicators have been assessed in Georgia.

4.1.1 SITCIN score of Georgia

Table 12 summarizes the performance of Georgia in each of the six assessment clusters. The country got the maximum score on rail transport of perishable foodstuffs and dangerous goods (30 out of 30 points). The environment and energy aspect has the lowest score, in which the total progress for road and rail transport is only 17.2 per cent.

The country overall score is 1013 points out of total 1468 points (see Table 13). The last column shows the country's connectivity index for each aspect and each applicable transport mode. This index refers to the country's progress in achieving and in keeping up with international standards and requirements to improve its transport connectivity. After the normalization process, the country's index is 69.6 per cent, which represents the progress of Georgia to be fully connected with global trade and ultimately to achieve the SDGs.

Figure 8. International transport network of Georgia



Table 12. SITCIN Score of Georgia

Aspects of assessment	Maximum score (points)	Score (points)	Percentage
Border-crossing facilitation	478	459	79.4
Road	340	268	78.8
Rail	236	191	80.3
Transport infrastructure	190	153	79.4
Road	120	85	70.8
Rail	70	68	97.1
Safety and security	160	127	79.4
Road	160	127	79.4
Transport of perishable foodstuffs & dangerous goods	280	210	75.0
Road	250	180	72.0
Rail	30	30	100.0
Intermodality	80	43	53.8
Road	40	16	40.0
Rail	40	27	67.5
Environment and energy	180	31	17.2
Road	130	27	20.8
Rail	50	4	8.0

Table 13. Weighted score of Georgia

Mode	Maximum score (points)	Score (points)	Progress (percentage)	Weighted maximum score (points)	Weighted score (points)	Weighted progress (percentage)
Road	1 040	693	66.6	437	291	67
Rail	428	320	74.8	248	186	75
Total	1 468	1 013	69.01	685	477	69.6

4.1.2 Transport connectivity of Georgia

Georgia performs well in facilitating cross border transport through, for example, the application of electronic data exchange, free-of-charge customs clearance service for export and transit containers, and visa-free access for drivers from main trade partner countries. The key challenge is to ensure the same service quality and simplified border-crossing procedures put in place by the relevant authorities in adjoining countries adjoining countries. Coordination and delegation of important issues with Azerbaijan and Armenia need to be improved.

Road infrastructure scores well on many of the indicators such as ratio of international roads, length of dual carriageway and IRI rating. Room for improvement can be seen on the number of international roads with design speed of at least 100 km/h, the provision of service facilities along international roads and on tunnel management systems.

Georgia's rail transport infrastructure mostly satisfies the international standards mainly because the country participates in various international corridors. However, challenges remain in relation to aged rolling stocks, low commercial speed and unsecured siding at rail BCPs and international rail lines.

Even though Georgian law adheres to global intermodal transport agreement, the share of multimodal, intermodal and combined cargo transported by road transport remains low, at around 21 per cent. A low share is also seen in containerized cargo transportation. Among all of the assessment aspects, the lowest performance is shown in the area of Environment and Energy owing to the high age of vehicles, low stringency level of national vehicle emission legislation and low number of alternative fuel road vehicles.

Box 2. Main policy recommendations for Georgian stakeholders

National Government

- Negotiate with border crossing authorities of the neighbouring countries to expand customs clearance working hours at adjoining BCPs.
- The Ministry of Environmental Protection and Agriculture should review national legislation and assess its harmonization with the requirements of the Agreement on the International Carriage of Perishable Foodstuffs and on the Special Equipment to be Used for such Carriage.
- The Ministry of Environmental Protection and Agriculture should finalize the national vehicle emission legislation/standards concerning the minimum emissions for new vehicles.
- The Roads Department should ensure the application of tunnel categorization based on the internationally agreed rules.
- The Revenue Service should continue its negotiations with adjoining border-crossing authorities to establish bilateral one-stop technology at adjoining BCPs and improve the coordination and delegation mechanisms. It should also continue to modernize the equipment and increase staff resources at secondary BCPs to address queuing issues.
- Georgian Railway should finalize the separation of railway undertakings and complete legislative changes to ensure open access of private operators to the country's national railway network. It should also plan to apply a moving block signalling system on most of the international railway network.

Intergovernmental organizations

- Facilitate transport connectivity improvement between the Caucasus and Central Asian countries by establishing common platforms to create opportunities for private companies to ship their containers to Central Asian countries, to minimize risk of empty returns, artificial delays and extra charges
- The European Union Agency for Railways (ERA) should support the integration process of the Georgian Railway into the Pan-European railway network, including technical and legislative harmonization.
- Continue active contribution towards peacekeeping in the region to maintain the security of international routes.
- UNECE should ensure periodic evaluation of the connectivity indicators and support effective cooperation among Member States.

Private sector

- Equip companies' vehicles with track and trace devices to improve the efficiency of truck management system.
- Green the fleet by replacing aged vehicles with alternative fuelled vehicles.

Non-governmental organizations

- Participate actively in developing transport policies, legislations, and regulations.
- Regularly conduct road safety research and improve public awareness on road safety.

4.2 Jordan

Although not landlocked, Jordan was invited to be part of the project due to its role as a bridging country between the eastern Mediterranean and Europe on one side and the Gulf countries on the other.

Although the international rail transport of Jordan stopped operating in 2018, the NCR of Jordan includes this mode in order to encourage the development of rail transport and to measure its progress. For rail indicators, only those relevant for Jordan are assessed.

Jordan also does not have inland water ways. However, during the fact-finding mission, the project team and national stakeholders decided to assess the maritime

transport of Jordan due to the importance of the Port of Aqaba. Jordan’s only seaport, it serves as the main trade gateway for containers and bulk shipments that enter and leave the country. Therefore, the assessment under the IWW mode concerns the port of Aqaba and the movement of goods through it (see chapter 3.2). Only IWW indicators relating to maritime transport were assessed.

The road sector plays a major role as the main transportation mode for trade flows in Jordan. Road directly accounts for 20 per cent of international trade (through land borders) in addition to the transport of goods (including all dry cargo) to and from the port of Aqaba.

Figure 9. Main road corridors in Jordan



Source: Jordan Highway Master Plan (2011)

4.2.1 SITCIN score of Jordan

Compared with Georgia, the maximum scores that Jordan can gain for most of the assessment aspects are lower, especially for rail and IWW. The NCR only assesses the indicators under rail and IWW that are applicable to the Jordanian situation. For border-crossing facilitation, for instance, the maximum score for rail is only 30 points, whereas Georgia has 238 points.

As shown in Table 14, the inland water transport of Jordan performs best in most aspects, having reached the maximum possible score (100 per cent).

The SITCIN overall score of Jordan is 635 out of the possible maximum score of 1396 points. After the normalization process, the country's index is 53.2 per cent as shown in Table 15.

Table 14. SITCIN Score of Jordan

Aspects of assessment	Maximum score (points)	Score (points)	Percentage
Border-crossing facilitation	456	124	27
Road	340	52	15
Rail	30	0	0
IWW	86	72	84
Transport infrastructure	200	107	54
Road	110	83	75
Rail	70	4	6
IWW	20	20	100
Safety and security	200	154	77
Road	160	114	71
IWW	40	40	100
Transport of perishable foodstuffs & dangerous goods	320	168	53
Road	250	108	43
Rail	10	10	100
IWW	60	50	83
Intermodality	60	38	63
Road	40	25	63
Rail	10	6	60
IWW	10	7	70
Environment and energy	160	24	28
Road	120	24	20
Rail	20	0	0
IWW	20	20	100

Table 15. Weighted Score of Jordan

Mode	Maximum score (points)	Score (points)	Progress (percentage)	Weighted maximum score (points)	Weighted score (points)	Weighted progress (percentage)
Road	1 020	406	39.8	388	154	40
Rail	140	20	14.3	0	0	0
IWW	236	209	88.6	146	130	89
Total	1 396	635	45.5	534	284	53.2

4.2.2 Transport connectivity of Jordan

In Jordan, there is a high political commitment to border-crossing facilitation, coupled with a set of political declarations, laws and agreements/treaties for bilateral cooperation. Well-trained, experienced staff are available around the clock, seven days a week, at all road BCPs and inland clearance stations. Customs, security and all other related authorities at all BCPs are well coordinated. Although application of fleet management and the Electronic Toll Collection (ETC) system are not in place, Jordan has implemented technologies such as electronic tracking and X-ray inspection systems, eCustoms, electronic system of permits and licences, eTIR and the e-Single Window.

Jordan is a party to all international agreements related to maritime security and safety. It has also signed bilateral agreements in maritime transport with all countries in the region. Despite its importance, the maritime

transport sector receives limited financial support from the Government. Another challenge faced by Jordan is political tensions in the surrounding countries. In terms of transport infrastructure, all roads, including those at the BCPs, along with traffic-control devices are developed in accordance with the international standards. However, Jordan's transport infrastructure suffers from a discouraging regulatory and legislative framework for investors.

Regarding transport of perishable foodstuffs and dangerous goods, Jordan has done well in harmonizing its legislations with the ATP and ADR requirements. The national noise and vehicle emission legislation also complies with international standards and agreements. However, there is a lack of monitoring of these regulations. The truck fleet is old and has a significant impact on the environment, especially causing urban noise and air pollution.

Figure 10. Port of Aqaba



Box 3. Main policy recommendations for Jordanian stakeholders

National Government

- Develop and prepare a national strategy for transport of dangerous goods to promote advanced safety of transport, traffic and the environment together with the functionality of logistics chains.
- Review national legislation relating to perishable foodstuffs to ensure its compliance with international standards and regulations.
- Establish a coherent legislative framework for regulation of intermodal transport with the involvement of all stakeholders from the logistics chain with the aim of identifying all bottlenecks, challenges and future trends.
- Make the decision regarding the national railway project as early as possible in order to secure the necessary funding to enable railway to play its role in both freight and passenger transport.
- Fully implement the recent National Window for Trade project as initiated by the Jordan Customs Department.
- Strictly control truck drivers' rest periods and the technical conditions of the vehicles.
- Implement fleet renewal programmes through a variety of public policy tools such as buyback programmes (compiled in a booklet available for the public).
- Carry out a periodic evaluation of SITCIN and ensure effective cooperation between neighbouring countries to facilitate more effective interoperability in the inland transport system in the region.

Intergovernmental organizations

- All parties concerned should actively cooperate to provide the necessary trainings and education courses, particularly in relation to the transport of perishable food and dangerous goods.
- UNECE and ESCWA should support the government in the periodic evaluation of SITCIN.

Private sector

- Together with the government, become actively involved in accessing regional and international funding to ensure continuous growth of the transport sector.

Non-governmental organizations

- Develop reliable, frequent and publicly available transport data sources.



4.3 Kazakhstan

Kazakhstan is located at the heart of the Eurasian continent. With a territory of 2,724,900 km², it is the ninth largest country in the world. Kazakhstan borders with China, Kyrgyzstan, Turkmenistan, Uzbekistan and the Russian Federation. The total length of the borders is 12,187 km. Various international road and rail corridors pass through the country, with a total length of 8,300 km and 21,000 km respectively.

4.3.1 SITCIN score of Kazakhstan

Kazakhstan is performing relatively well in most of the six assessment aspects, especially for the aspects of Safety and Security, and Transport of Perishable Foodstuffs and Dangerous Goods, as shown in Table 16.

The highest score of the former aspect is mainly a result of the complete harmonization of national legislation with international standards regarding road signs, signals and markings.

The same applies to the latter aspect, where the national legislation of Kazakhstan with regard to transport of perishable foodstuffs and dangerous goods has been harmonized with the ATP and ADR.

The Environment and Energy aspect has the lowest score mainly due to the high share of road transport and the high average age of motor vehicles.

Figure 11. Main international road corridors in Kazakhstan



Source: Road Committee of Ministry of Industry and Infrastructure Development of the Republic of Kazakhstan (collected during the development of the national connectivity report in 2020).

Table 16. SITCIN score of Kazakhstan

Aspects of assessment	Maximum score (points)	Score (points)	Percentage
Border-crossing facilitation	672	455	67.7
Road	340	248	72.9
Rail	236	126	53.4
IWW	96	81	84.4
Transport infrastructure	220	155	70.5
Road	120	98	81.7
Rail	70	40	57.1
IWW	30	17	56.7
Safety and security	220	208	90.0
Road	160	148	92.5
IWW	60	60	100
Transport of perishable foodstuffs & dangerous goods	310	297	84.8
Road	210	197	93.8
Rail	30	30	100
IWW	70	70	100
Intermodality	100	62	62
Road	40	40	100
Rail	40	8	20
IWW	20	14	70
Environment and energy	220	107	48.6
Road	130	67	51.5
Rail	50	21	42
IWW	40	19	47.5

Table 17. Weighted score of Kazakhstan

Mode	Maximum score (points)	Score (points)	Progress (percentage)	Weighted maximum score (points)	Weighted score (points)	Weighted progress (percentage)
Road	1 000	798	79.8	250	200	80
Rail	426	225	52.8	149	79	53
IWW	316	216	68.4	126	86	68
Total	1 742	1 239	71.13	526	365	69.4

The SITCIN overall score of Kazakhstan is 1239 out of the possible maximum score of 1742 points. After the normalization, the country's index is 69.4 per cent as shown in Table 17.

4.3.2 Transport connectivity of Kazakhstan

Kazakhstan is performing especially well in the road transport sector. The country has a high proportion of international roads with a design speed of at least 100 km/h. The BCP infrastructure is well developed to ensure the rapid passage of vehicles. It is characterized by the presence of parking space, dedicated lanes for trucks carrying live animals and perishable food products, and separation of vehicles based on customs transit documents. Road classes at BCPs are also harmonized with those of the neighbouring countries. Compared with road and rail, inland waterway transport represents a much lower share in volume.

The NCR reveals that there is room for improvement in terms of border crossing facilitation, particularly to address the absence of round-the-clock operation of BCPs and of joint control facilities with the neighbouring countries. For rail transport, the provision of railway BCPs with safe overtaking tracks needs to be considered.

Box 4. Main policy recommendations for Kazakh stakeholders

National Government

- Determine clear and simple tariff rates for customs clearance.
- Carrying out joint customs controls with neighbouring countries to significantly reduce border processing time.
- Modernize locomotive, wagon and container fleets in the railway industry.
- Consideration of the possibility of restoring the river transport industry.
- Supplementing regulatory legal acts of the Republic of Kazakhstan with provisions for checking, listing and organizing the transportation of perishable goods and goods requiring a special temperature regime during transportation, storage and transshipment.
- Consider introducing service quality questionnaires in the region through which transit corridors run. (These questionnaires can be offered by representatives of State authorities to international road carriers when entering the territory and collected from the drivers upon leaving the country. The questionnaires are to be filled by drivers on a voluntary and anonymous basis to gather drivers' observations regarding travel conditions along transport corridors.)

Intergovernmental organizations

- Develop a common format of the technical, operational and commercial characteristics of national and transit corridors and routes passing through the territories of the countries of the participants, and identify those responsible for providing the necessary information and publish the data.
- Take measures to remove non-physical barriers through collaboration with the relevant government bodies and business communities in the Eurasian Economic Commission, which has so far successfully coordinated this work.

Private sector and non-governmental organizations

- Promote collaboration among institutions involved in the transportation of goods, and on the intensification of their activities in order to determine the list of necessary measures, along with the implementation plan, to improve the quality and efficiency of the transport system.

4.4 Paraguay

Paraguay is one of the two LLDCs in South America. It is currently carrying out the Bioceanic corridor, which will connect the most important seaports of the Pacific and Atlantic Ocean. The corridor will have high strategic value for Paraguay because it will turn the western region into an international logistics centre that has the shortest route between ports in Chile and Brazil. At time of writing, the Bioceanic corridor already has 106 kilometres of paved and signposted roads out of the total of 277 km planned.³

As rail infrastructure in Paraguay is not used for cargo transport, this mode is not included in the SITCIN assessment. On the other hand, the inland waterways of Paraguay are of strategic importance. The most important rivers are the Paraguay River (length 1260 km) and the Parana River (length 850 km) because of their flow, extension and navigability. IMWW is the most widely used mode, transporting 80 per cent of the movement of cargo for exports and 63 per cent of the movement of cargo for imports.

Figure 12. Paraná Paraguay waterway system



Source: Diálogo Chino (2020).

3 <https://www.ip.gov.py/ip/corredor-bioceanico-avanza-con-la-ejecucion-del-505-en-todos-sus-subtramos/>

4.4.1 SITCIN score of Paraguay

The NCR of Paraguay only assesses the performance of the country's road and inland water transport system. Paraguay scores the highest in the aspect of transport of perishable foodstuffs and dangerous goods, especially for inland water transport, which has the maximum score (70 out of 70 points). Similar to Georgia and Kazakhstan, Paraguay scores the lowest for the environment and energy aspect.

The SITCIN overall score of Paraguay is 870 out of the possible maximum score of 1366 points. After the normalization, the country's progress is 65.2 per cent as shown in Table 19.

Table 18. SITCIN score of Paraguay

Aspects of assessment	Maximum score (points)	Score (points)	Percentage
Border-crossing facilitation	476	278	58
Road	340	175	51
IWW	136	103	76
Transport infrastructure	130	100	77
Road	100	77	77
IWW	30	23	77
Safety and security	220	134	61
Road	160	91	57
IWW	60	43	72
Transport of perishable foodstuffs & dangerous goods	300	259	86
Road	230	189	82
IWW	70	70	100
Intermodality	320	168	53
Road	40	27	68
IWW	20	11	55
Environment and energy	180	61	34
Road	130	40	31
IWW	50	21	42

Table 19. Weighted score of Paraguay

Mode	Maximum score (points)	Score (points)	Progress (percentage)	Weighted maximum score (points)	Weighted score (points)	Weighted progress (percentage)
Road	1 000	599	60	380	228	60
IWW	366	271	74	227	168	74
Total	1 366	870	64	607	396	65.2

4.4.2 Transport connectivity of Paraguay

Paraguay scores the highest in transport of perishable foodstuffs and dangerous goods because it has put in place provisions for the transport of meat products (although this is not always the case with other perishable foodstuffs). Moreover there is a solid national framework pertaining to general provisions for the transport of dangerous goods and the training of the personnel involved. This framework derives from the Sectoral Agreement for Transport of Dangerous Goods in MERCOSUR.

Paraguay has been putting efforts into facilitating cross-border transport such as through establishing joint control areas with neighbouring countries, e-solutions for customs and border procedures, and temporary importation mechanisms. The NCR indicates that there is room for improvement, particularly to address the absence of round-the-clock operation of BCPs and of fast lanes and fast-track treatment for perishable foodstuffs.

As shown in Table 19, the score of road is lower than for IWW. This can be explained by the fact that the condition of the national road networks in the country is deteriorating as a result of insufficient maintenance.

The entire IWW network of Paraguay is covered by at least one River Information System technological solution, and a solid national framework is in place concerning navigations rules. However, more investment is needed to guarantee navigation throughout the year and to exploit other navigable rivers whose potential is currently overlooked.

The low score of the environment and energy aspect is mainly due to the high age of road transport fleets. Paraguay has no regulations regarding emission of greenhouse gases and vehicle taxation is not determined based on the emissions.

Based on the findings above, the NCR of Paraguay came up with policy recommendations for various stakeholders as outlined in Box 5.

Box 5. Main policy recommendations for Paraguayan Stakeholders

National Government

- Implement fast lanes/fast track treatment for trucks carrying live animals and perishable foodstuffs.
- Integrate information systems to reduce repetitive checks at BCPs (e.g. weighting and scanning).
- Consider extending BCP working hours to facilitate and expedite movement of goods.
- Take steps to implement the recognition of driving permit based on the UN Conventions on Road Traffic and the Harmonization Convention.
- Consider recording and publishing data on the number of road traffic violations.
- Consider the transport conditions for dangerous goods and considerations on intermodal transport in the ongoing plans to develop rail infrastructure.
- Consider holding roundtable meetings with public and private ports to address the issue concerning the connection of ports and main roads and to agree common actions.
- Consider including data concerning the number of alternative fuel vessels, passenger cars, buses and trucks in the greenhouse gas inventory report.

Intergovernmental organizations

- Take into account the UN Agreement on Vehicle Regulations (<https://unece.org/fr/node/3492>) for new vehicles to update MERCOSUR's provision 75/97 on technical inspections.

Private sector

- Assess the ability to equip the current road transport vehicle fleet with tachographs. Propose actions to fairly distribute costs and benefits taking into consideration the context and characteristics of the cargo transport business.
- Collaborate with the Climate Change National Directorate to develop plans concerning the impact of climate change on transport infrastructure.

4.5 Serbia

Serbia is a landlocked country located at the crossroads of Central and Southeast Europe. It borders Hungary to the north; Romania and Bulgaria to the east; North Macedonia and Albania to the south; and Croatia, Bosnia and Herzegovina, and Montenegro to the west. The crossroads position of the country increases its potential for transit traffic.

In terms of transport network, various major road, rail and IWW corridors are passing through the country, such as the rail Pan European Corridor X and the inland waterway Rhine-Danube Corridor, which is one of nine European corridors on the TEN-T network.⁴

4.5.1 SITCIN score of Serbia

Besides the BCPs visited during the fact-finding missions (see Table 3), the Serbian national consultant team also visited Preševo at the North Macedonian border and Gostun at the border of Montenegro. Regarding Railway BCPs, additional visits were conducted to the Prijepolje railway station to assess passenger transport and to Vrbnica to assess the waiting time of passenger trains. In total, there are 18 BCPs at seven borders visited and assessed as indicated in Figure 13.

The SITCIN scores of Serbia for each of the six assessment aspects are indicated in Table 20. The best result is achieved in the aspects of Safety and Security and Transport of Perishable Foodstuffs and Dangerous Goods. The former is mainly due to the decreasing trend of road accidents, while the latter is achieved as a result of the harmonization of the national laws with the ADR, RID and ADN provisions. As with the other pilot countries, Serbia scores the lowest in the Environment and Energy aspect due to the high average fleet age across all transport modes along with the absence of alternative fuels.

4 The TEN-T programme consists of hundreds of projects – defined as studies or works – whose ultimate purpose is to ensure the cohesion, interconnection and interoperability of the trans-European transport network, as well as access to it (<https://ec.europa.eu/inea/en/ten-t/ten-t-projects>).

Figure 13. BCPs in Serbia



Source: Customs Administration of the Republic of Serbia (2019)



Table 20. SITCIN score of Serbia

Aspects of assessment	Maximum score (points)	Score (points)	Percentage
Border-crossing facilitation	712	516	72
Road	340	231	68
Rail	236	173	73
IWW	136	112	82
Transport infrastructure	220	151	69
Road	120	94	78
Rail	70	29	41
IWW	30	28	93
Safety and security	220	200	91
Road	160	144	90
IWW	60	56	93
Transport of perishable foodstuffs & dangerous goods	350	323	92
Road	250	230	92
Rail	30	30	100
IWW	70	63	90
Intermodality	100	31	31
Road	40	12	30
Rail	40	8	20
IWW	20	11	55
Environment and energy	220	54	25
Road	130	38	29
Rail	50	4	8
IWW	40	12	30

Table 21. Weighted score of Serbia

Mode	Maximum score (points)	Score (points)	Progress (percentage)	Weighted maximum score (points)	Weighted score (points)	Weighted progress (percentage)
Road	1 040	749	72.0	260	187	72
Rail	426	244	57.3	150	85	57
IWW	356	282	79.2	142	113	79
Total	1 822	1275	69.9	552	385	69.8

The SITCIN overall score of Serbia is 1275 out of the possible maximum score of 1822 points. After the normalization, the country's progress is 69.8 per cent as shown in Table 21.

4.5.2 Transport connectivity of Serbia

Serbia has a very well-developed network of roads with satisfactory quality, and a good IWW network with good capacity inland ports. However, railway infrastructure is in poor condition with low operation speed. In terms of intermodal transport, currently there is no fully developed intermodal terminal in Serbia.

The country performs relatively well in facilitating cross-border transport. It is a signatory to all relevant international agreements in the transport sector. It also

has the lowest customs clearance cost for different types of cargo. The NCR reveals that the efficiency of BCPs needs to be improved in terms of simplifying border procedures, better coordination and delegation of controls among national border agencies and between agencies of different countries as well as in terms of implementing interconnected e-solutions.

The NCR of Serbia came up with policy recommendations for various stakeholders as outlined in Box 6.

Box 6. Main policy recommendations for Serbian stakeholders

National Government

- Develop a national multimodal transport strategy, including transport of dangerous goods, that provides a clear and coherent policy framework for the transport sector for the next decade.
- Establish a coherent legislative framework for regulating intermodal transport, involving all stakeholders in the logistics chain.
- Increase the capacity and capability of human resources in line ministries and sectorial agencies that prepare, implement and supervise transport infrastructure projects.
- Build capacity in sectorial agencies, state-owned enterprises and private companies in terms of use of software applications and electronic documents aimed to gradually eliminate paper documents.
- Improve availability and visibility of transport data and statistics.
- Improve border procedures by implementation of a Single Window system (single interface) and digitalization of paper documents.
- Implement, in cooperation with neighbouring countries, an integrated border management concept based on the relevant international legal instruments.
- Develop and apply a light-duty vehicles test procedure for determining pollutant levels, CO₂ emissions and fuel consumption of road vehicles, along with taxation to promote environmentally friendly vehicles.

Intergovernmental organizations

- Support joint regional transport and border-crossing facilitation and connectivity projects to increase border-crossing efficiency.
- (UNECE) Support establishing the SITCIN self-assessment as regular practice in the country, through capacity-building activities.
- Cooperate with governments and the private sector to promote awareness on the benefits of alternative fuelled vehicles and to develop standards related to climate resilient transport infrastructure.

Private sector and non-governmental organizations

- Become actively involved in the social aspects of the transport system such as transport safety and security, and environment and energy aspects.
- Collaborate with government officials and international organizations to provide necessary trainings for transport stakeholders.
- Become actively involved in implementing SITCIN so as to better understand the benefits of this self-assessment tool and to incorporate it in regular decision-making process in the transport sector.

4.6 Lebanon

Lebanon plays a role as a transit country and its liberal trade regime allows it to serve as an entry point to the regional market. Lebanese exports typically go to neighbouring countries in the Middle East overland, transiting through the Syrian Arab Republic. The most important export destinations are the United Arab Emirates, Saudi Arabia, Jordan, Iraq, Iran (Islamic Republic of), Kuwait, Oman, Qatar, Bahrain and Türkiye.

Lebanon's main and only inland transport mode providing it with access to the rest of the region is

road. Lebanon shares borders with Israel, the State of Palestine and the Syrian Arab Republic. However, due to the unstable political conditions in the region, the only active border for trade is with the Syrian Arab Republic. Lebanon has a total of three official crossing points on the border with Syria, through which more than 20 per cent of total exports and about 6 per cent of total imports are transported, mainly to and from the Arab markets.

Lebanon also has two large seaports (Beirut and Tripoli) on the Mediterranean Sea that are gateways for goods coming in maritime containers, cargo shipments and other containerized goods entering and leaving the country.

Figure 14. BCPs in Lebanon



Table 22. SITCIN score of Lebanon (only road transport applicable)

Aspects of assessment	Maximum score (points)	Score (points)	Percentage
Border-crossing facilitation	340	187.5	55.1
Transport infrastructure	70	51	72.9
Safety and security	180	97	53.9
Transport of perishable foodstuffs & dangerous goods	220	137	62.3
Intermodality	40	18	45.0
Environment and energy	130	31	23.8
Total	980	521.5	53.2
Weighted score and progress	980	521.5	53.2

4.6.1 SITCIN score of Lebanon

The NCR of Lebanon only assesses road transport as the only inland transport mode applicable in the country. The assessment was done using the available information and through exchanges with the authorities, regulatory agencies and operators.

The SITCIN scores of Lebanon for each of the six assessment aspects are indicated in Table 22. The best result is achieved in relation to the aspects of Safety and Security and Transport Infrastructure. As with the other pilot countries, Lebanon scores the lowest in the Environment and Energy aspect, which reveals that Lebanon has not yet introduced the necessary measures to reduce the environmental impact and high energy consumption of its transport system.

The SITCIN overall score of Lebanon is 521.5 out of the possible maximum score of 980 points. After the normalization, the score remains the same as there is only one transport mode applicable, as such there is no mode weighting process. The country's progress is therefore 53.2 per cent.

4.6.2 Transport connectivity of Lebanon

In general, except for the environment and energy indicators, the SITCIN of Lebanon are deemed acceptable. However, many measures and steps remain to be taken in order to improve inland transport connectivity and efficiency. A SWOT analysis was performed on Lebanon's three border crossings with the Syrian Arab Republic.

The following observations were formulated and recommendations for improvement proposed:

a. Security and oversight

The multiplicity of security agencies operating at border crossings does not stimulate the development of services in support of international transport. Notwithstanding each party's competence, this multiplicity generates additional burdens without real added value. Coordination between Lebanese and Syrian authorities is also changeable, oscillating between the level of political relations and the whims of security officials and/or politicians. It would be useful to develop an effective mechanism that preserves the national security of the countries concerned and safety of their citizens, while improving the transport sector's performance by facilitating procedures, reducing travel time and upgrading verification and inspection procedures.

b. Organization

Controls and audits generate time waste that undermines the efficiency of international transport sector, which is detrimental to the economy in general, especially since trucking is the only method currently available to connect Lebanon with the eastern and Arab region. Despite the currently acceptable level of coordination between Lebanese and Syrian agencies, it still does not provide the highest protection and reliability. There is a need for regulatory improvement at the national level in both countries and in bilateral relations. A common database, audit tools approved by both parties, and new traceability technologies should be implemented to facilitate smooth clearance and inspection operations.

c. Institution and administration

Appropriate laws are in place for traffic safety and environmental conservation, but vehicles quality and age remain a significant problem. Therefore, executive procedures must be issued for the existing laws, implementation control should be tightened, budgets have to be set, and human resources need to be improved to keep pace with good implementation. Laws also need to be put in place to control vehicle quality and age.

d. Capacity building

In parallel with implementing the recommendations, it is necessary to build the capacities of officials, technicians, and administrators in all regulatory and security agencies.

Through the implementation of the aforementioned recommendations, it will be possible to develop, adopt and implement a Single Window System that could be applied at all BCPs.



4.7 The State of Palestine

Road transport is currently the only viable transportation mode in the State of Palestine. The Palestinian reality is unique. There are two parts of the State of Palestine, the West Bank and the Gaza Strip. Within the West Bank, the lands are politically classified into areas under Palestinian administrative control and areas under Israeli control. Within the territories controlled by the Palestinian National Authority (PNA), there is a border-crossing point with Jordan (King Hussein Bridge) and from there to the rest of the Arab and neighbouring countries; and a border-crossing point with Egypt (the Rafah crossing). There are several other crossing points with Israel that are not considered as Palestinian border crossings. These are used to cross goods from both directions for import and export through ports under the control of Israel, and Israeli procedures are applied to them. These are also subject to Israeli closures, restrictions and control procedures.

Regarding the Rafah border crossing between Gaza and Egypt, operations for commercial and passenger transport are irregular and irregular and subject to continuous closures from the Egyptian side and for varying periods of time, due to the political situation. Border-crossing performance is not included in the SITCIN evaluation for the State of Palestine.

Total Palestinian imports amounted to \$6,613.5 million in 2019, an increase of 1.1 per cent over 2018; while 2019 exports decreased by 4.5 per cent over 2018 to \$1,103.8 million. In total, 71,125 trucks crossed the King Hussein Bridge BCP in 2019, compared with 55,857 in 2018. In 2020, this number decreased to 57,144 mainly due to the COVID-19 pandemic. Imports and exports form 79.6 per cent of the Palestinian GDP. The economy is primarily a wholesale and retail economy (21.3 per cent of GDP in 2019), with services coming in second place (19.6 per cent). The transportation sector plays a minor role, accounting for just 1.7 per cent of GDP.

4.7.1 SITCIN score of the State of Palestine

Out of 121 road indicators, 117 apply to the Palestinian situation. Out of the possible maximum score of 980, State of Palestine gained 401 points. After the normalization, the score remains the same as there is only one transport mode applicable; and as such there is no mode weighting process. The country's progress is therefore 40.9 per cent. This is low but expected due to the political situation.

Relatively high scores (above 50 per cent) are achieved in the aspects of transport infrastructure and safety and security. Similar to the other countries, the environment and energy aspect has the lowest score.

Table 23. SITCIN score of State of Palestine (only road transport applicable)

Aspects of assessment	Maximum score (points)	Score (points)	Percentage
Border-crossing facilitation	300	82	27.3
Transport infrastructure	100	54	54.0
Safety and security	160	111	69.4
Transport of perishable foodstuffs & dangerous goods	250	120	48.0
Intermodality	40	16	40.0
Environment and energy	130	18	13.8
Total	980	401	40.9
Weighted score and progress	980	401	40.9

4.7.2 Transport connectivity of State of Palestine

Cargo and passenger border crossing movements are mainly subject to Israeli procedures and Palestinians have limited control over it. This instability results in low predictability of travel time and disruption of commercial movement, which can cause damage to the goods. Although the State of Palestine has joined many international trade agreements related to cross-border facilitation, as Israel is also a member of many of these agreements, many of them are not activated by the Israeli side, and the crossings are currently open only for certain hours per day. Furthermore, the Israeli authorities only allow entry to Israeli drivers.

In general, Palestinian human resources are sufficient and qualified and there is coordination in the exchange of information at the national and international levels, although efficiency needs to be improved.

Electronic documentation and information exchange are almost absent, which reduces the efficiency of border crossing procedures. The Government is currently negotiating with all relevant parties regarding the use of different technological solutions across the border.

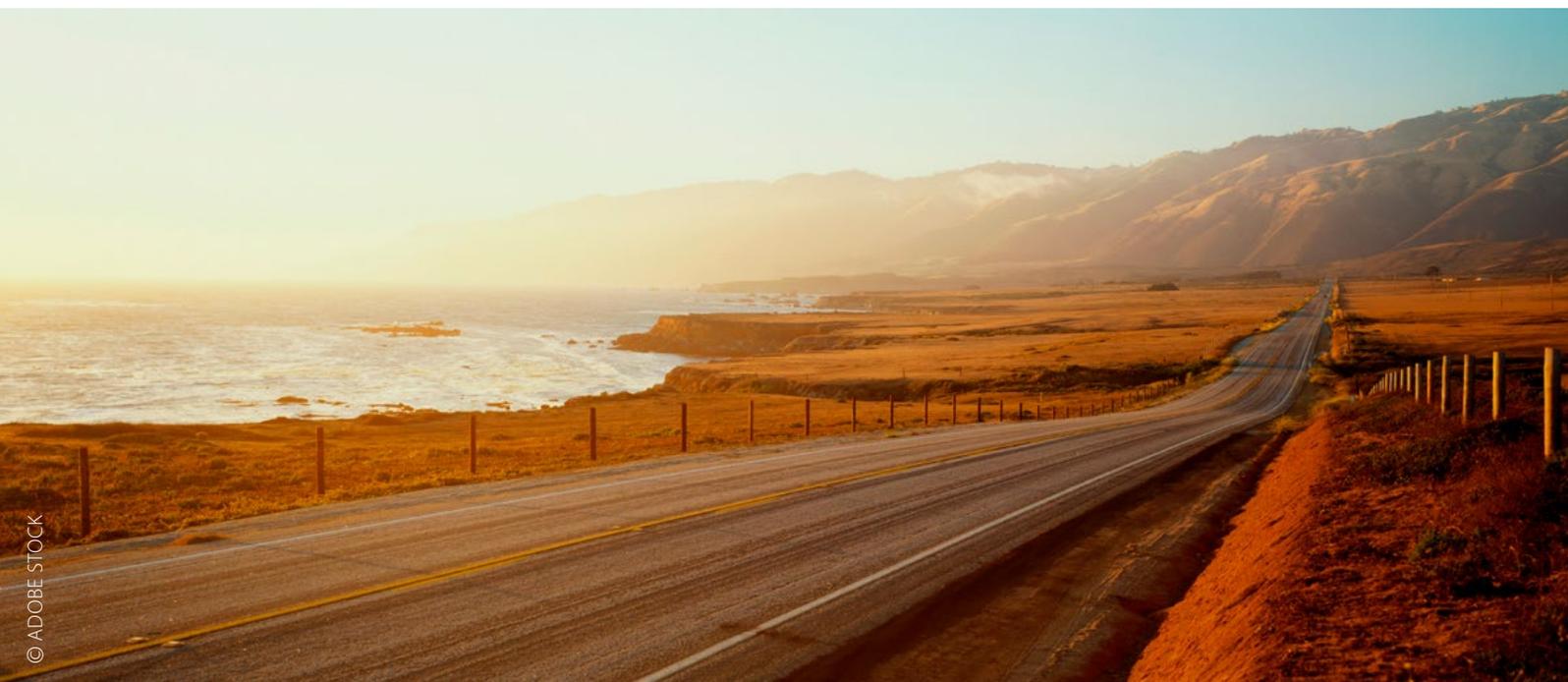
The road network including road border-crossing infrastructure is currently in a fair condition, but will not meet the requirements for developing increased levels of commercial traffic in the future. The logistics facility

in Jericho is under planning; however, its connection to the road network and to the border still requires much negotiation with Israel. The process of collecting data on roads and traffic is generally weak and is not continuous or updated, which hinders proper planning of infrastructure.

Lists of dangerous and perishable foodstuffs, as well as dual-use, are available and enforced. This list is consistent with international provisions, even more stringent. Goods are duly labelled indicating their nature, and the requirements of transport documents for these goods are complied with.

Traffic laws and infrastructures are available, and comply with international standards. The road crash records have recently been computerized; however, they are centrally recorded and not available for the general public. The competent authorities conduct traffic awareness campaigns and seasonal inspection of vehicles on the roads. At the same time, traffic accidents are on the rise, and there is a clear shortage in the traffic police force, and most importantly, a Palestinian National Road Safety Programme is lacking.

The truck fleet is totally diesel-based and the average age of all types of vehicles is high. Although there are laws and legislation that determine the maximum emission rates from vehicles, but these are not effectively monitored.



Box 7. Main policy recommendations for Palestinian stakeholders**National Government**

- Develop and unify the rules and regulations for the transport of goods across all institutions.
- Adopt and develop a one-stop shop system using the available technology to facilitate movement and improve efficiency.
- Secure necessary funding to enable road development to play its role in freight and passenger transport.
- Based on the Comprehensive Road and Transport Master Plan, prepare a framework for regulating multimodal transport.
- Improve traffic safety conditions through the development of a National Road Safety Programme, increasing traffic police staff, enhancing the role of traffic courts, intensifying traffic awareness campaigns and seasonal inspection of vehicles, and developing a policy for the post-accident response system.
- Develop clear policies regarding emissions and vehicle noise, develop a monitoring system, and adopt policies that encourage the use of alternative fuels.
- Implement fleet renewal programmes through a variety of public policy tools and tax incentives.
- Develop systems for the use of technology in all aspects of the transport sector (goods and passengers).
- Continuously provide and update information regarding goods transport operations, procedures, developments, restrictions, etc., and put it at the disposal of the relevant parties.
- Carry out periodic evaluation of SITCIN and ensure effective cooperation between neighbouring countries to facilitate inland transport connectivity.

Intergovernmental organizations

- All concerned parties should actively cooperate to get involved in, as well as provide, necessary training and education in various areas such as transport of perishable food and dangerous goods, transport data collection, vehicle tracking system, and use of simulation models to predict climate risks.
- UNECE to support the Government in periodic evaluation of SITCIN.

Private sector

- Get actively involved, with the Government, in accessing regional and international funding to ensure continuous growth of the transport sector.

Non-governmental organizations

- Develop reliable, frequent, and publicly available transport data sources.
- Support the Government in its environmental programme of monitoring and enforcing vehicle emissions and noise pollution through education, training, and making measuring equipment available to all relevant parties.
- Become actively involved in implementing SITCIN so as to better understand the benefits of this self-assessment tool and to incorporate it in regular decision-making process in the transport sector.



5. FINAL INDICATORS

This chapter presents the final SITCIN, which consists of 215 indicators grouped into three inland transport modes, three pillars of sustainability and 39 thematic clusters.

5.1 Road Transport Connectivity Indicators

In most countries in the world, especially in LLDCs, road is the leading mode of transport for freight and passengers. The road plays a critical role in providing access to and from LLDCs. It is therefore not surprising that more than half of the indicators relate to road transport (121 out of 215). These indicators assess, for example, the performance of road BCPs in ensuring smooth transport across borders, costs involved, provision of road infrastructure and the facilities, a country's compliance with related United Nations conventions and agreements along with the enforcement level, and a country's efforts on greening its road transport sector.



5.1.1 Economic Sustainability (EC)

1-EC-1: EFFICIENCY

1-EC-1.1: Staff resources at road BCPs and inland clearance stations

Definition:

Adequacy of the number of personnel at road BCPs and inland clearance stations to cope with the freight volumes involved.

Staff categories include: customs; border guards/police; Health and Safety Executive; State Veterinary Office; State Plant Health Protection Agency; public health agency, Food and Drug Administration, Service for Foreigners' Affairs, National Revenue Services, Vehicle and Operators Services Agency, and Department of Transport.

Scoring:

- All staff categories available 24/7 at more than 50 per cent of considered BCPs and inland clearance stations: **10 points**
- Some staff categories available 24/7 at more than 50 per cent of considered BCPs and inland clearance stations: **8 points**
- All staff categories available during office hours at more than 50 per cent of considered BCPs and inland clearance stations: **6 points**
- Some staff categories available during office hours at more than 50 per cent of considered BCPs and inland clearance stations: **4 points**
- Staff available only with appointment: **2 points**
- No staff at BCPs and inland clearance stations: **0 points**

1-EC-1: EFFICIENCY (continued)**1-EC-1.2a: BCP infrastructure
(Joint controls facilities)****Definition:**

Availability and opening hours of joint controls facilities at road BCPs open for international goods traffic. It concerns facilities for domestic controls as well as joint controls with adjoining countries. In terms of opening hours, Article 6 of Annex 8 to the Harmonization Convention sets out 24 hours a day as a minimum requirement.

Scoring:

- Facilities for joint bilateral controls with the adjoining country (one-stop technology) are available 24 hours a day: **10 points**
- Facilities for joint domestic controls (one-stop technology/ 2 stop border post) are available 24 hours a day: **8 points**
- Facilities for either joint bilateral controls or domestic controls are available with limited opening hours (e.g. no night, weekend and holidays operation): **6 points**
- No facilities for any type of joint controls: **0 points**

**1-EC-1.2b: BCP infrastructure
(off-lane control areas)****Definition:**

Availability and opening hours of off-lane control areas, for random cargo and vehicle checks, at road BCPs open for international goods traffic.

Scoring:

- Off-lane control areas are available, operated at all time, and used in >90 per cent of cases: **10 points**
- Off-lane control areas are available, operated only during certain times of the day/night, and only used in <90 per cent of cases: **6 points**
- No off-lane control areas available, inspections take place in the waiting line: **0 points**

1-EC-1: EFFICIENCY (continued)**1-EC-1.2c: BCP infrastructure
(parking and terminal facilities)****Definition:**

Availability of appropriate parking and terminal facilities at road BCPs open for international goods traffic.

Scoring:

- Free parking facilities, with support services, are available on both sides of the BCP: **10 points**
- Paid parking facilities, with support services, are available on both sides of the BCP: **8 points**
- Free basic parking facilities are available: **6 points**
- Paid basic parking facilities are available: **4 points**
- No parking facilities available: **0 points**

**1-EC-1.3: Inland clearance and control
procedures for import****Definition:**

The extent to which control procedures for import are undertaken at inland clearance stations away from the border so as to alleviate congestion and efficient movements at BCPs.

The control procedures involve medico-sanitary inspection, veterinary inspection, phytosanitary inspection, controls of compliance with technical standards, quality controls, vehicle inspections, and weighing of vehicles.

The adoption of customs risk management system will get additional points as risk management procedures expedite the clearance of goods.

Scoring:

- All control procedures take place at inland clearance stations: **8 points**
- >4 control procedures take place at inland clearance stations: **6 points**
- <4 control procedures take place at inland clearance stations: **4 points**
- All control procedures take place at BCPs: **0 points**
- Application of customs risk management system: **+ 2 points**

1-EC-1: EFFICIENCY (continued)

1-EC-1.4: Availability of fast lanes for trucks carrying live animals and perishable foodstuffs

Definition:

Availability of fast lanes/fast track treatment for trucks carrying live animals and perishable foodstuffs. As set out by Harmonization Convention, priority should be given to live animals and perishable goods in order to minimize waiting times at BCPs.

Scoring:

- Fast lanes/fast track treatment are available and there is a bilateral cooperation on these issues with adjoining countries: **8 points**
- Fast lanes/fast track treatment are available, but no bilateral cooperation: **6 points**
- No fast lane available at BCPs: **0 points**
- Special provision for refrigerated containerized units (e.g. energy sources) is in place at all considered BCPs in the country: **+2 points**

1-EC-1.5a: Coordination and delegation of controls among national border agencies

Definition:

The extent to which national border agencies (such as Health and Safety Authorities, Treasury, and Food and Drug Administration) delegate their control activities to other border agencies such as customs authorities, in accordance with a cooperation agreement or memorandum of understanding. By implementing a delegation mechanism, duplication and overlapping activities, and conflicting instructions and requirements can be reduced.

Scoring:

- A coordination and delegation mechanism is in place where all border agencies can at any time act/perform controls on each other's behalf: **10 points**
- A coordination and delegation mechanism is in place, however only several border agencies can in specific cases (e.g. during off-peak hours and at night) act/perform controls on each other's behalf: **6 points**
- No coordination and delegation mechanism in place, as such all government agencies act independently: **0 points**

1-EC-1: EFFICIENCY (continued)

1-EC-1.5b: Coordination and delegation of controls between agencies of neighbouring countries

Definition:

The extent to which border agencies from both sides of the BCP coordinate with each other or delegate the control procedures to each other at a designated single common border post/station, in accordance with a bilateral agreement or a memorandum of understanding. Implementing such a coordination and delegation mechanism will increase the border crossing efficiency.

Scoring:

- A coordination and delegation mechanism is in place, where border agencies from both sides of the BCP at any time act/perform controls together or on each other's behalf: **8 points**
- A coordination and delegation mechanism is in place, where border agencies from both sides of the BCP in specific cases (e.g. during off-peak hours and at night) act/perform controls jointly or on each other's behalf: **6 points**
- No coordination and delegation mechanism in place, as such border agencies from both sides of the BCP act independently: **0 points**
- Common opening hours of the common border post/station are determined by traffic volume: **+2 points**

1-EC-1: EFFICIENCY (continued)

1-EC-1.5c: Exchange of data and information among national border agencies

Definition:

Degree of implementation of data and information exchange (including for risk management purposes) among national border agencies, so as to increase time efficiency and provide accurate information for statistical purposes.

Scoring:

- Data and information (including for risk management purposes) are shared among different national border agencies at all times, through the use of shared electronic databases and platforms and if applicable through face-to-face consultations: **10 points**
- Data and information (including for risk management purposes) are shared, on a case-by-case basis, among different national border agencies, through the use of shared electronic databases and platforms and if applicable through face-to-face consultations: **8 points**
- Data and information (including for risk management purposes) are shared, on a case-by-case basis, among different national border agencies, through face-to-face consultations only: **6 points**
- No exchange of data and information: **0 points**

1-EC-1: EFFICIENCY (continued)

1-EC-1.5d: Exchange of data and information with foreign border agencies

Definition:

Degree of implementation of data and information exchange (including for risk management purposes) with foreign border agencies, so as to increase time efficiency and provide accurate information for statistical purposes.

Scoring:

- Data and information (including for risk management purposes) are mutually accepted among different border agencies at the international level, through the use of shared electronic databases and platforms and if applicable through face-to-face consultations: **10 points**
- Data and information (including for risk management purposes) are shared among different border agencies at the international level, through the use of shared electronic databases and platforms and if applicable through face-to-face consultations: **8 points**
- Data and information (including for risk management purposes) are partially shared among different border agencies at the international level, through the use of shared electronic databases and platforms and if applicable through face-to-face consultations: **6 points**
- Data and information (including for risk management purposes) are shared, on a case-by-case basis, among different border agencies at the international level, through face-to-face consultations only: **4 points**
- No exchange of data and information at the international level: **0 points**

1-EC-1: EFFICIENCY (continued)

1-EC-1.6: Traffic separation for vehicles under cover of valid international customs transit documents
<p>Definition: Degree of implementation of traffic separation at the country's main BCPs in order to give priority to vehicles under cover of valid international/regional/sub-regional customs transit documents, such as TIR and temporary importation carnets, so as to decrease truck waiting times at BCPs.</p>
<p>Scoring:</p> <ul style="list-style-type: none"> • Separation of traffic, at all times, to give priority to vehicles under cover of customs transit documents: 10 points • Separation of traffic, in some cases (for example, peak/off-peak hours and day or night shift), to give priority to vehicles under cover of customs transit documents: 5 points • No separation of traffic: 0 points

1-EC-2: TIME REQUIRED AT BORDERS

1-EC-2.1a: Average border clearance time for transit TIR trucks (with physical inspection)
<p>Definition: The average border clearance time (in minutes) needed by a transit TIR-truck, when physical inspections are involved. It is calculated by summing the clearance time of all inspected transit TIR-trucks divided by the number of inspected transit TIR-trucks. Time taken into consideration is the time from entering the border post in one territory to leaving it in the other country. The survey should capture the clearance time by time of day (peak and off-peak) and day of week.</p>
<p>Scoring: Not applicable. This is a verification indicator.</p>

1-EC-2.1b: Average border clearance time for transit TIR trucks (without physical inspection)
<p>Definition: The average border clearance time (in minutes) needed by a transit TIR-truck, when no physical inspections are involved. It is calculated by summing the clearance time of all surveyed transit TIR-trucks divided by the number of surveyed transit TIR-trucks. Time taken into consideration is the time from entering the border post in one territory to leaving it in the other country. The survey should capture the clearance time by time of day (peak and off-peak) and day of week.</p>
<p>Scoring: Not applicable. This is a verification indicator.</p>

**1-EC-2: TIME REQUIRED AT BORDERS
(continued)**

1-EC-2.2a: Average border clearance time for non-TIR transit trucks (with physical inspection)

Definition:

The average border clearance time (in minutes) needed by a transit non-TIR truck, when physical inspections are involved. It is calculated by summing the clearance time of all inspected non-TIR transit trucks divided by the number of inspected non-TIR transit trucks. Time taken into consideration is the time from entering the border post in one territory to leaving it in the other country. The survey should capture the clearance time by time of day (peak and off-peak) and day of week.

Scoring:

Not applicable. This is a verification indicator.

1-EC-2.2b: Average border clearance time for non-TIR transit trucks (without physical inspection)

Definition:

The average border clearance time (in minutes) needed by a non-TIR transit truck, when no physical inspections are involved. It is calculated by summing the clearance time of all surveyed non-TIR transit trucks divided by the number of inspected non-TIR transit trucks. Time taken into consideration is the time from entering the border post in one territory to leaving it in the other country. The survey should capture the clearance time by time of day (peak and off-peak) and day of week.

Scoring:

Not applicable. This is a verification indicator.

**1-EC-2: TIME REQUIRED AT BORDERS
(continued)**

1-EC-2.3: Average queuing time

Definition:

The average queuing time (in minutes) for trucks at customs point of entry. Time taken into consideration starts when a truck joins the queue and ends when the truck reaches the customs booth. Average time is calculated by summing the queuing time of all surveyed trucks divided by the number of surveyed trucks. The survey should capture queuing time by time of day (peak and off-peak) and day of week.

Scoring:

Not applicable. This is a verification indicator.

1-EC-3: COST**1-EC-3.1a: Average customs clearance cost (exports)****Definition:**

The average customs clearance cost for exports.

It concerns cost associated with compliance with customs regulations and border crossing procedures in the country relative to the average cost in the region. The involved costs are cost of carnets, loading/unloading of shipment at BCPs and inspection charges.

Scoring:

- Cost is more than 50 per cent lower than the regional average: **10 points**
- Cost is less than 50 per cent lower than the regional average: **7 points**
- Cost is in line with the regional average: 4 points
- Cost is less than 50 per cent higher than the regional average: **2 points**
- Cost is more than 50 per cent higher than the regional average: **0 points**

1-EC-3: COST (continued)**1-EC-3.1c: Average customs clearance cost (transit)****Definition:**

The average customs clearance cost for transit cargo.

It concerns cost associated with compliance with customs regulations and border crossing procedures in the country relative to the average cost in the region. The involved costs are cost of carnets, loading/unloading of shipment at BCPs and inspection charges.

Scoring:

- Cost is more than 50 per cent lower than the regional average: **10 points**
- Cost is less than 50 per cent lower than the regional average: **7 points**
- Cost is in line with the regional average: 4 points
- Cost is less than 50 per cent higher than the regional average: **2 points**
- Cost is more than 50 per cent higher than the regional average: **0 points**

1-EC-3.1b: Average customs clearance cost (imports)**Definition:**

The average customs clearance cost for imports.

It concerns cost associated with compliance with customs regulations and border crossing procedures in the country relative to the average cost in the region. The involved costs are cost of carnets, loading/unloading of shipment at BCPs and inspection charges.

Scoring:

- Cost is more than 50 per cent lower than the regional average: **10 points**
- Cost is less than 50 per cent lower than the regional average: **7 points**
- Cost is in line with the regional average: 4 points
- Cost is less than 50 per cent higher than the regional average: **2 points**
- Cost is more than 50 per cent higher than the regional average: **0 points**

1-EC-3.2: Average road-freight rate**Definition:**

Average road-freight rate is defined as the average trucking fee per ton-km applied in the country, relative to the average rate in the region.

Scoring:

- Rate is more than 50 per cent lower than the regional average: **10 points**
- Rate is less than 50 per cent lower than the regional average: **7 points**
- Rate is in line with the regional average: 4 points
- Rate is less than 50 per cent higher than the regional average: **2 points**
- Rate is more than 50 per cent higher than the regional average: **0 points**

1-EC-3: COST (continued)

1-EC-3.3: Visa requirements for professional drivers

Definition:

The extent to which the country requires visa for foreign professional drivers who wish to enter the country.

Scoring:

- No visa required for nationals from the region: **10 points**
- No visa required for nationals from the subregion: **8 points**
- If visa is required, multiple-entry visa valid for one year or more can be obtained with processing time no longer than that of the application for multiple-entry business visa: **6 points**
- If visa is required, multiple-entry visa valid for one year or more can be obtained, but the processing time is longer than that of the application for multiple-entry business visa: **4 points**
- If visa is required, only single-entry visa can be applied: **2 points**
- No issuance of visa for professional drivers, as such drivers are not allowed to enter beyond the BCP premises: **0 points**

1-EC-3.4: Cost for foreign drivers

Definition:

Average cost for foreign drivers wishing to enter the country, if allowed. The cost involved is the cost per entry, defined as the cost associated with visa, fees, insurance, and a temporary driving license and temporary taxes for vehicle registration, if applicable.

Scoring:

- <\$50: **10 points**
- \$50 until < \$100: **8 points**
- \$100 until < \$150: **6 points**
- \$150 until < \$200: **4 points**
- \$200 until < \$250: **2 points**
- ≥ \$250: **0 points**

1-EC-4: INFRASTRUCTURE

1-EC-4.1: Percentage of international road network

Definition:

Ratio of the total length of international roads to the total road network in the country.

International roads concern: international motorways, international express roads and international ordinary roads as defined by the AGR (UNECE); and international routes of regional, international and intraregional importance as defined by the Asian highway (UNESCAP), ECLAC, and M network (ESCWA).

Scoring:

- Ratio ≥ 4 per cent: **10 points**
- 3 per cent ≤ ratio < 4 per cent: **8 points**
- 2 per cent ≤ ratio < 3 per cent: **6 points**
- 1 per cent ≤ ratio < 2 per cent: **4 points**
- ratio < 1 per cent: **0 points**

1-EC-4.2: Length of international road network per class

Definition:

Ratio of the total length of class 3 international roads to the total international road network in the country.

Class 3 is the lowest class of international roads as defined by the AGR. For the Arab states, this concerns the second-class roads of the M network. In other regions, the road classification might be different. This indicator is about the lowest class as per the classification of the international road network followed by the country.

Scoring:

- ratio < 20 per cent: **10 points**
- 20 per cent ≤ ratio < 40 per cent: **7 points**
- 40 per cent ≤ ratio < 60 per cent: **5 points**
- 60 per cent ≤ ratio < 80 per cent: **2 points**
- ratio ≥ 80 per cent: **0 points**

1-EC-4: INFRASTRUCTURE (continued)**1-EC-4.3: Harmonization of road classes at BCP****Definition:**

The number of country's BCPs with harmonized road classes within 50 km of a BCP. When the roads on one side of a BCP are for instance class 1 roads, while the roads on the other side of the BCP are class 3 roads, this situation is unharmonized and creates a bottleneck.

Scoring:

- Entirely harmonized (100 per cent): **10 points**
- Harmonization applies at 80 per cent - < 100 per cent of the country's BCPs: **8 points**
- Harmonization applies at 60 per cent - < 80 per cent of the country's BCPs: **6 points**
- Harmonization applies at 40 per cent - < 60 per cent of the country's BCPs: **4 points**
- Harmonization applies at 20 per cent - < 40 per cent of the country's BCPs: **2 points**
- Harmonization applies at < 20 per cent of the country's BCPs: **0 points**

1-EC-4.4: Harmonization of BCP infrastructure**Definition:**

Level of harmonization of BCP infrastructure between the assessed country and the adjoining countries. It concerns the harmonization of the following: (1) number of channels; (2) number of parking lots; (3) number of bays for inspections; (4) height of monitoring gantries.

If there is more than one BCP, the average score of all BCPs should be calculated. If there is more than one adjoining country, the average score should also be calculated.

Scoring:

- All 4 infrastructure items are harmonized: **10 points**
- 3 infrastructure items are harmonized: **8 points**
- 2 infrastructure items are harmonized: **6 points**
- 1 infrastructure item is harmonized: **4 points**
- None is harmonized: **0 point**

1-EC-4: INFRASTRUCTURE (continued)**1-EC-4.5: Length of international road network with design speeds of at least 100 km/h****Definition:**

Ratio of the total length of international roads with design speeds of at least 100 km/h to the total international road network in the country.

Scoring:

- Ratio \geq 80 per cent: **10 points**
- 60 per cent \leq ratio < 80 per cent: **8 points**
- 40 per cent \leq ratio < 60 per cent: **6 points**
- 20 per cent \leq ratio < 40 per cent: **4 points**
- ratio < 20 per cent: **0 points**

1-EC-4.6: Design standard and technical specifications of new international roads**Definition:**

The extent to which the construction of new international roads complies with the internationally and/or regionally agreed standards, in terms of: parameters of design and dimensions; number and width of traffic lanes; geometric characteristics and other technical specifications, conditioned by its functions, its location (topography, land use, etc.); and the general technical and economic context.

Scoring:

- In accordance with internationally agreed standards: **10 points**
- In accordance with regionally agreed standards: **5 points**
- Differing from internationally/regionally standards: **0 points**

1-EC-4: INFRASTRUCTURE (continued)

1-EC-4.7: Sufficiency of service facilities along international roads

Definition:

The extent to which the provision of rest and service areas, the number of toll and border crossing control lanes are determined in terms of the volume of traffic anticipated.

Scoring:

- Fully taking the volume of traffic into account: **10 points**
- Partially taking the volume of traffic into account: **5 points**
- Not taking the volume of traffic into account: **0 points**

1-EC-4.8: Provision of tunnel management systems

Definition:

The extent to which traffic management systems and control centre are provided for long tunnels (tunnels with lengths of over 500 meters) and tunnels with heavy traffic (higher than an annual daily average of 2,000 vehicles per lane), as set out in the AGR or similar agreements applied in the country.

Scoring:

- The systems are covering all long tunnels and tunnels with heavy traffic in the country: **10 points**
- The systems are covering more than 50 per cent of long tunnels and tunnels with heavy traffic in the country: **7 points**
- The systems are covering less than 50 per cent of long tunnels and tunnels with heavy traffic in the country: **4 points**
- No tunnel management systems in place: **0 points**

1-EC-4: INFRASTRUCTURE (continued)

1-EC-4.9: Provision of safety equipment for tunnels

Definition:

Ratio of the length of long tunnels and tunnels with heavy traffic, equipped with emergency exits and access for emergency services, and tunnel equipment (such as lighting devices and ventilation systems) as per the AGR or similar agreements applied in the country, to the total length of long tunnels and tunnels with heavy traffic on the international road network.

Scoring:

- ratio \geq 90 per cent: **10 points**
- 75 per cent \leq ratio $<$ 90 per cent: **8 points**
- 50 per cent \leq ratio $<$ 75 per cent: **6 points**
- 25 per cent \leq ratio $<$ 50 per cent: **4 points**
- 10 per cent \leq ratio $<$ 25 per cent: **2 points**
- ratio $<$ 10 per cent: **0 points**

1-EC-5: OPERATIONS

1-EC-5.1: Access rights for transport operators from adjoining countries

Definition:

The extent to which access is given to transport operators from adjoining countries to enter the country in terms of issuance of permit and quota restriction.

Scoring:

- Access without quota and without designated routes: **10 points**
- Access with quota and without designated routes: **8 points**
- Access without quota and with designated routes: **6 points**
- Access with quota and with designated routes: **4 points**
- Access to the border areas only: **1 point**
- No access or trans-loading at BCPs: **0 points**

1-EC-5.2: Admission requirements for means of transport

Definition:

Admission requirements for means of transport, including vehicles and containers, based on the United Nations Temporary Importation Conventions, Container Convention, TIR Convention and the WCO Istanbul Convention.

Scoring:

- Application of the international convention regime: **10 points**
- Application of regional regime equivalent to the applicable international conventions: **8 points**
- Application of an equivalent subregional regime: **6 points**
- Application of a simplified bilateral regime: **4 points**
- Trip-based guarantee system: **2 points**
- No admission: **0 points**

1-EC-5: OPERATIONS (continued)

1-EC-5.3: Driving permit recognition

Definition:

Degree of recognition of driving permit based on the United Nations Convention on Road Traffic and Harmonization Convention.

Scoring:

- Recognition of International Driving Permit: **10 points**
- Mutual recognition of domestic driving permit: **8 points**
- Bilateral arrangement with additional documents: **6 points**
- No arrangement: **0 points**

1-EC-5.4: Vehicle insurance recognition

Definition:

Degree of recognition of vehicle insurance for foreign vehicles.

Scoring:

- Global or regional (Green Card or equivalent): **10 points**
- Subregional regime (similar to Green Card): **8 points**
- Bilateral inter-country coverage: **6 points**
- Trip-based insurance available at BCPs: **5 points**
- No facility: **0 points**

1-EC-5: OPERATIONS (continued)

1-EC-5.5: Contract of carriage requirements

Definition:

Level of harmonization of the contract of carriage requirements as per internationally and/or regionally agreed arrangements.

Scoring:

- Globally harmonized (recognition of CMR): **10 points**
- Regionally or subregionally harmonized: **8 points**
- Bilaterally harmonized with common full contract conditions, arrangements for legal issues and consent note: **6 points**
- No common arrangements: **0 points**

1-EC-5.6: Weight and vehicle dimension requirements

Definition:

Degree of harmonization of the weight and vehicle dimension requirements with the internationally and/or regionally agreed standards, so as to avoid repetitive vehicle weighing procedures at BCPs.

Scoring:

- Use of International Vehicle Weight Certificate (as set out by the Harmonization Convention): **10 points**
- Adhere to the regional standards: **8 points**
- Adhere to the subregional standards: **6 points**
- Use of domestic standards: **4 points**
- No arrangement: **0 points**

1-EC-6: INTERMODALITY/COMBINED TRANSPORT

1-EC-6.1: Modal share of freight road transport

Definition:

Ratio of freight ton-kms performed with road transport modes to the total ton-kms involved in international (transit) journeys per year.

Scoring:

- ratio < 10 per cent: **10 points**
- 10 per cent ≤ ratio < 25 per cent: **8 points**
- 25 per cent ≤ ratio < 50 per cent: **6 points**
- 50 per cent ≤ ratio < 75 per cent: **4 points**
- 75 per cent ≤ ratio < 90 per cent: **2 points**
- ratio ≥ 90 per cent: **0 points**

1-EC-6.2: System approach to intermodal transport

Definition:

Degree of harmonization of the national law on intermodal transport with the international and/or regional intermodal transport agreements, such as the AGTC.

Scoring:

- National law adheres to global intermodal transport agreement: **10 points**
- National law adheres to regional intermodal transport agreement: **8 points**
- National law adheres to sub-regional intermodal transport agreement: **6 points**
- National law does not adhere to any intermodal transport agreement: **4 points**
- No national law on intermodal transport: **0 points**

1-EC-6: INTERMODALITY/COMBINED TRANSPORT (continued)
1-EC-6.3: Share of multimodal, intermodal and combined cargo
Definition:

Ratio of the gross weight of international (transit) cargo (tonnes) that is transported by either multimodal, inter-modal or combined transport, to the total gross weight of cargo per year.

Notes:

- Multimodal refers to a single transport contract covering more than one mode of transport.
- Intermodal means one means of transport being moved by different modes such as trucks on ferries or trucks on railways.
- Combined Transport refers to the transport of goods in one and the same transport unit using more than one mode of transport (as defined by the AGTC).

Scoring:

- share \geq 75 per cent: **10 points**
- 75 per cent \leq share $<$ 50 per cent: **7 points**
- 50 per cent \leq share $<$ 25 per cent: **4 points**
- share $<$ 25 per cent: **0 points**

1-EC-6.4: Share of containerized cargo
Definition:

The share of containerization is defined as the gross weight of containerized cargo divided by the gross weight of international (transit) non-bulk cargo. Oil, coal, grain, bulk, cement, etc, are excluded.

Scoring:

- share \geq 65 per cent: **10 points**
- 50 per cent \leq share $<$ 65 per cent: **8 points**
- 25 per cent \leq share $<$ 50 per cent: **6 points**
- 10 per cent \leq share $<$ 25 per cent: **4 points**
- share $<$ 10 per cent: **0 points**

1-EC-7: ICT AND INTELLIGENT TRANSPORT SYSTEM SOLUTIONS
1-EC-7.1: Implementation of interconnected e-solutions
Definition:

Degree of implementation of interconnected e-solutions for customs and border procedures: eTIR, eCMR, and e-Single Window system.

Scoring:

- eTIR and or eCMR or equivalents and inter-agency e-Single Window are implemented: **10 points**
- Only e-Single Window is implemented: **8 points**
- Only eTIR and/or eCMR is/are implemented, no e-Single Window: **6 points**
- Use of electronic processing system: **4 points**
- Manual processing: **0 points**

1-EC-7.2: Application of advance electronic cargo information
Definition:

Degree of application of advance electronic cargo information for pre-clearance purposes.

Scoring:

- Full-fledged advance electronic cargo information system allowing for pre-clearance is applicable for all cargo: **10 points**
- Full-fledged advance electronic cargo information system allowing for pre-clearance is applicable for the majority of cargo: **7 points**
- Full-fledged advance electronic cargo information system allowing for pre-clearance is applicable for selected cargo only, the majority is processed manually upon arrival: **4 points**
- No electronic pre-clearance cargo system in place, processing and clearance take place upon arrival of the cargo in the country of importation: **0 points**

1-EC-7: ICT AND INTELLIGENT TRANSPORT SYSTEM SOLUTIONS (continued)

1-EC-7.3: Availability of detection equipment and inspection technologies at BCPs

Definition:

Availability of detection equipment, scanning and non-intrusive inspection technologies at BCPs. These include scanners for cargo, technology for detection of chemical, biological, radiological and nuclear materials, and e-Seal.

Scoring:

- Available at all BCPs and inland clearance stations: **10 points**
- Available at more than 50 per cent of BCPs and inland clearance stations: **7 points**
- Available at less than 50 per cent of BCPs and inland clearance stations: **4 points**
- Not available in any BCPs nor inland clearance stations: **0 points**

1-EC-7.4: Application of intelligent transport systems at BCPs

Definition:

Degree of application of intelligent transport systems at and around BCPs, such as traffic light management, automatic vehicle registration number recognition, and automatic container recognition.

Scoring:

- Applied at all BCPs and inland clearance stations: **10 points**
- Applied at more than 50 per cent of BCPs and inland clearance stations: **7 points**
- Applied at less than 50 per cent of BCPs and inland clearance stations: **4 points**
- Not available at any BCPs nor inland clearance stations: **0 points**

1-EC-7: ICT AND INTELLIGENT TRANSPORT SYSTEM SOLUTIONS (continued)

1-EC-7.5: Application of intelligent traffic management systems

Definition:

Degree of application of intelligent traffic management systems along international roads leading to BCPs. It concerns providing information to approaching trucks on the traffic situation at BCPs, i.e. traffic occupancy, processing and queuing time, and providing early recommendations such as postponing entry to BCPs or deviate to other BCPs.

Scoring:

- Systems are in place: **10 points**
- Systems are not in place: **0 points**

1-EC-7.6: Application of ICT systems

Definition:

Degree of application of information and communication support systems to the transport system in the country. The systems include:

- (1) Telecommunication Networks (TLC);
- (2) Automatic identification systems (Automatic Equipment Identification (AEI)/ Automatic Vehicle Identification (AVI));
- (3) Systems for automatically locating vehicles (AVLS);
- (4) Protocols for the electronic exchange of data (Electronic Data Interchange/EDI);
- (5) Cartographic databases and information systems providing geographical data (Geographic Information System/GIS);
- (6) Systems for the collection of traffic data, including Weigh-In-Motion (WIM) and systems for the automatic classification of vehicles;
- (7) Systems for counting the number of users of a public transport system (Automatic Passenger Counters/APC).

Scoring:

- All 7 systems are in place: **10 points**
- 5-6 systems are in place: **8 points**
- 3-4 systems are in place: **6 points**
- 2 systems are in place: **4 points**
- 1 system is in place: **2 points**
- No system is in place: **0 points**

1-EC-7: ICT AND INTELLIGENT TRANSPORT SYSTEM SOLUTIONS (continued)

1-EC-7.7: Number of national trucks with track and trace device

Definition:

Ratio of the number of national trucks equipped with track and trace devices to the total number of national trucks involved in international transport.

Scoring:

- Ratio \geq 90 per cent: **10 points**
- 70 per cent \leq ratio $<$ 90 per cent: **8 points**
- 50 per cent \leq ratio $<$ 70 per cent: **6 points**
- 30 per cent \leq ratio $<$ 50 per cent: **4 points**
- 10 per cent \leq ratio $<$ 30 per cent: **2 points**
- ratio $<$ 10 per cent: **0 points**

1-EC-7.8: Application of fleet management

Definition:

Degree of application of fleet management systems whereby vehicles can be tracked from a Traffic Control Center using GPS navigation devices together with communication facilities and digital cartography.

Scoring:

- Systems are in place: **10 points**
- Systems are not in place: **0 points**

1-EC-7: ICT AND INTELLIGENT TRANSPORT SYSTEM SOLUTIONS (continued)

1-EC-7.9: Application of roadside ITS

Definition:

Degree of application of roadside ITS to increase efficiency and capability to act in terms of time and resource management. The roadside technology includes: (1) Traffic Control Centers (TCC); (2) Traffic information centers; (3) Video monitoring system for traffic; (4) Variable Message Signs (VMS) to distribute information concerning particular events in a timely fashion; (5) Automatic Incident Detection (AID); (6) Radio channels that both provide information to road users and are used for service communication purposes; (7) Roadside equipment for speed enforcement

Scoring:

- \geq 7 systems are in place: **10 points**
- 5-6 systems are in place: **8 points**
- 3-4 systems are in place: **6 points**
- 2 systems are in place: **4 points**
- 1 system is in place: **2 points**
- No system is in place: **0 points**

1-EC-7.10: Application of pre-trip traffic information systems

Definition:

Degree of application of pre-trip traffic information systems to make international drivers aware of the traffic situation and travel conditions (so they can assess their travel options) through different types of media.

Scoring:

- Through web-based platforms: **10 points**
- Through traditional channels such as radio: **6 points**
- No system in place: **0 points**

1-EC-7: ICT AND INTELLIGENT TRANSPORT SYSTEM SOLUTIONS (continued)

1-EC-7.11: Application of Electronic Toll Collection systems

Definition:

Application of Electronic Toll Collection (ETC) technology. The score is given based on the highest ETC technology implemented in the country.

Scoring:

- Global navigation satellite system: **8 points**
- Automatic Number Plate Recognition (ANPR)/ Dedicated Short Range Communications (DSRC)/ Radio-Frequency Identification (RFID): **4 points**
- No ETC system is in place (cash payment only): **0 points**
- Systems are interoperable and based on open and public standards, available on a non-discriminatory basis to all system suppliers: additional **2 points**

5.1.2 Social Sustainability (SO)

1-SO-1: ROAD TRAFFIC RULES/ BEHAVIOUR

1-SO-1.1a: Harmonization of national laws on traffic rules

Definition:

Degree of harmonization of the UN Convention on Road Traffic (1968) in the national laws covering traffic rules for drivers and specific rules for professional drivers, such as National Highway Code and Road Traffic Regulations.

Scoring:

- Fully harmonized: **10 points**
- Partially harmonized: **7 points**
- Not harmonized: **4 points**
- No national law covering traffic rules: **0 points**

1-SO-1.1b: Development of rules on traffic behaviour

Definition:

The existence of rules on traffic behaviour concerning position on carriageway, manoeuvring, overtaking, passing of traffic, change of directions, behaviour at intersections and level-crossings, giving way and use of lamps.

Scoring:

- Rules on traffic behaviour are in place: **10 points**
- No specific rules on traffic behaviour in place: **0 points**

1-SO-1.1c: Effective rules on speed

Definition:

The existence and effectiveness of rules on speed. The effectiveness of the rules can be assessed by analysing the number of violations on speed limit (see indicator 1-SO-1.1d) in the last five years, where a decreasing trend can represent effective rules.

Scoring:

- Rules on speed are in place and effective: **10 points**
- Rules on speed are in place, but ineffective: **6 points**
- No specific rules on speed in place: **0 points**

1-SO-1: ROAD TRAFFIC RULES/ BEHAVIOUR (continued)

1-SO-1.1d: Number of violations on speed limit
<p>Definition:</p> <p>Ratio of the number of violations of exceeding the speed limit to the total number of recorded traffic violations on the (inter)national roads per year.</p> <p>If the data for the (inter)national roads is not available, the total data in the country may be used.</p> <p>Please indicate this in the scoring system.</p>
<p>Scoring:</p> <p>Not applicable. This is a verification indicator.</p>

1-SO-1: ROAD TRAFFIC RULES/ BEHAVIOUR (continued)

1-SO-1.1f: Number of violations on the use of safety equipment
<p>Definition:</p> <p>Ratio of the number of violations on the compulsory use of safety equipment (safety belts, child restraint systems, and helmets) to the total number of recorded traffic violations on the (inter)national roads per year.</p> <p>If the data for the (inter)national roads is not available, the total data in the country may be used. Please indicate this in the scoring system.</p>
<p>Scoring:</p> <p>Not applicable. This is a verification indicator.</p>

1-SO-1.1e: Effective rules on safety equipment

1-SO-1.1e: Effective rules on safety equipment
<p>Definition:</p> <p>The existence and effectiveness of rules on the compulsory use of safety equipment: (1) safety belts; (2) child restraint systems; and (3) helmets.</p> <p>The effectiveness of the rules can be assessed by analysing the number of violations on the use of safety equipment (see indicator 1-SO-1.1f) in the last five years, where a decreasing trend can represent effective rules.</p>
<p>Scoring:</p> <ul style="list-style-type: none"> • Rules on all three safety equipment are in place and effective: 10 points • Rules on all three safety equipment are in place, but ineffective: 8 points • Rules are in place for less than three safety equipment and effective: 6 points • Rules are in place for less than three safety equipment, but ineffective: 4 points • No specific rules on safety equipment in place: 0 points

1-SO-1.1g: Effective rules on cargo loading and carriage of passengers

1-SO-1.1g: Effective rules on cargo loading and carriage of passengers
<p>Definition:</p> <p>The existence and effectiveness of rules to strictly regulate loading of vehicles and carriage of passengers and put in place specific regulations for cargo securing for road transport and for carriage of passengers by buses and coaches.</p> <p>The effectiveness of the rules can be assessed by analysing the number of violations on cargo loading and carriage of passengers on the (inter)national roads in the last five years, where a decreasing trend can represent effective rules. If the data for the (inter)national roads is not available, the total data in the country may be used. Please indicate this in the scoring system.</p>
<p>Scoring:</p> <ul style="list-style-type: none"> • Rules are in place and effective: 10 points • Rules are in place, but ineffective: 6 points • No specific rules on cargo loading and carriage of passengers in place: 0 points

**1-SO-1: ROAD TRAFFIC RULES/
BEHAVIOUR (continued)**
**1-SO-1.1h: Number of vehicles stopped
per year**
Definition:

Ratio of the number of cars and trucks that are stopped by the police per year to the total number of vehicles on the (inter)national roads per year.

If the data for the (inter)national roads is not available, the total data in the country may be used. Please indicate this in the scoring system.

Scoring:

Not applicable. This is a verification indicator.

**1-SO-1: ROAD TRAFFIC RULES/
BEHAVIOUR (continued)**
**1-SO-1.1k: Number of violations of
distracted-driving**
Definition:

Ratio of the number of violations of distracted driving to the total number of recorded traffic violations on the (inter)national roads per year.

If the data for the (inter)national roads is not available, the total data in the country may be used. Please indicate this in the scoring system.

Scoring:

Not applicable. This is a verification indicator.

**1-SO-1.1i: Application of special
regulations for motorways
and tunnels**
Definition:

The existence of special traffic regulations for motorways and/or tunnels, such as prohibition of standing and parking, prohibition of reversing or making a U-turn, and the obligation to have the lights of the vehicle on in tunnels.

Scoring:

- Special regulations are in place: **10 points**
- No special regulations in place: **0 points**

**1-SO-1.1l: Adequate regulations on
training and examination
for drivers**
Definition:

The existence of an adequate system that sets out minimum requirements of curriculum and qualifications of professional driving establishments (Certificate of Professional Competence), requirements for obtaining a driving permit, including contents and procedure of both theoretical and practical exams, and requirements for training and certification for driving instructors and retraining for professional drivers.

Scoring:

- Regulations are in place and fully cover the required elements: **10 points**
- Regulations are in place and partially cover the required elements: **5 points**
- No regulations in place: **0 points**

**1-SO-1.1j: Effective rules on road users
distractions**
Definition:

The existence and effectiveness of rules regarding distraction during driving due to the use of infotainment systems, portable electronic devices or mobile phones.

The effectiveness of the rules can be assessed by analysing the number of violations of distracted driving (see indicator 1-SO-1.1k) in the last five years, where a decreasing trend can represent effective rules.

Scoring:

- Rules are in place and effective: **10 points**
- Rules are in place, but ineffective: **6 points**
- No specific rules on road users distractions in place: **0 points**

**1-SO-1: ROAD TRAFFIC RULES/
BEHAVIOUR (continued)**
1-SO-1.2a: Number of vehicles with tachograph
Definition:

Ratio of the number of commercial vehicles involved in international transport that are equipped with tachograph, to the total number of commercial vehicles involved in international transport in the country per year.

Scoring:

- ratio \geq 90 per cent: **10 points**
- 75 per cent \leq ratio < 90 per cent: **8 points**
- 50 per cent \leq ratio < 75 per cent: **6 points**
- 25 per cent \leq ratio < 50 per cent: **4 points**
- 10 per cent \leq ratio < 25 per cent: **2 points**
- ratio < 10 per cent: **0 points**

1-SO-1.2b: Number of vehicles with operational tachograph
Definition:

Ratio of the number of vehicles involved in international transport that are equipped with operational tachographs (being used), to the total number of vehicles with tachographs involved in international transport in the country per year. The scoring can be based on:

data collected from a survey by logging the number of trucks with operational tachographs at BCPs (in fact, the BCP police may enforce technical standards upon entry); or

country's statistics on roadside inspection on driving and resting time rules, for example if the percentage of violations of non-operational tachographs is 5 per cent, then the score is 10.

Scoring:

- ratio \geq 90 per cent: **10 points**
- 75 per cent \leq ratio < 90 per cent: **8 points**
- 50 per cent \leq ratio < 75 per cent: **6 points**
- 25 per cent \leq ratio < 50 per cent: **4 points**
- 10 per cent \leq ratio < 25 per cent: **2 points**
- ratio < 10 per cent: **0 points**

**1-SO-1: ROAD TRAFFIC RULES/
BEHAVIOUR (continued)**
1-SO-1.3: Development of regulations on cargo securing
Definition:

The existence and effectiveness of regulations on cargo securing that include the standards of safety of loads on vehicles, truck loading code, etc.

Scoring:

- Regulations are in place: **10 points**
- No specific regulations on cargo securing in place: **0 points**

1-SO-1.4: Number of crashes due to violating the traffic rules
Definition:

Number of crashes involving international traffic, due to violating the traffic rules per year.

Scoring:

Not applicable. This is a verification indicator.

1-SO-1.5: Application of National Road Safety System
Definition:

The extent to which a National Road Safety System (NRSS) is developed based on the UNRSTF (United Nations Road Safety Trust Fund) Global Framework Plan of Action for Road Safety (GFPARS), which comprises 5 pillars: (1) Road safety management; (2) Safe user; (3) Safe vehicle; (4) Safe road; (5) Effective post-crash response.

Scoring:

- Entirely based on GFPARS: **10 points**
- Partially based on GFPARS/not covering all elements: **7 points**
- No NRSS in place: **0 points**

**1-SO-1: ROAD TRAFFIC RULES/
BEHAVIOUR (continued)**

1-SO-1.6: Application of Post-Crash Response

Definition:

The extent to which Post-Crash Response standards and procedures are developed based on the UNRSTF Global Framework Plan of Action for Road Safety (GFPARS), which comprises eight actions:

- (1) Introduce legal requirement for anyone to perform first-aid activities within his/her capacity;
- (2) Introduce standards for post-crash professional emergency response;
- (3) Introduce framework for rehabilitation programmes;
- (4) Establish a link between liability insurance and financing of care for crash victims, and rehabilitation programmes;
- (5) Enable multi-disciplinary crash rescue operation and investigation;
- (6) Introduce a clear framework for crash investigation and data collection;
- (7) Designate authorities responsible for implementation including enforcement of the existing standards as well as for their further development, as necessary;
- (8) Assess effectiveness and completeness of standards (completeness of standards benchmarked against international regulatory framework)

Scoring:

- Entirely based on GFPARS: **10 points**
- Partially based on GFPARS/not covering all elements: **7 points**
- No post-crash response standards and procedures in place: **0 points**

1-SO-2: ROAD TRAFFIC INFRASTRUCTURE

1-SO-2.1: Length of dual carriageway international roads

Definition:

Ratio of the total length of dual carriageway international roads to the total length of the international roads in the country.

Scoring:

- ratio \geq 10 per cent: **10 points**
- 8 per cent \leq ratio $<$ 10 per cent: **8 points**
- 6 per cent \leq ratio $<$ 8 per cent: **6 points**
- 4 per cent \leq ratio $<$ 6 per cent: **4 points**
- 2 per cent \leq ratio $<$ 4 per cent: **2 points**
- ratio $<$ 2 per cent: **0 points**

1-SO-2.2: Harmonization of international standards for road signs, signals, and marking

Definition:

Harmonization of international standards for road signs, signals, and marking from the United Nations Convention on Road Signs and Signals (1968) into the national legislations (for example Traffic Signs Regulations and Manual).

Scoring:

- Fully harmonized: **10 points**
- Partially harmonized: **7 points**
- Not harmonized: **4 points**
- No national legislations covering road signs, signals, and marking: **0 points**

**1-SO-2: ROAD TRAFFIC INFRASTRUCTURE
(continued)**
1-SO-2.3: IRI rating
Definition:

The IRI (International Roughness Index) rating for the total length of the international roads.

Scoring:

- Very good: **10 points**
- Good: **8 points**
- Fair: **6 points**
- Poor: **4 points**
- Very poor/does not exist in the country: **0 points**

1-SO-2.4: Number of secured parking lots for trucks at BCPs
Definition:

The number of parking lots at secured parking area (in absolute number) as a percentage of the throughput of trucks in 24 hours.

Scoring:

Not applicable. This is a verification indicator.

1-SO-2.5: Number of incidents of cargo theft
Definition:

The number of cases of reported cargo theft per 100,000 trucks involved in trade (import and export) per year.

Scoring:

Not applicable. This is a verification indicator.

1-SO-3: VEHICLE REGULATIONS
1-SO-3.1: Harmonization of vehicle regulations
Definition:

Number of national vehicle regulations applied for new vehicles, which are developed in harmony with international agreements such as the United Nations agreements on vehicle regulations.

Scoring:

- number ≥ 100 : **8 points**
- $100 \leq \text{number} < 80$: **7 points**
- $80 \leq \text{number} < 60$: **5 points**
- $60 \leq \text{number} < 40$: **3 points**
- number < 40 : **2 points**
- No regulations applied: **0 points**
- Internationally harmonized vehicle regulations applied according to the most recent level of stringency: additional **2 points**

1-SO-3.2: Application of periodic technical inspections
Definition:

Degree of application of periodic technical inspections (PTIs) of vehicles.

Scoring:

- PTIs are enforced and applied with an increasing frequency to ageing vehicles, and international inspection certificate is recognized: **9 points**
- PTIs are enforced and applied with an increasing frequency to ageing vehicles, but international inspection certificate is not recognized: **8 points**
- PTIs are legally binding, but no enforcement mechanism exists, and international inspection certificate is recognized: **5 points**
- PTIs are legally binding, but no enforcement mechanism exists, and international inspection certificate is not recognized: **4 points**
- PTIs do not exist: **0 points**
- Road side inspections of commercial vehicles applied: additional **1 point**

**1-SO-3: VEHICLE REGULATIONS
(continued)**
**1-SO-3.3: Vehicle registration
documentation**
Definition:

Degree of recognition of vehicle registration documentation applied in the country.

Scoring:

- Use of internationally recognized registration certificate: **10 points**
- Use of regionally recognized registration certificate: **7 points**
- Use of bilaterally recognized registration certificate: **4 points**
- Use of national registration certificates, not recognized internationally, regionally nor among adjoining countries: **0 points**

**1-SO-4: PERISHABLE FOODSTUFFS
TRANSPORT**
**1-SO-4.1: List of perishable foodstuffs
and corresponding transport
conditions**
Definition:

Degree of harmonization of internationally/regionally agreed provisions on the list of perishable foodstuffs and corresponding transport conditions, in the national laws and legislations.

Scoring:

- In accordance with internationally agreed provisions: **10 points**
- In accordance with regionally agreed provisions: **5 points**
- Not recognizing international/regional provisions or no national law applied: **0 points**

**1-SO-3.4: Number of accidents due to
technical failure**
Definition:

The number of accidents, where primary cause is technical failure, per km driven.

Scoring:

Not applicable. This is a verification indicator.

**1-SO-4.2: Requirements for testing and
approval**
Definition:

Degree of harmonization of internationally/regionally agreed provisions on the requirements for testing and approval of the special equipment used for the transport of perishable foodstuffs, in the national laws and legislations. It concerns insulated, refrigerated, mechanically refrigerated or heated equipment as set out in the ATP.

Scoring:

- In accordance with internationally agreed provisions: **10 points**
- In accordance with regionally agreed provisions: **5 points**
- Not recognizing international/regional provisions or no national law applied: **0 points**

**1-SO-3.5: Number of accredited technical
inspection centres**
Definition:

The number of accredited technical inspection centres per million vehicles.

Scoring:

Not applicable. This is a verification indicator.

1-SO-4: PERISHABLE FOODSTUFFS TRANSPORT (continued)

1-SO-4.3:	Requirements for classification of special equipment
Definition: Degree of harmonization of internationally/regionally agreed provisions on the requirements for classification of the special equipment used for the transport of perishable foodstuffs, in the national laws and legislations. It concerns distinguishing marks that are affixed to the special equipment as set out in the ATP.	
Scoring:	
<ul style="list-style-type: none"> • In accordance with internationally agreed provisions: 10 points • In accordance with regionally agreed provisions: 5 points • Not recognizing international/regional provisions or no national law applied: 0 points 	

1-SO-4: PERISHABLE FOODSTUFFS TRANSPORT (continued)

1-SO-4.5:	Number of checks on trucks transporting perishable foodstuffs
Definition: Ratio of the number of roadside checks conducted on trucks transporting perishable foodstuffs to the total number of trucks transporting perishable foodstuffs involved in international transport in the country per year. It concerns checks to verify whether the requirements concerning transport of perishable foodstuffs have been met.	
Scoring: Not applicable. This is a verification indicator.	

1-SO-4.4: Harmonization of certificate of compliance

1-SO-4.4:	Harmonization of certificate of compliance
Definition: Degree of harmonization of internationally/regionally agreed provisions on the issuance of certificates and certification plates of compliance for the special equipment used for the transport of perishable foodstuffs, in the national laws and legislations.	
Scoring:	
<ul style="list-style-type: none"> • Issued in accordance with internationally agreed provisions: 10 points • Issued in accordance with regionally agreed provisions: 5 points • Not recognizing international/regional provisions or no national law applied: 0 points 	

**1-SO-5: DANGEROUS GOODS
TRANSPORT – ADMINISTRATIVE
REQUIREMENTS**

**1-SO-5.1: General provisions for the
transport of dangerous goods
by road**

**1-SO-5.1a: Classification of dangerous
goods for transport**

Definition:

Degree of harmonization of internationally/regionally agreed provisions on the classification of dangerous goods for transport, in the national laws and legislations.

Scoring:

- In accordance with internationally agreed provisions: **10 points**
- In accordance with regionally agreed provisions: **5 points**
- Not recognizing international/regional provisions or no national law applied: **0 points**

**1-SO-5.1b: Marking and labelling of
packaging**

Definition:

Degree of harmonization of internationally/regionally agreed provisions on marking and labelling of packages of dangerous goods, in the national laws and legislations.

Scoring:

- In accordance with internationally agreed provisions: **10 points**
- In accordance with regionally agreed provisions: **5 points**
- Not recognizing international/regional provisions or no national law applied: **0 points**

**1-SO-5: DANGEROUS GOODS
TRANSPORT – ADMINISTRATIVE
REQUIREMENTS (continued)**

**1-SO-5.1c: Placarding and marking of
containers and vehicles**

Definition:

Degree of harmonization of internationally/regionally agreed provisions on placarding and marking in the national laws and legislations. It concerns placarding and marking of all types of containers and vehicles for the transport of dangerous goods.

Scoring:

- In accordance with internationally agreed provisions: **10 points**
- In accordance with regionally agreed provisions: **5 points**
- Not recognizing international/regional provisions or no national law applied: **0 points**

**1-SO-5.1d: Dangerous goods transport
documentation**

Definition:

Degree of harmonization of internationally/regionally agreed provisions on the required documentation and information, in the national laws and legislations. It concerns documents that accompany the transport of dangerous goods.

Scoring:

- In accordance with internationally agreed provisions: **10 points**
- In accordance with regionally agreed provisions: **5 points**
- Not recognizing international/regional provisions or no national law applied: **0 points**

**1-SO-5.1e: Percentage of transport of
dangerous goods**

Definition:

Percentage of traffic classified as transport of dangerous goods on the international road network.

Scoring:

Not applicable. This is a verification indicator.

1-SO-5: DANGEROUS GOODS TRANSPORT – ADMINISTRATIVE REQUIREMENTS (continued)

1-SO-5.2: Training of personnel involved in the transport of dangerous goods

1-SO-5.2a: Training provisions for persons involved in the transport of dangerous goods

Definition:

Degree of harmonization of international/regional legal instruments and/or recommendations in the training provisions for personnel involved in the transport of dangerous goods in the country. It concerns personnel other than the driver, including vehicle crew, consignor, carrier, consignee, loader, packer, filler, tank-container/portable tank operator, and unloader.

Scoring:

- The provision is developed based on international recommendations or related legal modal instruments: **9 points**
- The provision is developed based on regional arrangements: **6 points**
- The provision recognizes the existing international/regional arrangements, but is not developed based on them: **3 points**
- Not recognizing international/regional provisions or no training provisions in place: **0 points**
- Issuance of training certificates for the transport of dangerous goods are agreed by the national competent authority or its accredited training bodies: **additional 1 point**

1-SO-5: DANGEROUS GOODS TRANSPORT – ADMINISTRATIVE REQUIREMENTS (continued)

1-SO-5.2b: Harmonization of requirements to appoint safety adviser

Definition:

Degree of harmonization of international/regional provisions in the national legislations on the requirements for undertakings involved in the transport of dangerous goods related activities (which include the carriage, or the related packing, loading, filling or unloading) to appoint one or more safety adviser responsible for helping to prevent the risks for people, property or the environment inherent to such activities.

Scoring:

- The requirements are developed in accordance with internationally agreed recommendations: **10 points**
- The requirements are developed in accordance with regionally agreed provisions: **5 points**
- The requirements are not developed based on internationally/ regionally agreed provisions, but recognize them: **3 points**
- Not recognizing international/regional provisions or no requirements: **0 points**

1-SO-5.2c: Number of safety adviser training certificates issued

Definition:

Ratio of the number of safety adviser training certificates issued/renewed per year by a national competent authority or its accredited authorized body, to the total number of undertakings involved in the transport of dangerous goods related activities.

Scoring:

Not applicable. This is a verification indicator.

**1-SO-5: DANGEROUS GOODS
TRANSPORT – ADMINISTRATIVE
REQUIREMENTS (continued)**

1-SO-5.2d: Provision of security awareness training

Definition:

Degree of harmonization of internationally/regionally agreed rules in the provision of security awareness training for persons involved in the transport of dangerous goods. The internationally agreed elements of security awareness training are set out in ADR.

Scoring:

- The provision is developed based on internationally agreed rules: **10 points**
- The provision is developed based on regionally agreed rules: **5 points**
- The provision is developed partially based on internationally/regionally agreed rules: **3 points**
- The provision does not recognize internationally/regionally agreed rules or no training provisions in place: **0 points**

**1-SO-5: DANGEROUS GOODS
TRANSPORT – ADMINISTRATIVE
REQUIREMENTS (continued)**

1-SO-5.3: Checks and other support measures to ensure compliance with safety requirements

1-SO-5.3a: Harmonization of procedures for approvals of inspection bodies

Definition:

Degree of harmonization of international/regional provisions in the national legislations on the procedures for approvals of inspection bodies by the competent authority. The inspection bodies carry out conformity assessments, periodic inspections, intermediate inspections, exceptional checks and surveillance of the in-house inspection service (in case of delegation of inspection tasks) for pressure receptacles.

Scoring:

- The approval procedures are developed based on internationally agreed provisions: **10 points**
- The approval procedures are developed based on regionally agreed provisions: **5 points**
- The approval procedures are not developed based on internationally/regionally agreed provisions, but recognize them: **3 points**
- Not recognizing international/regional provisions or no procedures in place: **0 points**

1-SO-5.3b: Revocation of approval of inspection bodies

Definition:

Revocation or restriction of the approval, given by the competent authority, to inspection bodies that are no longer in compliance with the requirements or do not follow the procedures specified in the provisions of ADR.

Scoring:

- Revocation/restriction is based on non-respect of internationally agreed rules: **10 points**
- Revocation/restriction is based on non-respect of regionally agreed rules: **5 points**
- Revocation/restriction is based on non-respect of national rules: **0 points**

**1-SO-5: DANGEROUS GOODS
TRANSPORT – ADMINISTRATIVE
REQUIREMENTS (continued)**

**1-SO-5.3c: Availability of information on
transport restrictions**

Definition:

Availability of information on transport restrictions applicable to the transport of dangerous goods.

Scoring:

Information is publicly available and accessible for free: **10 points**

Information is available against a fee or not publicly available: **0 points**

**1-SO-5.3d: Requirements of security
plans for transporting high
consequence dangerous goods**

Definition:

Degree of harmonization of internationally/regionally agreed rules in the national legislations on the requirements for adopting, implementing, complying with a security plan when transporting high consequence dangerous goods.

Scoring:

- The requirements are developed based on internationally agreed rules: **10 points**
- The requirements are developed based on regionally agreed rules: **5 points**
- The requirements are developed partially based on internationally/regionally agreed rules: **3 points**
- The requirements are fully deviating from the internationally/regionally agreed rules or no requirements in place: **0 points**

**1-SO-5: DANGEROUS GOODS
TRANSPORT – ADMINISTRATIVE
REQUIREMENTS (continued)**

**1-SO-5.3e: Reporting of occurrences
involving dangerous goods**

Definition:

Degree of harmonization of internationally/regionally agreed rules in the national legislations on the procedures for reporting a serious accident or incident takes place during loading, filling, carriage or unloading of dangerous goods. The report shall be made by the loader, filler, carrier or consignee, and developed based on the model prescribed by international/regional agreements.

Scoring:

- The procedures are developed based on internationally agreed rules: **10 points**
- The procedures are developed based on regionally agreed rules: **5 points**
- The procedures are developed partially based on internationally/regionally agreed rules: **3 points**
- The procedures are fully deviating from the internationally/regionally agreed rules or no procedures in place: **0 points**

**1-SO-5.3f: Provisions for vehicles
transporting dangerous goods**

Definition:

The extent to which the carriage of dangerous goods is subject to the mandatory use of vehicles required by the international standards for the carriage of dangerous goods as regards their construction, type approval, ADR approval and annual technical inspection.

Scoring:

- Mandatory: **10 points**
- Voluntary: **5 points**
- Non-existing: **0 points**

**1-SO-5: DANGEROUS GOODS
TRANSPORT – ADMINISTRATIVE
REQUIREMENTS (continued)**

**1-SO-5.3g: Instructions in writing in the
event of emergency**

Definition:

Degree of harmonization of internationally/regionally agreed rules in the national legislations on the provision of instructions in writing, in a language understood by the crew, to be carried on board for actions to be taken in the event of an accident or emergency.

Scoring:

- The provision of instructions is developed based on internationally agreed rules: **10 points**
- The provision of instructions is developed based on regionally agreed rules: **5 points**
- The provision of instructions is developed partially based on internationally/regionally agreed rules: **3 points**
- The provision of instructions is fully deviating from the internationally/regionally agreed rules or no provision in place: **0 points**

**1-SO-5.3h: Requirements for construction,
testing and approval of
packaging, tank and bulk
containers**

Definition:

Degree of harmonization of internationally/regionally agreed provisions in the national legislations on requirements for the construction, testing and approval of packaging (all types), tank and bulk containers for the transport of dangerous goods.

Scoring:

- The requirements are developed based on internationally agreed provisions: **10 points**
- The requirements are developed based on regionally agreed provisions: **5 points**
- The requirements are deviating from the internationally/regionally agreed provisions or no requirements in place: **0 points**

**1-SO-5: DANGEROUS GOODS
TRANSPORT – ADMINISTRATIVE
REQUIREMENTS (continued)**

**1-SO-5.4: Provisions concerning
transport equipment and
transport operations involving
dangerous goods**

**1-SO-5.4a: Provisions concerning loading,
unloading and handling of
dangerous goods**

Definition:

Degree of harmonization of internationally/regionally agreed provisions in the national regulatory provisions concerning loading, unloading and handling of dangerous goods.

Scoring:

- The national regulatory provisions are developed based on internationally agreed provisions: **10 points**
- The national regulatory provisions are developed based on regionally agreed provisions: **5 points**
- The national regulatory provisions are deviating from the internationally/regionally agreed provisions or no national regulatory provisions in place: **0 points**

**1-SO-5.4b: Mandatory requirements
concerning transport units
and equipment on board**

Definition:

Degree of harmonization of internationally/regionally agreed provisions in the national legislations on requirements concerning transport units and equipment on board, including fire-fighting equipment and equipment for personal protection.

Scoring:

- The requirements are developed based on internationally agreed provisions: **10 points**
- The requirements are developed based on regionally agreed provisions: **5 points**
- The national legislations are deviating from the internationally/regionally agreed provisions or no national legislations in place: **0 points**

1-SO-6: DANGEROUS GOODS TRANSPORT – INFRASTRUCTURE/HARDWARE REQUIREMENTS

1-SO-6.1: Application of tunnel categorization
<p>Definition: Degree of harmonization of internationally/regionally agreed rules in the national law on tunnel categorization when applying restrictions to the passage of vehicles carrying dangerous goods through tunnels. According to ADR, there are five tunnel categories that define the degree of restrictions for the carriage of dangerous goods.</p>
<p>Scoring:</p> <ul style="list-style-type: none"> • The applied tunnel categorization is developed based on internationally agreed rules (ADR): 10 points • The applied tunnel categorization is developed based on regionally agreed rules: 5 points • The applied tunnel categorization is partially developed based on internationally/regionally agreed rules: 3 points • The applied tunnel categorization is deviating from the internationally/regionally agreed provisions or no categorization in place: 0 points

1-SO-6.2: Availability of information on tunnel categorization
<p>Definition: Availability of information on tunnel categorization (including road signs and signals), notifications of tunnel prohibitions/restrictions and alternative routes for transport of dangerous goods.</p>
<p>Scoring:</p> <ul style="list-style-type: none"> • Information is publicly available and accessible for free: 10 points • Information is available against a fee or not publicly available: 0 points

1-SO-6: DANGEROUS GOODS TRANSPORT – INFRASTRUCTURE/HARDWARE REQUIREMENTS (continued)

1-SO-6.3: Requirements concerning the construction and approval of vehicles
<p>Definition: Degree of harmonization of internationally/regionally agreed provisions in the national law on the requirements of vehicles for the transport of dangerous goods, as regards their construction, type approval, ADR (Agreement concerning the International Carriage of Dangerous Goods by Road) approval and annual technical inspection.</p>
<p>Scoring:</p> <ul style="list-style-type: none"> • The vehicles requirements are developed based on internationally agreed provisions (ADR): 10 points • The vehicles requirements are developed based on regionally agreed provisions: 5 points • The vehicles requirements are deviating from the internationally/regionally agreed provisions or no requirements in place: 0 points

1-SO-6.4: Harmonization of requirements to be complied with by vehicle crew
<p>Definition: Degree of harmonization of internationally/regionally agreed provisions in the national law on the requirements to be complied with by the vehicle crew, such as use of fire-fighting appliances, prohibition of smoking, portable lighting apparatus, running the engine during loading or unloading, and use of the parking brakes and wheel chocks.</p>
<p>Scoring:</p> <ul style="list-style-type: none"> • The requirements are developed based on internationally agreed provisions (ADR): 10 points • The requirements are developed based on regionally agreed provisions: 5 points • The requirements are deviating from the internationally/regionally agreed provisions or no requirements in place: 0 points

5.1.3 Environmental Sustainability (EV)

1-EV-1: FLEET

1-EV-1.1a: Number of alternative fuel passenger cars

Definition:

Ratio of the number of alternative fuel passenger cars involved in international transport, to the total number of passenger cars involved in international transport in the country per year. Alternative fuels are defined as electric, hybrid, liquid biofuel includes biogasoline, biodiesels and other liquid biofuels, natural gas (CNG/LNG) and hydrogen/fuel cells.

Scoring:

- ratio \geq 30 per cent: **10 points**
- 20 per cent \leq ratio $<$ 30 per cent: **8 points**
- 10 per cent \leq ratio $<$ 20 per cent: **6 points**
- 5 per cent \leq ratio $<$ 10 per cent: **3 points**
- ratio $<$ 5 per cent: **0 points**

1-EV-1.1b: Number of alternative fuel buses

Definition:

Ratio of the number of alternative fuel buses involved in international transport, to the total number of buses involved in international transport in the country per year. It concerns buses carrying more than 9 passengers. Alternative fuels are defined as electric, hybrid, liquid biofuel includes biogasoline, biodiesels and other liquid biofuels, natural gas (CNG/LNG) and hydrogen/fuel cells.

Scoring:

- ratio \geq 30 per cent: **10 points**
- 20 per cent \leq ratio $<$ 30 per cent: **8 points**
- 10 per cent \leq ratio $<$ 20 per cent: **6 points**
- 5 per cent \leq ratio $<$ 10 per cent: **3 points**
- ratio $<$ 5 per cent: **0 points**

1-EV-1: FLEET (continued)

1-EV-1.1c: Number of alternative fuel trucks

Definition:

Ratio of the number of alternative fuel trucks involved in international transport, to the total number of trucks involved in international transport in the country per year. It concerns trucks weighing more than 3.5 tons. Alternative fuels are defined as electric, hybrid, liquid biofuel includes biogasoline, biodiesels and other liquid biofuels, natural gas (CNG/LNG) and hydrogen/fuel cells.

Scoring:

- ratio \geq 30 per cent: **10 points**
- 20 per cent \leq ratio $<$ 30 per cent: **8 points**
- 10 per cent \leq ratio $<$ 20 per cent: **6 points**
- 5 per cent \leq ratio $<$ 10 per cent: **3 points**
- ratio $<$ 5 per cent: **0 points**

1-EV-1.2a: Average age of passenger cars

Definition:

The average age of passenger cars in the country.

Scoring:

- age \leq 5 years: **10 points**
- 5 years $<$ age \leq 10 years: **7 points**
- 10 years $<$ age \leq 15 years: **4 points**
- age $>$ 15 years: **0 points**

1-EV-1: FLEET (continued)**1-EV-1.2b: Average age of buses****Definition:**

The average age of buses involved in international transport. It concerns buses carrying more than nine passengers.

Scoring:

- age ≤ 5 years: **10 points**
- 5 years < age ≤ 10 years: **7 points**
- 10 years < age ≤ 15 years: **4 points**
- age > 15 years: **0 points**

1-EV-1.2c: Average age of trucks**Definition:**

The average age of trucks involved in international transport. It concerns trucks weighing more than 3.5 tons.

Scoring:

- age ≤ 5 years: **10 points**
 5 years < age ≤ 10 years: **7 points**
 10 years < age ≤ 15 years: **4 points**
 age > 15 years: **0 points**

1-EV-2: EMISSION**1-EV-2.1: Level of stringency of national vehicle emission legislation****Definition:**

The level of stringency of the national vehicle emission legislation concerning the minimum emission standard for new vehicles.

Scoring:

- Euro 6 (or equivalent), combined with the Real Driving Emissions (RDE) and the Worldwide Harmonized Light Vehicle Test Procedure (WLTP): **10 points**
- Euro 6 (or equivalent): **8 points**
- Euro 4-5 (or equivalent): **5 points**
- Euro 1-3 (or equivalent): **2 points**
- No emission requirements: **0 points**

1-EV-2.2: CO₂ emissions**Definition:**

The method used to measure CO₂ emissions from road vehicles and the application of vehicle taxation based on the measured CO₂ emission levels.

Scoring:

- CO₂ emissions are measured through the Worldwide Harmonized Light Vehicle Test Procedure (WLTP) and vehicle taxes are applicable based on the measured CO₂ emission levels: **10 points**
- CO₂ emissions are measured through the New European Driving Cycle (NEDC) and vehicle taxes are applicable based on the measured CO₂ emission levels: **8 points**
- CO₂ emissions are measured through the New European Driving Cycle (NEDC) or equivalent (US Environmental Protection Agency Federal Test Procedure/EPA FTP-75, Japanese JS08), but no taxation: **5 points**
- No CO₂ emissions measurement and vehicle taxation: **0 points**

1-EV-2: EMISSION (continued)

1-EV-2.3: Noise emissions

Definition:

The application of noise regulations, restricting the amount/duration/source of noise, to reduce excessive noise levels of motor vehicles, through requirements applied to: (1) powertrain noise; (2) tire noise; (3) audible warning signals (horn); (4) Acoustic Vehicle Alerting Systems (AVAS) for electric vehicles; (5) replacement silencers.

Scoring:

- All 5 requirements are in place: **10 points**
- 4 requirements are in place: **8 points**
- 3 requirements are in place: **6 points**
- 2 requirements are in place: **4 points**
- 1 requirement is in place: **2 points**
- No requirement is in place: **0 points**

1-EV-2.4: Modal share of passenger road transport

Definition:

Ratio of the passenger kilometres performed with road transport modes to the total passenger kilometres involved in international journeys per year.

Scoring:

- ratio < 20 per cent: **10 points**
- 20 per cent ≤ ratio < 40 per cent: **8 points**
- 40 per cent ≤ ratio < 60 per cent: **6 points**
- 60 per cent ≤ ratio < 80 per cent: **4 points**
- 80 per cent ≤ ratio < 90 per cent: **2 points**
- ratio ≥ 90 per cent: **0 points**

1-EV-2: EMISSION (continued)

1-EV-2.5: Application of models to predict weather-related risks

Definition:

Degree of application of operational models/software tools to predict weather-related risks to transport infrastructure. It concerns the application of the following tiers according to the Intergovernmental Panel on Climate Change (IPCC):

- tier 1: simplest method with default values;
- tier 2: similar to tier 1 but with country-specific emission factor and other data;
- tier 3: more complex approaches (models).

For more information, see this [link](#).

Scoring:

- Application of tier 3: **10 points**
- Application of tier 2: **7 points**
- Application of tier 1: **4 points**
- No tool in place: **0 points**

1-EV-2.6: Implementation of technical adaptation measures in road transport

Definition:

Degree of implementation of technical adaptation measures for road to project climate change impacts on road transport system and to propose adaptation options. Some examples of documents where such measures are addressed are Highways Agency Climate Change Adaptation Strategy and Framework Model (UK), Advanced Road Weather Information Systems (Canada), and Costs of Climate Change Impacts and Adaptation (France).

Scoring:

- Measures have been implemented: **10 points**
- Measures are currently being developed: **7 points**
- Measures are planned to be developed: **4 points**
- No measures planned to be developed: **0 points**

1-EV-3: INFRASTRUCTURE

1-EV-3.1: Share of alternative fuel filling stations	
Definition:	
Ratio of the number of alternative fuel filling stations along international roads and inland stations, to the total number of fuel filling stations along international roads and inland stations.	
Alternative fuels are defined as electric, hybrid, liquid biofuel (includes biogasoline, biodiesels and other liquid biofuels), natural gas (CNG/LNG) and hydrogen/fuel cells.	
Alternative fuel filling stations can be defined as alternative fuel filling points as a part of fuel filling stations.	
Scoring:	
ratio ≥ 30 per cent: 10 points	
20 per cent ≤ ratio < 30 per cent: 8 points	
10 per cent ≤ ratio < 20 per cent: 6 points	
5 per cent ≤ ratio < 10 per cent: 3 points	
ratio < 5 per cent: 0 points	

5.2 Rail Transport Connectivity Indicators

5.2.1 Economic Sustainability (EC)

2-EC-1: EFFICIENCY

2-EC-1.1: Staff resources at rail BCPs and inland clearance stations	
Definition:	
Adequacy of the number of personnel at rail BCPs and inland clearance stations to cope with the freight volumes involved.	
Please refer to the definition in 1-EC-1.1 for the explanation of staff categories.	
Scoring:	
<ul style="list-style-type: none"> • All staff categories available 24/7 at most BCPs and inland clearance stations: 10 points • Some staff categories available 24/7 at most BCPs and inland clearance stations: 8 points • All staff categories available during office hours at most BCPs and inland clearance stations: 6 points • Some staff categories available during office hours at most BCPs and inland clearance stations: 4 points • Staff available only with appointment: 2 points • No staff at BCPs and inland clearance stations: 0 points 	

2-EC-1: EFFICIENCY (continued)

2-EC-1.2: BCP infrastructure (joint controls facilities)

Definition:

Availability and opening hours of joint controls facilities at rail BCPs open for international goods traffic.

It concerns facilities for domestic controls as well as joint controls with adjoining countries.

In terms of opening hours, Article 6 of the Annex 8 to the Harmonization Convention sets out 24 hours a day as a minimum requirement.

Scoring:

- Facilities for joint bilateral controls with the adjoining country (one-stop technology) are available 24 hours a day: **10 points**
- Facilities for joint domestic controls (one-stop technology/ 2 stop border post) are available 24 hours a day: **8 points**
- Facilities for either joint bilateral controls or domestic controls are available with limited opening hours (for example, no night, weekend and holidays operation): **6 points**
- No facilities for any type of joint controls: **0 points**

2-EC-1: EFFICIENCY (continued)

2-EC-1.4: Inland clearance and control procedures

Definition:

The extent to which control procedures are undertaken at inland clearance stations away from the border to promote efficient movements at BCPs. The control procedures are involving medico-sanitary inspection, controls of compliance with technical standards, quality controls, train inspections and other as applicable.

The adoption of customs risk management system will get additional points as risk management procedures expedite the clearance of goods.

Scoring:

- All control procedures take place at inland clearance stations: **8 points**
- >50 per cent control procedures take place at inland clearance stations: **6 points**
- <50 per cent control procedures take place at inland clearance stations: **4 points**
- All control procedures take place at BCPs: **0 points**
- Application of customs risk management system: **+ 2 points**

2-EC-1.3: Harmonization of international standards for minimum useful siding length

Definition:

Harmonization of international standards for minimum useful siding length on main international lines for goods trains. In AGC, this has been set at 750 m and in the Arab Mashreq 500 m.

Scoring:

- Applicable on more than 50 per cent of the international railway lines along the national segment: **10 points**
- Applicable on less than 50 per cent of the international railway lines along the national segment: **5 points**
- Not applicable in the country: **0 points**

2-EC-1: EFFICIENCY (continued)

2-EC-1.5a: Coordination and delegation of controls among national border agencies

Definition:
 The extent to which national border agencies (such as Health and Safety Authorities, Treasury, and Food and Drug Administration) delegate their control activities to other border agencies such as Customs authorities, in accordance with a cooperation agreement or memorandum of understanding. By implementing a delegation mechanism, duplication and overlapping activities, and conflicting instructions and requirements can be reduced.

- Scoring:**
- A coordination and delegation mechanism is in place where all border agencies can at any time act/perform controls on each other’s behalf: **10 points**
 - A coordination and delegation mechanism is in place, however only several border agencies can in specific cases (e.g. during off-peak hours and at night) act/perform controls on each other’s behalf: **6 points**
 - No coordination and delegation mechanism in place, as such all government agencies act independently: **0 points**

2-EC-1: EFFICIENCY (continued)

2-EC-1.5b: Coordination and delegation of controls between agencies of neighbouring countries

Definition:
 The extent to which border agencies from both sides of the BCP coordinate with each other or delegate the control procedures to each other at a designated single common border post/station, in accordance with a bilateral agreement or memorandum of understanding). Implementing such a coordination and delegation mechanism will increase the border crossing efficiency.

- Scoring:**
- A coordination and delegation mechanism is in place, where border agencies from both sides of the BCP at any time act/perform controls together or on each other’s behalf: **8 points**
 - A coordination and delegation mechanism is in place, where border agencies from both sides of the BCP in specific cases (e.g. during off-peak hours and at night) act/perform controls jointly or on each other’s behalf: **6 points**
 - Common open hours as determined by traffic volume: **+ 2 points**
 - No coordination and delegation mechanism in place, as such border agencies from both sides of the BCP act independently: **0 points**

2-EC-1.6: Average railway border clearance time

Definition:
 The average border processing time (in minutes) needed by a train, calculated by summing the stop time of all trains divided by the number of trains crossing the border per day. The survey should capture the stop time by time of day (peak and off-peak) and day of week.

Scoring:
 Not applicable. This is a verification indicator.

2-EC-1: EFFICIENCY (continued)

2-EC-1.7: Proportion of bulk to non-bulk cargo

Definition:

The proportion of bulk to non-bulk export rail cargo from the country. This indicator shows how diverse the rail traffic is, in order to promote non-bulk goods on railways.

Scoring:

- 50:50 : **10 points**
- 60:40 : **7 points**
- 70:30 : **4 points**
- 80:20 : **0 points**

2-EC-1.8: Empty running percentage

Definition:

The empty running percentage of railway traffic returning to the country. This indicator measures cooperation and coordination with neighbouring countries to reduce empty running.

Scoring:

Not applicable. This is a verification indicator.

2-EC-2: TIME REQUIRED AT BORDERS

2-EC-2.1a: Average border clearance time (with physical inspection)

Definition:

The average border clearance time (in minutes) needed by a train, when physical inspections are involved. It is calculated by summing the clearance time of all inspected trains divided by the number of inspected trains. Time taken into consideration is the time from entering the border post in one territory to leaving it in the other country. The survey should capture the clearance time by time of day (peak and off-peak) and day of week.

Scoring:

Not applicable. This is a verification indicator.

2-EC-2.1b: Average border clearance time (without physical inspection)

Definition:

The average border clearance time (in minutes) needed by a train, when no physical inspections are involved. It is calculated by summing the clearance time of all surveyed trains divided by the number of surveyed trains. Time taken into consideration is the time from entering the border post in one territory to leaving it in the other country. The survey should capture the clearance time by time of day (peak and off-peak) and day of week.

Scoring:

Not applicable. This is a verification indicator.

2-EC-2.2: Average queuing time

Definition:

The average queuing time (in minutes) for trains at border stations. Time taken into consideration starts when a train arrives at the rail yard and ends when the clearance process starts. The survey should capture queuing time by time of day (peak and off-peak) and day of week.

Scoring:

Not applicable. This is a verification indicator.

2-EC-3: COST

2-EC-3.1: Customs clearance cost for containerized cargo

Definition:

The average customs operation cost per Twenty Equipment Unit (TEU) associated with compliance with customs regulations and border crossing procedures in the country relative to the average cost in the region.

The involved costs include loading/unloading of shipment at BCPs and inspection charges.

Scoring:

- Cost is more than 50 per cent lower than the regional average: **10 points**
- Cost is less than 50 per cent lower than the regional average: **7 points**
- Cost is less than 50 per cent higher than the regional average: **4 points**
- Cost is more than 50 per cent higher than the regional average: **0 points**

2-EC-3: COST (continued)

2-EC-3.3: Customs clearance cost for liquid bulk cargo

Definition:

The average customs operation cost for liquid bulk cargo per ton associated with compliance with customs regulations and border crossing procedures in the country relative to the average cost in the region. The involved costs are, among others, loading/unloading of shipment at BCPs and inspection charges.

Scoring:

- Cost is more than 50 per cent lower than the regional average: **10 points**
- Cost is less than 50 per cent lower than the regional average: **7 points**
- Cost is less than 50 per cent higher than the regional average: **4 points**
- Cost is more than 50 per cent higher than the regional average: **0 points**

2-EC-3.2: Customs clearance cost for dry bulk cargo

Definition:

The average customs operation cost for dry bulk cargo per ton associated with compliance with customs regulations and border crossing procedures in the country relative to the average cost in the region. The involved costs are, among others, loading/unloading of shipment at BCPs and inspection charges.

Scoring:

- Cost is more than 50 per cent lower than the regional average: **10 points**
- Cost is less than 50 per cent lower than the regional average: **7 points**
- Cost is less than 50 per cent higher than the regional average: **4 points**
- Cost is more than 50 per cent higher than the regional average: **0 points**

2-EC-4: INFRASTRUCTURE

2-EC-4.1: Length of main international railway lines

Definition:

Ratio of the total length of main international railway lines (km) to the total rail network in the country. In Europe, these concern the class-A lines of E-railway network classification listed in Annex I of the European Agreement on Main International Railway Lines (AGC). In Mashreq region, these are listed in Annex I of the Agreement on International Railways in the Arab Mashreq.

Scoring:

Ratio \geq 25 per cent: **10 points**
 20 per cent \leq ratio $<$ 25 per cent: **8 points**
 15 per cent \leq ratio $<$ 20 per cent: **6 points**
 10 per cent \leq ratio $<$ 15 per cent: **4 points**
 5 per cent \leq ratio $<$ 10 per cent: **2 points**
 ratio $<$ 5 per cent: **0 points**

2-EC-4.2: Length of supplementary international railway lines

Definition:

Ratio of the total length of supplementary international railway lines (km) to the total rail network in the country. In Europe, these lines concern the class-B lines of E-railway network classification listed in Annex I of the AGC.

Scoring:

Ratio \geq 25 per cent: **10 points**
 20 per cent \leq ratio $<$ 25 per cent: **8 points**
 15 per cent \leq ratio $<$ 20 per cent: **6 points**
 10 per cent \leq ratio $<$ 15 per cent: **4 points**
 5 per cent \leq ratio $<$ 10 per cent: **2 points**
 ratio $<$ 5 per cent: **0 points**

2-EC-4: INFRASTRUCTURE (continued)

2-EC-4.3: Number of international railway corridors

Definition:

The number of international railway corridors passing through the country.

Scoring:

Not applicable. This is a verification indicator.

2-EC-4.4: Commercial speed of international railway lines

Definition:

The average commercial speed of the majority of the international railway lines along the national segment, which is equal to the distance divided by the journey time.

Scoring:

\geq 160 km/h: **10 points**
 120 km/h: **8 points**
 100km/h: **6 points**
 80 km/h: **4 points**
 60 km/h: **2 points**
 40 km/h: **0 points**

2-EC-5: OPERATIONS

2-EC-5.1: Administrative Requirements

2-EC-5.1a: Admission requirements for locomotives

Definition:

Admission requirements for locomotives and powered trains, in terms of the technical condition, based on international/regional/subregional regime.

Scoring:

- Application of the international convention regime: **10 points**
- Application of regional regime equivalent to the applicable international conventions: **8 points**
- Application of an equivalent subregional regime: **6 points**
- Application of a simplified bilateral regime: **4 points**
- No admission: **0 points**

2-EC-5.1b: Admission requirements for train wagons

Definition:

Admission requirements for train wagons and passenger carriages, in terms of the technical condition, based on international/regional/subregional regime.

Scoring:

- Application of the international convention regime: **10 points**
- Application of regional regime equivalent to the applicable international conventions: **8 points**
- Application of an equivalent subregional regime: **6 points**
- Application of a simplified bilateral regime: **4 points**
- No admission: **0 points**

2-EC-5: OPERATIONS (continued)

2-EC-5.1c: Contract of carriage requirements

Definition:

Level of harmonization of the contract of carriage requirements as per internationally and/or regionally agreed arrangements.

Note: the maximum score of this indicator is 8 points because currently there are no internationally agreed arrangements yet. 10 points are reserved when such agreements become available in the future.

Scoring:

- Regionally or subregionally harmonized: **8 points**
- Bilaterally harmonized with common full contract conditions, arrangements for legal issues and consignment note: **6 points**
- No common arrangements: **0 points**

2-EC-5.1d: Recognition of license for train drivers

Definition:

Degree of recognition of license for train drivers.

Note: the maximum score of this indicator is 8 points because currently there are no internationally agreed arrangements yet. 10 points are reserved when such agreements become available in the future.

Scoring:

- Use of regionally recognized license: **8 points**
- Bilateral arrangement with additional documents: **6 points**
- No arrangement: **0 points**

2-EC-5.2: INTEROPERABILITY

2-EC-5.2a: Track gauge

Definition:

The extent to which the track gauge of the international rail network in the country adheres to the regional/global technical standards.

Scoring:

Track gauge adheres to global technical standards: **10 points**

Track gauge adheres to regional technical standards: **8 points**

Track gauge adheres to subregional technical standards: **6 points**

Track gauge adheres to bilaterally agreed technical standards: **4 points**

Track gauge adheres to national technical standards: **0 points**

2-EC-5.2b: Loading gauge

Definition:

The extent to which the loading gauge of the international rail network in the country adheres to the regional/global technical standards.

Scoring:

- Loading gauge adheres to global technical standards: **10 points**
- Loading gauge adheres to regional technical standards: **8 points**
- Loading gauge adheres to subregional technical standards: **6 points**
- Loading gauge adheres to bilaterally agreed technical standards: **4 points**
- Loading gauge adheres to national technical standards: **0 points**

2-EC-5.2: INTEROPERABILITY (continued)

2-EC-5.2c: Railway signalling system

Definition:

The most widely used railway signalling system on the international railway network in the country.

Scoring:

- Moving-blocks signalling: **10 points**
- Fixed-blocks signalling: **7 points**
- Manually-controlled block: **4 points**
- No signalling system in place: **0 points**

2-EC-5.2d: Number of countries whose rolling stocks are allowed to enter the country

Definition:

The number of foreign countries whose rolling stocks are allowed to enter the country.

Scoring:

- ≥ 5 countries: **10 points**
- 4 countries: **8 points**
- 3 countries: **6 points**
- 2 countries: **4 points**
- 1 country: **2 points**
- None: **0 points**

2-EC-5.2: INTEROPERABILITY (continued)**2-EC-5.2e: Membership of international rail conventions****Definition:**

Degree of harmonization of legal interoperability by being member of international railway conventions to comprehensively address the legal issues of international rail transport across the entire continent.

Scoring:

- Member of either OSJD or OTIF: **10 points**
- Not member: **0 points**

2-EC-5.2f: Open access**Definition:**

Degree of access to third party operators to operate on the country's railway network. Third party operators are railway operators other than the main national operator.

Scoring:

- Full access with independent rail regulator oversight: **10 points**
- Full access without oversight: **7 points**
- Access granted to only adjoining state railways: **4 points**
- Access granted only to the national railway (monopoly): **0 points**

2-EC-6: INTERMODALITY/COMBINED TRANSPORT**2-EC-6.1: Modal share of freight rail transport****Definition:**

Ratio of the freight ton kilometres performed with rail transport to the total ton kilometres involved in international journeys per year.

Scoring:

- ratio \geq 90 per cent: **10 points**
- 75 per cent \leq ratio $<$ 90 per cent: **8 points**
- 50 per cent \leq ratio $<$ 75 per cent: **6 points**
- 25 per cent \leq ratio $<$ 50 per cent: **4 points**
- 10 per cent \leq ratio $<$ 25 per cent: **2 points**
- ratio $<$ 10 per cent: **0 points**

2-EC-6.2: Share of containerized cargo**Definition:**

The share of containerization is defined as the gross weight of containerized cargo divided by the total gross weight of non-bulk cargo by rail. Oil, coal, grain, bulk, cement, etc, are excluded.

Scoring:

- share \geq 65 per cent: **10 points**
- 50 per cent \leq share $<$ 65 per cent: **8 points**
- 25 per cent \leq share $<$ 50 per cent: **6 points**
- 10 per cent \leq share $<$ 25 per cent: **4 points**
- share $<$ 10 per cent: **0 points**

2-EC-6: INTERMODALITY/COMBINED TRANSPORT (continued)
2-EC-6.3: Handling time of consignments in terminals
Definition:

The minimum handling time of consignments in terminals, defined as the period from the latest time of acceptance of goods to the departure of trains, and from the arrival of trains to the availability of wagons ready for the unloading of loading units.

Scoring:

- time ≤ 1 hour: **10 points**
- 2 hours ≤ time < 1 hour: **5 points**
- time > 2 hours: **0 points**

2-EC-6.4: Waiting time for road vehicles
Definition:

The minimum waiting time for road vehicles, defined as the waiting time for road vehicles to deliver or collect loading units at rail terminals.

Scoring:

- time ≤ 20 minutes: **10 points**
- 60 minutes ≤ time < 20 minutes: **5 points**
- time > 60 minutes: **0 points**

2-EC-7: ICT AND INTELLIGENT TRANSPORT SYSTEM SOLUTIONS
2-EC-7.1: Implementation of interconnected e-solutions
Definition:

Degree of implementation of internationally, regionally, subregionally or bilaterally harmonized interconnected e-solutions for transport: electronic CIM/SMGS and e-Single Window system for customs and border procedures.

Notes:

CIM: Uniform rules concerning the contract of international carriage of goods by rail

SMGS: Agreement on International Freight Traffic by Rail

Scoring:

- electronic CIM/SMGS and inter-agency e-Single Window are implemented: **10 points**
- Only e-Single Window is implemented: **8 points**
- electronic CIM/SMGS is implemented, but not e-Single Window: **6 points**
- Use of electronic processing system: **4 points**
- Manual processing: **0 points**

2-EC-7.2: Application of advance electronic rail cargo information
Definition:

Degree of application of advance electronic cargo information for pre-clearance purposes.

Scoring:

- Full-fledged advance electronic cargo information system allowing for pre-clearance is applicable for all cargo: **10 points**
- Full-fledged advance electronic cargo information system allowing for pre-clearance is applicable for the majority of cargo: **7 points**
- Full-fledged advance electronic cargo information system allowing for pre-clearance is applicable for selected cargo only, the majority is processed manually upon arrival: **4 points**
- No electronic pre-clearance cargo system in place, processing and clearance take place upon arrival of the cargo in the country of importation: **0 points**

2-EC-7: ICT AND INTELLIGENT TRANSPORT SYSTEM SOLUTIONS (continued)

2-EC-7.3: Availability of detection equipment and inspection technologies
<p>Definition: Availability of detection equipment, scanning and non-intrusive inspection technologies including scanners for cargo, technology for detection of chemical, biological, radiological and nuclear materials, and e-Seal, at BCPs.</p>
<p>Scoring:</p> <ul style="list-style-type: none"> • Available at all rail BCPs and inland clearance stations: 10 points • Available at at least 50 per cent of rail BCPs and inland clearance stations: 7 points • Available at less than 50 per cent of rail BCPs and inland clearance stations: 4 points • Not available in any rail BCPs nor inland clearance stations: 0 points

2-EC-7.4: Coordinated timetabling process
<p>Definition: The existence of a coordinated timetabling process.</p>
<p>Scoring:</p> <ul style="list-style-type: none"> • Globally coordinated: 10 points • Regionally coordinated: 8 points • Subregionally coordinated: 6 points • Bilaterally coordinated: 4 points • No coordination in place: 0 points

5.2.2 Social Sustainability (SO)

2-SO-1: RAIL TRAFFIC INFRASTRUCTURE

2-SO-1.1: Percentage of international railway lines with at least two tracks
<p>Definition: Ratio of the international railway lines along the national segment with at least two tracks, to the total length of the international railway lines along the national segment.</p>
<p>Scoring:</p> <ul style="list-style-type: none"> • ratio ≥ 25 per cent: 10 points • 20 per cent ≤ ratio < 25 per cent: 8 points • 15 per cent ≤ ratio < 20 per cent: 6 points • 10 per cent ≤ ratio < 15 per cent: 4 points • 5 per cent ≤ ratio < 10 per cent: 2 points • ratio < 5 per cent: 0 points

2-SO-1.2a: Secured sidings at rail BCPs (cargo security)
<p>Definition: The extent to which the rail BCPs in the country are equipped with secured sidings - fully fenced and illuminated - in order to reduce cargo thefts.</p>
<p>Scoring:</p> <ul style="list-style-type: none"> • All rail BCPs are equipped with secured sidings: 10 points • More than 50 per cent of rail BCPs are equipped with secured sidings: 7 points • Less than 50 per cent of rail BCPs are equipped with secured sidings: 4 points • No BCP is equipped with secured sidings: 0 points

**2-SO-1: RAIL TRAFFIC INFRASTRUCTURE
(continued)**
2-SO-1.2b: Number of incidents of rail cargo theft
Definition:

The number of cases of reported rail cargo theft per 100,000 wagon days involved in trade (import and export) per year.

Scoring:

Not applicable. This is a verification indicator.

2-SO-1.2c: Level crossings on international lines
Definition:

The most widely used type of level crossings on the international railway lines in the country.

Scoring:

- No road level crossings: **10 points**
- Automated level crossing system: **7 points**
- Manned level crossings: **4 points**
- Unmanned level crossings: **0 points**

2-SO-1.2d: Number of accidents at level crossings
Definition:

The number of accidents at level crossings per 100,000 train-kms driven per year.

Scoring:

Not applicable. This is a verification indicator.

**2-SO-1: RAIL TRAFFIC INFRASTRUCTURE
(continued)**
2-SO-1.2e: Secured sidings of operating railway lines
Definition:

The extent to which secured sidings - fully fenced and illuminated - are installed on both sides of the operating international railway lines in the country in order to increase traffic safety.

Scoring:

- All operating railway lines are equipped with secured sidings: **10 points**
- More than 50 per cent of operating railway lines are equipped with secured sidings: **7 points**
- Less than 50 per cent of operating railway lines are equipped with secured sidings: **4 points**
- No railway line is equipped with secured sidings: **0 points**

2-SO-1.3: Number of accidents due to system failure
Definition:

The number of accidents per 100,000 train-kms driven per year, where primary cause is system failure, such as broken rails, track buckles, signals passed at danger, wrong-side signalling failures, broken wheels and broken axles.

Scoring:

Not applicable. This is a verification indicator.

2-SO-2: DANGEROUS GOODS TRANSPORT – ADMINISTRATIVE REQUIREMENTS

2-SO-2.1: General provisions for the transport of dangerous goods by rail

2-SO-2.1a: Placarding and marking of wagons

Definition:

Degree of harmonization of internationally/regionally agreed provisions on placarding and marking in the national laws and legislations. It concerns placarding and marking of all types of wagons for the transport of dangerous goods.

Scoring:

- In accordance with internationally agreed provisions: **10 points**
- In accordance with regionally agreed provisions: **5 points**
- Not recognizing international/regional provisions or no national law applied: **0 points**

2-SO-2.1b: Percentage of transport of dangerous goods

Definition:

Percentage of traffic classified as transport of dangerous goods on the international rail network.

Scoring:

Not applicable. This is a verification indicator.

2-SO-2.2: TRAINING OF PERSONNEL INVOLVED IN THE TRANSPORT OF DANGEROUS GOODS

2-SO-2.2a: Provision of function-specific training

Definition:

Degree of harmonization of internationally/regionally agreed rules in the provision of function-specific training for carriers and railway infrastructure managers personnel involved in the transport of dangerous goods. The internationally agreed elements of function-specific training are set out in RID.

Scoring:

- The provision is developed based on internationally agreed rules: **10 points**
- The provision is developed based on regionally agreed rules: **5 points**
- The provision is developed partially based on internationally/regionally agreed rules: **3 points**
- The provision does not recognize internationally/regionally agreed rules or no training provisions in place: **0 points**

2-SO-2.3: CHECKS AND OTHER SUPPORT MEASURES TO ENSURE COMPLIANCE WITH SAFETY REQUIREMENTS

2-SO-2.3a: Provisions for trains transporting dangerous goods

Definition:

The extent to which the carriage of dangerous goods is subject to the mandatory use of trains required by the international standards for the carriage of dangerous goods as regards their construction, type approval, RID approval and annual technical inspection.

Scoring:

- Mandatory: **10 points**
- Voluntary: **5 points**
- Non-existing: **0 points**

2-SO-2.3b: Number of accidents and incidents involving transport of dangerous goods

Definition:

The number of accidents and incidents involving transport of dangerous goods by rail per 100,000 train-kms driven per year.

Scoring:

Not applicable. This is a verification indicator.

5.2.3 Environmental Sustainability (EV)

2-EV-1: FLEET

2-EV-1.1: Average age of rolling stocks

Definition:

The average age of rolling stock involved in international transport.

Scoring:

- age < 15 years: **10 points**
- 15 years ≤ age < 20 years: **7 points**
- 20 years ≤ age < 25 years: **4 points**
- age ≥ 25 years: **0 points**

2-EV-1.2: Average age of locomotives

Definition:

The average age of locomotives involved in international transport.

Scoring:

- age < 15 years: **10 points**
- 15 years ≤ age < 20 years: **7 points**
- 20 years ≤ age < 25 years: **4 points**
- age ≥ 25 years: **0 points**

2-EV-1.3: Number of hydrogen-powered train

Definition:

Ratio of the number of hydrogen-powered train involved in international transport, to the total number of trains involved in international transport in the country per year.

Scoring:

- ratio ≥ 10 per cent: **10 points**
- 8 per cent ≤ ratio < 10 per cent: **8 points**
- 6 per cent ≤ ratio < 8 per cent: **6 points**
- 4 per cent ≤ ratio < 6 per cent: **4 points**
- 2 per cent ≤ ratio < 4 per cent: **2 points**
- ratio < 2 per cent: **0 points**

2-EV-2: EMISSION**2-EV-2.1: Modal share of passenger rail transport****Definition:**

Ratio of the passenger kilometres performed with rail transport modes to the total passenger kilometres involved in international journeys per year.

Scoring:

- ratio \geq 90 per cent: **10 points**
- 75 per cent \leq ratio $<$ 90 per cent: **8 points**
- 50 per cent \leq ratio $<$ 75 per cent: **6 points**
- 25 per cent \leq ratio $<$ 50 per cent: **4 points**
- 10 per cent \leq ratio $<$ 25 per cent: **2 points**
- ratio $<$ 10 per cent: **0 points**

2-EV-2.2: Implementation of technical adaptation measures in rail transport**Definition:**

Degree of implementation of technical adaptation measures for rail to project climate change impacts on rail transport system and to propose adaptation options. Some examples of technical adaptation measures for rail are greater resilience of the network to heavy precipitation, and installation of monitoring systems consisting of various environmental and engineering sensors (anemometers) along rail lines.

Scoring:

- Measures have been implemented: **10 points**
- Measures are currently being developed: **7 points**
- Measures are planned to be developed: **4 points**
- No measures planned to be developed: **0 points**

5.3 Inland Waterway Transport Connectivity Indicators**5.3.1 Economic Sustainability (EC)****3-EC-1: EFFICIENCY****3-EC-1.1: Waiting times at ports****Definition:**

The average waiting times at port, defined by the period from the latest time of acceptance of goods to the departure of vessels and from the arrival of vessels to the beginning of unloading of containers.

Scoring:

- time \leq 1 hour: **10 points**
- 2 hours \leq time $<$ 1 hour: **5 points**
- time $>$ 2 hours: **0 points**

3-EC-1.2: Waiting times at locks**Definition:**

The average waiting times at locks, defined by the period from the arrival of vessels at the locks area to the time when the vessels are allowed to enter the system.

Scoring:

- time \leq 20 minutes: **10 points**
- 60 minutes \leq time $<$ 20 minutes: **5 points**
- time $>$ 60 minutes: **0 points**

3-EC-1.3: Nighttime operation**Definition:**

Whether the majority of inland waterways in the country allow for nighttime navigation.

Scoring:

- allow for nighttime navigation: **10 points**
- do not allow for nighttime navigation: **0 points**

3-EC-2: COST

3-EC-2.1: Port dues

Definition:

The average inland port dues applied in the country relative to the average port dues in the region. It concerns a charge levied by the port to all ships entering the port till the time it leaves the port, and generally calculated on the gross registered tonnage of the ship as per the tonnage certificate issued for that ship.

Scoring:

- Cost is more than 50 per cent lower than the regional average: **10 points**
- Cost is less than 50 per cent lower than the regional average: **7 points**
- Cost is less than 50 per cent higher than the regional average: **4 points**
- Cost is more than 50 per cent higher than the regional average: **0 points**

3-EC-2.2: Tugboat service cost

Definition:

The average tugboat service cost applied in inland navigation ports in the country relative to the average tugboat service cost in the region. The costs are normally calculated based on the size of the tugboat in addition to an hourly usage charge.

Scoring:

- Cost is more than 50 per cent lower than the regional average: **10 points**
- Cost is less than 50 per cent lower than the regional average: **7 points**
- Cost is less than 50 per cent higher than the regional average: **4 points**
- Cost is more than 50 per cent higher than the regional average: **0 points**

3-EC-2: COST (continued)

3-EC-2.3: Tonnage dues

Definition:

The average tonnage dues applied in inland navigation ports in the country relative to the average tonnage dues in the region. This is a charge paid by the vessel operator to a port for the usage of the port.

Scoring:

- Cost is more than 50 per cent lower than the regional average: **10 points**
- Cost is less than 50 per cent lower than the regional average: **7 points**
- Cost is less than 50 per cent higher than the regional average: **4 points**
- Cost is more than 50 per cent higher than the regional average: **0 points**

3-EC-2.4: Cargo dues

Definition:

The average cargo dues applied in inland navigation ports in the country relative to the average cargo dues in the region. This concerns a fee levied by the port for using the port facilities for movement of the cargo.

Scoring:

- Cost is more than 50 per cent lower than the regional average: **10 points**
- Cost is less than 50 per cent lower than the regional average: **7 points**
- Cost is less than 50 per cent higher than the regional average: **4 points**
- Cost is more than 50 per cent higher than the regional average: **0 points**

3-EC-2: COST (continued)

3-EC-2.5: Lock service charges

Definition:
The average lock service charges applied along the inland waterways in the country relative to the average similar charges in the region.

- Scoring:**
- Cost is more than 50 per cent lower than the regional average: **10 points**
 - Cost is less than 50 per cent lower than the regional average: **7 points**
 - Cost is less than 50 per cent higher than the regional average: **4 points**
 - Cost is more than 50 per cent higher than the regional average: **0 points**

3-EC-3: INFRASTRUCTURE

3-EC-3.1: Percentage of IWW with international technical parameters

Definition:
Ratio of the length of IWW of international importance (in Europe these are E waterways) that complies with the internationally/regionally agreed technical and operational parameters, to the total length of the IWW in the country. The target infrastructure parameters are set out in the “Inventory of Main Standards and Parameters of the E Waterway Network”.

- Scoring:**
- ratio ≥ 80 per cent: **10 points**
 - 60 per cent ≤ ratio < 80 per cent: **8 points**
 - 40 per cent ≤ ratio < 60 per cent: **6 points**
 - 20 per cent ≤ ratio < 40 per cent: **4 points**
 - ratio < 20 per cent: **0 points**

3-EC-3.2: Cargo handling capacity of inland navigation ports

Definition:
Ratio of cargo handling capacity of inland navigation ports of international importance (in Europe these are E ports) in the country to the minimum capacity set out in the international agreements. In AGN, this has been set at 0.5 million tones/year. The target parameters of ports are set out in the “Inventory of Main Standards and Parameters of the E Waterway Network”.

- Scoring:**
- ratio ≥ 80 per cent: **10 points**
 - 60 per cent ≤ ratio < 80 per cent: **8 points**
 - 40 per cent ≤ ratio < 60 per cent: **6 points**
 - 20 per cent ≤ ratio < 40 per cent: **4 points**
 - ratio < 20 per cent: **0 points**

3-EC-3: INFRASTRUCTURE (continued)

3-EC-3.3: Number of destination countries that can be reached by international IWW corridors and coastal routes

Definition:

The total number of destination countries that can be reached by the international IWW corridors and coastal routes that passing through the country.

Scoring:

Not applicable. This is a verification indicator.

3-EC-3.4: Harmonization of national laws on IWW

Definition:

Degree of harmonization of the AGN and other relevant international conventions and legal instruments in the national laws on IWW (for example Inland Waterway Navigation and Ports Legislation and Maritime Code).

Scoring:

- Fully harmonized: **10 points**
- Partially harmonized: **7 points**
- Not harmonized: **4 points**
- No national law: **0 points**

3-EC-4: OPERATIONS

3-EC-4.1: Harmonization of boatmaster's certificates

Definition:

Level of harmonization of national boatmaster's certificates as per sub-regionally agreed arrangements.

Scoring:

- Subregionally harmonized: **6 points**
- Bilaterally harmonized: **4 points**
- Only nationally recognized: **2 points**
- No certificate issuance procedure in place: **0 points**

3-EC-4.2: Contract of carriage requirements

Definition:

Level of harmonization of the contract of carriage requirements as per internationally and/or regionally agreed arrangements.

Scoring:

- Globally harmonized (recognition of CMNI): **10 points**
- Regionally harmonized: **8 points**
- Subregionally harmonized: **6 points**
- Bilaterally harmonized: **4 points**
- No common arrangements: **0 points**

3-EC-5: INTERMODALITY/COMBINED TRANSPORT
3-EC-5.1: Modal share of freight by IWW
Definition:

Ratio of ton-kms of freight by IWW to the total ton-kms by road, rail and IWW per year.

Scoring:

- ratio \geq 10 per cent: **10 points**
- 8 per cent \leq ratio $<$ 10 per cent: **8 points**
- 6 per cent \leq ratio $<$ 8 per cent: **6 points**
- 4 per cent \leq ratio $<$ 6 per cent: **4 points**
- 2 per cent \leq ratio $<$ 4 per cent: **2 points**
- ratio $<$ 2 per cent: **0 points**

3-EC-5.2: Connection of port terminals with road and railway
Definition:

Whether the terminals in inland waterway ports are connected with main roads and railway lines.

Scoring:

- Connected with both international road and rail networks: **9 points**
- Connected with either international road or rail network: **7 points**
- Connected with both main roads and railway lines not belonging to the international network: **5 points**
- Connected with either main roads or railway lines not belonging to the international network: **3 points**
- No road and railway connection: **0 points**
- Connected with sea lanes: **+1 point**

3-EC-6: ICT AND INTELLIGENT TRANSPORT SYSTEM SOLUTIONS
3-EC-6.1: Percentage of IWW equipped with RIS
Definition:

Ratio of the length of inland waterways equipped with River Information Services (RIS) to the total length of IWW network.

Scoring:

- ratio \geq 80 per cent: **10 points**
- 60 per cent \leq ratio $<$ 80 per cent: **8 points**
- 40 per cent \leq ratio $<$ 60 per cent: **6 points**
- 20 per cent \leq ratio $<$ 40 per cent: **4 points**
- ratio $<$ 20 per cent: **0 points**

3-EC-6.2: Application of RIS technological solutions
Definition:

Degree of application of RIS technological solutions in the country, which include (1) VHF radio; (2) Mobile data communication; (3) Global Navigation Satellite Systems (GNSS); (4) Internet; (5) Vessel tracking and tracing system; (6) Ship reporting system.

Scoring:

- All 6 systems are in place: **10 points**
- 4-5 systems are in place: **8 points**
- 2-3 systems are in place: **6 points**
- 1 system is in place: **4 points**
- No system is in place: **0 points**

23-EC-6: ICT AND INTELLIGENT
TRANSPORT SYSTEM SOLUTIONS
(continued)

3-EC-6.3:	Percentage of IWW covered by Inland ECDIS standard
Definition:	
Ratio of the length of IWW of international importance that are covered by Inland ECDIS (Electronic Chart Display Information System) standard, to the total length of the international IWW in the country.	
Scoring:	
<ul style="list-style-type: none"> ratio \geq 80 per cent: 10 points 60 per cent \leq ratio $<$ 80 per cent: 8 points 40 per cent \leq ratio $<$ 60 per cent: 6 points 20 per cent \leq ratio $<$ 40 per cent: 4 points ratio $<$ 20 per cent: 0 points 	

3-EC-6.4:	Percentage of IWW equipped with AIS
Definition:	
Ratio of the length of IWWs equipped with Automatic Identification System (AIS) to the total length of IWW network.	
Scoring:	
<ul style="list-style-type: none"> ratio \geq 80 per cent: 10 points 60 per cent \leq ratio $<$ 80 per cent: 8 points 40 per cent \leq ratio $<$ 60 per cent: 6 points 20 per cent \leq ratio $<$ 40 per cent: 4 points ratio $<$ 20 per cent: 0 points 	

5.3.2 Social Sustainability (SO)

3-SO-1: TRAFFIC RULES

3-SO-1.1:	Application of internationally harmonized navigation rules
Definition:	
Degree of application of internationally harmonized navigation rules (in Europe, these concern the European Code for Inland Waterways/CEVNI) on the country's international waterways.	
Scoring:	
<ul style="list-style-type: none"> Fully harmonized: 10 points Partially harmonized: 7 points Not harmonized: 4 points No national legislations: 0 points 	

3-SO-1.2:	Navigation-related accidents
Definition:	
Number of navigation-related accidents per year. These concern the accidents that occur due to insufficient navigational infrastructure, such as navigational aids (cardinal marks, lateral marks and buoy etc.) and other signs & markings along waterway routes for both night and day navigation.	
Scoring:	
Not applicable. This is a verification indicator.	

3-SO.2: VESSELS REGULATIONS**3-SO-2.1: Harmonization of registration of inland navigation vessels****Definition:**

Degree of harmonization of internationally/regionally agreed provisions on the registration of inland navigation vessels, in the national laws and legislations.

Scoring:

- Globally harmonized: **10 points**
- Regionally harmonized: **8 points**
- Subregionally harmonized: **6 points**
- Bilaterally harmonized: **4 points**
- Not recognizing international/regional provisions or no national law applied: **0 points**

3-SO-2.2: Acceptance of harmonized mandatory vessel certificates**Definition:**

Degree of acceptance of harmonized mandatory vessel related certificates (such as vessel certificate vessel and measurement certificate).

Scoring:

- Globally harmonized: **10 points**
- Regionally harmonized: **8 points**
- Subregionally harmonized: **6 points**
- Bilaterally harmonized: **4 points**
- Accept only national certificates: **0 points**

3-SO.2: VESSELS REGULATIONS (continued)**3-SO-2.3: Number of vessels equipped with AIS****Definition:**

Ratio of the number of vessels involved in international transport that are equipped with Automatic Identification System (AIS), to the total number of vessels involved in international transport in the country per year.

Scoring:

- ratio \geq 90 per cent: **10 points**
- 75 per cent \leq ratio $<$ 90 per cent: **8 points**
- 50 per cent \leq ratio $<$ 75 per cent: **6 points**
- 25 per cent \leq ratio $<$ 50 per cent: **4 points**
- 10 per cent \leq ratio $<$ 25 per cent: **2 points**
- ratio $<$ 10 per cent: **0 points**

3-SO-2.4: Application of provisions for safety clearance, freeboard and draught marks**Definition:**

Degree of harmonization of internationally/regionally agreed provisions for safety clearance, freeboard and draught marks for inland navigation vessels, in the national laws and legislations.

Scoring:

- Globally harmonized: **10 points**
- Regionally harmonized: **8 points**
- Subregionally harmonized: **6 points**
- Bilaterally harmonized: **4 points**
- Not recognizing international/regional provisions or no national law applied: **0 points**

**3-SO.2: VESSELS REGULATIONS
(continued)**

3-SO-2.5: Application of provisions for passenger vessels

Definition:

Degree of harmonization of internationally/regionally agreed provisions for passenger vessels in the national laws and legislations.

Scoring:

- Globally harmonized: **10 points**
- Regionally harmonized: **8 points**
- Subregionally harmonized: **6 points**
- Bilaterally harmonized: **4 points**
- Not recognizing international/regional provisions or no national law applied: **0 points**

**3-SO-3: DANGEROUS GOODS
TRANSPORT – ADMINISTRATIVE
REQUIREMENTS**

3-SO-3.1: Training of personnel involved in the transport of dangerous goods

3-SO-3.1a: Provision of function-specific training

Definition:

Degree of harmonization of internationally/regionally agreed rules in the provision of function-specific training for personnel and crew involved in the transport of dangerous goods. The internationally agreed elements of function-specific training are set out in ADN.

Scoring:

- The provision is developed based on internationally agreed rules: **10 points**
- The provision is developed based on regionally agreed rules: **5 points**
- The provision is developed partially based on internationally/regionally agreed rules: **3 points**
- The provision does not recognize internationally/regionally agreed rules or no training provisions in place: **0 points**

3-SO-3.1b: Percentage of transport of dangerous goods

Definition:

Percentage of traffic classified as transport of dangerous goods on the IWW network.

Scoring:

Not applicable. This is a verification indicator.

3-SO-3: DANGEROUS GOODS TRANSPORT – ADMINISTRATIVE REQUIREMENTS (continued)

3-SO-3.2: Checks and other support measures to ensure compliance with safety requirements

3-SO-3.2a: Harmonization of procedures for appointment of inspection bodies

Definition:

Degree of harmonization of international/regional provisions in the national legislations on the procedures for appointment of inspection bodies. The inspection bodies are expert bodies on the construction and inspection of inland navigation vessels and as expert bodies on the transport of dangerous goods by inland waterway.

Scoring:

- The appointment procedures are developed based on internationally agreed provisions: **10 points**
- The appointment procedures are developed based on regionally agreed provisions: **5 points**
- The appointment procedures are not developed based on internationally/ regionally agreed provisions, but recognize them: **3 points**
- Not recognizing international/regional provisions or no procedures in place: **0 points**

3-SO-3.2b: Provisions for vessels transporting dangerous goods

Definition:

The extent to which the carriage of dangerous goods is subject to the mandatory use of vessels required by the international standards for the carriage of dangerous goods as regards their construction, type approval, ADN approval and technical inspections.

Scoring:

- Mandatory: **10 points**
- Voluntary: **5 points**
- Non-existing: **0 points**

3-SO-3: DANGEROUS GOODS TRANSPORT – ADMINISTRATIVE REQUIREMENTS (continued)

3-SO-3.3: Provisions concerning transport equipment and transport operations involving dangerous goods

3-SO-3.3a: Provisions concerning loading, carriage, unloading and handling of dangerous goods

Definition:

Degree of harmonization of internationally/regional agreed provisions in the national regulatory provisions concerning loading, carriage, unloading and handling of dangerous goods.

Scoring:

- The national regulatory provisions are developed based on internationally agreed provisions: **10 points**
- The national regulatory provisions are developed based on regionally agreed provisions: **5 points**
- The national regulatory provisions are deviating from the internationally/regional agreed provisions or no national regulatory provisions in place: **0 points**

3-SO-3.3b: Mandatory requirements concerning vessels and equipment

Definition:

Degree of harmonization of internationally/regional agreed provisions in the national legislations on requirements concerning vessels and equipment, such as fire-extinguishing arrangements and special equipment.

Scoring:

- The requirements are developed based on internationally agreed provisions: **10 points**
- The requirements are developed based on regionally agreed provisions: **5 points**
- The national legislations are deviating from the internationally/regional agreed provisions or no national legislations in place: **0 points**

**3-SO-4: DANGEROUS GOODS
TRANSPORT – INFRASTRUCTURE/
HARDWARE REQUIREMENTS**

**3-SO-4.1: Requirements concerning the
construction of vessels**

Definition:

Degree of harmonization of internationally/regionally agreed provisions in the national law on the requirements of vessels for the transport of dangerous goods, as regards the rules for construction of dry cargo and tank vessels, and construction applicable to seagoing vessels.

Scoring:

- The construction rules are developed based on internationally agreed provisions (ADN): **10 points**
- The construction rules are developed based on regionally agreed provisions: **5 points**
- The construction rules are deviating from the internationally/regionally agreed provisions or no requirements in place: **0 points**

**3-SO-4.2: Harmonization of requirements
to be complied with by vessel
crew**

Definition:

Degree of harmonization of internationally/regionally agreed provisions in the national law on the requirements to be complied with by the vessel crew, such as type of portable lamps and prohibition on smoking, fire and naked light.

Scoring:

- The requirements are developed based on internationally agreed provisions (ADR): **10 points**
- The requirements are developed based on regionally agreed provisions: **5 points**
- The requirements are deviating from the internationally/regionally agreed provisions or no requirements in place: **0 points**

5.3.3 Environmental Sustainability (EV)

3-EV-1: FLEET

**3-EV-1.1: Number of alternative fuel
inland vessels**

Definition:

Ratio of the number of alternative fuel inland vessels to the total number of inland vessels in the country per year. Alternative fuels for inland vessels are liquefied natural gas, liquefied petroleum gas, methanol, biofuel, hydrogen, as well as electromotion, hybrid (diesel-electric), fuel cell and battery systems.

Scoring:

- ratio \geq 20 per cent: **10 points**
- 15 per cent \leq ratio $<$ 20 per cent: **8 points**
- 10 per cent \leq ratio $<$ 15 per cent: **6 points**
- 5 per cent \leq ratio $<$ 10 per cent: **4 points**
- ratio $<$ 5 per cent: **0 points**

3-EV-1.2: Average age of vessels

Definition:

The average age of inland vessels involved in international transport.

Scoring:

- age \leq 10 years: **10 points**
- 10 years $<$ age \leq 30 years: **7 points**
- 30 years $<$ age \leq 50 years: **4 points**
- age $>$ 50 years: **0 points**

3-EV-2: EMISSION

3-EV-2.1: Harmonization of water pollution prevention
<p>Definition:</p> <p>Degree of harmonization of internationally/regionally agreed provisions on the prevention of water pollution produced by vessels in the national laws and legislations.</p>
<p>Scoring:</p> <ul style="list-style-type: none"> • Globally harmonized: 10 points • Regionally harmonized: 8 points • Subregionally harmonized: 6 points • Bilaterally harmonized: 4 points • Not recognizing international/regional provisions or no national law applied: 0 points

3-EV-2.2: Modal share of passengers IWW transport
<p>Definition:</p> <p>Ratio of the passenger kilometres performed with IWW transport to the total passenger kilometres involved in international journeys per year.</p>
<p>Scoring:</p> <ul style="list-style-type: none"> • ratio \geq 10 per cent: 10 points • 8 per cent \leq ratio $<$ 10 per cent: 8 points • 6 per cent \leq ratio $<$ 8 per cent: 6 points • 4 per cent \leq ratio $<$ 6 per cent: 4 points • 2 per cent \leq ratio $<$ 4 per cent: 2 points • ratio $<$ 2 per cent: 0 points

3-EV-2: EMISSION (continued)

3-EV-2.3: Implementation of technical adaptation measures in inland waterways
<p>Definition:</p> <p>Degree of implementation of technical adaptation measures for inland waterways to project climate change impacts on inland waterways system and to propose adaptation options. Some examples of documents where such measures are addressed are "Climate Change Adaptation Plan for International IW Network" (USA), and "The impact of climate change to inland waterway transport and the competitive position of the port of Rotterdam" (2011).</p>
<p>Scoring:</p> <ul style="list-style-type: none"> • Measures have been implemented: 10 points • Measures are currently being developed: 7 points • Measures are planned to be developed: 4 points • No measures planned to be developed: 0 points

5.4 Indicators related to pandemic and emergency situations

4-EM-1.1: Protocols and crisis teams to deal with pandemic situation
<p>Definition:</p> <p>The existence of emergency protocols to expedite movement of goods at BCPs in pandemic-created situations and setting up crisis teams to ensure the overall performance of customs tasks to improve the efficiency of border crossing activities.</p>
<p>Scoring:</p> <ul style="list-style-type: none"> Both protocols and crisis teams are in place: 10 points Only protocols are in place: 5 points Only crisis teams are in place: 5 points Neither protocols nor crisis teams are in place: 0 points

4-EM-1.2: Priority for essential goods
<p>Definition:</p> <p>Being part of the protocol, fast lanes/fast track treatment will be made available for trucks carrying essential goods (listed in the emergency protocol), such as healthcare related goods (medical supplies and equipment for testing centers) and agricultural products.</p>
<p>Scoring:</p> <ul style="list-style-type: none"> Fast lanes/fast track treatment will be made available 24/7: 8 points Fast lanes/fast track treatment will be made available, but not 24/7: 4 points No fast lane available at BCPs: 0 points Participation in regional agreements/cooperation on these issues: +2 points

4-EM-1.3: Extending opening hours of main BCP
<p>Definition:</p> <p>The possibility of extending the opening hours of the main BCPs in the country to reduce border clearance time, in order to ensure the national supply of goods. If the main BCPs are already open 24/7 during normal circumstances, then 10 points should be assigned.</p>
<p>Scoring:</p> <ul style="list-style-type: none"> Extension of opening hours is being part of emergency protocols: 10 points Extension of opening hours is not part of emergency protocols, as such not possible to implement: 0 points

4-EM-1.4: Temporary simplification of country-of-origin confirmation procedure
<p>Definition:</p> <p>Temporary simplification of the country-of-origin confirmation procedure applied to imported goods.</p>
<p>Scoring:</p> <ul style="list-style-type: none"> Temporary simplification procedure is in place: 8 points Temporary simplification procedure is not in place: 0 points Acceptance of electronic or paper copy of the certificate of origin : +2 points

4-EM-1.5: Import duty for healthcare related goods
<p>Definition:</p> <p>Relief from or deadline extension of import duty payment for healthcare related goods.</p>
<p>Scoring:</p> <ul style="list-style-type: none"> Relief from import duty payment: 8 points Deadline extension of import duty payment: 4 points Deadline extension is not in place: 0 points Abolition of penalties for late duty payment: +2 points

4-EM-1.6: Temporary extension and exemptions

Definition:

- (1) Temporary extension of the validity of certificates, such as certificates concerning dangerous goods training, tank- and road vehicle-inspection, and boatmaster’s certificates.
- (2) Temporary extension of the validity of drivers’ driving licenses.
- (3) Temporary extension of visa for seafarers who have been trapped on ships due to pandemic-created lockdown.
- (4) Temporary exemption from weight control of vehicles transporting essential goods.
- (5) The existence of a temporary regulation to increase the maximum daily driving limit in order to ensure the national supply of goods (but still within the limit given in the AETR).
- (6) The existence of a temporary regulation to reduce the drivers rest time requirements in order to ensure the national supply of goods (but still within the limit given in the AETR).

Scoring:

- All 6 types of extension and exemptions are in place: **10 points**
- Five types of extension and exemptions are in place: **9 points**
- Four types of extension and exemptions are in place: **8 points**
- Three types of extension and exemptions are in place: **7 points**
- Two types of extension and exemptions are in place: **6 points**
- Only one type of extension and exemptions are in place: **5 points**
- No extensions/exemptions are in place: **0 points**

4-EM-1.7: Temporary reduction of railway track access tariffs

Definition:

Temporary reduction of railway track access tariffs to promote the competitiveness of rail freight during the pandemic.

Scoring:

- Arrangement is in place: **10 points**
- Arrangement is not in place: **0 points**

4-EM-1.8: Temporary removal of road tolls

Definition:

Temporary removal of all road tolls (including for bridges and tunnels) across the country during the pandemic in order to reduce travel time and operational costs of cargo movements.

Scoring:

- Arrangement is in place: **10 points**
- Arrangement is not in place: **0 points**

4-EM-1.9: Communication and information point at BCPs

Definition:

The existence of a communication and information point at operating BCPs to assist drivers and travelers during emergency situations.

Scoring:

- Available at all operating BCPs: **10 points**
- Available at more than 50 per cent of operating BCPs: **7 points**
- Available at less than 50 per cent of operating BCPs: **4 points**
- Not available at any operating BCPs: **0 points**

4-EM-1.10: Medical examination points**Definition:**

Setting up medical examination points at operating BCPs in order to check for the presence of a suspected disease.

Scoring:

- Available at all operating BCPs: **8 points**
- Available at more than 50 per cent of operating BCPs: **6 points**
- Available at less than 50 per cent of operating BCPs: **4 points**
- Not available at any operating BCPs: **0 points**
- Available during the entire opening hours of BCPs: **+2 points**

4-EM-1.12: Thermal screening at railway stations**Definition:**

Deployment of thermal imaging devices to screen passengers at railway stations.

Scoring:

- System is in place at all high-speed railway stations in the country: **10 points**
- System is in place at more than 50 per cent of high-speed railway stations in the country: **7 points**
- System is in place at less than 50 per cent of high-speed railway stations in the country: **4 points**
- System is not in place: **0 points**

4-EM-1.1: Medical certificates for drivers and personnel**Definition:**

Being part of the emergency protocol, medical certificates for drivers and personnel are required before crossing borders.

Scoring:

- Medical certificate requirements are arranged based on regional regime: **10 points**
- Medical certificates are required, but not aligned with regional regime: **6 points**
- Medical certificates are not required: **0 points**

4-EM-1.13: Redundancy of international road networks**Definition:**

The total number of international routes that lead to BCPs in the country. It concerns the provision of alternative routes for travelers in the event of a disruption that causes closure of certain BCPs. Redundancy is the existence of numerous optional routes/means of transport between origins and destinations that can result in less serious consequences in case of a disturbance in some part of the system.⁵

Scoring:

Not applicable. This is a verification indicator.

⁵ Berdica, K., 2002. An introduction to road vulnerability: what has been done, is done and should be done. Transport Policy 9(2), 117-127.

6. SUMMARY POINTS

The SITCIN has been developed to address the absence of a unified assessment tool to measure transport connectivity across inland transport modes. Its 215 indicators cover a broad range of aspects including transport, trade and logistics system, business climate and countries' compliance with United Nations legal instruments relating to transport and border-crossing facilitation. It also covers indicators that measure countries' progress towards achieving the transport-related SDGs and their commitments under the Vienna Programme of Action for LLDCs for the decade 2014-2024.

The indicators are also intended to provide guidance to countries in designing and implementing an evidence-based transport policy framework that can promote sustainable transport connectivity at the national, regional and international levels.

The connectivity issue is especially important for landlocked countries whose trade depends on transit through other countries. Their competitive advantage can be threatened by additional border crossings and significant transportation costs and time and as a consequence can undermine their socioeconomic development, human and social progress, and environmental sustainability. These consequences are even more severe when the landlocked countries are developing countries.

SITCIN as a self-assessment tool

The development of SITCIN went through many phases between January 2019 and December 2021. The initial indicators were tested in five pilot countries (Georgia, Kazakhstan, Jordan, Paraguay and Serbia), and in addition in Lebanon and the State of Palestine upon initiative of ESCWA. The feedback received from the stakeholders has played an important role, not only in finalizing the indicators but also in the decision to normalize the SITCIN score by weighting the geographical and financial limitations of the assessed countries.

SITCIN should be considered by participating countries as a self-assessment tool to be used regularly in order to measure change over time. Correct data and information are crucial during the assessment process. Low scores should not be seen as a penalization but rather as a stepping stone to progress. The ranking system is also meant to encourage countries to keep on improving the performance of their transport system so as to become more connected to global trade.

A user platform will be made available on which interested governments can evaluate and assess their transport connectivity situation online beyond the project end date. The platform will also provide a multilingual e-learning course, with a step-by-step guide on how to go through the SITCIN data collection and assessment process. The course is self-paced using informative texts, videos, voice-overs, and quizzes to support the learning process.

Beyond SITCIN project

A series of regional outreach meetings have been organized to gather not only representatives of the pilot countries but also of their neighbours, explaining the SITCIN approach and methodology and encouraging its use at regional and subregional level.

Finally, the development of SITCIN is a continuous process. The indicators and methodology may need to be revised in the next couple of years when many more countries use the assessment tool and give feedback on their experience in using the tool and in understanding the indicators.

REFERENCES

Diálogo Chino (2021). Available at <https://dialogochino.net/en/infrastructure/37072-chinese-company-could-run-crucial-argentine-shipping-route/>. Accessed on 2 December 2021.

ITF (2021). *ITF Transport Outlook 2021*. OECD Publishing. Paris. Available at <https://doi.org/10.1787/16826a30-en>.

UNCTAD (2019). Country Profiles. Available at <https://unctadstat.unctad.org/CountryProfile/GeneralProfile/en-GB/004/index.html>. Accessed on 5 June 2019.

UNDP (2020). *Human Development Report 2020*. New York.

UN-OHRLLS (2021). Profiles of LDCs. Available at <https://www.un.org/ohrls/content/profiles-ldcs>. Accessed on 11 November 2021.

World Bank (2020a). World Bank Open Data. Available at https://data.worldbank.org/indicator/SP.POP.TOTL?name_desc=false. Accessed on 11 November 2021.

World Bank (2020b). World Bank Open Data. Available at <https://data.worldbank.org/indicator/NY.GDP.PCAP.KD>. Accessed on 11 November 2021.

World Bank (2019). World Bank Open Data. Available at <https://data.worldbank.org/indicator/NY.GDP.PCAP.CD>. Accessed on 5 June 2019.

World Bank (2018). *Connecting to Compete 2018 - Trade Logistics in the Global Economy: The Logistics Performance Index and Its Indicators*. Washington, D.C.

World Bank (2016). World Bank Open Data. Doing Business Trading Across Borders and Logistic Performance Index: similar yet different, 7 December.

World Bank (2005). *Customs Modernization Handbook*. Washington, D.C.

Sustainable Inland Transport Connectivity Indicators

Understanding the performance of road, rail, inland waterway, and inter-modal transport systems

The United Nations Economic Commission for Europe (UNECE) with the support of the Economic and Social Commission for Western Asia (ESCWA) and the Economic Commission for Latin America and the Caribbean (ECLAC), developed a comprehensive set of Sustainable Inland Transport Connectivity Indicators (SITCIN) in the framework of a UNDA-funded project. SITCIN is an analytical tool to enable countries to measure their degree of transport connectivity, both domestically and bilaterally/subregionally, as well as in terms of soft and hard infrastructure. It has been designed to enable governments to evaluate and assess the following:

- Their progress towards achieving the transport-related SDGs;
- Their commitments under the Vienna Programme of Action for LLDCs for the decade 2014-2024;
- The effectiveness and efficiency of their transport systems and degree of inter-operability with those of adjacent countries;
- The level of compliance of national administrative and legal frameworks with United Nations legal instruments relating to transport and border-crossing facilitation.

This publication covers all the project phases, which include the development of 215 indicators, the methodology used, the testing and validation phase in five pilot countries, and the development of the SITCIN user platform and the e-learning course.

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