



Economic Commission for Europe**Inland Transport Committee****Working Party on Transport Trends and Economics****Thirty-fourth session**

Geneva, 15–17 September 2021

Item 8 (c) (iii) of the provisional agenda

Review and monitoring of emerging issues and sustainable development goals:**Technical assistance to countries with economies in transition:****Support for Landlocked Developing Countries****Sustainable Inland Transport Connectivity Indicators – A tool to measure progress*****Submitted by the Governments of Georgia, Jordan, Kazakhstan, Paraguay and Serbia****I. Introduction**

1. In the framework of an ongoing United Nations Development Account (UNDA) funded project 215 Sustainable Inland Transport Connectivity Indicators (SITCIN) covering, road, rail, inland waterway and inter-modal transport have been developed. The project, entitled “Sustainable transport connectivity and implementation of transport related SDGs in selected landlocked and transit/bridging countries” was launched in September 2018 – and will conclude by December 2021). It involves the following pilot countries: Georgia, Kazakhstan, Serbia, Jordan, and Paraguay. It is led by the ECE Sustainable Transport Division and implemented with the support of relevant departments in two United Nations sister regional commissions: the Economic and Social Commission for Western Asia (ESCWA) and the Economic Commission for Latin America and the Caribbean (ECLAC).

2. The Inland Transport Committee at its eighty-third session (February 2021) requested the secretariat to clarify a measurable set of criteria within the Sustainable Inland Transport Connectivity Indicators (SITCIN) project activity and also requested WP.5 to re consider proposed actions to make them practically-oriented and interesting for all countries of the UNECE region. In response to this request, the present document provides an overview of the project objectives, the rationale for developing the SITCIN and its expected value added. It also covers the SITCIN development process and its scoring and weighing methodology. In Annex 1, it lists those indicators that apply to the rail and inland waterway sectors as well as a set of pandemic preparedness indicators. The road sector indicators are contained in document ECE/TRANS/WP.5/2021/8/Add.1.

* This document was submitted late for processing since clearance in finalizing this document took longer than anticipated.

II. Objective

3. The main objective of the project is to develop a tool enabling countries to measure their degree of transport connectivity: both domestically and bilaterally/sub-regionally as well as in terms of soft and hard infrastructure.
4. Inter alia, the SITCIN, once fully developed and tested in the five pilot countries, will provide an instrument (a measurable set of criteria) for governments enabling them to evaluate/ assess:
 - The extent to which they implement the relevant United Nations legal instruments, agreements, and conventions; and
 - The degree to which their inland transport systems are inter-operable with the systems within their respective (sub-)regions.
5. In doing so, it should enable policymakers to assess their country's degree of external economic connectivity in terms of efficiency of inland transport, logistics, trade, customs and border crossing facilitation processes. Governments could also use the SITCIN to assess and report on their progress in implementing the transport related Sustainable Development Goals (i.e. 2030 Agenda) and their commitments under the Vienna Programme of Action for Landlocked Developing Countries (for the decade 2014–2024).

III. Project phases

- I. January – June 2019: Development of the initial set of Sustainable Inland Transport Indicators (SITCIN)
- II. July 2019 – February 2020: Fact-finding missions to each of the five “pilot countries” to review national transport and logistics situation based on the SITCIN, resulting in five «national connectivity reports»
- III. March 2020 – May 2021: Five national policy dialogue meetings to validate the reports
- IV. April – December 2021: Tailor-made national capacity building programmes in each of the five “pilot countries”
- V. Concluding inter-regional forum to share “lessons learnt’ and experiences of the five pilot countries with other interested Governments around the globe to further promote the use of the SITCIN.

IV. Rationale for the SITCIN and its value added

6. Several methodological approaches have been developed over time to measure the performance of countries in international transport and trade facilitation. Some of them are listed below. Until today however there is no unified set of indicators in place to measure inland transport connectivity across all modes, therefore SITCIN is the first study of its kind
7. Already available methodological approaches include:

- (a) Logistic Performance Index

The 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 covers 160 economies. Data is 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 principle component analysis. Of the six core components, customs and infrastructure are of importance to SITCIN as they are directly related to international connectivity. Customs concern the efficiency of customs and border clearance management, while Infrastructure concerns the quality of transport infrastructure as well as ICT infrastructure.

(b) Ease of Doing Business Index

The Ease of Doing Business Index developed by the World Bank defines the ease of doing business in a country measured by 11 sets of indicators representing 11 areas of business regulations. One of them is Trading Across Borders that assesses the logistical processes of export and import. It measures the Time (hours) and Cost (USD) 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.

EODB data is updated annually from local experts and covers 190 economies. Input from domestic entrepreneurs is used as a basis to measure countries' performance. Furthermore, it 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).

(c) Air Connectivity Index

The Air Connectivity Index (ACI) is developed by the World Bank to measure 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 Air Liberalization Index of WTO and merchandise trade as a percentage of GDP, using a statistical correlation coefficient.

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

(d) Liner Shipping Connectivity Index

The Liner Shipping Connectivity Index (LSCI) is developed by the United Nations Conference on Trade and Development (UNCTAD) for the maritime sector and 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 to for instance the LPI that is based on surveys of professionals. The LSCI is also developed based on a weighted average of capacity and utilization data. However, it is only limited to liner shipping rather than the entire supply chain.

(e) Enhancing Connectivity and Freight in Central Asia

This study, developed by the International Transport Forum (ITF), might be the only publication that assesses transport connectivity and infrastructure needs, by applying three streams of analysis:

- (i) an assessment of the regional large-scale infrastructure programmes and of their capacity to improve connectivity
- (ii) a benchmarking of the national freight transport policies against OECD best practices
- (iii) 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 study focuses on transport infrastructure, logistics and institutional capacity. The institutional capacity is represented by three dimensions that contribute to overall transport performance, i.e. planning, governance and regulation, and sustainability. A score from 0 to 5 is given to each dimension by the authors based mainly on qualitative assessments on transport policies and frameworks of the assessed countries. This study provides a good approach to freight connectivity using data and information at the aggregate level.

(f) 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 relevant indicators which 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, i.e. country-level data and bilateral data.

The framework comprises a total of 49 indicators grouped into two indexes: (1) Connectivity index, comprises 30 indicators, and (2) Sustainability index, comprises 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 *italic* are related to bilateral data):

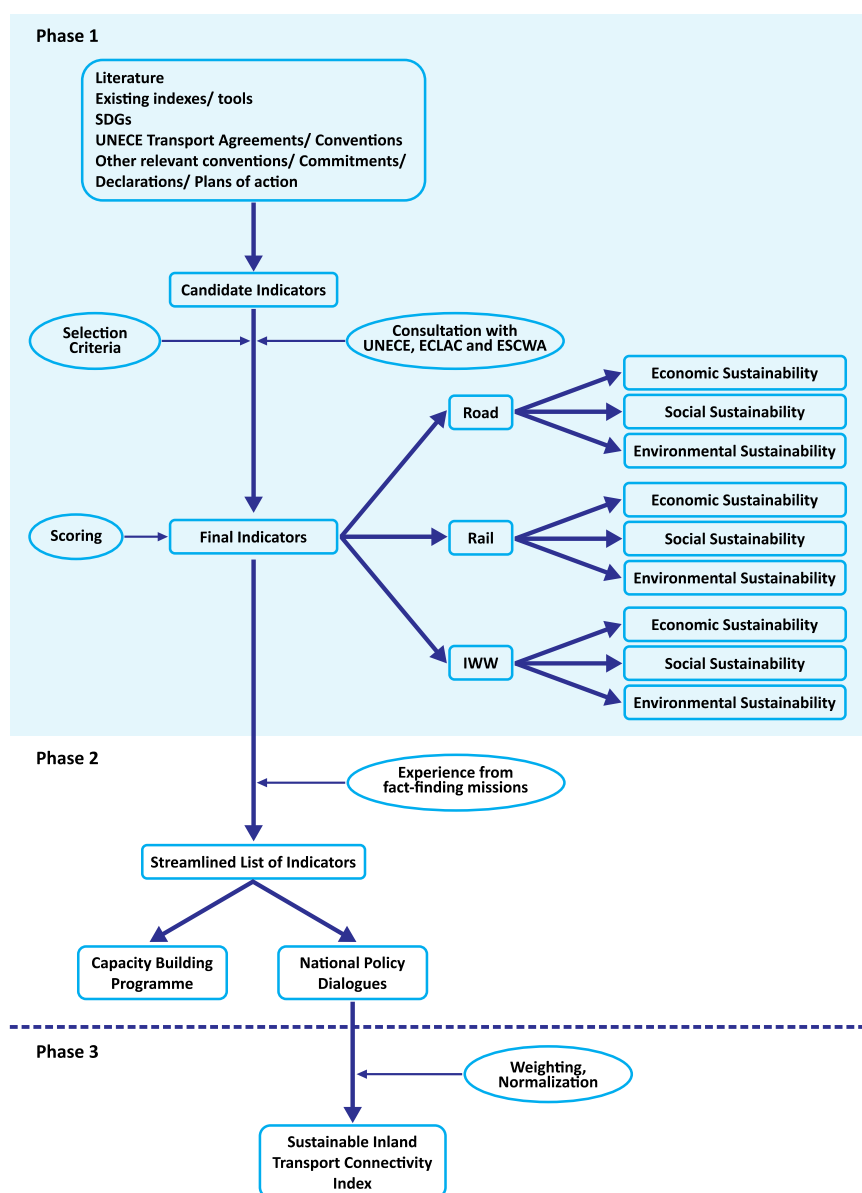
- (i) Physical: LPI, border crossings, trade in electricity, average connection speed.
- (ii) Economic/financial: trade in services, trade in goods, foreign direct investment.
- (iii) Political: embassies network, participation in international intergovernmental organizations.
- (iv) Institutional: mean tariff rate, technical barriers to trade, regional trade agreements.

- (v) People-to-people: trade in cultural goods, tourist arrivals at national borders.

The ASEM Connectivity 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. However, the index captures indirectly a country’s efforts to improve its transport connectivity such as infrastructure development and the development of related national regulatory framework.

V. SITCIN development process

Figure I
Methodology of SITCIN



A. Identification of candidate indicators

8. The process of identifying candidate indicators involved a thorough literature review, assessing the existing indexes and tools related to international transport and trade (as elaborated in section II). The Sustainable Development Goals of relevance for transport

connectivity, the United Nations Inland Transport Agreements and Conventions, and other relevant conventions, commitments, declarations and plans of action served as a regulatory basis and reference point for the development of the SITCIN. The United Nations Inland Transport Agreements and Conventions played a very important role in identifying and defining the indicators as they contain regulations, norms, and standards that facilitate integration and cooperation among the Member States by promoting harmonization of applicable standards and their integration in national laws and regulations.

9. The relevant SDGs and conventions are discussed in the sections below.

1. United Nations Sustainable Development Goals

10. As described above, one of the main purposes of the SITCIN is to give interested Governments the opportunity to report on the progress they are making in achieving the United Nations Sustainable Development Goals (United Nations 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.

Table 1
United Nations SDGs goals and targets

<i>Goal</i>	<i>Targets</i>
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 impacts	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

2. United Nations Inland Transport Agreements and Conventions

11. This section provides an overview of the United Nations Inland Transport legal instruments, as the most important source when developing candidate indicators.

(a) Transport Infrastructures

- 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.
- 1996 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.
- 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, along with 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.
- 2001 Budapest Convention on the Contract for the Carriage of Goods by Inland Waterway (CMNI), entered into force on 1 April 2005.

3. Other conventions, commitments, declarations and plans of action

12. SITCIN takes into consideration other conventions, commitments, declarations and plans of action related to transport connectivity and trade facilitation, listed below:

(a) Vienna Programme of Action for LDCs for the Decade 2014-2024

This is the principal programme of the United Nations that addresses issues related to development of states that lack direct access to the sea 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, and (6) Means of implementation. The SITCIN covers priorities 1, 2, 3 and 4, and specific objectives and actions in each priority area.

(b) Revised Kyoto Convention

This 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 the adoption of standardized model papers as international customs documents with international security.

(e) Global Framework Plan of Action for Road Safety

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

(f) Regulation concerning the International Carriage of Dangerous Goods by Rail (RID)

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.

B. SITCIN criteria

13. The second step was to filter the candidate indicators by applying a specific set of 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).

C. Categorization of indicators

14. The indicators are structured based on the four inland transport modes: road, rail, inland waterways and inter-modal transport. 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

15. 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 categories: efficiency, cost, infrastructure, operations, inter-modality/combined transport, and ICT and intelligent transport system solutions.

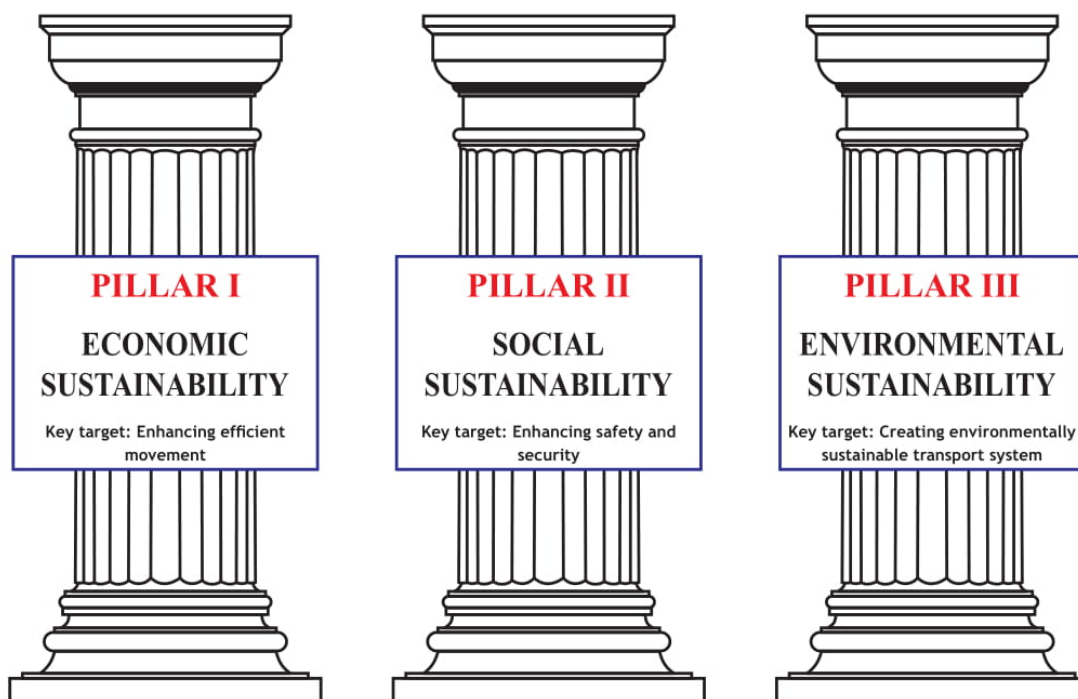
Pillar 2: Social Sustainability

16. The social dimension refers to sustainable traffic and transport systems with lower social costs, such as less accidents and less traffic delays. The key target for this dimension is “Enhancing safety and security”. The indicators under this pillar are grouped into the following categories: assessing adequacy of road traffic rules enforcement, road traffic infrastructure, vehicle regulations and administrative frameworks surrounding cross border transport of perishable foodstuffs and of dangerous goods.

Pillar 3: Environmental Sustainability

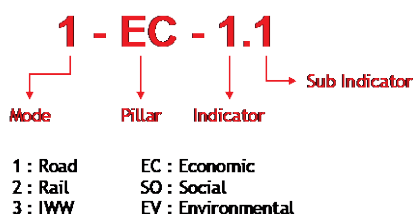
17. The environmental dimension refers to the reduction of greenhouse gas emissions, air pollutants and noise emissions. The key target for this dimension is “Creating an environmentally sustainable transport system”. The indicators under this pillar focus on evaluating measures aimed at reduction of greenhouse gas emissions, air pollutants and noise emissions (including considerations such as alternative fuel share and average age of the vehicle fleet).

Figure II
Three pillars of SITCIN



D. Numbering system

18. The numbering of the indicators is determined following this categorization and pictured as follows.



E. Assignment of scores

17. For each indicator, ordinal categorical data is provided. This type of data, which is often obtained during sampling surveys 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 cases, a score less than 10 is given for the best scenario. In this case, additional points are available, i.e. 10 minus the point of the highest category, when for instance an additional measure is implemented to achieve the promoted objective. An example of scoring an indicator is given in the text box below.

18. Important to note is that many indicators use the terms “region(al)” and “sub-region(al)”. Region should be defined as a group of countries that are engaged in economic cooperation that might cover sub-region and the adjoining countries of the sub-region. While sub-region involves a group of adjoining countries.

19. When measuring border crossing efficiency, the Government using the SITCIN should select one main border crossing point per each adjoining country, where “main”

defines as the one that processes the highest cargo volume among all border crossing points shared with this adjoining country. The overall number of border crossing points to be assessed in the country is to be limited to three or four. In case the above process results in more than four border crossings overall, a selection is to be made by choosing those border crossings that together process 60% of the international cargo volumes of the country.

20. The score for each sub-indicator within the border crossing efficiency cluster should then be calculated as the average of these three to four selected border crossing points.

21. Some sub-indicators might not apply to a country. For example, if a tolling system does not exist in a country, then the scoring of sub-indicator 1-EC-7.11 (Application of Electronic Toll Collection systems) should be excluded from the overall score. SITCIN scoring results are divided into 6 clusters: Border Crossing Facilitation; Transport Infrastructure; Safety and Security; Transport of perishable foodstuffs and dangerous goods; Intermodality; and Environment.¹¹

Example of indicator with score from 0 to 10

Indicator: 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 indicator with additional score

Indicator: 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

22. The aggregation of scores would enable changes to be registered for periodic comparison over time. However, the relative importance of attributes will vary and the process of aggregation into a single SITCIN score per country may benefit from a process of weighting. The weighting of scores needs to reflect the general opinion of stakeholders. This process may be carried out during the consultative phases of the study.

Table 2
Overview of final indicators

<i>Mode</i>	<i>Pillar</i>	<i>Indicator</i>	<i>Number of sub-indicators</i>
Road	Economic	Efficiency	11
		Time	5

<i>Mode</i>	<i>Pillar</i>	<i>Indicator</i>	<i>Number of sub-indicators</i>
		Cost	6
		Infrastructure	9
		Operations	6
		Intermodality/combined transport	4
		ICT and ITS Solutions	11
	Social	Road traffic rules/behavior	18
		Road traffic infrastructure	5
		Vehicle regulations	5
		Perishable foodstuffs transport	5
		Dangerous goods transport (administrative)	19
		Dangerous goods transport (infrastructure)	4
	Environmental	Fleet	6
		Emission	6
		Infrastructure	1
Total sub-indicators for road transport			121
Rail	Economic	Efficiency	9
		Time	3
		Cost	3
		Infrastructure	4
		Operations	10
		Intermodality/combined transport	4
		ICT and ITS Solutions	4
	Social	Rail traffic infrastructure	7
		Dangerous goods transport (administrative)	5
	Environmental	Fleet	3
		Emission	2
Total sub-indicators for rail transport			54
IWW	Economic	Efficiency	3
		Cost	5
		Infrastructure	4
		Operations	2
		Intermodality/combined transport	2
		ICT and ITS Solutions	4
	Social	IWW traffic rules	2

<i>Mode</i>	<i>Pillar</i>	<i>Indicator</i>	<i>Number of sub-indicators</i>
		Vessels regulations	5
		Dangerous goods transport (administrative)	6
		Dangerous goods transport (infrastructure)	2
	Environmental	Fleet	2
		Emission	3
Total sub-indicators for IWW transport			40
Total indicators of SITCIN			215

F. Weighting process

23. The aggregation of scores would enable changes to be registered for periodic comparison over time. However, the relative importance of attributes will vary and the process of aggregation into a single SITCIN score per country may benefit from a process of weighting. The weighting of scores needs to reflect the general opinion of stakeholders, target countries and applicable transport modes

24. As the SITCIN have been developed for universal use by all 193 United Nations Member States that might be interested to do so and considering that three different inland transport modes are evaluated in the framework of the project (road, rail and inland waterways), theoretically there are 8 different options:

- | | |
|-----------------------------------|-------------------------------|
| 1. All modes are developed | 5. Only Railway is developed |
| 2. Road and IWW are developed | 6. Only Road is developed |
| 3. Road and railway are developed | 7. Only IWW is developed |
| 4. Railway and IWW are developed | 8. None of them are developed |

25. Options 4, 5, 7 and 8 are purely hypothetical options as there is no single United Nations Member State without road transport. Therefore, only four different possible options are left. The following table describes the number (and %) of countries with different applicable transport modes.

Table 3
Applicable transport modes in United Nations Member States (MS)

Option #	Road	Railway	IWW	countries	%, out of 193
1	✓	✓	✓	100	52%
2	✓	✗	✓	8	4%
3	✓	✓	✗	47	24%
6	✓	✗	✗	38	20%

26. Findings from the data analysis are as follows:

- More than a half of the target countries have all three inland transport modes applicable
- 47 countries (24 per cent) have road and railway, and no inland waterways

- 38 countries (20 per cent) have only roads
- 8 countries (4 per cent) have roads and IWW, and not railway

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

1. Transport mode fixed weights

28. As described above, there are only four different options and the weightings are attributed accordingly (Table 4). 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.

Table 4
Transport mode fixed weights

<i>Option</i>		<i>Road</i>	<i>Rail</i>	<i>IWW</i>
Option 1	Road, Rail, IWW	0.6	0.3	0.1
Option 2	Road, IWW	0.9	0	0.1
Option 3	Road, Rail	0.65	0.35	0
Option 6	Road	1	0	0

2. Indicator cluster weights

29. SITCIN has 215 sub-indicators which are categorized in over 40 clusters (Table 5). Each cluster may have different influence on inland transport connectivity based on their intrinsic importance on promoting transport connectivity. The importance of each cluster (most important/ 1 – important/2 – less important/3) has been determined based on the lessons learnt during the pilot period and the mandates of the UN SDGs and the Vienna Program of Action for LLDCs. Based on the level of importance of each indicator cluster, different weights are assigned to different clusters (Table 6).

Table 5
Weighted clusters

<i>Indicator clusters</i>	<i>Importance</i>
1-EC-1: Efficiency	1
1-EC-2: Time required at borders	1
1-EC-3: Cost	1
1-EC-5: Operations	1
1-EC-7: ICT and Intelligent Transport System Solutions	2
2-EC-1: Efficiency	1
2-EC-2: Time required at borders	1
2-EC-3: Cost	1
2-EC-5: Operations	1
2-EC-7: ICT and Intelligent Transport System Solutions	2
3-EC-1 Efficiency	1
3-EC-2 Cost	1

<i>Indicator clusters</i>	<i>Importance</i>
3-EC-4 Operations	1
3-EC-6: ICT and Intelligent Transport System Solutions	2
1-EC-4: Infrastructure	1
1-SO-2: Road Traffic Infrastructure	2
2-EC-4: Infrastructure	1
2-SO-1: Rail Traffic Infrastructure	2
3-EC-3 Infrastructure	1
1-SO-1: Road Traffic Rules/Behavior	3
1-SO-3: Vehicle Regulations	1
3-SO-1 Traffic Rules	3
3-SO-2 Vessels Regulations	2
1-SO-4: Perishable Foodstuffs Transport	2
1-SO-5.1: General provisions for the transport of dangerous goods by road	2
1-SO-5.2: Training of personnel involved in the transport of dangerous goods	2
1-SO-5.3: Checks and other support measures to ensure compliance with safety requirements	3
1-SO-5.4: Provisions concerning transport equipment and transport operations involving dangerous goods	2
1-SO-6: Dangerous Goods Transport – Infrastructure/Hardware Requirements	1
2-SO-2.1: General provisions for the transport of dangerous goods by rail	2
2-SO-2.2: Training of personnel involved in the transport of dangerous goods	3
2-SO-2.3: Checks and other support measures to ensure compliance with safety requirements	2
3-SO-3: Dangerous Goods Transport – Administrative Requirements	2
1-EC-6: Intermodality/Combined Transport	1
2-EC-6: Intermodality/Combined Transport	1
3-EC-5: Intermodality/Combined Transport	1
1-EV-1: Fleet	1
1-EV-2: Emission	3
1-EV-3: Infrastructure	1
2-EV-1: Fleet	1
2-EV-2: Emission	3
3-EV-1: Fleet	1

Table 6
Indicator cluster weight

<i>Priority</i>	<i>weight</i>
1	1.2
2	1
3	0.8

3. Weights on modal share

30. The purpose of this weighting is to take into account what portion of the total cargo volume is transported by each inland transport mode applicable in the country. Therefore, there will be three priority levels of transport modes based on the modal share, as such weights are assigned relatively (Table 7).

Table 7
Weights by modal share priority

<i>Priority - modal share</i>	
1	1.0
2	0.9
3	0.8

4. Geographical and financial limitations

31. This last layer of the weighting process is related to the specific reason why (one or two) transport modes are not applicable in a given country, for example rail and/or IWW. Governments can select three different options with relevant weights attributed to each (Table 8):

(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, however it is not financially feasible to realize the necessary infrastructure projects. This “Financial” option cannot be selected by the 36 United Nations Member States that are categorized as developed economies, it can 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 and/or IWW, for instance due to mountainous terrain or deserts. As an example, if a country has a large desert and currently only road transport is applicable, then “Geographical” limitation can be selected for IWW and “Financial” may be selected for railway transport.

Table 8
Weights considering limitations

<i>option</i>	<i>Weight</i>
No	1.0
Financial	0.5
Geographical	0

5. SITCIN ranking types

32. The SITCIN automated data collection platform, currently under development, will offer four different rankings as follows:

- (a) Country overall score

- (b) Road transport sector score
- (c) Railway transport sector score
- (d) IWW sector transport score

6. Country Overall score calculation

33. Country overall score is the final score, after having gone through the four layers of weighting process, as described in the previous sections. The formula below describes how the country overall score is calculated.

$$\begin{aligned} & \text{country overall score} \\ & = \left(\sum \text{country score of each cluster} * \text{cluster weight} \right) * \text{transport mode fixed weight} * \text{transport mode priority} \\ & \quad + \text{normalization considering natural restrictions} \end{aligned}$$

34. Besides the overall score, the SITCIN platform will also show a given country's progress against the weighted SITCIN maximum score.

VI. Guidance by the Working Party

35. WP.5 is invited to consider the SITCIN methodology as outlined above as well as rail and inland waterway indicators in Annex 1 of this document and the road indicators as contained in ECE/TRANS/WP.5/2021/8/Add.1. It may then wish to provide further guidance and directions on how the SITCIN can be improved and ultimately used and promoted in the future.

VII. References

- UNCTAD (2019). Country Profiles. Available at <https://unctadstat.unctad.org/CountryProfile/GeneralProfile/en-GB/004/index.html>. Accessed on 5 June 2019.
- UNCTAD (2017). Map of Landlocked Developing Countries (LLDCs). Available at <https://unctad.org/en/Pages/ALDC/Landlocked%20Developing%20Countries/LLDCs-Map.aspx>. Accessed on 2 June 2019.
- 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.

Annex I

Rail transport connectivity indicators

I. Economic Sustainability (EC)

A. 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.

Scoring:

- 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 point

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 the adjoining country. 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 (e.g. no night, weekend and holidays operation): 6 points

2-EC-1.1: Staff resources at rail BCPs and inland clearance stations

- No facilities for any type of joint controls: 0 point

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 under AGC for goods trains. In AGC, this has been set at 750 m.

Scoring:

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

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% control procedures take place at inland clearance stations: 6 points
- <50% 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

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 MoU. By implementing a delegation mechanism, duplication and overlapping activities, and conflicting instructions and requirements can be reduced.

2-EC-1.1: Staff resources at rail BCPs and inland clearance stations

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 point

2-EC-1.5b: Coordination and delegation of controls between agencies of neighboring 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 MoU). 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 point

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-1.7: 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.

2-EC-1.1: Staff resources at rail BCPs and inland clearance stations

Scoring:

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

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 neighboring 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:

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

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.
-

B. 2-EC-3: Cost

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

Definition:

The average customs operation cost per 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 are, among others, loading/unloading of shipment at BCPs and inspection charges.

Scoring:

- Cost is more than 50% lower than the regional average: 10 points
- Cost is less than 50% lower than the regional average: 7 points
- Cost is less than 50% higher than the regional average: 4 points
- Cost is more than 50% higher than the regional average: 0 point

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% lower than the regional average: 10 points
- Cost is less than 50% lower than the regional average: 7 points

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

- Cost is less than 50% higher than the regional average: 4 points
- Cost is more than 50% higher than the regional average: 0 point

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% lower than the regional average: 10 points
 - Cost is less than 50% lower than the regional average: 7 points
 - Cost is less than 50% higher than the regional average: 4 points
 - Cost is more than 50% higher than the regional average: 0 point
-

C. 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).

Scoring:

- Ratio $\geq 25\%$: 10 point
- $20\% \leq \text{ratio} < 25\%$: 8 points
- $15\% \leq \text{ratio} < 20\%$: 6 points
- $10\% \leq \text{ratio} < 15\%$: 4 points
- $5\% \leq \text{ratio} < 10\%$: 2 points
- ratio $< 5\%$: 0 point

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

2-EC-4.1: Length of main 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 $\geq 25\%$: 10 point
- $20\% \leq \text{ratio} < 25\%$: 8 points
- $15\% \leq \text{ratio} < 20\%$: 6 points
- $10\% \leq \text{ratio} < 15\%$: 4 points
- $5\% \leq \text{ratio} < 10\%$: 2 points
- ratio $< 5\%$: 0 point

*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:

- $\geq 160\text{km/h}$: 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 point
-

D. 2-EC-5: Operations

1. 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 point

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 point

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.

Scoring:

- Regionally or subregionally harmonized: 8 points

2-EC-5.1a: Admission requirements for locomotives

- Bilaterally harmonized with common full contract conditions, arrangements for legal issues and consignment note: 6 points
- No common arrangements: 0 point

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

Degree of recognition of license for train drivers.

Scoring:

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

2. 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 sub-regional 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.

2-EC-5.2a: Track gauge

Scoring:

- Loading gauge adheres to global technical standards: 10 points
- Loading gauge adheres to regional technical standards: 8 points
- Loading gauge adheres to sub-regional 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-5.2c: Railway signaling system

Definition:

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

Scoring:

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

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 point

2-EC-5.2a: Track gauge

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 point

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 point
-

E. 2-EC-6: Intermodality/Combined Transport

2-EC-6.1: Modal share of freight rail transport

Definition:

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

Scoring:

- ratio $\geq 90\%$: 10 points
- $75\% \leq \text{ratio} < 90\%$: 8 points
- $50\% \leq \text{ratio} < 75\%$: 6 points
- $25\% \leq \text{ratio} < 50\%$: 4 points

2-EC-6.1: Modal share of freight rail transport

- $10\% \leq \text{ratio} < 25\%$: 2 points
- $\text{ratio} < 10\%$: 0 point

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:

- $\text{share} \geq 65\%$: 10 points
- $50\% \leq \text{share} < 65\%$: 8 points
- $25\% \leq \text{share} < 50\%$: 6 points
- $10\% \leq \text{share} < 25\%$: 4 points
- $\text{share} < 10\%$: 0 point

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:

- $\text{time} \leq 1 \text{ hour}$: 10 points
- $1 \text{ hour} \leq \text{time} < 2 \text{ hours}$: 5 points
- $\text{time} > 2 \text{ hours}$: 0 point

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:

- $\text{time} \leq 20 \text{ minutes}$: 10 points
-

2-EC-6.1: Modal share of freight rail transport

- 20 minutes \leq time < 60 minutes: 5 points
 - time > 60 minutes: 0 point
-

F. 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, sub-regionally or bilaterally harmonized interconnected e-solutions for transport, i.e. electronic CIM/SMGS and e-Single Window system for customs and border procedures.

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, no e-Single Window: 6 points
- Use of electronic processing system: 4 points
- Manual processing: 0 point

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 point

2-EC-7.3: Availability of detection equipment and inspection technologies

2-EC-7.1: Implementation of interconnected e-solutions

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.

Scoring:

- Available at all rail BCPs and inland clearance stations: 10 points
- Available at at least 50% of rail BCPs and inland clearance stations: 7 points
- Available at less than 50% of rail BCPs and inland clearance stations: 4 points
- Not available in any rail BCPs nor inland clearance stations: 0 point

2-EC-7.4: Coordinated timetabling process

Definition:

The existence of a coordinated timetabling process.

Scoring:

- Globally coordinated: 10 points
 - Regionally coordinated: 8 points
 - Subregionally coordinated: 6 points
 - Bilaterally coordinated: 4 points
 - No coordination in place: 0 point
-

II. Social Sustainability (SO)

A. 2-SO-1: Rail Traffic Infrastructure

2-SO-1.1: Percentage of international railway lines with at least two tracks

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.

Scoring:

2-SO-1.1: Percentage of international railway lines with at least two tracks

- ratio $\geq 25\%$: 10 points
- $20\% \leq \text{ratio} < 25\%$: 8 points
- $15\% \leq \text{ratio} < 20\%$: 6 points
- $10\% \leq \text{ratio} < 15\%$: 4 points
- $5\% \leq \text{ratio} < 10\%$: 2 points
- ratio $< 5\%$: 0 point

*2-SO-1.2a: Secured sidings at rail BCPs (cargo security)**Definition:*

The extent to which the rail BCPs in the country are equipped with secured sidings, i.e. fully fenced and illuminated, in order to reduce cargo thefts.

Scoring:

- All rail BCPs are equipped with secured sidings: 10 points
- More than 50% of rail BCPs are equipped with secured sidings: 7 points
- Less than 50% of rail BCPs are equipped with secured sidings: 4 points
- No BCP is equipped with secured sidings: 0 point

*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

2-SO-1.1: Percentage of international railway lines with at least two tracks

- Automated level crossing system: 7 points
- Manned level crossings: 4 points
- Unmanned level crossings: 0 point

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-1.2e: Secured sidings of operating railway lines

Definition:

The extent to which secured sidings, i.e. 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% of operating railway lines are equipped with secured sidings: 7 points
- Less than 50% of operating railway lines are equipped with secured sidings: 4 points
- No railway line is equipped with secured sidings: 0 point

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 signaling failures, broken wheels and broken axles.

Scoring:

Not applicable. This is a verification indicator.

B. 2-SO-2: Dangerous Goods Transport – Administrative Requirements

1. 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 point

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. 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 carrier's and railway infrastructure manager's 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
-

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

- The provision does not recognize internationally/regionally agreed rules or no training provisions in place: 0 point
-

3. 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 point

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.

III. Environmental Sustainability (EV)

A. 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

2-EV-1.1: Average age of rolling stocks

- 15 years \leq age < 20 years: 7 points
- 20 years \leq age < 25 years: 4 points
- age \geq 25 years: 0 point

*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 \leq age < 20 years: 7 points
- 20 years \leq age < 25 years: 4 points
- age \geq 25 years: 0 point

*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 \geq 10%: 10 points
- 8% \leq ratio < 10%: 8 points
- 6% \leq ratio < 8%: 6 points
- 4% \leq ratio < 6%: 4 points
- 2% \leq ratio < 4%: 2 points
- ratio < 2%: 0 point

B. 2-EV-2: Emission

2-EV-2.1: Modal share of passenger rail transport

Definition:

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

Scoring:

- ratio $\geq 90\%$: 10 points
- $75\% \leq \text{ratio} < 90\%$: 8 points
- $50\% \leq \text{ratio} < 75\%$: 6 points
- $25\% \leq \text{ratio} < 50\%$: 4 points
- $10\% \leq \text{ratio} < 25\%$: 2 points
- ratio $< 10\%$: 0 point

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 point
-

Inland waterway transport connectivity indicators

I. Economic Sustainability (EC)

A. 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
- 1 hour \leq time $<$ 2 hours: 5 points
- time $>$ 2 hours: 0 point

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
- 20 minutes \leq time $<$ 60 minutes; 5 points
- time $>$ 60 minutes: 0 point

3-EC-1.3: Nighttime operation

Definition:

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

3-EC-1.1: *Waiting times at ports*

Scoring:

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

B. 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% lower than the regional average: 10 points
- Cost is less than 50% lower than the regional average: 7 points
- Cost is less than 50% higher than the regional average: 4 points
- Cost is more than 50% higher than the regional average: 0 point

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% lower than the regional average: 10 points
- Cost is less than 50% lower than the regional average: 7 points
- Cost is less than 50% higher than the regional average: 4 points
- Cost is more than 50% higher than the regional average: 0 point

3-EC-2.3: *Tonnage dues*

3-EC-2.1: Port 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% lower than the regional average: 10 points
- Cost is less than 50% lower than the regional average: 7 points
- Cost is less than 50% higher than the regional average: 4 points
- Cost is more than 50% higher than the regional average: 0 point

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

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

C. 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 \geq 80%: 10 points
- $60\% \leq$ ratio $<$ 80%: 8 points
- $40\% \leq$ ratio $<$ 60%: 6 points
- $20\% \leq$ ratio $<$ 40%: 4 points
- ratio $<$ 20%: 0 point

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 (the European Agreement on Main Inland Waterways of International Importance), 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 \geq 80%: 10 points
- $60\% \leq$ ratio $<$ 80%: 8 points
- $40\% \leq$ ratio $<$ 60%: 6 points
- $20\% \leq$ ratio $<$ 40%: 4 points
- ratio $<$ 20%: 0 point

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.

3-EC-3.1: Percentage of IWW with international technical parameters

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 (e.g. 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 point
-

D. 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 point

*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.

3-EC-4.1: Harmonization of boatmaster's certificates

Scoring:

- Globally harmonized (recognition of CMNI): 10 points
 - Regionally harmonized: 8 points
 - Subregionally harmonized: 6 points
 - Bilaterally harmonized: 4 points
 - No common arrangements: 0 point
-

E. 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 $\geq 10\%$: 10 points
- $8\% \leq \text{ratio} < 10\%$: 8 points
- $6\% \leq \text{ratio} < 8\%$: 6 points
- $4\% \leq \text{ratio} < 6\%$: 4 points
- $2\% \leq \text{ratio} < 4\%$: 2 points
- ratio $< 2\%$: 0 point

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
-

3-EC-5.1: Modal share of freight by IWW

- 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 point
 - Connected with sea lanes: +1 point
-

F. 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 $\geq 80\%$: 10 points
- $60\% \leq \text{ratio} < 80\%$: 8 points
- $40\% \leq \text{ratio} < 60\%$: 6 points
- $20\% \leq \text{ratio} < 40\%$: 4 points
- ratio $< 20\%$: 0 point

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 point

3-EC-6.1: Percentage of IWW equipped with RIS

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:

- ratio \geq 80%: 10 points
- $60\% \leq$ ratio $<$ 80%: 8 points
- $40\% \leq$ ratio $<$ 60%: 6 points
- $20\% \leq$ ratio $<$ 40%: 4 points
- ratio $<$ 20%: 0 point

3-EC-6.4: Percentage of IWW equipped with AIS

Definition:

Ratio of the length of inland waterways equipped with Automatic Identification System (AIS) to the total length of IWW network.

Scoring:

- ratio \geq 80%: 10 points
 - $60\% \leq$ ratio $<$ 80%: 8 points
 - $40\% \leq$ ratio $<$ 60%: 6 points
 - $20\% \leq$ ratio $<$ 40%: 4 points
 - ratio $<$ 20%: 0 point
-

II. Social Sustainability (SO)

A. 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:

- Fully harmonized: 10 points
- Partially harmonized: 7 points
- Not harmonized: 4 points
- No national legislations: 0 point

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.

B. 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

3-SO-2.1: Harmonization of registration of inland navigation vessels

- Subregionally harmonized: 6 points
- Bilaterally harmonized: 4 points
- Not recognizing international/regional provisions or no national law applied: 0 point

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 point

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 $\geq 90\%$: 10 points
- $75\% \leq \text{ratio} < 90\%$: 8 points
- $50\% \leq \text{ratio} < 75\%$: 6 points
- $25\% \leq \text{ratio} < 50\%$: 4 points
- $10\% \leq \text{ratio} < 25\%$: 2 points
- ratio $< 10\%$: 0 point

3-SO-2.4: Application of provisions for safety clearance, freeboard and draught marks

3-SO-2.1: Harmonization of registration of inland navigation vessels

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 point

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 point
-

C. 3-SO-3: Dangerous Goods Transport – Administrative Requirements

1. 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 point

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.

2. 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 point

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 point

3. 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/regionally 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/regionally agreed provisions or no national regulatory provisions in place: 0 point

3-SO-3.3b: Mandatory requirements concerning vessels and equipment

Definition:

Degree of harmonization of internationally/regionally agreed provisions in the national legislations on requirements concerning vessels and equipment, e.g. 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/regionally agreed provisions or no national legislations in place: 0 point
-

D. 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 point

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 point
-

III. Environmental Sustainability (EV)

A. 3-EV-1: Fleet

3-EV-1.1: Number of alternative fuel inland vessels

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%: 10 points
- 15% \leq ratio < 20%: 8 points
- 10% \leq ratio < 15%: 6 points
- 5% \leq ratio < 10%: 4 points
- ratio < 5%: 0 point

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 point
-

B. 3-EV-2: Emission

3-EV-2.1: Harmonization of water pollution prevention

Definition:

Degree of harmonization of internationally/regionally agreed provisions on the prevention of water pollution produced by vessels in the national laws and legislations.

Scoring:

- Globally harmonized: 10 points
- Regionally harmonized: 8 points

3-EV-2.1: Harmonization of water pollution prevention

- Subregionally harmonized: 6 points
- Bilaterally harmonized: 4 points
- Not recognizing international/regional provisions or no national law applied: 0 point

3-EV-2.2: Modal share of passengers IWW transport

Definition:

Ratio of the passenger kilometers performed with IWW transport to the total passenger kilometers involved in international journeys per year.

Scoring:

- ratio $\geq 10\%$: 10 points
- $8\% \leq \text{ratio} < 10\%$: 8 points
- $6\% \leq \text{ratio} < 8\%$: 6 points
- $4\% \leq \text{ratio} < 6\%$: 4 points
- $2\% \leq \text{ratio} < 4\%$: 2 points
- ratio $< 2\%$: 0 point

3-EV-2.3: Implementation of technical adaptation measures in inland waterways

Definition:

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 (the Netherlands).

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 point
-