

National Experiences in Monitoring SDG 9.1.2

Background and Introduction

Sustainable Development Goal 9, with its targets and indicators: <https://sustainabledevelopment.un.org/sdg9>.

This page collects national (or regional or local) examples of ways countries are monitoring SDG 9.1.2. This includes links to National Reporting Platforms where relevant, in addition to descriptions of the country's approach.

Australia

<https://www.sdgdata.gov.au/goals/industry-innovation-and-infrastructure/9.1.2>

Belarus

<http://www.belstat.gov.by/en/ofitsialnaya-statistika/sustainable-development-goals/national-list-of-sdg-indicators/Goal-9/>

State statistical reporting on transport statistics is provided by resident organizations of the Republic of Belarus. For freight and passenger road transport reports are also submitted by individual entrepreneurs.

The indicator "**passenger turnover**" is collected by road, rail, air, inland waterway, urban electric transport and the metro in urban, suburban, intercity and international service. For road transport, we track passenger transportation by buses of organizations, buses of individual entrepreneurs, as well as transportation by passenger-car taxis. According to railway transport statistics, passengers transported are calculated by summing the passengers sent on trains from the stations of the republic's railways and passengers taken on trains from neighboring railways of another country. Passenger turnover in rail transport characterizes the amount of work performed, taking into account the distance that passengers were transported within the Belarusian railway.

The indicator "**freight turnover**" is collected by rail, pipeline, road, air, and inland waterway transport in domestic and international service. Carried goods by rail characterizes the mass of goods in tons, transported along the road, to the sections of the road in the domestic and international service.

Further comments

Gross Value Added (GVA) under section H «Transport, warehousing, postal and courier activities» is used to calculate the gross domestic product. Therefore, in order to better characterize transport as a sector of the economy, we propose to monitor commercial freight and passenger transportation performed by all types of public transport as part of SDG 9.1.2 monitoring. As part of the monitoring of SDG 9.1.2, it is necessary to monitor commercial passenger transportation, as passenger transportation by private vehicles is not included in the GVA calculation.

A country's economy as a whole is defined in terms of institutional units. It includes all institutional units that are resident in the economic territory of the country. Therefore, in the framework of monitoring SDG 9.1.2, **we propose to monitor commercial freight and passenger transportation performed by resident organizations** of the republic. We propose to monitor two indicators: cargo turnover in ton-kilometres and passenger turnover in passenger-kilometres. Cargo turnover and passenger turnover are qualitative indicators characterizing not only the volume of transported cargo and passengers, but also the distance of their transportation.

Belgium

https://www.indicators.be/fr/i/G09_FTR/Transport_de_marchises_par_la_route

Canada

<https://www144.statcan.gc.ca/tdih-cdit/info-network-reseau-eng.htm>

Czechia

Czech Republic as a member of the EU follows the relevant EU Regulations for transport statistics. The Regulations concern road freight transport, inland waterways freight transport, rail passenger transport and rail freight transport, air passenger transport and air transport of cargo.

Freight transport:

Road – follows residency principle, i.e. data refer to international and domestic transport of vehicles registered in the Czech Republic on national territory as well as on foreign territory.

Rail – follows territorial principal, data cover all the operators on the CZ territory

WW – both sets of data are collected, on territorial principle (according to the EU Regulation and sent to Eurostat) and residency principle is used for national purposes.

Aviation – information from the airlines (for national purposes and for ICAO) as well as from the Airports (for Eurostat) are collected.

Maritime – not applicable

Passenger transport

Bus – data are collected from bus operators registered in the CZ, international as well as national transport, on the CZ territory as well as on foreign territory

Passenger cars – number of passengers and pkm is estimated based on road censuses, number of passenger cars, energy consumption.

Rail – follows territorial principal, data cover all the operators on the CZ territory

IWW – number of passengers and pkm is available, transport mostly for leisure purposes

Aviation – information from the airlines (for national purposes and for ICAO) as well as from the Airports (for Eurostat) are collected

Maritime – not applicable

Data are collected from the operators, of course they are used for analysis as well. All the strategic documents related to transport, especially the main one - **Transport Policy**, include measure and objectives to support sustainable transport and more environmental friendly modes of transport – rail and IWW. No more indicators have been adopted for this purpose but there are lot of supportive indicators regularly collected which can be used, e.g. information on infrastructure, vkm, various transport breakdown.

Denmark

<https://www.dst.dk/en/Statistik/Sdg/09-industri-innovation-og-infrastruktur/delmaal-01/indikator-2#start>

Estonia

<https://www.stat.ee/stat-sustainable-development-indicators-9>

France

The indicators which are calculated for France are:

1. indicator 9.i.1a : modal share of public passenger transport = (railways (including metros) + bus, tramways and coaches)/passengers transport in Metropolitan France

unit = passengers/kilometers (%) on a territorial principal. It does not include walking and cycling, aviation and maritime.

2. indicator 9.i.1b : modal shares of road, railway and inland water transports (/good transport in Metropolitan France)

unit = tons/kilometers (%) on a territorial principal. 2020 targets are 10,4% for railway transport and 2% for inland waterway transport. It does not include maritime and aviation.

These indicators have been adopted to monitor the 2030 Development Agenda. Besides, modal split for passenger, including air transport inside metropolitan territory, are also calculated in the report of the Commission for the Transport Accounts of the Nation.

Ireland

<https://irelandsdg.geohive.ie/pages/goal9>.

From Ireland's SDG [Voluntary National Review](#) 2017: "Collective transport modes [buses, coaches, trains, excluding trams] account for a share of total [Irish] passenger land transport above the EU average. However Ireland's share of rail and inland waterways activity as a percentage of total freight transport is extremely low relative to other EU countries."

Italy

SDG report available in Italian here <https://www.istat.it/storage/rapporti-tematici/sdgs/2020/goal9.pdf>.

Tabella 9.1 - Elenco delle misure diffuse dall'Istat, tassonomia rispetto agli indicatori SDGs e variazioni rispetto a 10 anni prima e all'anno precedente

Rif. SDG	INDICATORE	Rispetto all'indicatore SDG	Valore	VARIAZIONI	
				Rispetto a 10 anni prima	Rispetto all'anno precedente
9.1.2	Sviluppare infrastrutture di qualità, affidabili, sostenibili e resilienti, comprese le infrastrutture regionali e transfrontaliere, per sostenere lo sviluppo economico e il benessere umano, con particolare attenzione alla possibilità di accesso equo e conveniente per tutti.				
Volumi trasportati di passeggeri (Istat, 2018, migliaia di passeggeri)		Proxy	(*)	---	---
Volumi trasportati di merci (Istat, 2018, migliaia di tonnellate)		Proxy	(*)	---	---
Chilometri di rete ferroviaria per 10.000 abitanti (MIT - RFI, 2018, per 10.000 abitanti)		Di contesto nazionale	3,3	 (a)	---
Chilometri di rete ferroviaria per 10000 Ettari (MIT - RFI, 2018, per 10.000 ettari)		Di contesto nazionale	6,7	 (a)	---
Reti ferroviarie a binario doppio o multiplo sul totale delle reti ferroviarie (MIT - RFI, 2018, %)		Di contesto nazionale	40,4	 (a)	---
Reti ad alta velocità sul totale delle reti ferroviarie (MIT - RFI, 2018, %)		Di contesto nazionale	3,6	 (a)	---
Reti ferroviarie elettrificate sul totale delle reti ferroviarie (MIT - RFI, 2018, %)		Di contesto nazionale	67,0	 (a)	---

Kazakhstan

https://stat.gov.kz/official/sustainable_development_goals/goal_09_industry_innovation_and_infrastructure

Moldova

At the national level, the indicator tracks data on goods in ton-km and Passengers' journey (passenger - kilometres), total, including modes of transport: rail, road (buses, taxis, trolleybuses), river and air http://statistica.gov.md/public/files/Metadate/en/Transport_en.pdf.

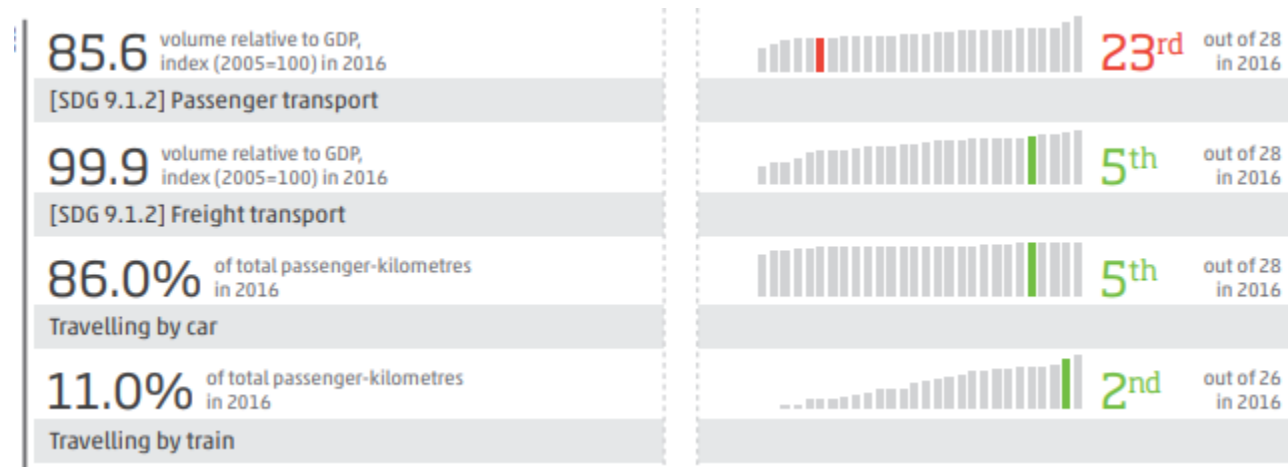
For road freight / passenger transport the data are disaggregated by:

- Districts, municipalities and ATU Gagauzia, economic development regions (North, Center, South);
- Destinations (domestic or international);
- Type of transport (for the carriage of goods by road - for payment or for own use);

9.1.2 is an indicator of obtaining the annual data of quality on the volume of goods transported, goods travelled, passengers transported and passengers' journey, by modes of transport. The Republic of Moldova has not adopted additional indicators regarding the target 9.1.

Netherlands

<https://www.cbs.nl/en-gb/publication/2018/10/the-sdgs-the-situation-for-the-netherlands>



Norway

<https://www.ssb.no/en/transport-og-reiseliv/statistikker/transpinn>

Statistics Norway has compiled statistics on domestic transport of passengers and goods for quite some time. The most updated time series, containing data for all modes of modes of transport (including pipeline) are available from 2010. The variables collected/estimated are:

- Number of passengers (passengers transported between two locations in Norway, including drivers of passenger cars)
- Passenger-kilometres
- Tonnes of goods (gross weight of goods carried between two locations in Norway, including packaging but excluding the tare weight of transport units)
- Tonne-kilometres

There are some differences in how passengers and tonnes are defined in the statistics for various transport modes, so having harmonised concepts in these areas is critical for the comparability and consistency of the indicators. Regarding the statistical scope, the Norwegian statistics is limited to transport between locations in Norway – regardless of the nationality of the transport vehicle. This concept is quite easy to implement and secures reasonable comparability between all the main modes of transport in Norway; Road, Rail, Short Sea and Air. In some cases, given Norway's geography, all of these modes could theoretically be competing for the same freight. Pipeline transport is a special case, since it is mainly used for transporting oil and gas from the Norwegian continental shelf to the mainland.

In addition, Eurostat is (as you probably know) calculating modal split indicators for all EEA countries based on the territoriality principle, i.e. including the part of international transports that are conducted on national territory. If this approach is considered more relevant for indicator 9.1.2 than the domestic transport scope used by Statistics Norway, I would suggest using the Eurostat figures for all EEA countries – as they are at least calculated in a harmonized way.

Portugal

https://www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine_publicacoes&PUBLICACOESpub_boui=377366012&PUBLICACOESmodo=2&lang=en.

9.1.2	Transporte de passageiros pelas empresas nacionais de transporte aéreo	Passenger transport by national air transport enterprises
	Transporte de carga pelas empresas nacionais de transporte aéreo	Cargo transport by national air transport enterprises
	Transporte de passageiros pelas empresas exploradoras de sistema ferroviário pesado	Passenger transport by heavy railway carrier enterprises
	Mercadoria transportada das empresas exploradoras de sistema ferroviário pesado	Goods transported of heavy railway carrier enterprises
	Transporte de passageiros pelas empresas de transporte rodoviário de passageiros	Passenger transport by enterprises of road transport passengers
	Tonelada-quilómetro dos Veículos pesados de mercadorias por Localização geográfica (Continente)	Tonne-kilometre of Heavy goods road vehicles by Geographic localization (Continent)

Slovenia

<https://www.stat.si/Pages/en/goals/goal-9.-build-resilient-infrastructure-promote-inclusive-and-sustainable-industrialization-and-foster-innovation/9.5-share-of-collective-transport-modes-in-total-passenger-land-transport>

1. Compilation guidance at Global Level

We believe that the optimum solution would be to include **all modes of transport** and, in our opinion, according to the **territorial principle**. Both measurement units – **passenger-km** and **tonne-km** – suit the purpose of this indicator(s) well.

Since countries are facing different challenges concerning the modal split, this kind of (basic) indicator(s) can help them calculate the shares among the modes that are of their national interest. In the case of Slovenia, the modal split between road and rail freight transport is very relevant, also the modal split of passenger transport between private cars and public transport. In other countries the modal split between rail and IWW transport of goods could be relevant. In recent years, Eurostat has worked on territorialisation of data (for all modes of transport based on national microdata matrices) and has made great progress. If the similar task/effort could be done on the Global level, that would be amazing. Data could be comparable by regions, countries, for the World, by modes, etc.

2. How is the indicator currently calculated?

In Slovenia we calculate these indicators for all modes of transport but not all can be compared and analysed (as modal split). The reason is that data for some of the indicators are collected according to the residency principle (road freight transport, passengers in public scheduled transport, etc.), while others are collected by the territorial principle (rail freight transport) Data are presented in passenger-km and tonne-km.

With the pilot survey on daily passenger mobility, we calculated the modal split of PKMs for the residents of Slovenia (territorial principle), so the share of PKMs made by walking and cycling in the total of road PKMs is now available.

3. Is the indicator simply tracking passenger and freight volumes, or is it treated as a modal split analysis?

In our transport statistics we are tracking passenger and freight volumes but we only rarely present them in a modal split analysis (see the reasons under 2. a). Currently the published transport indicators on SURS's website devoted to SDGs are:

- Share of collective transport modes in total passenger land transport (the ratio of passenger-km in land transport by means of transport - train, bus)
- Share of rail activity in total freight transport (the share of tonne-km by rail in total inland freight transport – rail, road)

See: <https://www.stat.si/Pages/en/goals/goal-9.-build-resilient-infrastructure-promote-inclusive-and-sustainable-industrialization-and-foster-innovation>. For the moment no other transport indicator is disseminated on SURS's website devoted to SDGs (and since both are based on Eurostat recalculations and estimates we are not really satisfied with them). So far for the published indicators (the portal was established by SURS initiative and does not represent the national portal for the SDG indicators) no specific targets have been set for a specific mode.

4. Has your country adopted additional transport indicators to monitor the 2030 Development Agenda?

With existing published indicators SURS followed the Eurostat's proposal of SDG indicators. By the end of the year 2019, some new selected indicators (modal split from passenger mobility survey and data on traffic performance) will be published on the same SDG portal to put focus on sustainable transport. At present we haven't defined indicators which would focus on resilient infrastructure. But we might think about them in the near future.

Switzerland

<https://www.bfs.admin.ch/bfs/en/home/statistics/sustainable-development/2030-agenda-goals-monitoring/all-indicators/9-industrie-innovation-infrastructure/congestion-swiss-motorway-network.html>

United Kingdom

<https://sustainabledevelopment-uk.github.io/9-1-2/>.

Plans to improve reporting on the indicator, including inland transport modes.

United States

<https://sdg.data.gov/9-1-2/>

The Office of management and Budget (OMB) submits the data for all of the SDG Indicators for the United States to the United Nations. The latest data submitted are [here](#), and the source data for the passenger volumes are [here](#).

Freight Volumes

"When the SDGs first came out it was very unclear as to what freight data specifically the United Nations was looking for. We have submitted data on tonnes rather than tonne-kilometers, because at the time of our first submission we had more recent tonne data than tonne-kilometer data. After consultation with Canada and Mexico, and seeing the direction that WP.6 is heading in, we plan to switch to tonne-kilometer data in next year's reporting. The freight data are estimates developed through our Freight Analysis Framework: <https://www.bts.gov/faf>."

Note also: USA tkm data are collected on the territorial principle.

Passenger Volumes

"We submitted data for highway, air, transit, and rail. Pedestrian and bicycle data are not included in our submission. Ferry boat data are included under transit, but not other types of vessels, such as cruise ships. Air data are only reported for **domestic** air service. We did not breakout the data beyond simply highway, air, transit, and rail. The passenger data are tracked by a variety of data programs within the U.S. Department of Transportation, and then compiled together in the attached Table 1-40M.

No additional indicators.

European Commission

Approach to Monitoring the SDGs: <https://ec.europa.eu/eurostat/documents/3217494/9237449/KS-01-18-656-EN-N.pdf/2b2a096b-3bd6-4939-8ef3-11cfc14b9329>.

Passenger volumes

"This indicator measures the share of buses, including coaches and trolley-buses, and trains in total passenger transport performance, expressed in passenger-kilometres (pkm). Total passenger transport here includes transport by passenger cars, buses and coaches, and trains, and excludes air and sea transport. All data should be based on movements within national territories, regardless of the nationality of the vehicle. The data collection is voluntary and not fully harmonised at the EU level. Other collective transport modes, such as tram and metro systems, are not included due to the lack of harmonised data."

Freight volumes

"This indicator measures the share of rail and inland waterways in total inland freight transport, expressed in tonne-kilometres (tkm). Inland freight transport modes include road, rail and inland waterways. Rail and inland waterways transport is based on movements on national territory, regardless of the nationality of the train or vessel. Road transport is based on all movements of vehicles registered in the reporting country. The redistribution of road transport according to the 'territoriality principle' involves modelling the likely journey itinerary and projecting it on to the European road network. Neither sea nor air freight transport are represented in the indicator."

Additional Indicators

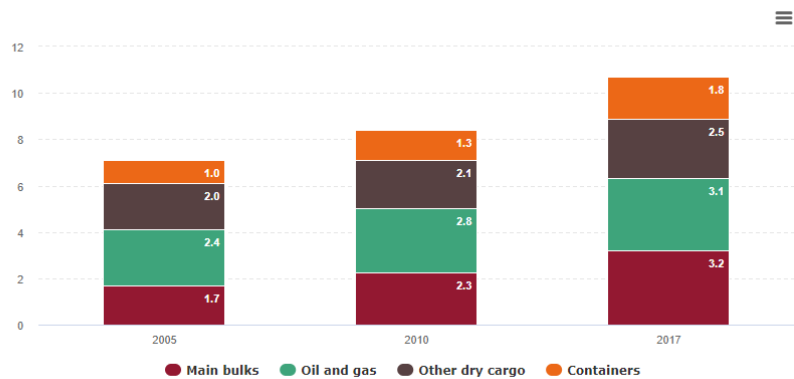
Average CO2 emissions per km from new passenger cars.

Sustainable transport			
Share of buses and trains in total passenger transport	↘	↗	page 178
Share of rail and inland waterways activity in total freight transport	↘ (?)	↘	page 179
🎯* Average CO ₂ emissions per km from new passenger cars (*)	↗ (?)	↗	SDG 12, page 229

United Nations Conference on Trade and Development

See page on the maritime side of indicator 9.1.2 [here](#).

 Figure 1. Volume of international maritime cargo
(Billions of tons loaded)



Source: UNCTAD (2018a), figure 1.1.

Report on Using 9.1.2 for tracking rural access (ReCap)

<http://www.research4cap.org/Library/Siebertetal-2020-ScopingStudySuitabilitySDGIndicator912-FinalReport-ReCAP-GEN2173A-200305.pdf>

Partnership on Sustainable Low Carbon Transport (Slocat)

This page <http://www.slocat.net/vnr> gives an analysis of how many Voluntary National Reviews have transport references in them.