SDG indicator metadata

(Harmonized metadata template - format version 1.1)

0. Indicator information (SDG_INDICATOR_INFO)

0.a. Goal (SDG_GOAL)

Goal 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

0.b. Target (SDG_TARGET)

Target 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

0.c. Indicator (SDG_INDICATOR)

Indicator 9.1.2: Passenger and freight volumes, by mode of transport

0.d. Series (SDG_SERIES_DESCR)

IS_RDP_FRGVOL - Freight volume (tonne kilometres) [9.1.2]

IS_RDP_LULFRG - Freight loaded and unloaded (metric tons) [9.1.2]

IS_RDP_PFVOL - Passenger volume (passenger kilometres) [9.1.2]

IS_RDP_PORFVOL - Container port traffic (twenty-foot equivalent units - TEUs) [9.1.2]

0.e. Metadata update (META_LAST_UPDATE)

2025-06-11

0.f. Related indicators (SDG_RELATED_INDICATORS)

0.g. International organisations(s) responsible for global monitoring (SDG_CUSTODIAN_AGENCIES)

International Civil Aviation Organization (ICAO); International Transport Forum (ITF); UN Trade and Development (UNCTAD).

1. Data reporter (CONTACT)

1.a. Organisation (CONTACT_ORGANISATION)

International Civil Aviation Organization (ICAO); International Transport Forum (ITF); UN Trade and Development (UNCTAD).

2. Definition, concepts, and classifications (IND_DEF_CON_CLASS)

2.a. Definition and concepts (STAT_CONC_DEF)

Definitions:

Passenger volumes are measured in passenger-kilometres while non-maritime freight volumes are measured in tonne-kilometres, and broken down by mode of transport. For the purposes of monitoring this indicator, passenger-km data are split between aviation, road (broken down between passenger cars,

buses and motorcycles) and rail, and tonne-km are split between aviation, road, rail and inland waterways.

Maritime freight volumes are measured in metric tons and container port traffic is measured in Twenty-foot Equivalent Unit (TEU). A TEU represents the volume of a standard 20 feet long intermodal container used for loading, unloading, repositioning and transshipment. A 40-foot intermodal container is counted as two TEUs.

Concepts:

Aviation:
The International Civil Aviation Organization (ICAO) through its Statistics Division has established standard methodologies and definitions to collect and report traffic (passenger and freight volume) data related to air transport. These standards and methodologies have been adopted by the 193 Member States of ICAO and also by the Industry stakeholders i.e. air carriers and airports. The data of ICAO is used by States and also the World Bank for its development indicators. ICAO uses Air Transport Reporting Forms A, AS, B and C to arrive at the passenger and freight volumes for air transport. The aviation data reported under indicator 9.1.2 is for scheduled traffic.

Precise definition of all different concepts and metadata related to Air Transport Reporting Forms A, AS, B and C to arrive at the passenger and freight volumes for air transport, as approved by the ICAO Statistics Division and Member States can be found at the ICAO website given below - http://www.icao.int/sustainability/pages/eap-sta-excel.aspx/.

Maritime:
International maritime freight is an indicator reflecting the following two components: (1) the sum of international freight volumes carried onboard ships and loaded (exports) and unloaded (imports) at ports worldwide and measured in metric tonnes, and (2) container port traffic handled at world ports and measured in twenty-foot equivalent unit (TEU).

International maritime freight volumes in metric tons reflect the imports and exports carried onboard ships and arriving at or departing from seaports located in the reference area's territory. Data on international maritime freight volumes exclude transhipments and domestic maritime freight. They include maritime freight volumes that originate from and are destined to the reference area's territory but that are loaded (exported) and unloaded (imported) through ports located outside the reference area's territory. For example, maritime freight volumes assigned to landlocked countries are handled at ports located in relevant transit coastal countries. In this case, the freight volumes that are handled at ports located in the transit coastal countries, are assigned to the relevant landlocked countries.

International maritime freight volumes are recorded at goods' arrival time at the country's external border.

Road, Rail, Inland waterways:
For definitions of all relevant terms, the UNECE/ITF/Eurostat Glossary for Transport Statistics can be consulted. The 5th edition of this publication is available at https://unece.org/DAM/trans/main/wp6/pdfdocs/Glossary_for_Transport_Statistics_EN.pdf

2.b. Unit of measure (UNIT_MEASURE)

Aviation: Revenue Passenger-Kilometres (RPK) and Freight Tonne-Kilometres (FTK)

Maritime: Metric tonnes and twenty-foot equivalent unit (TEU).

Road, Rail:

Passenger-Kilometres (Pkm) and Tonne-Kilometres (Tkm)

Inland Waterways: Tonne-Kilometres (Tkm)

2.c. Classifications (CLASS_SYSTEM)

3. Data source type and data collection method (SRC_TYPE_COLL_METHOD)

3.a. Data sources (SOURCE_TYPE)

Aviation

ICAO Air Transport Reporting Forms approved by the Statistics Division of ICAO and its Member States have been used to define standards, methodologies and to collect aviation data since the 1950's. ICAO definitions and metadata are also used by the Aviation Industry as the basis of collecting data and conducting analysis.

Maritime:

The UNCTAD secretariat generates the maritime freight volumes in metric tonnes based on UN Comtrade, which collects merchandise trade flow data from UN member countries. The trade volumes in UN Comtrade are divided into maritime and non-maritime freight volumes and by cargo type, using baseline maritime transport shares and cargo type shares sourced from MDS Transmodal's World Cargo Database available at https://www.mdst.co.uk/data (see section 4.c for the estimation methodology).

The UNCTAD secretariat compiles the container port traffic volumes in TEU from two main sources namely Dynamar B. V., and Professor Jean-Paul Rodrigue, Dept. of Maritime Business Administration, Texas A&M University – Galveston. In addition, other sources are relied upon, as deemed appropriate, and include the United Nations Economic Commission for Latin America and the Caribbean, Lloyd's List Intelligence, Drewry Maritime Research, as well as information published on relevant port authorities and container port terminals websites.

Road, Rail, Inland waterways:

The ITF runs transport models that are used to provide transport information for all regions.

3.b. Data collection method (COLL_METHOD)

Aviation:

Official aviation statistics are reported on a regular basis by Member States to ICAO through Air Transport Reporting Forms.

Maritime:

International maritime freight volumes are generated based on UN Comtrade, which collects trade flow data from UN member countries (see section 4.c for the estimation methodology).

Container port traffic data are not based on a systematic reporting by countries and rely mainly on secondary sources that may vary over time. Official reporting by countries is very limited.

Data published are country totals which may conceal the fact that some minor ports are not included.

Road, Rail, Inland waterways:
Data come from the ITF Global Models.
ITF, ITF Transport Outlook 2023, OECD Publishing, Paris

3.c. Data collection calendar (FREQ_COLL)

Aviation:
Every year by the fall data for the previous year is available to ICAO Member States at a country level.

Maritime:
As international maritime freight volumes are generated based on reported UN Comtrade data, the data collection calendar depends on UN Comtrade data availability. A high level of coverage is expected to be available by the fall following the reference year. Missing data are imputed by UNCTAD (see section 4.f for the imputation methodology).

Container port traffic data also depend on reporting by port authorities and other data sources. A cutoff date for data collection is set in the second quarter of the year for the data published in September of the same year.

Road/Rail/Inland waterways:
There is no compilation of data submitted from the countries. Data comes from the ITF Global Models which are updated every two years. In the last iteration of the ITF Global Models, data are available for 2015, 2019, 2020 and 2022. 2021 data are an interpolation of 2020 and 2022 data.
ITF, ITF Transport Outlook 2023, OECD Publishing, Paris

3.d. Data release calendar (REL_CAL_POLICY)

Aviation:
Data are collected on a regular basis and a high level of coverage is expected to be available by the fall following the reference year.

Maritime:
Data are published annually on-line on UNCTADstat and in the annual Review of Maritime Transport in September of each year.

Road, Rail, Inland waterways:
Data come from the ITF Global Models which are updated every two years.
ITF, ITF Transport Outlook 2023, OECD Publishing, Paris

3.e. Data providers (DATA_SOURCE)

Name:
ICAO, ITF, UNCTAD

Aviation:

International Civil Aviation organisation (ICAO).

Maritime:
Name: UN Trade and Development (UNCTAD)
Description: Data on international maritime freight in metric tons are generated by UNCTAD secretariat based on merchandise trade data reported by countries through the UN Comtrade database.

Data on container port throughput in TEU are compiled by UNCTAD based on two main data sources, namely Dynamar B. V., and Professor Jean-Paul Rodrigue, Dept. of Maritime Business Administration, Texas A&M University – Galveston. In addition, other sources are relied upon, as deemed appropriate, and include the United Nations Economic Commission for Latin America and the Caribbean, Lloyd's List Intelligence, Drewry Maritime Research, as well as information published on relevant port authorities and container port terminals websites.

Road, Rail, Inland waterway:
Data are from ITF Global Model estimation.

3.f. Data compilers (COMPILING_ORG)

International Civil Aviation organisation (ICAO)
International Transport Forum (ITF)
UN Trade and Development (UNCTAD)

3.g. Institutional mandate (INST_MANDATE)

ICAO:
ICAO is funded and directed by 193 national governments to support their diplomacy and cooperation in air transport as signatory states to the Chicago Convention (1944). Its core function is to maintain an administrative and expert bureaucracy (the ICAO Secretariat) supporting these diplomatic interactions, and to research new air transport policy and standardization innovations as directed and endorsed by governments through the ICAO Assembly, or by the ICAO Council which the assembly elects. https://www.icao.int/about-icao/Pages/default.aspx

UNCTAD:
Established in 1964, the United Nations Conference on Trade and Development (UNCTAD), rebranded as UN Trade and Development since April 2024, published its annual Review of Maritime Transport for the first time in 1968. The publication was mandated by UNCTAD's member States and is part of UNCTAD's research and analytical work in the field of maritime transport aimed at helping developing countries maximize their trade and investment opportunities and increase their participation in the world economy. It has been regularly reconfirmed in UNCTAD's quadrennial Ministerial Conferences, most recently by UNCTAD XIII in Doha (2012) and UNCTAD XIV in Nairobi (2016) and UNCTAD XV (Bridgetown). These mandates have emphasized sustainable and resilient transport as priority action areas and established "Sustainable and Climate Resilient Maritime Transport" as an important thematic area n UNCTAD's work programme and the Review of Maritime Transport.

ITF:

The International Transport Forum (ITF) was created by Ministerial Declaration in Dublin in 2006 on the legal basis of the European Conference of Ministers of Transport (ECMT), itself established as an international organisation by treaty (Protocol) signed in Brussels on 17 October 1953. The objectives of the ITF are to serve as a global platform for discussion and prenegotiation of transport policy issues across all modes. Unique in its global and modal scope, the ITF works to foster a deeper understanding of the role of transport in economic growth, environmental sustainability and social inclusion. It aspires to raise the public profile of transport policy.

4. Other methodological considerations (OTHER_METHOD)

4.a. Rationale (RATIONALE)

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. Trans-border infrastructure development is best captured by passenger and freight volumes moved by Member States and Regions. A growth in passenger and freight volumes shows a robust infrastructure development happening in States and Regions along with the resultant socio-economic benefits. Air Transport is particularly important not only for the economic and job benefits but also because it is one of the only modes of transport that can be relied on during emergencies and disease outbreaks to reach food, medicines, medical personnel, vaccines and other supplies speedily to the affected persons in the affected areas. In addition, tracking how the non-road share of freight volumes, and the public transport share of passenger volumes, changes over time, allows insights into the overall sustainability of the global transport system.

Aviation:
Informed decision-making is the foundation upon which successful businesses are built. In a fast-growing industry like aviation, planners and investors require the most comprehensive, up-to-date, and reliable data. ICAO's aviation data/statistics programme is to provide accurate, reliable and consistent aviation data so that States, international organizations, aviation industry, tourism and other stakeholders can make better projections. The UN recognized ICAO as the central agency responsible for the collection, analysis, publication, standardization, improvement and dissemination of statistics pertaining to civil aviation.

Maritime:
The volume of international maritime freight volumes and container port traffic provide an overall indication of the importance of port infrastructure for trade and development and may be relied upon to infer the quality and adequacy of seaport infrastructure and their hinterland connections. Maritime transport is the dominant mode of international freight transport when flows are measured in volume terms. Behind the global and regional headline estimates, individual contributions vary by region and type of cargo, reflecting, among other factors, differences in countries' economic structures, composition of trade, urbanization trends, levels of development, extent of integration into global trading networks, degree of participation in global supply chains, and the overall quality of transport infrastructure.

World container port traffic reflects the importance of containerized trade and countries' participation in global liner shipping networks and globalized manufacturing production processes. It also provides an indication of the port infrastructure size and quality and informs about the position of countries as major maritime trading nations and homes to global logistics hubs.

Road, Rail, Inland waterways:

The International Transport Forum has developed a set of modelling tools to build its own forward-looking scenarios of transport activity. Covering all modes of transport, freight and passenger, the tools are unified under a single framework.
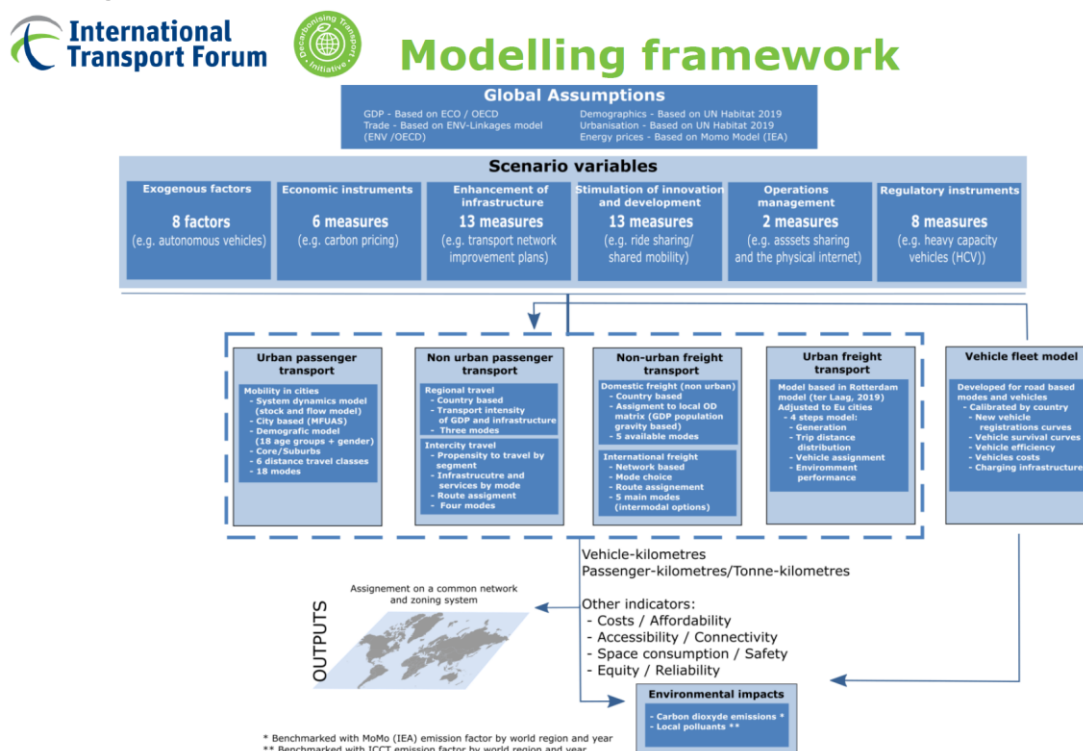
For passenger volumes, the following models are used to generate the data: the urban passenger transport model and the non-urban passenger transport model.

The urban passenger transport model is a strategic tool to test the impacts of policies and technology trends on urban travel demand, related CO_2 emissions and accessibility indicators.

The non-urban passenger transport model is a strategic tool that tests the impacts of multiple policies and trends on the non-urban passenger sector.

For freight volumes, the non-urban freight transport model is used to generate the data. The non-urban freight transport model assesses and provides scenario forecasts for freight flows around the globe. It is a network model that assigns freight flows of all major transport modes to specific routes, modes, and network links.

The ITF Modelling Framework is available at The ITF Modelling Framework.

4.b. Comment and limitations (REC_USE_LIM)

Aviation:

Coverage for aviation is for all ICAO 193 Member States.

Maritime:

Freight volumes loaded and unloaded, maritime transport: Coverage at regional and sub-regional level. For some countries, including landlocked countries, the maritime freight data includes freight volumes that originate from and are destined to the reference area's territory but that are loaded (exported) and unloaded (imported) though ports located in areas outside the reference area's territory. For example,

the maritime freight volumes assigned to landlocked countries are handled at ports located in relevant transit coastal countries.

Container port traffic, maritime transport: Coverage at regional, sub-regional and member state level. Totals may conceal the fact that some minor ports are not included. The data includes container port throughput for ports with time series that are complete since 2010 or that can be made complete by repeating an observation for a maximum of three years after the original observation. This means that on country level time series are comparable over time but that the coverage of ports may differ between countries.

Road, Rail, Inland waterways:
Coverage at regional and sub-regional level.

4.c. Method of computation (DATA_COMP)

Aviation
The aviation passenger and freight volumes are reported for the air carriers through ICAO Air Transport Reporting Forms and grouped by Member States of ICAO.

Road/Rail/Inland waterways
Urban passenger transport model
The model is designed as a systems dynamic model (stock and flow model) to evaluate the development of urban mobility in all cities over 50 000 inhabitants around the world. It combines data from various sources that form one of the most extensive databases on global city mobility to account for fifteen transport modes. These range from the conventional private car and public transport to new alternative modes such as shared mobility.
Non-urban passenger transport model
The model provides scenario forecasts for non-urban transport activity and its related CO_2 emissions up to 2050. The model estimates activity between urban areas (intercity travel) and passenger activity happening locally in non-urban areas (intra-regional travel). The latter includes travel in peri-urban and rural areas. The model is developed to assess the impact of transport, economic and environmental policy measures (air liberalisation, carbon pricing, etc.), as well as the impact of technological developments and breakthroughs (electric aviation, autonomous vehicles, etc.).
Non-urban freight transport model
The most recent version of the ITF freight model integrates the (previously distinct) surface and international freight models. International and domestic freight flows are calibrated on data on national freight transport activity (in tonnes-kilometres, tkm) as reported by ITF member countries. Reported data is also used to validate the route assignment of freight flows. Trade projections in value terms stem from the OECD trade model and converted into cargo weight (tonnes). These weight movements are then assigned to an intermodal freight network that develops over time in line with scenario settings. These define infrastructure availability, available services and related costs.

The model uses 2015 as its baseline year and provides estimation values for 2015, 2019, 2020, 2022, and 2025, then with computations done in five-year intervals. Therefore, the data for 2021 is derived through interpolation of the simulated values for 2020 and 2022.

The ITF Modelling Framework is available at The ITF Modelling Framework.

Maritime:

Freight volumes are based on merchandise trade data (imports and exports) reported by countries to the UN Comtrade database. The methodology applied to generate maritime freight volumes from UN Comtrade data was developed by the UNCTAD secretariat in collaboration with MDS Transmodal (https://www.mdst.co.uk) and UNSD.

Data are aggregated from data reported in metric tons on bilateral trade flows at the HS code 6-digit level. Commodities are inferred to be transported as a particular maritime cargo type (e.g. containerized carried in containers on containerships or oil carried as bulk in tankers) or a non-maritime cargo type (e.g. containerized cargo carried in containers on trucks or oil carried in tanks onboard trucks). This required the application of base rates of cargo types and base rates of how these cargo types are transported.

The baseline cargo type shares and maritime transport shares are based on MDST's World Cargo Database. However, some maritime transport shares are adjusted using information from UNCTAD Trade-and-Transport Dataset (https://unctadstat.unctad.org/datacentre/dataviewer/US.TransportCosts).

Commodity and cargo type are different concepts. Commodity refers to goods as classified under HS codes while cargo types reflect the condition under which the freight is being transported (containerized (dry or reefer/refrigerated containers), bulk liquid (tanker ships or, tanks), gas carriers, car carriers, dry bulk (e.g. iron ore, coal, grain, etc.)). Thus, maritime freight volumes of some commodities can be divided into various cargo types. For example, a share of frozen meats can be carried as dry bulk cargo while another share of this same commodity can be carried in containers on a container ship.

For SDG reporting cargo type totals of maritime freight loaded (exports) and unloaded (imports) are first summed up per country before being aggregated up to the regional total.

The UNCTAD secretariat compiles the container port traffic volumes in TEU by summing up the TEU volumes reported at the port level for all ports located in a territory. UNCTAD seeks good coverage of all relevant ports in a territory while excluding ports for which relevant data is considered less reliable. The ports included per territory are listed on UNCTAD Stat website at: https://unctadstat.unctad.org/datacentre/dataviewer/US.ContPortThroughput.

4.d. Validation (DATA_VALIDATION)

Aviation:

ICAO Statistics Programme has put in place a series of robust data quality control functions to automate all the necessary calculations and producing a report for each reporting form. These quality control processes were divided into two main activities: verification and validation.

Maritime:

UNCTAD secretariat developed a methodology that automatically detects and corrects UN Comtrade merchandise trade volume records that appear to be outliers and unreliable. The detection and correction of unreliable values are conducted for each bilateral trade flows of each commodity. The detection and correction are based on time series information of unit values. If a unit value deviates from its time series trend by a pre-determined threshold, the corresponding trade volume data is considered as unreliable value. The methodology also considers a possibility that a reported trade volume figure might be correct while the reported trade value figure might be incorrect. The timeseries trend is calculated by combining several types of trends, such as linear trend, log-linear trend, and invert of

inverted trend, according to a pre-determined rule, to ensure in-sample and out-of-sample validity. To guarantee that the timeseries trend is not significantly affected by unreliable values, a first-round check of these values is conducted before calculating the timeseries trend by comparing deviations of unit values from the corresponding world median (of unit values of the corresponding commodity across all trading pairs). When the number of observations is considered insufficient to calculate the timeseries trend, the algorithm checks for the presence of a significant deviation of unit values from the corresponding world median.

UNCTAD secretariat checks for the consistency between the estimated international maritime freight volumes and other comparable datasets published by international organizations such as IMF and WTO as well datasets published by national governments, and maritime specialised sources, including Clarksons Research Services.

UNCTAD secretariat monitors, collects, and compiles the container port traffic data at the country level as well as at regional and sub-regional levels. Some commercial providers of maritime transport and trade statistics also publish global data derived from sources such as the shipping contracts. UNCTAD compares its maritime freight volume data with those published by the relevant commercial providers.

Road/Rail/Inland waterways:
There is no compilation of data submitted from the countries. Data comes from the ITF Global Models. ITF, ITF Transport Outlook 2023, OECD Publishing, Paris

4.e. Adjustments (ADJUSTMENT)

Maritime:
International maritime freight: The data compilation process normally uses importer-side data (i.e., data on bilateral trade flows reported by the importing country) in Comtrade as a primary data source. Mirror data (i.e., data on bilateral trade flows reported by the exporting country) in Comtrade are used only when the importer-side data are missing (see also section 4.f. below).

Container port traffic: When collecting data, the best effort is made to collect data aligning to the definitions of the data series. Collected TEU values are used as reported and are not further adjusted.

Road, rail, inland waterways:
In order to provide a worldwide regional coverage, data from the ITF transport models are used (see point 4.f).

4.f. Treatment of missing values (i) at country level and (ii) at regional level
(IMPUTATION)

- **At country level**
Aviation data are broadly complete.

For inland transport statistics: In case of missing data for a country for which at least one data point is available since 2000, we calculate estimates based on the expected growth rate for the country. The growth rates are computed from other socio-economic variables, such as Gross Domestic Product (GDP), population or urbanization.

For road, rail, and inland waterways:
Not applicable

Maritime:
International maritime freight: Missing data in UN Comtrade are imputed by selecting the best method, based on a pre-determined criterion such as minimum mean squared error, for each trading pair and each commodity and from several options including interpolation/ extrapolation using linear trend and growth rates in mirror data. There are no other sources of missing values in the compilation process.

Container port traffic: The data includes container port throughput for ports with time series that are complete since 2010 or that can be made complete by repeating an observation for a maximum of three years after the original observation. Repeated port level observations are treated as estimates and country level figures that are made up of more than 40 per cent estimates are not published but included in the group level totals. UNCTAD continuously seeks to improve coverage in updates to this table. Ports included are noted in the economy level notes for data on UNCTADStat at https://unctadstat.unctad.org/datacentre/dataviewer/US.ContPortThroughput.

4.g. Regional aggregations (REG_AGG)

Aggregation by region is based on UN classification of country groupings, including by geography and development status.

Maritime: International freight volumes are aggregated using simple summation of volumes at bilateral country level. The bilateral country level data for international maritime freight volumes include areas that have different definitions from standard UN classification of country groupings, such as "Switzerland and Liechtenstein", "Special categories", "Other Africa, nes", and "Bunkers" because they are estimated based on UN Comtrade data. These areas are included in the world total, and in relevant regions if applicable, to avoid underestimation of maritime freight volumes.

Road/Rail/Inland waterways: The model estimations are at a country level, but the analysis is only possible at the regional groupings using simple summation from country level.

4.h. Methods and guidance available to countries for the compilation of the data at the national level (DOC_METHOD)

Aviation:
States refer to the ICAO Reference Manual on the Statistics Programme (Doc 9060) to compile and file traffic reports at a national level.

Road/Rail/Inland waterways
ITF only provides model results to be public at the regional level.

Maritime:
Countries do not systematically collect or report data on international maritime freight and container port traffic. International maritime freight volumes are generated based on country level merchandise trade data reported to UN Comtrade. Countries compile their international trade data according to International Merchandise Trade Statistics, Concepts and Definitions 2010, and submit them to UN Comtrade. In addition, UNCTAD relies on data and information published by industry and specialized maritime transport and trade sources.

4.i. Quality management (QUALITY_MGMNT)

Aviation:
ICAO applies the recommendations of the Committee for the Coordination of Statistical Activities (CCSA), including the Principles Governing International Statistical Activities.

Maritime:
UNCTAD statistics are compiled and disseminated in accordance with the Principles Governing International Statistical Activities published by the Committee for the Coordination of Statistical Activities (https://unstats.un.org/unsd/ccsa/principles_stat_activities/) and in line with the UNCTAD Statistics Quality Assurance Framework (https://unctad.org/publication/statistics-quality-assurance-framework).

Road/Rail/Inland waterways
This is not a statistical product resulting of data collection. Data are generated from a modelling exercise. ITF, ITF Transport Outlook 2023, OECD Publishing, Paris

4.j Quality assurance (QUALITY_ASSURE)

Aviation:
ICAO applies the United Nations Statistics Division (UNSD) fundamental principles and good practices of official statistics, and particularly the generic national quality assurance framework (NQAF). The complete version of the guidelines of NQAF is available at:
http://unstats.un.org/unsd/dnss/qualityNQAF/nqaf.aspx.

Maritime:
UNCTAD conducts annual checks of collected data by updating the data with latest data available and comparing the data for internal consistency, against previous years, or similar data published or produced by other sources, including commercial sources specialized maritime transport data providers and research entities. Correspondence is undertaken with countries when necessary to collect, compare or confirm relevant data.

Road/Rail/Inland waterways:
Not Applicable

4.k Quality assessment (QUALITY_ASSMNT)

5. Data availability and disaggregation (COVERAGE)

Data availability:

Aviation
Data already provided for all 193 Member States that have air transport activities

Maritime
International maritime freight: global, regional and subregional levels.
Container port traffic: global, regional and country levels.

Road/Rail/Inland waterways
2015,2019,2020,2021

Time series:

Aviation
From 1970's

Maritime
International maritime freight data annually from 2000.
Container port traffic data annually from 2010.

Road/Rail/Inland waterways
2015,2019,2020,2021

Disaggregation:

Aviation
The indicator can be dis-aggregated by -Country, Country pair, City Pair, Region, Segment (International and domestic)

Road/Rail/Inland waterways
The indicator can be disaggregated by mode of transport.

6. Comparability / deviation from international standards (COMPARABILITY)

Maritime:

Sources of discrepancies:
Data on container port throughput are based on varied and mixed sources, including ports This entails differences in computational systems and methods which may result in discrepancies.

The definition of "maritime" transport in international maritime freight volumes is slightly different from the definition used in International Merchandise Trade Statistics (IMTS) compiled by countries and submitted to UN Comtrade Plus. In IMTS, transport mode is considered as maritime if goods enter (for imports) or leave (for exports) the economic territory of a country by ship. As this definition can result in underestimation of world total of maritime freight volumes, the international maritime freight volumes include multimodal transport volumes where a part of it is carried out by ship. These maritime freight

volumes, carried as a part of multimodal transport, are attributed to only destination or origin countries (including landlocked countries), not to transit countries, to avoid double counting.

7. References and Documentation (OTHER_DOC)

URL:
www.icao.int
https://www.itf-oecd.org/itf-modelling-framework-1
https://w3.unece.org/PXWeb/en
https://unctadstat.unctad.org/EN/

UNCTAD. Review of Maritime Transport Series (RMT): https://unctad.org/topic/transport-and-trade-logistics/review-of-maritime-transport.
UNCTADstat Data Hub: https://unctadstat.unctad.org/datacentre/
- Freight Volumes by Sea (World Seaborne Trade): ttps://unctadstat.unctad.org/datacentre/dataviewer/US.SeaborneTrade
- Container Port Throughput: https://unctadstat.unctad.org/datacentre/dataviewer/US.ContPortThroughput.