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Accounting for trade in raw materials: usability of the existing datasets and indicators

*Preliminary analysis of the trade-
related data and indicators*

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Abstract

This report summarizes the outcome of the data-mapping step for identification of the most suitable country-, product- and material-specific data related to trade and of the most relevant indicators for raw materials. In a subsequent stage, the most suitable datasets and indicators will be used in the development of the *Country* submodule of the *Economics & Trade* module of Raw Materials Information System (RMIS)¹.

The RMIS' *Economics & Trade* module aims at giving access to relevant datasets, organized in **two large modules**, i.e., **Country** and **Product**. The former is organized around **six main thematic modules** (as shown in Figure 1):

- 1. Raw materials trade flows.** Indicative content: country's top 20 HS 6-digit non-energy and non-food raw materials commodities exported/imported (monetary value; quantity; calculated share of total raw materials exported; calculated share of total HS commodities exported/imported); country's top 10 country destinations of exports/imports of raw material commodities; country's restrictions imposed on raw materials exports in place in 2014; country's tariff profile.
- 2. Trade agreements.** Indicative content: country's participation in preferential and regional trade agreements.
- 3. Production of minerals and metals.** Indicative content: country's production of raw material commodities.
- 4. FDI stocks and flows.** Indicative content: Country's FDI stocks and flows over the last years; country's FDI stocks and flows by industry and geographical origin.
- 5. Trade performance indicators.** Indicative content: trade performance indicators by country or product group, e.g., market concentration degree by supply chain segment, country's exports composition and diversification, revealed comparative advantages; etc.).

Product module' structure is still to be developed.

Figure 1: The main thematic modules of the RMIS trade section



1 <http://rmis.jrc.ec.europa.eu/>

Introduction: accounting for trade in raw materials

The increasing fragmentation and diversification of global value chains, recognized in the new EU trade strategy², result in diversified commodity trade networks. Since this applies to the trade of raw-material-containing commodities as well, it entails accounting for data on their production and trade flows, alongside information on trade agreements in place and restrictiveness practices worldwide, at various value-chain stages.

Raw materials are incorporated and traded in varieties of commodity (Table 1), at different stages of fabrication (e.g., extraction, processing, etc. - Figure 2), broadly grouped into ores and concentrates, intermediates, unwrought metals, intermediates, final products and waste and scrap (Table 2).

Table 1. Selected 2017 Harmonised System (HS) 2-digit chapters relevant for raw material-containing commodities

SECTION V: MINERAL PRODUCTS
25 Salt; sulphur; earths and stone; plastering materials, lime and cement
26 Ores, slag and ash
27 Mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral waxes.
SECTION VI: PRODUCTS OF THE CHEMICAL OR ALLIED INDUSTRIES
28 Inorganic chemicals; compounds of precious metals, rare-earth metals etc.
SECTION VII: PLASTICS AND ARTICLES THEREOF; RUBBER AND ARTICLES THEREOF
40 Rubber and articles thereof
SECTION IX: WOOD AND ARTICLES OF WOOD; WOOD CHARCOAL; CORK AND ARTICLES OF CORK; MANUFACTURES OF STRAW, OF ESPARTO OR OF OTHER PLAITING MATERIALS; BASKETWARE AND WICKERWORK
44 Wood and articles of wood; wood charcoal
45 Cork and articles of cork
SECTION X: PULP OF WOOD OR OF OTHER FIBROUS CELLULOSIC MATERIAL; RECOVERED (WASTE AND SCRAP) PAPER OR PAPERBOARD; PAPER AND PAPERBOARD AND ARTICLES THEREOF
47 Pulp of wood or of other fibrous cellulosic material; waste and scrap paper or paperboard
48 Paper and paperboard; articles of paper pulp, of paper or of paperboard
SECTION XIII: ARTICLES OF STONE, PLASTER, CEMENT, ASBESTOS, MICA OR SIMILAR MATERIALS; CERAMIC PRODUCTS; GLASS AND GLASSWARE
68 Articles of stone, plaster, cement, asbestos, mica or similar materials
69 Ceramic products
70 Glass and glassware
SECTION XIV: NATURAL OR CULTURED PEARLS, PRECIOUS OR SEMI-PRECIOUS STONES, PRECIOUS METALS, METALS CLAD WITH PRECIOUS METAL AND ARTICLES THEREOF; IMITATION JEWELLERY; COIN
71 Pearls, precious or semi-precious stones, precious metals; imitation jewellery; coin
SECTION XV: BASE METALS AND ARTICLES OF BASE METAL
72 Iron and steel
73 Articles of iron or steel
74 Copper and articles thereof
75 Nickel and articles thereof
76 Aluminium and articles thereof
78 Lead and articles thereof
79 Zinc and articles thereof
80 Tin and articles thereof
81 Other base metals; cermets; articles thereof
82 Tools, implements, cutlery, spoons and forks, of base metal; parts thereof of base metal
83 Miscellaneous articles of base metal

² European Commission, "Trade for all. Towards a more responsible trade and investment policy", http://trade.ec.europa.eu/doclib/docs/2015/october/tradoc_153846.pdf

SECTION XVI: MACHINERY AND MECHANICAL APPLIANCES; ELECTRICAL EQUIPMENT; PARTS THEREOF; SOUND RECORDERS AND REPRODUCERS, TELEVISION IMAGE AND SOUND RECORDERS AND REPRODUCERS, AND PARTS AND ACCESSORIES OF SUCH ARTICLES
84 Nuclear reactors, boilers, machinery and mechanical appliances; parts thereof
85 Electrical machinery, equipment parts; sound and television recorders
SECTION XVII: VEHICLES, AIRCRAFT, VESSELS AND ASSOCIATED TRANSPORT EQUIPMENT
86 Railway or tramway locomotives, rolling-stock, parts, fixtures and fittings; signalling etc.
87 Vehicles other than railway or tramway rolling-stock, and parts and accessories thereof
88 Aircraft, spacecraft, and parts thereof
89 Ships, boats and floating structures
SECTION XVIII: OPTICAL, PHOTOGRAPHIC, CINEMATOGRAPHIC, MEASURING, CHECKING, PRECISION, MEDICAL OR SURGICAL INSTRUMENTS AND APPARATUS; CLOCKS AND WATCHES; MUSICAL INSTRUMENTS; PARTS AND ACCESSORIES THEREOF
90 Optical, photographic, cinematographic, precision, medical or surgical instruments etc.

Table 2 shows an overview of broad HS product categories relevant for raw materials is presented in the.

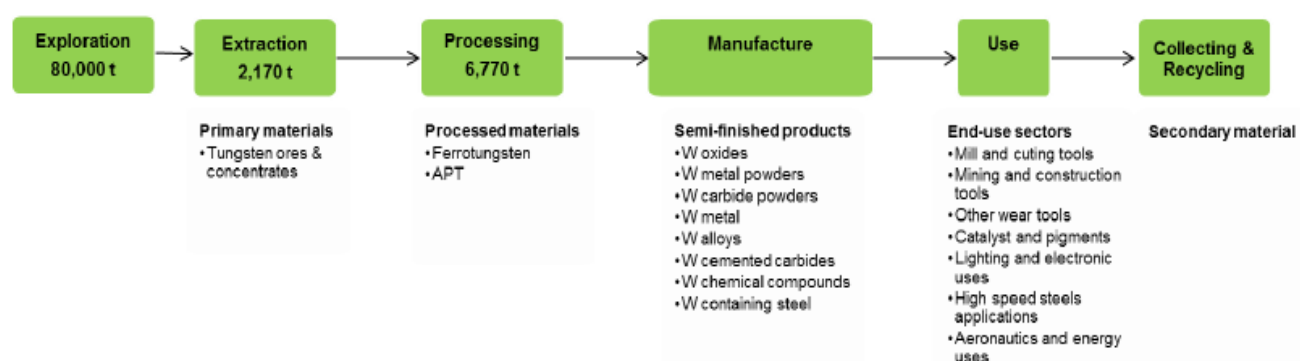
Table 2: Groupings of HS products by category and by raw materials sector

Product categories	HS codes / Number of products
HS Standard Product Groups	
Raw materials	This grouping contains also food- and energy-related HS 6-digit products
Intermediate goods	2049 HS 6-digit products
Consumer goods	1532 HS 6-digit products
Capital goods	905 1988/92 HS 6-digit products
Sectoral groupings	
Minerals	25,26
Metals	HS 72,73,74,75,76,78,79,80,81,82,83
Wood	HS 44,45,46,47,48,49
Stone and glass	68,69,70,71
Chemicals	28,29,30,31,32,33,34,35,36,37,38

Source: World Integrated Trade System, Reference data

Accounting for raw materials production and trade requires the statistical translation of all commodities belonging to a specific value chain (an example in Figure 2) into stage-, sector- and product-specific statistical codes.

Figure 2. Example of a simplified value chain for tungsten



Source: Partly reproduced from European Commission (2017)

For further illustrating the diversity of products containing raw materials across a material's value chain, Table 3 presents in a list of nickel-containing commodities and their associated HS and BEC³ codes.

³ BEC stands for UN Classification by Broad Economic Categories, <http://unstats.un.org/unsd/cr/registry/regcst.asp?Cl=10>

Table 3. Nickel-containing products according to the HS and BEC classification

HS code	Name	Stage of production (BEC classification)
SECTION V: MINERAL PRODUCTS		
- 26 - Ores, slag and ash		
26.04.00	Nickel ores and concentrates	210*
SECTION VI: PRODUCTS OF THE CHEMICAL OR ALLIED INDUSTRIES		
- 28 Inorganic chemicals; compounds of precious metals, rare-earth metals etc.		
28.25.40	Nickel oxides and hydroxides	220*
282735	Nickel chlorides	220
283324	Sulphates of nickel	220
SECTION XV: BASE METALS AND ARTICLES OF BASE METAL		
- 72 Iron and steel		
72.02.60	Ferro-nickel, in granular/powder form	220
72.04.21.10	Waste and scrap of stainless steel - nickel content 8% or greater	210
72.04.21.90	Waste and scrap of stainless steel - nickel content less than 8%	210
- 74 Copper and articles thereof		
740822	Wire of Copper-nickel base alloys (cupro-nickel)/Copper-nickel-zinc base alloys (nickel silver)	220
740940	Copper plates, sheets & strip, of a thickness >0.15mm, of Copper-nickel base alloys (cupro-nickel)/Copper-nickel-zinc base alloys (nickel silver)	220
- 75: Nickel and articles thereof		
75.01.10	Nickel matte	220
75.01.20	Nickel oxide sinter and other intermediate products of nickel metallurgy, excluding matte	220
75.02.10	Unwrought nickel, not alloyed	220
75.02.20	Unwrought nickel, alloys	220
75.03.00	Nickel waste and scrap	210
75.04.00	Nickel powder and flakes	220
750511	Bars, rods, profiles & wire, of nickel, not alloyed	220
750512	Bars, rods, profiles & wire, of nickel alloys	220
750521	Wire of nickel, not alloyed	220
750522	Wire of nickel alloys	220
750610	Plates, sheets, strip & foil, of nickel, not alloyed	220
750620	Plates, sheets, strip & foil, of nickel alloys	220
750711	Tubes and pipes of nickel, not alloyed	220
750712	Tubes and pipes of nickel alloys	220
750720	Tube or pipe fittings of nickel	220
750810	Cloth, grill and netting of nickel wire	220
750890	Other articles of nickel, n.e.s.	220
SECTION XVI: MACHINERY AND MECHANICAL APPLIANCES; ELECTRICAL EQUIPMENT; PARTS THEREOF; SOUND RECORDERS AND REPRODUCERS, TELEVISION IMAGE AND SOUND RECORDERS AND REPRODUCERS, AND PARTS AND ACCESSORIES OF SUCH ARTICLES		
- 85 Electrical machinery, equipment parts; sound and television recorders		
850730	Nickel-cadmium accumulators	220
850740	Nickel-iron accumulators	220
850750	Nickel-metal hydride accumulators (excl. spent)	220

* 210: Industrial supplies n.e.s., Primary;

** 220: Industrial supplies n.e.s., Processed;

Source: World Customs Organisation, Harmonized System 2017

In order to link the product-level production and trade datasets, the existing statistical correspondence tables provided by international data providers can be used – e.g., Procom-HS-CN; ISIC Rev.4-CPC⁴; HS-CPA-CN; NACE-CPA-Prodcom.

Thematic data sources and indicators

1. Production of minerals and metals

This section describes the identified sources of mining and metals production data. Taking into account the stages of RMIS development process, they are divided into two categories:

- i) ready-to-use datasets:
- ii) sets of data that needing further processing.

1.1 Ready-to-use datasets on production of mineral commodities

1.1.1 **World Mining Data** provides comprehensive worldwide mineral production data in both metric tons and mil. USD on production of mineral raw materials, by region, producer country, commodity group and raw material, alongside country shares of world production.

1.1.2 **European Minerals Yearbook** is a web-based dataset developed within the EU 7th Framework Programme project “Minerals Intelligence Network for Europe” (Minerals4EU) project (Work Package led by BGS). It provides mining and refinery production by country (41 European countries) and primary raw material (in metric tonnes; time series 2004-2013).

1.1.3-4 British Geological Survey publishes annually two datasets: **World Mineral Production** (1.1.3) and **European Mineral Statistics** (1.1.4).

World Mineral Production set of data covers around 70 mineral commodities. Worldwide production data are grouped by mineral/metal and country.

European Mineral Statistics provides country-level and aggregate Europe-36 (i.e., EU members and EU candidate countries, plus Norway and Switzerland) data on production of minerals (in metal content) and metals in the EU (around 70). Two types of statistical tables are provided: by individual country and by mineral commodity. Country production tables – alongside World Mining Data - can be used in the construction of Country profile in the RMIS.

1.1.5 The **Study on the review of the list of Critical Raw Materials 2017** provides production data as follows:

- Part B, Critical and non-critical materials factsheets, contains data on global mining/refinery production of around 80 raw materials, as well as the world shares of the main producing countries.
- The material-specific Criticality Assessment Excel Worksheets accompanying the Study also provide data on global mining supply or production (in kg) for around 80 raw materials (“Supply” worksheet).

Table 4: List of ready-to-use sets of production data

Dataset	Description	Web link
1.1.1 C. Reichl, M. Schatz, G. Zsak, World Mining Data, Mineral Production 2016	Annual publication that provides production figures of 63 mineral commodities from 168 countries. Up-to-date data on world production of mineral raw materials. (data updated for 2017)	http://www.wmc.org.pl/sites/default/files/WMD2016.pdf http://www.world-mining-data.info/?World_Mining_Data

⁴ CPC stands for UN Central Product Classification, <http://unstats.un.org/unsd/cr/registry/cpc-2.asp>

1.1.2 European Minerals Yearbook (Minerals4EU)	Production by commodity, country and category Minerals4EU project, European Minerals Yearbook	http://minerals4eu.brqm-rec.fr/m4eu-yearbook/theme_selection.html
1.1.3 British Geological Survey, World Mineral Production 2012-2016	Provides statistics on global mineral production of mineral commodities by country.	https://www.bgs.ac.uk/mineralsuk/statistics/worldStatistics.html
1.1.4 British Geological Survey, European Mineral Statistics 2010-2014	Data provided are based on the World Mineral Statistic database.	https://www.bgs.ac.uk/mineralsuk/statistics/europeanStatistics.html
1.1.5 Study on the review of the list of Critical Raw Materials (2017)	<ul style="list-style-type: none"> - Part B, Critical and non-critical materials factsheets, provides data on global annual mining production and country-level data on primary production of around 80 raw materials. - Also the Criticality Assessment Excel Worksheets accompanying the Study. 	https://publications.europa.eu/en/publication-detail/-/publication/08fdab5f-9766-11e7-b92d-01aa75ed71a1/language-en

1.2 Other sets of production data

1.2.1 Eurostat's **Prodcom** provides statistics on the EU production of three NACE Rev. 2 sections, i.e., Mining and quarrying (B), Manufacturing (C), and Electricity, gas and water supply (D). It covers around 3900 8-digit code products; its geographical scope is European Union plus Norway and Iceland.

The variables provided are (country-level data and EU-28 and EU-27 totals): Value, Total volume, Sold volume and Unit value⁵. Sold production for steel is provided separately.

As far as its correspondence with other nomenclatures is concerned, Prodcom product codes are linked to the CPA 2008, NACE Rev. 2 and Combined Nomenclature headings (trade statistics).

1.2.2 **UNSD's Industrial Commodity Statistics Database** provides production data in both metric tons and mil. USD. Time coverage of the online database covers is 1995-2013. Product data are provided according to UN's 3-digit Central Product Classification, compatible with ISIC Rev.4 and Harmonized System.

1.2.3 UNIDO's **MINSTAT 2016 ISIC Revision 3** and **MINSTAT 2016 ISIC Revision 4** provide data on the output of primary industry sectors. Data are presented by country and sector (at 2- and 3-digit levels of the ISIC Rev. 3 and 4). These two datasets are not accessible free of charge.

1.2.4 **USGS Minerals Yearbook**. Volume I, Metals and Minerals presents annually updated data and information on production of 90 raw materials, by commodity. Includes also country-level data on major operating companies and main facilities.

Volume III, "Area Reports: International", is an annual review of mineral commodities, including production data and industry structure for around 175 countries.

1.2.5 **Federal Institute for Geosciences and Natural Resources** (BGR) provides data on mining and refinery production worldwide, grouped by raw material (16).

1.2.6 **S&P Market Intelligence** (the former **SNL**) databases (1.11) contain the following data categories:

- Data on country-level production of commodities (Countries>Country profile> Metals & Mining Industry>Production by Commodity);
- Top Projects by Production Value, by country (Countries>Country profile>Metals & Mining)

⁵ Unit value is defined as value of production of an item divided by the quantity (source: OECD Glossary of Statistical Terms)

- Data on Top Producing Projects and Top Producing Companies, by commodity (Commodities>Top producing companies)
S&P Market Intelligence (the former SNL) covers 2349 companies operating in Metals & Mining sector (2015 coverage).

SNL Metals and Mining Production Template (11.2) provides commodity-specific annual production data by country and region; it also includes the Top 15 producing country.

1.2.7 **BRGM's Banque de données Economiques Mondiales des Minerais et Métaux (BE3M)** provides data on global mining and metals production, by raw material, commodity and country. As far as the REEs are concerned, BRGM published *Panorama 2014 du marché des Terres Rares* in 2015.

1.2.8 **Roskill** provides commodity-specific market reports, including data on production (not freely available).

Table 5: List of other sets of data on production

Dataset	Description	Web link
1.2.1 Eurostat, Prodcom	EU-28 production statistics, by industrial commodity; covers commodity-level production from Mining and quarrying and Manufacturing sectors.	http://ec.europa.eu/eurostat/web/prodcom/data/database
1.2.2 United Nations Statistics Division's Industrial Commodity Statistics Database	The United Nations Industrial Commodity Statistics Database provides annual data on production of several industrial primary and intermediary commodities by country.	http://data.un.org/Explorer.aspx?d=31
1.2.3 UNIDO's MINSTAT (Mining and Utilities Statistics Database) 2016	MINSTAT 2016 ISIC Revision 3 and MINSTAT 2016 ISIC Revision 4 provide data on output of primary industry sectors. Data are offered by country and sector (at 2- and 3-digit levels of the ISIC Rev. 3 and 4).	http://www.unido.org/resources/statistics/statistical-databases/minstat-2014-edition.html (not freely accessible)
1.2.4 USGS' Minerals Yearbook	Provides annual data on production of mineral commodities by material and country. - Volume I, Metals and Minerals presents annually updated data and information on 90 commodities, by commodity. - Volume III, Area Reports: International	https://minerals.usgs.gov/minerals/pubs/commodity/myb/ https://minerals.usgs.gov/minerals/pubs/country/index.html#pubs
1.2.5 Federal Institute for Geosciences and Natural Resources (BGR)	Mineral Commodity Facts and Figures provides data on mining and refinery production worldwide, grouped by raw material.	http://www.bgr.bund.de/EN/Themen/Min_rohstoffe/Produkte/produkte_node_en.html?tab=Mineral+Commodity+Facts+and+Figures
1.2.6 S&P Market Intelligence, Metals and Mining Production Template	SNL Metals and Mining Production Template provides commodity-specific annual production data by country and region. Includes also the Top 15 producing country.	Excel Template Library, http://www.snl.com/
1.2.7 BRGM	BRGM's <i>Banque de données Economiques Mondiales des Minerais et Métaux (BE3M)</i> provides data on global mining and metals production, by raw material, commodity and country. As to REEs, BRGM published production data in <i>Panorama 2014 du marché des Terres Rares</i> in 2015.	http://www.mineralinfo.fr/page/be3m http://www.mineralinfo.fr/site/default/files/upload/documents/Panoramas_Metaux_Strategie/rp-65330-fr_labbe-final_160119.pdf
1.2.8 Roskill	Provides commodity-specific market reports, including data on production.	Roskill, Market Reports, https://roskill.com/product-category/market-reports/ (not freely accessible)

The identified datasets provide the basis for country-level production indicators such as: value and volume of mineral production; country's mineral production relative to GDP; top minerals produced; active mining companies operating in a certain country (e.g., by using SNL data).

2. Data and indicators of trade performance

The trade-related data sets and indicators identified for the purpose of this report are also divided into two categories:

i) ready-to-use datasets and indicators:

ii) sets of data that need targeted gathering and/or further processing, or indicator that need own calculation.

2.1 Trade-related data sources

2.1.1 Ready-to-use datasets

2.1.1.1 **European Minerals Yearbook (Minerals4EU)** gives access to country- and material-specific import and export data for 41 European countries. For primary raw materials, data are provided in metric tonnes, time series 2004-2013, while for the secondary raw materials, data provided represent mineral-specific import and export flows of waste (data for 2010 and 2013 only).

2.1.1.2 **Study on the review of the list of Critical Raw Materials.** Each material-specific factsheet (Part B) includes a separate section on the EU-28 import and export flows. Only one value-chain stage is referred to (mostly ores & concentrates). Annual and average data are provided for the period 2010-2014.

The material-specific criticality calculation Excel files contain data on the EU's actual suppliers on material-specific import dependency (most of them at ores & concentrates stage).

2.1.1.3 **British Geological Survey's European Mineral Statistics** contains country-level and material-specific data on exports and imports flow of commodities for 36 European countries. For some metals the import and export flows at various value-chain stages are cumulated (e.g. chromium, tungsten, etc.), whereas for the other only unwrought metal data are presented.

2.1.1.4 **BRGM's Banque de données Economiques Mondiales des Minerais et Métaux (BE3M)** provides data on global trade, by raw material, commodity and country. As to REEs, BRGM published world trade data in *Panorama 2014 du marché des Terres Rares in 2015* (from p. 181 onwards).

2.1.1.5 **Roskill** provides commodity-specific market reports, including data on international trade (not freely accessible).

Table 6: Ready-to-use trade datasets

2.1.1.1 European Minerals Yearbook (Minerals4EU)	Country- and material-specific import and export data for 41 European countries.	The web links to all these datasets are provided above, in Tables 4 and 5 .
2.1.1.2 Study on the review of the list of Critical Raw Materials	Includes data on EU trade flows and on material-specific import dependency (mostly at ores&concentrates stage)	
2.1.1.3 British Geological Survey's European Mineral Statistics	Offers country-level and material-specific data on exports and imports flow of commodities for 36 European countries (time series 2010-2014)	
2.1.1.4 BRGM	BRGM's Banque de données Economiques Mondiales des Minerais et Métaux (BE3M) provides data on global trade, by raw material, commodity and country.	
2.1.1.5 Roskill	Provides commodity-specific market reports, including data on international trade.	

2.1.2 Other trade data providers

Among the most established trade-related data sets are Eurostat's *International Trade in goods*, UN Comtrade, World Integrated Trade Solution (WITS) and International Trade

Centre's Trade by Commodity Statistics. The data they provide allow for compilation and analysis of country-, sector- and product-level trade performance in primary and secondary raw materials.

2.1.2.1 **Eurostat's International trade in goods** provides EU-related trade datasets such as:

- EU Trade since 1988 by HS2, 4, 6 and CN8 (value and quantity);
- EU Trade since 1988 by SITC;
- EU Trade since 1988 by BEC;
- EU Trade since 1988 by CPA_2008;
- EU Trade since 1988 by BEC-CPA;
- Adjusted EU-EXTRA Imports by tariff regime, by HS 2, 4 and 6.

International trade in goods (ITGS) dataset offers detailed data on the value and quantity of intra-EU and extra-EU trade of goods.

2.1.2.2 Run by United Nations Statistics Division, **UN Comtrade** is the most internationally established product trade database that gives access to the most detailed annual international trade statistics (imports, re-imports, exports, re-exports) by commodities and partner countries since 1962. **UN Comtrade Analytics** provides an interactive visualization tool of data on import, export and trade balance, by country and product group.

2.1.2.3 **United Nations, 2015 International Trade Statistics Yearbook, Volume I - Trade by Country** offers data on imports and exports of individual countries (areas), by commodity and by partner country. Part 1 contains world trade tables by regions and countries or areas, and exports by provenance and destination. Part 2 presents country (and areas, including EU-28) trade profiles.

Volume II-Trade by Product provides the latest trends of trade in goods and services for 257 individual commodities (3-digit SITC groups). Part 1 consists of 11 tables of world trade data; Part 2 contains the trade profiles for 257 commodities.

2.1.2.4 World Bank's **World Integrated Trade Solutions (WITS)** gives access to trade, tariff and non-tariff data and indicators from various sources (UN Comtrade, UNCTAD Trade Analysis Information System, etc.). The main sections are:

<TradeStats>, which provides summary trade, tariff and non-tariffs data and indicators, as follows:

- Top importing and exporting countries;
- Country's top products exported/imported
- Country's top export and import partners;
- Annual world, region- and country-specific trade data and indicators, by product, product group, trade partner and by trade performance indicator
- Trade indicators, such as Revealed comparative advantage (RCA), Trade balance as percentage of GDP, etc.

WITS also provides in-built applications to generate customized queries, calculate other country-level trade performance and competitiveness indicators.

2.1.2.5 **International Trade Center's Yearly Trade by Commodity Statistics 2001-2015** offers direct and mirror trade data on imports and exports; trade balance and other trade variables, by product group and by country.

Country-level trade variables are provided by HS 2 and 4 product group and trade partner, such as:

- Value;
- Share in value (%);
- Unit value;
- Growth on unit value;
- Index on values;
- Index on unit values;
- Quantity;
- Growth in value and quantity;

- Ranking of partner countries in world exports;
- Share of partner countries in world exports (percentage);
- Total exports growth in value of partner countries between 2011-2015 (percentage).

2.1.2.6 **OECD International trade and balance of payments statistics** provides country-level monthly, quarterly and annual (monthly, cumulated) data on export, import and net import of goods, extracted from the UN Monthly Comtrade database.

The International Trade (MEI) dataset contains predominantly monthly merchandise trade statistics. The datasets cover the OECD member countries and the EU.

2.1.2.7 **OECD's 2016 International Trade by Commodity Statistics** (Vol. 1-5) provides country-level trade data, total and by HS 2012 2-digit product group, for the OECD member countries, based on UN Comtrade data.

2.1.2.8 **IHS Markit's Global Trade Atlas**, Global Import/Export Commodity Trade Data, provides relevant data such as: global trade flows of products and product groups; country-specific import sources and export destinations.

Table 7: Other trade data providers

2.1.2.1 Eurostat's International trade datasets	Provides trade data for the EU and EU countries. European statistics on international trade in goods (ITGS) provides the value and quantity of intra-EU and extra-EU trade of goods	http://epp.eurostat.ec.europa.eu/newxtweb/ http://ec.europa.eu/eurostat/web/international-trade-in-goods/data/database
2.1.2.2 United Nations Commodity Trade Statistics Database (UN Comtrade)	The UN Comtrade gives access to the most detailed annual international commodity trade statistics by commodity and partner country. UN Comtrade Analytics provides interactive visualization tools of trade flows data.	http://comtrade.un.org
2.1.2.3 United Nations, 2015 International Trade Statistics Yearbook - Volume I - Trade by Country - Volume II - Trade by Product	Volume I - Trade by Country offers data on imports and exports of individual countries (areas). Volume II-Trade by Product provides the latest trends of trade in goods and services for 257 individual commodities.	https://comtrade.un.org/labs/ https://comtrade.un.org/pb/
2.1.2.4 World Integrated Trade Solutions (WITS)	Provides annual world, region- and country-specific trade data, by product group and trade partner. Offers trade performance indicators. WITS also provides in-built applications for customized data queries and calculation of other trade indicators.	http://wits.worldbank.org/Default.aspx?lang=en
2.1.2.5 International Trade Centre (ITC), International trade statistics 2001-2016	ITC's Yearly Trade by Commodity Statistics 2001-2015 contains direct and mirror trade data on imports, exports trade balance and other trade variables, by product group and by country.	http://www.intracen.org/itc/market-info-tools/trade-statistics/
2.1.2.6 OECD International trade and balance of payments statistics	Provides country-level monthly, quarterly and annual data on export, import and net import of goods for the 35 OECD member countries and the EU-27.	http://stats.oecd.org/Index.aspx?DataSetCode=MEI_TRD
2.1.2.7 OECD's 2016 International Trade by Commodity Statistics (Vol. 1-5)	Provides counr-level trade data, total and by HS 2012 2-digit product group.	http://www.oecd-ilibrary.org/trade/international-trade-by-commodity-statistics_22195076

2.1.2.8 IHS Markit's Global Trade Atlas: Global Import/Export Commodity Trade Data	Provides data on: - global trade flows of products and product groups and trade balance at detailed HS code; - country's import sources and export partners; - country's import and export share;	https://www.ihs.com/products/maritime-global-trade-atlas.html (not freely provided)
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2.2 Trade performance indicators

2.2.1 Ready-to-use basic trade indicators

Based on the existing trade datasets, trade performance indicators can be collected/calculated, at various sophistication degrees. On short term, ready-to-use and basic trade performance indicators can be used in RMIS' Trade section.

Table 8: Ready-to-use trade performance indicators

BY COUNTRY			
Dataset	Product cluster level	Indicators	Details
Export of goods	CN/HS codes	Country's total export and imports of goods, i.e., without services (both value and quantity).	Eurostat's International Trade database for the EU countries. World Bank DataBank for the third countries.
Country's share of world exports	country	Share of a country's total exports in the world's total exports	Eurostat's International Trade database for the EU countries. UN COMTRADE for third countries.
Product (group) share in country's total exports	product	It calculates the share of each HS product (group) exported in the country's total exports.	Eurostat's International Trade database for the EU countries. UN COMTRADE for third countries.
Trade balance (TB) TB = Xi – Mi	country	Difference between a country's total exports and total imports.	Eurostat's International Trade database for the EU countries. ITC for the rest of the world.
1. UN Comtrade Analytics indicators	2- and 3- digit HS groups	<ul style="list-style-type: none"> - Destination of exports - Annual average growth of exports - Net exporting countries/areas - Origin of imports - Annual average growth of imports - Net importing countries/areas - Trade balance 	https://comtrade.un.org/labs/
ITC's Yearly Trade by Commodity Statistics 2001-2015, by country: imports or exports	- 4-digit HS groups	<ul style="list-style-type: none"> - Country list of products imported, exported or reexported - Product-specific yearly time series for import, export and reexport - Basic trade indicators: Value; Growth in value; Share in value; Quantity; Growth in quantity; Unit value; Growth on unit value; Index on values; Index on unit values; Trade balance, Share in country's export/import, Share in world import/export, Ranking in world import/export, Tariff faced/applied, Trend in a 4-digit product groups, Average distance of partner countries, Market concentration 	<ul style="list-style-type: none"> - By partner country or partner region - Chargeable data for 6-digit HS groups and Product tariff in line options - Chargeable data for company level data on export/import of products

WITS TradeStat Database, Trade statistics by Country / Region		Basic trade indicators: country's trade as percentage of GDP; country's and region's overview of imports and exports, tariff and non-tariff measures; country's or region's overall exports, imports and tariffs; export and import partner countries alongside their share; Most Favored Nation (MFN) and Effective Applied Tariff (AHS) tariffs imposed; total products exported/imported globally and with country partners; number of export and import partners; HHI; Export Market Penetration, RCA; taxes on exports;	The comprehensive list of indicators is provided in the Table., Trade performance and competitiveness indicators
Competitiveness indicators			
Export Dependence (or Export propensity) $XD = X_i / GDP_i$	country	It shows the degree of reliance of domestic producers on foreign markets. Defined as ratio of exports to GDP.	Eurostat's International Trade database for the EU countries. UN COMTRADE for third countries; World Bank DataBank for GDP; UN (2007)
Import Dependence 1. $ID = M_i / GDP_i$ 2. $ID = M_i / (M_i + P_i) - X_i$	country	1. It indicates contribution of foreign supply to a country's GDP. 2. It can be calculated for product groups or sectors. P_i is domestic production; $(M_i + P_i)$ represents domestic availability.	Eurostat's International Trade database for the EU countries. UN COMTRADE for third countries. World Bank DataBank for GDP
BY PRODUCT			
Ores and metals exports (% of merchandise exports)	$OM_x = X_{ik} / \sum_k X_{ik}$	product group	World Bank DataBank estimates based on data from the UN Comtrade
Ores and metals imports (% of merchandise imports)	$OM_x = M_{ik} / \sum_k M_{ik}$		
ITC's Yearly Trade by Commodity Statistics 2001-2015, by product group: imports or exports	- 4-digit HS groups - 6-digit HS groups (chargeable)	- Product-specific yearly time series for import, export, reexport and trade balance - Basic trade indicators: Value; Growth in value; Share in value; Quantity; Growth in quantity; Unit value; Growth on unit value; Index on values; Index on unit values; Trade balance, Share in country's export or import, Share in world import/export; Average tariff (estimated) applied by the country (%)	- Partner: world and individual countries - Downloadable tables, graphs and maps - Average tariff (estimated) applied by the country
WITS TradeStat Database, Quick Search, UN COMTRADE, By Product	2-, 4- and 6-digit codes	- Flows: Gross imports; Gross exports; Re-imports; Re-exports;	By country reporter (and EU) and trade partner

2.2.2 Other trade performances indicators

On long term, additional indicators can be collected or computed for measuring the performance of country-, sector- and product-level trade in raw materials. A tentative list of most suitable indicators for keeping track of trade performance, covering four trade-

related themes, is presented in Table 9. They are applicable to either country or product trade analysis (or both of them).

Table 9: Additional indicators of performance of trade in raw materials (to be considered on long term)

Theme/Indicator	Formula	Level	Description	Sources of data
A. Net trade				
Export value index (base year = 100)	$(\sum X_i / \sum X_{\text{base year}}) * 100$	country	It measures aggregate price change in a country's exports of commodities.	World Bank's DataBank
Import value index (base year = 100)	$(\sum M_i / \sum X_{\text{base year}}) * 100$	country	It measures aggregate price change in a country's imports of commodities.	World Bank's DataBank
Growth rate of exports (or imports)	$CGRE = [(\sum X_1 / \sum X_0 - 1)^{1/n} - 1]$	country	Annual compound percentage change in the value of exports or imports between two periods	UN (2007); UN Comtrade
Normalized trade balance (NTB)	$NTB = (X_i - M_i) / (X_i + M_i)$	country	It measures trade performance as trade balance fraction of total trade.	Eurostat's International Trade database for the EU countries. UN COMTRADE for third countries.
B. Market shares				
Normalized share balance (NSB)	$NSB_{ik} = [(X_{ik} / \sum_k X_{ik}) - (M_{ik} / \sum_k M_{ik})] / [(X_{ik} / \sum_k X_{ik}) + (M_{ik} / \sum_k M_{ik})]$	country/ product	X_{ik} = country i total exports or exports of product k; M_{ik} = country i total imports or imports of product k; $-1 \leq NSB_{ik} \leq 1$;	Eurostat's International Trade database for the EU countries. UN COMTRADE for third countries.
Hummels-Klenow intensive export margin	$IM_j = X_j / \sum_{i \neq j} \sum_{s \in X_{jis}} X_{Wis}$	country/ product groups	X_j = nominal exports of country j; X_{Wis} = world exports to country i in product category (>0); X_{jis} = nominal exports of country j to country i in product category s; "The intensive export margin measures a country's share of world exports in those market-categories in which it exports."(Hummels and Klenow, 2002)	Eurostat's International Trade database for the EU countries. UN COMTRADE for third countries.
Hummels-Klenow extensive export margin	$EM_j = \sum_{i \neq j} \sum_{s \in X_{jis}} X_{Wis} / X_w$	country / product groups	"The extensive margin for country j measures the fraction of exports that occur in those world market categories in which country exports...Other things equal, if a country concentrates all of its exports in a small number of market categories, it will have a higher intensive export margin and a lower extensive margin. If that country spreads its exports thinly over many market-categories, it will have a lower intensive export margin and a higher extensive margin." (Hummels and Klenow, 2002).	UN COMTRADE, accessed through World Integrated Trade Solutions (WITS) and/or International Trade Centre's Trade statistics
C. Competitiveness				
Trade dependence or Trade openness $TD = (X_i + M_i) / GDP_i$		country	It is calculated as trade-to-GDP ratio; $0 \leq TD \leq 1$. A value close to 1 shows that international trade features highly in the nation's GDP profile.	Eurostat's International Trade database for the EU countries. UN COMTRADE for third countries. World Bank DataBank for GDP.
Import Penetration	$IP = \sum M_i / [GDP_i - \sum X_i + \sum M_i]$	Country	Defined as ratio of total imports to domestic consumption (DC).	UN (2007)

Net Trade Openness	$NTO = (X_i - M_i) / GDP_i$	country	It measures the trade balance' share of the country's GDP.	Eurostat's International Trade database for the EU countries. UN COMTRADE for third countries. World Bank DataBank for GDP.
Revealed comparative advantage - sector	$RCA = [X_{ij} / \sum_i X_{ij}] / [\sum_i X_{ij} / \sum_i \sum_j X_{ij}]$	sector	The numerator represents the percentage share of a certain product/sector in country's exports; the denominator represents the percentage share of a certain sector in total exports.	UN COMTRADE, accessed through World Integrated Trade Solutions (WITS) and/or International Trade Centre's Trade statistics.
Revealed comparative advantage - product	$RCA_{ij} = (x_{ij}/X_{it}) / (x_{wj}/X_{wt})$	product	x_{ij} and x_{wj} are country i's exports of product j and world exports of product j respectively; X_{it} and X_{wt} refer to the country's total exports and world total exports respectively. $RCA_{ij} < 1$ means country's revealed comparative disadvantage for the product; $RCA_{ij} > 1$ means country's revealed comparative advantage for the product.	UN COMTRADE, accessed through World Integrated Trade Solutions (WITS) and/or International Trade Centre's Trade statistics;
Normalized / symmetric revealed comparative advantage index	$NRCA_{ik} = (RCA_{ik} - 1) / (RCA_{ik} + 1)$	product / sector	It measures the competitiveness of a country's trade portfolio for a certain group of goods/sectors. A NRCA value close or around to 1 means comparative advantage; a NRCA value close or around to 0 means comparative disadvantage in that product group or sector.	Eurostat's International Trade database for the EU countries. UN COMTRADE for third countries.
Export specialization index	$ESI = (X_{ij}/X_{it}) / (M_{kj}/M_{kt})$	product	X_{ij} and X_{it} are export values of country i in product j and total exports in market k; M_{kj} and M_{kt} are the import values of product j in market k and total imports in market k. The denominator refers to specific markets or partners rather than world market. A ESI value close or around to 1 means specialisation in the market; a ESI value close or around to 0 means comparative disadvantage in exports of that product group or sector.	UN COMTRADE, accessed through World Integrated Trade Solutions (WITS)
D. Trade diversification, intensity, complementarity or similarity				
Product export concentration - Herfindahl Index	$H_i = \sqrt{\sum_k (x_{ik} / \sum_k x_{ik})^2}$	product	x_{ik} is country i's exports of product k. A H_i A close to zero indicates a perfectly diversified export portfolio will have an index, whereas a country which exports only one export will have a value of 1 (least diversified). (Source: WITS)	UN COMTRADE, accessed through World Integrated Trade Solutions (WITS)
Export Diversification / Concentration Index	$XDI = (\sum x_{ij} - x_i) / 2$	product	x_{ij} is the share of a commodity x_i in the total exports of country j and x_i is the share of that commodity in world exports. $0 < XDI < 1$, where 1 indicates a large variation from the world average.	World Integrated Trade Solutions (WITS)
Herfindahl Hirschman Index (HHI)	$HHI = \sum si^2$	country	$0 < HHI < 1$; a higher value indicates a greater concentration of exports	World Integrated Trade Solutions (WITS)

Concentration index or Hirschman index (H)	$HI = \sqrt{[\sum(x_i/X_t)^2]}$	product / country	x_i is country j 's exports of product i ; X_t is country j 's total exports. The lower the index, the less concentrated are a country's exports. Used by UNCTAD for calculating the shares of all three-digit products in a country's exports. (source: WITS, Trade indicators).	UN COMTRADE, accessed through World Integrated Trade Solutions (WITS)
Concentration ratio	$CR = \sum S_i$		$i = 1, 2, \dots, n$; S = shares of export; CR measures the concentration share held by N -sectors within a country's export portfolio. A low concentration ratio indicates that a country's export portfolio comprises a greater variety of goods, whereas a ratio nearing 1 (100%) means that a country exports only one type of product. (Source: Delta Economics)	UN COMTRADE, accessed through World Integrated Trade Solutions (WITS)
Trade Intensity Index	$TI_{ij} = (x_{ij}/X_{it})/(x_{wj}/X_{wt})$		x_{ij} and x_{wj} are country i 's exports and those of world exports to country j ; It is defined as the share of one country's exports going to a partner divided by the share of world exports going to the partner. $TI > 1$ indicates a bilateral trade flow that is larger than expected, given the partner country's importance in world trade. (Source: Delta Economics)	UN COMTRADE, accessed through World Integrated Trade Solutions (WITS)
Finger-Kreinin index of trade similarity	$FK_{ij} = 1 - [1/2 \sum_k (x_{ik} / \sum_k x_{ik}) - (x_{jk} / \sum_k x_{jk})]$		FK measures the competition extent between two countries in terms of its exports. A FK closer to 0 indicates less similar export structure, whereas 1 represents close similarity. (Source: Delta Economics)	UN COMTRADE
Trade Complementarity	$TC_{ij} = 100[1 - \sum(M_{ik} - X_{ij} / 2)]$	country / product / sector	TCI is an 'overlap' index which shows how well the structure of a country's export-supply matches another country's import-demand of a certain product/sector X_{ij} is the share of good i in global exports of country j ; M_{ik} is the share of good i in all imports of country k . $TC=0$ when no goods are exported by one country or imported by the other $TC=100$ when the export and import shares are the same. A higher TC value shows high suitability for countries considering the conclusion of trade agreements. (Source: Delta Economics)	UN COMTRADE, accessed through World Integrated Trade Solutions (WITS)
Grubel-Lloyd index of intra-industry trade	$GL_i = 1 - [X_{jk} - M_{jk} / (X_{jk} + M_{jk})]$	product	GL measures intra-industry trade degree; $0 < GL < 1$; (Source: Delta Economics)	UN COMTRADE, accessed through World Integrated Trade Solutions (WITS)

3. Data and indicators on tariff and non-tariff trade restrictiveness

3.1 Data and indicators on tariffs

3.1.1 **WTO Tariff Analysis Online (TAO)** tool and **Tariff Download Facility** offer data on member countries' customs duties.

Tariff Analysis Online⁶ is an interactive tool providing tariff rates on products defined at 8-digit HS level (i.e., „tariff lines“). It allows for extracting and analysing data such as tariffs, tariff quotas and import commitments.

Tariff Download Facility⁷ provides simple tariff statistics – i.e., bound, applied and preferential tariffs - for downloading, less HS detailed but allows for quick comparability between countries. Information on bound rates is based on the WTO's Consolidated Tariff Schedules (CTS) database, and applied rates is drawn from the WTO's Integrated Database (IDB). Some data on preferential duties under free trade agreements or preferential schemes are available for some members.

It presents bound and applied information in a uniform and consolidated form (i.e., the same level HS codes) of for all member countries.

The country-level data provided by these two data services are:

- country's legally „bound commitments“ on customs duties (i.e., tariff ceiling commitments by WTO member countries);
- country's „applied rates“, i.e., charges on imports, lower than bound rates).

3.1.2 **WTO's country-specific ceiling tariff commitments in goods** gives access to country' maximum tariff levels (technically named “bound tariffs”), MFN applied tariffs for goods, by national tariff lines at HS-6 subheading, alongside ad-valorem duties (number, minimum, maximum, average and duty-free tariff lines) and country's tariff profile.

3.1.3 **WTO's Members and Observers** database country's information on WTO commitments (bound and applied rates at HS 6-digit subheading level), disputes and notifications, as well as trade policy reviews.

3.1.4 **WTO, ITC and UNCTAD, World Tariff Profiles** is an annual publication based on Tariff Download Facility (point 1.5.1.1) which provides figures for more aggregated categories of products. It contains bound and applied import tariffs rates, as well as non-tariff measures imposed by around 170 countries (164 WTO members plus some others) for all products by HS nomenclature), by year of MFN applied tariff, duty range and sectors (including Minerals & Metals).

Provides indicators such as: binding coverage; tariff average; maximum duty; percentage of duty-free tariff lines; tariff dispersion (number of distinct duties and coefficient of variation of ad valorem duties).

Part A.1: Country/region's tariffs and imports. Summary and duty ranges, containing: simple average final bound; simple average MFN applied; trade-weighted tariff average; binding coverage;

Part A.2: Country's tariffs and imports by product groups (final bound duties and MFN applied duties): simple average; duty free; maximum; binding in %; product group's share of imports; share of MFN duty-free imports;

Part B: Country's exports to major trading partners and duties faced: bilateral imports; HS-2 and HS-6 trade diversification; MFN Average of traded tariff lines; preference margin; share of duty-free trade in per cent of all bilateral trade flows.

3.1.5 **WITS' TRAINS dataset** gives access to data harmonized across the countries (at 6-digit-level of HS) on preferential and most-favored-nation (MFN) tariff rates from UNCTAD's TRAINS database. UNCTAD method is used to convert specific duty rates into

⁶ <https://tao.wto.org/welcome.aspx?ReturnUrl=%2f>

⁷ <http://tariffdata.wto.org/>

ad-valorem equivalents (AVEs). It provides downloadable data at 6-digit HS code and computed indicators on tariff measures and preferential beneficiaries, by country and year. Variables: Reporter Name; Partner Name (country or group of countries to which the tariff rates are applicable); Tariff Year; Trade Year; Trade Source; Duty Type; Average tariff (estimated) applied by the country; Weighted Average; Standard Deviation; Minimum and maximum rate; Number of total lines; Number of domestic peaks; Number of international peaks; Imports value; Binding coverage.

3.1.6 UNCTAD Statistics, Import tariff rates on non-agricultural and non-fuel products gives access to data on country's import tariffs, by country, product category, duty type and import origin. It provides data for the period 1988 – 2015.

3.1.7 DG TRADE database on Trade Defence Instruments includes data and information EU actions against the dumping and subsidy duties applied by the third countries.

3.1.8 DG TRADE Market Access Database includes information for exporting EU companies on the trade barriers, duties, taxes, etc. existing in third countries.

Table 10: List of available sets of data on imposed tariff rates

3.1.1 WTO Tariff Download Facility and Tariff Analysis Online	Provide country's standardized tariff information at HS six-digit level	https://www.wto.org/english/tratop_e/tariffs_e/tariff_data_e.htm
3.1.2 WTO's country-specific ceiling tariff commitments in goods	Provides "Situation of schedules of concessions" in goods, by WTO member.	https://www.wto.org/english/tratop_e/schedules_e/goods_schedules_table_e.htm
3.1.3 WTO's Members and Observers database	Country's information on WTO commitments, disputes, and notifications, alongside trade policy reviews.	https://www.wto.org/english/thewto_e/whatis_e/tif_e/org6_e.htm
3.1.4 WTO, ITC and UNCTAD, World Tariff Profiles 2016	Provides import tariffs, as well as non-tariff measures imposed by around 170 countries for all products (by HS nomenclature), by year of MFN applied tariff, duty range and sectors (including Minerals & metals). Also provides tariff-related indicators.	https://www.wto.org/english/res_e/reser_e/tariff_profiles_e.htm
3.1.5 WITS' TRAINS dataset	Gives access to data harmonized across the countries (at 6-digit-level of HS) on preferential and MFN tariff rates from UNCTAD's TRAINS database. Allows for calculating customized tariff-related indicators.	http://wits.worldbank.org/WITS/WITS/Default-A.aspx?Page=Default Advanced query > Build download (TRAINS)
3.1.6 UNCTAD Statistics, Import tariff rates on non-agricultural and non-fuel products	It gives access to indicators on country's import tariffs, by country, product category, duty type and import origin.	UNCTAD STAT, Market Access http://unctadstat.unctad.org/wds/ReportFolders/reportFolders.aspx
3.1.7 DG TRADE database on Trade Defence Instruments (anti-dumping and anti-subsidy duties)	The database contains information on the investigations on unfair trade practices applied by third countries.	http://trade.ec.europa.eu/tdi/index.cfm

3.1.8 DG TRADE Market Access Database	The database includes information for EU exporting companies on import conditions (trade barriers, duties, taxes, etc.) in third countries	http://madb.europa.eu/madb/indexPubli.htm
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3.2 Data and indicators on non-tariff trade restrictiveness

3.2.1 WTO's **Integrated Trade Intelligence Portal (I-TIP)** gives access to information on notified trade non-tariff measures (NTMs) applied by WTO members by type of NTM, HS section, and by country imposing the measure. The NTMs covered are: Anti-dumping, Countervailing, Quantitative restrictions, Safeguards, Sanitary and phytosanitary, Special safeguards, Technical barriers to trade, Tariff-rate quotas and Export subsidies.

Data search options provided:

- i) tables by product - NTMs by HS section/chapter;
- ii) tables by country - NTMs by WTO member and geographical regions;
- iii) mixed query - customized combination of the five criteria: type of NTM, dates, country imposing, country affected, and product.
- iv) export summary and detailed NTM information.

3.2.2 **OECD's Inventory on export restrictions on Industrial Raw Materials** provides the restrictions on exports of industrial raw materials (i.e., minerals, metals and wood) imposed by the governments worldwide, by commodity, and by restricting country, for the period 2009-2014. There are 13 types of restrictions recorded such as export taxes, prohibitions, licensing requirements, etc. Product groups are defined at HS 4-, 6-, 8- and 10-digit codes and BEC stage of production.

3.2.3 WTO's **World Tariff Profiles** provides information on the tariffs and non-tariff measures imposed by over 170 countries and customs territories.

3.2.4 **World Bank's Temporary Trade Barriers Database (TTBD)**. The Temporary Trade Barriers Database (TTBD) hosts detailed data on around 30 governments' (e.g., Argentina, European Union, India, Mexico, Turkey, United States, China, etc.) use of import protection instruments such as antidumping, global safeguards, China-specific transitional safeguard measures, and countervailing duties, updated up to 2013. TTBD consists of 5 databases: Global Antidumping Database plus four databases of temporary trade barriers – i.e., Global Countervailing Duties Database (GCVD), China-Specific Safeguards Database (CSGD), WTO Disputes Database (DSUD), and Global Safeguards Database (GSGD).

Table 11: Identified datasets on non-tariff trade restrictiveness

3.2.1 WTO's I-TIP Goods	WTO's I-TIP Goods provides information on non-tariff measures (NTMs), including tariff-rate quotas and quantitative restrictions, imposed by WTO members, with links to the WTO's extensive tariff and trade databases, and to DocsOnLine system.	https://i-tip.wto.org/goods/default.aspx?language=en
3.2.2 OECD's Inventory on export restrictions on Industrial Raw Materials	Worldwide restrictions on exports of raw materials imposed in the period 2009-2014, by commodity and restricting country.	http://qdd.oecd.org/subject.aspx?Subject=ExportRestrictions_IndustrialRawMaterials

3.2.3 WTO's World Tariff Profiles 2016	World Tariff Profiles 2016 provides information on the tariffs and non-tariff measures imposed by over 170 countries and customs territories.	https://www.wto.org/english/res_e/publications_e/world_tariff_profiles16_e.htm
3.2.4 WB's Temporary Trade Barriers Database	Temporary Trade Barriers Database hosts detailed data on around 30 governments' (e.g., Argentina, European Union, India, Mexico, Turkey, United States, China, etc.) use of import protection instruments	http://econ.worldbank.org/WBSITE/EXTERNAL/EXTDEC/EXTRESEARCH/EXTPROGRAMS/EXTTRADERESEAR/0,,contentMDK:22561572~pagePK:64168182~piPK:64168060~theSitePK:544849_00.html

4 Trade agreements

As required in the Task 2.3, trade commitments data and information should reflect country's international trade obligations relating to raw materials, such as WTO Membership (yes/no) and conclusion of bilateral or regional trade agreements. The results of mapping the most comprehensive and relevant data sources on the bilateral and multilateral trade agreements in force are listed in Table 12.

4.1 **DG TRADE's Agreements** website offers up-to-date information on the free trade agreements concluded by the EU and customs union the EU takes part in.

4.2 **World Trade Organisation's RTA-IS** and **PTAs** databases contain information on the agreements notified or announced to the GATT/WTO. It offers the ready-to-use list of all RTAs and PTAs in force, list of early announcements and pre-defined reports (based on criteria such as date of entry into force, agreement type, country, etc.). It also allows for retrieving information on RTAs by country/territory.

4.3 Part of **WB's WITS database, GPTAD** contains the original text of preferential trade agreements (PTAs) concluded worldwide, including those not having been notified to the WTO (in total around 330 PTAs). Agreements in the database have been made compatible with the WTO's classification criteria. The library allows for sorting PFAs by various criteria, such as membership, date of signature, in-force status, etc.

Table 12: Identified datasets on bilateral and multilateral trade agreements in force

4.1 European Commission, DG TRADE, Trade agreements	It is a DG TRADE's dedicated website, giving access to up-to-date information on the free trade agreements concluded by the EU and customs union the EU takes part in.	http://ec.europa.eu/trade/policy/countries-and-regions/agreements/
4.2 WTO's Regional Trade Agreements Information System (RTA-IS) and Preferential Trade Agreements (PTAs)	RTA-IS database contains information on the agreements regional trade agreements between two or more partners notified or announced to the GATT/WTO.	http://rtais.wto.org/UI/PublicMaintainRTAHome.aspx http://ptadb.wto.org/
4.3 World Bank, World Integrated Trade Solution (WITS), Global Preferential Trade Agreements (GPTAD)	GPTAD database provides up-to-date information on worldwide preferential trade agreements (PTAs), including those agreements not having been notified to the WTO.	http://wits.worldbank.org/gptad.html

5. Foreign direct investments in mining sector

According to the Task 2.3 requirements, the following data and information on Foreign direct investments (FDI) in mining sector should be collected:

- share of mining sector in total FDI that a country attracts per year and annual change;
- share of FDI in total mining investment in the country;
- country's inward FDI in the mining sector as share of world FDI.

The main sources of data identified are described below and summarized in Table 13.

5.1 UNCTAD's FDI Statistics, Foreign direct investment flows and stock dataset contains data on FDI's inward and outward flows and stock by country, continent, region (including EU-28) and free-trade area (e.g., OECD, NAFTA, MECOSUR, etc.).

Data are provided in million dollars, for the period 1970-2015. It also provide already computed FDI-related indicators, such as absolute FDI flows; FDI as percentage of GDP; FDI as percentage of Gross Fixed Capital Formation; FDI as percentage of total merchandise trade.

5.2 UNCTAD's Bilateral FDI Statistics provides up-to-date and FDI data, covering FDI inflows, outflows, inward and outward stock, by region and country (206 countries).

5.3 UNCTAD's World Investment Report, Country and Region Fact Sheets 2016, contains the most relevant indicators of FDI at country and regional level. Each sheet contains the most recent data on FDI flows and stocks, mergers and acquisitions, largest TNCs and regulatory changes.

5.4 World Bank, World Development Indicators, Global Private Financial Flows also provides several country-level FDI indicators such as: Foreign direct investment, net inflows; Foreign direct investment, net inflows (% of GDP); Portfolio equity, net inflows; Portfolio investment, bonds; Commercial banks and other lending.

5.5 OECD, FDI Statistics database gives access to data series according to OECD's BMD4 classification, based on balance of payments statistics. It includes:

i) FDI financial flows by industry (BMD4, including B, Mining and quarrying, in aggregate):

- FDI financial flows by industry
- FDI financial flows by industry (BMD4)
- Inward and outward FDI by industry
- Inward FDI by instrument and by industry
- Outward FDI by instrument and by industry
- Inward and outward FDI by industry and by geographic region

ii) FDI income by industry (BMD4, including B, Mining and quarrying in aggregate)

- FDI income by industry BMD4
- Income on inward FDI (receipts) and income on outward FDI (payments) by industry
- Income on inward FDI (receipts) and income on outward FDI (payments) by industry AND by geographic region
- Income on inward FDI (receipts) by instrument and by industry
- Income on outward FDI (payments) by instrument and by industry

iii) FDI positions by industry (BMD4, including B, Mining and quarrying in aggregate)

- FDI positions by industry BMD4
- Inward and outward FDI by industry
- Inward and outward FDI by industry AND by geographic region
- Inward FDI by instrument and by industry
- Outward FDI by instrument and by industry.

5.6 Eurostat's European Union direct investments (bop_fdi6) dataset contains data on and flows of Direct investment in the reporting economy and Direct investment abroad (DIA), and on stocks (assets and liabilities) by NACE activity, reporting country (including total EU-28) and partner (including extra-EU28), in 2013, 2014 and 2015.

Separate datasets:

- EU direct investment positions, breakdown by country and NACE activity (BPM6) (bop_fdi6_pos)
- EU direct investment income, breakdown by partner country and NACE activity (BPM6) (bop_fdi6_inc)
- EU direct investment flows, breakdown by partner country and NACE activity (BPM6) (bop_fdi6_flow)

- EU direct investment positions, flows and income, breakdown by partner countries (BPM6) (bop_fdi6_geo)

5.7 International Trade Centre (ITC), Foreign Direct Investment Statistics 2001-2013 provides access to FDI data as follows:

- by country: inward or outward
- by industry: inward or outward.

5.8 International Trade Centre's Investment Map tool provides data on sectoral-level FDI data flows and stocks by country. It is linked to other ITC's tools providing statistics on trade flows and tariff data (which includes data on MFN tariffs and ad-valorem tariffs; multilateral, regional and bilateral preferences; tariff quotas and anti-dumping duties), and activities of foreign affiliates of multinational companies.

It provides data and information on:

- Historical series of total FDI flows and stocks for around 200 countries and territories;
- Sectoral breakdown of FDI flows and stocks for around 110 countries;
- Information on the location and parent company for around 150,000 foreign affiliates
- Average tariff data applied by 187 countries and faced by 200 exporting countries and territories.

ISIC rev. 3 nomenclature is used for defining sectors; tariff data is available for more than 5,300 products (6-digit level of the Harmonized System); information on foreign affiliates covers 1,000 lines of business (US SIC nomenclature).

Several country- and sector-specific indicators can be directly obtained, such as Locations competing for investment attraction in a selected sector; Parent companies based in a certain country for a selected sector; Parent country of foreign affiliates operating in a selected sector.

Table 13: Description of the identified sets of data on foreign direct investments

5.1 UNCTAD's Foreign Direct Investment Statistics	This dataset contains region- and country-level information on (FDI) inward and outward flows and stock, alongside FDI-related indicators.	Foreign direct investment flows and stock, http://unctadstat.unctad.org/wds/ReportFolders/reportFolders.aspx
5.2 UNCTAD's Bilateral FDI Statistics	UNCTAD's Bilateral FDI Statistics provides up-to-date and FDI data, covering inflows, outflows, inward stock and outward stock, by region and country.	http://unctad.org/en/Pages/DIAE/FDI%20Statistics/FDI-Statistics-Bilateral.aspx
5.3 UNCTAD's World Investment Report 2016, Country and Regional Fact Sheets 2016	Contains the most relevant indicators of FDI at country and regional level.	http://unctad.org/en/page/PublicationWebflyer.aspx?publicationid=1555
5.4 World Bank, World Development Indicators, Global Private Financial Flows	Also provides several country-level FDI indicators.	http://wdi.worldbank.org/table/6.9#

5.5 OECD, FDI Statistics	Offers FDI data on FDI inward and outward flows, FDI position and FDI income by industry (including BD4 section Mining and quarrying)	http://stats.oecd.org/ (under "Globalisation")
5.6 Eurostat, European Union direct investments (BPM6) (bop_fdi6)	Contains data on and flows of Direct investment in the reporting economy and Direct investment abroad (DIA), and on stocks (assets and liabilities) by NACE activity, reporting country (including total EU-28) and partner (including extra-EU28), in 2013, 2014 and 2015.	http://ec.europa.eu/eurostat/web/balance-of-payments/data/database
5.7 International Trade Centre (ITC), Foreign Direct Investment Statistics 2001-2013	Foreign Direct Investment Statistics 2001-2013 provides direct access to FDI data as follows: - by country: inward or outward - by industry: inward or outward	http://www.intracen.org/itc/market-info-tools/foreign-direct-investment/
5.8 International Trade Centre (ITC), Investment Map Tool	Provides data on sectoral-level FDI data flows and stocks by country. Several country- and sector-specific indicators can be obtained. Strength of the tool lies in its link to other datasets.	http://www.investmentmap.org/

There are already-computed FDI-related indicators that can be directly used in RMIS (Table 14).

Table 14: Computed FDI-related from various sources

Indicator	Providers
Foreign direct investment, net	UNCTAD FDI Statistics; World Bank DataBank
Foreign direct investment, net inflows (current US\$)	UNCTAD FDI Statistics; World Bank DataBank
Foreign direct investment, net inflows (% of GDP)	UNCTAD FDI Statistics; World Bank DataBank
Foreign direct investment, net outflows (current US\$)	UNCTAD FDI Statistics; World Bank DataBank
Foreign direct investment, net outflows (% of GDP)	UNCTAD FDI Statistics; World Bank DataBank
Primary income on FDI, payments (current US\$)	UNCTAD FDI Statistics; World Bank DataBank
Inward and outward flows and stock of foreign direct investment, 1980-2014	UNCTAD FDI Statistics
Mining FDI (stock, year) Major TNC presence Foreign ownership as share of total production	ITC, Foreign Direct Investment

6. Qualitative assessment of country's investment attractiveness in the primary raw material sector

Task 2.3 also requires mapping the sources of data and information on the following three topics:

- (6.1) General financial burden on the primary raw material sector;
- (6.2) Qualitative assessment of investment readiness/attractiveness of the sector;
- (6.3) Assessment of the legislative framework (incl environmental/health/safety regulations).

Several general data sources have been identified so far – *work in progress* (Table 15).

Fraser Institute's Annual Survey of Mining Companies: 2015 is an annually conducted survey of mining and exploration companies for evaluating how country's natural resources endowment and public policy (taxation, regulatory framework) influence investments in mining exploration.

It also provides country-level Investment Provides Attractiveness Index and Policy Perception Index and tables containing data on various variables these indices are composed of.

OECD FDI Regulatory Restrictiveness Index measures country’s investment climate, by calculating the overall score of restrictions imposed on FDI in 22 economic sectors (including Mining and quarrying).

It takes into account four types of restrictions on FDI: 1) foreign equity limitations; 2) discriminatory screening or approval mechanisms; 3) restrictions on the employment of foreigners as key personnel; 4) other operational restrictions.

Deloitte, Country’s Taxation and Investment profiles 2016 offers several taxation and investment country profiles, containing information on investment climate, business environment and taxation regime.

Table 15: Sources of data and information on country’s investment attractiveness in the primary raw material sector

Fraser Institute’s Annual Survey of Mining Companies: 2015	An annually conducted survey of mining and exploration companies for evaluating how country’s natural resources endowment and public policy influence investments in mining exploration. It also provides country-level Investment Provides Attractiveness Index and Policy Perception Index.	https://www.fraserinstitute.org/studies/annual-survey-of-mining-companies-2015
OECD FDI Regulatory Restrictiveness Index	The index measures country’s investment climate, by calculating the overall score of restrictions imposed on FDI in 22 economic sectors. It takes into account four types of restrictions on FDI.	http://stats.oecd.org/ under “Globalisation”
Deloitte, Country’s Taxation and investment profiles 2016	Provides several country-specific information on investment climate, business environment and taxation regime.	https://dits.deloitte.com/#TaxGuides
International Monetary Fund	Country-reports, e.g. on Zambia (2015)	Zambia(2015) https://www.imf.org/external/pubs/ft/scr/2015/cr15153.pdf

6.1 General financial burden on the primary raw material sector

In this study the **financial burden is defined as all costs that are directly resulting from the fiscal and financial regulatory regime of a given country** that a mining company is facing during the whole period of a mining project. In this regard, the extractive sector is specific as compared to other economic sectors due to the following characteristics:

- it has significantly longer investment period, and in association with this, high CAPEX, that is not limited to the construction cost of the installation but
- includes the extensive exploration costs, permitting costs (incl. acquisition of social license to operate), and collateral infrastructure development (roads, water works, power supply);
- during the operation phase (OPEX) environmental levies and taxes, high energy and water consumption (in relation either to extraction or transportation), and the **mining royalties** can be considered as specific burdens, as well as
- the costs of mine closure and the costs of active or passive environmental monitoring and necessary measures (aftercare).

Other financial burden such as corporate tax, healthcare and social fees, salaries, technical safety and occupations health related spending, amortization rates, etc. are not considered

as specific to this sector. The trade related financial and administrative burden are discussed at other chapters of the study.

As a preliminary conclusion of the study, the best **candidate indicator for the characterization of the financial burden of the primary raw materials sector is the mining royalty** because:

- it reflects the related policy of the government of a country,
- it is based on 2-4 different calculation methods (profit-, value-, volume-based, resource rent, etc.);
- its definition, volume and percentage may be distinct for
 - different commodities,
 - ASMs, SMEs and major companies,
 - extracted volumes,
 - extraction methodologies;
- the collected royalty can feed either central, regional or local budget income.

The mining royalty is also considered as a constituent to the composite **Mining Contribution Index** (MCI) that is to indicate the contribution of the extractive sector to the macroeconomy of a given country.

Currently there is no one coherent and annually updated information source on mining royalties available in the world. Mining royalty can be a major income of the state budget, changes in mineral and fiscal policies are reflected in amendments of the mining and/or tax legislation. In this respect, authentic and up-to-date information on mining royalty can be accessed typically at mining authorities', finance departments' and national legislation e-library websites. Information on mining royalty is also available at commercial information services, such as SNL, Infomine, and IHS.

PWC operates an interactive benchmarking service, inter alia, on mining royalty comparison:

<http://www.pwc.com/gx/en/industries/energy-utilities-mining/mining/tax/data-tool.html>

It also provides information on corporate income tax, amortization, tax on exports, social security costs, etc.

Comprehensive international review reports are published periodically by major industry associations (e.g. ICMM), international entities (e.g. World Bank), and finance consulting firms (e.g. Price Waterhouse), as listed below. Numerous of these cover the pilot countries of this study.

http://unsdsn.org/wp-content/uploads/2016/11/Mapping_Mining_SDGs_An_Atlas.pdf

<http://hub.icmm.com/document/7950>

<https://www.pwc.com/gx/en/energy-utilities-mining/publications/pdf/pwc-gx-mining-taxes-and-royalties.pdf>

<http://siteresources.worldbank.org/INTOGMC/Resources/336099-1156955107170/miningroyaltiespublication.pdf>

https://www.afdb.org/fileadmin/uploads/afdb/Documents/Publications/AEB%20VOL%203%20Issue%206%20avril%202012%20Bis_AEB%20VOL%203%20Issue%206%20avril%202012%20bis_01.pdf

<http://latinlawyer.com/reference/topics/46/jurisdictions/16/mexico/>

http://im4dc.org/wp-content/uploads/2012/01/UWA_1698_Paper-01_Mineral-royalties-other-mining-specific-taxes1.pdf

6.2 Qualitative assessment of investment readiness/attractiveness of the extractive sector

Qualitative assessments are typically based on expert opinions that rely on both quantitative indicators and personal experience, and sometimes subjective perceptions as well. In this way, the statistical representativeness of the number of experts involved in the survey is even more relevant than in standard quantitative analysis. There are numerous international and commercial entities running and maintaining world-wide assessments on the investment attractiveness of a country in general, not specific for the extractive sector (e.g. World Bank). For the extractive sector there are a limited number of services focus on the country-scale dimension. One distinguished player in this regard the Fraser Institute's annual report, the thematics of which covers topics such as corruption, streamlined permitting, lean legislation, good infrastructure, etc. The methodology is based on 300-500 expert opinion survey covering most of the world but in a few countries the figure is based on 8-10 answers.

6.3 Assessment of the legislative framework (incl. environmental/health/safety regulations)

International entities' informationbase with country profiles and/or relevant indicators on the countries

World Bank,

World Bank country profiles, among which there are relevant sets on

[Worldwide Governance Indicators \(WGI\)](#)

Aggregate and individual governance indicators for 215 countries and territories over the period 1996–2015, for six dimensions of governance. See more: [Millennium Development Goals \(MDGs\)](#)

Relevant indicators drawn from the World Development Indicators, reorganized according to the goals and targets of the Millennium Development Goals (MDGs).

[Doing Business \(DB\)](#)

Doing Business provides objective measures of business regulations and their enforcement across 189 economies. Each economy is ranked according to 10 sets of indicators. These are combined into an overall "ease of doing business" ranking.

[World Integrated Trade Solution \(WITS\)](#)

WITS is a trade software tool giving access to bilateral trade between countries based on various product classifications, product details, years, and trade flows. It also contains tariff and non-tariff measures data, as well as analysis tool to calculate effects of tariff reductions. In addition, users have access to many visualization tools.

Type:Time series| Periodicity:Quarter| Last Updated:30-Dec-2016[See More +](#)

[Country Opinion Survey Data \(COSD\)](#)

Survey data about how the World Bank Group and its work in social and economic development are perceived by key stakeholders in client countries across the globe.

Type:Survey(Microdata)| Periodicity:n/a| Last Updated:18-Mar-2014

[Business Environment and Enterprise Performance Survey \(BEEPS\)](#)

The Business Environment and Enterprise Performance Survey provides firm-level data on a broad range of issues about the business environment and performance of firms, including business-government relations, firm financing, labor, infrastructure, informal payments and corruption, and other topics such as training and innovation.

Type:Survey(Microdata)| Periodicity:Annual| Last Updated:01-Jun-2014[See More +](#)

[Exporter Dynamics Database \(EDD\)](#)

The Exporter Dynamics Database is the first database providing measures of exporter characteristics and dynamics across 70 countries in all geographic regions and at all income levels. The Exporter Dynamics Database contains more than 100 measures covering the basic characteristics of exporters, their distribution by size, the diversification in their products and markets, their dynamics in terms of entry, exit, and survival, and the average unit prices of the goods they trade.

Type:Time series, Transactions| Periodicity:Annual| Last Updated:31-Mar-2016[See More](#) [±](#)

[Enterprise Surveys \(ES\)](#)

Enterprise Surveys provide firm-level data from over 125,000 establishments in 139 countries. Data are used to create over 100 indicators that benchmark the quality of the business environment across the globe. Each country is surveyed every 3 to 4 years. [More...](#)

Type:Survey(Microdata)| Periodicity:Annual| Last Updated:03-Jan-2017[See More](#) [+](#)

[Indonesia Database for Policy and Economic Research \(INDO-DAPOER\)](#)

The Indonesia Database for Policy and Economic Research (INDO-DAPOER) contains relevant economic and social indicators at the province- and district-level, which span across four main categories: fiscal, economic, social and demographic, as well as infrastructure. Please note that data and metadata are currently under review and will be revised shortly.

Type:Cross sectional, Time series| Periodicity:Annual| Last Updated:08-Jun-2015[See More](#) [+](#)

[Country Policy and Institutional Assessment \(CPIA\)](#)

Rating of countries against a set of 16 criteria grouped in four clusters: economic management, structural policies, policies for social inclusion and equity, and public sector management and institutions.

Type:Cross sectional| Periodicity:Annual| Last Updated:30-Jun-2015[See More](#) [+](#)

[Millennium Development Goals Tables \(MDG Tables\)](#)

Millennium Development Goals tables provide data for MDG indicators from 1990 to the most recent year available in five year increments.

Type:Time series| Periodicity:Annual| Last Updated:16-Dec-2016[See More](#) [+](#)

[Export Value Added Database \(EVAD\)](#)

The Export Value Added Database provides information on the domestic value-added content of domestic output and exports for 118 countries across 27 sectors of the economy, including 9 commercial services sectors, 3 primary sectors, and 14 manufacturing sectors, spanning intermittent years between 1997 and 2011.

Type:Cross sectional, Time series| Periodicity:Annual| Last Updated:10-May-2016[See More](#) [+](#)

[Socio-Economic Database for Latin America and the Caribbean \(SEDLAC\)](#)

This web site includes statistics on poverty and other distributional and social variables from 25 Latin American and Caribbean (LAC) countries. All statistics are computed from microdata of the main household surveys carried out in these countries using a homogenous methodology (data permitting).

Type:Time series| Periodicity:Annual| Last Updated:23-Jun-2015[See More](#) [+](#)

[IFC Investment By Industry - Annual Summary](#)

IFC Industries (Sectors) are in charge of processing IFC transactions. They also provide the Regional Departments with the expertise and knowledge needed to process new

projects. Learn more at http://www1.ifc.org/wps/wcm/connect/industry_ext_content/ifc_external_corporate_site/industries. FY10 data has been revised to be consistent with IFC's FY11 re-organizational changes across Industry departments. Note: Dollars in millions, for the year ended June 30. Short-term finance investments are included in figures prior to 2015.

Type: Time series | Periodicity: Annual | Last Updated: 17-Jan-2017 [See More +](#)

OECD Environmental Data Compendium (for all countries):

<http://www.oecd.org/env/indicators-modelling-outlooks/oecdenvironmentaldatacompendium.htm>

as well, on competition, public governance, investment, regulatory reforms, trade indicators, and more

Trading Economics information service (global coverage country profiles, with a variety of thematics)

<http://www.tradingeconomics.com/countries>

Central Intelligence Agency (basic country factsheets with selective benchmarking options)

<https://www.cia.gov/library/publications/resources/the-world-factbook/>

International Monetary Fund (IMF)

<http://data.imf.org/?sk=471DDDF8-D8A7-499A-81BA-5B332C01F8B9>

<http://www.imf.org/external/np/ds/matrix.htm>

macroeconomic, fiscal and financial statistics some of which are restricted

EXIOBASE (environmental information on 43 countries)

<http://www.exiobase.eu/>

FocusEconomics is a leading provider of economic analysis and forecasts for [127 countries](#) in Africa, Asia, Europe and the Americas, as well as price forecasts for 33 key commodities

<http://www.focus-economics.com>

UN Conference on Trade and Statistics (with downloadable data on different topics)

<http://unctad.org/en/Pages/statistics.aspx>

UN International Trade Centre (country profiles, reports)

<http://www.intracen.org/>

UN Industrial Development Organization (country profiles with limited thematics)

<http://www.unido.org/>

UN Economic Commission for Latin America and Caribbean (country profiles and data with different thematics)

http://estadisticas.cepal.org/cepalstat/web_cepalstat/Portada.asp?idioma=i

UN Economic Commission for Asia and the Pacific (country profiles and data with different thematics)

<http://www.unescap.org/>

http://data.unescap.org/escap_stat/

Mineral Rents Indicator (World Development Indicator)

Natural Resource Governance Institute, (<https://resourcegovernance.org/>)

It developed and updates the Resource Governance Index, with good but not complete coverage of countries. Methodology and glossary is available.

[ILO](#)

The below data are available for countries in annual time series in order to characterize the efficiency of the national health and safety legislation and enforcement (http://www.ilo.org/ilostat/faces/wcnav_defaultSelection?_afLoop=108178952970554&_afWindowMode=0&_afWindowId=lrbifmlek_102#!%40%40%3F_afWindowId%3Dlrbifmlek_102%26_afLoop%3D108178952970554%26_afWindowMode%3D0%26_adf.ctrl-state%3Dlrbifmlek_122).

Occupational injuries -- Time lost

[Days lost due to cases of occupational injury with temporary incapacity for work by economic activity](#)

Occupational injuries -- Fatal

[Cases of fatal occupational injury by economic activity](#)

[Fatal occupational injuries per 100'000 workers by economic activity](#)

Occupational injuries --
Non-fatal










[Cases of non-fatal occupational injury by economic activity](#)

[Non-fatal occupational injuries per 100'000 workers by economic activity](#)

OECD

Environmental Indicators of OECD countries (<http://www.oecd.org/site/envind/>) with the following indicators:

List of indicators presented in the country profiles

 Climate Change emissions of greenhouse gases and CO ₂	 Air Quality emissions of SO _x and NO _x	 Waste Generation municipal waste generation and treatment	 Biodiversity threatened species	 Water Quality population connected to a waste water treatment plant
 Water Resource intensity of use of freshwater resources	 Forest Resources intensity of use of forest resources and forest area	 Energy Resources energy intensity and mix	 Environmentally Related Taxes	

The Environmental Performance Index (EPI) is a composite indicator that measures how well a country is performing environmentally. It compares the environmental pressures and environmental state of the country to national and/or international policy and scientific target values (proximity-to-target approach). It is developed annually by the Yale University. EPI is based on indicators on environmental health – protection of human health from environmental harm – and on indicators on ecosystem vitality – ecosystem protection and resource management. EPI values range from 0 to 100, with the closer a value is to 100, the closer a country is to the target values. a (<http://epi.yale.edu/>, <http://epi.yale.edu/downloads>)

Natural protected areas include both terrestrial and marine nationally designated areas. Terrestrial protected areas are areas of at least 1000 hectares that are totally or partially protected. These areas include e.g. scientific reserves with limited public access, national parks, natural monuments, nature reserves, wildlife sanctuaries, protected landscapes, etc. Marine protected areas are areas of intertidal or subtidal terrain whose environment is protected by effective means (e.g. by law).

Based on the United Nations Environmental Program and the World Conservation Monitoring Centre, as compiled by the World Resources Institute and as provided by the World Bank (<https://data.worldbank.org/indicator>).

Latin Lawyer (commercial site for business law, incl. environmental and public administration thematics)

<http://latinlawyer.com/reference/topics/46/jurisdictions/16/mexico/>

National information services in the pilot countries

Japan

Ministry of Environment: <http://www.env.go.jp/en/coop/pollution.html>

With annual reports and statistics, including material flows and recycling, only in pdf.

Ministry of Finance: http://www.customs.go.jp/toukei/info/index_e.htm

Trade statistics of Japan in xls, csv.

Geological Survey of Japan: <https://www.gsj.jp/en/>, geological information, mostly maps

Japan Business Connection: <http://jb-c.org/trading-association/809/japan-mining-industry-association>

<http://www.tradingeconomics.com/japan/mining-production>

Ministry of Economy, Trade and Industry: <http://www.meti.go.jp/english/index.html>

with national statistics downloadable

Agency for Natural Resources and Energy: <http://www.enecho.meti.go.jp/en/>

with thematic reports in pdf

United States

US Environmental Protection Agency: <https://www.epa.gov/>

with legislation searchable for sectors, and topics

US Code of Federal Regulations: <http://www.ecfr.gov/cgi-bin/ECFR?page=browse>

US Mining Health and Safety Authority: <https://www.cdc.gov/niosh/mining/index.html>

USGS mineral statistics: <https://minerals.usgs.gov/minerals/pubs/state/>

Infomine legal site: <http://technology.infomine.com/lawmine/>

Selected Latin American countries

Chile

[Servicio Nacional de Geología y Minería \(Chile\)](#)

(SERNAGEOMIN) Site in Spanish

[Gobierno de Chile: Ministerio de Minería](#)

Site in Spanish

[Empresa Nacional de Minería](#)

(ENAMI)

[Sociedad Nacional de Minería](#)

(SONAMI) National Mining Society, site in Spanish

[Instituto de Innovación en Minería y Metalurgia](#)

Site in Spanish

[Federación de Trabajadores del Cobre Chile](#)

(FTC) Site in Spanish

[Chile Mining Concessions Registry Visualization System \(SERNAGEOMIN\)](#)

Visualization map for the Chilean Mining Concessions Registry and cadastral data

Peru

[LatinFocus - Peru](#)

News, Economy

[Stock Exchanges in Peru](#)

[Instituto Geografico Nacional](#)

Site in Spanish

[Instituto Geofísico del Perú](#)

Site in Spanish

[Instituto Geológico Minero y Metalurgico de Perú](#)

Site in Spanish

[Instituto de Ingenieros de Minas del Perú](#)

Site in Spanish

[Centro de Promoción de Usos del Cobre Peru](#)

ProCobre

[Sociedad Nacional de Minería Petróleo y Energía - Peru](#)

(SNMPE) Site in Spanish

[Peru GEOCATMIN](#)

Online map viewer (website in Spanish)

Brasil

[Brasil Mining Site](#)

portal da mineração brasileira. Site in Portuguese

[Brasil Mineral](#)

Magazine, in Portuguese

[Serviço Geológico do Brasil](#)

Geological survey. Site in Portuguese and English

[CETEM: Centro de Tecnologia Mineral](#)

Centre of Mineral Technology

[Departamento Nacional de Produção Mineral](#)

National Department of Mineral Production. Site in Portuguese

[Associação Brasileira do Alumínio - Brazilian Aluminum Association](#)

(Site in Portuguese, English, and Spanish)

[IBRAM - Instituto de Brasileiro de Mineracao](#)

Brazilian National Mining Association

[ProCobre - International Copper Association Latin America](#)

Site in Portuguese

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http://ec.europa.eu/trade/policy/countries-and-regions/agreements/index_en.htm
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<http://ec.europa.eu/eurostat/web/ess/-/user-guide-on-european-statistics-on-international-trade-in-goods>
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