

UNITED NATIONS CONFERENCE ON TRADE AND DEVELOPMENT



SDG Pulse 2022

UNCTAD TAKES THE PULSE OF THE SDGS



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Geneva, 2022

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A dispute exists between the Governments of Argentina and the United Kingdom of Great Britain and Northern Ireland concerning sovereignty over the Falkland Islands (Malvinas).

The final boundary between the Sudan and South Sudan has not yet been determined.

The final status of the following territories has not yet been agreed or determined: Abyei area,

Aksai Chin, Arunachal Pradesh, Bi'r Tawil, Hala'ib Triangle, Ilemi Triangle, Jammu and Kashmir, Kuril Islands, Paracel Islands, Scarborough Shoal, Senkaku Islands and Spratly Islands.

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Foreword

This UNCTAD SDG Pulse comes at a crucial moment in the history of both multilateralism and trade and development. Since 2020, the world has been in a constant state of cascading crises that overlap and compound each other. Climate change, the COVID-19 pandemic, and now the war in Ukraine, have as a result impacted developing countries' ability to meet their sustainable development goals. This SDG Pulse traces these complex disruptions in the world's progress towards the 2030 Agenda through data-driven analysis relying on SDG indicators and other official statistics updated by our new stand-alone UNCTAD Statistics Unit.

The fourth edition of SDG Pulse reveals uneven progress towards the 2030 Agenda and for too many countries a deterioration of the progress made under the compounding effects of these crises. Despite the rise of regional trade agreements, the lingering disruptions in global value chains, trade sanctions, and shrinking export diversification have dented the ability of global trade to foster sustainable and inclusive growth in the most vulnerable countries, with increasing concerns over food security. The indicators show bleaker conditions for financing for development with rising inequalities between and within countries and many SDGs falling increasingly out of reach. Furthermore, the strong rebound of CO₂ emissions in 2021 underlines the need to transform policies that still allow the overuse of natural resources, rising pollution, and waste.

Together with other UN and external agencies, we measure progress towards the SDGs as set out on the 2030 Agenda. In 2017, the UN Statistical Commission set up a Global SDG Indicator Framework to ensure transparency and accountability of the Agenda, as endorsed by the General Assembly (A/RES/71/313). UNCTAD is a custodian agency and partner for nine SDG indicators related to trade, tariffs, development finance, debt, investment, illicit finance, and enterprise sustainability. This entails a global responsibility for UNCTAD to develop concepts and methods to track progress with these indicators, and to support member States in strengthening their capacity to measure and analyse progress to effectively target policy efforts towards meeting the SDGs.

UNCTAD's work to track and curb illicit financial flows, as a custodian of SDG indicator 16.4.1 jointly with UNODC, is critical for developing countries to stem the drain of resources that are painfully needed for essential services and sustainable development. In March 2022, the UN Statistical Commission also adopted a new SDG indicator 17.3.1 to measure development support. With OECD as a co-custodian, UNCTAD was called upon to support countries of the South in measuring financial resources, including a new voluntary framework for the measurement of South-South cooperation that will serve as a data source for the indicator.

This report not only presents statistical updates and data-driven analysis for SDG indicators relevant for trade, development, investment, finance, and technology, but also a range of other official statistics that provide broader context and more nuance to these complex topics. The report also presents case studies of UNCTAD's capacity development in support of the 2030 Agenda – UNCTAD in Action outlines our activities and successes with hard numbers.

Finally, every year this report highlights a thematic issue of immediate relevance. This year's theme addresses inclusive growth with a new UNCTAD Inclusive Growth Index that puts people and the planet at the centre of attention. This In-Focus analyses countries' ability to achieve inclusive growth with particular attention paid to gender equality and environmental sustainability. It is my hope that this report will help to guide more holistic policies that pursue wellbeing for everyone today and in the future.

Rebeca Grynspan
Secretary-General of UNCTAD

Introduction

Welcome to the fourth edition of *SDG Pulse* – UNCTAD’s annual statistical publication reporting on developments relating to the 2030 Agenda for Sustainable Development (United Nations, 2015) and the Sustainable Development Goals (SDGs). The purpose of this report is to: provide an update on the evolution of a selection of official SDG indicators and complementary data and statistics; provide an update on progress in the development of new concepts and methodologies for SDG indicators for which UNCTAD is a global custodian agency; and to showcase how UNCTAD is supporting member States in the implementation of the 2030 Agenda. The report also investigates thematic issues of relevance to the 2030 Agenda – this year, the report discusses, as In-Focus topic, the issue of inclusive growth with particular emphasis on gender equality and environmental sustainability, assessing progress and challenges in these areas. Over the last decades, rising inequality as well as climate change have indeed questioned the ability of economic growth to continue to play its historical role as the driver of development. To support the SDGs, growth needs to be inclusive and sustainable.

The report is arranged in a way that it can be read by theme, and by goal and indicator.

Theme

In the theme view, the indicators are browsable by the three themes to which UNCTADs work contributes: [multilateralism for trade & development](#); [productive growth](#); and [structural transformation](#). Through this thematic lens, progress towards a wide range of SDG indicators is discussed, including recent trends in trade, including barriers to trade, and policies to promote trade; financial resource mobilization, investment, debt sustainability, transport infrastructure and ICT for sustainable development; as well as industrial development, manufacturing value-added, technological upgrade, environmental sustainability and the fostering of productive capacities.



Goals and indicators

In the goals-and-indicators view, the content is presented by SDG indicators and their related goals. The goals and indicators selected reflect UNCTAD's broad mandate in trade and development, investment, finance, and technology. The SDG indicators are supplemented with other data and official statistics to complement the picture. The SDG indicators presented in this report are:

GOAL 2

Goal 2: Zero hunger

- Indicator 2.a.2: Total official international support to agriculture
- Indicator 2.b.1: Agricultural export subsidies
- Indicator 2.c.1: Indicator of food price anomalies

GOAL 8

Goal 8: Decent work and economic growth

- Indicator 8.a.1: Aid for Trade commitments and disbursements

GOAL 9

Goal 9: Industry, innovation and infrastructure

- Indicator 9.1.2: Passenger and freight volumes, by mode of transport
- Indicator 9.2.1: Manufacturing value added
- Indicator 9.2.2: Manufacturing employment
- Indicator 9.4.1: CO₂ emission per unit of value added
- Indicator 9.5.1: Research and development expenditure
- Indicator 9.5.2: Researchers relative to population
- Indicator 9.a.1: Total official international support to infrastructure
- Indicator 9.b.1: Proportion of medium and high-tech industry value added
- Indicator 9.c.1: Proportion of population covered by a mobile network

GOAL 10

Goal 10: Reduce inequality

- Indicator 10.a.1: Proportion of tariff lines with zero-tariff*
- Indicator 10.b.1: Total resource flows for development

GOAL 12

Goal 12: Responsible consumption & production

- Indicator 12.6.1: Number of companies publishing sustainability reports*

GOAL 16

Goal 16: Peace, justice and strong institutions

- Indicator 16.4.1: Total value of inward and outward illicit financial flows*

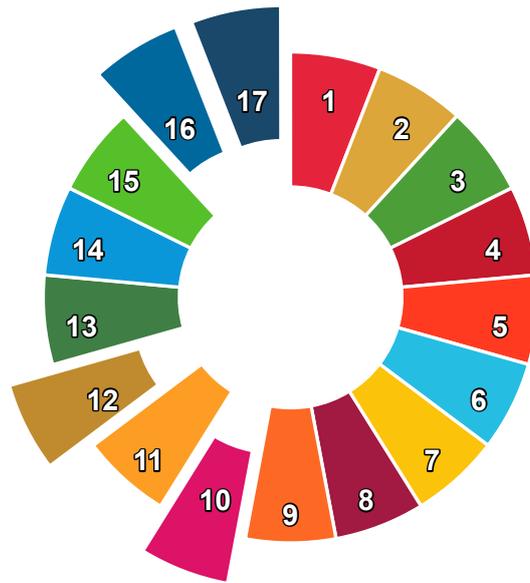
GOAL 17

Goal 17: Partnership for the goals

- Indicator 17.2.1: Net official development assistance, total and to LDCs
- Indicator 17.3.1: FDI, ODA and South-South Cooperation*
- Indicator 17.4.1: Debt service as a share of exports of goods and services
- Indicator 17.5.1: Implement investment promotion regimes for LDCs*
- Indicator 17.6.2: Fixed Internet broadband subscriptions
- Indicator 17.8.1: Proportion of individuals using the Internet
- Indicator 17.10.1: Worldwide weighted tariff-average*
- Indicator 17.11.1: Developing countries and LDCs' share of global exports*
- Indicator 17.12.1: Tariffs faced by developing countries, LDCs and SIDS*

This includes all the indicators for which UNCTAD is a custodian or co-custodian. These indicators fall under goals 10, 12, 16 and 17, covering topics related to trade, tariffs, development finance, debt, investment, illicit finance, and enterprise sustainability.

Custodian agencies of SDG indicators, including UNCTAD, are responsible for developing international standards and recommending methodologies for monitoring SDG indicators. They are also tasked with compiling and verifying country data and metadata, and for submitting the data, along with regional and global aggregates, to the global SDG report and database updated by the United Nations Statistics Division. SDG Pulse covers the following UNCTAD's custodian indicators, but also many other SDG indicators to describe sustainable development comprehensively.



UNCTAD in Action

UNCTAD runs a wide-ranging capacity development programme to support progress towards the 2030 Agenda. This report presents some case studies from UNCTAD’s development programme from a statistical perspective – presenting UNCTAD’s activities and successes in hard numbers. These case studies are important as they also illustrate the Results Based Management approach adopted by UNCTAD – helping us to improve our responsiveness and accountability to member states. In 2022, new chapters showcase statistics reflecting UNCTAD’s activities in supporting member States to measure illicit financial flows (SDG 16.4.1), enhance productive capacities, and mobilize financial resources for development in the time of COVID-19.

In Focus

Every year, the SDG Pulse will highlight a specific aspect of the 2030 Agenda and discuss this issue from the slant or perspective of statistics. This year’s theme addresses [inclusive growth](#) with a new UNCTAD Inclusive Growth Index that puts people and the planet at the centre of attention. In-Focus analyses countries’ ability to achieve inclusive growth with a particular lens on gender equality and environmental sustainability. It will help to guide more holistic policies pursuing wellbeing for everyone today and in the future.

Data downloads

All data used in maps and charts can be downloaded by clicking  on the top right of each data visualization.

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Falkland Islands (Malvinas). The final boundary between the Republic of Sudan and the Republic of South Sudan has not yet been determined. The final status of the following territories has not yet been agreed or determined: Abyei area, Aksai Chin, Arunachal Pradesh, Bi'r Tawil, Hala'ib Triangle, Ilemi Triangle, Jammu and Kashmir, Kuril Islands, Paracel Islands, Scarborough Shoal, Senkaku Islands, Spratly Islands.

The designations “developing” and “developed” are intended for statistical convenience and do not necessarily express a judgement about the stage reached by a particular country or area in the development process. UNCTAD's grouping of developing and developed economies is based on the former development status classification of the M49 standard, with some recent updates. For more details, see the [UNCTADstat classification page](#).

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Notes

- * Indicator for which UNCTAD is a custodian or co-custodian agency.

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Glossary

A-C

3G	Third generation of cellular network technology
4G	Fourth generation of cellular network technology
Ad-valorem equivalent	A tariff that is not a percentage of the price of the product (e.g. dollars per ton) can be estimated as a percentage of the price — the ad valorem equivalent. (WTO, 2021a)
Advanced reporting requirement	Advanced reporting requirement represents a set of reporting elements, beyond the minimum reporting requirement, which demand additional information from companies in their sustainability reports for the purpose of measuring SDG indicator 12.6.1 (UNCTAD, 2019).
AfCFTA	African Continental Free Trade Area (AfCFTA)
AGOA	African Growth and Opportunity Act
AI	Artificial intelligence
Aid for Trade	Measures aimed at assisting developing countries to increase exports of goods and services, to integrate into the multilateral trading system, and to benefit from liberalized trade and increased market access. It is considered as part of ODA. Effective Aid for Trade will enhance growth prospects and reduce poverty in developing countries, as well as complement multilateral trade reforms and distribute the global benefits more equitably across and within developing countries (WTO, 2006). It is measured as gross disbursements and commitments of total ODA from all donors for Aid for Trade (United Nations, 2021).
Aid for Trade commitments	Aid for Trade commitment is a firm obligation, expressed in writing and backed by the necessary funds, undertaken by an official donor to provide specified assistance to a recipient country or a multilateral organisation (OECD, 2021a; AidFlows, 2019).
Aid for Trade disbursements	Aid for Trade disbursements refer to the release of funds to or the purchase of goods or services for a recipient; by extension, the amount thus spent. Disbursements record the actual international transfer of financial resources, or of goods or services valued at the cost to the donor (OECD, 2021a; AidFlows, 2019).
AIS	Automatic identification system (AIS)
ALDC	Division for Africa, Least Developed Countries and Special Programmes
ASYCUDA	Automated System for Customs Data
Asymptomatic	When a condition produces no symptoms, or a person shows no symptoms.
AU	African Union
B2B	Business to Business
B2C	Business to Consumer
BEPS	Base erosion and profit shifting
BIT	Bilateral Investment Treaty (BIT) is a type of international investment agreement (IIA) made between two countries regarding promotion and protection of investments made by investors from one country in the other country's territory, which commits the host country government to grant certain standards of treatment and protection to foreign investors (nationals and companies of the other country) and their investments (UNCTAD, 2022).
Blended finance	Blended finance combines concessional financing — loans that are extended on more generous terms than market loans — and commercial funding.
BoP	Balance of payments

Broadband	A general term meaning a telecommunications signal or device of greater bandwidth, in some sense, than another standard or usual signal or device. In data communications, this refers to a data transmission rate of at least 256 kbit/s. In the context of Internet, this can be delivered via fixed (wired) or mobile networks (ITU, 2014).
CAPI	Computer assisted personal interview
Carbon intensity	Carbon intensity is the amount of emissions of carbon dioxide (CO ₂) released per unit of another variable such as gross domestic product (GDP), output energy use or transport (IPCC, 2014).
Carbon price	Carbon price is the price per unit of avoided or released carbon dioxide (CO ₂) emission, or its CO ₂ equivalent (IPCC, 2014).
Carbon tax	Carbon tax is a levy on the carbon content of fossil fuels (IPCC, 2014).
CATI	Computer assisted telephone interview
CBERA	The Caribbean Basin Economic Recovery Act
CCCT	Commonwealth Caribbean Countries Tariff (CCCT) is a Preferential Trade Arrangements (PTAs) categorized as other type of PTAs. The provider of CCCT is Canada. CCCT entered into force on the 15th of June 1986 (WTO, 2021b).
CCSA	Committee for the Coordination of Statistical Activities
CH ₄	Methane
CIS	Commonwealth of Independent States
CO ₂	Carbon dioxide (CO ₂) is a colourless, odourless and non-poisonous gas formed by combustion of carbon and in the respiration of living organisms (OECD, 2021b).
CO ₂ e	Carbon dioxide equivalent (CO ₂ e) is a measure used to compare the emissions from various greenhouse gases based upon their global warming potential. It represents the quantity of carbon dioxide that has equal global warming potential as the given quantity of a greenhouse gas (OECD, 2021b).
Comply-or-explain approach	Comply-or-explain approach is a reporting practice under which companies are invited to explain the reasons for not providing all requested information in their sustainability reports or for not publishing a sustainability report at all (UNCTAD, 2013).
Concessional loans	Loans that are extended on terms substantially more generous than market loans. The concessionality is achieved either through interest rates below those available on the market or by grace periods, or a combination of these (OECD, 2021b).
Containerised transport	Freight transport using intermodal containers of standard dimensions, i.e. containers that can be moved seamlessly between ships, trucks, trains and other modes of transport as well as storage. The two most used are the 20-foot and the 40-foot containers. They form the basis of the main units of measure currently applied in transport: the twenty-foot equivalent Unit (TEU) and the forty-foot equivalent unit (FEU). (World Shipping Council, 2020)
CoP	Communication on Progress (CoP) is a voluntary, public report through which a company informs stakeholders about its efforts to implement the principles of the United Nations Global Compact (2013).
COVID-19	COVID-19 is an infectious disease caused by the strain of coronavirus SARS-CoV-2 discovered in December 2019. Coronaviruses are a large family of viruses which may cause illness in animals or humans. In humans, several coronaviruses are known to cause respiratory infections ranging from the common cold to more severe diseases such as Middle East Respiratory Syndrome (MERS) and Severe Acute Respiratory Syndrome (SARS). The most recently discovered coronavirus causes coronavirus disease COVID-19 (WHO, 2020b).
COVID-19 death	Defined for surveillance purposes as a death resulting from a clinically compatible illness in a probable or confirmed COVID-19 case, unless there is a clear alternative cause of death that cannot be related to COVID-19 disease (e.g. trauma). There should be no period of complete recovery between the illness and death. Further guidance for certification and classification (coding) of COVID-19 as cause of death is available in WHO (2020a).
CPC	Central Product Classification. The latest version of this classification is CPC 2.1 (United Nations, 2022b)

CSOs	Civil society organizations (CSOs)
CSTD	United Nations Commission on Science and Technology for Development
CTS	Consolidated Tariff Schedules

D-F

DAC	Development Assistance Committee
Data revolution	Data revolution refers to the transformative actions needed to respond to the demands of a complex development agenda, improvements in how data is produced and used; closing data gaps to prevent discrimination; building capacity and data literacy in “small data” and big data analytics; modernizing systems of data collection; liberating data to promote transparency and accountability; and developing new targets and indicators (see http://www.undatarevolution.org/data-revolution/).
DDA	Doha Development Agenda (DDA) refers to the latest Doha Round of world trade negotiations among the WTO memberships. The round is also known semi-officially as the Doha Development Agenda and was launched in November 2001. Its aim is to achieve major reform of the international trading system through the introduction of lower trade barriers and revised trade rules. The fundamental objective of DDA is to further liberalising trade in order to improve the trading prospects of developing countries. The main issues at stake are: Reforming agricultural subsidies; Ensuring that new liberalisation in the global economy respects the need for sustainable economic growth in developing countries; Improving developing countries' access to global markets for their exports (WTO, 2020b).
Debt service	Payments made to satisfy a debt obligation, including principal, interest and any late payment fees (IMF, 2014).
Debt sustainability	A country's capacity to finance its policy objectives through debt instruments and service the ensuing debt (IMF, 2014).
DFQF	Duty-free and quota free
DGDS	Division on Globalization and Development Strategies
DIAE	Division on Investment and Enterprise
DITC	Division on International Trade and Commodities, UNCTAD
DMFAS	Debt Management and Financial Analysis System Programme
Doha Development Round	Also called the Doha Development Agenda is a round of trade negotiations among WTO members launched in 2001 at the WTO's Fourth Ministerial Conference in Doha, Qatar. A fundamental objective of the Doha round is to improve the trading prospects of developing economies. (WTO, 2022a)
DSSI	Debt Service Suspension Initiative (World Bank, 2022b)
DTAs	Deep trade agreements (DTAs) between countries that cover not just trade but additional policy areas, such as international flows of investment and labor, and the protection of intellectual property rights and the environment. Their goal is integration beyond trade, or deep integration.
DTL	Division on Technology, Innovation and Trade Logistics
Duty-free	Not subject to import tariffs.
E-commerce	Sale or purchase of goods or services, conducted over computer networks by methods specifically designed for the purpose of receiving or placing of orders; it can involve business-to-business (B2B) or a business-to-consumer (B2C) transactions (OECD, 2021b).
EBA	Everything But Arms (EBA) is a European Commission's 'zero' tariff initiative for LDCs covering all products except the arms trade.
ECLAC	United Nations Economic Commission for Latin America and the Caribbean
ECOWAS	Economic Community of West African States
EEC	Eurasian Economic Commission

Emission	Emission is the discharge of pollutants into the atmosphere from stationary sources such as smokestacks, other vents, surface areas of commercial or industrial facilities and mobile sources, for example, motor vehicles, locomotives and aircraft (OECD, 2021b).
Employed in R&D in FTE	Employed in R&D in FTE is the ratio of working hours spent on R&D during a specific reference period (usually a calendar year) divided by the total number of hours conventionally worked in the same period by an individual or by a group (OECD, 2015).
Empretec	Empretec is a Spanish acronym which blends “emprendedores” (entrepreneurs) and “tecnología” (technology). The term was introduced in Argentina in 1988.
Energy intensity	Energy intensity is the ratio between gross inland energy consumption and GDP. It measures how much energy is required to generate one unit of GDP.
ESCAP	United Nations Economic and Social Commission for Asia and the Pacific
ESCWA	United Nations Economic and Social Commission for Western Asia
EU	European Union
EVI	Economic Vulnerability Index
Excess mortality	Term used in epidemiology and public health to define the number of deaths which occurred in a given crisis above and beyond what we would have expected to see under ‘normal’ conditions. The WHO define ‘excess mortality’ as “mortality above what would be expected based on the non-crisis mortality rate in the population of interest. Excess mortality is thus mortality that is attributable to the crisis conditions. It can be expressed as a rate (the difference between observed and non-crisis mortality rates), or as a total number of excess deaths.” To calculate ‘excess mortality’ in a given period, the number of people who had died over this period is compared with the number expected to have died (WHO, 2008).
Export concentration index	This index measures, for each product, the degree of export market concentration by country of origin. It tells us if a large share of commodity exports is accounted for by a small number of countries or, on the contrary, if exports are well distributed among many countries. The index ranges from 0 to 1 with higher values indicating more market concentration (UNCTAD, 2018a).
Export restrictiveness	The average level of tariff restrictions imposed on a country's exports as measured by the MA-TTRI.
Export subsidies	Export subsidies refer to the granting of support by governments to some beneficiary entity or entities to achieve export objectives. Export subsidies may involve direct payments to a firm, industry, producers of a certain agricultural product etc. to achieve some type of export performance. In addition, export subsidies may include low-cost export loans, rebates on imported raw materials and tax benefits such as duty-free imports of raw material. They can also take the form of government financed marketing. Most subsidies have existed in agriculture (United Nations, 2022a).
External debt	External debt is understood as outstanding amount of those actual current, and not contingent, liabilities that require payment(s) of principal and/or interest by the debtor at some point(s) in the future and that are owed to nonresidents by residents of an economy (IMF, 2014).
F-gases	Fluorinated GHGs ('F-gases') include mainly: hydrofluorocarbons, perfluorocarbons, sulphur hexafluoride, and nitrogen trifluoride. They typically have relatively long lifetimes in the atmosphere and high global warming potentials (European Environment Agency, 2020)
FACTI	International Financial Accountability, Transparency and Integrity for Achieving the 2030 Agenda
FAO	Food and Agriculture Organization of the United Nations
FCI	Financial conditions indicator
FDI	Foreign Direct Investment (FDI) is an investment involving a long-term relationship and reflecting a lasting interest and control by a resident entity in one economy (foreign direct investor or parent enterprise) in an enterprise resident in an economy other than that of the foreign direct investor (FDI enterprise or affiliate enterprise or foreign affiliate) (UNCTAD, 2016).

FERDI	Fondation pour les études et recherches sur le développement international (FERDI)
Food insecurity	Food insecurity is a situation where an individual cannot reliably access or afford healthy food. The FAO describes a moderately food insecure person as someone who cannot afford a healthy diet, has experienced uncertainty about the ability to access food and is likely to skip meals occasionally because of lack of resources. A severely food insecure person has at times run out of food and has during the last year gone a whole day without food. For SDG indicator 2.1.2, food insecurity is estimated based on survey data using the Food Insecurity Experience Scale developed by FAO. It consists of eight questions pertaining to whether the respondents or their families have reduced the quantity or quality of consumed food over the last 12 months because of lack of resources. (FAO, 2022; United Nations, 2022a)
Food price anomalies	Food price anomalies refer to abnormally high or low market prices for food commodities. The indicator relies on a weighted compound growth rate that accounts for both within-year and across-year price growth. The indicator directly evaluates growth in prices over a particular month over many years, taking into account seasonality in agricultural markets and inflation, allowing to answer the question of whether or not a change in price is abnormal for any particular period. The method is applied both to individual food commodities and to a basket of food items. It is measured by SDG indicator 2.c.1 (United Nations, 2022a).
FTE	Full Time Equivalent (FTE) unit of labour is the hours worked by one employee on a full-time basis. The concept is used to convert the hours worked by several part-time employees into the hours worked by an equivalent full-time employee (ideally the comparison is standardized for gender and industry sector).

G-J

G20	Group of Twenty
GATS	General Agreement on Trade in Services
GATT	The General Agreement on Tariffs and Trade (GATT) is a multilateral agreement, originally negotiated in 1947 in Geneva among 23 countries, to reduce tariffs and other trade barriers. It provides a framework for periodic multilateral negotiations on trade liberalisation (WTO, 2021c).
GATT-94	The GATT 1994 is contained in Annex 1A of the WTO Agreement. It incorporates by reference the provisions of the GATT 1947, a legally distinct international treaty applied provisionally from 1948 to 1995 (WTO, 2021c).
GCRG	On 14 March 2022, UN Secretary-General António Guterres established of a Global Crisis Response Group on Food, Energy and Finance (GCRG) to coordinate the global response to the widespread impacts of the war in Ukraine.
GDP	Gross domestic product (GDP) is an aggregate measure of production, income and expenditure of an economy. As a production measure, it represents the gross value added, i.e., the output net of intermediate consumption, achieved by all resident units engaged in production, plus any taxes less subsidies on products not included in the value of output. As an income measure, it represents the sum of primary incomes (gross wages and entrepreneurial income) distributed by resident producers, plus taxes less subsidies on production and imports. As an expenditure measure, it depicts the sum of expenditure on final consumption, gross capital formation (i.e., investment, changes in inventories, and acquisitions less disposals of valuables) and exports after deduction of imports (United Nations et al., 2009).
GERD	Gross domestic expenditure on research and development
GFSN	Global Financial Safety Net
GHG	Greenhouse gas (GHG) is an atmospheric gas that lets the solar radiation reach the Earth's surface, but absorbs infrared radiation emitted by the Earth and thereby leads to the heating of the surface of the planet. The main GHGs the concentrations of which are rising are CO ₂ , methane, nitrous oxide, F-gases, and ozone in the lower atmosphere. (WMO, 2019)
GHS	Global Health Security
GII	Gender Inequality Index (GII) measures gender inequalities in three aspects of human development: reproductive health, measured by maternal mortality ratio and adolescent birth rates; empowerment, measured by proportion of parliamentary seats occupied by females and proportion of adult females and males aged 25 years and older with at least some secondary education; and economic status, expressed as labor market participation and measured by labor force participation rate of female and male populations aged 15 years and older (UNDP, 2020).
Gini index	Gini index measures the extent to which the distribution of a variable over a population deviates from a perfectly equal distribution. A Gini index of zero represents perfect equality and 100, perfect inequality.
GLI	Grubel-Lloyd Index (GLI) is calculated on products categorized as manufacturing intermediate inputs (e.g. parts and components), computed at the industry level (as defined by the 4 digit Harmonized System classification) and then aggregated at the sectoral level using bilateral trade shares. (UNCTAD, 2021a)
Global Diplomacy Index	Global Diplomacy Index includes a full listing of all diplomatic representations abroad from 61 countries, for a total of 7320 missions (Lowy Institute, 2019).
Global Presence Index	Global Presence Index is a composite index that assesses 130 countries along three pillars: economic (investments and exports of goods, services and energy), military (troops and military equipment) and soft power (development cooperation, education, science, technology, culture, sports, tourism and migration) (Elcano Royal Institute, 2020).
Global Soft Power Index	Global Soft Power Index is a composite index calculated from extensive public opinion surveys and expert assessments, evaluating the soft power of 60 countries, mostly high- and middle-income economies, along seven pillars: business and trade, governance, international relations, cultural and heritage, media and communication, education and science, and people and values. The data collection of the 2020 index took place in autumn 2019.

GNI	Gross national income
GNP	Gross national product
Goods discharged	Merchandise destined for import, also referred to as “inbound trade volumes”. (UNCTAD, 2021b)
Goods loaded	Merchandise destined for export, also referred to as “outbound trade volumes”. (UNCTAD, 2021b)
GPT	Generalized preferential tariff
GRI	Global Reporting Initiative
GSP	Generalized System of Preferences
Gt	Gigaton
GTA	Global Trade Alert
GVC	Global value chain
GWP	Global Warming Potential (GWP) is an index measuring the radiative forcing following an emission of a unit mass of a given substance, accumulated over a chosen time horizon, relative to that of the reference substance, CO ₂ . The GWP thus represents the combined effect of the differing times these substances remain in the atmosphere and their effectiveness in causing radiative forcing (IPCC, 2014).
HDI	Human development index
HICs	High-income developing countries
HS	The Harmonized System (HS) is an international nomenclature developed by the World Customs Organization, which is arranged in six-digit codes allowing all participating countries to classify traded goods on a common basis. Beyond the six-digit level, countries are free to introduce national distinctions for tariffs and many other purposes.
IAEG-SDG	Inter-Agency and Expert Group on Sustainable Development Goals indicators
ICCS	International Classification of Crime for Statistical Purposes
ICD	International Classification of Diseases
ICT	Information and communications technology (ICT) is a diverse set of technological tools and resources used to transmit, store, create, share or exchange information. These resources include computers, the Internet, live broadcasting technologies, recorded broadcasting technologies and telephony (UNESCO Institute for Statistics, 2020).
ICT goods	ICT goods are those goods that are either intended to fulfil the function of information processing and communication by electronic means, including transmission and display, which use electronic processing to detect, measure and/or record physical phenomena, or to control a physical process (UNCTAD, 2021e).
ICT services	ICT services are defined in the alternate aggregation of the ISIC Rev.4 as a component of the ICT sector and include software publishing, telecommunications, computer programming, consultancy and related activities, data processing, hosting and related activities, web portals, and repair of computers and communication equipment (UNCTAD, 2021e).
IDA	International Development Association
IDB	Integrated Data Base
IEA	International Energy Agency
IFF	Illicit financial flow
IGI	Inclusive growth index

IIA	International Investment Agreement (IIA) are treaties with investment provisions (e.g. a free trade agreement with an investment chapter) between two or more countries include commitments regarding cross-border investments (foreign investment or FDI), typically for the purpose of protection and promotion of such investments. They include two types of agreements: (1) bilateral investment treaties and (2) treaties with investment provisions (UNCTAD, 2022).
IIP	Index of Industrial Production (IIP) is a measure of the change in the volume of goods or services produced over time. Its main purpose is to provide a measure of the short-term changes in value added over a given reference period, usually a month or a quarter. The index covers the industrial sector, including mining, manufacturing, electricity and gas, and water and waste (United Nations, 2010).
IIRC	International Integrated Reporting Council
Illegal economic activity	Illegal production comprises (1) the production of goods or services whose sale, distribution or possession is forbidden by law; (2) production activities which are usually legal but which become illegal when carried out by unauthorised producers, e.g., unlicensed medical practitioners; (3) production which does not comply with certain safety, health or other standards could be defined as illegal; and (4) the scope of illegal production in individual countries depends upon the laws in place, e.g. prostitution (United Nations et al., 2009).
ILO	International Labour Organization
IMF	International Monetary Fund
IMO	International Maritime Organization (IMO)
Import restrictiveness	The average level of tariff restrictions on imports as measured by the tariff trade restrictiveness index (TTRI).
IMTS	International Merchandise Trade Statistics
Indico	Integrated Digital Conferencing (Indico) is an open-source web-based tool for event management system developed and maintained at (CERN, 2022). In this publication, Indico.UN refers to the event registration system of the United Nations based on CERN Indico and managed by the United Nations Office at Geneva (UNOG, 2022).
INFF	Integrated National Financing Framework
Informal economy	The informal economy comprises (i) the production of goods and market services of households; and (ii) the activities of corporations (illegal, underground) that may not be covered in the regular data collection framework for compiling macroeconomic statistics. This scope of the informal economy considers not only the domestic activities, but also the cross-border transactions of resident units (IMF, 2019).
Intrapreneur	Intrapreneur refers to a manager within a company who promotes innovative product development and marketing.
Investment guarantee	An insurance, offered by governments or other institutions, to investors to protect against certain political risks in host countries, such as the risk of discrimination, expropriation, transfer restrictions or breach of contract (UNCTAD, 2015). (UNCTAD, 2015)
IPA	Investment Promotion Agency
IPCC	Intergovernmental Panel on Climate Change
ISAR	International Standards of Accounting and Reporting
ISMs	International Support Measures
ITC	International Trade Centre
ITU	International Telecommunications Union

K-M

km	kilometre
Laboratory-confirmed cases	Cases where there has been detection of SARS-CoV-2 nucleic acid in a clinical specimen.
Land-use change	Land-use change refers to a change in the use or management of land by humans, which may lead to a change in land cover (IPCC, 2014).
Latency rate	Latency rate is a network performance metric, measured as the round-trip time that it takes for a packet of data to travel from a sending node to the nearest receiving server in each country and back. It is collected by Measurement Lab from a high number of tests performed across networks every day. A higher latency indicates a worse connection quality, therefore affecting network performance and opportunities to use ICTs for business or private connections.
LDC	Least developed country
LHS	Left Hand Side
LICs	Low-income developing countries
Living wage	Living wage is defined by the Global Living Wage Coalition to mean the remuneration received for a standard workweek by a worker in a particular place sufficient to afford a decent standard of living for the worker and her or his family. Elements of a decent standard of living include food, water, housing, education, health care, transportation, clothing, and other essential needs including provision for unexpected events.
LLDC	Landlocked developing country
MA-TTRI	An index measuring the average level of tariff restrictions imposed on exports.
Main bulks	This category includes iron ore, grain, coal, bauxite/alumina and phosphate. Starting on 2006, the category was restricted to iron ore, grain and coal only, while bauxite/alumina and phosphate were moved to the category "other dry cargo". (UNCTAD, 2021b)
Medium and high-tech industry	Medium and high-tech industry is an industry in which producers of goods incur relatively high expenditure on research and development (R&D) per unit of output. The distinction between low, medium, and high-tech industries is based on R&D intensity, i.e. the ratio of R&D expenditure to an output measure, usually gross value added. For a list of the particular economic activities, considered to be medium and high-tech (UNIDO, 2021).
MFN	Most-favoured-nation (MFN) is a status or level of treatment accorded by one state to another in international trade. Under the WTO agreements, countries cannot normally discriminate between their trading partners. (WTO, 2022b) .
MFN tariffs	Most Favoured Nation (MFN) tariffs are a tariff level that a member of the General Agreement on Tariffs and Trade of the WTO charges on a good to other members, i.e. a country with a most favoured nation status (see UNCTAD, 2018b) It applies to imports from trading partners-members of the World Trade Organization (WTO), unless the country has a preferential trade agreement. It is the lowest possible tariff a country can assess on another country.
MICs	Middle-income developing countries
Minimum reporting requirement	Minimum reporting requirement refers to a core set of economic, environmental, social and governance elements of sustainability information requested from companies in their sustainability reports for the purpose of measuring SDG indicator 12.6.1. Only reports including this information are counted towards the indicator (UNCTAD, 2019).
MNC	Multinational corporation
MNE	Multinational enterprise group
Mobile money	A service in which the mobile phone is used to access financial products and services (GSMA, 2010).
MOPAN	Multilateral Organization Performance Assessment Network (MOPAN)

MPED	Ministry of Planning and Economic Development, Egypt
Municipal solid waste	Municipal solid waste per capita is an environmental indicator that measures the intensity of waste generation relative to population.
MVA	Manufacturing value added (MVA) is the net-output of all resident manufacturing activity units. It is obtained by adding up their outputs and subtracting intermediate inputs (United Nations, 2021). Manufacturing can broadly be understood as "the physical or chemical transformation of materials, substances, or components into new products" (United Nations, 2008), consisting of sector C in the International Standard Industrial Classification of all Economic Activities (ISIC) revision 4 (United Nations, 2021).

N-P

N ₂ O	Nitrous oxide
NAFTA	North American Free Trade Agreement
Nairobi Package	The Nairobi Package is a series of Ministerial Decisions adopted at the WTO's Ministerial Conference in Nairobi, 2015. The issues covered relate to agriculture, cotton and LDCs (WTO, 2021d).
Net private capital flows	Net private capital flows include net FDI, net portfolio investment and net other investment, as defined in the balance of payments.
Net-exporter of CO ₂	Net-exporter of CO ₂ is a country in which more emissions are generated by the production of goods it exports to other countries than by the production goods it imports from other countries.
NO ₂	Nitrogen dioxide (NO ₂) is a product of combustion, for instance emitted by road transport, and is generally found in the atmosphere in close association with other primary pollutants. Nitrogen dioxide is toxic, and its concentrations are also often strongly correlated with those of other toxic pollutants. As it is easier to measure, it is often used as a proxy for them. There is growing concern about rising levels of NO ₂ in fast-growing cities with large numbers of vehicles (WHO, 2006).
Non-observed economy	According to the OECD, the groups of activities most likely to be non-observed are those that are underground, illegal, informal sector, or undertaken by households for their own final use. Activities may also be missed because of deficiencies in the basic statistical data collection programme (OECD, 2012).
NSO	National statistical office
NTBs	Non-tariff Barriers
NTFC	National Trade Facilitation Committee
NTMs	Non-tariff measures (NTMs) are policy measures other than ordinary customs tariffs that can potentially have an economic effect on international trade in goods, changing quantities traded, or prices or both such as technical barriers to trade, price-control measures, etc. (UNCTAD, 2021c)
ODA	Official Development Assistance (ODA) are resource flows to countries and territories which are: (a) undertaken by the official sector; (b) with promotion of economic development and welfare as the main objective; (c) at concessional financial terms (implying a minimum grant element depending on the recipient country and the type of loan). In addition to financial flows, technical co-operation is also included (OECD, 2021a).
OECD	Organization for Economic Cooperation and Development
OFDI	Outward foreign direct investment
OFDI	Outward foreign direct investment
Official international support	For the purpose of the SDGs, official international support refers to assistance in the form of official development assistance and other official flows (United Nations, 2021).
OIE	World Organisation for Animal Health
ONS	Office for National Statistics of the United Kingdom
OOF	Other official flows (OOF) are transactions by the official sector with countries and territories which do not meet the conditions for eligibility as ODA, either because they are not primarily aimed at development or because they do not meet the minimum grant element requirement (OECD, 2021a).
P&C	Principles and Criteria

Pandemic	<p>Commonly described by the WHO as ‘the worldwide spread of a new disease’, no strict definition is provided. In 2009, they set out the basic requirements for a pandemic:</p> <ol style="list-style-type: none"> 1. New virus emerges in humans 2. Minimal or no population immunity 3. Causes serious illness; high morbidity/mortality 4. Spreads easily from person to person 5. Global outbreak of disease. <p>The US Centre for Disease Control uses a similar approach, but with a reduced set of criteria. It is very difficult to gauge whether the spread of a disease should be termed an outbreak, epidemic or pandemic. In other words, when to declare a pandemic isn’t a black and white decision (Doshi, 2011).</p>
Paris Climate Agreement	<p>The Paris Agreement is an agreement within the UNFCCC aiming to strengthen the global response to the threat of climate change by keeping a global temperature rise this century well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase even further, to 1.5°C. It aims to strengthen countries’ ability to deal with the impacts of climate change. To reach these ambitious goals, appropriate financial flows, a new technology framework and an enhanced capacity building framework are intended to support developing countries, in line with their national objectives (UNFCCC, 2016).</p>
PBL	Planbureau voor de Leefomgeving
PCI	<p>Productive Capacities Index (PCI) is a multidimensional composite index that measures productive capacities of economies by using eight categories: natural and human capital, energy, institutions, private sector, structural change, transport and information, and communication technologies, which together yield the multidimensional productive capacity index (UNCTAD, 2021d)</p>
PHEIC	<p>Public health emergency of international concern (PHEIC): Serious public health events that endanger international public health. This term is defined in as “an extraordinary event which is determined [...]:</p> <ul style="list-style-type: none"> ■ to constitute a public health risk to other States through the international spread of disease; and ■ to potentially require a coordinated international response”. <p>This definition implies a situation that: is serious, unusual or unexpected; carries implications for public health beyond the affected State’s national border; and may require immediate international action. The responsibility of determining whether an event is within this category lies with the WHO Director-General and requires the convening of a committee of experts, the IHR Emergency Committee. This committee advises the Director-General on the recommended measures to be promulgated on an emergency basis, known as temporary recommendations. Temporary recommendations include health measures to be implemented by the State Party experiencing the PHEIC, or by other States Parties, to prevent or reduce the international spread of disease and avoid unnecessary interference with international traffic (WHO, 2005).</p>
PIANC	The World Association for Waterborne Transport Infrastructure (PIANC)
PMI	<p>Purchasing Managers’ Index (PMI) is a monthly indicator of expected economic activity, collected by surveying senior executives at private sector companies. The PMI is a weighted average of five sub-indices measuring new orders, output, employment, suppliers’ delivery times and stocks of purchases. It is calculated for the total economy as well as for specific sectors, such as manufacturing, construction, services, etc. A figure of 50 indicates that no change in economic production is expected; a value above 50 means that the economy is expected to grow, a value below 50 that it is expected to contract (Refinitiv, 2021).</p>
PNG	<p>Publicly Non-Guaranteed debt (PNG) is an external debt of the private sector that is not contractually guaranteed by a public sector unit resident in the same economy (IMF, 2014). Unless otherwise indicated, only long-term debt (maturity of more than one year) is included.</p>
PPE	Personal protective equipment

PPG	Publicly guaranteed debt (PPG) is an external debt liabilities of the private sector, the servicing of which is contractually guaranteed by a public unit resident in the same economy as the debtor (IMF, 2014). Unless otherwise indicated, only long-term debt (maturity of more than one year) is included.
PPI	Private Participation in Infrastructure
PPP	Purchasing power parity
PPPs	Public Private Partnerships
PRGT	The Poverty Reduction and Growth Trust is a trust housed in the IMF which provides concessional assistance to low-income member countries.
Private flows	Private flows consist of flows at market terms financed out of private sector resources and private grants. They include FDI, private export credits, securities of multilateral agencies and bilateral portfolio investment. Private flows other than FDI are restricted to credits with a maturity of greater than one year (OECD, 2021a).
Productive capacities	UNCTAD defines productive capacities as consisting of the productive resources, entrepreneurial capabilities and production linkages that together determine a country's ability to produce goods and services that will help it grow and develop (UNCTAD, 2006)
PTAs	Preferential Trade Arrangements (PTAs) can be established under paragraphs 4 to 10 of Article XXIV of GATT (WTO, 2020a) between parties through which one party can grant more favourable trade conditions to other parties of the arrangement and not to other WTO members.
Public bond debt	Public debt in the form of sovereign international bonds traded in international capital markets (UNCTAD, 2017).
Public sector debt	All debt liabilities of resident public sector units to other residents and nonresidents (IMF, 2014).

Q-S

R&D	Research and development (R&D) comprise creative and systematic work undertaken in order to increase the stock of knowledge – including knowledge of humankind, culture and society – and to devise new applications of available knowledge (OECD, 2015) (see also United Nations et al., 2009, para 10.103).
R&D intensity	R&D intensity is defined as the ratio of gross domestic expenditure on research and development (GERD) to GDP (OECD, 2015).
R&D services	Research and experimental development (R&D) comprise creative and systematic work undertaken in order to increase the stock of knowledge – including knowledge of humankind, culture and society – and to devise new applications of available knowledge. (The OECD Frascati Manual) The definition used for international trade (MSITS 2010) includes testing and product development that may give rise to patents, as an addition.
Remittances	The term remittances can refer to three concepts, each encompassing the previous one. “Personal remittances” are defined as current and capital transfers in cash or in kind between resident households and non-resident households, plus net compensation of employees working abroad. “Total remittances” include personal remittances plus social benefits from abroad, such as benefits payable under social security or pension funds. “Total remittances and transfers to non-profit institutions serving households (NPISHs)” includes all cross-borders transfers benefiting household directly (total remittances) or indirectly (through NPISHs) (IMF, 2009b).
Revealed comparative advantage in exports	Revealed comparative advantage in exports is the proportion of a country group’s exports by service category divided by the proportion of world exports in the corresponding category.
RFA	Regional Financial Agreements
RHS	Right Hand Side
RO/RO ships	Roll-on/Roll-off ships are cargo ships which are used to transport wheeled cargo, such as cars, buses, etc.
RTA	Regional trade agreement
SAR	Special Administrative Region
SASB	Sustainability Accounting Standards Board
SDFA	Sustainable Development Finance Assessment
SDG	Sustainable Development Goal
SDR	Special Drawing Rights (SDR) (IMF, 2021)
Serological tests	Tests that do not detect the virus itself but instead detect antibodies produced in response to an infection.
Seroprevalence	Level of a pathogen in a population, as measured in blood serum.
SG	Secretary General
Shadow economy	The shadow economy includes all economic activities which are hidden from official authorities for monetary, regulatory, and institutional reasons (Medina and Schneider, 2018).
Shallow Trade Agreements	Shallow Trade Agreements are reciprocal agreements between countries that cover tariffs and other border measures.
Short-term debt	Debt liabilities having a maturity of one year or less; maturity can be defined on an original or remaining basis (IMF, 2014). Interests in arrears on long-term debt are included within short-term debt.
SIDS	Small island developing states (SIDS) were recognized as a distinct group of developing countries at the Earth Summit in Rio de Janeiro in June 1992. More information on UNCTAD official page .

SITC	Standard International Trade Classification. The commodity groupings of SITC reflect (a) the materials used in production, (b) the processing stage, (c) market practices and uses of the products, (d) the importance of the commodities in terms of world trade, and (e) technological changes.
SITS	Statistics of International Trade in Services
SME	Small- and medium-sized enterprise
SNA	System of national accounts
Soft infrastructure	Ideas and conceptual frameworks that give shape and direction to what is eventually physically manifest (<i>FutureStructure</i> , 2013).
SPS	Sanitary and phytosanitary measures (SPS): Any measure applied: (a) to protect animal or plant life or health within the territory of the trade partner from risks arising from the entry, establishment or spread of pests, diseases, disease-carrying organisms or disease-causing organisms; (b) to protect human or animal life or health within the territory of the trade partner from risks arising from additives, contaminants, toxins or diseases causing organisms in foods, beverages or feedstuffs; (c) to protect human life or health within the territory of the trade partner from risks arising from diseases carried by animals, plants or products thereof, or from the entry, establishment or spread of pests; or (d) to prevent or limit other damage within the territory of the trade partner from the entry, establishment or spread of pests (UNCTAD, 2003).
SSC	South-South Cooperation
Stocks-to-use ratio	Stocks-to-use ratio for a given commodity in an economy is the ratio of market-year ending stock over domestic consumption (Bobenrieth et al., 2013). For the world it is as world stocks divided by world use.
Structural transformation	Structural transformation or change can be broadly defined as the reallocation of economic activity across three broad sectors, agriculture, manufacturing and services, which accompanies the process of economic growth (Kuznets, 1966). It usually refers to the transfer or shift of production factors — especially labour, capital and land — away from activities and sectors with low productivity to those with higher productivity, which are typically different in location, organization and technology (UNCTAD, 2006; Rodrik, 2013).
Sustainability report	Sustainability report is a document published by an entity describing the economic, social, environmental impacts caused by its activities; it is composed of a certain number of disclosures along the main pillars of sustainable development (GRI, 2019).

T-V

Tanker trade	This category includes trade in crude oil, refined petroleum products, gas and chemicals. (UNCTAD, 2021b)
Tariff line	A single item in a country's tariff schedule (United Nations, 2021).
Tariff peak	A single tariff or a small group of tariffs that is/are particularly high.
Tariffs	Tariffs "are customs duties on merchandise imports, levied either on an ad valorem basis (percentage of value) or on a specific basis (e.g. \$7 per 100 kg). Tariffs can be used to create a price advantage for similar locally produced goods and for raising government revenues. Trade remedy measures and taxes are not considered to be tariffs." (United Nations, 2021)
TBT	Technical barriers to trade (TBT) are measures referring to technical regulations, and procedures for assessment of conformity with technical regulations and standards.
TDB	UNCTAD Trade and Development Board
TEU	Twenty-foot Equivalent Unit
TFA	The WTO Agreement on Trade Facilitation came into force on 22 February 2017 following its ratification by two-thirds of the WTO membership. The TFA contains provisions for expediting the movement, release and clearance of goods, including goods in transit. It also sets out measures for effective cooperation between customs and other appropriate authorities on trade facilitation and customs compliance issues. It further contains provisions for technical assistance and capacity building in this area.
Tier 1	Tier 1 means that a SDG indicator has been classified by the IAEG-SDG as being conceptually clear, has an internationally established methodology and standards are available, and data are regularly produced by countries for at least 50 per cent of countries and of the population in every region where the indicator is relevant.
Tier II indicator	SDG indicator that is conceptually clear, has an internationally established methodology and standards are available, but data are not regularly produced by countries (United Nations Statistics Division, 2020).
Tier III indicator	SDG indicator for which there is no internationally established methodology or standards yet available, but methodology or standards are being (or will be) developed or tested (United Nations Statistics Division, 2020).
TORs	Terms Of References
Total resource flows	In the context of the IAEG-SDG, these flows quantify the overall expenditures that donors provide to developing countries, including official and private flows, both concessional and non-concessional. Specifically, they include ODA, OOFs and private flows (United Nations, 2021).
Tourism direct GDP	Tourism direct GDP measures direct contributions of tourism to the national economy, since tourism does not exist as a separate industry in the standard industrial classification. Instead, it is embedded in various other industries. (no SDG metadata)
Tourism sector	Tourism sector is the cluster of production units in different industries that provide consumption goods and services demanded by visitors. Such industries are called tourism industries because visitor acquisition represents such a significant share of their supply that in the absence of visitors, the production of these would cease to exist in meaningful quantities (UNWTO and ILO, 2014).
Trade in services	In the international trade in services context, services are understood as the result of a production activity that changes the conditions of the consuming units or facilitates the exchange of products or financial assets (IMF, 2009a). Following the balance-of-payments classification, trade in services refers to manufacturing services, repair services, transport, travel, construction, telecommunications, computer services, financial services, insurance, intellectual-property related and other business services, as well as personal and cultural services, and government services.
TRAINS	Trade Analysis and Information System

TRIPS	Trade Related Aspects of Intellectual Property Rights (TRIPS)
TTRI	Tariff trade restrictiveness index (TTRI) is an index measuring the average level of tariff restrictions imposed on imports.
UN Women	UN Women is the United Nations entity dedicated to gender equality and the empowerment of women (UN Women).
Underground economy	Underground production consists of activities that are productive in an economic sense and quite legal (provided certain standards or regulations are complied with), but which are deliberately concealed from public authorities for the following reasons: (i) to avoid the payment of income, value added or other taxes; (ii) to avoid payment of social security contributions; (iii) to avoid meeting certain legal standards such as minimum wages, maximum hours, safety or health standards, etc; or (iv) to avoid complying with certain administrative procedures, such as completing statistical questionnaires or other administrative forms (United Nations et al., 2009).
Undernourishment	For the purposes of SDG Indicator 2.1.1, [glossray-ignore]undernourishment[glossray-ignore] is defined as a dietary energy intake that is below what is needed to retain a minimum acceptable BMI at low physical activity. The prevalence of undernourishment in a population is estimated based on mean and variation of consumption in calories in that population (United Nations, 2022a).
UNDESA	United Nations Department of Economic and Social Affairs
UNECA	United Nations Economic Commission for Africa
Unemployment	The unemployed comprise all persons of working age who were: (a) without work during the reference period, i.e. were not in paid employment or self-employment; (b) currently available for work, i.e. were available for paid employment or self-employment during the reference period; and (c) seeking work, i.e. had taken specific steps in a specified recent period to seek paid employment or self-employment. Future starters, that is, persons who did not look for work but have a future labour market stake (made arrangements for a future job start) are also counted as unemployed, as well as participants in skills training or retraining schemes within employment promotion programmes, and persons “not in employment” who carried out activities to migrate abroad in order to work for pay or profit but who were still waiting for the opportunity to leave (ILO, 2020).
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNESCO UIS	United Nations Educational, Scientific and Cultural Organization Institute of Statistics
UNFCCC	United Nations Framework Convention on Climate Change
UNFPA	United Nations Population Fund
UNGC	United Nations Global Compact (UNGC) is a voluntary initiative based on company-level commitments to adopt sustainability and socially responsible principles and to take steps to support UN goals (United Nations Global Compact, 2020).
UNODC	United Nations Office on Drugs and Crime
UNSD	United Nations Statistics Division
VAR	Vector autoregression

W-Z

Weighted mean applied tariff	The average of effectively applied rates weighted by the product import shares corresponding to each partner country (World Bank, 2022a).
Weighted tariff-average	Weighted average of tariffs applied to imports of goods in HS chapter 01-97. The tariffs are weighted by the value of the imported goods to which they are applied. It is expressed as percentage of the value of goods imported. The average level of customs tariff rates applied worldwide can be used as an indicator of the degree of success achieved by multilateral negotiations and regional trade agreements. See metadata for indicator 17.10.1 (United Nations, 2021).
WFP	World Food Programme
WHO	World Health Organization
WMO	World Meteorological Organization
WRI	World Resources Institute
WTO	World Trade Organization
WTO TFA	World Trade Organization Agreement on Trade Facilitation (WTO TFA)

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THEME 1

Multilateralism for trade and development

“In a free trade, an effectual combination cannot be established but by the unanimous consent of every single trader, and it cannot last longer than every single trader continues of the same mind. The majority of a corporation can enact a bye-law, with proper penalties, which will limit the competition more effectually and more durably than any voluntary combination whatever.”

– Adam Smith, The Wealth Of Nations

Multilateralism for trade and development

The COVID-19 pandemic caused a significant decline in global trade of goods and services and gave a rise to new protectionist measures around the globe, aimed at maximizing the supplies of critical goods on domestic markets. Many of these temporary trade measures in relation to the COVID-19 pandemic have been terminated; and the economies entered the recovery phase. However, the fragile rebound of world trade is hampered by the devastating war in Ukraine. In addition to the humanitarian crisis, it might have destructive repercussions for the poorer and most vulnerable countries. In this time of crisis, having an open, non-discriminatory and inclusive world trading system is ever more important to support development towards achieving the 17 SDGs of the 2030 Agenda for Sustainable Development.

This theme on multilateralism for trade and development of SDG Pulse:

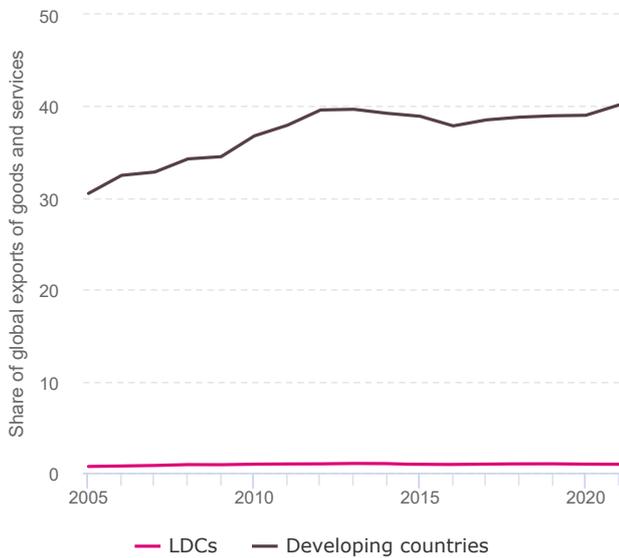
1. Provides analysis and statistics on [international trade in developing economies](#), including goods and services trade.
2. Assesses progress and studies new developments in the [special and differential treatment for developing countries](#).
3. Analyses trade restrictions and distortions in world agricultural markets and links between [trade, food security and sustainable agriculture](#).
4. Examines the role of [Aid for Trade](#) in support of developing countries.

In a free trade, an effectual combination cannot be established but by the unanimous consent of every single trader, and it cannot last longer than every single trader continues of the same mind. The majority of a corporation can enact a bye-law, with proper penalties, which will limit the competition more effectually and more durably than any voluntary combination whatever.

— Adam Smith, The Wealth Of Nations

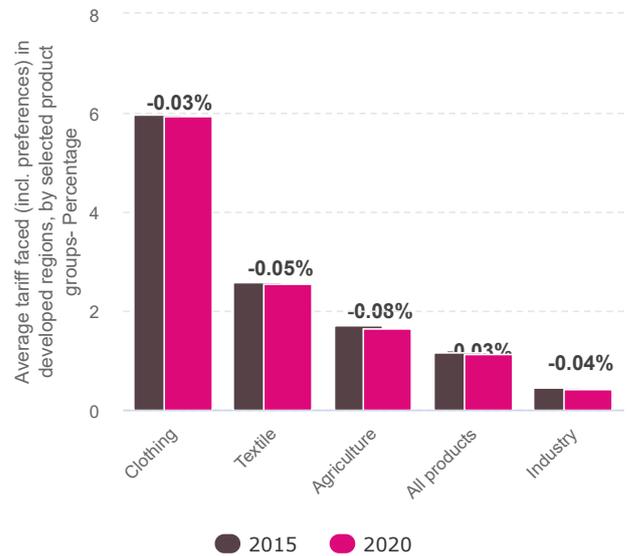
Developing countries' share of global exports of goods and services has increased over the last two decades to 40 per cent in 2021, whilst LDCs' share has hovered around 1 per cent since 2011.

UNCTAD, ITC & WTO SDG indicator 17.11.1



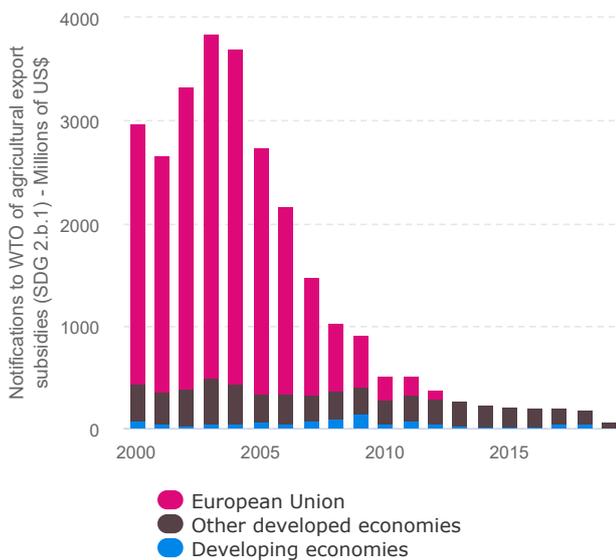
Import tariffs applied by developed countries to products from LDCs registered a slight decline since 2015 and amounted to about 1.1 per cent in 2020.

UNCTAD, ITC & WTO SDG indicator 17.12.1



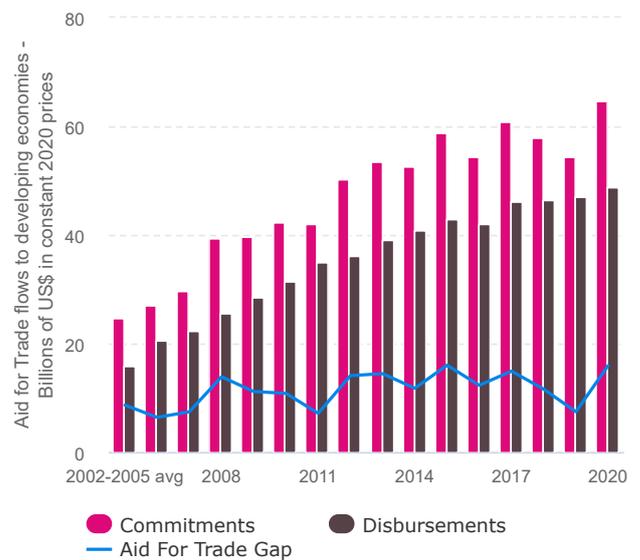
In 2019, agricultural export subsidies dropped to a total value of US\$58 million, its lowest level ever.

SDG indicator 2.b.1



In 2020, donors increased Aid for Trade disbursements to developing countries by 3.5 per cent, as compared to 2019, supporting an inclusive global recovery, but the gap between commitments and disbursements widened.

SDG indicator 8.a.1



International trade in developing economies

SDG indicators

Target 17.11: Significantly increase the exports of developing countries, in particular with a view to doubling the least developed countries' share of global exports by 2020.

Indicator 17.11.1: Developing countries' and least developed countries' share of global exports (Tier I)

The target of doubling the share of LDCs' exports in global exports by 2020 has not been achieved



Trade is recognized as a key factor for poverty reduction and economic growth in the 2030 Agenda (Tipping and Wolfe, 2016). SDG target 17.11 aims to significantly increase the exports of developing countries, with a particular view of doubling the LDCs' share in global exports by 2020. Even before the COVID-19 pandemic, the prospects of the target being achieved were bleak. The share of merchandise exports for LDCs since 2011 had been hovering around just one per cent and amounted to only 1 per cent in 2021. In comparison, the indicator averaged 42 per cent in the same period for developing economies as a group.

In 2020, amid the economic fallout from the COVID-19 pandemic, the LDCs as a group registered their worst economic growth since the early 1980s. LDCs' merchandise exports are estimated to have dropped by 6.1 per cent in 2020, and their exports of services by more than 35 per cent. The decline of LDC's exports was largely due to the terms-of-trade effect. In volume terms, LDCs' merchandise exports were down 4 per cent, compared to 5.5 per cent for world trade.

Although several LDCs have broadened their export base, as many as 38 of them remain dependent on exports of commodities, like copper, cotton, and oil. Exports of commodities represent more than 70 per cent of merchandise exports of LDCs. The sharp decrease in commodity prices during the pandemic, such as oil and minerals, hit African commodity-dependent exporters particularly hard¹. The value of African merchandise exports declined by 17.5 per cent in 2020, more than the drop in world exports (-7.2 per cent).

The large dependence on trade as a driver of their economic growth, small domestic markets and low levels of diversification increase the vulnerability of these countries to external shocks (see [Fostering productive capacities to graduate with momentum](#)). The COVID-19 health crisis has temporarily slowed down the contribution of trade to the achievement of SDGs, such as poverty alleviation, food security, and decent jobs. Although developing countries and LDCs experienced a rebound in trade in 2021, with growth of exports amounting to 30 per cent and 25 per cent, respectively, they continue to face additional challenges due to the 2022 war in Ukraine.

Greater challenges to world trade are posed by the war in Ukraine

In 2021, world merchandise exports rose by 26.3 per cent compared with 2020 and reached a record high of US\$22.3 trillion, exceeding their pre-COVID-19 level by 17 per cent. Meanwhile, trade in services rose by US\$860 billion to reach US\$6 trillion, which was still below pre-pandemic levels.

However, this upward trend should be met with increasing uncertainty due to the conflict in Ukraine and the trade and financial sanctions imposed on the Russian Federation, as well as the lockdowns related to COVID-19 in China in the first half of 2022. The war in Ukraine has led to "a huge cost in human suffering and is sending shocks through the world economy," UNCTAD Secretary-General, Rebeca Grynspan, said in a statement on the situation in Ukraine (UNCTAD, 2022c). The war has caused immediate disruptions to global trade and is likely to additionally impact its structure in the longer term. In the short-term, price effects and shortages are spilling over into economies more dependent on Ukrainian and Russian exports, especially food products, fuels, and fertilizers. (UNCTAD, 2022d)

1.7 billion people in 107 economies are severely exposed to rising food and energy prices and tightening financial conditions



Lower-income countries, in particular, are most exposed to price fluctuations and supply shocks in agri-food markets. On average, more than 5 per cent of the import basket of the poorest countries consist of products that are likely to face price hikes resulting from the ongoing war in Ukraine. The share is below 1 per cent for richer countries. In 2018–2020, LDCs imported US\$1.4 billion of Russian wheat (29 per cent of their total) and another \$0.5 billion from Ukraine (10 per cent). (based on UNCTADstat, see UNCTAD, 2022a)

Russia also accounts for a quarter of global natural gas exports, one fifth of the global coal market and supplies more than 10 per cent of global crude oil. The hikes in fuel prices and disruption of supplies will negatively impact net oil importers, in particular, heavily indebted countries poor countries, and a majority of CIS countries. According to the IMF estimates, an oil price hike of 5\$ per barrel is expected to deteriorate trade balances of these countries by more than 1 per cent of GDP (IMF, 2000).

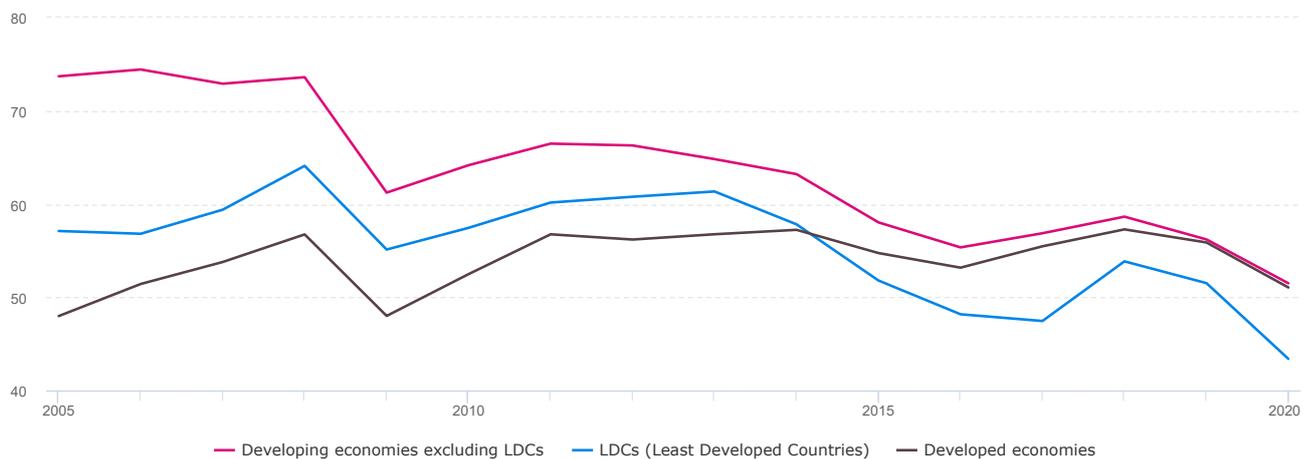
Tourism-dependent developing countries are likely to be greatly impacted by the war in Ukraine. The most exposed are SIDS, in particular, those with a high share of Russian visitors, such as Maldives or Seychelles. The war is therefore expected to compound the devastating effects of the COVID-19 pandemic on the tourism sectors of these countries (AOSIS, 2022) with all the higher impact on development as tourism has been one of their main and rare engines of growth over the last decades.

Overall, the United Nations Task Team for the Global Crisis Response Group (GCRG) estimated that 1.7 billion people in 107 economies are severely exposed to at least one of the crisis' three global channels of transmission – rising food prices, rising energy prices, and tightening financial conditions. Of these 1.7 billion people, 553 million are already poor, and 215 million are already undernourished (United Nations, 2022).

Trade openness of developing economies and LDCs

As shown in Figure 1, LDCs' trade openness, expressed as the ratio of the sum of exports and imports of goods and services to GDP, has been consistently lower than in other developing economies. The drastic decline in world trade had a disproportional impact on LDCs which already entered the pandemic period as minor players in world trade. The LDCs' trade openness dropped by almost 16 per cent in 2020, compared to the previous year, from 52 per cent to around 43 per cent. This is twice more than in other developing economies, excluding LDCs, which recorded a decline of more than 8 per cent for the same period (see Figure 1).

 **Figure 1. Trade openness index**
(Percentage)



Source: UNCTADstat (UNCTAD, 2022a).

Notes: This index measures the relative importance of international trade in goods and services (sum of exports and imports) relative to the domestic economic output of an economy. Economy groups refers to the April 2022 classification as specified in (UNCTAD, 2022b).

Current trends of trade in developing economies

Between 2017 and 2019, trade in developing economies was vigorously recovering from the trade downturn in 2014-2016. This was offset by the economic impact of the pandemic in 2020, when trade in goods and services decreased by 7 per cent and 25 per cent, respectively. In 2021, trade rebounded sharply and reached US\$11.2 trillion for developing economies. Trade in goods exceeded its pre-COVID-19 level and reached US\$9.6 trillion. Trade in services, however, still falls short of pre-pandemic levels, despite estimated 16.7 per cent growth in 2021 (based on UNCTADstat, see UNCTAD, 2022a).

 In 2021, trade in goods and services of developing economies reached US\$11.2 trillion

Figure 2. Trends of goods and services trade in developing economies
(Millions of United States dollars)



Source: UNCTADstat (UNCTAD, 2022a).

Developing countries' performance with respect to SDG 17.11.1

The evaluation of progress towards SDG target 17.11, aiming to significantly increase the exports of developing countries, and to double the LDCs' share of global exports by 2020, is difficult to achieve. One of the measurement challenges relates to the choice of the baseline year. While the agreed default year is 2015 for key SDGs indicators (United Nations, 2019), longer time-series' are often required to get a more comprehensive overview of the underlying dynamics and issues relating to achievement of particular SDGs, such as 17.11.1.

Performance as to SDG target 17.11 does vary considerably with the selected baseline year, used to calculate the change over time, at both country and group levels. A baseline year is a reference point in time against which progress in the future is measured. For example, if 2015 is considered as a baseline, the target to increase LDCs' share in global trade, in 2021, translates into a 0.17 percentage point reduction. If 2010 were used, we would see a 0.04 percentage point decrease (see table 1).

Table 1. Evolution of LDCs' and developing economies' share of global trade

(Different baselines scenario, in percentage)

Group of economies	Measure	Alternative baselines Share of global trade (percentage)				2020 Change from baseline (percentage points)		
		2010	2015	2020	2021	2010-2021	2015-2021	2020-2021
LDCs	Service exports	0.60	0.74	0.74	0.61	0.56	-0.04	-0.05
	Goods exports	1.03	0.97	1.04	1.03	0.00	0.06	-0.01
	Total exports	0.94	0.91	0.94	0.93	-0.01	0.01	-0.01
Developing economies	Service exports	25.62	27.80	25.59	26.40	0.78	-1.40	0.81
	Goods exports	39.73	42.34	43.03	43.93	4.19	1.59	0.89
	Total exports	36.76	38.91	39.01	40.14	3.39	1.24	1.13

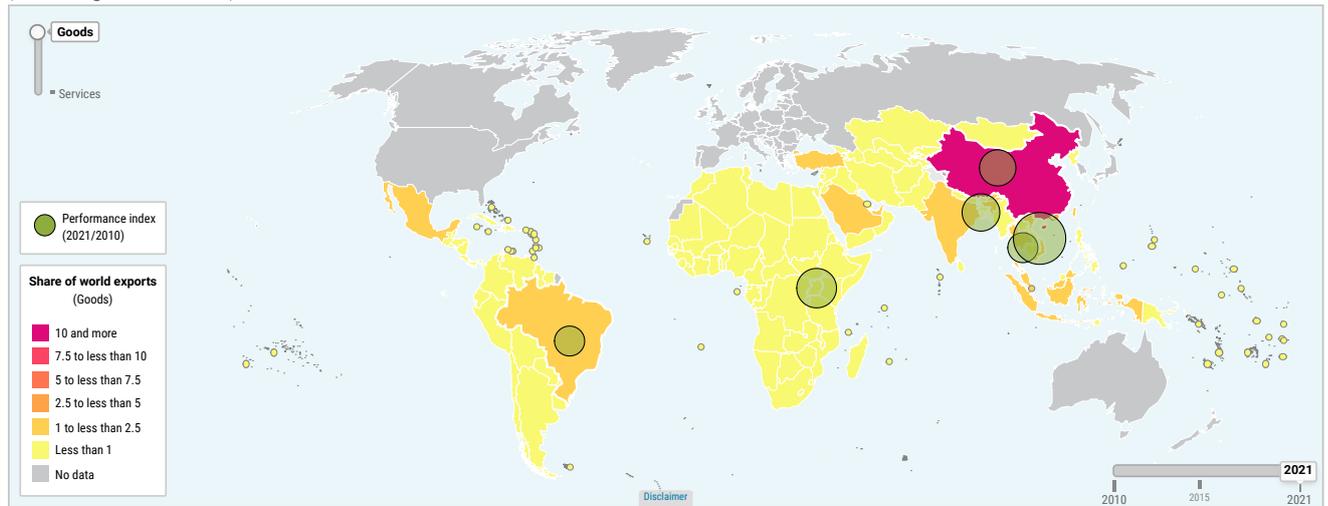
Source: UNCTADstat (UNCTAD, 2022a).

Another measurement hurdle to consider is the composition of LDCs which varies over the years. LDCs graduation is expected to accelerate and several LDCs are scheduled to exit least developed status in the coming years. Vanuatu has already done so and several others (Bhutan, Angola, Sao Tomé and Príncipe, Solomon Islands, etc.) follow suit (UN DESA, 2021). MacFeely (2020) explored the implications of the changing group composition for assessing progress towards the SDG target. Should rates of change be calculated using the original composition of LDCs or developing economies in 2010 or 2015, the selected base year, or applied to the group as it is composed in the latest year for which data are available? Some soon-to-graduate countries have only a marginal contribution to the group performance, and whether they are included or not will have minor impact. However, the weight of some other countries, like Bangladesh, is considerable (see Map 1) and will significantly weight on the performance of the group as a whole.



Map 1. Developing countries' share of global exports of goods and services

(Percentage of total trade)



Source: UNCTADstat (UNCTAD, 2022a).

Several LDCs sharply expanded their share of global trade from 2010 to 2021. Two LDCs, Tuvalu and Rwanda, substantially increased their shares of global exports of goods. Tuvalu doubled its share from 0.01 per cent in 2010 to 0.02 per cent in 2021, and Rwanda increased its share by 4.7 times, from an exceedingly small base of 0.001 per cent in 2010 to 0.006 per cent in 2021. Viet Nam's share of world exports of goods grew from 0.47 per cent in 2010 to 1.51 per cent in 2021. Bangladesh doubled its share of total services exports from 0.06 in 2010 to 0.12 in 2021. Its share of total exports of goods also increased in the same period, from 0.09 to 0.20.

**By 2021,
Tuvalu and Rwanda
sharply increased
their shares of world
goods exports,
and
Bangladesh doubled
its share of world
services exports from 2010**



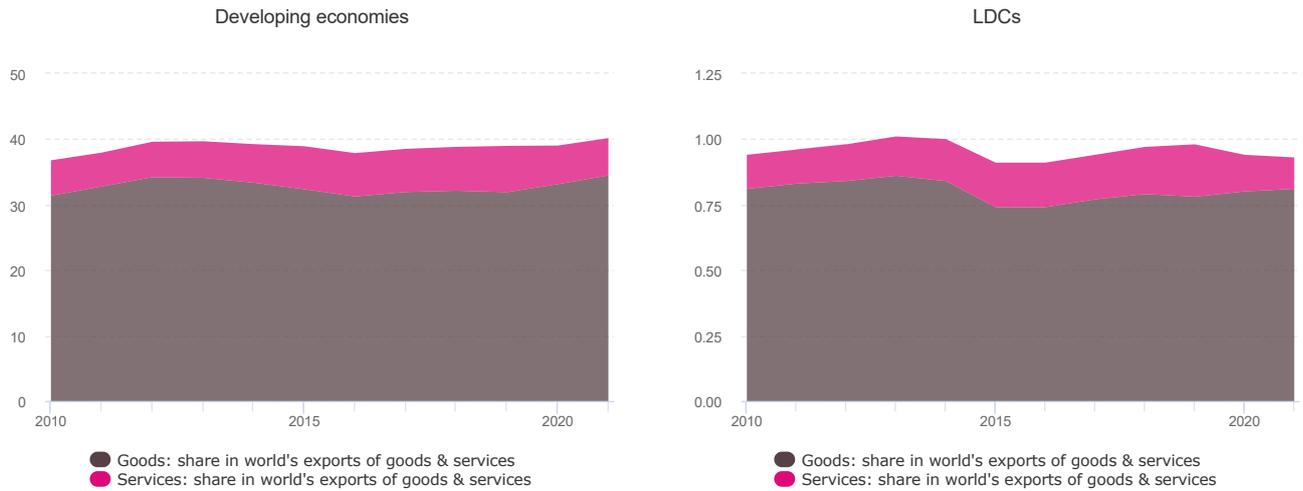
Developing economies' and LDCs' participation in world trade

Over the last two decades, developing economies have recorded a notable increase in their share of world trade in goods and services. Developing countries' share in world exports has risen from 36.8 per cent in 2010 to 39.7 per cent in 2013, but has stagnated ever since, increasing only slightly to 40.1 per cent in 2021. LDCs' share in world exports of goods and services has hovered around 1 per cent since 2011 and stood at 0.93 per cent in 2021. The outbreak of the COVID-19 crisis caused LDCs' share of world exports to fall to 0.94 per cent in 2020, compared with 0.98 per cent in 2019, a drop of 4 per cent. Developing countries' share of global exports of goods and services registered an increase of 0.1 percentage points in 2020 compared to the previous year. In 2020, trade in services for both developing countries and LDCs declined by more than trade in goods. As a result, these countries' shares of global trade in services declined by 16.5 per cent and 30 per cent, respectively (see Figure 3).



Figure 3. Developing economies' and LDCs' share in global exports (SDG 17.11.1) of goods and services, 2010-2021

(Percentage)



Source: UNCTADstat (UNCTAD, 2022a).

Note: Statistics on trade in services are preliminary, annual estimates based on the most recent quarterly figures (BPM6). Statistics on trade in goods are estimates based on Comtrade, international and national sources.

China, EU27 and the United States of America are the top trading partners of LDCs

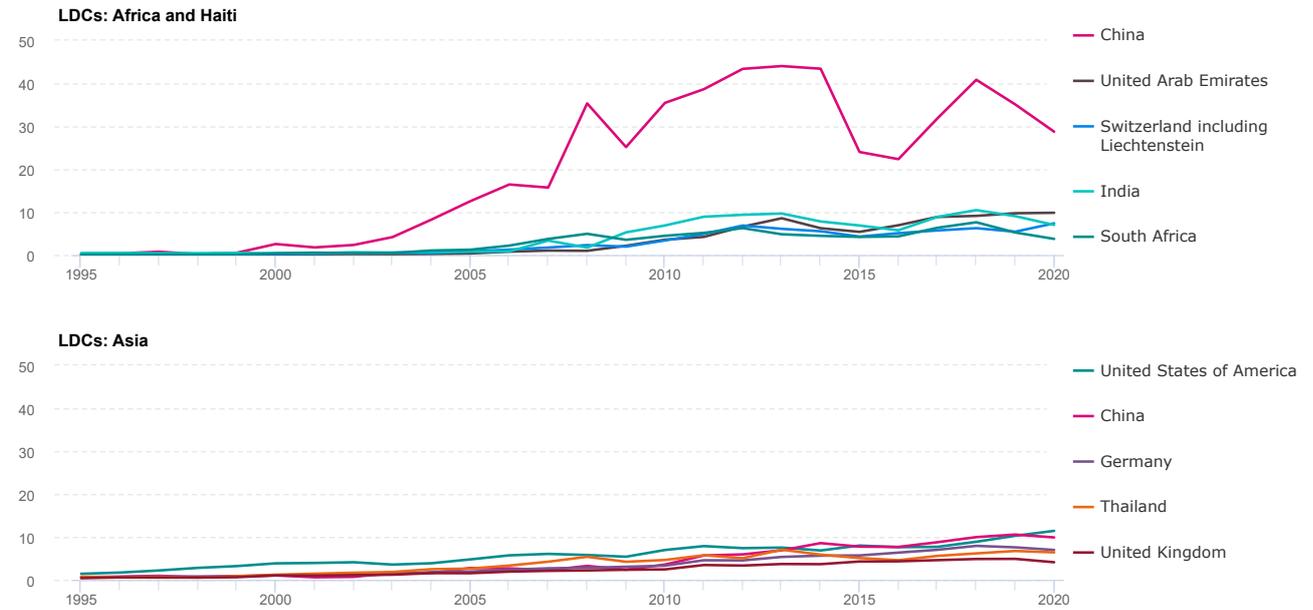
The United States and China are the main exports' markets for developing economies



In 2020, developing economies shipped most of their exports to the United States of America (US\$1.4 trillion), China (US\$1.1 trillion) and other Asian economies. The value of merchandise exports of developing countries to the EU27 in 2020 amounted to almost US\$1 trillion. For LDCs, the top export destinations in 2020 were the EU27 (US\$34.1 billion), China (US\$38.9 billion) and the United States of America (US\$14.8 billion).

In 2020, LDCs in Africa and Haiti delivered goods worth US\$28.8 billion to China, more than to any other economy in the world (see Figure 4). Asian LDC exports were oriented towards China and the United States of America, amounting to US\$11.4 billion and US\$9.9 billion, respectively. The exports of LDCs in Asia to the EU27 amounted to US\$22.9 billion in 2020. Intra-regional trade is also high for LDCs from East Asia and the Pacific, and low but rising for LDCs from most other regions (based on UNCTADstat, see UNCTAD, 2022a).

Figure 4. Top 5 partners for LDCs in merchandise exports
(Ranked by 2020, US\$ billions)



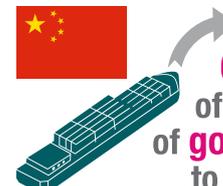
Source: UNCTADstat (UNCTAD, 2022a).

Notes: The country groupings are based on the geographic regions defined under the Standard Country or Area Codes for Statistical Use (known as M49) of the United Nations Statistics Division (UNSD, 2020).

China's rising importance in global trade

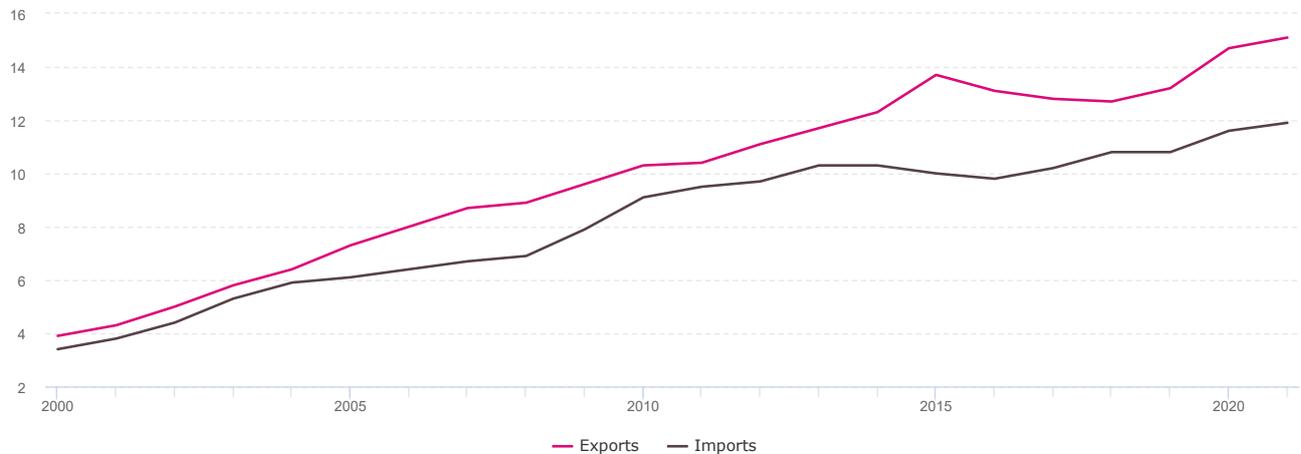
In the last twenty years, China has become a major player in global trade. Its share in world exports of goods increased from 4 per cent in 2000 to 15 in 2021 (see Figure 5). To compare, the share of the United States of America in global exports of goods amounted to 8 per cent, Germany to 7 per cent, and Japan to 3 per cent in 2021. Between 2000 and 2021, China's share of total imports of goods expanded rapidly from 3.4 per cent to almost 12 per cent.

China's exports not only proved to be resilient to trade tensions with the United States of America, but recovered faster than those of most other countries from the COVID-19 pandemic, already surpassing pre-pandemic levels by mid-2020. The successful mitigation strategies employed by China in the beginning of the pandemic allowed it to reopen its supply chains ahead of other countries and orient manufacturing capacity towards the products for which global demand was rising. In 2021, China's share in global exports of goods rose by two percentage points, and in global imports of goods by more than one percentage point, compared with 2019.



In 2020
China's share
of world exports
of goods amounted
to 15% and 34%
in developing economies

Figure 5. China's share in world trade
(Percentage)

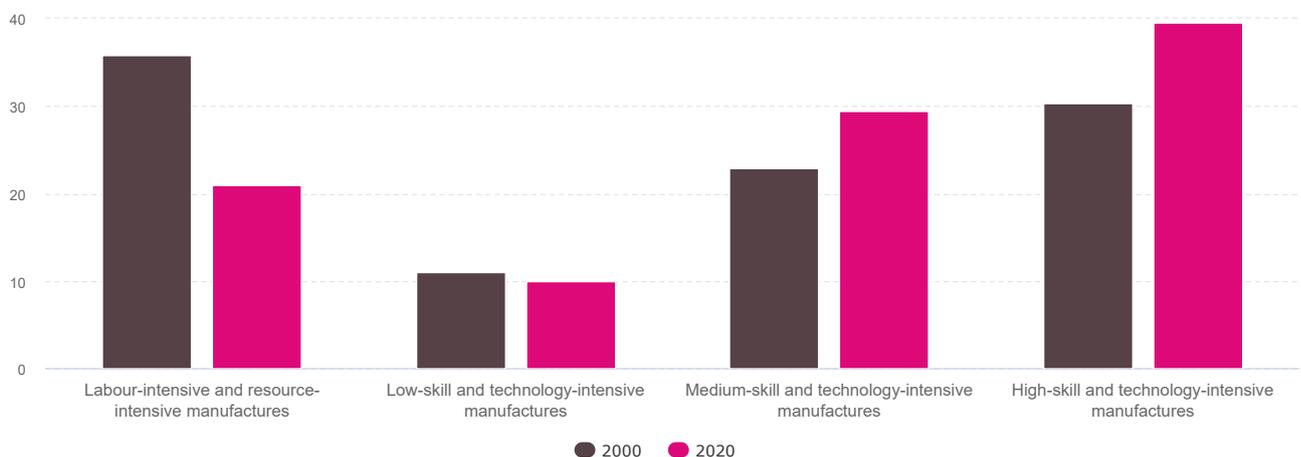


Source: UNCTADstat (UNCTAD, 2022a).

In 2020, China was the largest export destination for 38 countries, and the largest partner for imports for 51 countries, including the United States of America and Japan, for which the share of China in total exports/imports amounted to 20 per cent or more. Its share of total exports and imports of goods of developing countries rose to 34 per cent and 29 per cent, respectively.

Over the last two decades, China has become an important source of supply for many products, from precision instruments and industrial machinery to computers and smartphones. In 2020, high-skill and technology intensive manufactures constituted about 40 per cent of Chinese exports of manufactured goods, or 7.8 per cent of the world exports of this group of products (see Figure 6).

Figure 6. China's share in exports of manufactured goods, by degree of manufacturing
(Percentage)



Source: UNCTADstat (UNCTAD, 2022a).

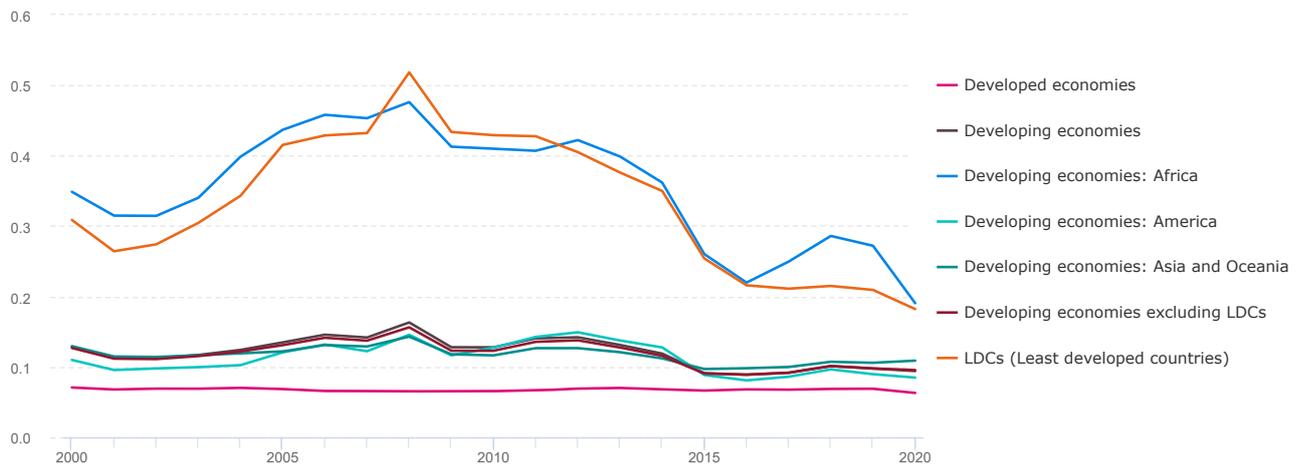
Enhancing trade diversification in developing countries and LDCs

LDCs' merchandise exports are mainly focused on primary products and simple manufactures, especially textiles and clothing. The concentration, as measured by the Herfindahl-Hirschman Index², increased from 2001 to 2008, and since then, has gradually declined, reaching 0.18 per cent in 2020, compared to 0.52 per cent in 2008, (see Figure 7). Guinea-Bissau, Chad, Angola and South Sudan are the four African LDCs with the highest concentration index, approaching or even exceeding an index value of 0.9 in 2020, which indicates that their trade is concentrated in a very few products. Guinea-Bissau is highly dependent on trade in fruits and nuts, Chad, South Sudan and Angola on petroleum.³ Among Asian LDCs, Yemen, which top exports product is crude petroleum, had the highest export concentration index in 2020 (0.70) (based on UNCTADstat, see UNCTAD, 2022a). Diversifying strategic economic sectors of LDCs, such as food and health sectors, and empowering both production and services, such as banking,

retailing, and public services with high-level of digitization, represent possibilities for these countries to build more resilient and sustainable economies (World Bank, 2020).

Developing economies' exports concentration index in 2020 stood at 0.09. Exports are most concentrated in Africa and Oceania. The export mix is more varied in the developing economies of Asia, where Turkey, Thailand and India are the most diversified countries in the region. In developing America, Mexico, Panama and Guatemala recorded the lowest concentration index in 2020.

Figure 7. Product concentration index of exports in LDCs and developing economies
(Percentage)



Source: UNCTADstat (UNCTAD, 2022a).

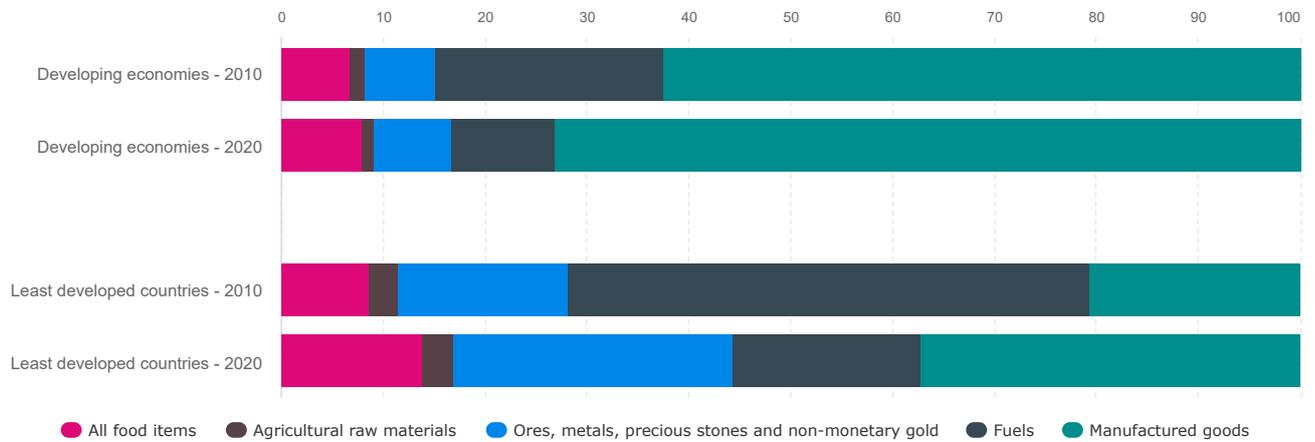
Notes: The country groupings are based on the geographic regions defined under the Standard Country or Area Codes for Statistical Use (known as M49) of the United Nations Statistics Division (UNSD, 2020). An index value closer to one indicates that a country's exports or imports are highly concentrated in a few products. On the contrary, values closer to zero reflect a more homogeneous distribution of exports or imports among a series of products.

In 2020, manufactured goods accounted for about 73 per cent of total merchandise exports from developing economies. The share of fuels has reduced from about 22 per cent in 2010 to 10 per cent in 2020. Food accounted for 8 per cent of total exports of developing economies, followed by ores, metals, precious stones and non-monetary gold (around 8 per cent).

The structure of exports by product group has changed significantly in LDCs and developing economies over the last ten years (see Figure 8). In 2020, manufactured goods accounted for more than 37 per cent of total exports in LDCs – a notable increase from approximately 19 per cent in 2010. The biggest exporters of manufactured goods in 2020 were Asian LDCs. Bangladesh, Cambodia and Nepal received 70 per cent or more of their export revenues from exporting manufactured goods in 2020. Ores, metals, precious stones and non-monetary gold formed the second largest product group in 2020 (about 27 per cent), while in 2010 they accounted for around 17 per cent in LDCs' exports. The share of fuels dropped in 2020 to approximately 19, compared to 51 per cent in 2010. The proportion of food items in exports increased from around 9 to 14 per cent during the same period.



Figure 8. Export structure by product group in LDCs and developing countries
(Percentage)



Source: UNCTADstat (UNCTAD, 2022a).

Notes: For the composition of product groups please refer to UNCTAD (2022b).

The country groupings are based on the geographic regions defined under the Standard Country or Area Codes for Statistical Use (known as M49) of the United Nations Statistics Division (UNSD, 2020).

COVID-19 crisis seriously impacted trade in services

Before services were severely affected by the COVID-19 pandemic, growing services exports was a general trend across all economic regions, but mainly benefiting developed economies. In 2021, this group still accounted for 74 per cent of all traded services. With US\$1.59 trillion worth of services exported in 2021, developing economies accounted for only 26 per cent of the global services market. 2021 recorded an increase of 17 per cent in exports of services compared to 2020 after contracting by 18 per cent in 2020 (based on UNCTADstat, see UNCTAD, 2022a).

Among broad service categories, travel, the most prominent sector in developing economies' exports in 2019, was most severely affected in 2020. Exports of travel services dropped from US\$583 billion in 2019 to US\$186 billion in 2020, a third of the previous value. The recovery of travel services in 2021 was relatively weak: developing countries exported an estimated US\$200 billion in the travel sector. Trade in transport declined to a lesser extent and amounted to some US\$300 billion in 2020 for developing economies. In 2021, demand for international transport was high after the pandemic disruptions. Prices went up and developing countries recorded a substantial transport exports growth of 45 per cent, largely attributable to Asian exporters. Grouping together other services – including telecommunications, computer, insurance, financial, IP-related, and other business services, etc. – their exports were slightly higher in 2020 than in 2019. Rising thereafter by 15 per cent, they reached an estimated US\$936 billion in 2021. This represented almost 60 per cent of total services supplied internationally by developing economies. Many of these services can be traded remotely and some – like telecommunications and computer services – were highly demanded during lockdowns and social distancing.

LDCs continue to lag behind other groups of countries in services exports. Their share amounted to approximately 0.6 per cent of total services exports in 2021, a drop of around 28 per cent compared to 2019. Exports of personal, cultural and recreational services have been the most dynamic sector in LDCs' services exports. They grew, on average, by over 11 per cent annually between 2010 and 2020. In the same period, notable annual average increases were recorded for charges for the use of intellectual property, transport, and travel services (11 per cent, 8 per cent, and 2 per cent, respectively). In the same period construction services and telecommunication services saw a downturn and registered a drop of about 3 per cent and 1 per cent, respectively (see Figure 9).

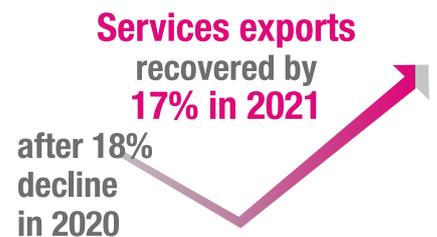
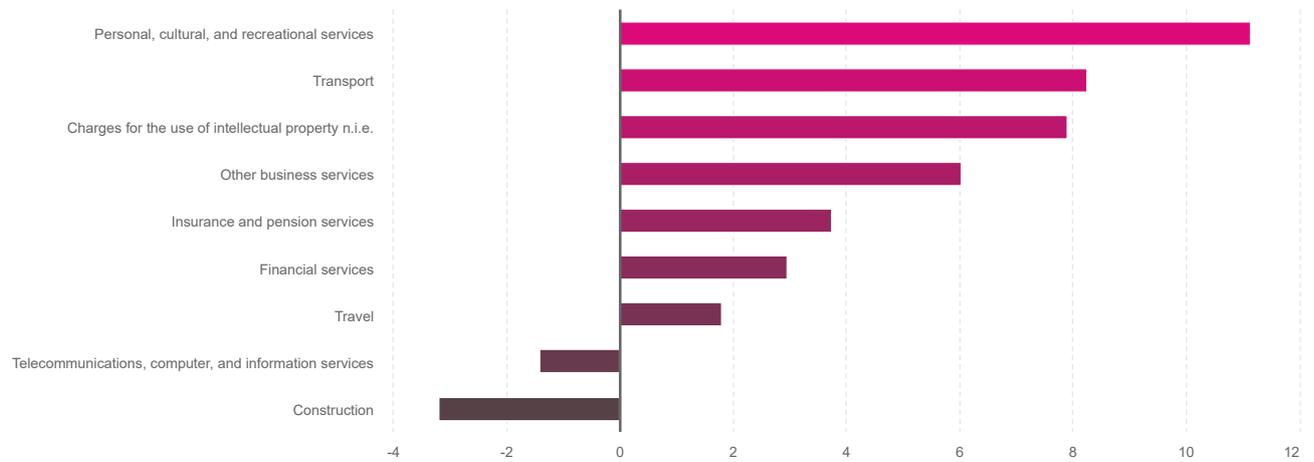




Figure 9. Annual average growth of services exports in LDCs, by service category, 2010-2020

(Percentage)



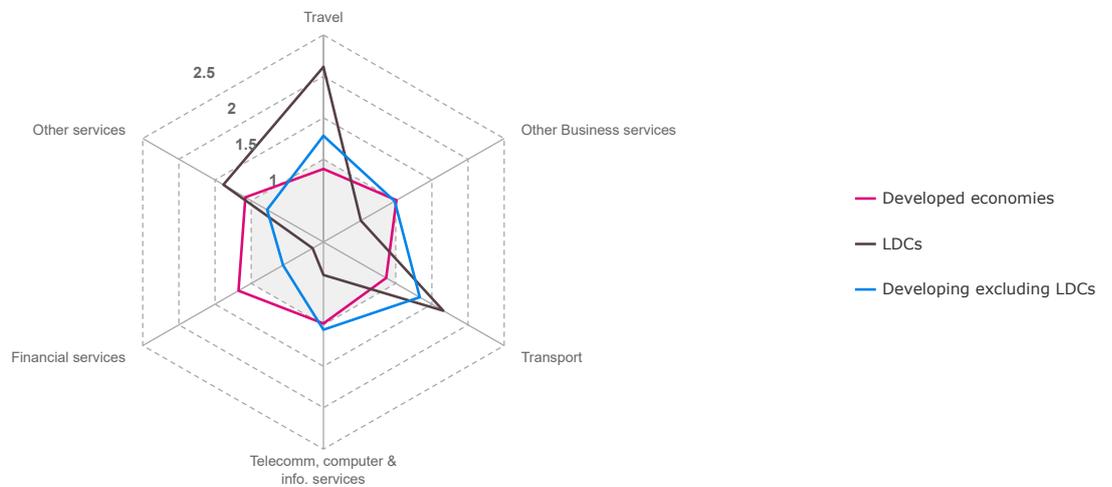
Source: UNCTADstat (UNCTAD, 2022a).

LDCs and other developing economies have a revealed comparative advantage⁴ in exports of travel services. For LDCs the index reached 2.1 in 2020, LDCs have also a comparative advantage in exporting transport services (1.7). The index for other developing countries excluding LDCs was larger than one in travel services (1.3), transport sector (1.3), and telecommunications, computer, and information services (1.1) (see Figure 10).



Figure 10. Revealed comparative advantage in services exports, 2020

(Proportion)



Source: UNCTAD calculations based on data from UNCTADstat (UNCTAD, 2022a)

Notes: The revealed comparative advantage is measured as the proportion of a country group's exports by service category, divided by the proportion of world exports in each category. A country or region is considered to have a revealed comparative advantage for a product or sector if the index is greater than one.

Notes

1. A country is considered to be export-commodity-dependent when more than 60 per cent of its total merchandise exports are composed of commodities.
2. The Herfindahl-Hirschman Index (HHI) is a measure of market concentration. A higher index value indicates a more concentrated export structure.
3. Products classification refers to three-digit level of SITC Revision 3.
4. The revealed comparative advantage is measured as the proportion of a country group's exports by service category, divided by the proportion of world exports in each category.

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Free trade for inclusive and resilient growth

SDG indicators

SDG target 17.10: Promote a universal, rules-based, open, non-discriminatory and equitable multilateral trading system under the World Trade Organization, including through the conclusion of negotiations under its Doha Development Agenda.

SDG indicator 17.10.1: Worldwide weighted tariff-average (Tier I)

SDG target 17.12: Realize timely implementation of duty-free and quota-free market access on a lasting basis for all least developed countries, consistent with World Trade Organization decisions, including by ensuring that preferential rules of origin applicable to imports from least developed countries are transparent and simple, and contribute to facilitating market access.

SDG indicator 17.12.1: Average tariffs faced by developing countries, LDCs and SIDS (Tier I)

SDG target 10.a: Implement the principle of special and differential treatment for developing countries, in particular least developed countries, in accordance with World Trade Organization agreements

SDG indicator 10.a.1: Proportion of tariff lines applied to imports from LDCs and developing countries with zero-tariff (Tier I)

The Addis Ababa Action Agenda (United Nations, 2015) acknowledges that international trade is an engine for inclusive economic growth and poverty reduction. Target 17.10 is of paramount importance to advancing economic growth and fostering global competitiveness, as it promotes a universal, rules-based, open, non-discriminatory and equitable multilateral trading system. Market access conditions are an important factor for the effectiveness of trade, and tariffs are an important determinant of market access.

Making free trade work for sustainable development

In recent years, several empirical studies have reaffirmed that trade reforms which significantly reduce import barriers have on average a positive effect on economic growth. Falvey et al. (2013) estimate that economic growth is roughly 1.7 percentage points higher after trade liberalization than a benchmark (compared to the situation without those reforms). Easterly (2019) finds that the positive correlation between trade liberalization and economic growth has increased since the 1990s. Piketty (2014) notes that free trade and economic openness are in everyone's interest. Jenkins and Safaeimanesh (2021), taking the case of the ECOWAS, estimate that from 15 to 26 per cent of the average annual value of net official assistance received by coastal ECOWAS members could be achieved through trade facilitation. This ratio is even higher for Nigeria, where the saving would account for around 31 to 46 per cent of net official assistance.

However, the ultimate economic gains from trade liberalization may vary considerably with domestic contexts and, as underlined by Dutt and Gallagher (2020), developing countries need to be mindful of the potential impacts of trade and investment liberalization on the ability to mobilize domestic resources for development. Revenues accrued from tariffs may constitute a significant portion of a government's public revenue, particularly in low-income countries, where the need for coordination of tariff liberalization with other tax policies is of particular importance.

Resilience from regional trade agreements

In 1947, major economies involved in global trade signed the GATT, an agreement through which countries entered into "reciprocal and mutually advantageous arrangements aimed at the substantial reduction of tariffs and other barriers to trade and to the elimination of discriminatory treatment in international commerce" (WTO, 2021a). The conclusion of the "GATT-94" multilateral trade negotiations led to the creation of the WTO in 1995, with a mandate to develop an integrated, more viable and durable multilateral trading system. The WTO TFA was the first multilateral trade agreement concluded since the establishment of the WTO. It came into force in 2017 with the aim of boosting the speed and efficiency of cross-border trade procedures while reducing cost. Full implementation of the TFA could cut global trade costs by 10 to 18 per cent (OECD, 2018) and increase export gains by up to US\$ 1 trillion per year, with the biggest gains in the poorest countries (WTO, 2015).

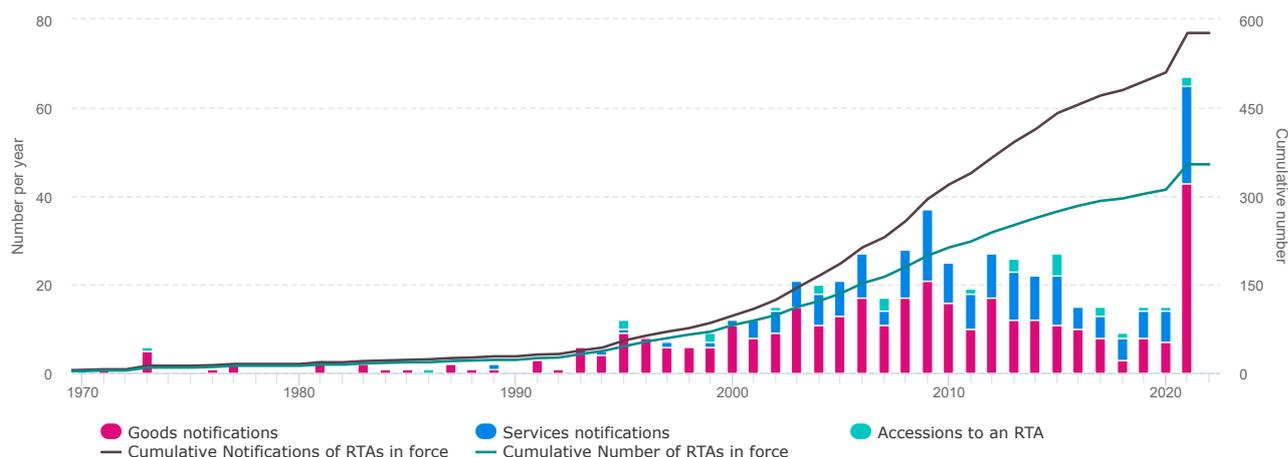
Article 1 of the "GATT-94" stipulates that members set their tariffs on a MFN basis meaning that any advantage, favour, privilege or immunity granted to any product originated in and destined for other countries becomes immediately and unconditionally applicable to all contracting parties (WTO, 2021a). Article 24 of the GATT, Article 5 of the GATS and the Enabling Clause (Paragraph 2(c)) allow WTO members to conclude RTAs as a special exception, provided the agreements help trade flow more freely among the countries in the RTA without barriers being raised on trade with the outside world (WTO, 2022b). Since the inception of the GATT/WTO system, most economies across the world have negotiated bilateral or multilateral trade agreements with the objective of reducing barriers to trade and promoting exchange of goods and services among members. Nowadays, practically all countries

participate in at least one RTA, with some countries forming more bilateral and regional RTAs than others. More than 50 per cent of global trade takes place between countries that are members to PTAs, one third under DTAs that go beyond traditional tariffs and existing WTO agreements (UNCTAD, 2022a). Only a limited number of countries, largely in East Asia, trade mostly under so-called shallow agreements. Most of the trade of African countries still occurs outside of any PTAs (UNCTAD, 2022a).



According to the WTO RTA Database, as of 15 March 2022, 354 RTAs were in force for both goods and services, as compared to 135 in 2005 (WTO, 2022b) (see Figure 1).

Figure 1. Evolution of RTAs, 1970-2022

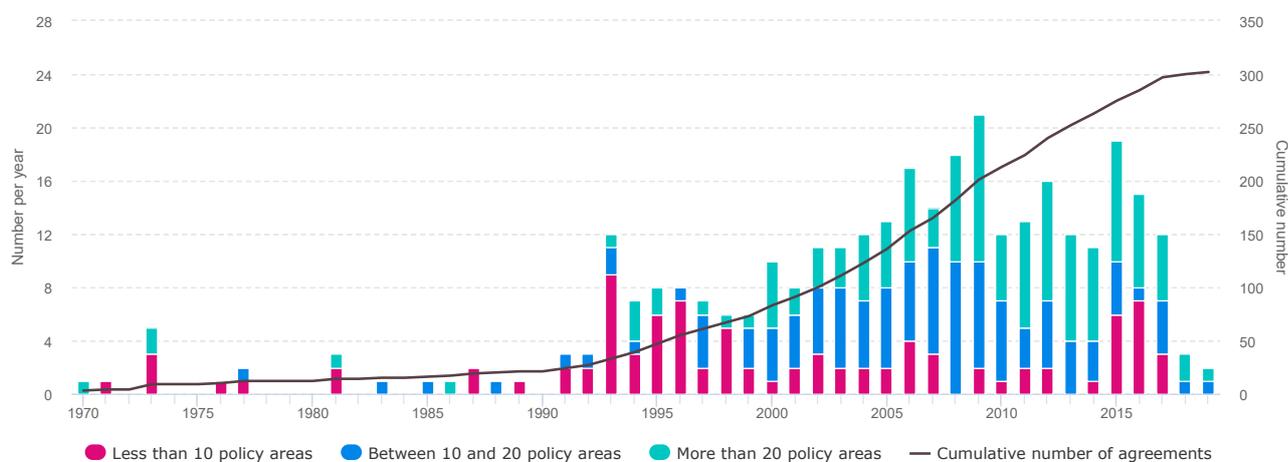


Source: WTO (2022b)

Note: Goods, services and accessions to an RTA are counted separately. The cumulative lines show the number of RTAs currently in force (by year of entry into force).

The coverage of PTAs has also expanded. While the average PTA in the 1970s covered less than ten policy areas, since the 2000s most new PTAs included between 10 and 20 policy areas (see Figure 2). Such agreements with larger scope tend to include not only traditional trade policy, such as tariff liberalization, but also trade-related regulations like subsidies or technical barriers to trade, as well as areas not related to trade, for example, labour, environment, and migration (Mattoo et al., 2020).

Figure 2. Number of policy areas covered by PTAs, 1970-2019



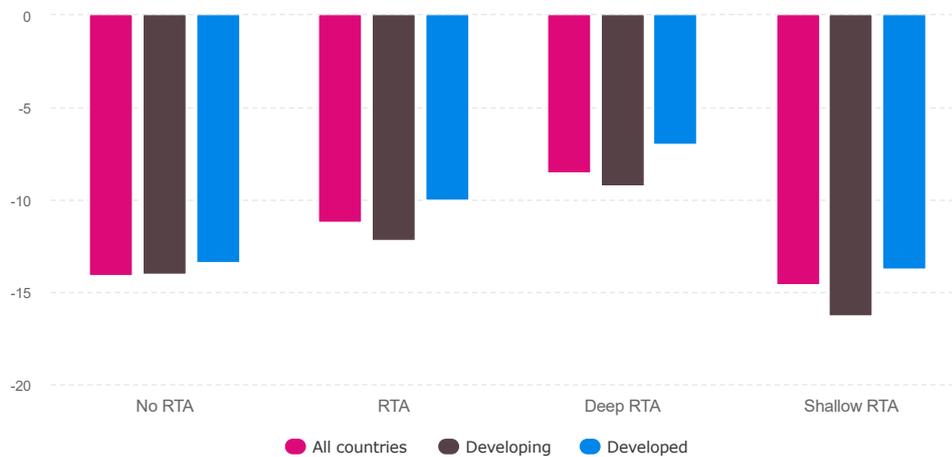
Source: World Bank (2022a)

Note: Number of policy areas covered in an agreement is calculated as the count of policy areas included in a PTA, a maximum number of policy areas being 52.

Trade within RTAs demonstrates greater resilience in response to global shocks, compared to trade outside those -agreements. A recent case study by UNCTAD on intra RTA trade resilience during the COVID-19 downturn (Nicita and Saygili, 2021) reveals that trade within trade agreements declined significantly less than other trade, and that RTAs with deep provisions, or deep RTAs, have provided relatively better stability against the global trade

collapse of 2020 than shallow RTAs. The results also reveal some heterogeneity across developing and developed countries, as well as across developing countries' regions. Figure 3 shows that, while a decline in bilateral trade for an average country was around 14 per cent, the decrease under an RTA amounted to about 11 per cent. In addition trade between members of a deep RTA fell by about 6 percentage points less than trade between members of a shallow RTA.

Figure 3. Average growth of exports by RTAs, 2020



Source: Nicita and Saygili (2021)
 Note: These estimates are based on an analysis of bilateral trade flows of 139 countries.

Trade, peace and security

Most-favoured-nation (MFN) is a cornerstone of the multilateral trading system. The exception to this rule is an issue of “essential security interests” of the Article XXI of the GATT-94 (WTO, 2022c), the provisions of which allow countries to suspend concessions for reasons of national security. In fact, Article XXI states that the GATT will not prevent a WTO member from lifting the MFN rule when “considered necessary for the protection of its interests, taken in time of war or other emergency relations”. Both the WTO’s agreement on trade in services (GATS) and its agreement on intellectual property (TRIPS) contain similar exceptions.

“Even though trade has been viewed as a vehicle for peace”, recent developments worldwide show that trade sanctions in response to hostilities in international relations are on a rise (Mollaian, 2019). Examples of a “security exceptionalism in trade” (Manak, 2022) are numerous, and includes the United States of America, in early 2018, imposing a tariff of 25 per cent on steel and of 10 per cent on aluminum imports under Section 232 of the Trade Expansion Act of 1962; India lifting the MFN status from Pakistan in 2019, after a suicide attack by a Pakistan-based Islamist group; Bahrain, Saudi Arabia and the United Arab Emirates invoking altogether a series of sanctions against Qatar, in July 2017, over allegations of Qatari support for terrorism; Canada, the United States of America, the G-7 countries and the European Union announcing their intentions to revoke MFN treatment, in March 2022, from Russia and its ally Belarus, over the Russian war on Ukraine. As emphasized by Heath (2020), these increasing conflicts between national security interests and rules defining the multilateral trade system might have serious adverse effects on development and the overall growth of the world economy. The international community faces the challenge of finding the right balance between the nations’ rights to decide what needs to be done to protect essential security interests and the urge to safeguard global trade as a key engine for growth and sustainable development, especially in a world battered by the economic fallout of the pandemic and the war in Ukraine (Van den Bossche and Akpofure, 2020).

Making non-discriminatory tariff reforms work for development

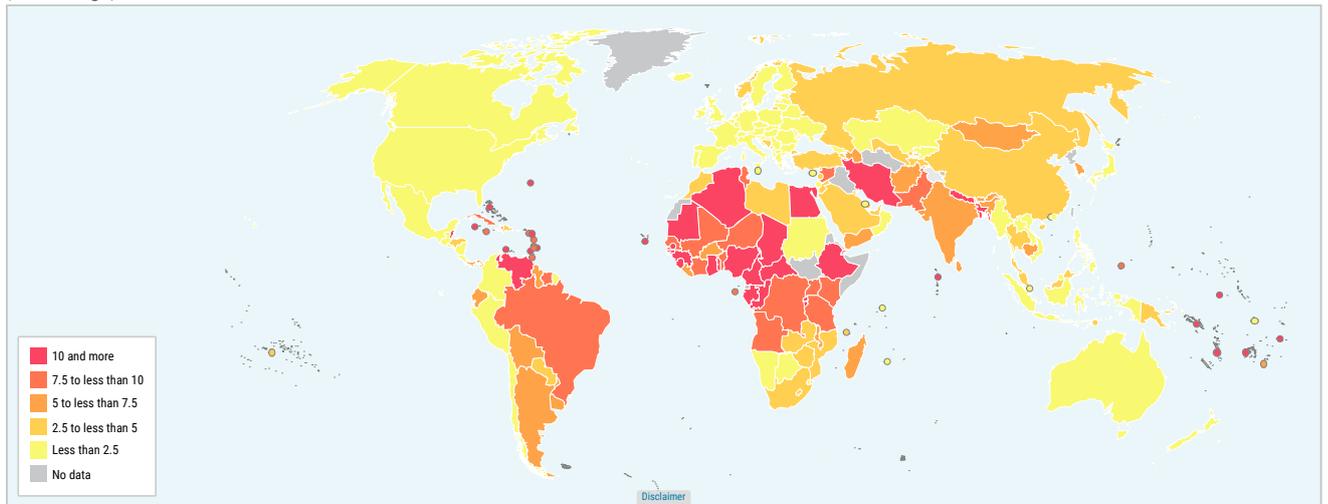


After 2019, many countries recorded a sharp drop of weighted average tariffs on imports. Palau’s average import tariff dropped to 9.6 per cent in 2020 from a rate as high as 118.2 per cent in 2019. The United States of America, in 2020, reduced their weighted average tariff on imports from 13.8 per cent in 2019 to 1.5 per cent. India imposed a tariff of 6.2 per cent on average, while China’s average rate was 2.5 per cent in 2020. The weighted average tariff applied in the EU was 1.5 per cent in 2020. In 2020, the country with the highest weighted average import tariff worldwide was Gambia, at 17.8 per cent, followed by Bermuda at 24.1 per cent. The lowest weighted average tariff rate, zero per cent, was recorded in Hong Kong SAR, China, Macao SAR, China, and Sudan (see Map 1).¹



Map 1. Worldwide weighted average tariff, latest available data (SDG 17.10.1)

(Percentage)



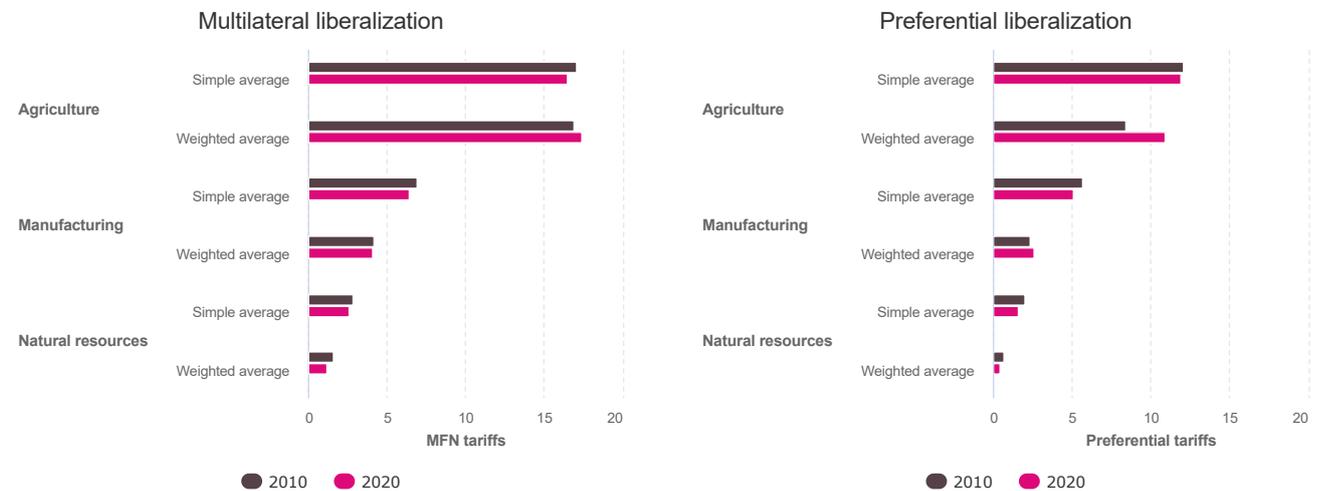
Source: World Bank estimates (World Bank, 2022b), based on (UNCTAD, 2022b), (WTO, 2022d) and (WTO, 2022e).

Since 2010, tariffs have been trending downwards, mostly on a preferential basis. Simple-average MFN tariffs on agriculture, manufacturing and natural resources have remained largely constant in 2020, amounting to 16.5 per cent, 6.4 per cent, and 2.6 per cent, respectively (see Figure 4). The increase of PTA schemes has contributed to about 2 percentage points to the reduction of simple agricultural tariffs and to about 1 percentage point to manufacturing tariffs. However, preferential tariffs have increased on a trade weighted basis, indicating an increase in tariffs among some of the major trading nations. In the natural resources sector, liberalization continued both in MFN and preferential terms, leading to tariffs rates of 2.6 per cent and 1.6 per cent, respectively, on a simple average basis, in 2020 (UNCTAD, 2022a)



Figure 4. Multilateral and preferential tariff liberalization

(Percentage)



Source: UNCTAD, ITC and WTO calculations based on (UNCTAD, 2022b), (ITC, 2022) and (WTO, 2022d).

Tariffs on exports of LDCs and developing countries decreasing slowly

The average level of customs tariff rates (indicator 17.12.1) faced by developing countries and LDCs illustrates the pace at which the multilateral system is advancing toward the implementation of duty-free and quota-free market access (United Nations, 2021a). SDG target 17.12 calls for “timely implementation of duty-free and quota-free market access on a lasting basis for all least developed countries”. Recognizing LDCs’ special economic circumstances, developed countries and other economies² agreed to grant LDCs duty-free and quota-free preferential market access.

Preferential market access for developing countries has been granted by most developed countries since the early 1970s under the aegis of UNCTAD (UNCTAD, 2022a). These unilateral trade preferences, called GSP, allow developed countries to apply different tariffs between different groups of trading

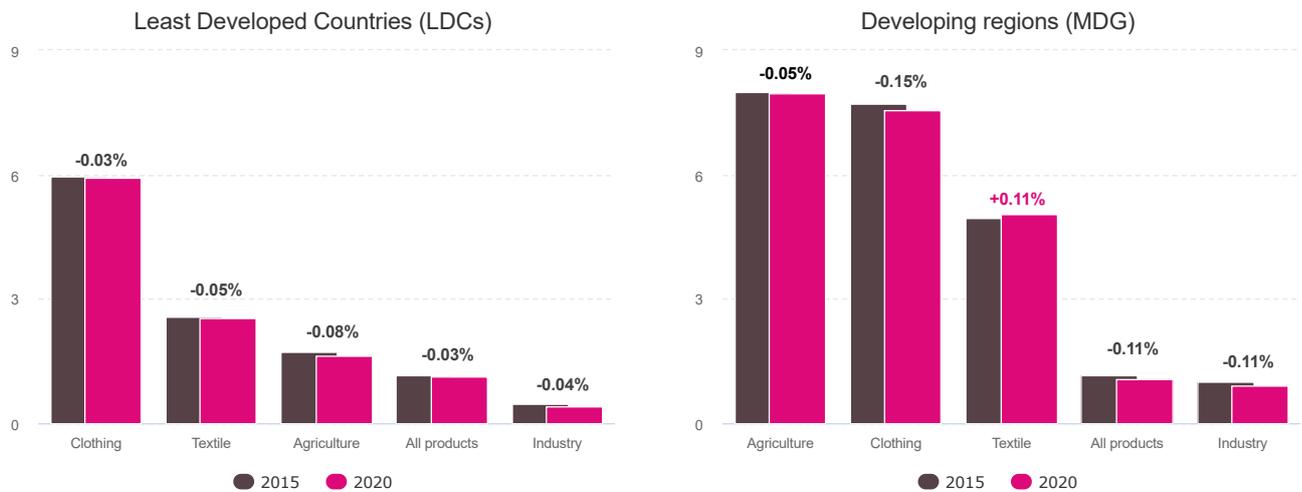
partners without violating Article I of the GATT stipulating non-discriminatory and equal treatment of trading partners.

Trade preferences under the GSP program are granted by the EU, the United States of America, Japan, Canada, Australia, New Zealand, Norway, Belarus, Iceland, Kazakhstan, the Russian Federation, Switzerland, Turkey, etc.

Figure 5 shows that in 2020 import tariffs applied by developed countries to products from LDCs registered a slight decline since 2015 throughout all groups of products. The average tariff amounted to 1.1 per cent in 2020. Tariffs, including preferences, faced by LDCs vary across product groups. Tariffs for clothing and textiles amounted to 5.9 per cent and 2.5 cent, while tariffs for industrial products were relatively low, at 0.4 per cent.



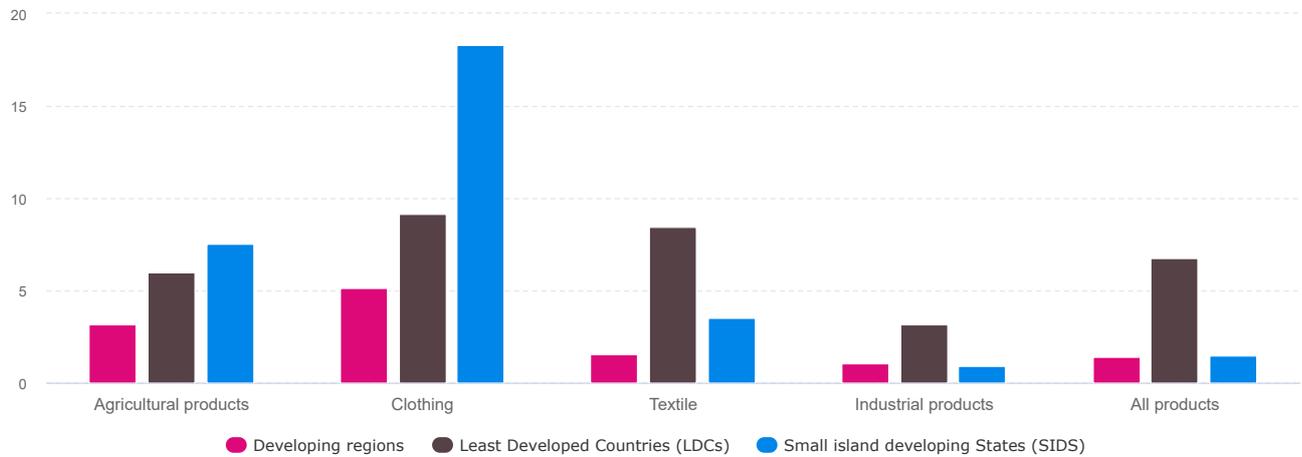
Figure 5. Average tariff faced (incl. preferences) in developed regions, by selected product groups
(Percentage)



Source: UNCTAD (2022c).

The degree of developing countries' export competitiveness can partly be measured by the size of the preferential tariff margin, that is the difference between the preferential and the non-preferential tariff rate, of developing countries' exports. The higher the margin the greater the market shares of these countries in preference granting countries. Figure 6 shows that LDCs' preferential margins are strongest in low-skill manufacturing sectors, such as clothing, leading to a tariff advantage of six percentage points in entering developed countries' markets vis-à-vis the foreign competitors, on average. Preferential margins for LDCs are also substantial for textiles and agricultural products (between three and six percentage points). For developing countries, a substantial share of exports of clothing is attributed to markets in which countries have preferences (4 percentage points). For SIDS, the highest preferential margins, of more than 15 percentage points, are registered for exports of agricultural products.

Figure 6. Preferential tariff margins for developing countries, LDCs and SIDS exports in developed-country markets, 2020
(Percentage)



Source: UNCTAD, ITC and WTO calculations based on (UNCTAD, 2022b), (ITC, 2022) and (WTO, 2022d).
Note: The preferential margin is measured as the difference between the preferential tariff and the MFN rate

To assist LDCs in the elaboration of studies on DFQF market access, UNCTAD produced two Handbook on "Duty-Free and Quota-Free Market Access and Rules of Origin For Least Developed Countries" (UNCTAD, 2018b) and a database on the utilization of trade preferences (UNCTAD, 2022d).

Import restrictiveness differs substantially across countries, even within the same region. Table 1 presents a matrix of the average tariff rates imposed on trade flows between and within regions in 2020. Intraregional trade (in the shaded cells of the tables) is generally subject to lower tariffs than interregional trade. However, much South-South trade is still burdened by relatively high tariffs. This is the case, for example, for the trade between Latin America and South Asia, on which an average tariff of about 10 per cent is applied. South Asia faced the highest intraregional tariffs, with tariffs of 5.4 per cent in 2020 (UNCTAD, 2022a).



Table 1. Tariff restrictiveness, matrix by region, 2020

(Percentage)

Importing Region	Exporting Region					
	Developed economies	Africa	Latin America	East Asia	South Asia	Rest of Asia
Developed economies	1.7	0.9	1.3	5.7	2.8	1.0
	0.0	0.3	0.5	3.5	0.1	0.3
Africa	9.2	2.6	8.9	12.9	9.3	12.1
	0.5	0.2	0.6	0.7	0.8	5.8
Latin America	3.3	2.8	1.3	8.1	9.7	5.3
	-0.3	0.0	-0.1	0.1	-0.1	0.8
East Asia	4.7	2.2	4.8	1.5	2.9	1.6
	-0.7	0.5	0.7	-1.0	-0.7	0.0
South Asia	10.5	5.7	8.4	8.4	5.4	6.1
	1.6	-1.2	1.9	-0.1	-2.0	-0.6
Rest of Asia	3.7	1.9	7.6	4.6	3.8	3.0
	0.0	0.4	2.1	0.0	0.1	0.3

Source: UNCTAD (2022a).

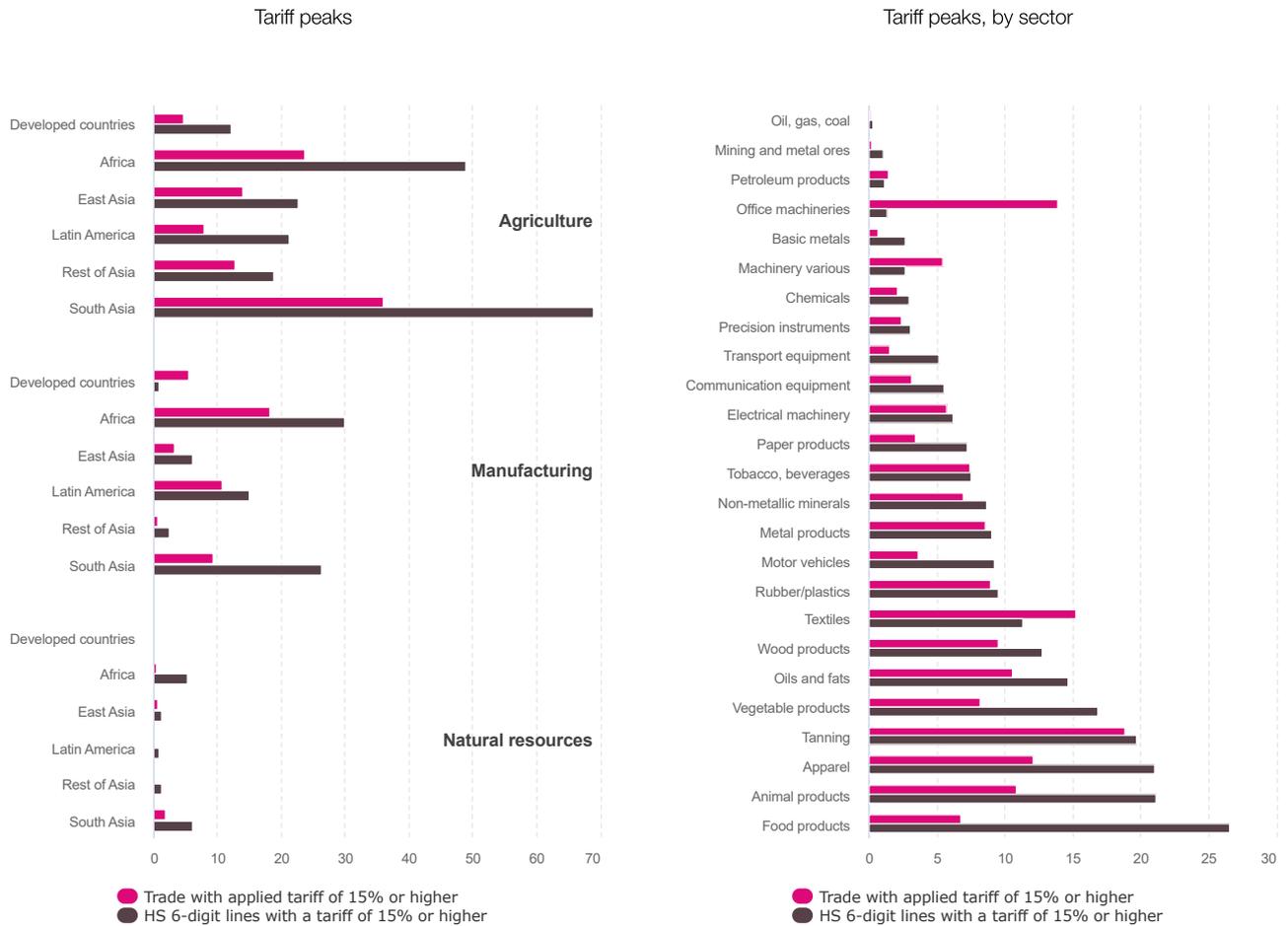
Note: Changes between 2010 and 2020 are shown in smaller font.

Tariffs are particularly high for agricultural products, as well as apparel, textiles and tanning. For example, tariffs above 15 per cent are imposed on about 7 per cent of global trade in food (26 per cent of the products in this group). About 12 per cent of world trade in apparel (21 per cent of the products in

this group) is subject to tariff peaks of 15 per cent or more (see Figure 7).



Figure 7. Tariff peaks, by product groups, 2020
(Percentage)



Source: UNCTAD, ITC and WTO calculations based on (UNCTAD, 2022b), (ITC, 2022) and (WTO, 2022d).

The objective to improve market access for LDCs' exports by granting special and differential treatment to them in accordance with the WTO agreements was outlined not only in SDG target 17.12, but also in SDG target 10.a. (United Nations, 2021a)

More than half of merchandise exports from developing countries are duty-free

Most developed countries grant either full or almost full duty-free and quota-free, i.e. DFQF, market access for LDCs, and an increasing number of developing countries are in the process of extending similar treatment to most imports from LDCs. Australia, New Zealand, Norway and Switzerland provide full duty-free access through preferential LDC schemes. For Canada, Chile, the EU and Japan, more than 97 per cent of tariff lines are free of duty for products originating from LDCs. China grants duty-free access for LDCs on about 97 per cent of its tariff lines. India, Iceland, the Republic of Korea and Montenegro have a duty-free coverage of around 90 per cent or higher (WTO, 2021c)

However, progress on export expansion from LDCs is slow. Despite considerable growth of LDCs' exports since 2000, their share in world trade has remained at 1 per cent over the last ten years, while their share in the world population has been increasing, reaching 13.6 per cent in 2020 (UNCTAD, 2021a).

Tariff barriers remain significant in some countries, notably the United States of America. In 2019, 67 per cent of LDC exports were dutiable under the United States' GSP scheme for LDCs, in US dollar terms, with a trade-weighted average tariff of 11.4 per cent (WTO, 2021c).

Share of zero tariffs applied to LDCs exports

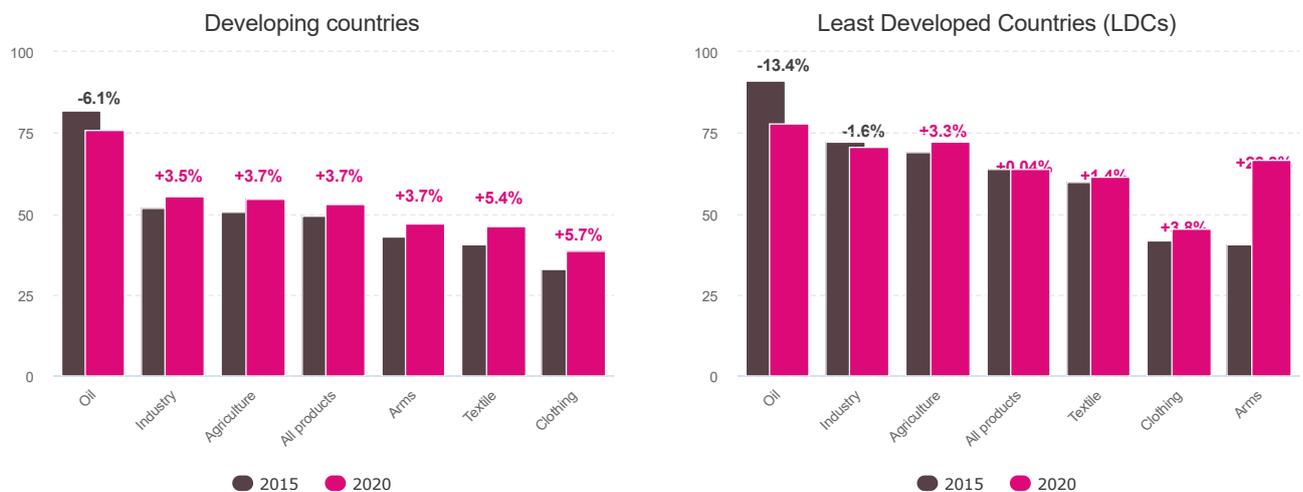
0%
amounted to 64% in 2020

SDG indicator 10.a.1 shows the extent to which special and differential treatment has been applied through import tariffs.³

LDCs were granted duty-free market access on 63.9 per cent of tariff lines in 2020 (see Figure 8); the respective share for all developing countries was around 53.2 per cent.⁴

The highest proportion of exports from LDCs relieved from customs duties excluding oil, was found in trade in agricultural products (72.3 per cent). The second highest rate was recorded for trade in industrial products (70.5 per cent). As for developing countries, 54.5 per cent of their exports of agricultural products and 55.3 per cent of industrial products entered the world markets duty free (see Figure 8).

Figure 8. Share of duty-free products (exported products) to world from developing countries and LDCs, by product, 2020 (#SDG 10.a.1)

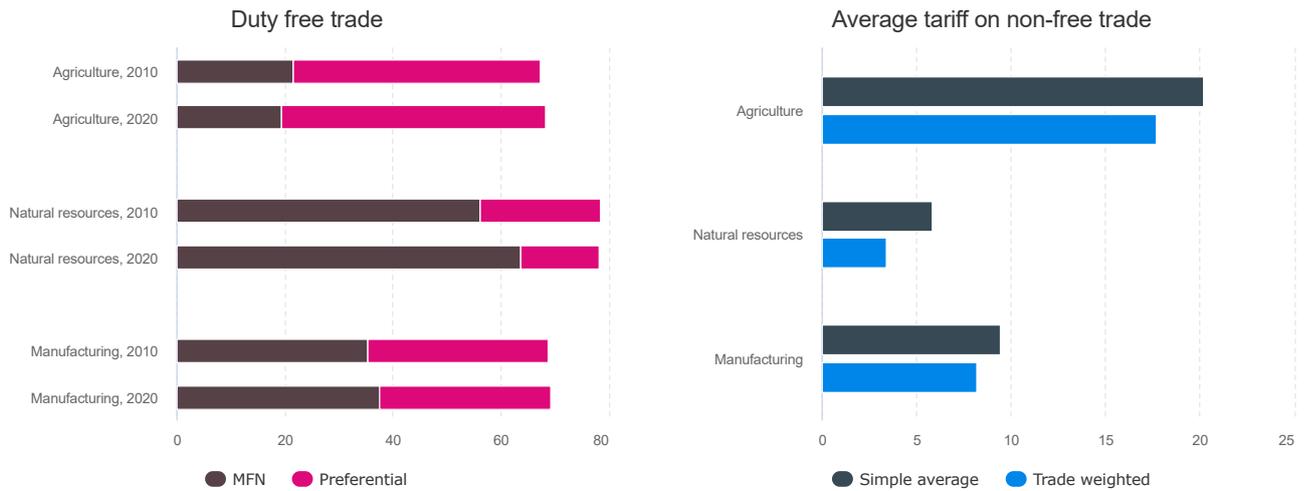


Source: UNCTAD, ITC and WTO calculations based on (UNCTAD, 2022b), (ITC, 2022) and (WTO, 2022d).

Figure 9 shows that almost 68 per cent of international trade of agricultural products in 2020 was duty-free, with 19 per cent of this accounting for duty-free on a MFN basis and the rest under preferential tariffs. The remaining tariffs for agriculture are fairly high, averaging to 20.2 per cent. Preferential access is also important for trade in manufacturing products, for which it accounted for 33.5 per cent. The simple average tariff for manufacturing products is also high and stood, in 2020, at 9.4 per cent. For natural resources, preferential access is less important, as trade in these goods is largely tariff-free under MFN rates. The remaining tariffs are generally very low, with tariffs averaging 5.8 per cent.

Preferential access continued to play a key role in agricultural trade, but remaining tariffs were more than 20%

Figure 9. Free trade and remaining tariffs, by broad category
(Percentage)



Source: UNCTAD, ITC and WTO calculations based on (UNCTAD, 2022b), (ITC, 2022) and (WTO, 2022d).

The rise of non-tariff measures

NTMs often impede international trade more than border duties. Trade costs associated with NTMs are estimated to account for as much as 1.6 per cent of global GDP, amounting to US\$1.4 trillion (United Nations, 2020), more than double the amount of ordinary customs tariffs. According to UNCTAD (UNCTAD, 2019) estimates, in Asia and the Pacific, NTMs affect around 58.0 per cent of trade in the region. For intra-African trade, the average import-weighted tariff is 7.0 per cent, while the ad-valorem equivalent cost of non-tariff barriers is estimated to be 14.3 per cent (UNECA, 2020).

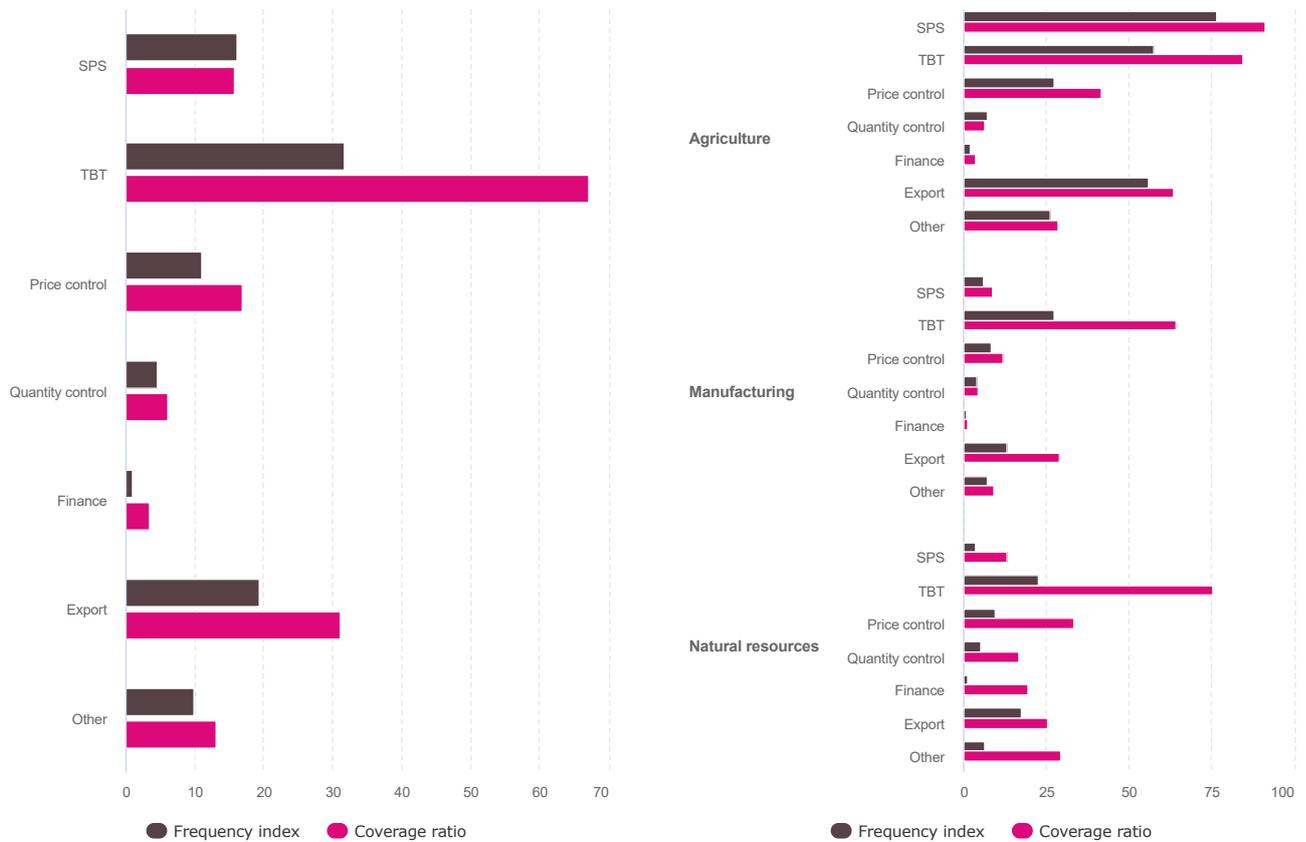
NTMs, as policy instruments, are both directly and indirectly linked to sustainable development. Direct linkages include NTMs' intended impact on social and environmental issues, such as their contribution to food security (SDG 2) and nutrition and health (SDG 3); protecting endangered species and the environment (SDGs 14 and 15); supporting sustainable production and consumption (SDG 12); contributing to sustainable energy (SDG 7); and combatting climate change (SDG 13). Indirect effects may arise from trade policies that influence trade which can restrict economic growth and create negative spillover effects on sustainability (UNCTAD, 2022e).

Technical barriers to trade
affect 30% of product lines and almost 70% of world trade

A considerable number of NTMs are regulatory measures, which respond to a public demand for protection against environmental and health hazards (UNCTAD, 2021b). Technical NTMs, such as TBT, which includes labelling, standards on technical specifications and quality requirements, as well as all conformity-assessment measures, affect 31.6 per cent of product lines and 67.1 per cent of world trade (see Figure 10). SPSs, which typically prevail in agriculture, affect 16.1 per cent of product lines and 15.7 per cent of world trade. Figure 10 shows that the agricultural sector is more often regulated than manufacturing and natural resources, where most of world agricultural trade is subject to SPS and TBT. Almost 40 per cent of all exports are subject to at least one export regulation

measure (UNCTAD and World Bank, 2018).

Figure 10. NTMs in world trade, by type and broad category, 2020
(Percentage)



Source UNCTAD, ITC and WTO calculations based on (UNCTAD, 2022b), (ITC, 2022) and (WTO, 2022d).
Note: The frequency index is defined as the percentage of HS 6-digit lines covered; and coverage ratio is defined as the percentage of trade affected.

In LDCs and developing countries as a whole, about 40 per cent of imports are subject to NTMs. This is less than half as much as in developed countries. NTMs in developing countries and LDCs are less diversified than in developed countries. On average, developing countries use two different NTMs on any regulated product, and LDCs one, compared to four in developed economies (UNCTAD and World Bank, 2018)

Statistics on NTMs are still incomplete. As of today, the TRAINS (UNCTAD, 2022b) database developed by UNCTAD in partnership with several regional and international organizations is the most complete collection of publicly available data on NTMs at the HS six-digit level. As of 2018, UNCTAD has collected comprehensive and comparable NTM data, covering 109 countries and containing more than 65 000 measures.

In LDCs and developing countries, about 40% of imports are subject to NTMs

Trade measures and COVID-19



The COVID-19 pandemic emerged in the context of already increasing protectionism and faltering globalization, as reflected, for instance, by the Brexit and the trade war between China and the United States of America. It highlighted major ongoing shifts in the objectives of national governments and companies and put considerable pressure on the multilateral rule-based trading system. Axioms of free trade, free movement of capital, or freedom of energy supplies have often been questioned against a cruder metric: “What’s in it for me?” (Grizold and Jaklic, 2020) Governments have been challenged to find the right balance between the need to import medical supplies and personal protective equipment (PPE), such as hand soap, sanitizer, face masks and protective spectacles,

against the loss of tariff revenues associated with them.

Trade measures target both exports and imports. WTO estimated that, by mid-October 2021, the trade coverage of ongoing COVID-19 trade-facilitating measures stood at US\$112.1 billion, while the coverage of trade-restrictive measures amounted to US\$92.3 billion (WTO, 2021d).

As of 15th of March 2022, WTO members had submitted a total of 453 COVID-19 related notifications, covering a range of products, including PPE, food, live animals, medical equipment and medicines. TBT (201) and SPS measures (122) made up the bulk of them, along with quantitative restrictions aimed at ensuring domestic food and medical supplies (87) (see Figure 11). Examples of the notifications include, inter alia, member states streamlining certification and authorization for medical goods, permitting the use of scanned and electronic SPS certificates, relaxing certain aspects of technical regulations for some food products.

 **Figure 11. WTO members' COVID-19 related notifications, by type**
(Percentage)



Source: (WTO, 2022f)

Notes

1. Data are classified using the Harmonized System of trade at the six- or eight-digit level. Tariff line data were matched to the SITC revision 3 codes to define commodity groups and import weights. To the extent possible, specific rates have been converted to their ad valorem equivalent rates and have been included in the calculation of Weighted mean applied tariff. Import weights were calculated using the UN Comtrade database (United Nations, 2021b). Effectively applied tariff rates at the six- and eight-digit product level are averaged for products in each commodity group. When the effectively applied rate is unavailable, the most favoured nation rate is used instead.
2. Following the WTO Hong Kong Ministerial Decision in 2005 (WTO, 2005).
3. Limitations of this indicator include the following: tariff-based measures are only a part of trade limitation factors; inability to comply with rules of origin criteria limits the utilization of preferential treatments; using data on zero-tariff lines assumes full utilization of benefits; low MFN tariffs mean that duty-free treatment is not always preferential (United Nations, 2019).
4. Proportion of total number of tariff lines applied to products imported from LDCs and developing countries is presented in per cent, corresponding to a 0 per cent tariff rate in HS chapter 01-97. This indicator allows observing how many products from developing countries and LDCs have free access to markets in developed countries.

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Trade, food security and sustainable agriculture

SDG indicators

SDG target 2.b: Correct and prevent trade restrictions and distortions in world agricultural markets, including through the parallel elimination of all forms of agricultural export subsidies and all export measures with equivalent effect, in accordance with the mandate of the Doha Development Round

SDG indicator 2.b.1: Agricultural export subsidies

SDG target 2.c: Adopt measures to ensure the proper functioning of food commodity markets and their derivatives and facilitate timely access to market information, including on food reserves, in order to help limit extreme food price volatility

SDG indicator 2.c.1: Indicator of (food) price anomalies

Goal 2 of the 2030 Agenda sets out to “End hunger, achieve food security and improved nutrition and promote sustainable agriculture”. As with other SDGs, realizing this goal will require a multifaceted approach. To ensure that markets around the world have access to nutritious food requires international trade and cross-border cooperation. With climate change threatening predictability of harvests and the sustainability of many regional crops, the importance of trade in food commodities may well increase rather than diminish.

Two means of implementation targets for SDG 2 refer to the proper functioning of food markets. Target 2.c is to limit or reduce price volatility through better access to market information. Target 2.b is to avoid market distortions by eliminating export subsidies and equivalent measures, as defined in the Doha Development Round. A well-functioning global market for food plays a role in alleviating hunger, complementing other efforts, such as, increasing ODA and OOFs to the agricultural sector (see [Official support for sustainable development](#)).

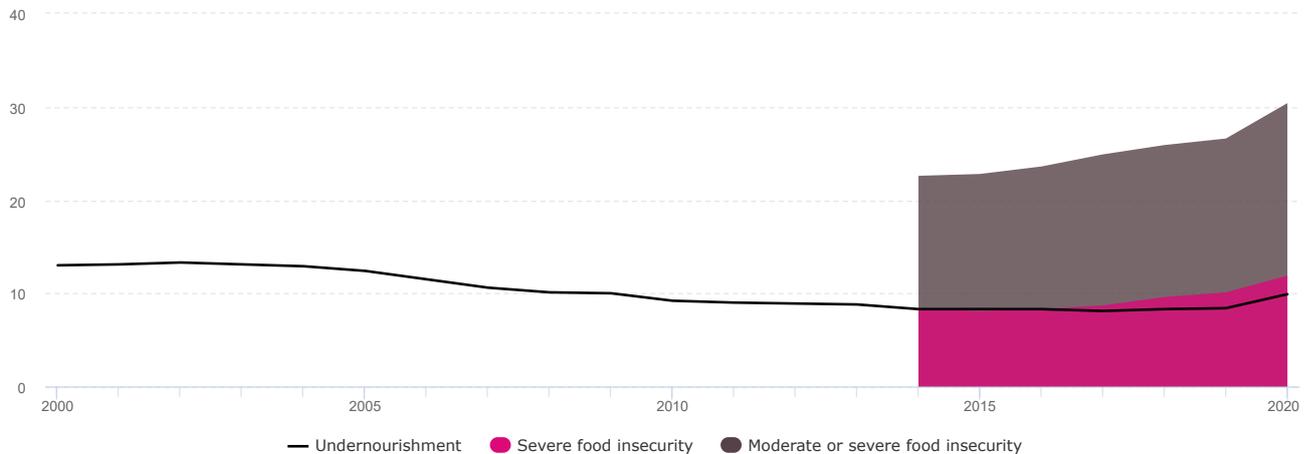
The goal to end hunger is falling behind schedule

World hunger can be estimated in several ways. Based on average dietary intake per person and its variation in a country, FAO estimates the prevalence of undernourishment was one in ten of the world's population. That is, 768 million people were undernourished in 2020. Survey data on experienced food insecurity, available from 2014 onward, show that 11.9 per cent of the world's population experienced severe food insecurity in 2020 and an additional 18.5 per cent experienced moderate food insecurity. These numbers are all a clear increase from 2019 (see figure 1). Food insecurity is also more prevalent among women – an inequality that grew from 2019 to 2020 (FAO, 2022b). In 2020, people were displaced by worsening conflicts and weather extremes spoiled crops and killed livestock. As the COVID-19 pandemic surged, governments acted, largely successfully, to keep food supply chains functioning (OECD, 2021b) but the economic impact disrupted the livelihoods of many and thereby put nutritious food beyond what many poor households could afford (FAO et al., 2021).

30% of the world's population experienced moderate or severe food insecurity in 2020



Figure 1. Global prevalence of undernourishment (SDG 2.1.1) and of food insecurity (SDG 2.1.2)
(Percentage)



Source: FAO (2022b)

The Global Network against Food Crises finds that the number of people in an acute food crisis has increased several years in a row and did so again in 2021 (FSIN and Global Network Against Food Crises, 2022). In 2021, increasing food prices are making food unaffordable for many people. This started before the war in Ukraine which created another major wave of displacement as well as considerable uncertainty over the global market for cereals and vegetable oils (United Nations, 2022d).

Globally, in pure calorie terms, there is enough food to feed the world. The average person on earth (considering all ages) needs a minimum of 1830 kcal per day to avoid undernourishment and about 2350 kcal per day for optimal health. The food available per person in 2019 amounted to 2950 kcal per day, up from 2830 kcal in 2010 (FAO, 2022b).

Imported food is an important part of many economies' food supply

Several factors affect food production over time and location, which means there are benefits of a diversified global market for food. Trade between regions and across borders may help adjust to changing conditions affecting food production as result of climate change (FAO, 2018). A well-functioning global value chain across agro-food sectors also opens up opportunities for producers in developing economies to contribute to economic development in their local community (FAO, 2020). The International Covenant on Economic, Social and Cultural Rights (United Nations, 1966) recognizes freedom from hunger as a fundamental right and states that the parties to the Covenant shall take measures to ensure that right, including by equitably distributing the world's food supply.

[...] The States Parties will take appropriate steps to ensure the realization of [the right to adequate food... taking] into account the problems of both food-importing and food-exporting countries, to ensure an equitable distribution of world food supplies in relation to need.

— International Covenant on Economic, Social and Cultural Rights, article 11

Trade is part of a global food system that depends on diverse local food systems. The complex task of these food systems is to feed the world and provide livelihoods to farmers and workers in food related industries and to do this in an environmentally sustainable manner (von Braun et al., 2021; United Nations, 2022b; OECD, 2021b). In the lead up to the Twelfth WTO Ministerial Conference in June 2022 (WTO, 2022b), UNCTAD recommends that the international trade architecture be enhanced in such a way that international trade can do its part in increasing food security (UNCTAD, 2021). These recommendations include counteracting export restrictions of essential food, supporting resource-poor agricultural producers, finding permanent solutions regarding public stockholding for food security, and scaling up financial and technical support to agricultural production in the LDCs and net food-importing developing economies. As the pressure on international food commodity markets was increasing in 2022, the UN Global Crisis Response Group on Food, Energy and Finance, coordinated by UNCTAD jointly with FAO and IEA, urged all countries to encourage proper functioning of international markets and to avoid ad-hoc policy responses, hoarding and panic buying of food and, furthermore, to exempt food purchases by WFP from any food export restrictions (United Nations, 2022d).

From 2016 to 2020, among economies with recorded data, as a median, 11 per cent of merchandise imports were basic food¹. However, the importance of food to individual economies' import basket varies considerably across countries. At one extreme, in Haiti food comprised 43 per cent of

the total value of merchandise imports. Calculations based on UNCTADstat (UNCTAD, 2022) show that the share of basic food in merchandise imports exceeded 30 per cent also in Benin, Eritrea, Somalia, Yemen, American Samoa, Guinea-Bissau, and Wallis and Futuna Islands.

Of the 20 economies with highest relative net imports of food 10 are SIDS

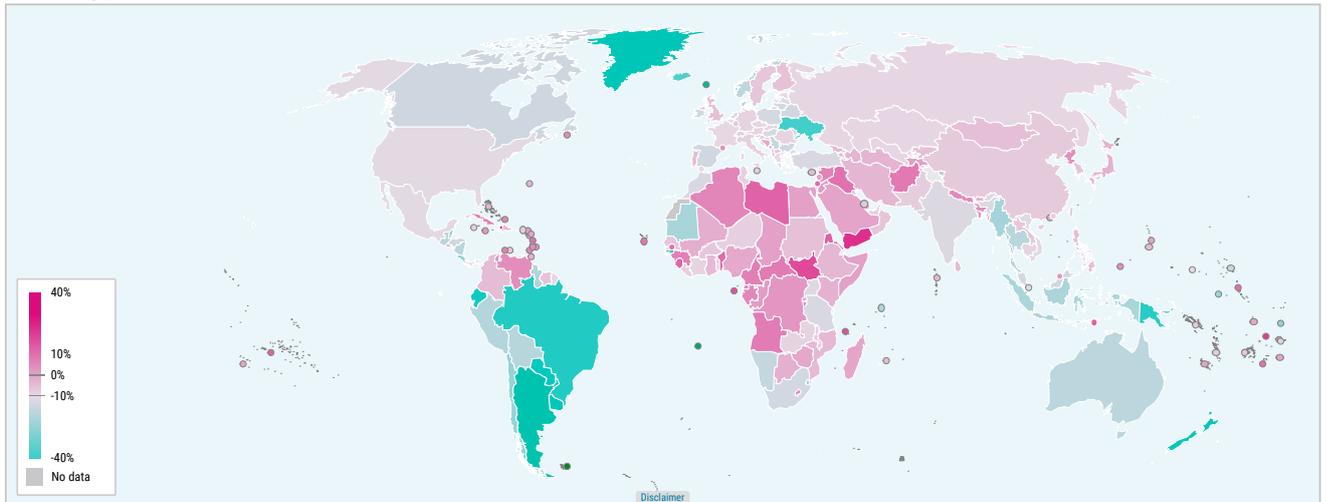


UNCTAD, 2022).

Seven in ten economies import more food than they export. After subtracting exports from imports, the median net imports of basic food were 4.3 per cent of total merchandise imports for the period 2016 – 2020. South America is home to several net food-exporting countries while many net-importing countries are found in the Middle East and Africa (see map 1). Another prominent group of net food importers are the SIDS. Half of the 20 economies with highest relative net food imports are SIDS. At the same time, many islands and other economies with access to oceans are net exporters of basic food – in the Falkland Islands (Malvinas) an estimated share as high as two thirds of all exports in 2020 were crustaceans, mollusks and aquatic invertebrates (based on UNCTADstat, see

Map 1. Net import of food as a ratio to total imports, 2016-2020

(Percentage)

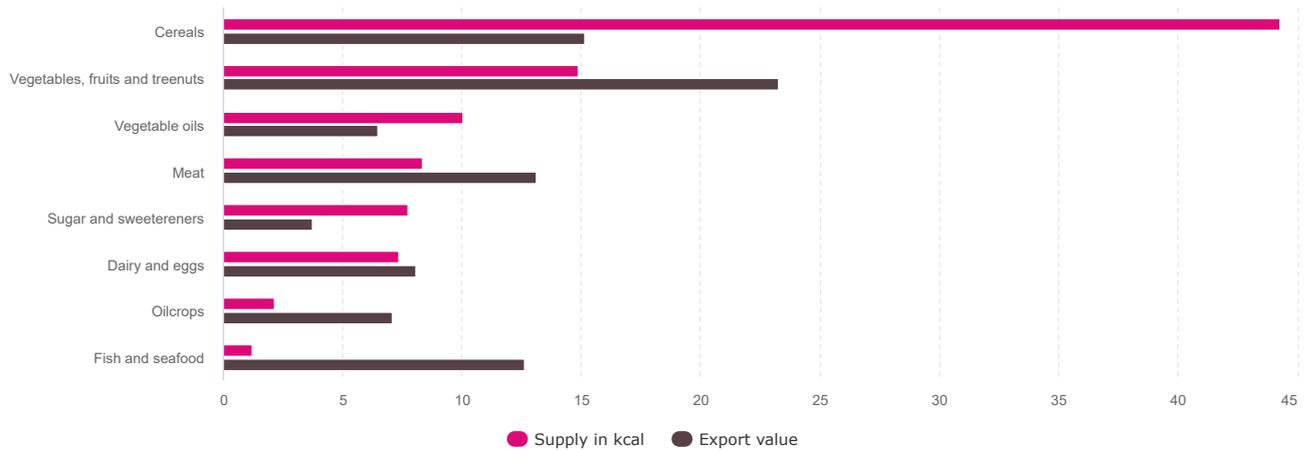


Source: UNCTAD calculations based on UNCTADstat (UNCTAD, 2022).

Notes: Net food imports are calculated as imports minus exports of basic food excluding tea, coffee, cocoa and spices (SITC Revision 3 codes 0, 22 and 4 less 07) during the years 2016 – 2020. The percentage displayed is reached by dividing net food imports with total imports of all goods for the economy in the same period.

Cereals and preparations of cereals make up only 15 per cent of the exported food in value terms but they account for 44 per cent of the calories available to the world's population. Meat and especially fish constitute far smaller parts of the dietary energy supply but play a similar role to cereals in international trade of food (see figure 2).

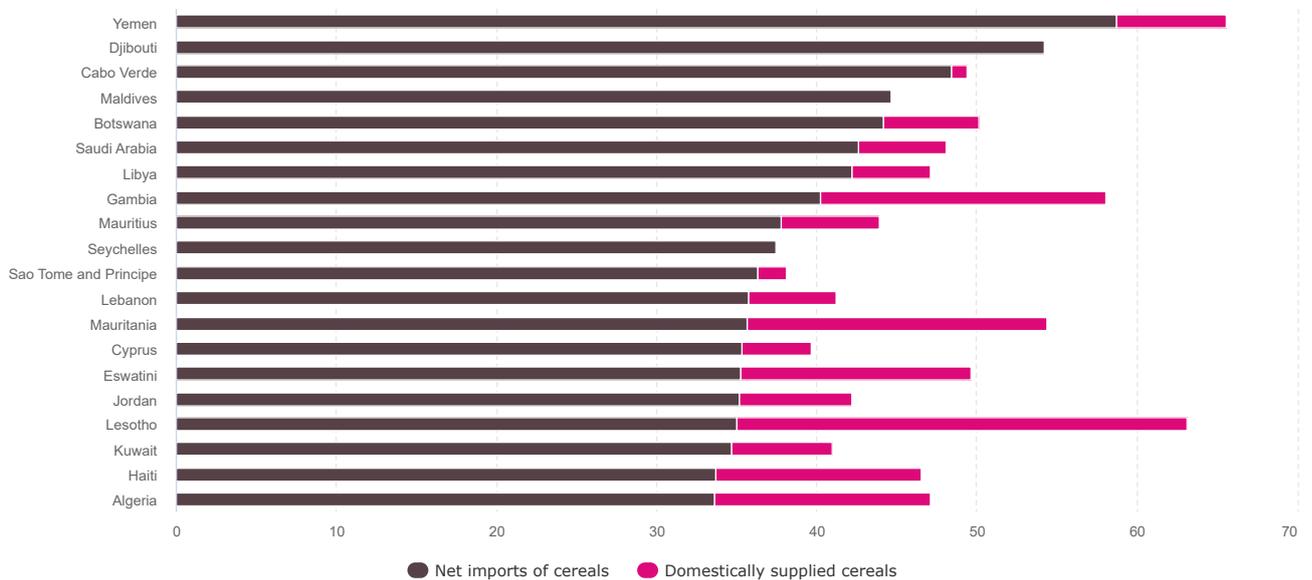
Figure 2. Share of calories supplied and US\$ value of traded food, by food group, world total
(Percentage)



Source: UNCTAD calculations based on FAO (2022b) and UNCTADstat (UNCTAD, 2022)
Note: The figures are compiled using three years average (2018 - 2020) for trade values and year 2019 for data on calories. Food groups include preparations of the main commodity. Food products are grouped according to CPC Version 2.1 for supply in calories and according to SITC Revision 3 for export value. Live animals excluded from trade of basic food.

For many economies, imported cereals make up a substantial part of the food supply. In Yemen, two thirds of the calories supplied come from cereals and only a tenth of that is domestically supplied. This means that 59 per cent of the supplied calories are imported cereals (see figure 3). An additional consideration (not reflected in figure 3) is that Yemen is one of the many countries where total food supply does not exceed that needed for good health outcomes.

Figure 3. Top 20 economies by share of imported cereals of total dietary energy supply, 2017 - 2019
(Percentage of total dietary energy supply)



Source: UNCTAD calculations based on FAO (2022b)
Note: Net imports of cereals, as a percentage of all supplied cereals (in weight), are calculated the same way as FAO's indicator on cereal import dependency ratio, that is, (cereal imports - cereal exports) / (cereal production + cereal imports - cereal exports). This percentage is applied to the share of total dietary energy supply from cereals (in calories) to arrive at the percentage of net imports in the dietary energy supply. The remaining part of dietary energy supply from cereals thus come from domestic production.

Economies where much of the food supply comes from cereals, and little of these cereals are domestically produced, are particularly vulnerable to price increases in cereals. Over the first quarter of 2022, cereal prices rose by 20 per cent to an all-time high. Prices for vegetable oils grew even faster (FAO, 2022c).

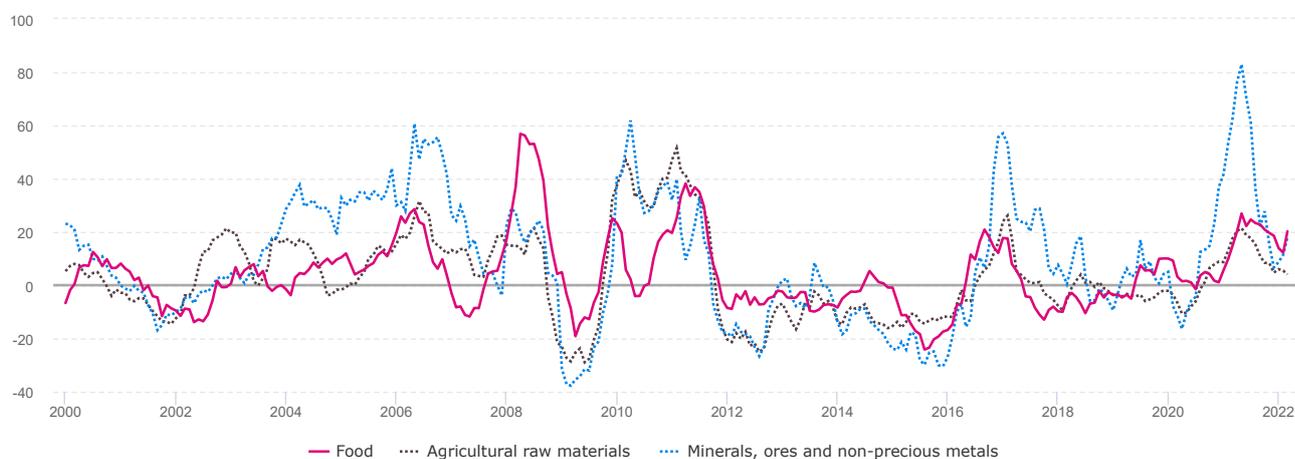
Rapidly increasing food prices threaten food security

Like other commodities, the price of food has increased over the last two decades. Stable increases in prices give consumers and producers a theoretical chance to budget and plan, whereas volatile prices are more disruptive to the livelihoods of people on both sides of the market. There is a strong correlation between food prices and commodity prices generally, though food prices have tended to be less volatile than, for example, non-edible agricultural raw materials or metals (see figure 4). However, sharp rises in food prices between 2007 and 2008 and again in 2011 highlighted the need to develop methods to track price volatility as advance warnings of food crises (Baquedano, 2015). Since spring 2021, the year-on-year price increase of food has been above 10 per cent with a peak of 27 per cent in May 2021 (see figure 4). The prices continued to rise in the first quarter of 2022 due to the war in Ukraine. Not only did the war disturb grain exports from Ukraine, it also threatened to increase production cost of agricultural products via fuel and fertilizers putting even more pressure on food prices. From March 2020 to March 2022 the food subindex of UCPI increased by 38 per cent.

**Food index of UCPI
38% higher in March 2022
than at the start of the
COVID-19 pandemic**



Figure 4. Growth rate for selected subindices of the UNCTAD commodity price index
(Percentage, monthly, year-on-year)



Source: UNCTADstat (UNCTAD, 2022)

Note: The UNCTAD commodity price index displays the average development of prices, in United States dollars, of main primary commodities exported by developing economies. The food index excludes tropical beverages, vegetable oilseeds and oils. For more information, see UNCTAD (2018).

Spikes in food prices can deny low-income families access to sufficient nutritious food. Abnormalities in food prices are in themselves strong indicators of potential threats to food security and provide valuable warning signs, signaling the need for action. Prices carry broad information about recent changes in supply and demand as well as signals about expectations and risks for future food markets. They can be observed easily and frequently (Kalkuhl et al., 2016). Episodes of rapid changes in food prices are sometimes induced by climate events. These episodes are expected to become more frequent with the rising number of extreme climate-related events (FAO, 2018).

The methodology for the SDG indicator of food price anomalies (SDG 2.c.1) relies on identifying food prices with growth rates that differ from the historical average (United Nations, 2022a; Baquedano, 2015). This method is applied both to individual food commodities and to the consumer food price index of an economy. In 2020, one in five economies experienced abnormally quick growth of consumer food prices (defined as Indicator of Food Price Anomalies with a value over 1, see figure 5). These economies were in all geographic regions and were of all sizes of population and GDP.



Figure 5. Food price anomalies, 2020 (SDG 2.c.1)

(Difference between compound growth rate and its historical mean, in standard deviations)



Sources: FAO (2022b) and UNCTADstat (UNCTAD, 2022).

Note: The Indicator of Food Price Anomalies is here applied to the price of a local basket of food items. Values in the range -0.5 to 0.5 are considered normal, value between 0.5 and 1 are considered moderately high and values above 1 are considered abnormally high (United Nations, 2022a).

Lebanon, with the value of 15.1, is outside the range of the figure. The x-axis has a logarithmic scale.

International trade in open and transparent markets may alleviate the effects of external shocks. UNCTAD has long called for increased transparency and tighter regulation of commodity markets to help avoid speculative bubbles (UNCTAD, 2012). Applying these initiatives in food markets can contribute to food security.

Agricultural export subsidies are vanishing, but production is still supported

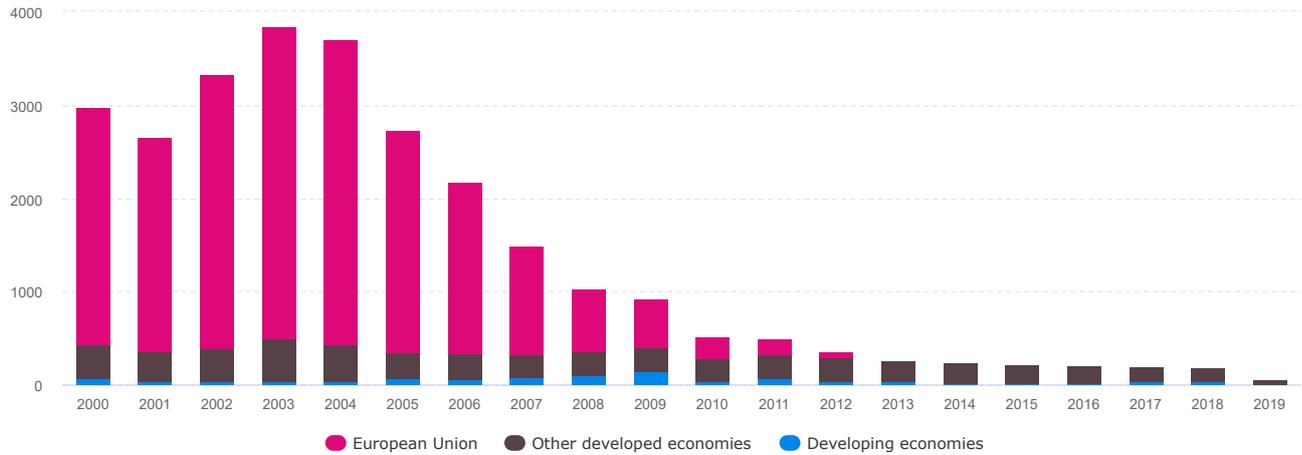
Agricultural subsidies were originally intended to aid domestic producers and farmers in areas where agricultural production costs were high and to ensure the production of enough food to meet domestic needs. Agricultural export subsidies are a form of government intervention to modify a country's terms of trade. They protect producers from international market competition; i.e., economies where the costs of production, such as labour or land, are lower. As such, subsidies may have many spillover effects for the global economy where they can exacerbate volatility and food price spikes. They allow exporters to gain market share without the efficiencies that should accompany such growth. The harmful effects on international trade were already noted in GATT 1947 (see Article XVI, WTO, 2022c).

The WTO Agreement on Agriculture, which came into force in 1995 (WTO, 2022d), placed limits on export subsidies that distort agricultural trade in order to prevent the disposal or dumping of surplus commodities on global agricultural markets. Following the 2015 Nairobi Ministerial Conference, WTO members have taken steps to phase out export subsidies to level the playing field between developed and developing economies. Apart from a few selected agricultural products, developed countries agreed to remove export subsidies with immediate effect, and most developing countries agreed to do so by 2018. However, developing countries will retain the flexibility to cover marketing and transport costs for agriculture exports until the end of 2023, while the poorest and food-import dependent developing countries will be granted more time to reduce export subsidies (WTO, 2022e).

Notifications of agricultural export subsidies were between US\$ three and four trillion in the early years of the 2000s with the majority provided by the EU. Subsidies by the EU have since ceased, and the total has decreased substantially. The 2015 Nairobi package has further strengthened WTO members' commitment to abolish trade-distorting subsidies in agricultural markets. In 2019, only five economies notified WTO about agricultural export subsidies to a total value of US\$58 million (see figure 6).

Figure 6. Notifications to WTO of agricultural export subsidies (SDG 2.b.1)

(Millions of US\$)



Source: United Nations (2022c)

Notes: Only export subsidies budgetary outlays notified to WTO by members who are required to do so are included (United Nations, 2022a).

However, export subsidies are dwarfed by the total support that governments provide to agricultural producers that amount to a market price support, either through licenses, tariffs or other measures that raise domestic market prices or through budgetary expenditures benefitting the agricultural sector (OECD, 2021b). In OECD countries, these forms of support summed to about US\$238 billion in 2020, which accounts for about 18 per cent of gross farm receipts. This support too has decreased over time. In 2000, this figure was 30 per cent (OECD, 2022). Agricultural markets are further supported by budgetary transfers to consumers and by general service supports that are not paid directly to producers but has the agricultural sector as its main beneficiary. A report by the Food and Land Use Coalition (2019) estimates that, globally, the agricultural sector is supported to the tune of US\$700 billion per year. These forms of support differ in the degree they give recipients a competitive advantage that distorts global food markets. Support has been moving in the direction of less distortion by decoupling support that incentivize production towards good use of existing land. It is also recognized that changing support for food exports may change market conditions for net-food importing developing countries and that this needs to be compensated by ensuring that food aid is not hindered and by promoting agricultural productivity in these countries through technical and financial assistance (WTO (2022f); see also [Official support for sustainable development](#)).

18% of receipts for agricultural producers in OECD countries are a result of government support

The report of the Food and Land Use Coalition (2019) found that much of the current use of agricultural subsidies leads to inefficient land use and that there are huge opportunities in reorienting subsidies away from high carbon-emitting production and incentives for deforestation and redirecting them towards more sustainable practices. The positive effects would be manifold, including improving global health and combatting climate change. Especially among OECD economies there is a push towards payments to producers that are conditional on production practices that preserve public goods, such as, biodiversity. Even as export subsidies are being phased out, policies for agricultural trade and support remain key factors in building sustainable food systems (OECD, 2021b)

Notes

1. Basic food refers here to a category of food products that excludes beverages and tobacco, tropical beverages (such as coffee and tea) and spices. When SITC codes are used, the included codes are 0 - *Food and live animals*, 22 - *Oil seeds and oleaginous fruits*, 4 - *Animal and vegetable oils, fats and waxes* with the exclusion of 07 - *Coffee, tea, cocoa, spices, and manufactures thereof*. In the HS classification a comparable set of products would be included in chapters 1-24 excluding 05 - *Products of animal origin, not elsewhere specified or included*, 06 - *Live trees and other plants; bulbs, roots and the like; cut flowers and ornamental foliage*, 09 - *Coffee, tea, mate and spices*, 13 - *Lac; gums, resins and other vegetable saps and extracts*, 14 - *Vegetable plaiting materials; vegetable products not elsewhere specified or included*, 22 - *Beverages, spirits and vinegar*, and 24 - *Tobacco and manufactured tobacco substitute*.

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Aid for Trade: widening gap between disbursements and commitments amid increased needs

SDG indicators

SDG target 8.a: Increase Aid for Trade support for developing countries, in particular least developed countries, including through the Enhanced Integrated Framework for Trade-related Technical Assistance to Least Developed Countries.

SDG indicator 8.a.1: Aid for Trade commitments and disbursements (Tier I)

What is Aid for Trade?

The Aid for Trade initiative was launched at the 2005 WTO Ministerial Conference in China, Hong Kong (SAR) (WTO, 2005). Its goal is to help developing countries, particularly LDCs, build the supply-side capacity and trade-related infrastructure that they need, to assist them in implementing and benefiting from WTO agreements and, more broadly, in engaging in international trade. The assistance is targeted at enhancing national trade policy and regulations, developing infrastructure, and [building productive capacity](#). Aid for Trade is an integral part of regular ODA programmes. It covers three main categories: i) economic infrastructure; ii) economic capacity building; and ii) trade policy and adjustment¹.

The OECD and WTO put in place the 'aid-for-trade monitoring framework' to evaluate the progress in implementing the Aid-for-Trade Initiative. The seventh joint OECD-WTO Aid for Trade monitoring and evaluation exercise held in 2019 highlighted the importance of economic and export diversification, with a focus on promoting growth in the manufacturing sector for African countries, and the role that economic empowerment can play to facilitate this process as well as benefit from it (OECD and WTO, 2019). The eighth global review of Aid for Trade which is to take place in July 2022, with the theme of "Empowering connected, sustainable trade", will discuss the key areas where developing countries and LDCs need a support to overcome supply-side constraints limiting their participation in international trade. This exercise will also focus on policies promoting women's economic empowerment and on the opportunities that [inclusive growth](#) and digital connectivity offer to meet the SDG targets (WTO, 2022).

Academic research and donor evaluation programmes provide evidence of the positive impact of Aid for Trade (OECD and WTO, 2019). Such evaluation, however, can be limited by scarcity of useful data and methodological challenges (Razzaque and te Velde, 2013). A study on the effectiveness of Aid for Trade suggests that a one per cent increase in Aid for Trade for policies and regulations (as a percentage of GDP) induces a 0.15 per cent decline in tariff volatility (Gnangnon, 2019). According to the OECD, for every dollar of Aid for Trade, on average eight additional dollars in exports from all developing countries are generated; this reaches up to twenty dollars for the poorest countries (OECD and WTO, 2013).

Aid for Trade flows remained resilient despite the COVID-19 crisis

The COVID-19 crisis created major setbacks in financing for sustainable development, which had already been under strain before the pandemic. Foreign aid to developing countries rose to unprecedented levels in 2020 (US\$161 billion in real terms), partly due to additional spending mobilized to help developing countries deal with the COVID-19 crisis and an increase in bilateral sovereign lending by some donors (OECD, 2021b). However, the UN warned that increasing spending of donors on military expenditures and on Ukrainian refugees in Europe because of Russia-Ukraine war could occur at the expense of ODA provided to the poorest countries and climate action (United Nations, 2022).



The disbursements to LDCs more than doubled over the period 2006-2020 and totalled US\$14 billion in 2020



In 2020, the donors maintained and even increased the Aid for Trade volumes, supporting an inclusive global recovery. In 2020, the Aid for Trade disbursements from official donors to developing economies rose to an all-time high of US\$48.7 billion in constant 2020 prices, up almost 4 per cent compared to 2019, and up 136 per cent compared to 2006. Aid for Trade commitments to developing economies totalled US\$64.6 billion, in 2020. This represents a yearly increase of nearly 19 per cent, and an increase of 139 per cent compared to 2006, the baseline year which followed the launch of the Aid for Trade initiative. However, the Aid for Trade disbursements fell short of commitments by about a quarter. The average Aid for Trade

gap amounted to approximately US\$9 billion for the period of 2002-2011 and to US\$13 billion for the period of 2012-2020. The Aid for Trade

disbursements to LDCs, in 2020, were 2.7 times higher than those in 2006 and stood at US\$14 billion. It is slightly below the 2019 peak of US\$14.3 billion. The ratio of total disbursements to total commitments to LDCs was 71 per cent in 2020 (see Figure 1).

Figure 1. Aid for Trade flows to developing economies and LDCs
(Billions of US\$ in constant 2020 prices)



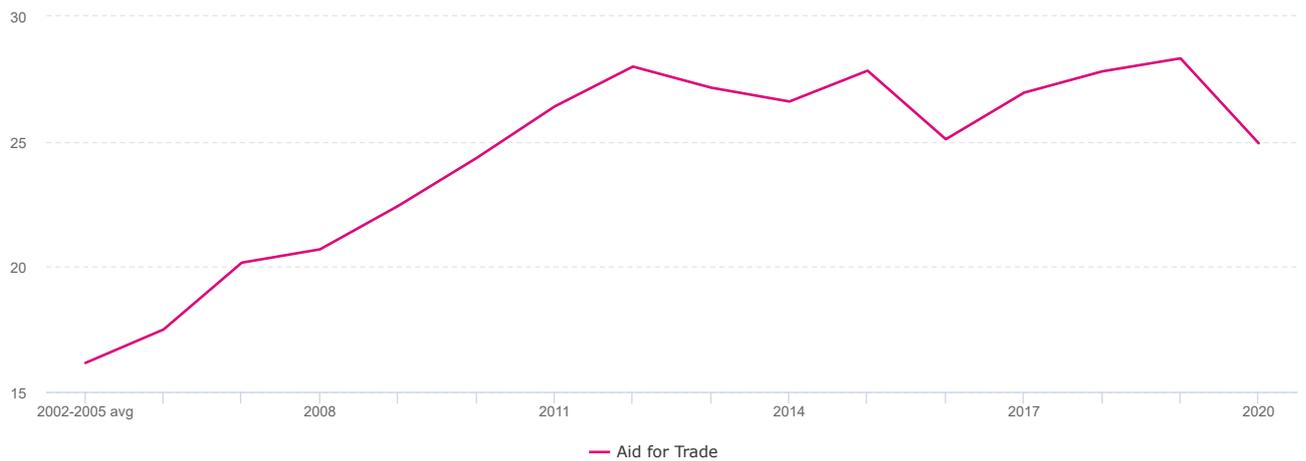
Source: UNCTAD calculations based on data from OECD (2022)

Notes: Aid for Trade gap is calculated as the difference between Aid for Trade commitments and disbursements.

Despite the growth in volumes, the share of Aid for Trade in total ODA disbursements declined by 12 per cent in 2020, as compared to the previous year, when it peaked at more than 28 per cent. Its share amounted to approximately 25 per cent in 2020 (see Figure 2).

 **Aid for Trade share in total ODA disbursements amounted to 25% in 2020**

Figure 2. Aid for Trade share of total ODA disbursements
(Percentage)



Source: UNCTAD calculations based on data from OECD (2022)

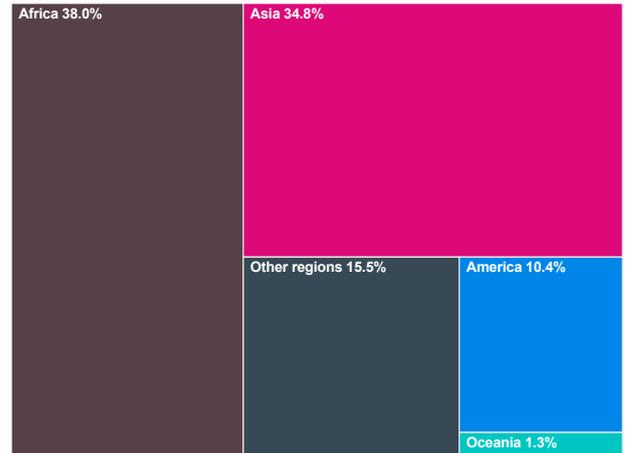
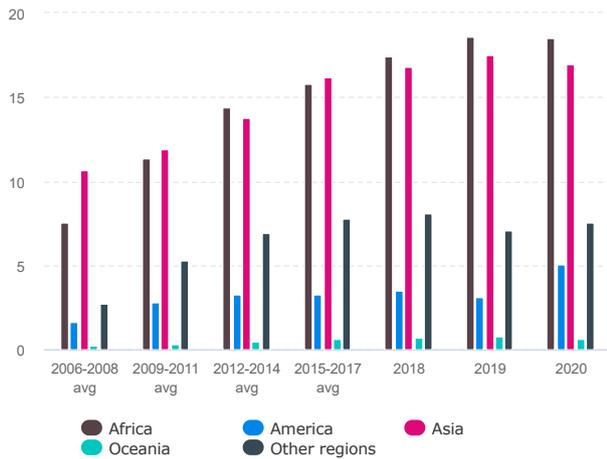
Aid for Trade goes primarily to Africa and Asia

Africa and Asia received most of the global Aid for Trade disbursements in 2020, US\$18.5 billion (38 per cent) and US\$17 billion (35 per cent), respectively (see Figure 3).



Figure 3. Aid for Trade disbursements by region
(Constant prices 2020 USD billions, 2006-2020)

(Percentage, 2020)



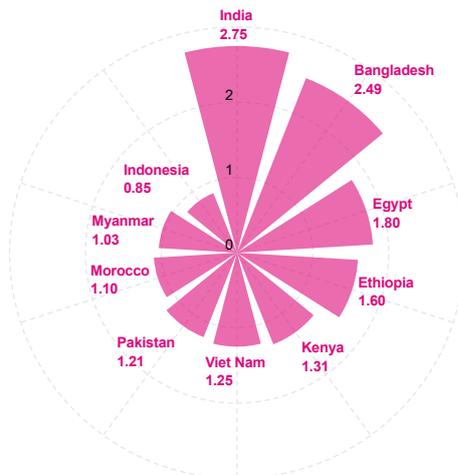
Source: UNCTAD calculations based on data from OECD (2022).
Notes: Other regions include Europe and unspecified countries.

The countries that received the most Aid for Trade in 2020 were India (US\$ 2.7 billion), Bangladesh (US\$ 2.5 billion), Egypt (US\$1.8 billion), Ethiopia (US\$1.6 billion), and Kenya (US\$1.3 billion) (see Figure 4).

In 2020, India was the largest recipient of Aid for Trade, followed by Bangladesh and Egypt



Figure 4. Top 10 recipients of total Aid for Trade disbursements, 2020
(Constant prices 2020 USD billions)



Source: UNCTAD calculations based on data from OECD (2022).

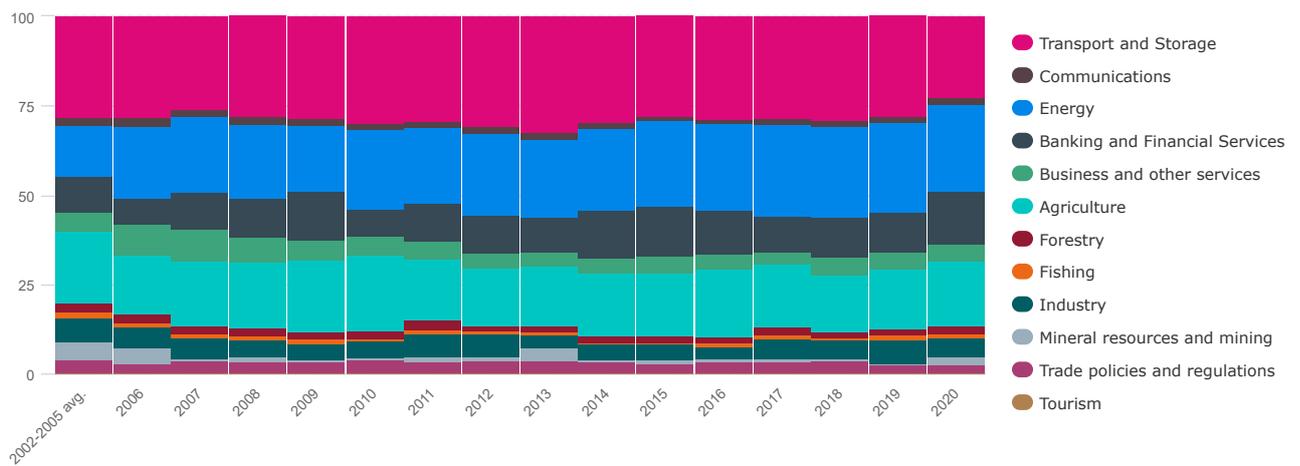
Aid for Trade targets economic capacity building and infrastructure

Economic infrastructure and economic capacity building represented the bulk of total Aid for Trade disbursements. In 2020, they amounted to US\$23.7 billion and US\$23.9 billion (49 per cent each). Trade policies and regulations accounted for only US\$1.1 billion (2 per cent). Assistance in the energy sector was the highest (24 per cent), followed by transport and storage (23 per cent) and agriculture (18 per cent) (see Figure 5).

Aid for Trade disbursements to energy, transport, and agriculture amounted to 65% of total disbursements in 2020



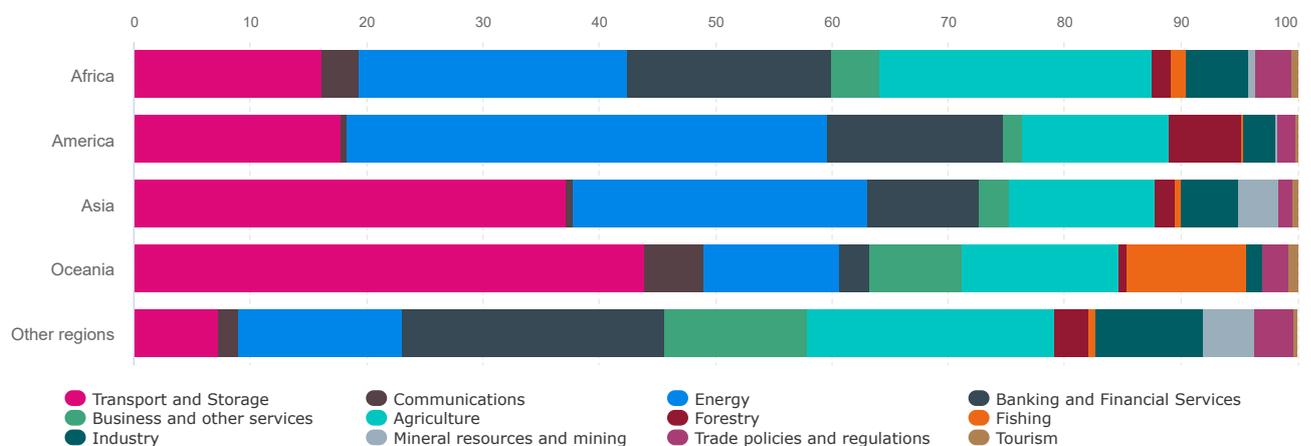
Figure 5. Aid for Trade disbursements by sector
(Proportion of total)



Source: UNCTAD calculations based on data from OECD (2022).

The sectors receiving Aid for Trade disbursements vary across regions. In 2020, the transport sector led disbursements in Oceania, with 44 per cent of allocated total and Asia with 37 per cent of allocated total. Energy and agriculture were the dominant beneficiaries in Africa, accounting for 23 per cent of total disbursements each, while only 16 per cent of spending went to transport (see Figure 6). On average, only 0.4 per cent of total Aid for Trade disbursements to developing countries were allocated to tourism, the sector most severely hit by the COVID-19 pandemic.

Figure 6. Aid for trade disbursements by sector and region, 2020
(Proportion of total)



Source: UNCTAD calculations based on data from OECD (2022).
Note: Other regions include Europe and unspecified countries.

Notes

1. Economic infrastructure includes transport and storage, communication, and energy. Economic capacity building includes banking and financial services, business and other services, agriculture, forestry and fishing, industry, mineral resources and mining, and tourism. Trade policy and adjustment includes trade policy and regulations.

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A hand is shown pouring water from the fingers onto a small green seedling growing out of a mound of dark soil. The entire scene is overlaid with a semi-transparent red filter. The background is a soft-focus image of the same scene.

THEME 2

Productive Growth

*“Exploration is the engine that drives innovation.
Innovation drives economic growth”.*

– Edith Widder

Productive growth

Sustained and inclusive economic growth is an essential requisite for poverty eradication and sustainable development. Productive infrastructure, access to ICT and new technologies, and a stable macroeconomic environment are some of the most important determinants of long-term growth. These are some of the topics covered in this theme of SDG Pulse, along with the domestic and international mechanisms available to finance these policies.

As shown in the statistics and insights presented in [SDG Pulse](#), there are great opportunities to use infrastructure, new technologies, sound economic policy and stable financing mechanisms as enablers of growth. However, these same areas, when not properly managed, could also become obstacles for development. The SDG indicators allow countries to monitor these areas and identify the most urgent priorities.

Available data on these SDG indicators show a mixed picture. On one hand, there has been significant progress in developing economies in many areas, including access to ICT technologies among the population and a growing weight as transport hubs for global trade. On the other hand, there are also important concerns in many countries regarding access to international sources of financing for development and debt sustainability, concerns that have only grown more acute in light of stresses brought on from the aftermath of the COVID-19 pandemic and the war in Ukraine. In terms of domestic resource mobilization, illicit financial flows are increasingly considered as a significant threat to sustainable development, requiring concerted national and international efforts to contain it.

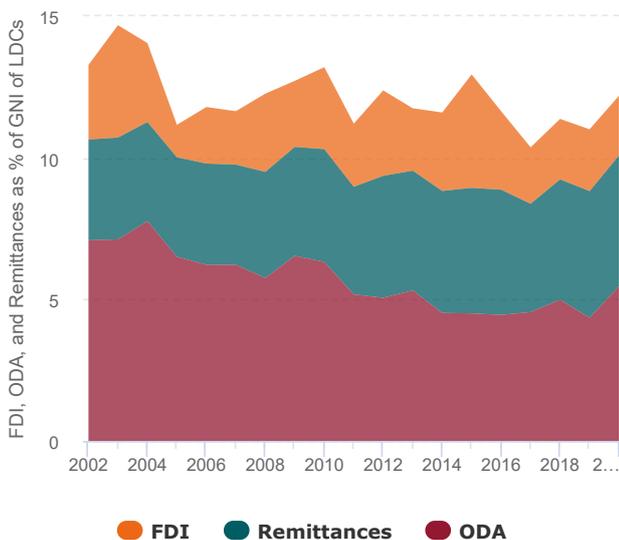


The **weight of international financing** sources for LDC economies has remained stable since 2005, representing **more than 12 per cent of their GNI in 2021**.

[UNCTAD & OECD SDG indicator 17.3.1](#)

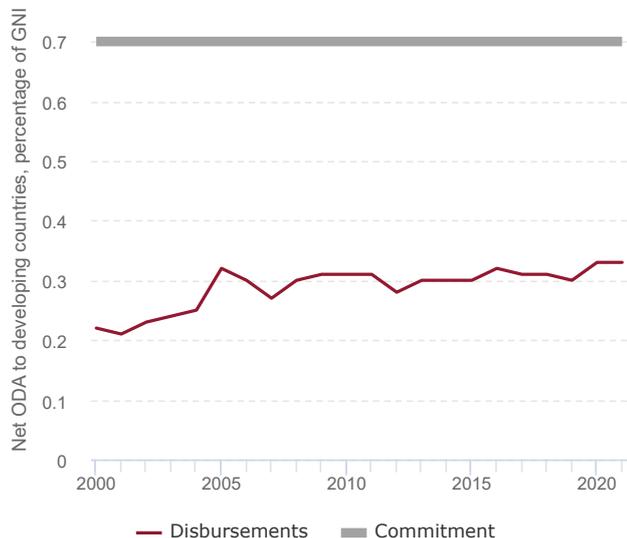
120 countries had signed a bilateral investment **treaty with an LDC** in 2021.

[UNCTAD SDG indicator 17.5.1](#)



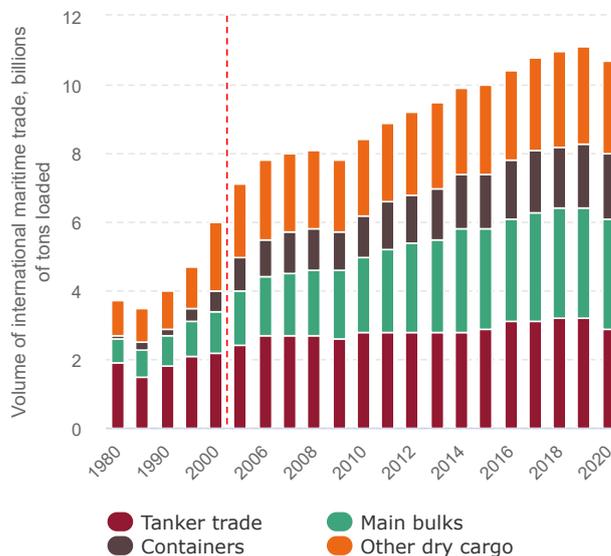
Donor countries continue to fall short on their ODA commitments.

SDG indicator 17.2.1



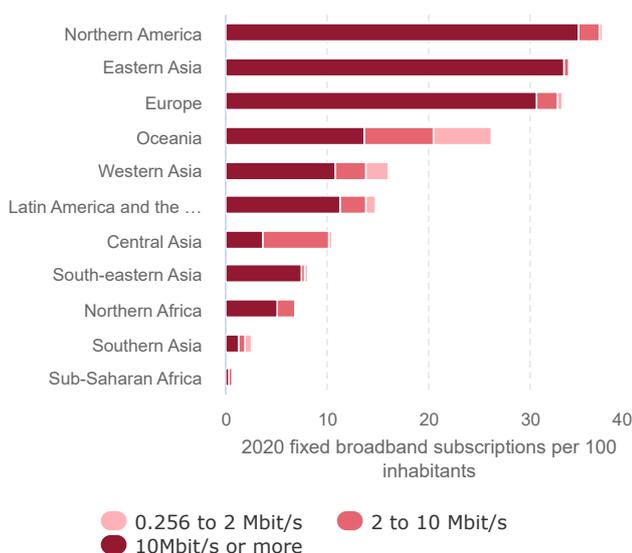
International maritime transport was heavily impacted in 2020 and continues to be impacted by capacity shortages, weighing on global trade.

SDG indicator 9.1.2

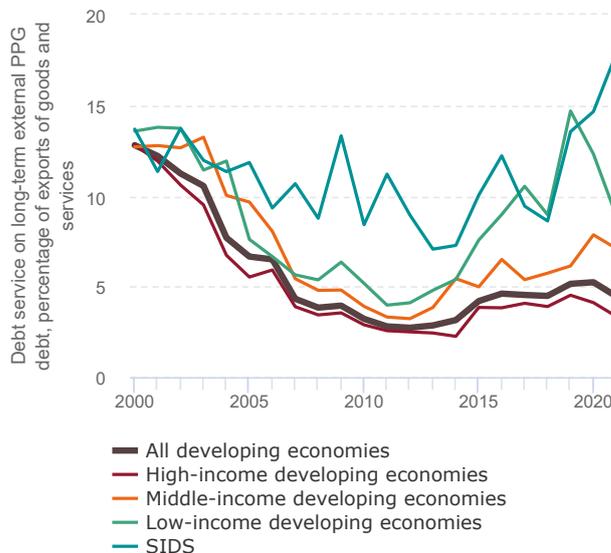


Access to ICT technologies, including broadband connections, continues to rise in developing regions, but they still lag behind the levels of developed regions.

SDG indicator 17.6.1

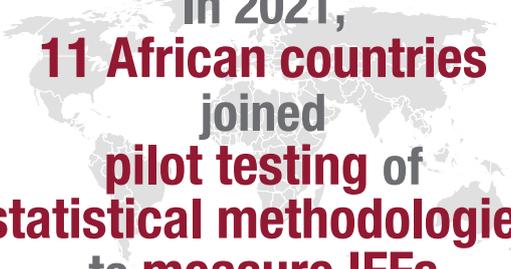


As external debt stocks in the developing world expand, debt servicing continues to affect the ability to finance development, especially in low-income economies.



Pilots will help to find **feasible country-specific solutions** to applying the common framework for IFFs.

UNCTAD & UNODC SDG indicator 16.4.1



**In 2021,
11 African countries
joined
pilot testing of
statistical methodologies
to measure IFFs
with UNCTAD and UNECA**

Robust and predictable sources of financing for sustainable development

SDG indicators

SDG target 10.b: Encourage official development assistance and financial flows, including foreign direct investment, to States where the need is greatest, in particular least developed countries, African countries, small island developing States and landlocked developing countries, in accordance with their national plans and programmes

SDG indicator 10.b.1: Total resource flows for development, by recipient and donor countries and type of flow (e.g. official development assistance, foreign direct investment, and other flows) (Tier I/II)

SDG target 17.3: Mobilize additional financial resources for developing countries from multiple sources.

SDG indicator 17.3.1: Foreign direct investment, official development assistance and South-South cooperation as a proportion of gross national income (Tier I)

Target 17.5: Adopt and implement investment promotion regimes for least developed countries.

Indicator 17.5.1: Number of countries that adopt and implement investment promotion regimes for least developed countries (Tier III)

Many developing countries lack the capacity to mobilise sufficient funds under the right conditions to support programmes and implement reforms towards sustainable development. In addition, even at an aggregate level, there can be considerable fluctuation in resource flows from one year to the next (Sachs et al., 2021). These economic flows can also have a vastly different impact on short and long-term sustained development depending on their source, type and volume. For this reason, financing strategies for the 2030 Agenda receive a prominent role in all implementation strategies.

There are three crucial challenges when it comes to financing development programmes:

- First, there is a need for more resources to achieve the SDGs and address financing gaps and rising borrowing costs. In the context of the “two-speed recovery” from the COVID-19 pandemic, compounded by the war in Ukraine, concerns have been voiced over “the great finance divide” (United Nations, 2022a). That is, the inability of poorer countries to raise sufficient resources and borrow affordably for investment.
- Second, it is important to find the right mix and adequate terms of financing in order to have a lasting effect and reach those individuals, households and communities with the most urgent needs and where the highest impact can be achieved.
- Third, as developing countries have gradually integrated into global financial markets, they have grown more vulnerable to the volatility and procyclical nature of private capital flows. Subject primarily to external factors (such as monetary and fiscal policy decisions in advanced economies or commodity price movements) rather than local factors, these flows have been particularly fickle since 2008, with the recurrence of global external shocks, including the pandemic and more recently the war in Ukraine. In addition to the numerous macroeconomic challenges that these flows pose (UNCTAD, 2021), it has been extremely difficult for developing countries to harness them so that they become efficient, robust and predictable sources of financing for development. The challenge is even more critical when countries graduate to the next income group, lose eligibility for concessional finance, or part thereof, and are instead expected to rely more on private financial markets.

Different external financing sources are better for different aspects of development

The outcome documents of the most recent United Nations International Conferences on Finance for Development, namely the Monterrey Consensus (United Nations, 2003) and the Addis Ababa Action Agenda (United Nations, 2015) state that the primary responsibility for financing development belongs to the countries themselves. Therefore, governments must enhance their domestic resource mobilization so that financing needs are met in a predictable and sustained manner. However, the international community also has an important role to play. Sources of external financing include international trade, FDI and other private flows (from businesses and individuals), international financial and technical cooperation, and external debt. These different forms of economic flows are, however, not assumed to be equal in their effect on development.

International trade has expanded significantly in previous decades under the existing multilateral trading system, while many new and longstanding challenges remain. These issues are covered in Multilateralism for Trade & Development. International trade is an important engine for economic growth. With adequate support and fostering mechanisms, trade can encourage long-term investments and higher productivity, create jobs and livelihoods for millions, and provide important resources to finance public services and policy interventions. However, a high dependence on international markets could increase exposure to global volatility and macroeconomic imbalances, as well as imperil vulnerable or immature domestic industries to excessive competition. If not managed properly, trade can create imbalanced development opportunities thus promoting inequality across population groups, as well as between women and men (see Luomaranta et al. (2020) and The Many Faces of Inequality).

Public debt is another essential financing mechanism for development. As long as funds raised by external or domestic borrowing support strategic productive investment, they can foster growth without threatening future financial stability. It is, therefore, important for countries to reach long-term debt sustainability. This topic is covered in depth in Developing countries' external debt sustainability.

FDI to developing countries declined by 8.4% in 2020, year over year



FDI remains a vital source of financing for development. With inflows of US\$733 billion in developing economies in 2020 (based on UNCTADstat, see UNCTAD, 2022a), FDI was the largest source of external financing in these countries (UNCTAD, 2022b). FDI was hit hard in 2020, however, with the US\$733 billion figure representing an 8.4 per cent decline compared with 2019. Moreover, these flows are directly linked to the main drivers of productive growth and employment creation: establishment of new businesses and greenfield investments; expansion of operations; acquisition of machinery and equipment; upgrade of technology, knowledge and innovation; and others. However, FDI inflows are not distributed evenly among countries; instead, they are concentrated among countries with higher growth prospects, stronger rule of law and respect for contracts, and stable institutions. This means that some countries with urgent financing needs may be bypassed. FDI to LDCs represented only 2.1 per cent of global inflows in 2020, for example (based on UNCTADstat, see UNCTAD, 2022a). In addition, this source of external financing remains tied to macroeconomic performance and the global economic climate. It is, therefore, typically a pro-cyclical flow that may be absent in times when sustained financing is most needed. FDI flows were severely impacted by the global pandemic, with global 2020 flows dropping to their lowest level since 2005. Despite their reliance on export and commodity-based

investments, which have been hit especially hard during the pandemic, LDCs and developing countries suffered a relatively milder pullback in FDI compared with other countries.

Remittances lack the employment creation potential of FDI because they are managed directly by individuals and are mostly directed towards household consumption. Their capacity to raise productive investment is, therefore, limited. However, remittances are an indispensable source of income for many countries. In LDCs, for example, they are the most important source of external financing, remaining substantially higher than FDI in 2020 (US\$48 billion compared with US\$22 billion) (based on UNCTADstat, see UNCTAD, 2022a). Remittances are also a stable source of income for families, contributing to housing, nutrition, health and education. Thus, they act as an important social safety net. In addition, in countries with an active support policy, remittances have become a significant source of funds for improving social and economic infrastructure.

Official international support plays a unique role when it comes to supporting global development, especially for LDCs and other vulnerable economies. In addition to its concessional nature, official support is the only source of financing available in many cases. Especially in situations of low rentability or high risk, official support can become important for mobilizing additional resources. This source of funding is described in greater detail in *Official Support for Sustainable Development*.

In this context, it is also important to monitor South-South Cooperation. Links and connections between countries of the Global South have expanded in volume and scope over the previous decades. This is explained to a certain extent by the increasing political and economic weight of several emerging and developing economies across Asia, Africa and Latin America. For a variety of reasons, including the lack of a universally accepted definition and opacity regarding its scope and coverage, South-South cooperation has long proven hard to quantify (Besharati and MacFeely, 2019).

However, thanks to the joint efforts by countries from the global South, for the first time there is now a global, voluntary framework to measure South-South cooperation (see Box 1). This new statistical framework will serve as a reference for measuring both financial and in-kind flows for sustainable development from the recipient perspective. It will play a critical role in providing the data needed to report on the new SDG indicator 17.3.1 on 'additional financial resources mobilized for developing countries from multiple sources' (UNSD, 2022), which has just been adopted by the United Nations Statistical Commission in its 53rd session (UNSD, 2022) and for which co-custodianship was assigned to UNCTAD and OECD.

The Commission also "requested that further work on this [framework], including on global reporting and capacity building, be enabled by UNCTAD's co-custodianship and led by countries from the global South, building on country-led mechanisms, and be included under indicator 17.3.1 in the future" and "invited countries involved in South-South cooperation to work closely with UNCTAD". Against this backdrop, UNCTAD has launched pilot measurement exercises with pioneering countries to develop, test and refine tools to prepare and collect data on South-South cooperation for the new SDG indicator. UNCTAD will also be launching a wider capacity development project where the pioneering countries will be able to share their expertise with other providers of SSC.

Box 1: The new statistical framework for the quantification of South-South cooperation in the context of Target 17.3

In April 2019, the United Nations General Assembly (A/RES/73/291, para 25) encouraged “all actors to support initiatives for information and data collection, coordination, dissemination and evaluation of South-South cooperation, upon the request of developing countries”. So far, country and regional variations in approaches to and concepts of South-South cooperation, as well as political dimensions, have made it difficult to reach consensus on a definition or statistical estimates as to the value of South-South cooperation. This uncertainty has prevented reporting on the related SDG indicator and seriously hampered the monitoring of progress in mobilizing financial resources for developing countries.

In view of the increased urgency, in October 2020, the Working Group on Measurement of Development Support of the IAEG-SDGs established a sub-group dedicated to South-South cooperation. UNCTAD was asked to act as secretariat to this sub-group, consisting of Southern countries.

In a process led by Southern countries, a conceptual framework for the measurement of SSC was developed reflecting current experience and solutions for addressing measurement challenges. The work provides an operational framework which, among other things, will allow measurement of the current modalities of SSC under Target 17.3.

The framework takes into account the multidimensional and unique characteristics of South-South cooperation and its different modalities, thus enabling the measurement of its financial and non-financial dimensions from the perspective of developing countries. It considers elements of solidarity between developing countries that constitute powerful instruments for promoting international and regional development, instead of focusing only on vertical relations driven by grants, technical cooperation and concessional loans.

Considering different views among developing countries on the methods that could be applied to quantify SSC and to allow flexibility to develop country-led systems, the framework presents three sets of quantifiable items, that can be independently measured and reported:

- Group A: Financial modalities of South-South cooperation (reported directly through monetization)
- Group B: Non-financial modalities of South-South cooperation (including items that may be monetized)
- Group C: Non-financial modalities of South-South cooperation (the same items as in Group B, subject to quantification by non-monetized methods)

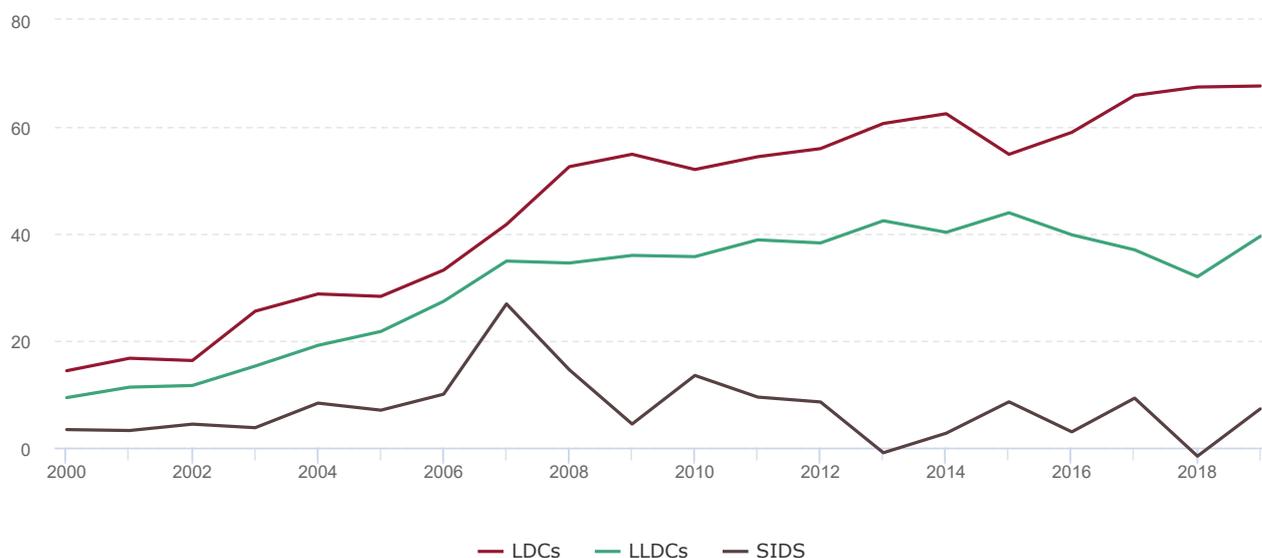
A full listing and a description of the items included in each group of the conceptual framework is available on the IAEG-SDGs website (United Nations, 2021b).

Pilot data collection exercises are being carried out in 2022, to be followed by a wider capacity development project by UNCTAD and United Nations Regional Commissions from 2023 onward to support countries of the South to start reporting on SDG indicator 17.3.1.

Recent trends in external financing

Financing for development is a crucial element of the 2030 Agenda. SDG target 10.b seeks to “encourage official development assistance and financial flows, including foreign direct investment, to States where the need is greatest [...]” To this end, SDG indicator 10.b.1 measures total resource flows for development. Figure 1 presents recent trends in these flows for three groups of economies, LDCs, LLDCs and SIDS, that face heightened challenges in achieving their development goals.

Figure 1. Total resource disbursements for development (SDG 10.b.1)
(Billions of current US\$)

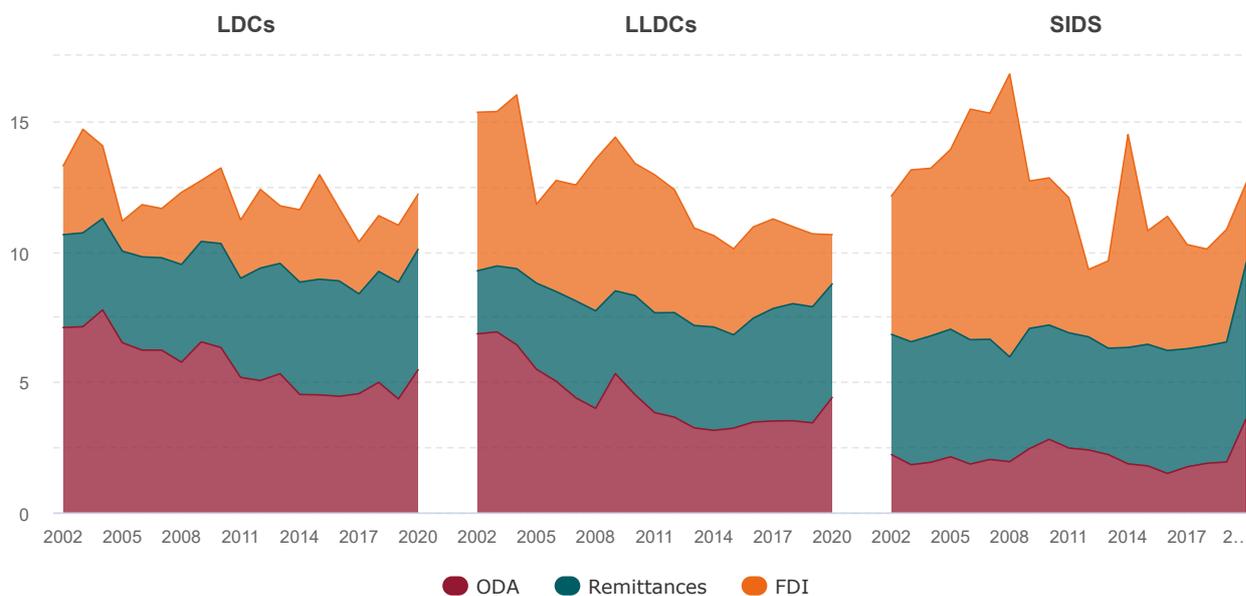


Source: UNCTAD calculations based on data from OECD (2022a).

Even expressed in current prices, the trends in external financing have not been homogeneous through time or across country groups. Resource flows to LDCs increased fourfold between 2000 and 2019. However, most of this increase was registered before 2010. Since then, total external funding for LDCs has increased at a slower rate and with some transitory reversals. Figure 1 shows a more disappointing evolution for LLDCs. The years from 2000 to 2007 showed sustained growth in funding, followed by several years of stagnation. An improvement during the years 2012 to 2015 was followed by three straight years of decline, falling back to 2006 levels in 2018. 2019 brought hope, however, registering the first increase since 2015. Funding for SIDS has shown more modest volumes and greater volatility. After a peak in 2007, external financing has seen steep declines, practically drying out in 2018 before rebounding somewhat in 2019. Despite positive developments in 2019, unfortunately, a significant decline can be expected for 2020.

The earlier SDG indicator 17.3.1 also examined financial support for development from multiple sources, but as a proportion to GNI. This transformation put external financing in context with all sources of income in the national economy. Figure 2 shows the results for LDCs, LLDCs, and SIDS. The figure also includes remittances because, although not part of the official SDG indicator, they are an important revenue source for many countries.

Figure 2. FDI, ODA and remittances
(Percentage of GNI)



Source: OECD (2022a) and World Bank (2022).

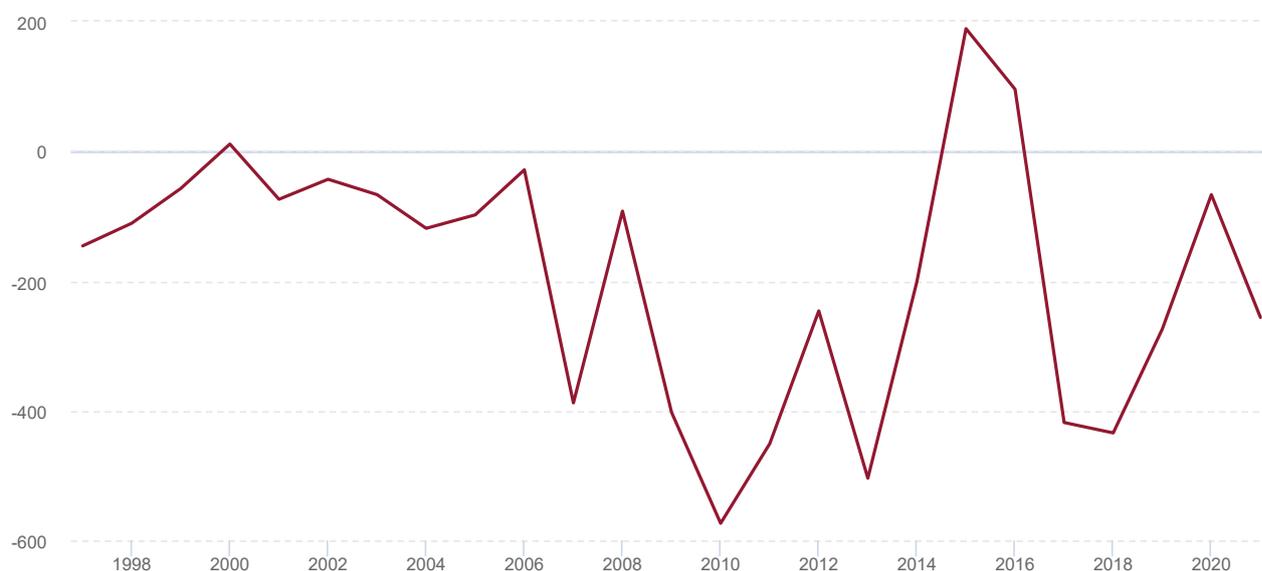
Between 2002 and 2020
FDI, ODA and remittances
accounted for
13% of GNI for
LLDCs and SIDS
on average

Figure 2 shows the importance of external financing flows to LDCs, LLDCs and SIDS. The three sources combined on occasion amount to 15 per cent or more of total GNI, though in recent years this share has been decreasing, driven mostly by slowdowns in FDI or ODA, the latter of which increased significantly in 2020. In fact, although a sizable source of financial flows, FDI shows high volatility, in addition to a downward trend since 2008 for LLDCs and SIDS. Remittances for all three groups routinely account for more than 4 per cent of GNI and they are significant both in terms of high volume and low volatility. Remittances represent a more stable inflow than FDI, with a standard deviation almost 10 times lower over the period covered in Figure 2. The observed downward trends for FDI and ODA in these groups of economies indicate room for policies to attract investment and other sources of funds to the places where they are most urgently needed. It is, for instance, pressing that developed countries meet their ODA pledges, equivalent to 0.7 per cent of GNI, as well as protect current shares of assistance to developing countries.

Figure 3 shows a clear increase in the volatility of net private capital flows to developing countries since the 2008 crisis, a reaction to the increasing occurrence of jitters or shocks in global financial markets. The mobilization of these resources was unsurprisingly challenged in the wake of the COVID-19 crisis: while expansionary monetary policies in the North, alongside measures from the international community, such as the G20 Debt Suspension Initiative and the allocation of new SDRs by the IMF, managed to eventually contain the huge capital flight which occurred during the first quarter of 2020, the emergence of new COVID-19 variants as well as looming inflation and prospects for a tightening of monetary conditions in the United States of America have caused net private capital flows to developing countries to plummet in 2021. They fell sharply by 283 per cent, to -US\$256 billion. If the international community does not take concrete measures to facilitate access to private financial flows for development, this trend is likely to worsen in 2022

with the war in Ukraine, which is projected to produce alarming cascading effects to a world economy already battered by COVID-19 and climate change (United Nations, 2022b).

Figure 3. Net private capital flows to developing countries
(Billions of US\$)



Source: IMF (2022).

Outward investment promotion instruments increasingly adopted by developed countries

SDG target 17.5 encourages countries to promote investment for LDCs. The intention of SDG indicator 17.5.1 is, more specifically, to measure the “number of countries that adopt and implement investment promotion regimes for developing countries, including LDCs”. As a result of work done by UNCTAD, as the custodian of this indicator, the definitions and measurement methodologies were agreed upon in late 2019 by the IAEG-SDG (United Nations, 2021b).

In recent years, developed economies have implemented policies and measures to encourage outward FDI, including investment in LDCs. Some emerging economies have also begun to do so.

These policies include mainly investment guarantees protecting outward investors against certain political risks in a host country, financial and fiscal support, mostly in form of loans, direct capital participation by a home state in an investment project abroad or investment facilitation instruments, such as information hubs, networking events, and other support services.

Investment promotion instruments are generally available for outward investment in any foreign country or economy. Promotion tools targeted specifically at supporting investment in LDCs are difficult to identify.

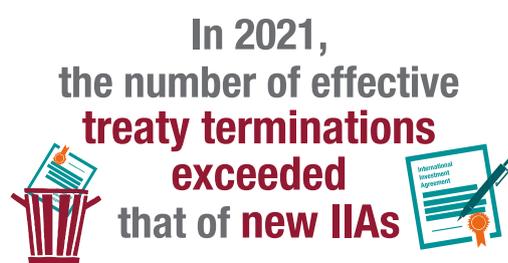
Even if most provider countries do not yet have in place investment promotion regimes targeting specific groups of countries, such as LDCs, progress on these indicators can be assessed by looking at the number and amount of investment guarantees and financial and fiscal support that home countries and international institutions have provided to investors when investing in LDCs and other developing countries. However, information on this is still scarce. In total,

in its direct survey of countries, UNCTAD identified 28 countries that provide for at least one type of instrument for promoting OFDI that directly targeted or benefited investors in developing countries. Among them, at least 10 countries had implemented policies that specifically promote OFDI in developing countries, including LDCs. The most common policy instruments are investment guarantees or insurance policies (at least 23), but countries provide also loans for internationalization of local companies (at least 14). In addition, at least 11 countries offer minority equity participation of the State for investment projects abroad. Investment facilitation instruments are used by at least 7 countries. Some countries use all four types of investment promotion instruments.

While most OFDI promotion regimes are implemented by developed economies, UNCTAD research points to an early trend towards the adoption of such schemes by emerging economies (e.g., Brazil, India, Mexico, Paraguay, Qatar and Turkey), consistent with the rising South-South FDI flows.

The rise of megaregional investment agreements

IAs are another policy tool to foster investment promotion regimes for developing countries, including LDCs, as pursued by SDG target 17.5.



The annual number of new BITs continues to decline. As in 2020, the number of effective treaty terminations in 2021 exceeded that of new IIAs (UNCTAD, 2022b). On the other hand, megaregional IAs have been proliferating in recent years, with possible significant implications for future international investment rulemaking. Megaregional agreements are broad economic agreements among a group of countries that together carry significant economic weight and in which investment is only one of several subjects addressed. These include for example the African Continental Free Trade Area (AfCFTA); the EU–United Kingdom Trade and Cooperation Agreement; the China–EU Comprehensive Agreement on Investment (CAI); the Regional Comprehensive Economic Partnership (RCEP); the United States–Mexico–Canada Agreement (USMCA); and the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP).

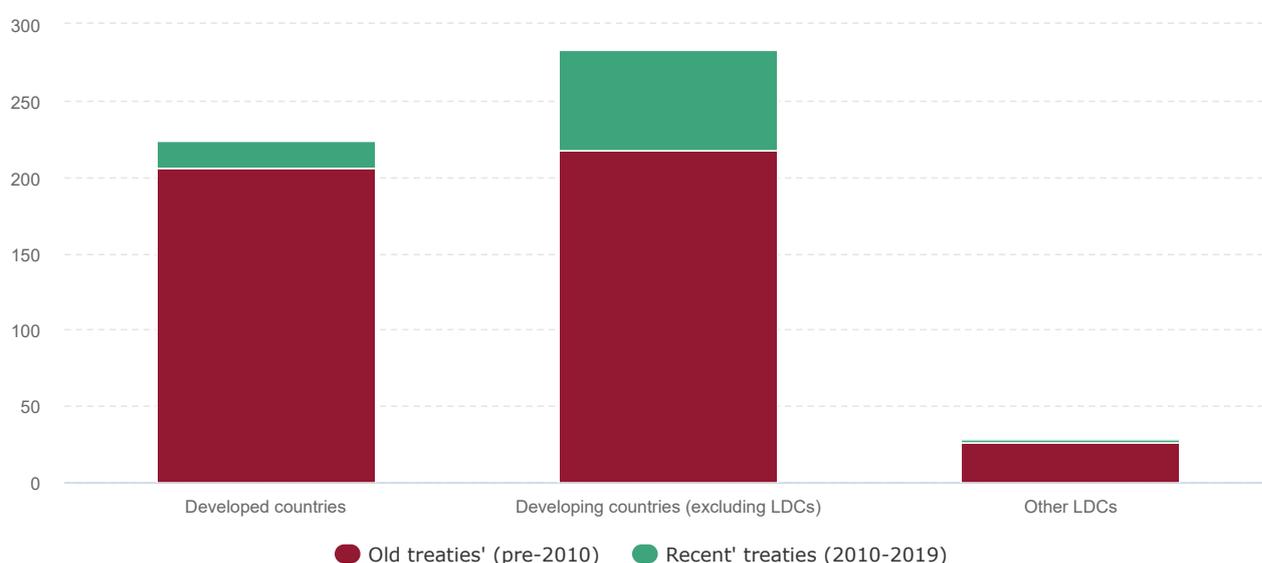
As of December 2021, LDCs have concluded a total of 552 BITs (307 of which are in force). LDCs' bilateral treaty activity has hence followed the overall trend in IIAs, with a shift away from bilateral towards regional investment rulemaking. LDCs are now party to 76 treaties with investment provisions (TIPs). These include for example recent megaregional IAs such as the Regional Comprehensive Economic Partnership (2020); the CARIFORUM-UK EPA (2019); the ASEAN - Hong Kong, China SAR Investment Agreement (2017); the Pacific Agreement on Closer Economic Relations Plus (2017); as well as AfCFTA Investment Protocol currently under negotiations.

UNCTAD works with members states to modernize IAs using the Investment Policy Framework for Sustainable Development first developed in 2012 and updated in 2015 (UNCTAD, 2015). Since then, 155 countries have formulated new sustainable, development oriented and equitable IAs. These modernized IAs emphasize investment for sustainable development and ensure the parties' right to regulate for public policy objectives such as the protection of the environment, labour and health.

More remains to be done to modernize the stock of 2 500 old-generation IIAs in force today. Most recently, UNCTAD has launched the IIA Reform Accelerator (UNCTAD, 2020) to expedite this process. The Accelerator responds to the need for change of substantive aspects of the IIA regime by focusing on a selection of reform-oriented formulations for eight key IIA clauses (including fair and equitable treatment, and indirect expropriation provisions). The IIA Reform Accelerator identifies ready-to-use model language, accompanied by recent IIA and model BIT examples.

This work is further supported by UNCTAD “Action Packages” for investment to mainstream SDGs into IPAs and investment strategies (UNCTAD, 2018). Modern industrial policies often directly promote SDG-related industries, such as clean energy, electric vehicles, ecotourism, health care and education, but the process of modernizing industrial policies is slow.

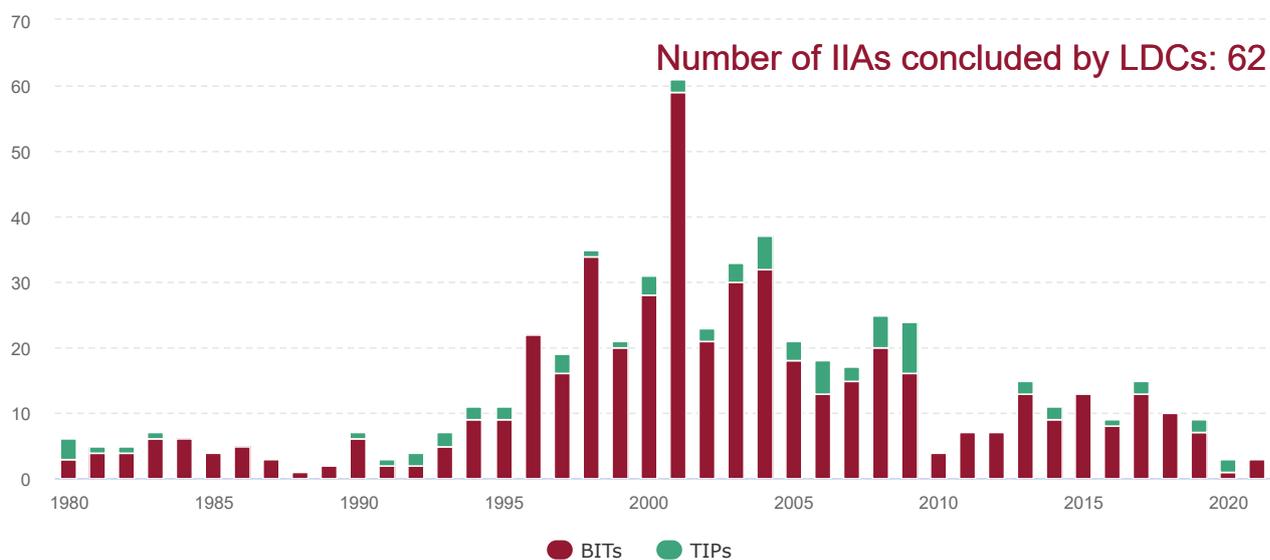
Figure 4. Bilateral investment treaties with LDCs by development status of donor countries



Source: UNCTAD (2022b).

Figure 5. Number of IIAs concluded by LDCs, 1980-2021

(Number of IIAs)

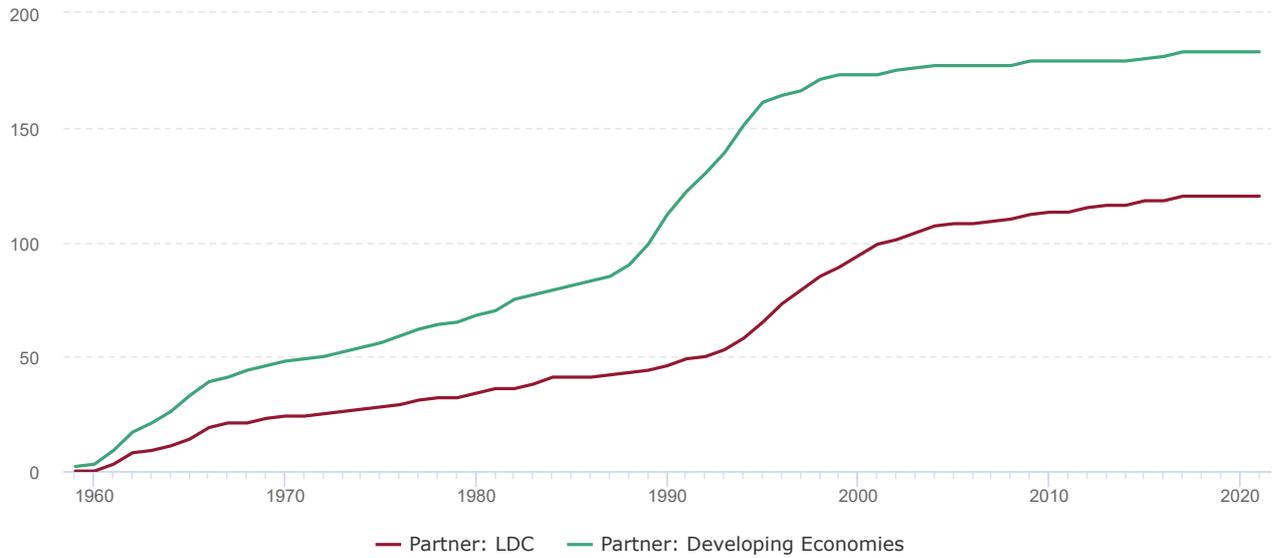


Source: UNCTAD (2022b).

Typically, LDCs' BITs with other countries are still “old generation” treaties that are in need of modernization so that they can help achieve more sustainability-oriented development outcomes. BITs and other IIAs could be reformed in five areas: (i) safeguarding the right to regulate, while providing protection; (ii) reforming investment dispute settlement; (iii) promoting and facilitating investment; (iv) ensuring responsible and sustainable investment; and (v) enhancing systemic consistency (UNCTAD, 2017). LDCs concluded 86 “new generation” BITs between 2010 and 2020, while 449 existing “old generation” BITs, dating from before 2010, have not yet been reformed. Most of these old generation BITs make little or no reference to sustainable development objectives or to the right of LDCs to regulate investment in the public interest. UNCTAD’s Investment Policy Framework for Sustainable Development (UNCTAD, 2015), its Reform Package for the International Investment Regime (UNCTAD, 2018) and the newly released IIA Reform Accelerator (UNCTAD, 2020) can guide countries in reforming these old-generation IIAs.

Preliminary data for SDG indicator 17.5.1, available from UNCTAD’s IIA Navigator, show that LDCs were parties to a total of 628 IIAs (signed or in force) as of 1 December 2021. This includes 262 IIAs with developed countries, and 366 IIAs concluded with other developing countries. The cumulative number of countries that have signed (“adopted”) BITs with LDCs and developing economies reached 120 and 183 by the end of 2021, respectively (Figure 6). The rate of new countries signing BITs with LDCs and developed economies has slowed in recent years after rapid growth in the 1990s. In light of IIA reform efforts across different country groupings and geographical regions, the negotiation of BITs is becoming more complex as countries attempt to strike a balance between investment protection and the right of host states to regulate, assessing the risks and benefits of these agreements.

Figure 6. Cumulative number of countries with signed BITs (SDG 17.5.1)



Source: UNCTAD (2022b).

Developed economies, including many EU member states, have the largest number of BITs with LDCs; for instance, Germany has 33. The top ten economies, listed in table 1, are also well placed to contribute to the modernization of investment agreements with LDCs to consider sustainable development and social responsibility. The LDCs with the most BITs in place with other economies comprise Yemen, Ethiopia and Sudan (see Table 1). Efforts to modernize investment treaties would have a potentially large effect on these LDCs to promote investment for development.

Table 1. Economies with the most BITs with LDCs, as of end-2020

Top 10 developed countries with most BITs with LDCs

Developed country	Number of BITs
Germany	33
Switzerland	26
France	18
Belgium and Luxembourg	19
United Kingdom	17
The Netherlands	16
Italy	15
Portugal	7
Spain	7
Sweden	7

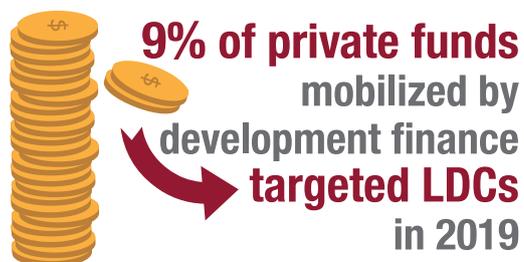
Top 10 LDCs with BITs

LDC country	Number of BITs
Yemen	36
Ethiopia	33
Sudan	32
Bangladesh	29
Senegal	29
Mozambique	27
Cambodia	26
Guinea	24
Laos	23
Mali	22
Mauritania	22

Source: UNCTAD (2022b).

Note: Belgium/Luxembourg are included as a group because they negotiate treaties together as an economic union (Ministry of Foreign and European Affairs, Luxembourg, 2018).

Africa was the main recipient for development finance



OECD (2022b) collects data on funds mobilized from the private sector by development finance interventions, such as investment guarantees, syndicated loans, credit lines and direct investment in companies. According to data by OECD, a total of US\$257.6 billion was mobilized globally from 2012 to 2019, with a drop of 9 per cent in 2019 from the previous year. A further drop in 2020 due to the pandemic's impacts on the private sector is expected. In 2019, over nine per cent of the amounts mobilized supported LDCs, totalling US\$4.4 billion. Support to LDCs increased by 14 per cent from 2018.

In the period 2017-2018, development finance was divided evenly across the five continents. Among LDCs, the top recipients were Uganda, Myanmar, Benin, Mauritania and Bangladesh, receiving half of the support to LDCs. The top sectors receiving development finance in LDCs were energy (US\$677 million), banking (US\$503 million), industry and construction (US\$303 million) as well as communications (US\$211 million).

Overall, investment guarantees were the instrument that mobilized the most funds for LDCs, US\$2.6 billion according to preliminary figures for 2019, accounting for about 60 per cent of the total. Other financing tools included direct

investment, syndicated loans, credit lines and co-financing. In 2017-2018, the largest bilateral providers were France, the United States of America, the United Kingdom, Finland and the Netherlands. The flows from Finland consisted of direct investment only; the Netherlands mainly offered syndicated loans; whereas the other three utilised more often investment guarantees.

Despite progress, the measurement of indicator 17.5.1 remains a challenge, and UNCTAD will continue efforts to improve the coverage of types of investment promotion schemes. A more comprehensive assessment would also require home countries of investment to collect additional and more exhaustive data on the impact of their outward investment promotion tools, including in terms of volume and geography of supported investment.

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Official international assistance: Stagnation despite pledges and new development challenges

SDG indicators

SDG target 2.a: Increase investment, including through enhanced international cooperation, in rural infrastructure, agricultural research and extension services, technology development and plant and livestock gene banks in order to enhance agricultural productive capacity in developing countries, in particular least developed countries
 SDG indicator 2.a.2: Total official flows (official development assistance plus other official flows) to the agriculture sector (Tier I)

SDG target 9.a: Facilitate sustainable and resilient infrastructure development in developing countries through enhanced financial, technological and technical support to African countries, least developed countries, landlocked developing countries and small island developing states
 SDG indicator 9.a.1: Total official international support (official development assistance plus other official flows) to infrastructure (Tier I)

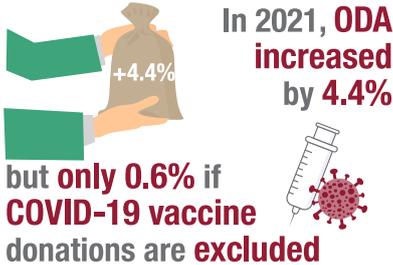
SDG target 17.2: Developed countries to implement fully their official development assistance commitments, including the commitment by many developed countries to achieve the target of 0.7 per cent of gross national income for official development assistance (ODA/GNI) to developing countries and 0.15 to 0.20 per cent of ODA/GNI to least developed countries; ODA providers are encouraged to consider setting a target to provide at least 0.20 per cent of ODA/GNI to least developed countries
 SDG indicator 17.2.1: Net official development assistance, total and to LDCs, as a proportion of the OECD DAC donors' GNI

The Addis Ababa Action Agenda on Financing for Development (United Nations, 2015a) clearly identifies ODA and OOFs as a relevant element in the financing of sustainable development programmes. As shown in [Robust and predictable financing sources](#), these flows are relatively small when compared to domestic public resources or private flows. However, they still play an essential role since they frequently function as “seed funds” or catalysers of additional resource mobilization in sectors or projects where other funding options are limited, or where investors are reluctant to participate. Furthermore, for some countries in vulnerable situations, official funds are frequently the only source of financing available.

For this reason, the importance of official flows is often highlighted in the 2030 Agenda. In fact, they are referred to in 11 targets, including sector-specific official support to agriculture¹, health², water and sanitation³, clean energy⁴, biodiversity⁵ and others.

No progress on Target 17.2 despite a record high in ODA disbursements due to vaccine donations

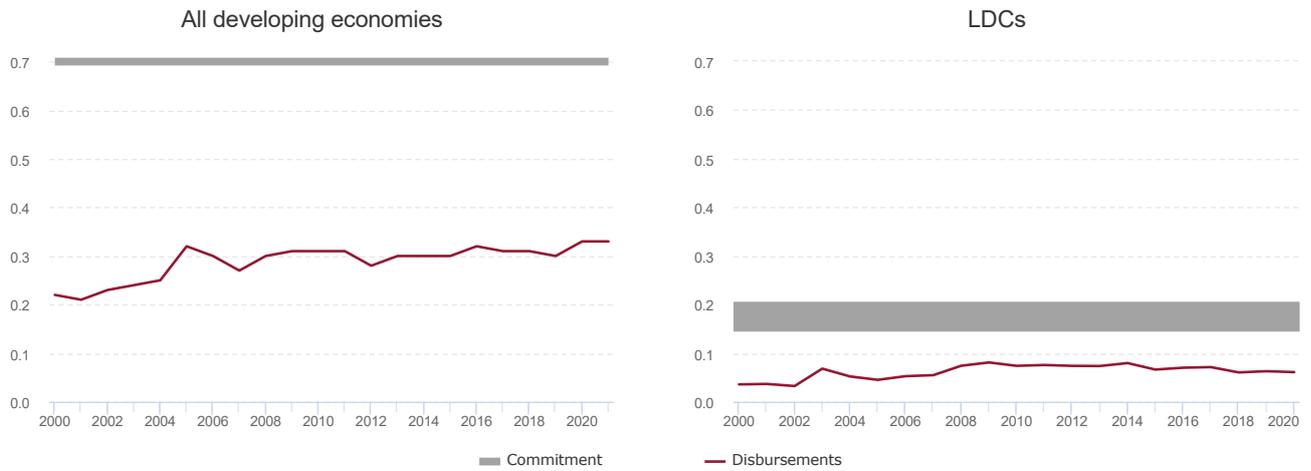
In 2021, total ODA reached a record high of US\$178.9 billion, amounting to an annual increase of 4.4 per cent in real terms (OECD, 2022a). This rise emanated almost exclusively from donations of excess or specifically purchased vaccines for COVID-19. ODA only increased by 0.6 per cent, excluding vaccine donations. Developing countries' access to vaccines was key to saving lives and coping with the acute phases of the pandemic. Yet, given the continuous emergence of new variants, vaccination could not completely avoid lockdowns and other preventive measures with high economic and social tolls. The 2021 increase in ODA fell short of global expectations as well as pleas made in 2020 (OECD, 2021b)⁶. It remained insufficient to support recipient countries in their efforts to not only recover at the same pace as advanced economies, but also to face new long-term challenges planted by the pandemic and looming over their journey to the SDGs.



Net ODA to developing countries has been hovering around 0.30 per cent of developed economies' GNI, far below the 0.70 target

Figure 1 confirms that the persistence of the pandemic in 2021 did not spur a substantial shift in ODA flows: the share of ODA in GNI stagnated at 0.33 per cent, identical to 2020. Since 2005, this indicator has hovered around 0.30 per cent, far below developed economies' pledge to dedicate 0.70 per cent of their GNI to ODA for developing countries. Flows to LDCs have likewise remained unchanged. In 2020, developed economies only devoted 0.06 per cent of their GNI to ODA to LDCs, a steady yet too little share in view of their commitment to allocate 0.15 to 0.20 per cent exclusively to LDCs.

Figure 1. Net ODA to developing countries and LDCs (SDG 17.2.1)
(Percentage of GNI, commitments and actual disbursements)



Source: OECD (2022a).

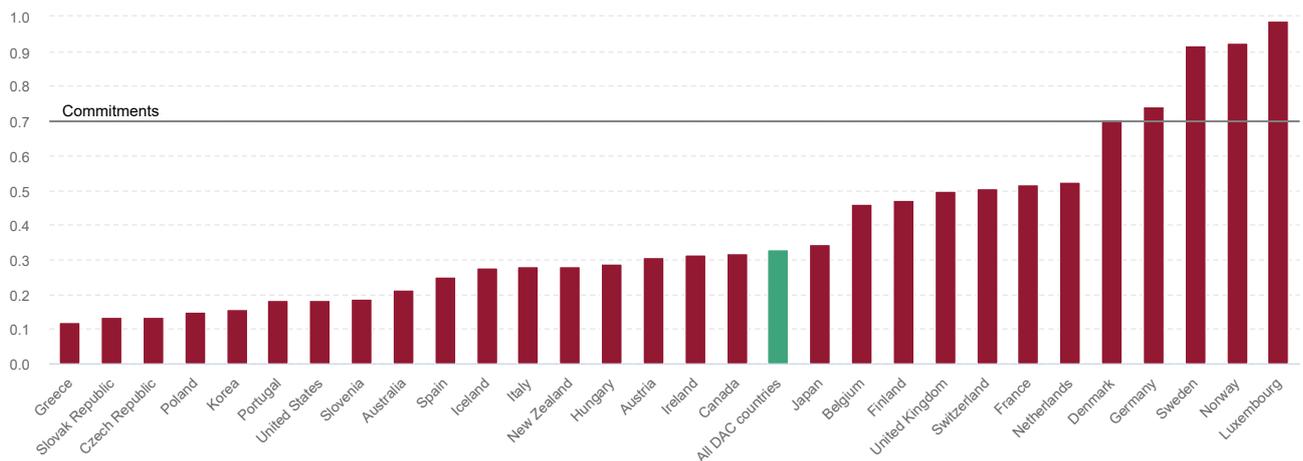
Notes: Under SDG target 17.2, developed economies commit to dedicating 0.7 per cent of their GNI for ODA to developing countries, including a range between 0.15 to 0.20 per cent specifically to LDCs. 2021 is not shown in the LDCs graph as ODA data by detailed recipient is not yet available for that year.

The distribution of donors by ODA as share of GNI reveals three main groups of countries (see Figure 2). The first one refers to these countries which meet or exceed the 0.70 per cent target and is comprised of Luxembourg, Norway, Sweden, Germany and Denmark. The second group includes six countries (Netherlands, France, Switzerland, United Kingdom, Finland and Belgium) whose ODA to GNI ratio stands at around 0.50 per cent, hence significantly above the donor average. All other ODA providers (18 countries in total) lie between 0.12 to 0.34 per cent.



Only 5 donor countries meet or exceed their SDG commitment

Figure 2. Net ODA by donors vis-a-vis SDGs commitments, 2021
(Percentage of GNI)



Source: OECD (2022a)

With the onset of the pandemic, debt relief flows reported in ODA were multiplied by five

In 2020, debt relief reported in ODA was multiplied by five, which is equivalent to a rise by 0.7 point as a share of total ODA (see Figure 3). This means that part of the debt relief programs implemented by advanced economies to support developing countries facing liquidity constraints and high debt distress were deducted from ODA receipts. The share of debt relief in ODA additionally ramped up considerably in the aftermath of the 2008 financial crisis, reaching 6.2 per cent in 2011. This rise persisted until 2013, representing a significant shortfall in ODA to foster sustainable development.

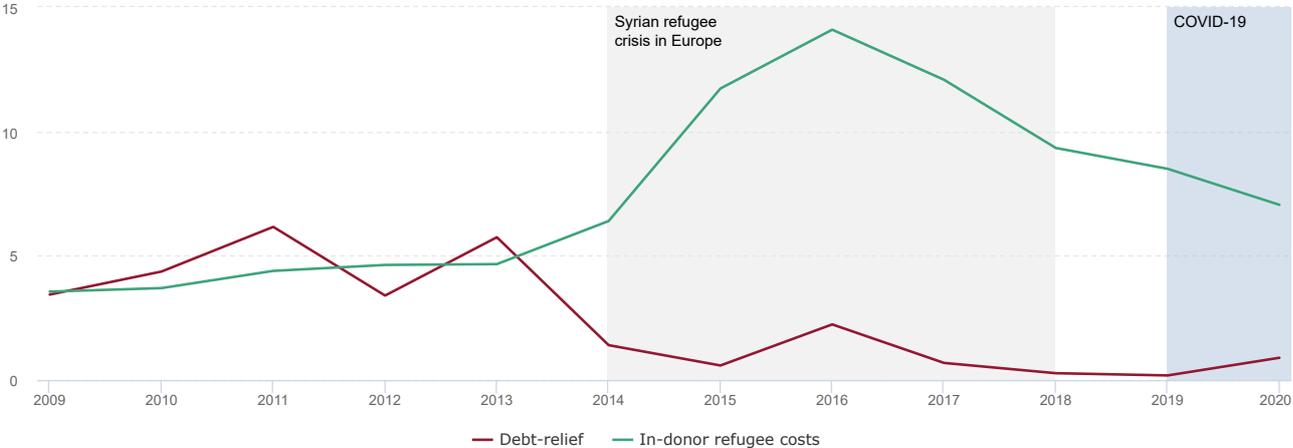
The war in Ukraine is likely to increase the share of in-donor country refugee costs in 2022 which could be at the expense of other financial flows for development, along the same mechanisms as those in play during the Syrian refugee crisis. As of May 2022, several development agencies have put forward proposals and decisions to redirect ODA into servicing the impacts of the war in Ukraine on refugees (United Nations, 2022b). The UN Secretary-General has urged “all countries to reconsider making cuts that will affect the world’s most vulnerable”.

Over the last years, many donor countries rechannelled their ODA domestically to care for refugees fleeing the conflict in Syria. In-donor refugee costs peaked at 14.1 per cent of total ODA in 2016 (see Figure 3). At that time, former UN Secretary-General Ban Ki-moon warned that “reducing development assistance to finance the cost of refugee flows was counter-productive” and that “helping people in need should not be a zero-sum game” (United Nations, 2015b).

In the context of the Syrian refugee crisis, In-donor refugee costs peaked at 14% of total ODA in 2016



Figure 3. In-donor refugee costs and debt relief as a share of total ODA, 2009-2020
(Percentage)



Source: OECD (2022b).

In March 2022, the UN Statistical Commission adopted the new SDG indicator 17.3.1 under Target 17.3, "Mobilize additional financial resources for developing countries from multiple sources", aiming to improve and refine the measurement of development support in line with the 2030 Agenda. UNCTAD and OECD were designated as co-custodians of this new indicator, which embraces a cascading approach with detailed items on concessional finance for development. Flows are included only if they directly support either (i) at least one of the SDG targets or (ii) an objective in the recipient country’s development plan as long as this is directed towards supporting or achieving sustainable development. A notable innovation of this indicator is that it covers for the first time South-South cooperation under the umbrella of a new UN statistical framework, being pilot tested, presented with greater detail in [Financing Development](#).

SDRs: an alternative official source of financing for development

In August 2021, the IMF injected a historic and unprecedented allocation of SDRs into the global economy, equivalent to US\$650 billion (IMF, 2021b). The objective was twofold: first, in the short-term, to release sufficient liquidity for countries to cope with the economic and social fallout of COVID-19 and avert looming debt crises, and second, in the longer-term, to provide countries with new resources which they could mobilise to meet their financing

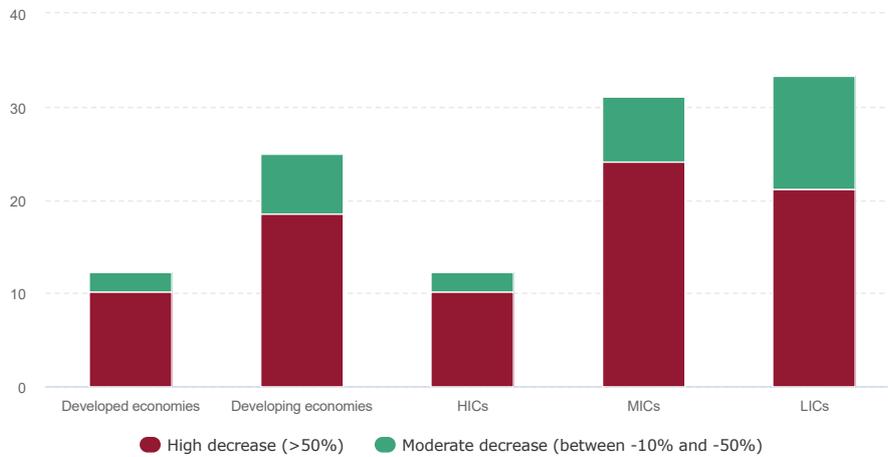


One third of MICs and LICs have already tapped into the historic SDR allocation of August 2021

needs, including those relating to the achievement of the SDGs. SDRs have several advantages over other official credit facilities: they do not generate debt, do not carry conditionalities, have a very low cost of use, and may reduce the risk premium for highly indebted countries. UNCTAD has long called for such a recourse to SDRs to address macroeconomic global imbalances, finance development and, more recently, support climate adaptation and mitigation in the context of the “Global Green New Deal” (UNCTAD, 2019a).

Figure 4 shows that such an SDR expansion was indeed much needed: in less than a year, about one third of MICs and LICs have already tapped into this new SDR allocation significantly. IMF data does not allow the tracking of how countries spend their SDRs with precision, but in developing countries, especially MICS and LICs, a decline in SDRs holdings essentially reflects either a debt pay-off in SDRs or an exchange for hard currencies with another member country or prescribed holder of SDRs⁷.

Figure 4. Percentage of countries showing significant decreases in SDRs holdings between the 2021 SDR allocation (August) and March 2022 (Percentage)



Source: IMF (2022a).

Figure 4 reveals that MICs spend higher amounts of SDRs once they decide to use them: 24 per cent of them show an SDR decrease exceeding 50 per cent between August 2021 and April 2022. MICs are overrepresented in the top of the distribution: among the 16 developing countries that have used more than 90 per cent of the SDRs holdings, nine are MICs (Cabo Verde, Iraq, Jordan, Tunisia, Republic of Congo, Sao Tome and Principe, Mauritania, Egypt and Djibouti), four are HICs (Lebanon, Guyana, Ecuador and Maldives)⁸ and three are LICs (Ethiopia, Tanzania and Malawi). MICs are often excluded from access to concessional finance as they exceed GDP per capita requirements, hence they are probably incited to use SDRs more largely. From a geographical perspective, it is in the African continent that SDR holdings have been spent the most since the allocation of August 2021, in terms of not only number of countries but also withdrawn amounts. The number of SIDS using SDRs is relatively high as well.

As Figure 4 shows, developed countries have not relied as much as developing countries on the new SDRs allocation, as they generally have more fiscal space. In fact, only some former transition economies and Greece have used them. Yet, developed countries have received two third of the new SDR allocation, in conformity with IMF quotas. The United Nations has invited countries which do not use their SDRs to reallocate those, either bilaterally or through existing mechanisms, such as the PRGT, which target LICs. The organization has also called for the establishment of a new IMF trust fund to support MICs and SIDS in particular.

Official flows remain supportive of infrastructure projects

Investment in modern and efficient economic infrastructure (transport, information and communication technologies, water supply, electrical power) is essential to achieving sustainable development objectives. Long-term strategies for economic growth, poverty reduction and environmental sustainability all have infrastructure development as a common element. A 2015 report (Bhattacharya et al., 2015) estimates that the global economy needs to invest between US\$5 and 6 trillion (in constant 2010 prices) in economic infrastructure every year over the period from 2015 to 2030. Additional funds equivalent to US\$600 to 800 billion per year will be necessary to make this investment sustainable. Developing countries will account for about two thirds of the investments required to accommodate higher growth and structural change. These figures do not take into account soft infrastructure, which also plays an important role in economic development, including, for example, national data infrastructure (UNCTAD, 2016).

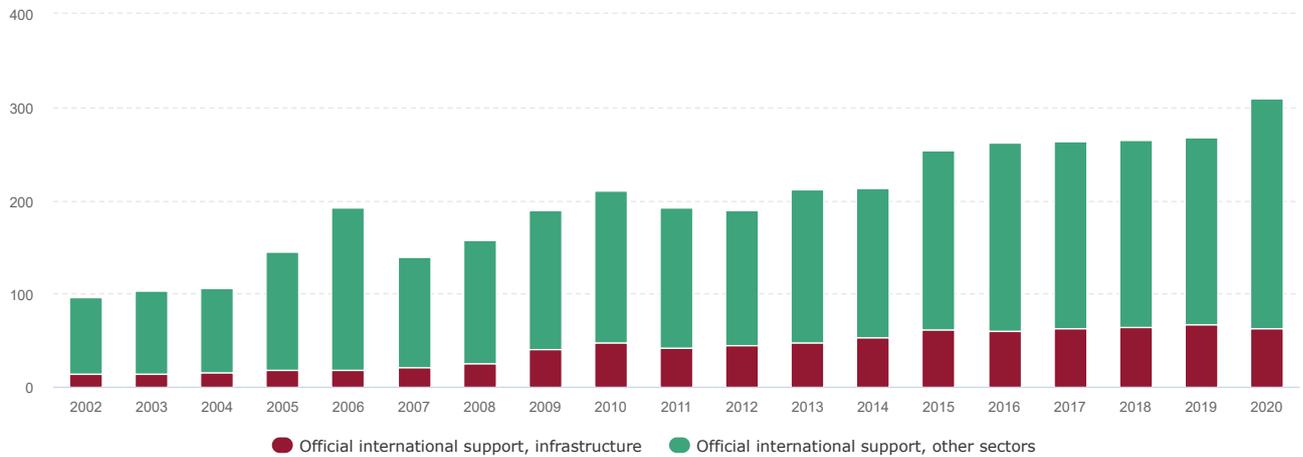
Woetzel et al. (2017) estimate the sectoral breakdown of global infrastructure needs with a 2030 horizon as 38 per cent for transport, 30 per cent for power, 17 per cent for telecommunications, and 15 per cent for water. Given these needs and the current and expected investment trends, the largest infrastructure investment gaps will be concentrated in the generation and distribution of electricity, followed by transport infrastructure.⁹ In addition, significant additional resources are needed across all sectors for climate change mitigation and adaptation (UNCTAD, 2019b).

Even if most of the funds for infrastructure investment will come from the public sector and private actors, including through public-private partnerships and other forms of blended finance, ODA will also play a significant role, particularly for LDCs and countries in vulnerable situations. For this reason, SDG indicator 9.a.1 monitors “total official international support (official development assistance plus other official flows) to infrastructure”.¹⁰

Figure 5 shows the evolution of total official flows and those directed to economic infrastructure. While the global financial crisis of 2007/2008 had a profound impact on overall concessional financing flows, those targeting infrastructure projects were sustained. This has led to an increase in the average annual share of infrastructure in total flows, from 14 per cent before the crisis (2002-2008) to 23 per cent after (2009-2020). From 2016, after a marked increase in 2015, official support flows increased only modestly each year. ODA and OOFs in support of infrastructure reached US\$63 billion in 2020,

lower than their record high in 2019, accounting for 20 per cent of total flows. Flows targeting infrastructure retracted in 2020 even as flows to other sectors grew.

Figure 5. Official International support, total and to infrastructure (SDG 9.a.1)
(Billions of constant 2018 US\$)

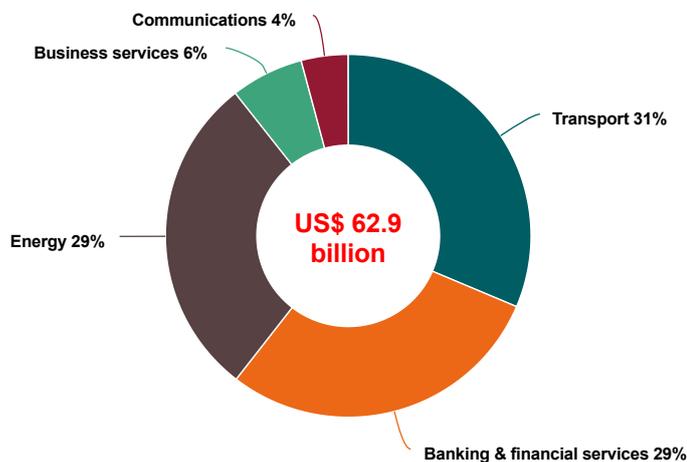


Source: UNCTAD calculations based on OECD (2022b).

Note: Official international support to infrastructure includes sector codes in the 200 series of the DAC classification.¹⁰

Of the amount that was spent in 2020, the majority was assigned to banking and financial services, and transportation projects (see Figure 6). Communications received a relatively low share, but this can be attributed to the large participation of the private sector as a source of financing in this area.

Figure 6. Distribution of official international support to infrastructure, 2020



Source: UNCTAD calculations based on (OECD, 2022b).

Notes: Official international support to infrastructure includes sector codes in the 200 series of the DAC classification (see note 10).

An important source of funding for infrastructure in LDCs, LLDCs and SIDS

In 2020, just 13 countries received half of all official international support to infrastructure. The largest recipients were India (11.0 per cent of the total), Bangladesh (5.0 per cent), Egypt (4.7 per cent), Turkey (3.5 per cent) and Brazil (3.5 per cent). However, these are also among the largest developing economies and official support represents only a small share of their total sources of domestic and external financing.

For other countries, official international support has a higher weight relative to the size of their economies. In some cases, because of special needs in terms of economic infrastructure or lack of access to other sources of development financing, official support is fundamental. Figure 7 shows the international support to infrastructure relative to GDP by groups of economies.

LDCs, LLDCs and SIDS receive a higher share of funds from ODA compared to other developing economies. Furthermore, these groups of economies all suffered disproportionately in 2020 when compared with other developing economies. Official support to infrastructure in terms of GDP fell, year over year, by 13 per cent, 10 per cent, and 13 per cent for LDCs, LLDCs, and SIDS, respectively. This compares with a year over year decline of 2 per cent for other developing economies.

Official support to infrastructure fell by 13% for LDCs in 2020

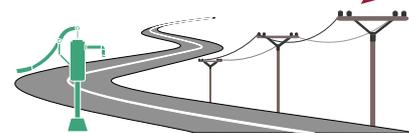
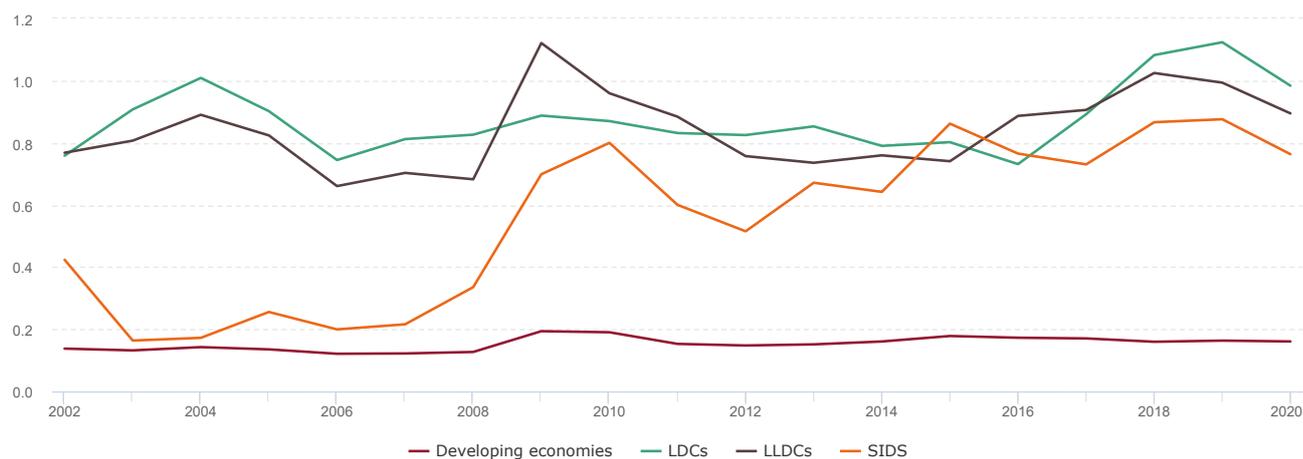


Figure 7. International official support to infrastructure by group of economies

(Percentage of GDP)



Source: UNCTAD calculations based on (OECD, 2022b) and UNCTADstat (UNCTAD, 2022).

Notes: Official international support to infrastructure includes sector codes in the 200 series of the DAC classification (see note 10).

The need for infrastructure development, particularly transport, is of central importance for economic development in LLDCs due to their isolation from international markets. However, there is an important investment gap in this area (UN-OHRLLS, 2018). This points to the importance of all sources of funding for infrastructure projects. LLDCs were recipients of US\$7.3 billion of development assistance to economic infrastructure in 2020, equivalent to 0.9 per cent of GDP, down from one per cent in 2019. This reverses an increasing trend in terms of volumes and share of GDP since 2015, dropping the figure to levels not seen since 2016.

Due to their structural characteristics, such as small population size, geographic remoteness, economic reliance on trade and tourism, as well as high vulnerability to natural disasters and climate change, SIDS have significant infrastructure requirements, both in terms of building new facilities and maintaining and adapting existing ones (OECD, 2018). As seen in Figure 7, the importance of official international support to economic infrastructure in these economies has grown in recent years, increasing from about 0.2 per cent of GDP in 2006 to 0.8 per cent in 2020, though this figure was still off the high of 0.9 per cent achieved in 2019.

Despite the growing infrastructure challenges, long-term investment in infrastructure for sustainable development in developing countries remains insufficient. Stronger consideration should be given to the positive impact of infrastructure, as developing countries will require large-scale investment to build high quality, resilient and inclusive infrastructure (United Nations, 2018). Official international support with long time horizons will be essential in developing infrastructure while keeping debt at sustainable levels (United Nations, 2022a).

Agriculture no longer a priority for ODA, even when challenges keep mounting

The agricultural sector employs a considerable share of the labour force in developing economies and plays an essential role for food security and rural development. Agricultural products are traded internationally and constitute an important source of revenue for many countries. However, even if agriculture remains a crucial economic sector in many developing economies, agricultural productivity remained stagnant during the 1960s to 1980s and has only increased gradually since then. This could be attributed to several factors, including unsupportive policies and insufficient resources to develop this sector (Mattoo et al., 2020).

In addition to the urgent need for increases in productivity, agriculture must also embrace sustainable practices and adapt to climate change. On one hand, the sector contributes to greenhouse gas emissions, natural habitat loss and unsustainable use of water resources, among others (see [Make or Break for Green Economy](#)), and reducing its environmental impact would require important investments. On the other hand, agriculture is strongly affected by climate change and extreme climatological or meteorological events. Significant resources are needed for adaptation and mitigation. In many

countries, official flows in the form of ODA and OOFs play a key role in financing agricultural development. In this sense, SDG indicator 2.a.2 measures “total official flows (official development assistance plus other official flows) to the agriculture sector”.¹¹

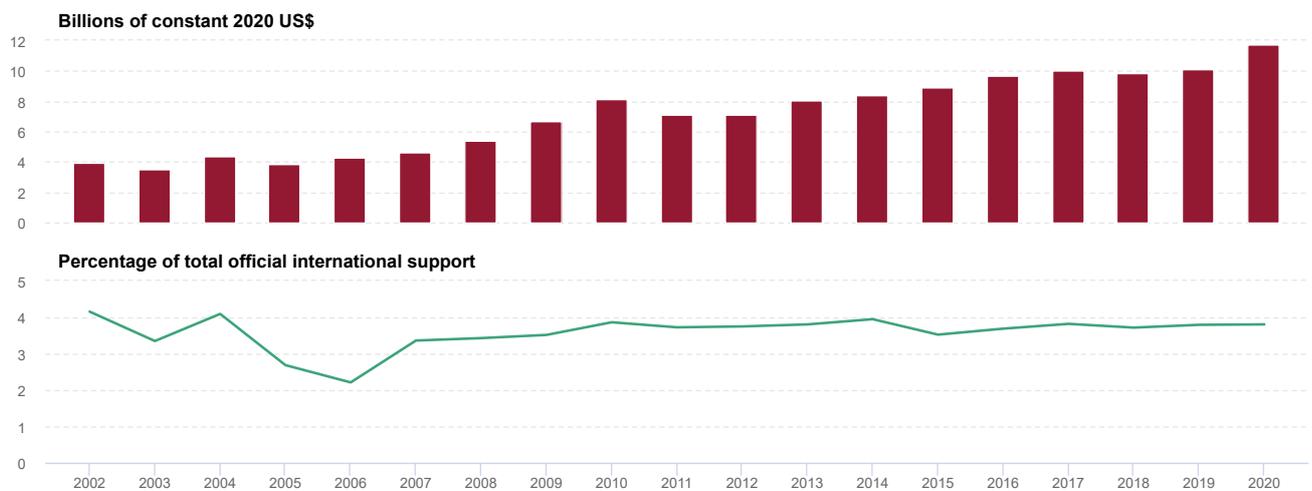
The share of ODA to agriculture in total concessional resources has remained stable, at a low level



During the 1970s and 1980s, agriculture was a major recipient of international assistance, accounting for 15 to 20 per cent of total ODA (Cabral and Howell, 2012). However, the relative importance of agriculture as a beneficiary of ODA has declined since then. Several factors are behind this shift, including changing donor priorities, pressure from environmental groups and insufficient evidence of its contribution to increasing productivity (Mattoo et al., 2020).¹²

As shown in Figure 8, while ODA to agriculture increased in absolute terms almost every year between 2012 and 2020, its share of total concessional resources has remained stable, at a low level. Indeed, since 2004, the four-per-cent mark has not been exceeded.

Figure 8. Total official international support to agriculture (SDG 2.a.2)



Source: UNCTAD calculations based on (OECD, 2022b).

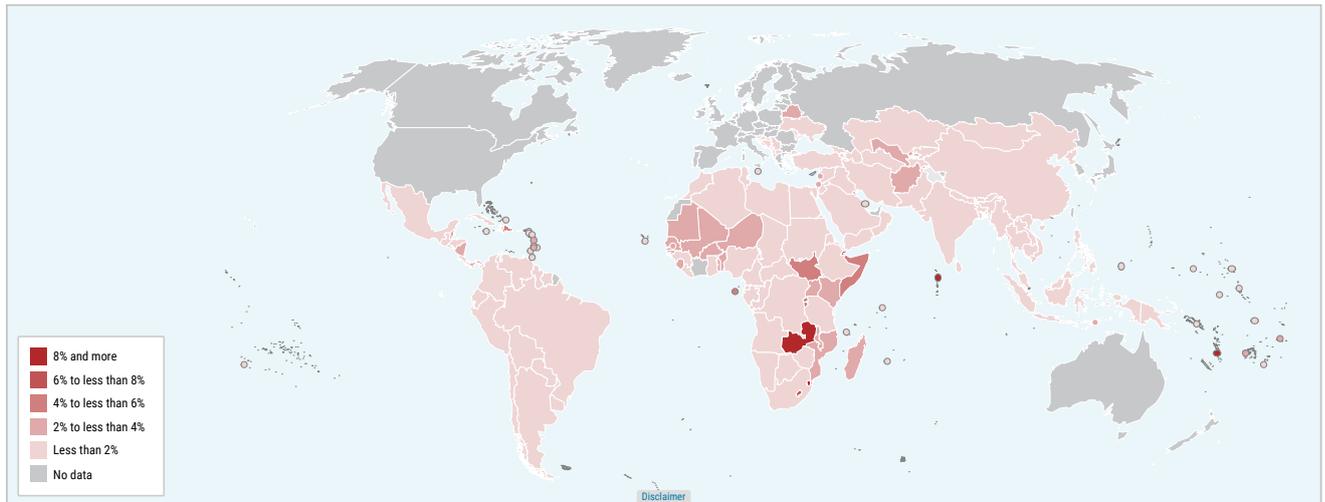
Notes: Official international support to infrastructure includes sector codes in the 311 series of the DAC classification (see note 11).

Even if ODA to agriculture has remained stagnant relative to other sectors, it still represents an important source of funding for many developing economies. Map 1 shows the weight of these flows relative to the value added of the primary sector.¹³ It can be seen that several economies in Central and West Africa, Central Asia and the Caucasus still rely on ODA as a significant source of financing for the development of their agricultural sector.

The agricultural sector is facing mounting environmental challenges, including changing climatological patterns, water shortages, treatment-resistant plagues and increased incidence of natural disasters. These factors, combined with an increasing food demand caused by population growth and changing consumption preferences, could translate into important threats for food security in many parts of the world. The COVID-19 pandemic may have exacerbated these risks by restricting the mobility of people and products and disrupting trade and global value chains. This could lead to lower yields, scarcity of specific food commodities and food price increases (FAO, 2020). Global food supplies were dealt yet another blow following the war in Ukraine, which is a significant exporter of wheat, sunflower oil, and other food products. These twin crises illustrate the importance of food sovereignty and agricultural investment, where ODA can play an important role.



Map 1. Official international support to agriculture as a percentage of primary sector GDP, 2020



Source: UNCTAD calculations based on (OECD, 2022b) and UNCTADstat (UNCTAD, 2022).

Notes: Official international support to infrastructure includes sector codes in the 311 series of the DAC classification (see note 11). Countries in gray: developed economies or countries not included in the CRS database.

Notes

1. SDG indicator 2.a.2: Total official flows (official development assistance plus other official flows) to the agriculture sector.
2. SDG indicator 3.b.2: Total net official development assistance to medical research and basic health sectors.
3. SDG indicator 6.a.1: Amount of water- and sanitation-related official development assistance that is part of a government-coordinated spending plan.
4. SDG indicator 7.a.1: International financial flows to developing countries in support of clean energy research and development and renewable energy production, including in hybrid systems.
5. SDG indicator 15.a.1: Official development assistance and public expenditure on conservation and sustainable use of biodiversity and ecosystems.
6. The OECD Secretary General, Angel Gurría, pointed out that "total ODA in 2020 equated to around a mere one per cent of the total amount countries have mobilised in economic stimulus measures to respond to the Covid-19 crisis". He added that going forward "greater efforts are needed to help developing countries with vaccine distribution, with hospital services and to support the world's most vulnerable peoples' incomes and livelihoods" (OECD, 2021b)
7. In developed economies and to some extent HICs, a decline in SDRs can also refer to lending SDRs to the PRGT.
8. Argentina was included in this list until March 2022, when it received a new SDR allocation (IMF, 2022b)
9. For more information on investment needs specific to transport infrastructure, see chapter [Mitigating risks to build transport infrastructure](#).
10. Note that the definition of infrastructure for the purpose of this indicator could vary from other classifications. According to the DAC classification, official flows to infrastructure can be divided into social and economic sectors. The former includes education, health, population policies, water supply and sanitation, and government and civil society; the latter comprises transportation and storage, communications, energy, banking and financial services, and business services (OECD, 2021a). As specified in its official metadata, funding from all official international donors directed to infrastructure in economic sectors in developing countries is considered for SDG indicator 9.a.1 (United Nations, 2021).
11. According to the official metadata, this indicator measures funding from all official international donors to the agricultural sector in developing countries (United Nations, 2021). This corresponds to sector code 311 of the DAC classification, including sub-sectors such as agricultural development, agricultural policy, agricultural water and land resources, food crop production, livestock, industrial/exports crops, rural co-operatives, agricultural inputs, and agrarian reforms, among others (OECD, 2021a).
12. In order to reflect current practices in terms of ODA to the primary sector, a broader definition could also include other relevant sectors, such as rural livelihoods, rural development and food security, and take into account multi-sector ODA-financed projects (Cabral and Howell, 2012). However, even with this definition, ODA directed to agricultural projects still shows a decline in relative terms, although at a slower rate.
13. The primary sector is broader than agriculture (it also includes hunting, forestry and fishing). It is used in map 1 as a denominator since data on value added for agriculture is not available for all countries.

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Sustainable and resilient transport amidst persistent disruptions, climate risks and geopolitical concerns

SDG indicators

SDG target 9.1: Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all

SDG indicator 9.1.2: Passenger and freight volumes, by mode of transport (Tier I)

Infrastructure, including transport infrastructure, directly and indirectly influences the attainment of all the SDGs, including 92 per cent of the 169 individual targets (Thacker et al., 2018).

Transport infrastructure and services enable trade, support global supply chains, propel growth and promote social progress. While multimodality is key to door-to-door delivery of goods, maritime transport is the dominant mode, accounting for over 80 per cent of world merchandise trade by volume and more than 70 per cent of its value (UNCTAD, 2021a).

The transport sector is highly exposed to global risks and disruptive shocks that dislocate transport networks and supply chains, including pandemics such as COVID-19 or, for instance, the six-day blockage of the Suez Canal in March 2021 after the grounding of the 20 000 TEU container ship, the 'Ever Given'. Other factors driving uncertainty and challenging the sustainability and the resilience of the sector include inward-looking trade policies, constrained supply-side capacity, geopolitical threats, unsustainable energy use, environmental degradation and climate change (UNCTAD, 2021a).

The COVID-19 disruption underscored the importance of transport and maritime transport infrastructure as essential sectors for the continued delivery of critical supplies and global trade in time of crisis, during the recovery stage and when resuming normality. The pandemic can be seen as a wake-up call which revealed just how important transport is, and in particular how important ports are for global supply chains and for keeping trade flowing. The unprecedented health crisis has shown how vulnerable the sector is to shocks and disruptions. While the pandemic has put global shipping networks and supply chains to the test and laid bare their frailties, climatic factors are delivering a further blow, for instance due to extreme weather events, such as floods, hurricanes and cyclones.

In 2022, the world continues to fight the pandemic and plan for the recovery while global trade and value chains continue to grapple with strained supply chains, soaring freight rates and increased costs. The ongoing supply chain crisis as well as the heightened threat to supply chains and transport resilience arising from the recent war in Ukraine are weighing heavily on the sustainability and resilience of transport infrastructure services. The cumulative effect of the COVID-19 disruption and the Ukraine war is expected to heavily weigh on developing countries' recovery and sustainable development prospects. The sector is also facing concerns relating to potential shifts in supply chain design and globalization patterns, new consumption and spending habits, a growing focus on risk assessment, adaptation, resilience-building, and digital transformation, as well as a heightened global sustainability and low-carbon agenda (UNCTAD, 2020a).



Devising policies that promote sustainable and inclusive long-term growth is crucial (UNCTAD, 2018d). While access to affordable, reliable and cost-effective transport systems remains a challenge for many developing countries, especially for LLDCs and SIDS, mainstreaming sustainability and resilience, in particular according to climate criteria, into transport designs, development plans and management, is an imperative (UNCTAD, 2014a). Integrating measures such as risk assessment and management, event and risk forecasting and business continuity plans has also become critical. As part of UN action in response to the COVID-19 pandemic, UNCTAD and the UN Regional Commissions are currently implementing a joint technical assistance project on "transport and trade connectivity in the age of pandemics: contactless, seamless and collaborative UN solutions" (UNCTAD, 2021b). Relevant outputs include, among others, advice and guidance on some of the complex commercial law issues that arise in the context and in the aftermath of the pandemic for contracting parties to commercial contracts throughout the supply chain (UNCTAD, 2021c, 2021d, 2022a). It also includes global and regional impact assessment reports and [webinars](#) disseminating information about the impact of COVID-19 on the maritime supply chain, on response measures introduced to mitigate these impacts, and on good practices in future proofing the maritime supply chain (UNCTAD, 2021e).

SDG target 9.1 seeks to improve infrastructure that supports economic activity and human well-being while promoting sustainability. Specific to transport infrastructure, SDG indicator 9.1.2 measures progress towards sustainable and resilient transportation and measures trends in "passenger and freight transport". Freight transportation is of direct relevance to UNCTAD's mandate on transport and trade logistics. This chapter highlights trends in critical maritime transport infrastructure and services that underpin trade, supply chain linkages and economic integration.

Recovery in maritime transport as disruptions persist and new challenges lie ahead

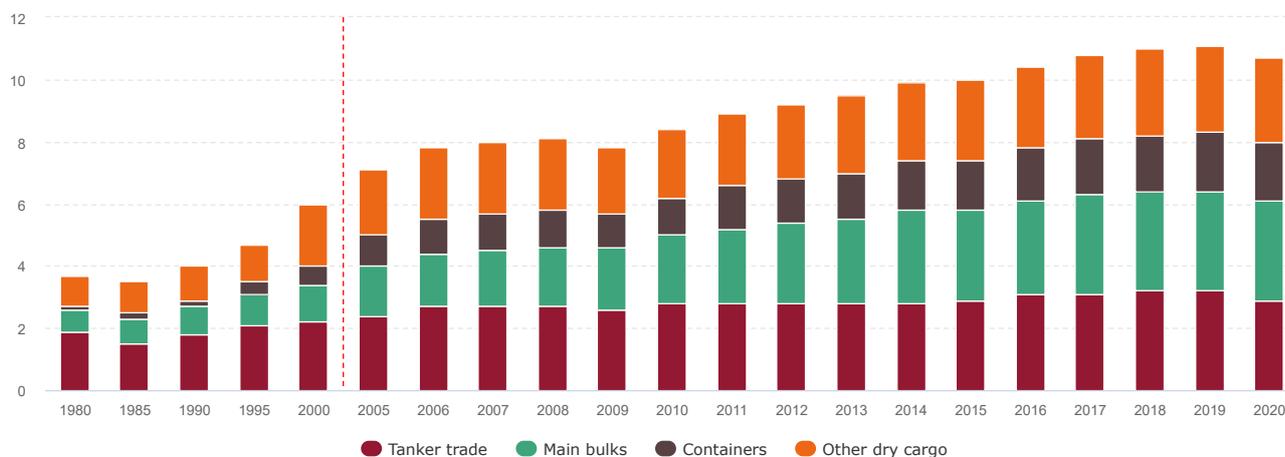


In 2020, the COVID-19 pandemic disrupted the world economy, thereby impacting supply, demand and logistics, and constraining trade flows. For 2020, following a contraction of 3.8 per cent over 2019, UNCTAD estimates shipping volumes to have lost 422 million tons taking the total to 10.65 billion tons (UNCTAD, 2021a). The drop was less dramatic than initially feared or when compared to the 2009 downturn, as the maritime transport sector managed to better navigate through the crisis. Reflecting its resilience, global containerised trade contracted by a marginal 1.1 per cent with volumes totaling 149 million TEUs.

Some sectors performed better than others. Worst hit was tanker shipping and less impacted were containerised trade, gas shipments, and dry bulk commodities such as iron ore and grains (Figure 1). The end of 2020 saw a nascent recovery, though asymmetric across market segments, as volumes picked up speed in the container segment and dry bulk commodities, while tanker shipping awaited a full recovery in global demand. However, the fragile recovery stumbled into shortages – of shipping capacity, as well as of containers and equipment, warehouse and infrastructure capacity at ports – leading to an unprecedented global supply chain crisis and surging freight rates and costs. These constraints have put supply chains under strain, while adding to port congestion and increasing delays and dwell times, and leading to a general decline in service reliability. UNCTAD expects world maritime trade to recover by 4.3 per cent in 2021, with annual growth moderating to 2.4 per cent thereafter (UNCTAD, 2021a).

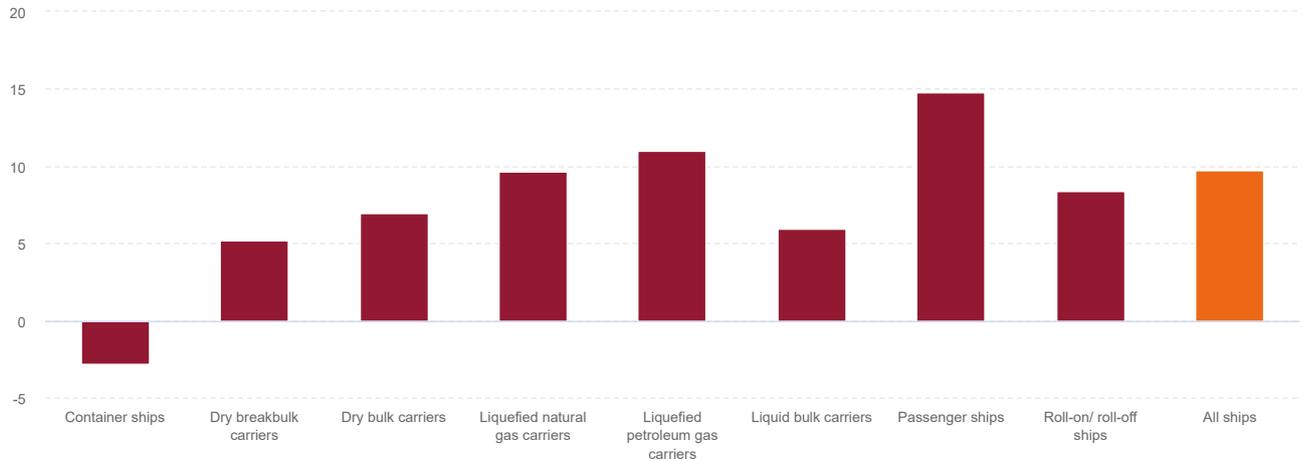
After a drop of 10.4 per cent in 2020, global port calls by all ship types bounced back by 9.7 per cent 2021, reflecting a rapid surge in demand. The impact across maritime sectors was uneven. Container vessel port calls showed more resilience than port calls on average, with a drop of only 3.2 per cent in 2020, while the recovery in 2021 was driven by calls by gas and dry bulk carriers, passenger and Ro/Ro ships (Figure 2).

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



Source: UNCTAD (2021a).

Figure 2. Vessel port calls, change from 2020 to 2021
(Percentage)

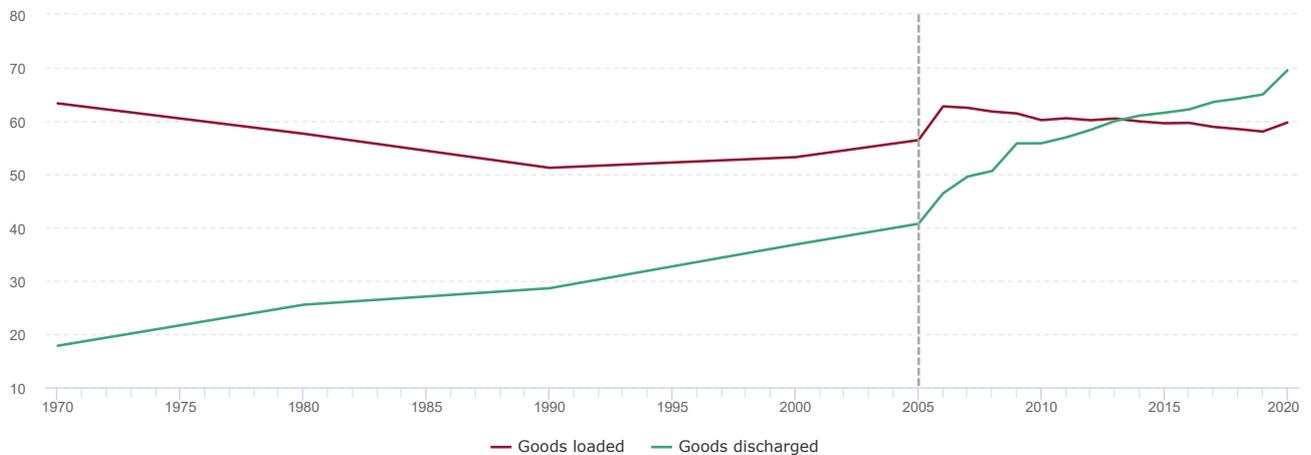


Source: UNCTADstat (UNCTAD, 2021f).

Note: Calculations based on aggregates derived from combined automatic identification system (AIS) and port mapping intelligence data from MarineTraffic (<http://marinetraffic.com>). Ships of at least 1000 GT are covered. Only arrivals are considered in the total number of port calls.

Around two thirds of global maritime trade takes place in developing countries (Figure 3). In 2020, developing countries accounted for 60 per cent of global maritime exports and 70 per cent of imports.

Figure 3. Participation of developing countries in global maritime trade
(Percentage share of global maritime trade volumes)



Source: UNCTADstat (UNCTAD, 2021f).

Note: These statistics were compiled under UNCTAD's country classification as of April 2021.

Much of the growth in 2020 took place in East Asia, especially China. There has also been a surge in volumes on the Transpacific Containerized Trade Route linking East Asia with North America.

Asia's predominance was further strengthened in 2020. Capitalizing on the fragmentation of globalized production processes, Asia has become a maritime hub that concentrates over 50 per cent of global maritime freight. Other developing regions do not contribute equally, reflecting varying degrees of integration into global value chains and manufacturing networks.

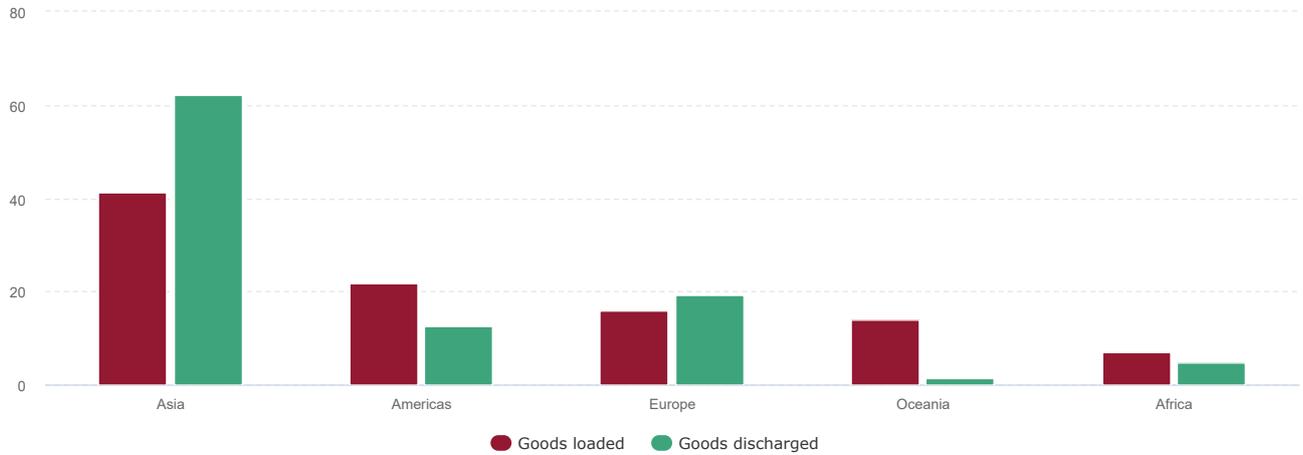
In 2020, this region shipped 41 per cent and received 66 per cent of world maritime cargo. Corresponding figures for the Americas were 23 and 13 per cent respectively, while 15 per cent of global goods were loaded and another 15 per cent of global goods were discharged at European ports. The other regions accounted for smaller shares of worldwide maritime cargo flows.





Figure 4. International maritime trade by region, 2020

(Percentage share of global maritime trade volume)



Source: UNCTADstat (UNCTAD, 2021f).

UNCTAD estimates global import prices will increase by 11 per cent on average as a result of

freight rate increases

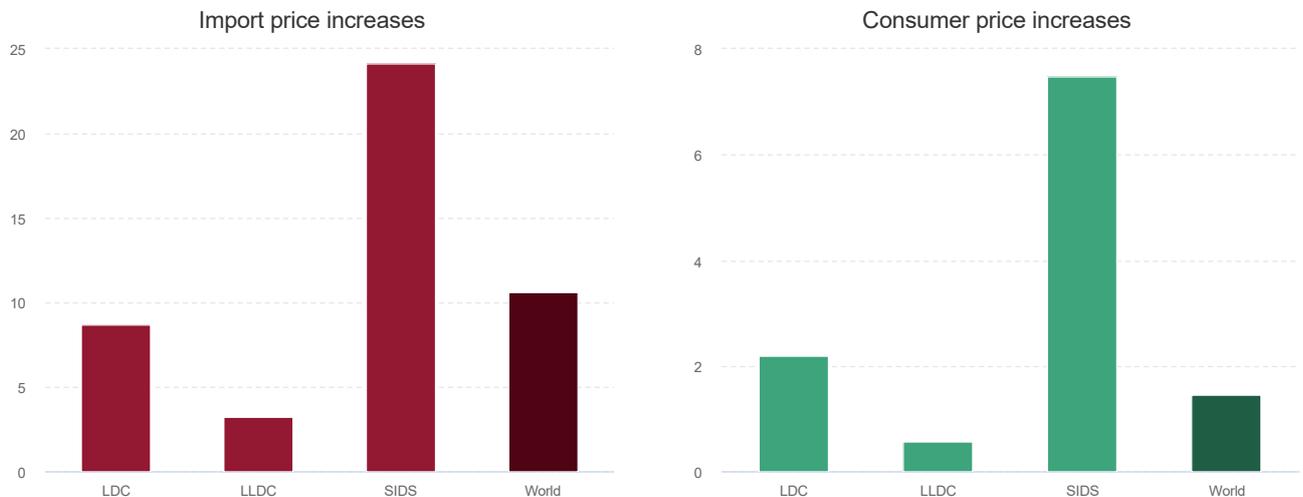


The historical highs observed in shipping costs since late 2020 are largely driven by pandemic-induced shocks and unexpected upward swings in shipping demand. According to UNCTAD analysis, if sustained, the 2020 surge in container freight rates will drive both import and consumer prices up. UNCTAD's simulation model suggests that global import price levels will increase on average by 11 per cent as a result of the freight rate increases (Figure 5). See UNCTAD (2021a), chapter 3 for more information on UNCTAD's simulations. Hardest hit will be the SIDS, whose trade relies heavily on maritime transport and which are predicted to face a cumulative increase of 24 per cent. Furthermore, if container freight rates remain elevated in 2023, global consumer prices could be 1.5 per cent higher than we would otherwise expect. In SIDS, the cumulative increase in consumer prices is estimated to be 7.5 per cent and in LDCs 2.2 per cent in 2023 (UNCTAD, 2021a).

In the longer term, however, shipping and port prices are driven by structural factors, such as port infrastructure, economies of scale, trade imbalances, trade facilitation, and shipping connectivity – all of which have lasting impacts on maritime transport costs and trade competitiveness. UNCTAD's analyses show that policy measures that improve port infrastructure and shipping connectivity, for example, could cut transport costs by over 4 per cent (see Figure 6) (UNCTAD, 2021a).

Figure 5. Simulated impact of current container freight rate surge on import and consumer price levels between 2020-2023

(Percentage change)

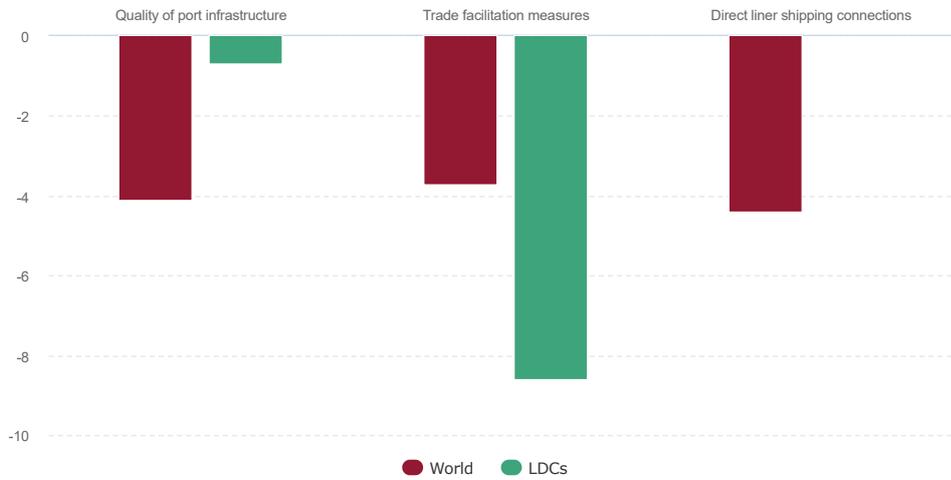


Source: UNCTAD (2021a).



Figure 6. Impact of structural determinants on long-term maritime transport costs for importing goods

(Percentage change)



Source: UNCTAD (2021a).

As disruptions and uncertainty heighten, port efficiency becomes ever more important

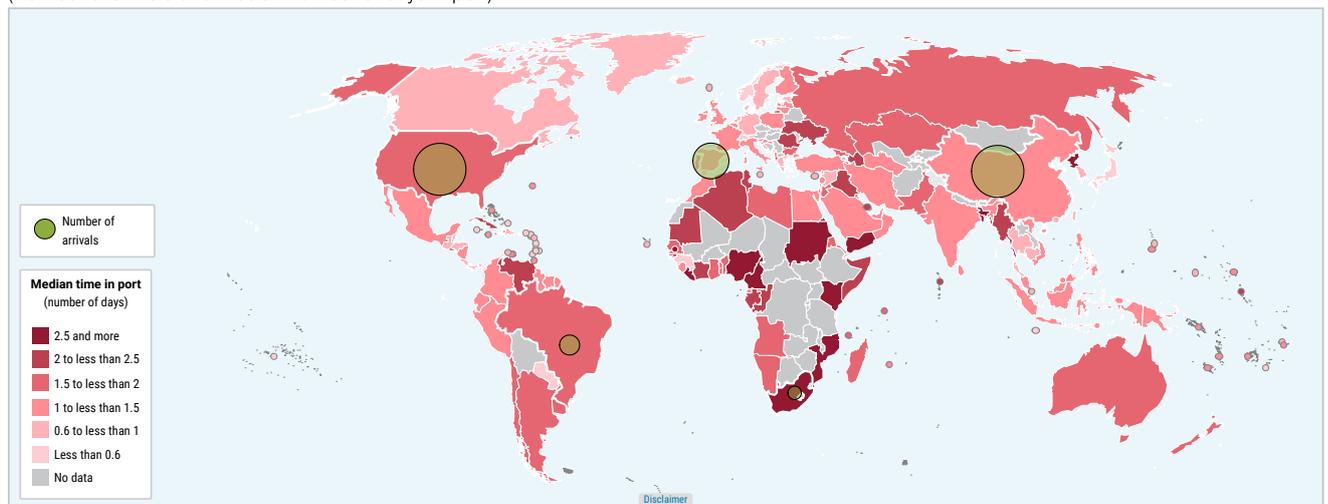
In 2020, terminal operators, authorities, and intermodal transport providers introduced measures to contain the COVID-19 pandemic and, as a result, ships had to spend more time in ports that were operating more slowly than before the pandemic. The greatest delays were for dry break bulk carriers for which cargo operations tend to be less automated and more labour-intensive so they were slowed by measures to reduce social contact. In 2021, port waiting times varied significantly across countries and regions (Map 1). Countries that record fewer arrivals and are called by smaller ships, and in which few containers are handled per port call, exhibit faster turnaround time than others. These include Dominica, Saint Kitts and Nevis, and Saint Vincent and the Grenadines. Countries with relatively fast turnaround time include, for example, Japan, Hong Kong SAR, and Taiwan Province of China. These benefit from the latest port technologies and adequate infrastructure and can accommodate the largest container vessels.

Efficient ports initiate a positive feed-back loop: high efficiency makes their ports attractive as ports of call, further boosting the number of arrivals. Countries with average turnaround time report a wide range of average port waiting times, reflecting large differences in efficiency and other factors such as vessel age and cargo throughput. Shipping and port performance is generally lower in developing countries where transport costs are higher and connectivity levels lower, due to persistent structural factors.



Map 1. Container ship port calls and time in port, 2021

(Number of arrivals and median number of days in port)



Source: UNCTADstat (UNCTAD, 2021f).

Note: These figures are based on AIS data. "Median time in port" represents an estimate of the overall time per ship spent in port. This can be interpreted as a rough measure of efficiency, although it does not consider differences in waiting time, berth time, working and idle time.

Investing in transport efficiency, sustainability and resilience

The disruptions related to the COVID-19 pandemic and the pressing need for sustainability require scaling up investment in smart, green and resilient transport infrastructure and services. As infrastructure is set to play a key role in the global economic recovery, there is an opportunity to advance objectives such as efficiency and resilience-building. Investing in risk assessment and preparedness will be crucial in a post COVID-19 world. Such measures include control towers and tools to effectively predict and analyse transport system disruptions and business continuity plans for different stages of a crisis. In the face of disruptions, it is also important to collect and share information on potential congestion and bottlenecks and to accelerate greater uptake of technology, a proven mitigating tool. All in all, lessons learned from the pandemic should serve as guidance for informing preparedness and future-proofing of maritime transport.

Available estimates specific to the transport sector also reveal high investment needs over the coming decades. Around US\$95 trillion of investments, or US\$6.3 trillion per year, not considering climate change concerns, are estimated to be required over the period from 2016 to 2030 in infrastructure, including energy, transport, water and telecommunications networks. Transport accounts for 43 per cent, or US\$41 trillion, of the required investments, with much of the needs concentrated in developing regions (OECD, 2017).

Alleviating the persistent transport infrastructure gap and ensuring proper service delivery require further mobilization of domestic resources, and tapping into other financing sources and arrangements, including blended finance, FDI, green and climate finance, as well as private sector participation in the form of public-private partnerships, among others. However, in many countries, investing in transport infrastructure competes for public funds with other high-priority areas, while opportunities and capabilities for domestic resource mobilization and international borrowing are often constrained and limited.

For private sector participation in the transport sector, the risks increased during the pandemic. Private commitment in the transport sector fell by 78 per cent in 2020 in comparison with 2019. The drop totaled US\$10.5 billion across 41 projects, the lowest levels in the past decade in terms of the number of projects and size of the investment. The five largest port projects alone had investments totaling US\$805 million (World Bank, 2020). However, the situation improved in the first half of 2021, when the transport sector outpaced the other sectors, attracting US\$14.4 billion, spread over 40 projects. Port projects received US\$1.9 billion in private investment commitments in the first half of 2021, indicating signs of recovery (World Bank, 2021).

Green and sustainable finance with dedicated tools to support the transition to low-carbon shipping is expanding. Banks following the Poseidon principles climate agreement for the maritime sector, for example, issued over \$1.2 billion in sustainable maritime ship financing in 2020 (Green principles for the shipping industry, 2022). Meanwhile, under the Climate Bonds Standard and Certification Scheme, a first shipping project was certified, involving a loan facility of US\$246 million to a New Zealand-based transport operator (Climate Bonds Initiative, 2022). Another example is Hapag-Lloyd, a global container shipping company which concluded its first green finance deal totaling US\$889 million to secure funds for six liquefied natural gas (LNG) powered, 23 500 TEU containerships ordered in 2020 (Seaways, 2022).

Adapting transport infrastructure to climate change

UNCTAD has worked on assessment for the implications of climate change for maritime transportation since 2008, with an increasing focus on climate change adaptation and resilience building for seaports and other key coastal transport infrastructure (UNCTAD, 2021g). These are strategic nodes in the network of closely interconnected global supply chains. In keeping up with the global momentum of the 2030 Agenda for Sustainable Development, the Paris Agreement on Climate Change and the 2019 Climate Action Summit convened by the Secretary-General of the United Nations, UNCTAD is intensifying its efforts to promote sustainable and climate-resilient freight transport infrastructure and services.²

Transport infrastructure is affected directly and indirectly by climate change, with far-reaching consequences for international trade and the development prospects of the most vulnerable nations (UNCTAD, 2021k).³ Seaports fulfil an important function in the network of global supply chains and are critical for access to global markets. With the global sea level continuously rising (WMO, 2022), climate resilience and adaptation for critical coastal transport infrastructure, such as ports, is of strategic socio-economic importance (UNCTAD, 2020b, 2020c). This is the case in all countries, but particularly in SIDS, which depend on their coastal transport infrastructure as lifelines for external trade, food and energy security, and tourism, and as a means for disaster risk reduction (UNCTAD, 2019a, 2020d).

Climate-related extreme events and disasters can result in significant damage, disruption and delay, giving rise to extensive economic costs (WMO, 2022; UNCTAD, 2020d; Environmental Defense Fund, 2022). In light of recent climate projections and the increasing urgency of action (IPCC, 2018, 2019, 2021, 2022; UNCTAD, 2021m, 2021l, 2021k; Asariotis, 2020), they are considered among the top global economic risks (World Economic Forum, 2022), with implications for additional infrastructure investment needs and climate adaptation.

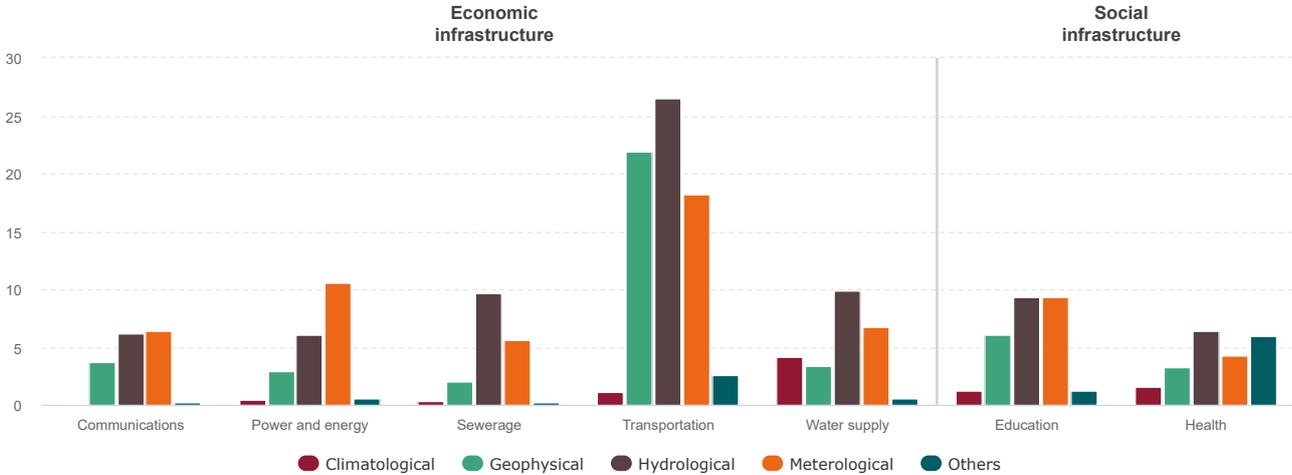
Figure 7 shows the share of disasters over the past 20 years that had a significant impact on infrastructure. The figure suggests that transport is the sector that is most vulnerable to disasters. On average, transport facilities have an 18 to 26 per cent probability to be adversely impacted by geophysical, hydrological and meteorological events. Some of these events are expected to increase in frequency and intensity as a result of climate change, with severe consequences for infrastructure. Indeed, a recent study estimates that global damages due to the sea-level rise and related extreme events might amount to US\$10.8 trillion per year, about 1.8 per cent of global GDP, in a scenario of 1.5°C warming by 2100. In a scenario of global warming of 2°C or

more, the costs could be much higher (Jevrejeva et al., 2018). Another recent study estimates that the total value of assets exposed to episodic coastal flooding by 2100 could increase to between 12 and 20 per cent of the global GDP, if adaptation measures will not be taken (Kirezci et al., 2020).

Despite a brief dip in carbon dioxide emissions caused by the COVID-19 pandemic (see chapter [Make or break for green economy](#)), the world is still heading for a temperature rise of 2.7°C by the end of this century – far beyond the Paris Agreement goals of limiting global warming to well below 2°C and pursuing 1.5°C (UNEP, 2020). Therefore, accelerated action both on mitigation and adaptation will be key (Environmental Defense Fund, 2022).

In addition, there is an urgent need to step up climate adaptation finance, including in the form of grants (UNCTAD, 2021m). Estimated adaptation costs in developing countries are five to ten times higher than current public adaptation finance flows, and the adaptation finance gap is widening. Also, further ambition is needed to progress in national-level adaptation planning, finance, and implementation worldwide (UNEP, 2020; UNCTAD, 2021m). And investing in climate-resilience makes good economic sense: according to the World Bank, the overall net benefits of investing in resilient infrastructure in developing countries could amount to US\$4.2 trillion over the lifetime of new infrastructure – a US\$4 return for each dollar invested in resilience (Hallegatte et al., 2019).

Figure 7. Share of disasters impacting infrastructure, by sector, 2000-2019
(Percentage)



Source: UNCTAD calculations based on data from (UNDRR, 2020).
Notes: The share shown in this chart is calculated as the number of disasters that caused significant damage on infrastructure, divided by the total number of disasters. It is calculated for each infrastructure sector and type of disaster. The category “other” includes multi-hazard events. The source database provides an inventory of disasters and their effects for 155 economies during the period 2000-2019. UNDRR (2020)

Adaptation and resilience measures are not only essential to reducing the negative impacts of climate change on critical transport infrastructure; they are also key to achieving progress on several SDG targets. In view of the long service life of transport infrastructure and the potentially major consequences of inaction, effective adaptation and resilience requires an early re-thinking of established approaches and practices (UNCTAD, 2011a, 2019b, 2019a, 2020b, 2020c).

However, a recent UNCTAD port-industry survey on climate change impacts and adaptation for ports shows important gaps in data on resilience and preparedness among seaports worldwide (UNCTAD, 2017). Relevant data are urgently needed for effective climate risk assessment and adaptation planning of coastal transport infrastructure, especially for ports in developing countries (UNCTAD, 2011a, 2011b, 2019b, 2019a). As noted by UNCTAD (UNCTAD, 2020b, 2020d), legal and regulatory approaches as well as policies and plans are crucial for facilitating effective risk and vulnerability assessments and providing a supportive framework for adaptation action. Guidance, standards (ISO, 2019, 2021), best practices, methodologies (UNCTAD, 2018a; PIANC, 2020) and other tools in support of adaptation (UNCTAD, 2020b, 2020d) are urgently required, especially for the most vulnerable countries.

Climate change adaptation is a particularly urgent imperative for SIDS (IPCC, 2019; Climate Ambition Support Alliance, 2020). Many of them are particularly exposed and vulnerable to the impacts of climate change while also highly dependent on coastal transport infrastructure for external trade, food, energy and tourism. SIDS therefore suffer from a “double exposure” to external economic and environmental shocks (UNCTAD, 2021h). Climate-related extreme events, which are expected to increase in frequency and severity, may cause major disruptions to the connectivity of SIDS to international markets with broad ramifications for sectors such as tourism (IPCC, 2018; UNCTAD, 2014b, 2019a, 2020d).

UNCTAD has recently conducted vulnerability assessments for eight seaports and coastal airports in two SIDS in the Caribbean: Saint Lucia and Jamaica (UNCTAD, 2018b, 2018c), as part of a technical assistance project on climate change adaptation for coastal transport infrastructure in SIDS (UNCTAD, 2020b). The results of the assessment, which focused on operational disruptions and marine inundation risk under different climate scenarios, suggest severe climate change impacts on coastal transport infrastructure and operations from as early as the 2030s unless further climate change

adaptation is undertaken (IPCC, 2018, 2019, 2021, 2022; Monioudi et al., 2018). Because of SIDS' heavy reliance on maritime and air transport infrastructure, climate-change driven impacts on transport assets have significant impacts on livelihoods, economic, social, and environmental assets, and adversely affect the overall sustainable development prospects of SIDS (UNCTAD, 2019a, 2020b, 2020d).

Priority actions to strengthen adaptation and resilience building include inspection and maintenance, monitoring systems and effective data management, as well as risk assessments, contingency plans and warning systems. In addition, flexible and adaptive infrastructure, systems and operations, and engineered redundancy to improve resilience are needed (PIANC, 2019, 2020), as are other technologies to avert, minimize and address loss and damage in coastal zones (UNFCCC, 2020).

With regard to climate change adaptation and resilience-building for seaports, the latest Climate Action Pathway for Transport, revised in 2021, includes recommendations for 'Resilient transport systems, infrastructure and vehicles', with milestones towards 2050 (for 2025, 2030 and 2040) (UNFCCC, 2021a, 2021b). By 2025, all new transport infrastructure, systems and, where necessary vehicles, should be climate-resilient to at least 2050; by 2030, that should be extended to all critical transport infrastructure and systems; and by 2040, all critical infrastructure and systems should be climate-resilient to at least 2100 (UNFCCC, 2021b). Translating these timely targets into action will require a major acceleration of efforts at all levels.

Without timely planning and implementation of appropriate adaptation measures, the projected impacts on critical transport infrastructure may have broad economic and trade-related repercussions, and could severely compromise the sustainable development prospects of the most vulnerable nations (UNECE, 2020; Pacific Community, 2019; UNCTAD, 2020b, 2020c). However, important knowledge gaps remain concerning vulnerabilities and the specific nature and extent of the exposure that individual coastal transport facilities may be facing.

The potentially severe economic impacts of the global COVID-19 public health crisis might counteract the adaptation efforts of the transport sector in the short term, through a shift in budget allocations resulting in a decrease of infrastructure financing, for example. However, the pandemic underlines the critical importance of preparedness, risk assessment and resilience-building. Lessons learnt could provide renewed impetus to climate risk and vulnerability assessments of critical transport infrastructure and foster long-term planning essential to enhancing resilience. Changing circumstances arising from the impacts of the pandemic, e.g., the need for health and safety measures at ports of entry; changes to tourism markets; greater reliance on local and national resources and supplies, will need to be taken into account in any strategy for infrastructure adaptation and resilience building. Addressing the impacts of climate change remains a major challenge, in particular for the most vulnerable groups of countries, such as SIDS which depend on their critical coastal transport infrastructure and face a high and growing risk of coastal flooding (IPCC, 2018, 2019, 2021, 2022; Monioudi et al., 2018).

While central to development, transport also has detrimental effects on the environment through air pollution, GHG emissions, soil contamination, waste, noise, threats to land and water ecosystems and biodiversity, and others. Each mode of transport entails a different combination of negative impacts on the environment (UNECE, 2015). While maritime transport is considered to be the most CO₂-efficient mode of freight transport, the large volumes handled by this sector and its projected expansion in the coming decades make climate change efforts of the sector a priority. According to different scenarios, CO₂ emissions from maritime transport are expected to increase by 50 to 250 per cent until 2050 (IMO, 2015, 2020; OECD, 2010).

The sector is making progress towards achieving the ambitious levels set out in the initial IMO strategy on reduction of GHG emissions from ships, targeting among other measures on the promotion of ship energy efficiency, use of alternative fuels and the development of national action plans, to address GHG emissions from international shipping (UNCTAD, 2020e, 2021a). However, much more remains to be done. For developing countries, it is important that their legitimate interests be taken into account in the quest to reduce emissions from international shipping. UNCTAD is collaborating with IMO by providing an expert assessment of the potential impact of the proposed short-term IMO measures on GHG emission reduction across three scenarios until 2030. UNCTAD has analyzed the impact of the proposed measure on countries' external trade, transport costs (UNCTAD, 2021f), connectivity and economic growth, in particular in SIDS and LDCs (IMO, 2021).

To conclude, promoting sustainable transport involves balancing the economic, social and environmental dimensions of the sector. It involves ensuring that transport infrastructure, services and operations be safe, socially acceptable, universally accessible, reliable, affordable, fuel-efficient, environmentally friendly, low-carbon and climate-resilient (OECD, 2011; UNCTAD, 2018d, 2020e, 2020f, 2020d; UNECE, 2015).⁴ Given the potential for a broad range of climate-change induced impacts and the multi-dimensional nature of the sector, collaboration and participation of all relevant stakeholders, including public and private actors and academia, will be crucial to drive more systemic approaches to resilience-building (UNCTAD, 2019a, 2020d).

Notes

1. For example, OECD (2012) forecasts global investment needs for airports, ports, rails and energy transportation of US\$585 billion per year from 2015 to 2030. PwC and Oxford Economics (2015) estimate that investment requirements in transport infrastructure will increase from US\$557 billion in 2014 to US\$900 billion in 2025 globally. Finally, Woetzel et al. (2016) project cumulative investment needs in the sector over the period from 2016 to 2030 to amount to US\$18.7 trillion.
2. For additional information, see UNCTAD (2020b), UNCTAD (2022b), UNCTAD (2020f) and UNCTAD (2021i).
3. For recent studies on these topics, see Asariotis and Benamara (2012); Becker et al. (2013); UNCTAD (2017); UNCTAD (2020b); UNCTAD (2022b); UNECE (2013); and UNECE (2020).
4. For more information on UNCTAD's current work on sustainable and climate resilient freight transport, see UNCTAD UNCTAD (2021g) and UNCTAD UNCTAD (2021j).

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Digitalization helps mitigate pandemic impacts, but digital and data-related divides affect ability to recover

SDG indicators

SDG target 9.c: Significantly increase access to information and communications technology and strive to provide universal and affordable access to the Internet in LDCs by 2020

SDG indicator 9.c.1: Proportion of population covered by a mobile network, by technology (Tier I)

SDG target 17.6: Enhance North-South, South-South and triangular regional and international cooperation on and access to science, technology and innovation and enhance knowledge-sharing on mutually agreed terms, including through improved coordination among existing mechanisms, in particular at the United Nations level, and through a global technology facilitation mechanism

SDG indicator 17.6.1: Fixed Internet broadband subscriptions per 100 inhabitants, by speed (Tier I)

SDG target 17.8: Fully operationalize the technology bank and science, technology and innovation capacity-building mechanism for LDCs by 2017 and enhance the use of enabling technology, in particular information and communications technology

SDG indicator 17.8.1: Proportion of individuals using the Internet (Tier I)

ICTs have led to wide-ranging economic changes over recent decades, transforming value chains and the production and trade of goods and services. Related to this, ICTs have become an increasingly important tool for development; their adoption has the potential to spur productivity, trade, and economic development, but can also cause disruption that exacerbates inequities and exclusion, as well as other risks.

As the COVID-19 pandemic caused wide-ranging disruption, many turned to digital means to continue with economic activity, social life, education and entertainment (Ker et al., 2021; UNCTAD, 2021b). Digitalization helped societies cope with the health and economic impacts of the pandemic. It is likely that in many areas this boost to digital transformation will continue into the recovery. However, those without the access, skills, or resources to “go digital” will have been further disadvantaged.

Even before the COVID-19 outbreak, there were already persistent differences in access between men and women, urban and rural locations, low- and high-skilled workers, large and small firms, public and private schools, and others. This is also seen at the country level; the pandemic appears to have further increased the already high levels of digitalisation present in many developed countries, while some developing countries, especially the LDCs, saw reduced imports of the ICT goods needed to support digital transformation (UNCTAD, 2021d). In addition, privacy and data protection concerns have multiplied. To meet the SDG targets of universal access to ICTs, efforts to bridge existing and emerging digital divides should be reinforced to allow more countries and all elements of the population to take advantage of digital technologies.

More people than ever are using the Internet, but access remains unequal

To monitor a key aspect of ICTs for development, SDG indicator 17.8.1 measures the proportion of individuals who use the Internet. ITU estimates show that, although the percentage of people using the Internet in developing countries remains far below the 90 per cent rate of developed countries, Internet use increased markedly during the pandemic. Across developing countries, 57 per cent of people used the Internet in 2021, up from 44 per cent in 2019. Meanwhile, in the LDCs the increase was from 19 to 27 per cent (ITU, 2019, 2021a).

Just as disparities exist between countries, they also occur between different population groups within countries. For example, the percentage of women using Internet is lower than that of men, especially in LDCs and in Africa. Additionally, a large gap is still observed between individuals living in urban and rural areas. Overall, an estimated 37 per cent of the world's population – or 2.9 billion people – have still never used the Internet (ITU, 2021a).

**In 2021,
for the first time
more than half of the
population in developing
countries used the Internet**

To support access to ICTs, SDG 9 encourages innovation and infrastructural improvements, including through ICT. It also recognises the risk that many people and businesses could be left behind. To address this, SDG target 9.c calls for increased access to ICTs, striving to achieve universality and affordability. In support of this, SDG indicator 9.c.1 measures the proportion of the population covered by a mobile network, broken down by technology.

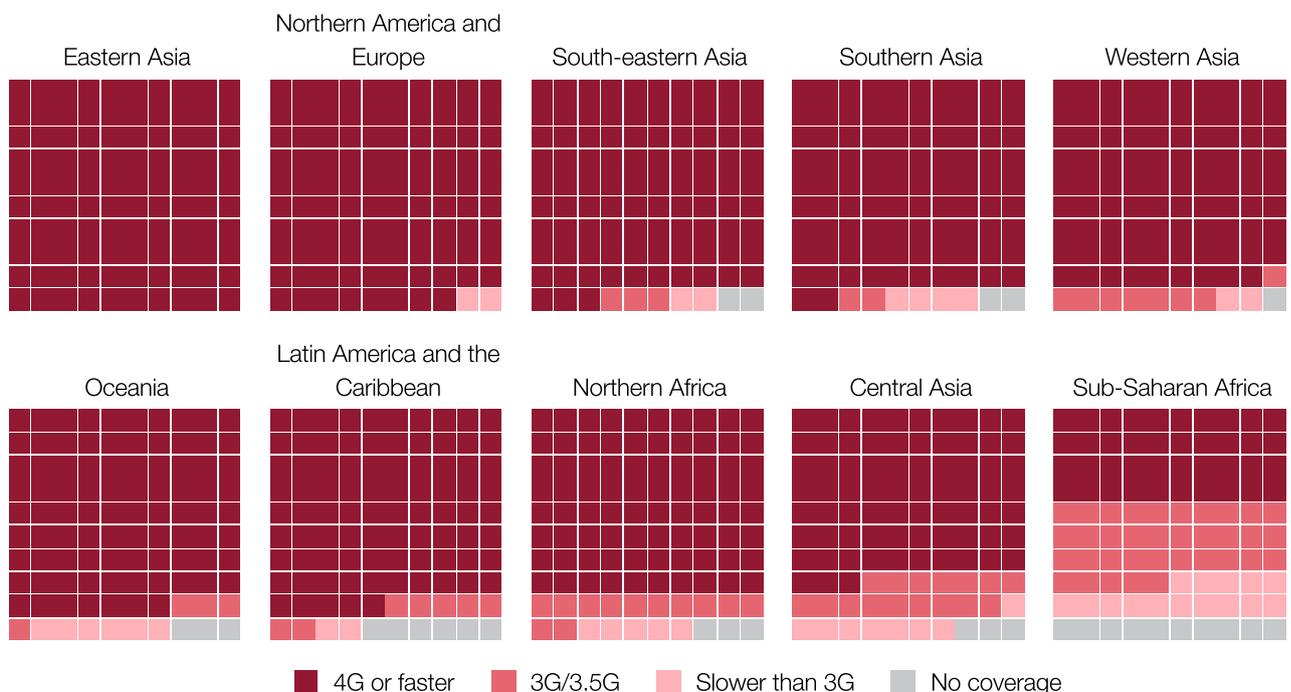
The global number of registered mobile money accounts surpassed 1.2 billion in 2020



For many people in developing countries mobile devices are often the only option for telephony and Internet connectivity. Mobile devices are increasingly used for economic purposes, supporting entrepreneurship, empowerment, and financial inclusion. For example, the number of registered mobile money accounts worldwide surpassed 1.2 billion in 2020, about 45 per cent of them in Sub-Saharan Africa. Mobile money transactions were worth almost US\$2 billion daily in 2020 (GSMA, 2021).

Figure 1 illustrates how mobile networks now cover most of the population in all regions of the world. Except for in Sub-Saharan Africa, the share of the population lacking coverage does not exceed seven per cent, and 4G or newer wireless systems are now the dominant technology in use globally. Nevertheless, more than one-in-five people in Northern Africa and Central Asia have yet to gain 4G coverage.

Figure 1. Distribution of population by mobile network coverage, by technology, 2021 (SDG 9.c.1)



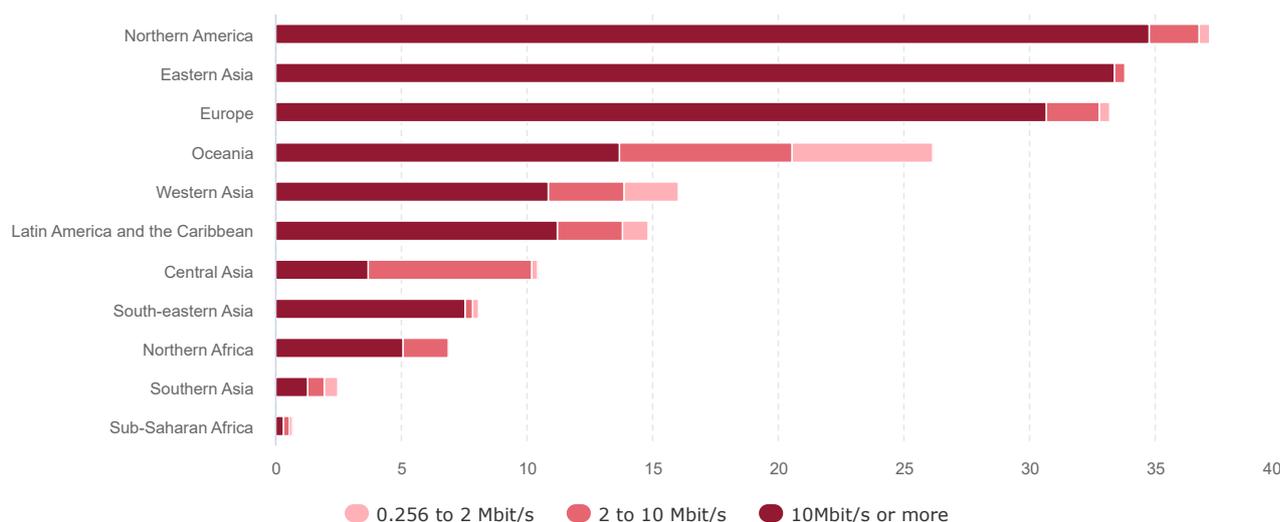
Source: UNCTAD calculations based on (ITU, 2021b).

The availability of mobile or fixed-line networks where people live and work, is a crucial foundation for Internet access. However, uptake is dependent on many other factors including the affordability of both network services and the devices needed to use them, access to electricity (e.g., for charging), literacy and other skills, and more.

In 2019, developing countries exceeded one mobile telephone subscription per person for the first time - a level developed countries reached around a decade before. Having stalled as the pandemic took hold in 2020, growth in developing countries picked up again in 2021, to reach 105 subscriptions per 100 inhabitants (ITU, 2021a). In 2021, LDCs had the lowest rates of adoption, with only 77 subscriptions per 100 inhabitants, though multiple people may have access to a single subscription, or indeed, one person may have multiple subscriptions. Furthermore, it is Internet access which is crucial for participation in the digital economy, and not all subscriptions offer “broadband” speeds of 256kbps or more. In 2021, there were 131 active mobile broadband subscriptions per 100 inhabitants in developed countries, close to twice the number of developing countries (74) and over three times the number in LDCs (39).

In many countries, fixed line technologies also play a crucial role in delivering Internet connectivity - especially connections with the highest speeds, such as fibre broadband connections. Figure 2 presents the number of fixed broadband subscriptions relative to the population, disaggregated by speed - as specified in SDG indicator 17.6.1. While fixed broadband, in general, is widespread in Northern America, Europe, Oceania and Eastern Asia, other regions have much lower subscription rates. For example, Southern Asian countries had, on average, around 2 subscriptions per 100 inhabitants in 2021, and Sub-Saharan African countries only 1 subscription.

 **Figure 2. Fixed broadband subscriptions by speed, 2020 (SDG 17.6.1)**
(Subscriptions per 100 inhabitants)



Source: UNCTAD calculations based on ITU (2021b).

As well as the availability of networks, differences in the affordability of broadband are a key reason for varying uptake across countries. Although monthly subscription charges for fixed broadband have in general fallen considerably, they remain relatively high in many developing countries, especially LDCs. The median annual cost of a fixed broadband subscription (5GB basket or equivalent) in developed countries during 2020 was equivalent to only 1.2 per cent of GNI per capita but equates to over one-fifth of GNI per capita in LDCs. The yearly median cost of mobile broadband subscriptions (1.5GB basket or equivalent) equated to 0.6, 4.4 and 6.1 per cent of GNI per capita in developed, developing and least developed countries respectively (ITU, 2021a). High-speed Internet access therefore remains a luxury for most people in LDCs.

2020 price of an annual subscription in LDCs



Fixed broadband 20.1% of GNI per capita



Mobile broadband 6.1% of GNI per capita

During the COVID-19 pandemic, those living in areas unserved (or underserved) by ICT infrastructure, or lacking the necessary financial or other capabilities, have been least able to use ICTs to mitigate the disruption and carry on economic and social life. As such, the pandemic will have compounded the disadvantages faced by some individuals, businesses, and indeed countries.

ICT is an increasingly essential element of business and trade

Disparities also exist between countries in the proportion of businesses that use ICTs. Official statistics are lacking for many countries, particularly for LDCs, but available figures show that most firms in developed economies use computers and the Internet, while this proportion varies considerably for developing countries. Within countries, there is a persistent gap in ICT uptake between small and large enterprises, and between enterprises in rural and urban locations according to UNCTADstat (UNCTAD, 2022a).

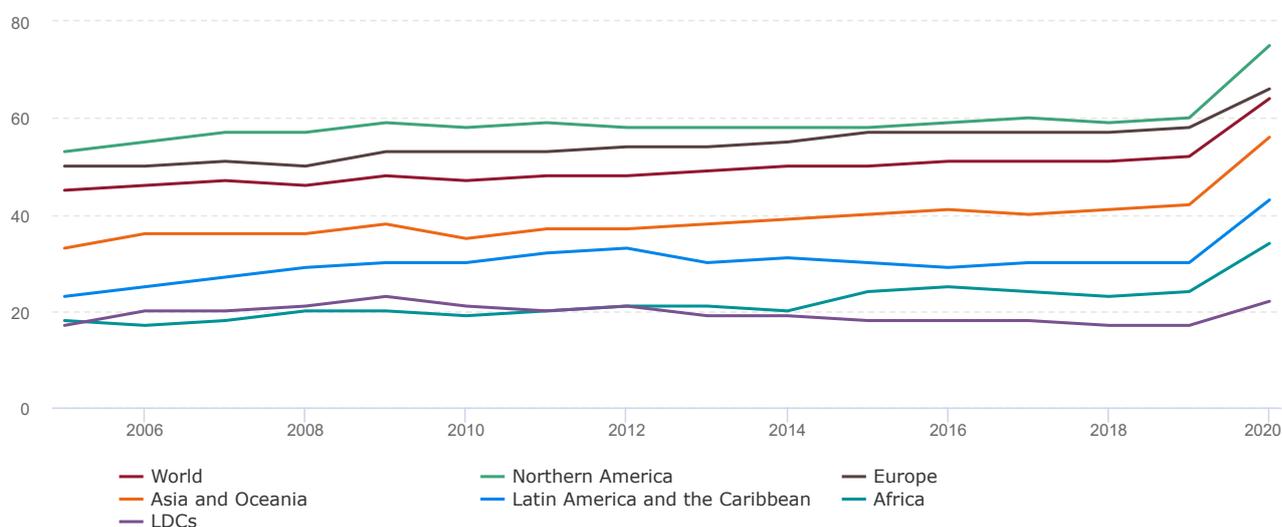
Internet use by employees has been positively correlated with productivity (World Bank, 2016). It is also a condition for e-commerce (digital ordering of goods and services) and digital delivery (of services), including across national borders – “digital trade” (OECD et al., 2019).

The pandemic has highlighted the importance of digital technologies in supporting international trade. In 2020, global services exports fell by 20 per cent compared with 2019, but exports of digitally deliverable services – those that can be delivered remotely over ICT networks such as the Internet – proved relatively resilient, declining by only 1.8 per cent, despite extensive economic disruption (UNCTAD, 2021d). As a result, digitally deliverable services reached almost 64 per cent of global services exports, as shown in Figure 3.

These developments have accelerated a pre-existing trend, namely, that digitally deliverable services are becoming an increasingly important element of services trade. From 2005 to 2019, global exports of digitally deliverable services grew at an average nominal rate of 12 per cent per year and at a rate of as much as 21 per cent in Asia. The share of digitally deliverable services in total global services exports had already increased from 45 per cent in 2005 to 52 per cent in 2019.

 **Figure 3. Exports of digitally deliverable services, by region and country grouping**

(Percentage)



Source: UNCTAD (2022b).

Types of services have been identified as digitally deliverable, also referred to as “potentially ICT-enabled” per UNCTAD (2015), yet the share of services that are actually delivered digitally is not routinely distinguished. UNCTAD is working with countries to measure this through surveys. Initial results obtained from Costa Rica, India and Thailand suggest that, between 80 and 99 per cent of services that can be delivered through ICT networks are actually delivered in this manner (UNCTAD, 2018).

Digitally ordered trade is a subset of e-commerce. In 2020, on average across countries with statistics available, 24 per cent of firms received orders online and over 40 per cent of firms placed orders online (UNCTAD, 2022b). Uptake varies with firm size; on average, more than twice the share of large firms sell online compared with small firms (OECD, 2019). Among the 27 member

Across countries, on average,



Working Group on Measuring E-commerce and the Digital Economy, UNCTAD is conducting detailed research on current approaches to measuring e-commerce among Member States (including cross-border e-commerce) as a basis to identify good practices for wider adoption.

countries of the OECD for which data are available, the share of people shopping online increased by 5.2 percentage points in 2020. This was the greatest increase since records began in 2005 (UNCTAD, 2022b).

The extent to which rising total e-commerce has translated to increases in cross-border e-commerce is not currently known due to a lack of statistics. A minority of countries produce e-commerce value estimates and even fewer break these down into domestic and international components. Under the auspices of the

The data-related divide and the need for a global data governance framework to oversee cross-border data flows

Alongside digital trade, international data flows are a hallmark of the global digital economy. Data flows are expanding rapidly, with the majority of cross-border flows taking place between North America and Europe and between North America and China (UNCTAD, 2021a). Slower and less ubiquitous Internet access in developing countries limits the possibilities for their citizens to participate in and benefit from the evolving data-driven digital economy.

Cross-border data flows can be considered in the context of the data value chain from raw data collection to the production of digital intelligence (data products), which implies value addition and therefore the potential for economic growth and development. Currently, there are indications that most developing countries' data outflows are in the form of raw data, while their data inflows consist more of digital intelligence produced in those countries that enjoy the main data advantages and have better capacities to process raw data. Consequently, a data-related divide is adding to the traditional digital divide.

Two countries stand out in terms of capacity to engage in and benefit from the data-driven digital economy: the United States and China. They account for half of the world's hyperscale datacentres, about 90 per cent of the market capitalization of the world's largest digital platforms, 94 per cent of all funding for AI start-ups, and have the highest rates of 5G adoption (UNCTAD, 2021a).



Currently, those that can extract or collect the data and have the capacity to further process them – mainly the global digital corporations – are in a privileged position to appropriate most of the value of data. By contrast, those who can be considered as producers or the source of the data in its raw form – such as the users of online platforms, many of whom are in developing countries, who are also contributing to that value – do not necessarily receive development gains. There is a need for a new international system to regulate these flows so that the benefits of cross-border data flows are equitably distributed.

Among the major geopolitical players in the digital economy, approaches for governing data flows – and the digital economy more broadly – vary considerably. In simplified terms: the United States of America focuses on control of the data by the private sector; the Chinese model emphasizes control of data by the Government; while the European Union favours control of data by individuals on the basis of fundamental rights and values. The current context is one of tensions among these areas, particularly between the United States of America and China.

Divergent “data nationalism” will be especially inimical to the interests of developing countries, including LDCs:

- First, it will result in suboptimal domestic regulations, especially in developing countries with low regulatory capacity, resulting in adverse consequences for privacy and security, and prejudicing the interests of domestic Internet users, as will be discussed in the following section.
- Second, a fragmented Internet reduces market opportunities for domestic MSMEs to reach worldwide markets, which may instead be confined to some local or regional markets.

- Third, it reduces opportunities for digital innovation, including various missed opportunities for inclusive development that can be facilitated by engaging in data-sharing through strong international cooperation.
- Finally, a world of divergent data nationalism has only a few winners and many losers. Certain established digital economies may emerge as winners due to their advantageous market size and technological prowess, but most small, developing economies will lose opportunities for increasing their digital competitiveness.

In the absence of a properly functioning international system of regulations of cross-border data flows that allows maximizing benefits from data while addressing the risks in a way that income gains are equitably distributed, the only option for developing countries is to regulate their data flows at the national level.

A strong case can be made for a global data governance framework that complements other levels of governance. Existing institutional frameworks at the international level are not fit for purpose to address the specific characteristics and needs of global data governance. For global data governance to be effective, a new global institutional framework is needed, with the appropriate mix of multilateral, multi-stakeholder, and multidisciplinary engagement. Global debates on the governance of data and cross-border data flows need to be fully inclusive; they should ideally take place under the auspices of the United Nations, the most inclusive international forum in terms of country representation.

UNCTAD takes an active role in promoting ICT as a tool for development

The rapid changes taking place as a result of widespread Internet access, increasing e-commerce penetration, and other digital advances require new approaches to adapt to and maximize opportunities from these changes. UNCTAD is implementing several initiatives in response. “eTrade for all” has established a global partnership of over 30 organizations working together to support an enabling environment for sustainable development through e-commerce. At the heart of this initiative is an online knowledge-sharing platform through which countries can navigate the technical and financial assistance offered by partnering institutions in key policy areas such as ICT infrastructure and services, payments, trade logistics, regulatory frameworks, skills development and finance.

UNCTAD has also undertaken 25 eTrade Readiness Assessments in LDCs as well as four assessments in other developing countries. These identify areas for action across various policy areas to increase countries’ capacity to participate in and benefit from e-commerce. They help give LDCs the information and awareness to effectively formulate their needs for development assistance related to e-commerce and to seek support for action from donors. UNCTAD also works with a number of developing countries to develop e-commerce strategies and policies, such as [Egypt](#), [Botswana](#), Oman and Rwanda.

UNCTAD has also launched several initiatives to improve the measurement of ICT-related contributions to the economy and trade. UNCTAD has responded to the need to boost work in this area by establishing the Intergovernmental Group of Experts on E-commerce and the Digital Economy, which on its third session (2019) recommended the creation of the Working Group on Measuring E-commerce and the Digital Economy. UNCTAD is also an active and founding member of the [Partnership on Measuring ICT for Development](#). In 2020, UNCTAD published the revised Manual for the Production of Statistics on the Digital Economy (UNCTAD, 2021c), which provides guidance and specifications for key indicators to help countries with measuring the digital economy. In 2022, an online learning course based on the manual will be launched.

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Developing country external debt: A cascade of crises means more countries face debt distress

SDG indicators

SDG target 17.4: Assist developing countries in attaining long-term debt sustainability through coordinated policies aimed at fostering debt financing, debt relief and debt restructuring, as appropriate, and address the external debt of highly indebted poor countries to reduce debt distress.

SDG indicator 17.4.1: Debt service as a proportion of exports of goods and services (Tier I)

External indebtedness poses important challenges for developing countries, particularly in the context of floating exchange rate systems, open capital accounts and fast integration into international financial markets. The historical position of developing countries as debtors in foreign currency has been a recurrent source of vulnerability to external shocks, for example, during a commodity price slump. This is because the servicing of external debt obligations ultimately requires generating sufficient export earnings or other forms of income. At the same time, exchange rate volatility is likely to affect the value of debt owed externally and that of export earnings in opposite directions. Thus, a depreciation of the local currency against hard currencies may result in increased export earnings (provided that the fall in the dollar price of local exports is compensated by a commensurate increase in export volumes), but will automatically imply an increase in the value of foreign-currency denominated debt obligations in local currency.

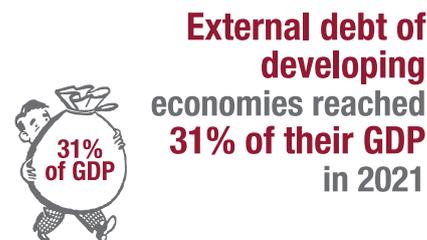
Against a backdrop of insufficient international public finance flows and limited access to concessional resources (UNCTAD, 2020a), developing economies have increasingly raised development finance on commercial terms in international financial markets. They have also opened their domestic financial markets to non-resident investors, and they have allowed their citizens and firms to borrow and invest abroad. While increased access to international financial markets can help capital-scarce countries to quickly raise much-needed funds, it also exposes them to higher risk profiles of debt contracts, i.e., shorter maturities and more volatile financing costs, as well as to sudden reversals of private capital flows. In conjunction with other exogenous shocks, such as natural disasters, pandemics or episodes of political instability, external debt burdens deemed sustainable by international creditors can quickly become unsustainable.

In the light of this analytical background, upcoming years appear very challenging for debt sustainability in developing countries due to the unfortunate crossroads of various exogenous shocks and the systemic fragility of the international financial architecture. The COVID-19 pandemic hit developing countries' external debt sustainability through several transmission channels simultaneously, in the form of unprecedented non-resident portfolio capital outflows and reductions in foreign direct investment during the first months of the pandemic, and then sharp falls in export earnings and the virtual collapse of the tourism industry, compounded with slumps in commodity prices and remittances. The immediate consequence was drastically reduced fiscal space in many developing countries. In the longer term, other shocks, including climate-related disasters and the triple impact of the Ukrainian conflict on food, energy and finance prices - as well as rising global interest rates aimed at curbing inflation - have further reinforced those forces that jeopardise growth and progress with the SDGs. Coordinated efforts by international governance has so far managed to prevent a tidal wave of sovereign defaults but the expiration of exceptional measures for debt relief coupled with the tightening of monetary conditions in advanced economies do not bode well.

External debt stocks of developing countries grew by 8 per cent to US\$11.1 trillion in 2021, with worsening risk profiles

As the COVID-19 pandemic continued to dominate in 2021, external debt stocks of developing countries reached US\$11.1 trillion, their highest level on record, more than twice their value of US\$4.1 trillion registered in 2009, and nearly fivefold their level of US\$2.1 trillion in 2000 (Figure 1). Given the sluggish growth since the global financial crisis of 2007-2008, this translated into a renewed increase in the average ratio of external debt to GDP from 22.8 per cent in 2008 to 30.6 per cent in 2021, as shown in Figure 2. The share of external debt stocks slightly declined in 2021 (-2.4 percentage points), probably due to global efforts to provide "breathing space" to developing countries in the need via debt relief programmes and a historic SDR allocation (IMF, 2021b), as discussed in the chapter [Official Support for Sustainable Development](#). During the past decade, external debt stocks of developing countries have grown on average 7.1 per cent annually.

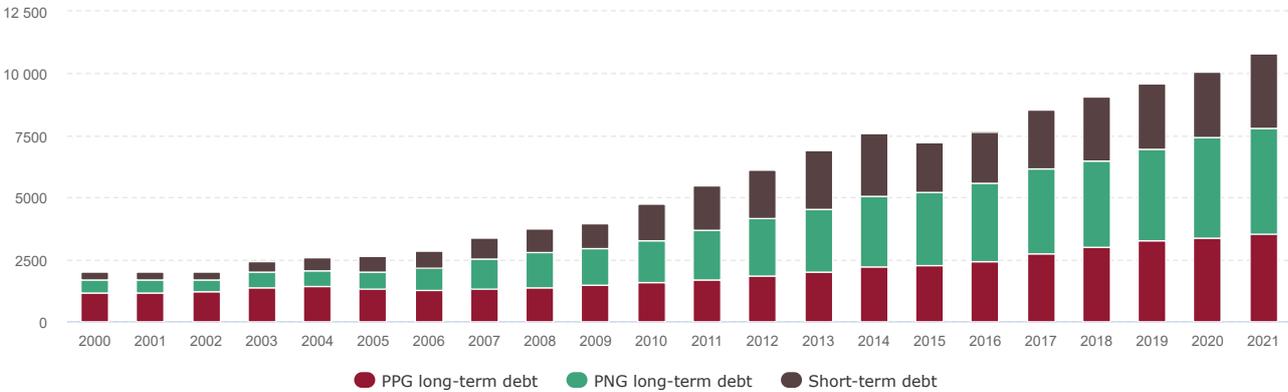
These trends are largely influenced by China, whose economy accounted for 21.1 per cent of total external debt stocks of developing economies and 41.6 per cent of their GDP in 2020. During the period from 2009-2020, China's external debt stock grew at a rate twice as fast as the developing



country average (16.1 per cent), while its GDP grew on average 10.1 per cent per year. As a result, the country's external debt to GDP ratio increased from 8.9 per cent to 15.9 per cent in the period. Excluding China, the ratio of external debt to GDP for developing economies is 14.5 percentage points higher, reaching 45.4 per cent of their GDP in 2021.

Figure 1. External debt stocks, developing economies

(Billions of current US\$)



Source: UNCTAD calculations based on data from World Bank (2022a), IMF (2022) and national sources.
 Note: Figures for 2021 are UNCTAD estimates. Data does not include IMF credit lines.

Figure 2. External debt stocks as a percentage of GDP, developing economies

(Percentage)

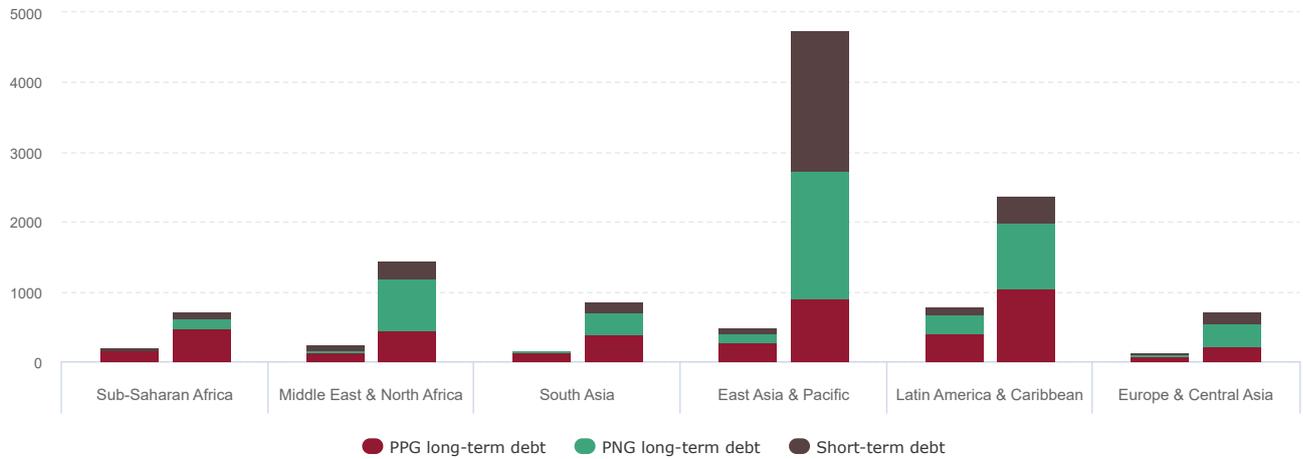


Source: UNCTAD calculations based on data from World Bank (2022a), IMF (2022) and national sources.
 Note: Figures for 2021 are UNCTAD estimates. Data does not include IMF credit lines.

As Figure 2 shows, over the past two decades, overall external debt stocks have continued to rise, with the shares of short-term debt and PNG (private) long-term debt contributing to a rising share of total external debt. The regional comparison in Figure 3 shows that, given their deeper financial systems, the majority of international private lending into developing countries went to high-income and upper-middle income economies, particularly in Asia and Latin America. But the trend has also been upward in other developing regions, including those with a large share of low-income economies, such as Sub-Saharan Africa.

Figure 3. External debt stocks, developing economies, by region

(Billions of current US\$)



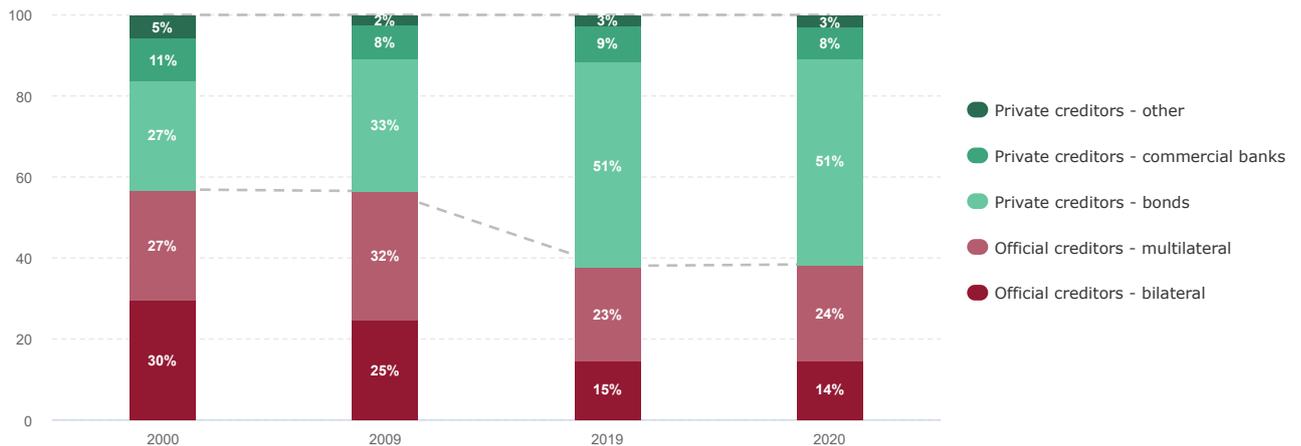
Source: UNCTAD calculations based on data from World Bank (2022a), IMF (2022) and national sources.

This increase of private sector lending participation in developing countries' PPG external debt accelerated after 2009 (Figure 4), and this trend has not always been warranted by positive developments in these economies' domestic financial and banking systems. Instead, the driving forces have mostly been global "push factors", such as the impact of accommodative monetary policies in many developed economies in the aftermath of the global financial crisis. High levels of private external indebtedness are of concern since they represent a large contingent liability on public sector finances, ultimately backed by international reserves held in the domestic economy. In the event of wide-spread private sector debt distress, governments will have little choice but to transfer the bulk of distressed private debt to public balance sheets.

Public debt in bond markets almost doubled its share of total debt between 2000 and 2020

Figure 4. Long-term external PPG debt by creditor, developing economies

(Percentage of total PPG debt)



Source: UNCTAD calculations based on data from World Bank (2022a).

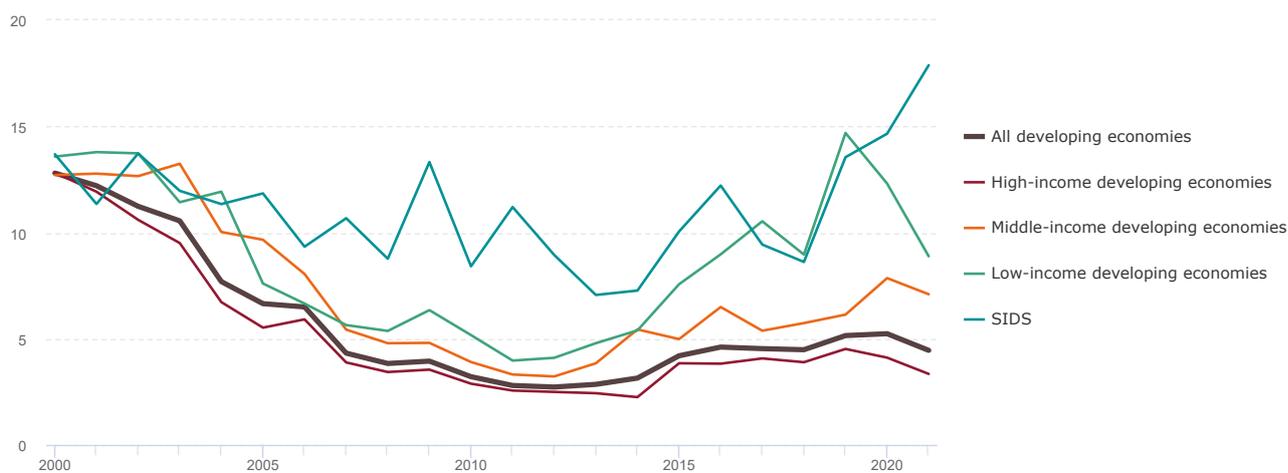
Notes: Averages by group of economies. Only countries with available data were included.

The fragility of developing countries' debt positions during the COVID-19 outbreak was intensified by changes in ownership of long-term external PPG debt. As shown in figure 4, the share of PPG external debt of developing governments owed to private creditors reached 61.6 per cent of the total in 2020, compared to 43.1 per cent in 2000. Its most volatile component, public bond finance, is clearly on the increase relative to financing through commercial bank loans and other private creditors. This reflects the growing reliance of developing country governments on refinancing their external debt obligations in international financial markets with strong speculative features rather than borrowing from official bilateral and multilateral creditors, which is generally more stable and on more favourable terms.

Debt service costs on public external debt continue to pose a serious challenge

Rising external debt burden along with increased risk profiles of such debt translate into rising servicing costs. Debt service ratios are considered important indicators of a country's debt sustainability. In this sense, SDG indicator 17.4.1 measures “debt service as a proportion of exports of goods and services”. This indicator reflects a government's ability to meet external creditor claims on the public sector through export revenues. A fall (increase) in this ratio can result from increased (reduced) export earnings, a reduction (increase) in debt servicing costs, or a combination of both. A persistent deterioration of this ratio signals an inability to generate enough foreign exchange income to meet external creditor obligations on a country's PPG debt, and thus potential debt distress in the absence of multilateral support or effective sovereign debt restructuring.

 **Figure 5. Debt service on long-term external PPG debt by groups of economies (SDG 17.4.1)**
(Percentage of exports of goods and services)



Source: UNCTAD calculations based on data from World Bank (2022a), IMF (2022) and national sources.
Notes: Figures for 2021 are UNCTAD estimates. Income groups follow UNCTAD's definition.

As Figure 5 shows, only high-income developing countries have maintained a stable ratio of external long-term PPG debt to export revenues of around two to four per cent in the last decade. This is largely due to their greater capacity to issue domestic public debt, with a view to avoiding currency mismatches. However, while greater reliance on local-currency denominated public debt reduces vulnerability to exchange rate volatility, it frequently creates maturity mismatches. Even governments in high-income developing countries are often unable to issue long-term government securities at a sustainable rate of interest, yet they need to be able to pay off or roll over maturing short-term obligations. In contrast, a marked increase of debt service ratios has been registered since 2012 across all other income categories, with a dip in the value for several groups of countries – especially the LICs – related to the G20 DSSI of the G20, beginning of April 2020. The DSSI made 73 countries eligible to suspend their interest payments to official bilateral creditors until December 2021. In the end, 48 countries took up the option – gaining short-term relief on debt servicing, as reflected in the data here (World Bank, 2022b).

The amounts suspended will have to be repaid over a period of five years, with a one-year grace period, so this ratio is likely to rise again. Among the 38 UN member states that are SIDS, 22 were eligible to the DSSI, and only 13 joined the initiative. The group of SIDS saw the ratio of debt servicing to long term PPG debt continue to rise from 13.6 per cent prior to the pandemic (2019) to 17.9 per cent in 2021, due to worsening of export performance and little debt relief as only lower-income SIDS were eligible for DSSI. As these economies increasingly tapped into international capital markets, this reflects rising external public debt stocks since 2012 in a context of commodity price volatility, sluggish global economic growth and rising debt service.

Moving beyond SDG indicator 17.4.1, the share of government revenues dedicated to servicing PPG debt rose sharply in recent years, particularly in the poorest developing economies. As Figure 6 illustrates, whereas in 2012 low-income developing countries spent 4.8 per cent of their government revenues to meet external public debt obligations, this figure rose to 12.0 per cent in 2020, before falling slightly to an estimated 9.7 per cent in 2021, along the same lines as those observed for indicator 17.4.1. The squeeze on government revenues from service payments on external PPG debt was particularly drastic in Sub-Saharan Africa, where this ratio jumped from a low point of 3.4 per cent in 2011 to an estimated 15 per cent in 2021.



Debt service on PPG debt in SIDS accounted for 18% of exports of goods and services in 2021

 **Figure 6. Debt service on long-term external PPG debt, selected groups of developing countries**
(Percentage of government revenue)



Source: UNCTAD calculations based on data from World Bank (2022a), IMF (2022) and national sources.
Note: Figures for 2021 are UNCTAD estimates.

This is of concern since low-income developing countries still rely predominantly on public financing to mobilise resources for structural transformation, yet also struggle the most with limited fiscal space given their shallow domestic financial and banking systems and limited options to refinance maturing debt obligations in the international financial markets.

The challenges posed by the COVID-19 shock

While developed countries have put together massive stabilisation packages to flatten both the pandemic curve and the curve of economic and financial crisis, this is not an option open to many developing economies, at least not at the required scale. On one hand, developing countries cannot easily lock down their largely informal economies effectively without more people being affected by hunger rather than by illness. On the other, they face substantive limitations on their fiscal space to mount rescue packages comparable to those currently under way in developed economies.

To pay for imports and to meet external debt obligations, the vast majority of developing countries are heavily reliant on access to hard currencies, earned primarily through commodity and service exports, such as food, oil and tourism, or received through remittances, as well as access to further concessional and market-based borrowing. Their central banks cannot act as lenders of last resort to their governments to the extent central banks in developed economies can without risking a large depreciation of their local currencies and its effects in terms of steep increases in the value of foreign-currency denominated debt. This has the potential to unleash destructive inflationary pressures and rising borrowing costs, as hinted by recent developments.

It is against this backdrop that already existing debt vulnerabilities and distress in developing countries require decisive action to avoid liquidity constraints turning into wide-spread insolvency crises. Well-designed debt relief – through a combination of temporary standstills with sovereign debt reprofiling and restructuring – including further enhancing the scale and scope of the G20 Common Framework for Debt Treatments - to help developing countries cope with the wall of upcoming sovereign debt payments. This is likely to be necessary to address not only immediate liquidity pressures, but also to restore long-term external debt sustainability in many developing countries, not least with a post-COVID-19 view of achieving the 2030 Agenda for Sustainable Development (United Nations, 2022; UNCTAD, 2020b).

Developing countries require decisive action to avoid liquidity constraints turning into wide-spread insolvency crises, as they deal with a cascade of crises



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Statistical measurement of illicit financial flows

SDG indicators

SDG target 16.4: By 2030, significantly reduce illicit financial and arms flows, strengthen the recovery and return of stolen assets and combat all forms of organized crime

SDG indicator 16.4.1: Total value of inward and outward illicit financial flows (in current United States dollars) (Tier II)

The COVID-19 pandemic, the war in Ukraine and the increasing costs of climate change and environmental challenges have had a particularly devastating impact on developing economies highlighting the critical need for addressing the financing gap. The ability to achieve the SDGs remains fragile when IFFs continue to drain resources that would be needed to fulfil human rights and pursue sustainable development. Domestic resource mobilization, assets recovery and curbing IFFs is more critical than ever. Governments' capacity to raise resources through return of assets will be fundamental to rescue the 2030 Agenda.

Absence of complete and consistent statistics hampers policy action to curb IFFs



The 2030 Agenda identifies the reduction of IFFs as a priority area, as reflected in target 16.4: "by 2030, significantly reduce illicit financial flows and arms flows, strengthen the recovery and return of stolen assets and combat all forms of organised crime". This target is critical for financing efforts to achieve SDGs. IFFs were also identified as a global priority in the Addis Ababa Action Agenda (United Nations, 2015) on financing for development which calls for a redoubling of efforts to substantially reduce IFFs, with a view to eventually eliminating them.

Research shows that IFFs weaken state institutions by encouraging corruption and undermine the rule of law and the functioning of the criminal justice systems. The impacts lead to particularly dire effects for the most vulnerable. UNCTAD's Economic Development in Africa Report (UNCTAD, 2020) found that some countries with high IFFs spend on average 25 per cent less on health and 58 per cent less on education compared with countries with low IFFs. By eroding the tax base and discouraging public and private investment, they hamper structural transformation, economic growth and sustainable development.

Regardless of its importance, data on indicator 16.4.1, "total value of inward and outward illicit financial flows", are not yet reported as part of the SDG indicator framework (United Nations, 2017b). The world needs comparable and reliable statistics on IFFs to shed light on the activities, sectors and channels most prone to illicit finance, pointing to where actions should be undertaken as a priority to curb these flows.

After intensive global efforts by UNCTAD, UNODC and experts from member States and international organizations, globally agreed concepts for measuring IFFs as SDG indicator 16.4.1 now exist and were adopted by all member States represented at the IAEG-SDGs, and the United Nations Statistical Commission, as well as endorsed at the political level by the FACTI panel (United Nations, 2021) and the Cluster V of United Nations Regional Commissions on Financing for Development in the Era of COVID-19 (United Nations, 2020). Selected methods to measure different types of IFFs have been pilot tested between 2018 and 2022 by 22 countries in Africa, Asia and Latin America, contributing towards refining global methods to measure IFFs and report on SDG 16.4.1.

Globally agreed concepts for SDG indicator 16.4.1 on illicit financial flows

UNCTAD and UNODC, as custodians of SDG indicator 16.4.1 assigned by the General Assembly, lead global methodological work to develop statistical definitions and methods to measure IFFs to support member States in monitoring progress towards target 16.4. In line with the General Assembly resolution (United Nations, 2017a) ¹ to ensure engagement with national statistical authorities, UNCTAD and UNODC established a Task Force on the Statistical Measurement of IFFs in January 2019 ², involving experts from national statistical offices, financial intelligence units, tax authorities, academia, non-governmental organisations, international organisations and other IFF experts.

As a result of this work, and for the purpose of the SDG indicator, there is a globally agreed definition of IFFs which are defined as *financial flows that are illicit in origin, transfer or use, that reflect an exchange of value, and cross country borders.*³

The IAEG-SDG, as designated by the United Nations Statistical Commission, endorsed these concepts in a methodological proposal in October 2019 and reclassified indicator 16.4.1 from tier 3 to tier 2, meaning that the indicator is conceptually clear and based on internationally established standards, while data are not yet available from countries.

The UNCTAD and UNODC (2020) *Conceptual Framework for the Statistical Measurement of Illicit Financial Flows* reflects the approved concepts and standards, and the Framework was endorsed by the member States and international organizations at the 53rd Session of the United Nations Statistical

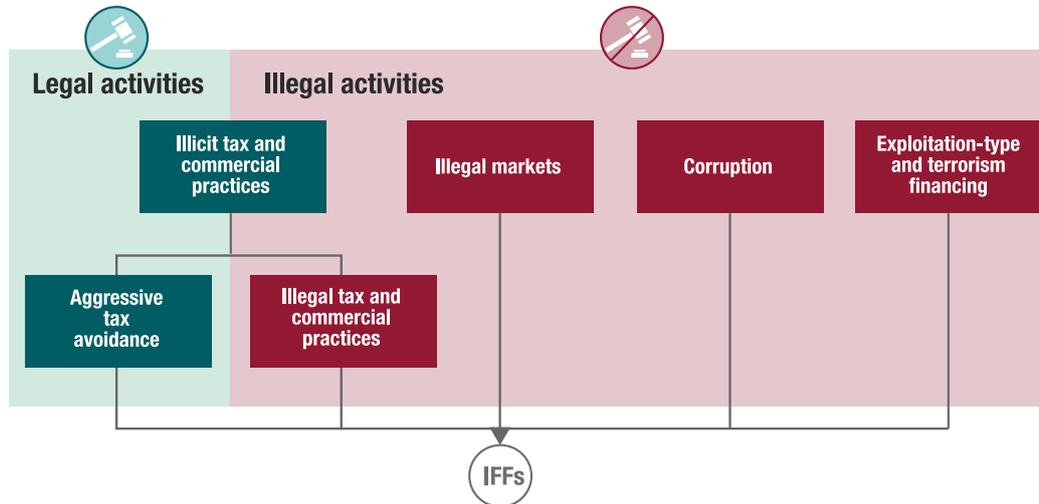
Common definition of IFFs for statistics reached



Commission (UNSC, 2022) in March 2022.

For comparability and timeliness, statistics cannot be based on legality as country laws on crime differ and some activities may be declared illegal only afterwards as part of investigations. Therefore, the scope of IFFs is defined based on a typology of activities that may generate IFFs. The Framework identifies four main types of such activities (1) illicit tax and commercial practices, (2) illegal markets, (3) corruption and (4) exploitation-type and terrorism financing (see Figure 1).

Figure 1. Categories of activities that may generate IFFs



Source: UNCTAD and UNODC (2020).

According to this typology, the four main categories of IFFs are described as follows:

- 1. Illicit tax and commercial IFFs.** This category includes illicit practices by legal entities as well as arrangements and individuals with the objective of concealing revenues, reducing tax burden, evading controls and regulations and other purposes. This category can be divided into two components:

 - IFFs from illegal commercial and tax practices. These include illegal practices such as tariff, duty and revenue offences, tax evasion, corporate offences, market manipulation and other selected practices. Some activities that are non-observed, hidden or part of the so-called shadow economy, the underground economy or the informal economy may also generate IFFs. Related activities included in the ICCS comprise tax evasion, tariff, duty and revenue offences, competition offences, import/export offences, acts against trade regulations, restrictions or embargoes and investment or stock/shares offences.
 - IFFs from aggressive tax avoidance. Illicit flows can also be generated from legal economic activities through what is sometimes called harmful or aggressive tax avoidance (see box 1 for more detail on the distinction between legal and illegal illicit flows). Aggressive tax avoidance can take place through a variety of forms, such as manipulation of transfer pricing, strategic location of debt and intellectual property, tax treaty shopping, and the use of hybrid instruments and entities. For the purposes of the measurement of the indicator, these flows need to be carefully considered, as they generally arise from licit business transactions and only the illicit part of the cross-border flows belongs to the scope of IFFs.
- 2. IFFs from illegal markets.** These include trade in illicit goods and services, when the money flows generated cross country borders. Such processes often involve a degree of criminal organisation aimed at creating profit. They include any type of illegal trafficking of goods, such as drugs and firearms, or services, such as smuggling of migrants. IFFs are generated by the flows related to international trade of illicit goods and services, as well as by cross-border flows from managing the illicit income from such activities.
- 3. IFFs from corruption.** The United Nations Convention against Corruption (UNODC, 2004) defines acts considered as corruption, which are consistently defined in the ICCS. These include bribery, embezzlement, abuse of functions, trading in influence, illicit enrichment and other acts. When the economic returns from these acts directly or indirectly generate cross-border flows, they are considered IFFs.
- 4. IFFs from exploitation-type activities and financing of crime and terrorism.** Exploitation-type activities are illegal activities that entail a forced and/or involuntary transfer of economic resources between two actors. Examples include slavery and exploitation, extortion, trafficking in persons, and kidnapping. In addition, terrorism financing and financing of crime are illicit, voluntary transfers of funds between two actors with the purpose of funding criminal or terrorist actions. When the related financial flows cross country borders, they constitute IFFs.

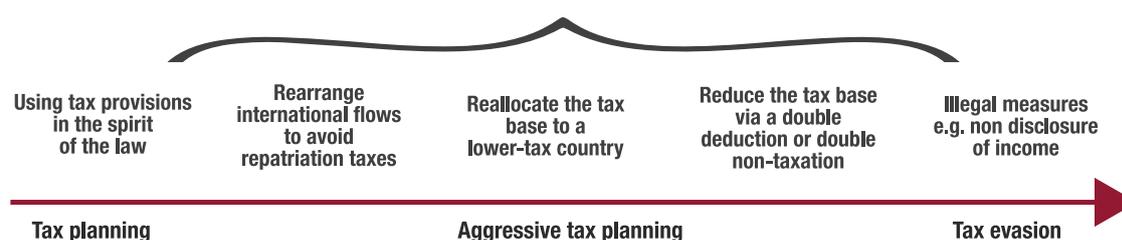


Box 1: Aggressive tax avoidance and IFFs

A specific conceptual challenge is to specify what kinds of activities should be designated as illicit or licit. It is noteworthy that SDG target 16.4 refers to 'illicit' instead of 'illegal' financial flows. Aggressive tax avoidance, including by MNEs, although usually legal, can drain resources and be considered illicit.

The inclusion of tax avoidance in the definition of IFFs creates some challenges, as it blurs the line between legal and illegal activities. Noting that the boundary between legal and illegal tax practices may be unclear, the European Commission (2017) described the continuum of activities from legal tax planning to illegal tax evasion (see Figure 2). In this context, aggressive tax planning is described as "taking advantage of the technicalities of a tax system or of mismatches between two or more tax systems for the purpose of reducing tax liability."

 **Figure 2. Boundaries of aggressive tax planning**



Source: European Commission (2017).

IFFs stemming from aggressive tax avoidance are considered in detail by OECD (2013), and can include BEPS through interest payments, strategic location of intangible assets, abuse of tax treaties, artificial avoidance of permanent establishment and transfer pricing manipulation. The BEPS package, released in 2015 by OECD and G20 countries, delivers guidance for governments to close gaps in existing international rules that allow corporate profits to be artificially shifted to low-tax jurisdictions where companies have little or no economic activity. Work to address outstanding BEPS issues by the Inclusive Framework is ongoing (OECD, 2020).

As part of the OECD Inclusive Framework on BEPS, progress has also been made in improving data availability to support the measurement of MNEs tax avoidance. Country-by-country reporting statistics are released publicly in an aggregated and anonymised form and can be analysed at the microdata level by country authorities.

An important distinction is made to avoid double counting and link to the SNA between two different stages leading to IFFs: ⁴

1. **IFFs linked to income generation**, as the set of cross-border transactions that are performed in the context of the production of illicit goods and services or the set of cross-border operations that directly generate illicit income for an actor during a non-productive illicit activity. Inward or outward IFFs occur when the operation in question is performed across a border.
2. **IFFs linked to income management**, as the set of cross-border transactions finalised to use the (illicit) income for investment in (legal or illicit) financial and non-financial assets or for consuming (legal or illegal) goods and services. If spent abroad, the operation is an outward IFF. If stemming from illicit activity outside a jurisdiction but is spent in the domestic jurisdiction, an inward IFF is generated.

IFFs need to be classified using a discrete, exhaustive and mutually exclusive statistical classification aligned with existing statistical frameworks and principles (OECD, 2021). The ICCS (UNODC, 2015) is a good point of departure for identifying the activities that could generate IFFs. Table 1 provides examples of some activities generating IFFs that are linked directly to the ICCS.

**Table 1. Examples of activities generating IFFs from crime, by ICCS categories**

Categories of IFFs	Examples
Tax and commercial practices	08041 Tariff, taxation, duty and revenue offences
	08042 Corporate offences including competition and import/export offences; acts against trade regulations
	08045 Market manipulation or insider trading, price fixing
Exploitation-type activities and terrorism financing (parts of sections 02, 04, 09)	020221 Kidnapping
	0203 Slavery and exploitation
	0204 Trafficking in persons
	0302 Sexual exploitation
	02051 Extortion
	0401 Robbery
	0501 Burglary
	0502 Theft
09062 Financing of terrorism	
Illegal markets	ICCS includes a long list of activities, including for example drug trafficking (060132), firearm trafficking (090121), illegal mining (10043), smuggling of migrants (08051), smuggling of goods (08044), wildlife trafficking (100312)
Corruption (section 0703)	07031 Bribery
	07032 Embezzlement
	07033 Abuse of functions
	07034 Trading in influence
	07035 Illicit enrichment
	07039 Other acts of corruption

Source: UNODC (2015).

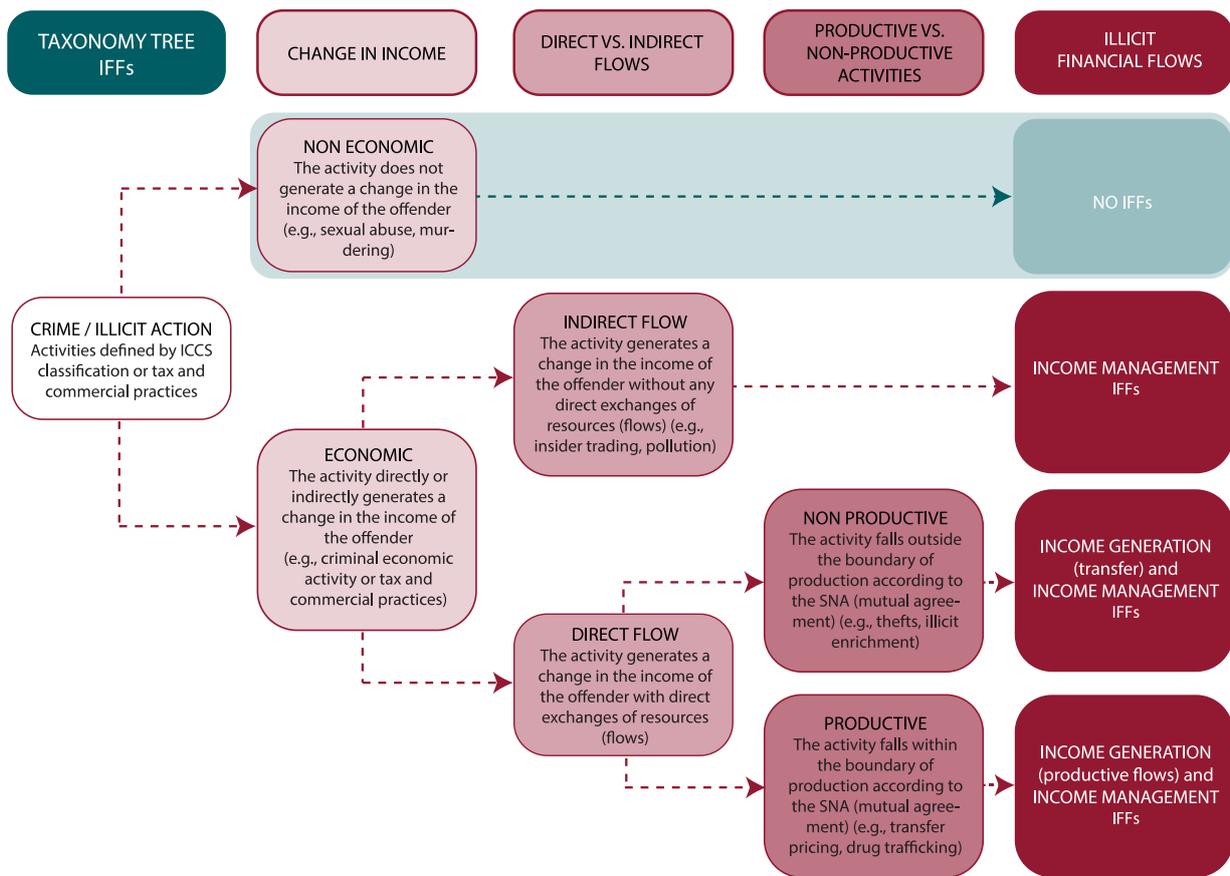
Note: This list is only intended to provide some examples and it is not exhaustive.

The ICCS does not cover all tax and commercial activities that may generate IFFs, for instance IFFs related to aggressive tax avoidance. Therefore, the classification of IFFs needs to be wider. A more exhaustive classification is being developed, where each activity is being analysed considering three aspects:

- Change in income: whether the activity is economic (directly or indirectly generating a change of income) or non-economic;
- Direct or indirect flows: activity generating a change of income with or without direct exchange of resources;
- Productive or non-productive activities: falling within or outside the production boundary as defined in the SNA.

Such taxonomy (see Figure 3) allows for addressing not only whether each activity generates IFFs, but also which part, i.e., income generation or income management, thus guiding IFF measurement.

Figure 3. The decision tree for IFF taxonomy



Source: UNCTAD.

UNCTAD and UNODC refining global statistical methodologies with member States

IFFs are deliberately hidden and, as they take many forms and use varying channels, their measurement is challenging both conceptually and in practice. UNCTAD and UNODC, therefore, provide different methods for the measurement of different types of IFFs. The measurement challenges also differ across countries, depending on main types of IFFs affecting the country, data availability, mandates of national institutions, statistical capacity and national policy priorities. Thus, a suite of methods is suggested for selection allowing country-specific solutions and the flexible application of the most suitable methods in each country.

In May 2021, UNCTAD (2021) *Methodological Guidelines to Measure Tax and Commercial IFFs* were published for pilot testing. They identify a suite of methods for the measurement of the main types of tax and commercial IFFs for pilot testing (see table 2). The guidelines put preference on bottom-up and direct measurement of IFFs based on using all microdata available for national authorities.⁵

**Table 2. Activities that may generate tax and commercial IFFs and types of flows**

Categories	Activities	Flows
A. IFFs from illegal commercial and tax activities	A1 Acts against public revenue provisions [08041]	F1 Transfer of wealth to evade taxes, i.e., flows related to undeclared offshore wealth <ul style="list-style-type: none"> ▪ Outright undeclared (concealed e.g., in secrecy jurisdictions) ▪ Undeclared via instruments (Phantom corporations or shell companies, tax havens)
	A2 Acts against commercial or financial regulations [08042]	
	A3 Market manipulations or insider trading [08045]	
	A4 Acts of commercial fraud [07019]	
	A5 Other illegal commercial and tax acts [08049+]	
		F2 Misinvoicing <ul style="list-style-type: none"> ▪ Under/over pricing ▪ Multiple invoicing ▪ Over/under reporting of quantities ▪ Misclassification of tariff categories
B. IFFs from aggressive tax avoidance	B1 Acts departing from the arm's length principle	F3 Transfer mispricing
	B2 Acts related to strategic location of debt, assets, risks, or other corporate activities	
	B3 Other acts of aggressive tax avoidance	
		F4 Debt shifting <ul style="list-style-type: none"> ▪ Intracompany loans ▪ Interest payments
		F5 Assets and intellectual property shifting <ul style="list-style-type: none"> ▪ Strategic location of intellectual property ▪ Strategic location of other assets ▪ Cost-sharing agreements ▪ Royalty payments

Source: UNCTAD (2021).

Note: Activities in category A are based on level-3 categories of the ICCS (with corresponding codes in brackets).

The *Methodological Guidelines* are aimed at statistical and other national authorities with a mandate to collect and access detailed data. Microdata available to national authorities enable the compilation of more reliable estimates. However, simpler methods are proposed in parallel with more sophisticated methods to enable IFFs' estimation also where less data are available. The UNCTAD guidelines provide two methods for each of the three main types of tax and commercial IFFs:

1. Trade misinvoicing by entities (flow F2, table 2)

- Method #1 - Partner Country Method Plus
- Method #2 - Price Filter Method Plus

2. Aggressive tax avoidance or profit shifting by MNEs (flows F3-F5, table 2)

- Method #3 - Global distribution of MNEs' profits and corporate taxes
- Method #4 - MNE vs comparable non-MNE profit shifting

3. Transfer of wealth to evade taxes by individuals (flow F1, table 2)

- Method #5 - Flows of undeclared offshore assets indicator
- Method #6 - Flows of offshore financial wealth by country

The above methods are tier classified, allowing member States to exercise flexibility and select a feasible method. A three-tier classification is proposed, with tier 1 as the preferred method based on the soundness of methodology, data requirements, and expected quality of estimates. Tier 2 is proposed as a fallback option if tier 1 method cannot be applied. If neither are applicable, a tier 3 method could be used.

UNODC has developed and continues to enhance methods to address IFFs from criminal activities, such as smuggling of migrants, drugs trafficking, illegal mining, wildlife trafficking, and corruption, providing guidance and expert support to national authorities undertaking measurement.

The approach taken by UNCTAD and UNODC considers the multi-dimensional nature of IFFs, identifies the main types of IFFs to be measured and lays out a framework in line with existing statistical definitions, classifications and methodologies, in particular with the SNA and BoP.

Work continues to develop a comprehensive classification of IFFs and design methods to aggregate various types of IFFs into a single indicator on IFFs, towards measuring and reporting on SDG indicator 16.4.1.

Granular data held by government agencies needed for reliable measures of IFFs

National statistical systems already have some of the data needed for the measurement of IFFs, but these data are scattered across a range of authorities and domains. For instance, existing national accounts and balance of payments statistics include estimates of illegal economic activities and the non-observed economy; they provide a good starting point for the measurement of IFFs.

Relevant data may be held by the police and ministries and councils of justice, financial intelligence units and other government agencies collecting information on seizures and criminal offences. In addition, tax authorities collect relevant data for assessing the tax gap, and they exchange country-by-country reporting data on multinational enterprises. Customs' data and statistics on international trade in goods and services provide useful information on commercial IFFs.

Over 60 per cent of national statistical offices collate relevant data on underground, illegal and informal activities using surveys, administrative sources, mirror statistics, international studies and expert assessment (IMF, 2018). While these activities are largely domestic, many of them also generate cross-border flows. There are also systematic data collections on crime and related IFFs; UNODC, for instance, compiles statistics on drugs as reported directly by countries, including detailed data on demand, supply, prices, drug characteristics, seizure data, etc.

Compiling statistics on IFFs requires access to many data sources held by different authorities. Central banks, customs, tax authorities and national statistical offices often have the strongest mandate to collect and access such data. Several global databases also contain relevant data for the compilation of IFF estimates, for instance the [OECD country-by-country reporting data](#), [UNCTAD Global Transport Costs Dataset for International Trade](#), the [United Nations Comtrade](#) database and [the locational banking statistics by the Bank of International Settlements](#).

Measuring IFFs requires close collaboration within the national statistical system and with administrative data providers. The compilation of SDG indicator 16.4.1 is a technical, statistical activity to be based on statistical considerations only in line with the Fundamental Principles of Official Statistics (United Nations, 2014). National statistical offices, as the focal point for coordinating the compilation of SDG indicators, should lead and coordinate the work to bring the necessary stakeholders together to measure IFFs.



Country pilots show that illicit financial flows can be estimated

While some elements of IFFs are more readily measurable, others are highly challenging to estimate, including bribery, abuse of functions, illicit enrichment and illicit tax practices. Country pilots are central to building the capacity to measure IFFs and testing the feasibility of measurement.

Pilot studies focus first on types of IFFs that are most prominent in a country and for which data are available. Coverage of different IFFs will be improved gradually along with data improvements. A series of pilot studies have been conducted with partners, UNODC and relevant UN Regional Commissions, in 22 countries to date, and have provided or continue to provide critical information for refining statistical methods to measure IFFs, either in terms of modifying the methodological approach (e.g., due to unreliable quantity information in trade statistics, related proposed reliability weighting procedure for Partner Country Method Plus on trade misinvoicing turned out to be unattainable in parts), or proposing alternative avenues (e.g., inspecting remittance flows), or clearly specifying national adaptations in applying methods. Further refinements are expected after current pilot testing concludes towards the end of 2022.

The first pilots carried out in Latin America between 2018 and 2020, by UNODC, show the way forward for other countries. In the first pilots, Colombia, Peru, Ecuador, and Mexico measured IFFs from selected illegal markets, such as drugs trafficking and smuggling of migrants.⁶ Estimates in Mexico, for instance, show that an inflow of IFFs equivalent to around \$12 billion was generated annually by drug trafficking activities⁷ conducted between 2015 and 2018.

Similarly, inward IFFs from cocaine trafficking were estimated for Peru (\$1.48 billion annually between 2015 and 2017) and Colombia (range: \$1.5 billion - \$10.2 billion for 2019). Smuggling of migrants is instead estimated to have generated an annual average of \$1.1 billion in inward IFFs for Mexico and \$13.6 million outward IFFs for Ecuador (2016-2018 data).

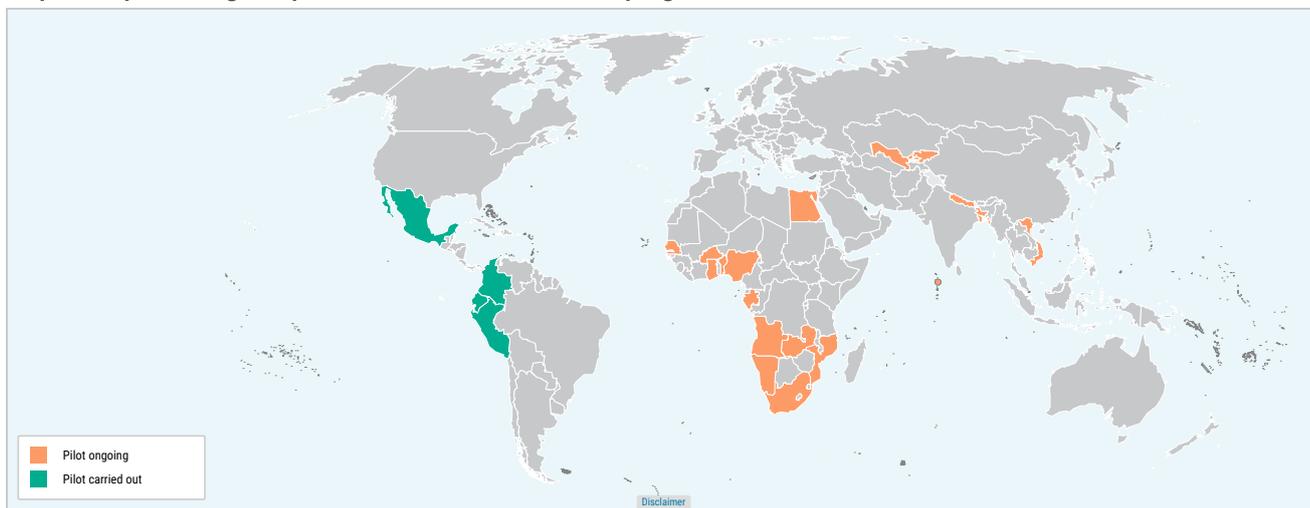
Pilots also addressed the measurement of IFFs from illegal gold mining and trafficking in persons, even if data in such cases did not allow for a sufficiently robust estimate.

In 2021, eleven interested African countries joined the pilot testing of statistical methodologies to measure IFFs with UNCTAD and UNECA focusing on tax and commercial IFFs. UNCTAD and UNODC are also pilot testing IFFs' measurement with ESCAP and six countries in Asia and the Pacific in 2021–2022, and Egypt is pursuing overall measurement of IFFs in the context of United Nations Joint Fund Support to Egypt for Integrated SDGs Financing⁸, in

In 2021, 12 African countries and 6 in Asia use statistical methodologies to measure IFFs with UNCTAD and UNODC, and UNECA and ESCAP

collaboration with UNCTAD on tax and commercial IFFs and with UNODC on drug-related IFFs. Map 1 shows countries that have been involved in measurement of IFFs.

Map 1. IFF pioneering and pilot studies carried out and in progress



Source: UNCTAD and UNODC

Note: Situation reflected on the map as in May 2022.

While countries are moving at a different pace, the eleven pilots in Africa will finish in June 2022; Egypt and countries in Asia are expected to produce preliminary results by autumn 2022 and finalise project activities by the end of 2022. Project activities in general start by a review of national circumstances in the form of an IFF risk assessment, followed by a mapping of relevant national stakeholders, a review of data availability and quality; and finally, the pilot calculation of IFF estimates with one or two selected methods. In order to implement the activities, countries form a national technical working group composed of key institutions possessing relevant data and mandates to measure or address IFFs. Tight collaboration among national institutions is key to getting the work done.

Selection of method(s) to measure IFFs depends on types of IFFs that prevail in a country. In the 18 pioneering countries currently measuring IFFs, trade misinvoicing and to a somewhat lesser extent multinational profit shifting are identified for measurement, with many countries focusing on their extractive industries. The choice of the method also depends on data available in the national statistical system and accessible to some members of the technical working group. Moreover, specific economic and market conditions may limit the choice of methods, e.g., specific prominent sectors (e.g., mining) being fully dominated by multinational enterprises, whereby no domestic units could be identified to use a control group.

Preliminary results of pilot testing activities confirm the feasibility of the task, yet challenges in coordinating access and use of data, the collaboration between several entities and the estimation exercise remain. Early feedback shows that support by national consultants, training provided by international organizations and integration of national institutions into the technical working group, are crucial for compiling statistics on IFFs, all this was further complicated by the COVID-19 restrictions in 2021-2022. UNCTAD's support to pioneering countries in measuring SDG indicator 16.4.1 is discussed in more detail in [UNCTAD in Action section on IFFs](#).

Lastly, countries will prepare an action plan to address gaps to enable regular measurement of IFFs with national statistics. These gaps may refer to unavailability of data, poor basic statistics or lack of integration of data sources. The action plans will be important for raising awareness of decision makers on the needs for investment and support, including from national governments and donors. The feedback from pilots will help refine the *Methodological Guidelines* and the skills and processes established contribute to future reporting of progress towards SDG target 16.4.

The early pilots developed tools and approaches and tested first methods to measure IFFs. As a result, refined tools and methods can be made available for all interested countries to use globally. In addition, a global UN capacity development project will start in 2023, relying on methodological support, guidance and training by UNCTAD and UNODC. It will be carried out in coordination by UNECA with all UN Regional Commissions. The project will enhance the capacity of developing countries across regions to measure and curb IFFs, enhance investigative and analytical capacities and improve domestic resource mobilisation to strengthen socio-economic resilience to pursue the 2030 Agenda.

UNCTAD and UNODC invite all interested countries to test the measurement of IFFs that affect their economies the most. Estimating IFFs will not only provide clarity on the scope of IFFs, but also help improve the quality of key macroeconomic statistics, such as GDP, by improving their coverage and

exhaustiveness.

The statistical Task Force will continue its work to support countries in the pilot testing of the measurement of IFFs with a view to developing a global *Statistical Framework for the Measurement of Illicit Financial Flows* with practical and methodological guidance in line with the *Conceptual Framework*. This will include a classification of activities generating IFFs, linked to the SNA and BoP concepts, and recommended methods to measure different types of IFFs in SDG indicator 16.4.1.

Further work will also aim at developing nuanced measurement of IFFs to support policy action and at the same time developing methods to aggregate estimates of different types of IFFs into one SDG indicator, e.g., to adjust for double counting. In the future, the measurement of IFFs as a satellite account taking into consideration national accounts concepts and definitions could be worth exploring.

Notes

1. The General Assembly resolution “stresses that official statistics and data from national statistical systems constitute the basis needed for the global indicator framework, recommends that national statistical systems explore ways to integrate new data sources into their systems to satisfy new data needs of the 2030 Agenda for Sustainable Development, as appropriate, and also stresses the role of national statistical offices as the coordinator of the national statistical system” (United Nations, 2017a).
2. The Task Force is composed of statistical experts from Brazil, Finland, Ireland, Italy, Peru, South Africa and the United Kingdom, representing national statistical offices, central banks, customs or tax authorities. The Task Force also includes experts from international organisations with recognised expertise in this field. ECLAC, ESCAP, Eurostat, IMF, OECD, UNECA, UNSD, UNCTAD and UNODC are represented.
3. The proposed bottom-up measurement approach considers domestic illicit financial flows as part of the illegal economy. These flows would not fall under the definition of IFFs for SDG indicator 16.4.1 but are of high relevance to understanding organised cross-border illicit flows.
4. This basic typology is coherent with the main concept of national accounts. Indeed, income generation refers to the set of operations that in national accounts relate to production account, and generation and distribution of income account, while income management refers to the set of operations that in national accounts refer to capital and use of income account.
5. This approach is consistent with Eurostat (2018).
6. Preliminary estimates of IFFs from illegal activities resulting from pilot testing in Latin America were presented at a meeting in Latin America in March 2021 (UNODC, 2021).
7. Mexico-US trafficking of cocaine, methamphetamine and heroin.
8. Under the INFF. Refer to project’s website for more information (UNCTAD, 2022).

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THEME 3

Structural Transformation

“We are the last people who can prevent catastrophe on the planet. We have no excuse for failure.”

– UN Deputy Secretary General, Amina J. Mohammed

Structural transformation

A shift from lower to higher value-added productive activities is an important condition for long-term growth that is sustainable and provides economic opportunities for everyone. In many countries, this requires investment, adoption of new technologies and a skilled workforce. Statistics show the complex environmental challenges we are facing. To avoid further ecological degradation and climate change, a shift to more resource-efficient and environmentally responsible economic activities will be needed. Productive capacities – human and natural capital, energy, transport, ICT, institutions, private sector and structural change – play a central role in strengthening countries' resilience to deal with economic and environmental pressures and shocks. This theme of SDG Pulse looks at these three aspects of structural transformation:

- We look for evidence of a shift towards [Sustainable industrialization and higher technology](#)s and more skills-intensive economic activities, and
- We consider whether it is [Make or break for green economy](#) in the face of serious environmental and climate concerns, and
- We discuss [Fostering productive capacities to graduate with momentum](#) as a priority for LDCs.

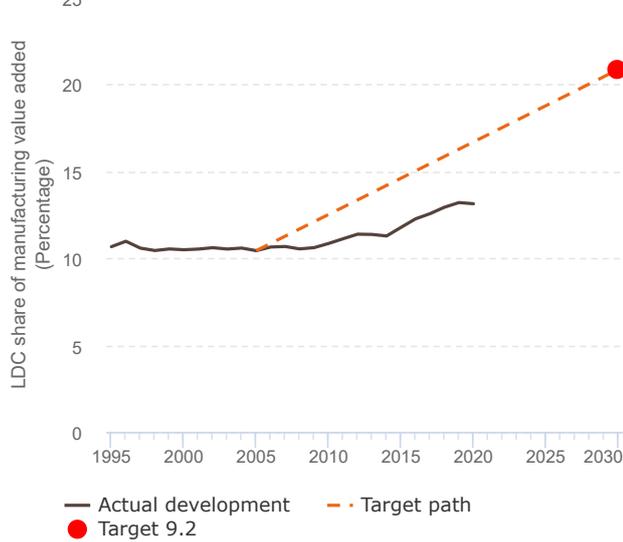
To achieve the objectives of the Paris Climate Agreement, the world needs to deploy green technologies on a much greater scale. Innovation plays a key role in that process. The climate challenge is immediate, and as statistics in the SDG Pulse demonstrate, we can reduce carbon intensity of the economy through technological and economic transformation, but the challenge is urgent. If there was some hope that the pandemic would have put the world on the right track to achieve at least the 2 °C target, this hope was dashed by the strong rebound of fossil carbon dioxide emissions by 6 per cent in 2021.

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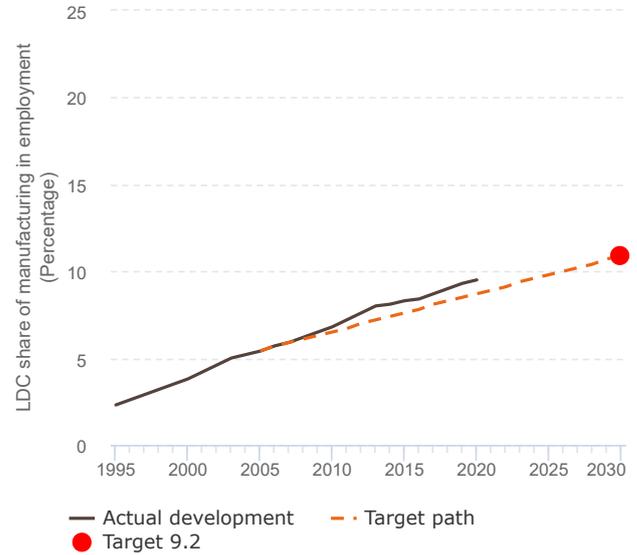
LDCs' **pace too sluggish** to double their manufacturing share in value added by 2030: +0.42 percentage points would have been needed each year from 2005, vs. +0.18 percentage points achieved until 2020.

SDG indicator 9.2.1



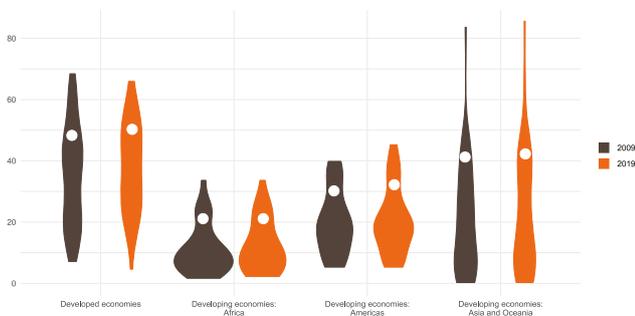
Share of manufacturing employment in total employment increased in LDCs by 75% since 2005 – on track for 2030.

SDG indicator 9.2.2



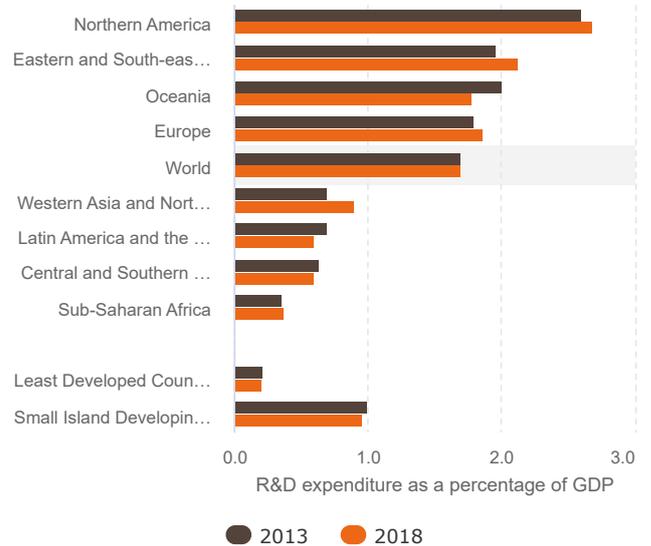
Medium and high-tech manufacturing share increasing in all regions, with Africa lagging behind.

SDG indicator 9.b.1



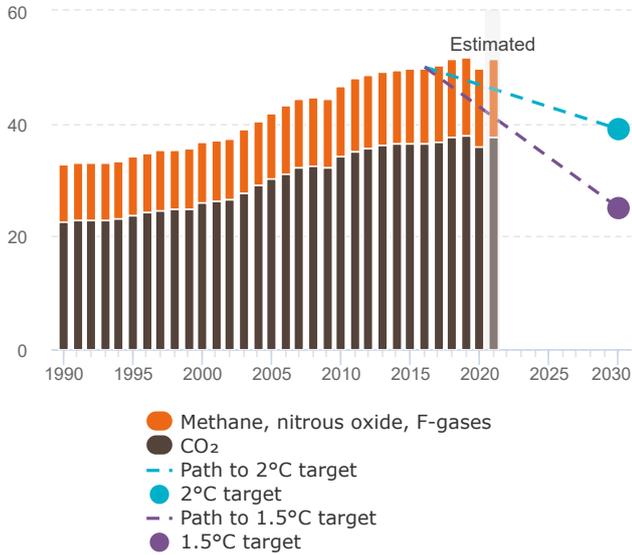
LDCs spend eight times less on R&D than the world average, relative to GDP.

SDG indicator 9.5.1

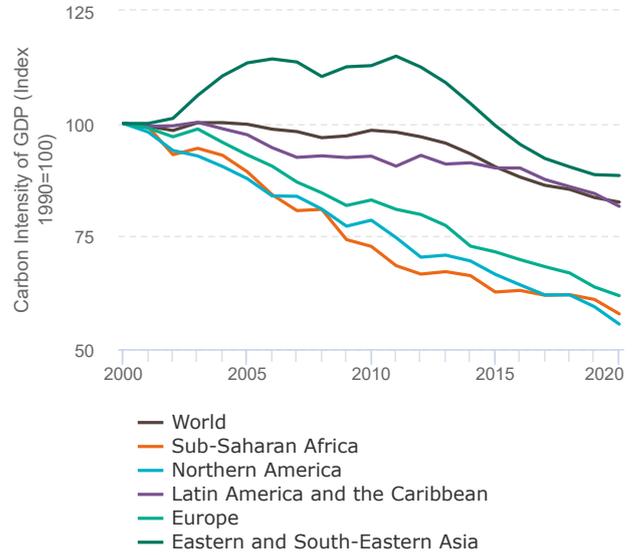


CO₂ emissions estimated to be almost back at pre-COVID-19 level in 2021, at 37.7 Gt, after an unprecedented 5% decline in 2020.

SDG indicator 9.4.1

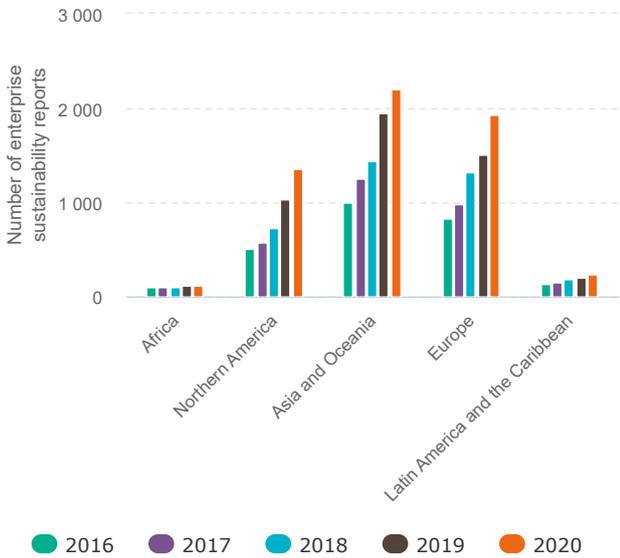


Carbon intensity of GDP decreasing in all regions in the world – at different paces.

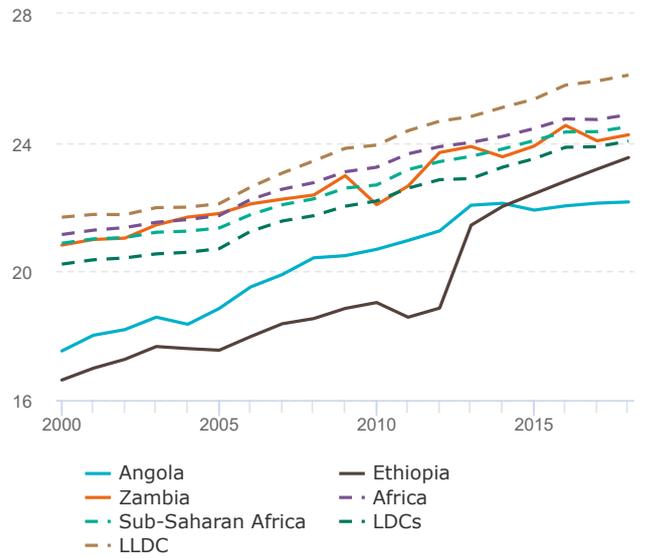


A growing number of companies prepare sustainability reports, especially in developed regions.

UNCTAD & UNEP SDG indicator 12.6.1



UNCTAD's PCI reveals weak productive capacities in several LDCs nominated for graduation, especially Angola and Ethiopia.



Towards sustainable industrialization and higher technologies

SDG indicators

Target 9.2: Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries.

Indicator 9.2.1: Manufacturing value added as a proportion of GDP and per capita (Tier I)

Indicator 9.2.2: Manufacturing employment as a proportion of total employment (Tier I)

Target 9.b: Support domestic technology development, research and innovation in developing countries, including by ensuring a conducive policy environment for, inter alia, industrial diversification and value addition to commodities.

Indicator 9.b.1: Proportion of medium and high-tech industry value added in total manufacturing value added (Tier I)

Target 9.5: Enhance scientific research, upgrade technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and increasing the number of research and development workers per 1 million people and public and private research and development spending.

Indicator 9.5.1: Research and development expenditure as a proportion of GDP (Tier I)

Indicator 9.5.2: Researchers (in full-time equivalent) per million inhabitants (Tier I)

Structural transformation has been an important driving force of economic development over the last decades. According to the theory of structural transformation (Kuznets, 1957; Chenery, 1960; Fourastié, 1963) development is driven by a shift from the extraction of raw materials and primary sector activities to increasingly complex technical transformation processes, commonly referred to as manufacturing. On the supply side, the sources of that transition include the development of know-how, increase in high-skilled labour and technological advancement, and enabling the application of new production methods. On the demand side, rising standards of living induce a shift in consumption from food and other primary commodities towards consumer goods, that are usually manufactured. This transformation leads to higher value added and greater economic welfare. In line with this thinking, SDG target 9.2 promotes inclusive and sustainable industrialization and aims to significantly raise industry's share of employment and GDP by 2030.

During the later phases of economic development, a sectoral shift from manufacturing to services has typically been observed. Once a certain standard of living is reached, the demand for services increases relative to the demand for physically produced goods. According to Haraguchi and Rezonja (2010) this level is reached when GDP per capita amounts to around US\$13 000 at 2005 prices. At that stage, manufacturing usually accounts for around one fifth of value added. Based on these estimates, UNIDO (2021a) considers countries to be industrialized when their manufacturing value added, adjusted to purchasing power parities, exceeds US\$2 500 per capita.

Rapid industrialization in developing economies of Asia and Oceania over the last decades

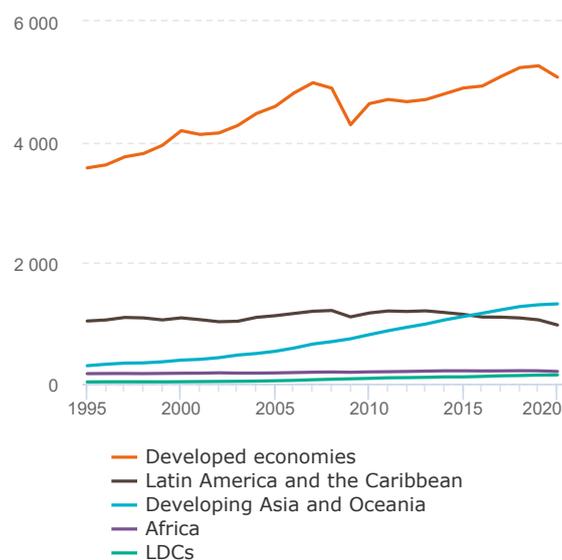
In 2020, manufacturing value added per capita amounted to US\$5 075 at constant 2015 prices in developed economies (see Figure 1). It was 2.8 times higher than in developing Asia and Oceania (US\$1 322) and 4.2 times higher than in developing Latin America and the Caribbean (US\$973). It exceeded the value in Africa (US\$204) by almost 24 times.



Over the last 20 years, manufacturing value added per capita in developing Asia and Oceania has steadily increased – by the factor 3.4 since 2000. In 2016, the region overtook Latin America and the Caribbean where the indicator has remained constant over the last 20 years. Africa has seen some increase, by 17 per cent over 20 years. Developed economies have recorded modest steady growth, disrupted only by the economic downswings from 2000 to 2002, from 2007 to 2010, and, very recently, in 2020.

 **Figure 1. Trends in manufacturing value added per capita (SDG 9.2.1)**

(US\$ in constant 2015 prices)



Source: UNCTADstat (UNCTAD, 2022).

Disruptions in industrial output by the COVID-19 pandemic

The outbreak of COVID-19 led to considerable disruptions of the long-term trends in manufacturing outlined above, all over the world. The containment measures introduced in response to the pandemic affected manufacturing both from the supply and demand side. Pressures on the demand side included the sudden drop out of many workers due to sickness, factory closures as part of the containment measures, and value chain disruptions. Pressures on the demand side included a decline in consumption as a consequence of the restrictions to day-to-day life, decreasing salaries and entrepreneurial income, as well as causing a halt in investment due to an increased uncertainty. Some industries proved more robust in coping with these shocks and more equipped to recover than others. Enterprise surveys carried out by UNIDO (2021a) show that producers of essential goods, such as food, and producers of goods aimed at meeting the health emergency, such as pharmaceuticals, computers and medical equipment, as well as firms in capital-intensive high-tech industries got relatively well through the crisis, whereas firms in labour-intensive industries and in capital-intensive industries, strongly relying on inputs from abroad, were hit harder. Some businesses adopted new digital technologies and thereby mastered the difficulties caused by the pandemic better than others.



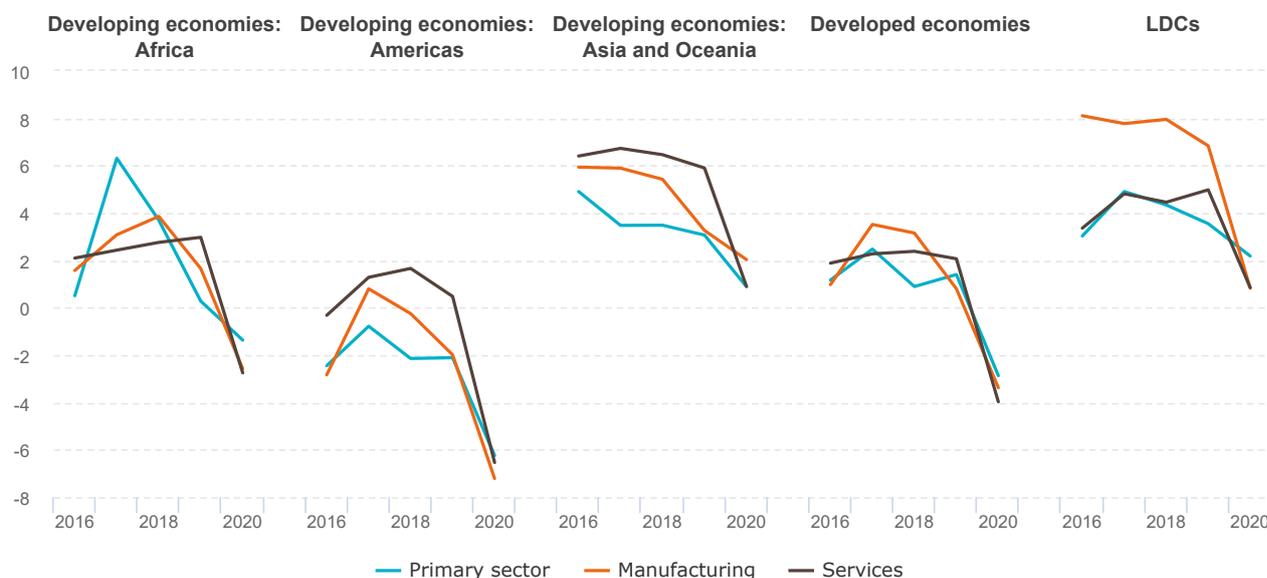
Manufacturing was hit equally hard by the pandemic as the primary sector and services

In total, growth in manufacturing output dropped considerably from 2019 to 2020 in all regions of the world, as figure 2 shows. The developed economies and the developing economies of Africa and America saw their manufacturing value added shrink as the pandemic extended across the globe. In the developing economies of Asia and Oceania, manufacturing output continued increasing, albeit at a significantly reduced pace compared to before. This also applies to LDCs. Figure 2 also reveals that manufacturing value added was equally hit by the pandemic when compared to the primary sector and services.



Figure 2. Annual growth of value added by economic sector, 2016-2020

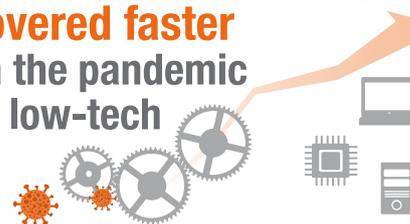
(Percentage)



Source: UNCTADstat (UNCTAD, 2022).
Note: In constant 2015 prices.

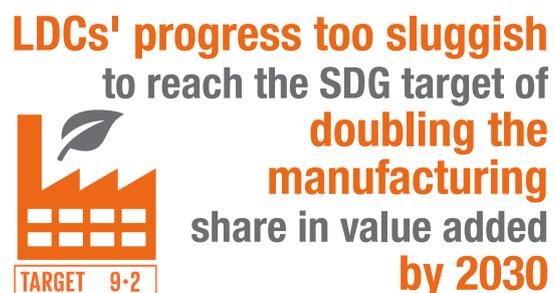
UNIDO (2021b) traces infra-annual developments of manufacturing output. In industrialized economies and in emerging and developing economies, excluding China, a sudden slowdown of growth was observed in the first quarter of 2020, followed by a substantial drop of manufacturing output in the second quarter. In that quarter, in emerging and developing economies, manufacturing output lost more than one fifth of its level of one year before. It took until the first quarter of 2021 in both groups of economies that growth in manufacturing output resumed. The development in China, which was first hit by the pandemic, was different: the recovery began already in the second quarter of 2020, and ample growth of nine per cent was reported during the second half of that year. While the report reveals that, globally, all sectors of manufacturing were equally affected by the pandemic, higher technology sectors showed a faster recovery than lower technology sectors.

High-tech manufacturing recovered faster from the pandemic than low-tech



Intermittent catching up of LDCs

In 2020, the LDCs' manufacturing sector produced on average US\$146 per head, at 2015 prices, almost 35 times less than the average produced in the developed world. However, LDCs' manufacturing value added per capita has steadily increased over the last 20 years, at a higher rate than in developing countries in general. The level in 2020 was already 3.6 times higher than the level of 2000 (see Figure 1). This is equivalent to a growth of eight per cent each year.



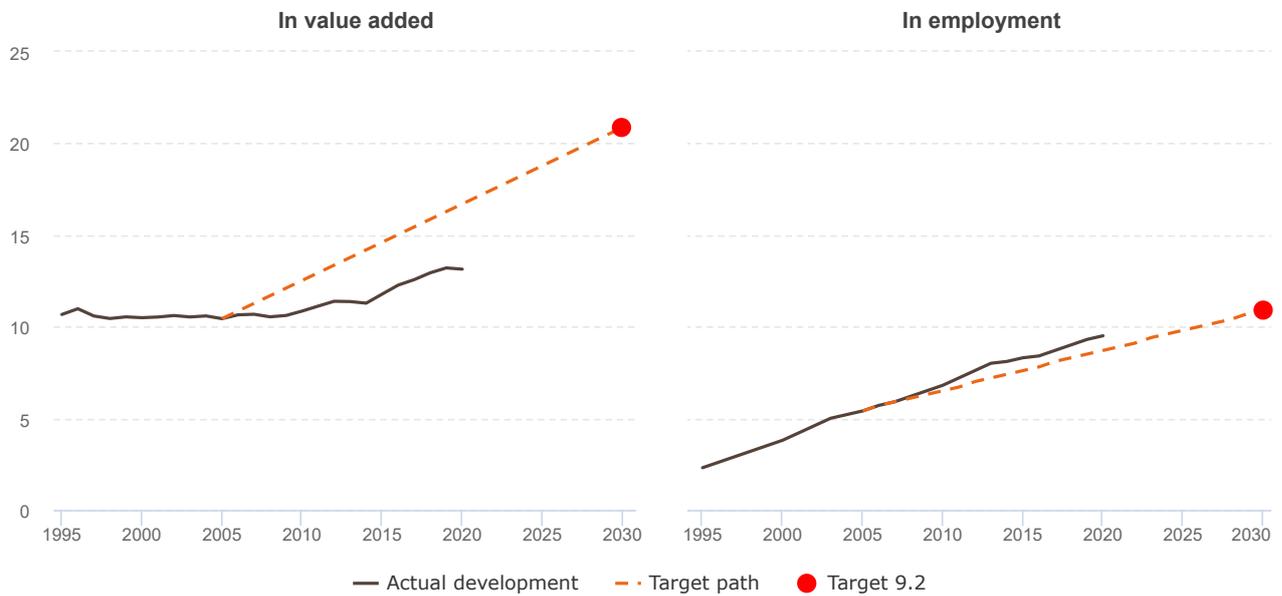
The manufacturing share in value added, the focus of SDG target 9.2 for LDCs, increased from 10.5 per cent in 2000 to 13.1 per cent in 2020. Most of that progress was made between 2014 and 2019; until 2010, the share had remained constant at just below 11 per cent; and in 2020 the expansion of the manufacturing sector stalled again (see Figure 3). Extrapolating the trend into the future, the growth achieved after 2005 on average appears to be too slow to achieve the SDG target of doubling the manufacturing share in value added by 2030.¹

From 2005 onwards, an average annual increase of 0.42 percentage points would have been required to reach the target. The actual annual average increase until 2020 was 0.18 percentage points.

It is striking that the faltering development in the share of manufacturing in value added is not reflected in the manufacturing share in employment. On the contrary, the employment share of manufacturing has steadily increased over the last 25 years, at a pace higher than required to reach by 2030 the SDG target 9.2.2 set up for employment. The findings above – in particular, the modest growth of the manufacturing share in value added compared to employment – suggest that new industrial innovations and policies are needed in LDCs to foster productivity in manufacturing and thereby accelerate structural transformation in output and income.



Figure 3. Development of the manufacturing share of value added (SDG 9.2.1) and of employment (SDG 9.2.2) in LDCs compared to the target
(Percentage)



Sources: UNCTADstat (UNCTAD, 2022); UNCTAD calculations based on SDG Indicators Database (UNDESA, 2022), ILOEST (ILO, 2022) and INDSTAT 2 (UNIDO, 2022).

Note: Target and target path set with reference to the base year 2005.¹

Structural transformation more in employment than output

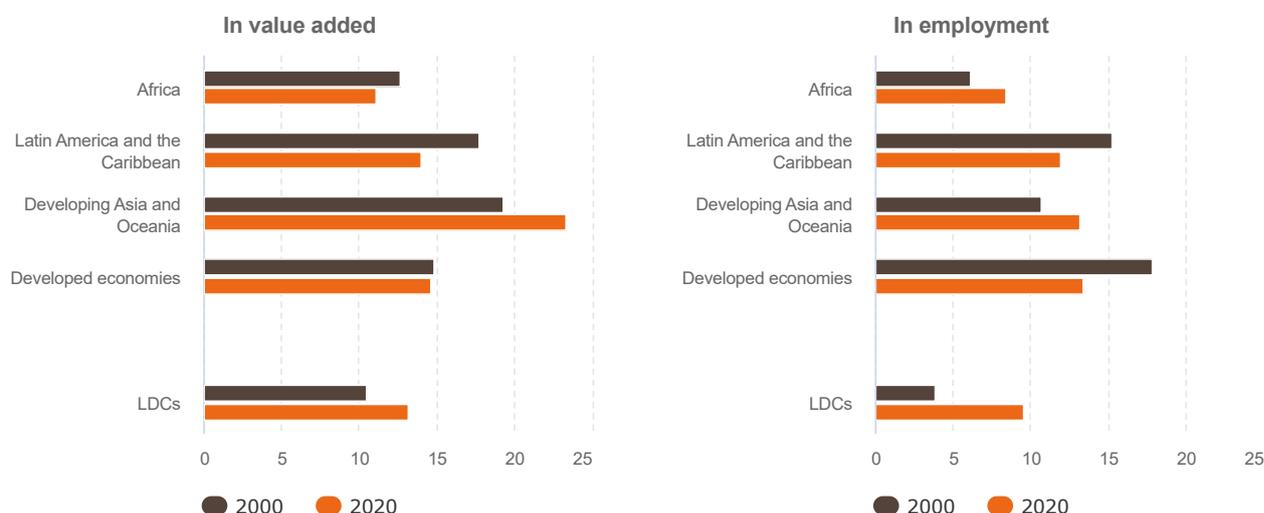
How has structural transformation changed the sectoral distribution of employment and value added? Between 2000 and 2020, the share of manufacturing in employment increased only in developing Asia and Oceania (from 10.7 to 13.2 per cent) and in Africa (from 6.1 to 8.4 per cent) (see Figure 4). In developing Asia and Oceania, in contrast to Africa, this increase was combined with an increase of the manufacturing share in value added (from 19.3 to 23.4 per cent). This highlights a growing disparity in productivity growth between the regions, in line with the above diverging trends in manufacturing value added per capita (see Figure 1). In LDCs, increases in manufacturing value added per capita, discussed above, were strongly employment driven. The share of manufacturing in employment almost tripled in that group of economies, from 3.8 per cent in 2000 to 9.5 per cent in 2020.



These figures suggest that during the last two decades, among the broad regions compared, only Asian and Oceanian developing economies have gone through a process of structural transformation as described in the literature. The LDCs as a group have also followed that path. Latin America and the Caribbean, like the developed economies, recorded shrinking proportions of manufacturing in both employment and value added. This development is not what is aspired to by the SDG target, which aims at significantly raising industry's share of employment and value added. Many of these countries may nevertheless have changed their economic structure towards higher value-added activities, by raising the share of services, in particular telecommunication and ICT services, or by a structural transformation within manufacturing from lower-tech to

higher-tech production. Below, the analysis is extended to investigate to what extent such digitalization and transformation to higher technologies is happening.

Figure 4. Share of manufacturing in value added (SDG 9.2.1) and employment (SDG 9.2.2)
(Percentage)



Source: UNCTADstat (UNCTAD, 2022), UNCTAD calculations based on UNDESA (2022), ILO (2022) and UNIDO (2022).

Technology gap persists in manufacturing

The 2030 Agenda promotes technological development through research and innovation, especially in developing economies. Progress towards the achievement of that target is measured by the proportion of medium and high-tech industry value added in total manufacturing value added (SDG indicator 9.b.1). This indicator shows a shift from lower to higher technology value added, raising the average value added per worker. R&D and innovation play a crucial role in this transformation by providing the grounds for the use of new and more efficient technologies.

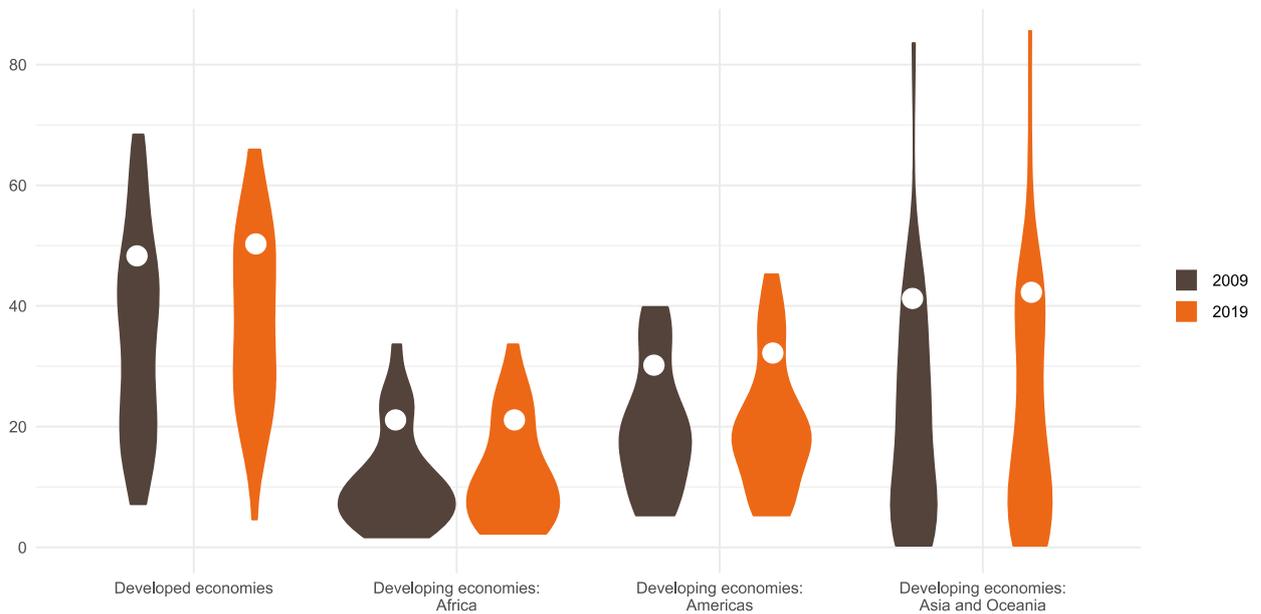
In the developed world, medium and high-tech industry accounts for higher shares of manufacturing value added than in developing economies. The weighted regional averages, represented by the dots in figure 5, reveal that half of developed economies' manufacturing output is obtained in medium and high-tech industries. Among developing countries, this share varies considerably across regions. In developing Asia and Oceania, it was 42 per cent in 2019, almost as high as in developed economies, while it reached 32 per cent in developing America and only 21 per cent in Africa.

From 2009 to 2019, the share of medium and high-tech manufacturing increased in all regions except in Africa. While developed economies managed to increase the share of medium and high-tech manufacturing from 48 to 50 per cent, developing Asia and Oceania only moved from 41 to 42 per cent, and developing America from 30 to 32 per cent, and the share remained constant at 21 per cent in Africa. These figures suggest that Africa has become increasingly uncoupled from the global technological advancements in manufacturing. Figure 5 also shows considerable variation across individual economies of the same region, especially in developing Asia and Oceania. This region encompasses, on one hand, the two economies with the world's most innovative manufacturing sectors, namely, Singapore (85 per cent in 2019) and Taiwan, Province of China (68 per cent); on the other hand, it includes several countries, primarily LDCs and SIDS, in which the share of medium and high-tech industries in value added has persistently remained below three per cent, such as Cambodia, Kyrgyzstan, Maldives, Tajikistan and Mongolia.



Figure 5. Proportion of medium and high-tech industry in manufacturing value added (SDG 9.b.1), by development status and region

(Percentage)



Source: UNCTAD calculations based on UNIDO (2022).

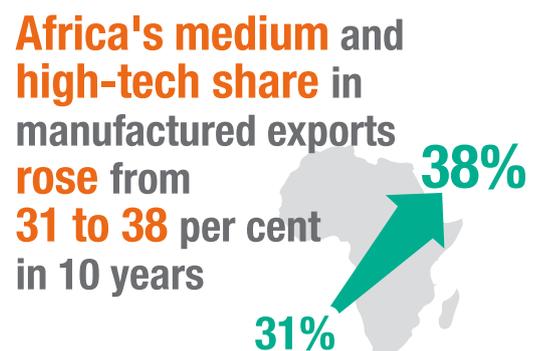
Notes: A violin plot shows the distribution of individual countries' medium and high-tech industry shares in manufacturing value added within each country group and year. The coloured area illustrates the distribution of individual countries around the regional average (white dots). In Africa, for instance the majority of countries are well below the regional average (indicating their low share of medium and high-tech industry). The coloured areas depict the distribution of countries' rates smoothed by kernel density estimation, a non-parametric way to estimate the probability density function of a variable. The wider the violin shape, the higher the possibility to find an observation, in this case a country, in that location. The dots within the shapes represent the weighted average of countries' medium and high-tech industry shares in manufacturing value added.

Considerable spread in the medium and high-tech industry share of manufacturing value added is also found among developed economies. Some of them reach less than one third of the rates recorded by the developed countries at the highest ranks, such as, Switzerland (65 per cent) and Germany (62 per cent).

Many LDCs and SIDS are characterized by low shares of medium and high-tech manufacturing. However, this is changing. Noteworthy exceptions among SIDS include Trinidad and Tobago and Barbados, where the medium and high-tech share in manufacturing value added was at 40 and 38 per cent in 2019, respectively (UNIDO, 2022).

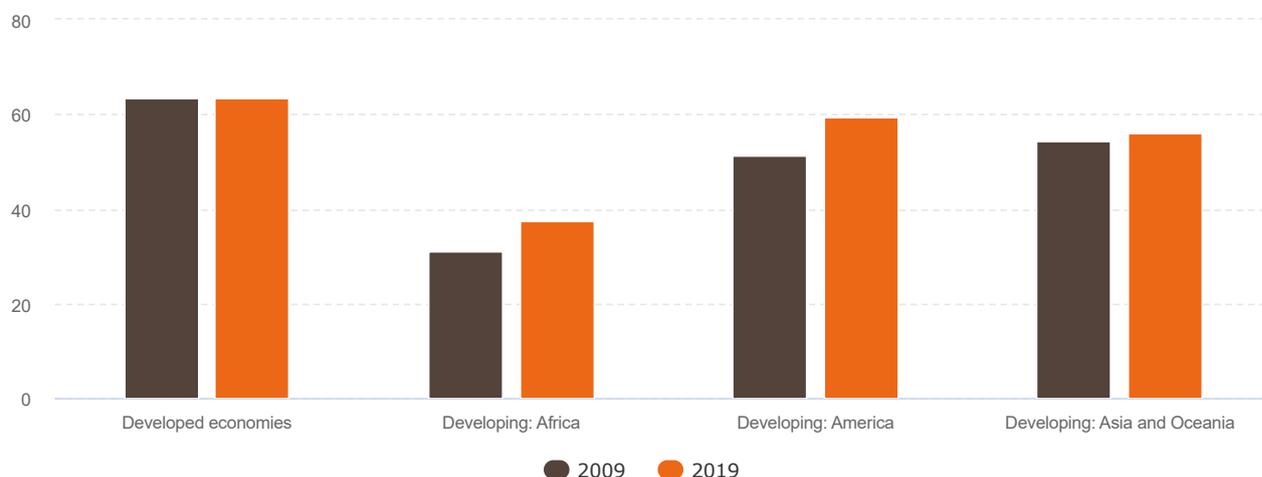
Developing economies' medium and high-tech exports increasing

Looking at international trade, the share of medium and high-tech products in manufacturing exports has been increasing in developing countries during the last ten years, while it has remained almost constant in the developed world (see figure 6). In developing America and in developing Asia and Oceania, the share of medium and high-tech exports reached almost 60 per cent in 2019, whereas in developed economies it stood at 64 per cent. Africa has increased its medium and high-tech export share from 31 to 38 per cent between 2009 and 2019. Thereby,



the region has caught up in structural transformation of manufactured exports, and the overall gap between the developing and developed world has narrowed.

 **Figure 6. Share of medium and high-tech manufactured exports in total manufacturing exports**
(Percentage)



Source: UNCTAD calculations based on UNIDO (2022).

R&D investment and international cooperation are vital for fighting the COVID-19 pandemic

 **10 economies**
account for over
75% of total
R&D spending in the world 

As COVID-19 threatened human health across the globe in 2020, R&D investment in biomedicine witnessed an unprecedented surge. Coupled with increased international collaboration, the biomedical innovation responded to that threat. Within only 12 months, tests and treatments for millions of persons were developed and produced. The lockdowns made it necessary to also reallocate R&D funds to the ICT sector, following the

demand for advanced digital working methods and digital economy (WIPO, 2021). A precise assessment of R&D levels during the pandemic needs to await more complete data from countries and from enterprises.

In the OECD countries, R&D expenditure grew by 1.8 per cent in 2020 (OECD, 2022). Although this marks a slowdown from 5 per cent average annual growth observed during the pre-pandemic years, it represents a historical precedent, as R&D expenditure grew in parallel to a decline in GDP. Although businesses remained the biggest R&D investors in value terms, the R&D funding growth was mostly driven by public spending in 2020, contrary to previous years when it was led by enterprise investments. This shows the importance of public funds and concerted international efforts in coping with a regional and global crisis (OECD, 2022). Various international organizations have emphasized the crucial role of public support for sustainable research targeting socially beneficial projects with wide spill-over effects. They also reiterated the significance of global cooperation and inter-disciplinary connections in science, aimed to build more resilient societies and avert future threats. Moreover, supporting innovation should facilitate progress towards achieving the SDGs (UNCTAD, 2020).

Looking at trends among the main global players, R&D investment gained strength in the United States of America and China in 2020, while it slowed down in Japan and the European Union, according to OECD (2022). In the European Union, public R&D funds followed the increasing global trend, while corporate investment declined more than in other regions, indicating that

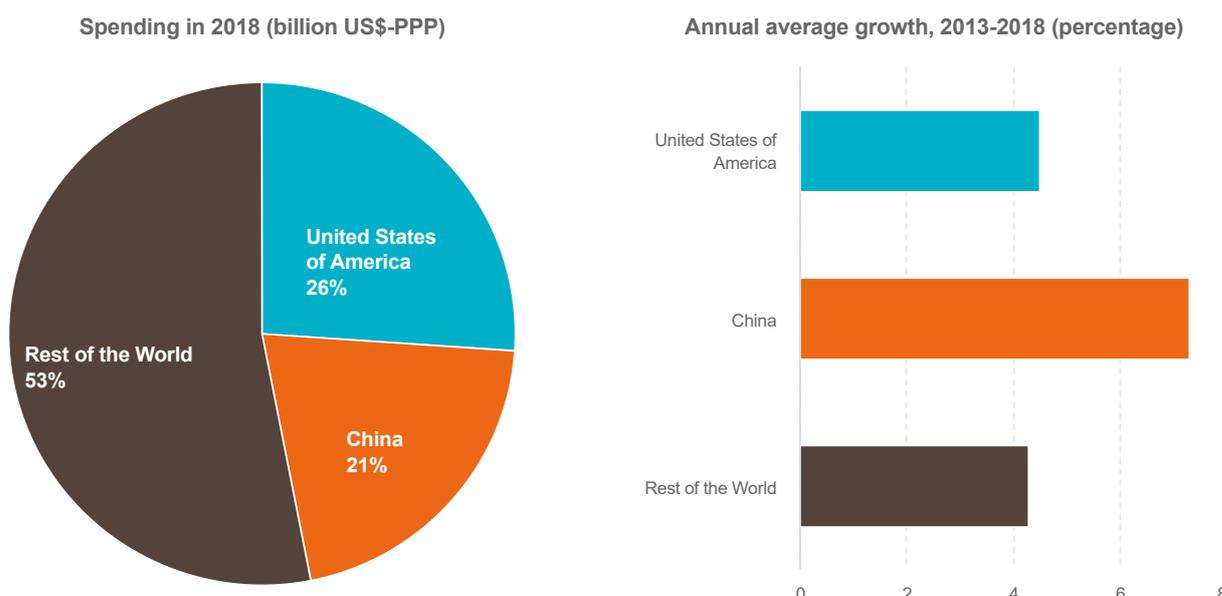
business innovation in the European Union is linked to industries more affected by the pandemic. OECD (2022) data further reveal that the R&D intensity, the domestic expenditure on R&D as a percentage of GDP, went up in 2020 in the OECD member states, not necessarily reflecting a rise in R&D but rather a decline in GDP. Early indicators suggest a solid increase in R&D investment by businesses and a slowdown in public funding budgeted for R&D in 2021. The shrinkage of public R&D budgets is not projected to induce an overall drop in R&D funds, so R&D should be on the rising track (OECD, 2022).

In a sample of two thirds of the largest corporate R&D spenders, WIPO (2021) also finds that investment of businesses in innovation increased in 2020. Expectedly, the largest rise was observed in ICT hardware and software and in electrical equipment, followed by pharmaceuticals and biotechnology. Most visible declines were reported in the automobile industry and in sectors closely linked to travel, leisure, and personal goods. The studies suggest that ICT software, biomedicine, and alternative energy represent the three sectors that should not face difficulties in attracting innovation funding in the near future. They further estimate that the United States of America and China will see their R&D rise more rapidly than other states, owing to the fact that these two countries host some of the world’s largest science and technology clusters (e.g., the Beijing cluster, or the San Jose - San Francisco cluster), and due to government policies suited to encourage R&D investment.

Already before the COVID-19 pandemic, governments were encouraged to increase spending on R&D in the context of the 2030 Agenda. In 2018, the latest year with globally comparable innovation statistics, the world invested US\$2.2 trillion in R&D, PPP-adjusted. Over the five-year period from 2013 to 2018, absolute R&D spending increased by 5.4 per cent each year on average. Not surprisingly, investment was highly concentrated in a few economies. In 2018, some 75 per cent of R&D investment was made by only 10 countries.

In PPP-adjusted value terms, the leaders in R&D spending were the United States of America (US\$582 billion), China (US\$465 billion), Japan (US\$171 billion) and Germany (US\$141 billion). Remarkably, the United States and China accounted for almost half of global R&D investment (see Figure 7 and Table 1). Among developing economies, relatively high growth in R&D spending was recorded for Iran (the Islamic Republic of), Indonesia, Macao SAR, El Salvador, and Panama: above 25 per cent average annual increase (UNESCO Institute for Statistics, 2021).

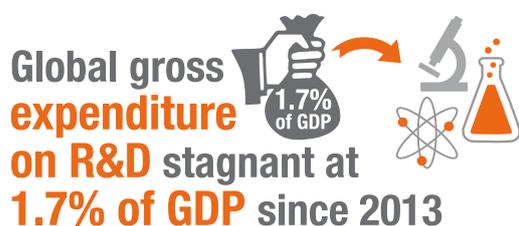
 **Figure 7. Leaders in global R&D spending**



Source: UNCTAD calculations based on UNESCO Institute for Statistics (2021).

Despite the growth of world R&D investment in absolute terms, global R&D intensity – SDG indicator 9.5.1 – remained at 1.7 per cent of GDP from 2013 to 2018 (see Figure 8). Israel (4.9 per cent) and the Republic of Korea (4.5 per cent) were the most prominent R&D investors relative to GDP, followed by Switzerland (3.4 per cent) and Sweden (3.3 per cent). The United States of America invested 2.8 per cent of its GDP in innovation, and China 2.1 per cent. Only a few developing economies have managed to develop into ‘R&D powerhouses’, such as, China and the Republic of Korea. For some of these countries, that process took around two decades. Participation in global value chains and R&D networks is essential for moving up the innovation ladder.

Looking at regional averages, Northern



in America invested most in R&D in proportion to GDP. However, Eastern, South-Eastern and Western Asia were the regions in which R&D spending relative to GDP grew fastest from 2013 to 2018.

The Global Innovation Index (WIPO, 2021) shows Switzerland, Sweden and the United States of America as top performers in innovation in 2020, considering both invested inputs and the return on that investment. Among developing economies, Singapore, China, and the United Arab Emirates ranked highest, followed by Malaysia, Turkey, Thailand, Viet Nam, and India – the later five described as progressing fast or above expectations based on their income level.

The Cornell University et al. (2020) estimates that, besides China, most progress in R&D was achieved by India, the Philippines and Vietnam. Europe recorded only a slight increase in R&D funding. At 1.9 per cent of GDP in 2018, R&D intensity remained well below the three-per-cent goal set by the EU (European Commission, 2010). Only Austria, Denmark, Germany and Sweden reached or surpassed this target, as well as Switzerland (not an EU-member). The AU has also established an R&D intensity objective for its member states, set at one per cent (UNECA, 2018). According to available statistics, among AU member



Table 1. Leading investors in R&D, ranked by investment levels in 2018 (SDG 9.5.1)

Investors	Billion US\$-PPP	Annual average growth, 2013-2018 (percentage) ^b	Percentage of GDP	Percentage of world total
United States of America	582	5.0	2.8	26.0
China	465	7.3	2.1	20.8
Japan	171	0.2	3.3	7.7
Germany	141	6.7	3.1	6.3
Korea, Republic of	98	7.5	4.5	4.4
Top 10 developing countries, excl. China				
India	59	5.1	0.7	2.6
Brazil	36	-2.4	1.2	1.6
Turkey	22	9.9	1.0	1.0
Iran (Islamic Republic of)	12	24.5	1.0	0.6
Thailand	10	3.0	1.9	0.5
Malaysia ^a	10	...	0.8	0.5
Mexico ^a	9	5.5	1.0	0.4
Singapore ^a	8	10.8	1.3	0.4
Indonesia	8	5.1	0.7	0.4
Egypt	8	-2.6	0.3	0.4

^a Refers to 2017.

^b Growth is estimated for Malaysia, Singapore, Thailand, Turkey, United Arab Emirates.

Source: UNCTAD calculations based on UNESCO Institute for Statistics (2021).

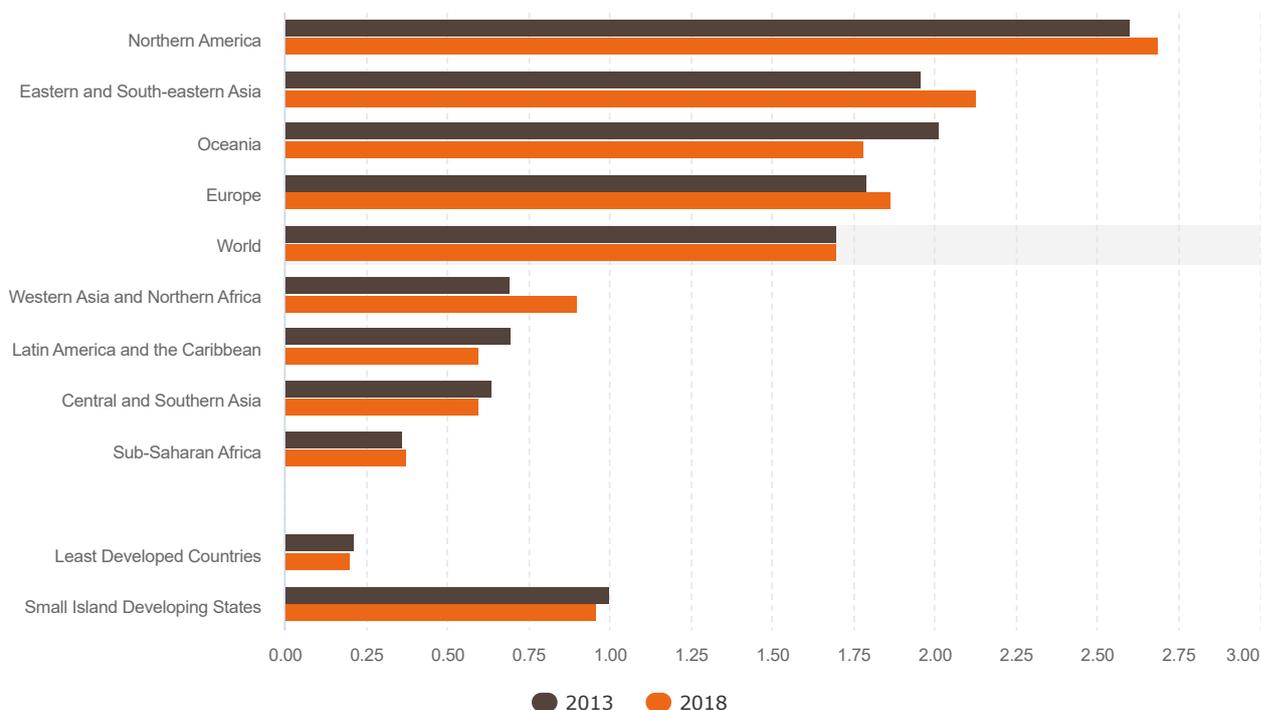
countries, only South Africa was close to that target, recording an R&D intensity of 0.8 per cent in 2018. Egypt and Tunisia registered R&D intensity of 0.7 and 0.6 per cent, respectively. Other African states remained below 0.5 per cent.

R&D intensity in Brazil over two times higher than in other Latin American countries



Developing economies in America spent on average 0.6 per cent of their GDP on innovation in 2018. At 1.2 per cent, Brazil's R&D intensity was more than two times higher than that of any other country in the region. In Oceania, R&D spending stood at 1.8 per cent of GDP, dropping from two per cent observed five years earlier. SIDS² allocated on average one per cent and LDCs some 0.2 per cent of GDP to R&D.

Figure 8. R&D expenditure as a proportion of GDP (SDG 9.5.1)
(Percentage of GDP)



Source: UNESCO Institute for Statistics (2021).
Note: Based on UNESCO country classification.

SDG indicator 9.5.2 looks at the number of persons directly employed in R&D, as FTE, per million inhabitants. According to this measure, the topmost performers come from Europe, led by Denmark and followed by Switzerland, Iceland and Luxembourg. Among non-European states, the Republic of Korea, Singapore, and New Zealand rank at the top. In 2018, Denmark reported over 11 000 employed on R&D per million inhabitants, while the Republic of Korea and Switzerland recorded figures close to 10 000. These statistics include not only researchers, but also R&D technical and supporting staff. Between 2013 and 2018, stronger rise in R&D employment was observed in developing economies than in the developed world. Macao SAR, Kuwait, and Iran recorded highest R&D job

About 40% of R&D employees are women – even more in developing economies



growth. According to figures available for 50 countries, on average 40 per cent of the R&D workforce were women. Interestingly, developing economies registered higher percentages of female R&D staff than developed economies (UNESCO Institute for Statistics, 2021).

R&D services in international trade

Innovation is increasingly traded internationally. Global R&D services exports expanded by an estimated 5 per cent annually, between 2015 and 2020, outpacing the average growth of total trade in services (2 per cent). In 2020, countries exported about US\$172 billion worth of R&D services. Again, innovation exports and imports were concentrated in a small group of economies. The top-ten R&D exporters accounted for 77 per cent of the total; the top three held 49 per cent: the United States of America (US\$45 billion), Germany (US\$25 billion), and the United Kingdom (US\$14 billion), see Table 2. Seven out of ten leading R&D services exporters also belonged to the top-ten R&D services importers. They were also part of the world leading recipients of charges for the use of intellectual property. Among developing economies, prominent exporters of R&D services include China, India, Singapore, Brazil, Turkey, and Malaysia.

 **Table 2. Leading R&D services exporters, 2020**

(Ranked by exports values)

Country	Exports (Billion US\$)	Annual average growth of exports, 2015-2020 (Percentage)	Imports (Billion US\$)
United States of America	45	4.8	33
Germany	25	1.4	24
United Kingdom	14	8.5	10
France	11	0.0	12
Ireland	10	25.7	-
Japan ^a	6	2.4	19
Canada ^a	6	4.8	1
Belgium	5	5.0	7
India	5	32.2	1
Sweden	5	6.0	6

^a Estimated.

Source: UNCTADstat (UNCTAD, 2022).

Notes: Economies are ranked by exports value. China belongs to the leading R&D services exporters, according to estimates available for previous years. 2020 figures were not available.

Notes

1. In this report, progress in target 9.2 is measured with reference to the base year 2005. This is in line with the practice applied in the monitoring of the Millennium Development Goals, where the baseline was set to the year 1990, thus ten years before the adoption of the Millennium Development Declaration (United Nations, 2005). The 2030 Agenda for Sustainable Development does not specify any base year for target 9.2.
2. SIDS based on the UNESCO country classification: <http://www.unesco.org/new/en/natural-sciences/priority-areas/sids/resources/sids-list/>

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Make or break for green economy

SDG indicators

Target 9.4: By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities

Indicator 9.4.1: CO₂ emission per unit of value added (Tier I)

Target 7.3: By 2030, double the global rate of improvement in energy efficiency

Indicator 7.3.1: Energy intensity measured in terms of primary energy and GDP

Target SDG 12.6: Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle

Indicator SDG 12.6.1: Number of companies publishing sustainability reports (Tier III)

Research shows clearly that choices in climate policy taken now will be critical for our future and for the future of the ocean and cryosphere (IPCC, 2019). Climate change has already “caused impacts on natural and human systems on all continents and across the oceans” (IPCC, 2014, p.6). We are experiencing more frequent natural disasters and extreme weather events, rising sea levels and diminishing Arctic Sea ice, among other changes (IPCC, 2018). Although 2021 was slightly cooler than some of the previous years, partly due to the influence of La Niña conditions, it saw exceptional heatwaves that broke temperature records in several regions. For example, 54.4 °C was measured in California and 48.8 °C in Sicily. The year 2021 also witnessed natural disasters of unprecedented severity, such as the Hurricane Ida in the North Atlantic and extreme floodings in the Henan province of China and in Western Europe. Rain fell at the highest point on the Greenland ice sheet, 3 216 meters above sea level, for the first time in history (WMO, 2022).

Back on the sinister track into global warming

A growing concentration of the 'critical' GHGs, mainly CO₂, methane, nitrous oxide, and F-gases, in the atmosphere has been identified as the main cause of increased temperatures on the planet (WMO, 2019). In 2019, GHG emissions reached a record high of 51.4 Gt of CO₂e. This level was 57 per cent higher than in 1990 and 41 per cent higher than in 2000 (see Figure 1). Looking back to the times of industrialization, nearly half (42 per cent) of GHG emissions since 1850 have been caused in the last three decades alone (IPCC, 2022). While emissions continuously grew over the past decades, this growth has recently slowed down. From 2000 to 2019, emissions increased on average 1.8 per cent each year; in the period from 2014 to 2019, the average annual increase was 0.8 per cent (see Figure 1).

CO₂ emissions from energy production above pre-COVID-19 level, after a strong rebound in 2021: +6.0%

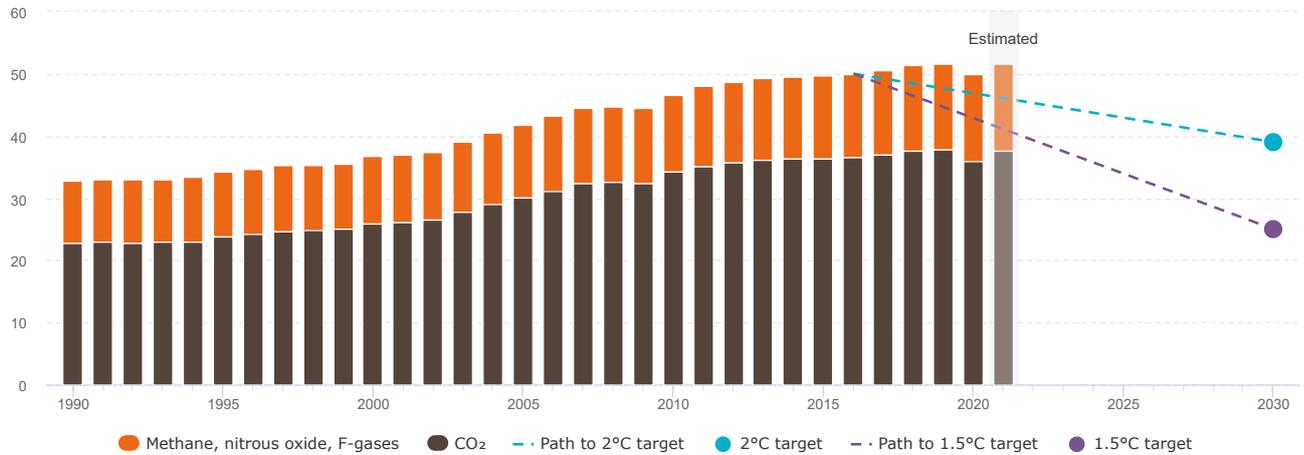


The COVID-19 pandemic had a major impact on global emissions. In tandem with the development of industrial output, emissions fell sharply in the first two quarters of 2020 and rebounded in quarter three (IPCC, 2022). Total GHG emissions dropped by 3.7 per cent in 2020 to 49.8 Gt of CO₂e, CO₂ emissions by 5.1 per cent (see figure 1). Figures for 2021 are already available for CO₂ emissions from energy combustion and industrial processes, accounting for almost three quarters of GHG emissions.

These figures suggest a rapid rebound, an annual increase of 6 per cent, pushing CO₂ emissions from energy to a record high, above their 2019 level (IEA, 2022). In October 2021, the Emissions Gap Report (UNEP, 2021) expected global total emissions to be in 2021 only slightly lower than the record level of 2019. At that time, energy-related CO₂ emissions were estimated to grow by 4.8 per cent, while the latest figures show a 6 per cent growth (IEA, 2022). There is, therefore, evidence that the preliminary estimates for 2021 in Figure 1 underestimate the actual amount of CO₂ and other GHG emissions. It is possible that in 2021, more GHG was emitted than ever before.

Figure 1. GHG emissions and target reductions (SDG 9.4.1)

(Gt of CO₂e)



Source: UNCTAD calculations based on Netherlands PBL (2022) and UNEP (2021).

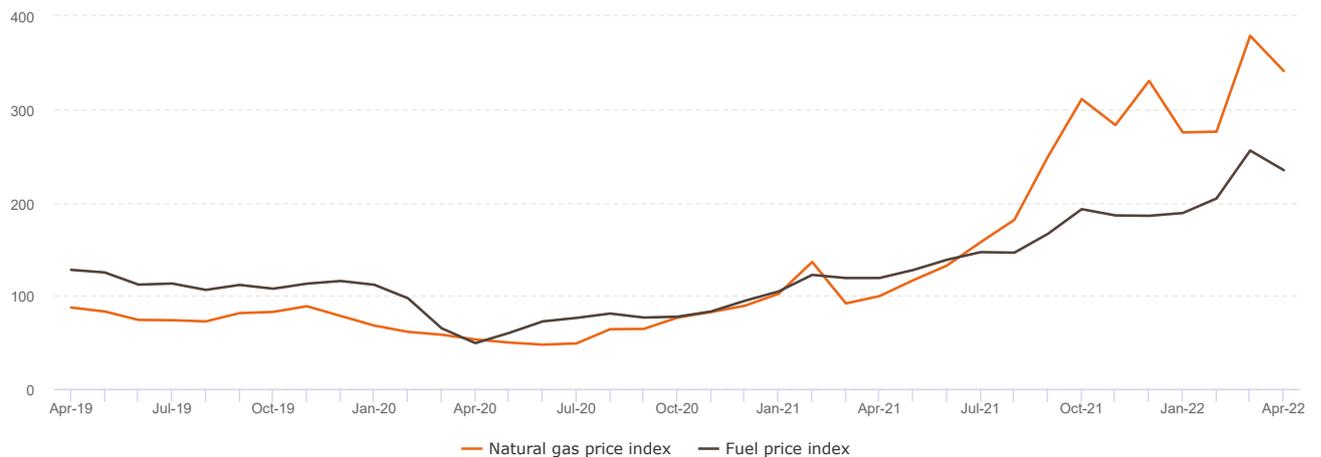
Notes: Emissions from land-use change are not included. The 2021 estimates are based on IEA as reflected in UNEP (2021). The baseline year for the target path is 2016.

According to the IEA (2022), the high growth of fossil CO₂ emissions was not only due to the recovery in industrial output, but also fueled by weather conditions and the situation on world energy markets. High prices for natural gas relative to coal led to substitution of gas by coal, the more carbon-intensive fuel, in energy production. Yet, the overall rise of fuel prices during the economic recovery from the pandemic is likely to have had a positive effect on the use of renewable energies. The IEA estimates that without the increasing use of renewable energies and nuclear power for electricity generation, the rise in global CO₂ emissions from energy production in 2021 would have been 220 Mt higher than it was. In 2022, fuel prices have increased further, partly triggered by the war in Ukraine and the related bans on gas and oil imports from the Russian Federation. In March 2022, the UNCTAD fuel price index was 1.2 times higher than in December 2019 with natural gas prices even 3.8 times higher (see Figure 2). The stronger the expectations that high fuel price levels persist, the stronger the incentives to invest in renewable energy.

Fuel prices in March 2022 more than twice as high as before COVID-19

Figure 2. Development of fuel and natural gas prices

(2015=100)



Source: UNCTADstat (UNCTAD, 2022).

What do the developments above imply for global warming? The years from 2015 to 2021 were the warmest seven years on record. In 2021, the global mean temperature was around 1.11 °C above the 1850–1900 pre-industrial average (WMO, 2022). The 2015 Paris Climate agreement aims “to limit the temperature increase from pre-industrial levels to 2 °C and pursue efforts to remain below 1.5 °C” by 2100 (UNFCCC, 2016). Remaining below the 2 °C target requires a reduction of nearly 25 per cent from the 2018 levels of global emissions and remaining below the 1.5 °C target would require a

reduction of nearly 55 per cent, by 2030 (UNEP, 2018). If there was some hope that the COVID-19 pandemic would put the world on the right track to achieve at least the 2 °C target, this hope was dashed by the strong rebound of emissions in 2021.

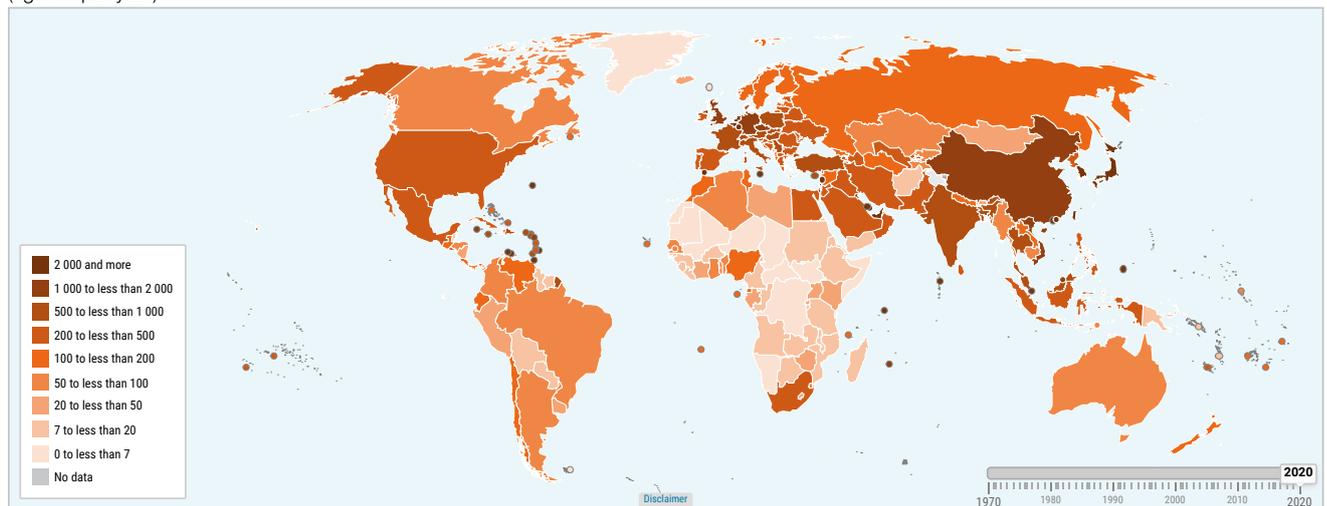
Most carbon dioxide emitted in Asia – per unit of GDP and in total

Among the different GHG, the most prevalent in the atmosphere is CO₂, as mentioned above. This gas is released through human activities, such as deforestation and burning of fossil fuels, and through natural processes, such as respiration and volcanic eruptions. Around 90 per cent of CO₂ emissions are generated by burning of fossil fuels in the form of coal, oil and natural gas. However, CO₂ concentrations in the atmosphere are also influenced by deforestation and other types of land-cover or land-use change, due to their impact on the land's potential to absorb or generate CO₂. As CO₂ accounts for three quarters of GHG emissions, by focusing on CO₂, SDG indicator 9.4.1 helps monitor the largest part, although not the full amount of global GHG emissions.

The concentration of CO₂ emissions varies considerably across the globe. In 2020, many countries in Africa recorded emissions of less than 20 kg/km². In Latin American countries and in Australia, emissions were mainly between 20-100 kg/km². Much higher CO₂ emissions, typically more than 200 kg/km² and sometimes even higher than 2 000 kg/km², were common for countries located in a band that ranges from the United States of America and Central America over to Western, Southern and Eastern Europe and the Near East to Southern, Eastern and South-Eastern Asia. Within that band, particularly high emission levels were recorded in the Benelux and in Eastern Asia. Farther to the North, in Canada, Northern Europe and in Northern and Central Asia, emission levels were lower, usually ranging between 50 and 200 kg/km² on average per country.

 **Map 1. Concentration of carbon dioxide emissions**

(kg/km² per year)



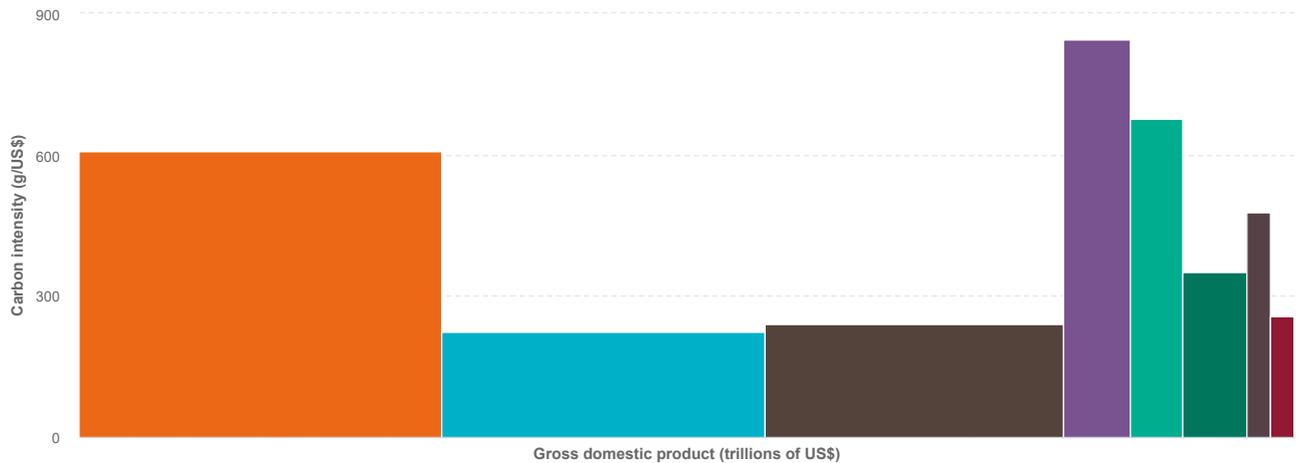
Source: UNCTAD calculations based on EDGAR (Crippa et al., 2021) and UNCTADstat (UNCTAD, 2022).

Notes: CO₂ emissions from fossil fuel use (combustion, flaring), industrial processes (cement, steel, chemicals and urea) and product use are shown. Emissions from fuels burned on ships and aircrafts in international transport are not included.

Nearly half of carbon dioxide emitted in Eastern and South-Eastern Asia

As Figure 3 shows, in 2020, nearly half of the CO₂ emissions from fuel combustion, industrial processes and product use came from Eastern and South-Eastern Asia (15.5 Gt). Northern America (5.1 Gt) and Europe (5.1 Gt) jointly added almost one third. Around one quarter (9.6 Gt) was emitted in the rest of the world. In Australia and New Zealand, in Northern America and in Europe, between 220 and 260 g of CO₂ was emitted on average for the production of output worth one United States dollar. In Eastern and South-Eastern Asia and in Western Asia and Northern Africa, this rate, the carbon intensity, was higher than 600 g/US\$, and in Southern and Central Asia it even exceeded 800 g/US\$. In this comparison, the regional differences in price levels are not taken into account. While the economies of Eastern and Southern Asia, of Europe and of Northern America are comparable in size, Eastern and Southern Asia caused around two and a half times as much CO₂ emissions as Europe and Northern America each.

Figure 3. Carbon dioxide emissions, emissions intensity and GDP, by region, 2020 (SDG 9.4.1)



Source: UNCTAD calculations based on EDGAR (Crippa et al., 2021) and UNCTADstat (UNCTAD, 2022).

Notes: The area of bars measure carbon dioxide emissions. Regions are arranged in the order of the amount of emissions. CO₂ emissions from fossil fuel use (combustion, flaring), industrial processes (cement, steel, chemicals and urea) and product use are included. Emissions from fuels burned on ships and aircrafts in international transport are not included. US\$ values are in constant 2015 prices. Central and Southern Asia includes developing economies in Oceania.

While emissions continue rising, advances in carbon efficiency increasingly offset population growth and rising incomes

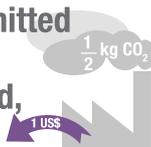
Over the last three decades, global fossil CO₂ emissions have increased by two thirds: from 22.7 Gt in 1990 to 37.9 Gt in 2019 and dropped temporarily in 2020 to 36.0 Gt (see Figure 1). Much of the increase until 2019 relates to world population growth and increased consumption per capita, since consumption relies on the production of goods and services. In fact, CO₂ emissions can be expressed as the product of population size, GDP per capita (GDP/population), and the carbon intensity of production (CO₂/GDP):

$$\left[\frac{CO_2}{GDP} \right] = \left[\frac{Energy}{GDP} \right] \left[\frac{CO_2}{Energy} \right]$$

An increase in GDP, the product of population and GDP per capita, the first two factors in the equation above, leads to rising CO₂ emissions, unless carbon intensity, the third factor, decreases at a higher rate than the growth of GDP. Some studies suggest that carbon intensity decreases as a country's level of development rises, to the extent that GDP growth can be offset. This would result in a bell-shaped relationship between GDP and emissions – the so-called "environmental Kuznets curve". So far, research has provided mixed empirical evidence for the validity of this curve (see Stern, 2004; Victor, 2010; Hoffmeister, 2013; Pacini and Silveira, 2014).

At the global level, between 1990 and 2019, real GDP more than doubled – from US\$36 trillion to US\$84 trillion in 2019, in constant 2015 prices. This is the result of a 45 per cent increase in the world population (1990: 5.3 billion, 2019: 7.7 billion) and a 62 per cent increase in real GDP per capita (1990: US\$6 761, 2019: US\$10 932) (based on UNCTADstat, see UNCTAD, 2022). Global carbon intensity reduced by almost one third from 1990 (631 g/US\$) to 2019 (449 g/US\$). That means, CO₂ emissions have grown at a slower pace than GDP. As Figure 4 shows, this decoupling of CO₂ emissions from GDP was most significant in Europe, where carbon intensity fell by 56 per cent between 1990 and 2019, and in Northern America where it reduced by a slightly smaller rate (by 49 per cent). As a result, Europe is the only region where the overall amount of CO₂ emissions is lower today than in 1990, by 30 per cent. Northern America is almost back at 1990 levels, but the other regions are well above.

Globally, still almost 1/2 kg CO₂ is emitted for each US\$ of output produced, on average



Over the past 29 years, carbon intensity has decreased less in regions primarily associated with the developing world than in developed regions. Eastern and South-Eastern Asia released over 2.4 times more CO₂ in 2019 than in 1990. This increase was mainly driven by a rapid rise in income levels, with annual average growth rates of real GDP-per-capita above 3 per cent in all five-year periods since 1990. Since around 2008, however, we can also observe a reduction in carbon intensity also in that region. In the five-year period from 2015 to 2020, emissions per US-dollar value of output were already 16 per cent

lower than in the five-year period from 2010 to 2014, indicating an annual average reduction of 3.4 per cent. A reduction by 4.6 per cent would have been required to offset the combined effect of GDP-per-capita and population growth. Rising carbon efficiency in recent years can be observed also in Central and Southern Asia. In that region, like in Western Asia, Africa and in Latin America and the Caribbean, high population growth constitutes a major challenge for the reduction of GHG emissions (see Figure 4).

Figure 4. Population, GDP per capita and carbon intensity contributions to CO₂ emissions growth, by region

(Average annual growth to previous five years, in per cent)



Source: UNCTAD calculations based on EDGAR (Crippa et al., 2021) and UNCTADstat (UNCTAD, 2022).

Notes: CO₂ emissions from industrial processes (cement, steel, chemicals and urea) and product use are excluded. Annual average growth rates are calculated from 5 years averages. GDP is measured in constant 2015 prices. Central and Southern Asia includes developing economies in Oceania.

Deindustrialization during the higher stages of economic development (see section [Towards sustainable industrialization and higher technologies](#)) is likely to be a factor behind the stronger increase in emissions observed in the developing than in the developed world. Furthermore, as countries are connected by global value chains and trade relations, there is evidence that observed growth in carbon intensity of GDP in developing regions is driven by demand for carbon-intensive final products in other regions. In fact, studies based on inter-country input-output tables find that demand-based CO₂ emissions of developed economies are generally higher than their production-based emissions, while most developing economies are net-exporters of CO₂ emissions embodied in final products (Wiebe and Yamano, 2016). As environmental policy is more stringent in some regions than in others, companies can save production costs by relocating carbon intensive production processes globally, a process described as "carbon leakage" (Lanzi et al., 2013). The "pollution haven" hypothesis suggests that poorer countries tend to set low pollution standards to attract pollution intensive FDI (Borga et al., 2022).

After the COVID-19 pandemic, still far away from a change of tack

The slowdown of economic activity during the COVID-19 pandemic brought about an unprecedented drop in GHG emissions and gave a hint of the efforts roughly needed to bring emissions down to reach the Paris Climate Agreement's targets. The lockdowns during the COVID-19 pandemic were involuntary, unplanned, and accompanied by high socio-economic costs. In the fight against global warming, although time is running out, the world needs effective strategies for a transition to a green economy including measures to alleviate the social and economic costs.

The first figures available for 2021 indicate that the COVID-19 pandemic caused just a temporary interruption in the longer-term harmful trend of steadily increasing emissions, and the world appears to be far from the path towards the targets of the Paris Climate Agreement. The only evidence of slightly favourable development in latest emissions statistics is the slowdown of the pace at which GHG emissions increase each year.

As population and per-capita incomes grow, policies to reduce emissions need to focus on carbon intensity. The private sector plays a key role in the introduction of more carbon efficient production methods. The next section will show the efforts under the 2030 Agenda to make the contributions of businesses towards that end more visible. Europe serves as an example in which GDP growth has been more than offset by advancements in carbon efficiency. Northern America seems to be following suit. Recently, carbon intensity has been diminishing in large parts of Asia. Overall, however, regions of the developing world are struggling to cope with the challenges imposed by high population or output-per-capita growth. Thereby climate change continues to be an alarming challenge for people and the planet.

Involving the private sector in the sustainable development agenda

Recent global trends, not the least of which is the COVID-19 pandemic, emphasize the role of sustainability reporting in transitioning to a more sustainable economy. The business sector is identified in the Addis Ababa Action Agenda as a significant player in the financing of sustainable development (United Nations, 2015). Their actions contribute directly or indirectly to the attainment of all SDGs, including the state of the environment and GHG emissions. Nonetheless, the business sector is mostly absent from the SDG targets and is explicitly mentioned in only one of them: target 12.6, which calls for a greater integration of sustainability information in the regular reporting cycle of firms.



This target and the related reporting are important for making companies' contribution to the 2030 Agenda visible and for encouraging them to review how their operations affect their stakeholders and the environment. Sustainability reporting promotes transparency in the business sector and increases business accountability to society. The COP26 Climate Conference as well as the launch of the International Sustainability Standards Board, establishing a global set of sustainability-related reporting standards, pave the way for enterprise sustainability reporting. Governments and regulators now embrace environmental and social sustainability standardization as a central concern. In this context, large and listed companies are moving faster following new requirements of stock exchanges, while smaller businesses need more guidance and capacity building to ensure access to finance through sustainability reporting in the post-COVID-19 recovery.

SDG indicator 12.6.1 measures the number of companies that publish sustainability reports. Developing consistent reporting on the indicator requires aligning multiple reporting frameworks, including the International Integrated Reporting Council (IIRC, 2013) framework, the Global Reporting Initiative (GRI, 2019) standards, the standards proposed by the Sustainability Accounting Standards Board (SASB, 2018), the Climate-related Financial Disclosure Recommendations (TCFD, 2017), the EU Non-financial Reporting Directive (European Commission, 2014), the Framework on Environmental, Social and Governance Factors (WEF, 2020) and the UNCTAD (2018) Guidance on Core Indicators.¹

To this end, UNCTAD and UNEP, as joint custodians of SDG indicator 12.6.1, identified four dimensions for sustainability reporting: economic, environmental, social and institutional. As a "minimum reporting requirement", only reports that cover certain elements in a meaningful way will be counted as sustainability reports for the SDG indicator. To further strengthen sustainable practices and accountability, the agencies also identified an "advanced reporting requirement" with more comprehensive reporting rules.

In September 2019, the IAEG-SDGs approved the concepts and methods developed by UNCTAD and UNEP, and data collection for the indicator began. The framework does not add new reporting requirements, instead it suggests a way to reconcile the existing frameworks.

UNCTAD regularly convenes a Group of Experts on ISAR to discuss international accounting and reporting standards, in order to improve the availability, reliability and comparability of financial and non-financial enterprise reporting, and especially to integrate sustainability information into business reporting.

Enterprise sustainability reporting increases significantly but unequally across the regions

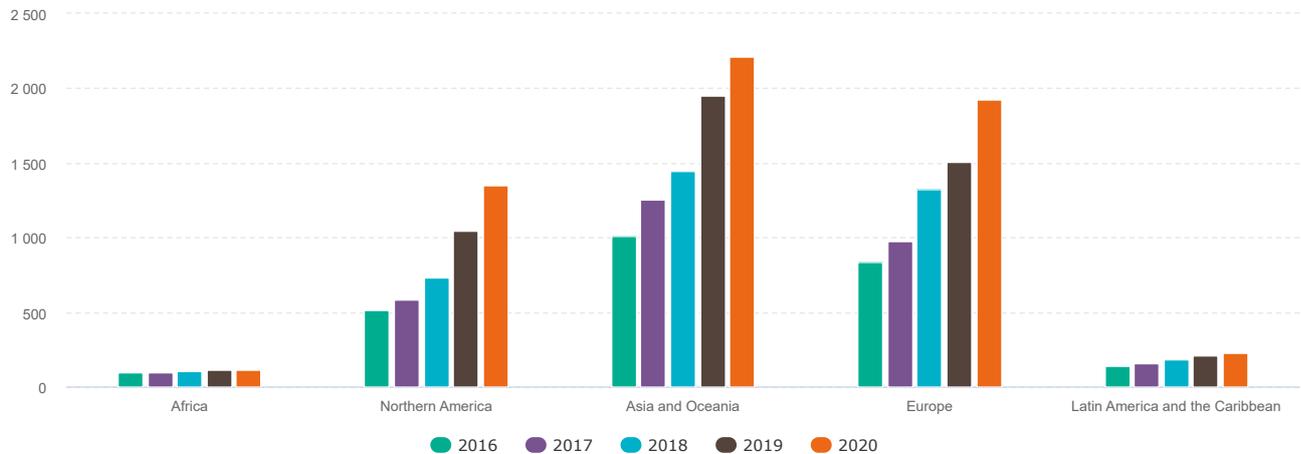
Official statistics for SDG 12.6.1 are not yet available as companies are still setting up the new sustainability reporting. UNCTAD and UNEP, as custodians of indicator 12.6.1, continue to identify and analyze new data sources for more comprehensive reporting on the indicator. The preliminary analysis of over 10 000 companies around the world shows that 61 per cent of companies in the sample publish a sustainability report. The number has more than doubled from 2016. Additionally, according to a report by KPMG (2020), third-party assurance of sustainability information has also increased, exceeding 50 per cent among the largest companies in the world.

From a geographical perspective (see Figure 5), the results show a high differences in the volume of sustainability reporting across the regions. While the regional results based on the preliminary sample need to be interpreted with caution, they provide indications of trends. In North America, the number of reports almost tripled and Europe and Asia experienced a twofold increase from 2016 to 2020. However, in Africa and Latin America, the data show a much slower increase in the number of enterprise sustainability reports.



Figure 5. Development of enterprise sustainability reporting, by region

(Number of reports)



Source: UNCTAD calculations based on Refinitiv (2021).

Note: Preliminary data from a sample of over 10 000 companies.

Looking at the breakdown by industry, the manufacturing, financial and insurance sectors feature the highest publication volume of sustainability reports. The utilities sector maintains a majority of companies consistently publishing sustainability reports from 2016 to 2020. Overall, almost all sectors have seen a twofold increase in the number of sustainability reports published annually since 2016.

In terms of company size, the data show that the largest companies publish the highest number of sustainability reports. KPMG highlights that 80 per cent of the top 250 companies worldwide and the top 100 companies in 52 countries now report on sustainability. Throughout the sample, the number of small and medium-sized companies publishing a sustainability report has sharply increased from some reports in 2016 to a few hundred in 2020.

Regarding the quality of the sustainability reports analyzed, the majority of environmental indicators disclosed comprise CO₂ direct emissions, energy consumption, and water withdrawal. Less attention is given to recycled water. In the social dimension, almost 30 per cent of the reports cover occupational health and safety and employees' training. In the area of corporate governance, all reports cover board diversity, and half include a sustainability commitment by the company. Furthermore, around 70 per cent of major companies connect their business activities with the SDGs.

All in all, the sample data show that the 2030 Agenda has built momentum and enterprise sustainability reporting has increased. This has led to closer engagement of international organizations and businesses to develop a commonly agreed upon and harmonized set of indicators.

Notes

1. The Guidance on Core Indicators, developed by UNCTAD upon request by the 34th session of the Intergovernmental Working Group of Experts on ISAR, lists the main elements for entity reporting to monitor company-level contributions towards SDGs (UNCTAD, 2018).

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Fostering productive capacities to graduate with momentum

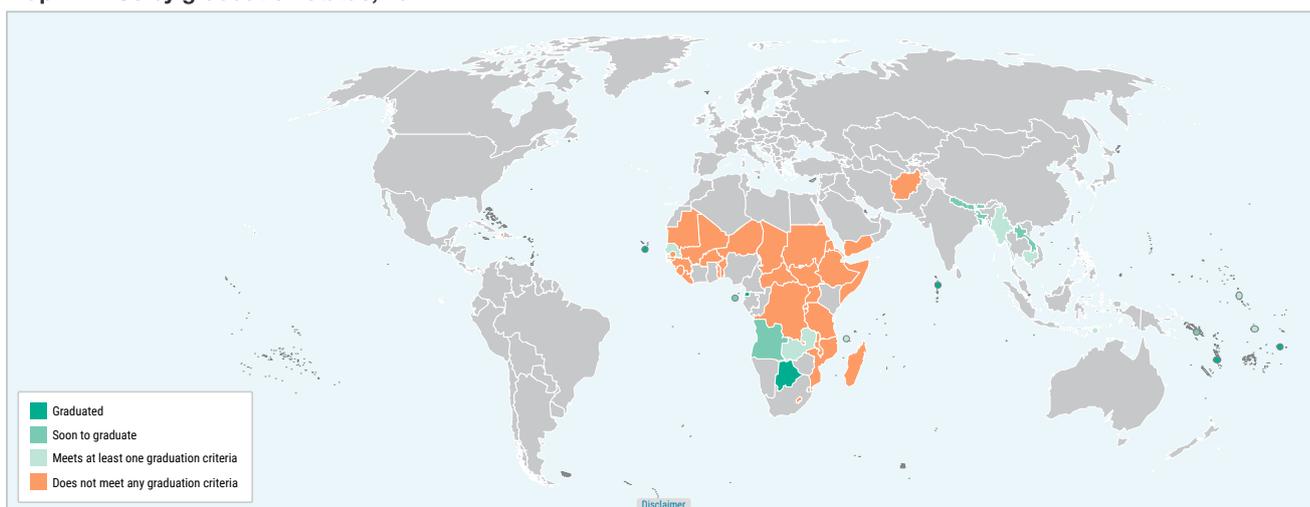
Graduation from the LDC category is accelerating

In the foreseeable future, a number of countries will graduate from the LDC category, a designation created by the United Nations in 1971 (United Nations, 1971) to depict those countries with particular development challenges due to their low level of development, who also require particular attention and support. The process of graduation is accelerating. For years, hardly any country graduated; between 1971 and 2021 only six did. Nevertheless, among those who have not yet graduated, 11 have fulfilled the criteria two or more consecutive times, whereas four LDCs are scheduled to graduate in 2023-2024 (see Map 1) - Bhutan in 2023, and Sao Tome and Principe, Solomon Islands and Angola in 2024. Others will undoubtedly follow suit. Graduation will be a milestone in the path of achieving SDGs, particularly those broadly defined as economic (ESCAP, 2016), namely, Goal 1 – no poverty, Goal 8 – decent work and economic growth, Goal 9 – industry, innovation, and infrastructure.



To be eligible for graduation a country needs to achieve two out of three thresholds – US\$1 222 GNI per capita, HAI of 66 or above, EVI of 32 or below – in two consecutive triennial reviews by the CDP (UNDESA, 2021). As an exception, a country whose per capita income is sustainably above the “income-only” graduation threshold, set at twice the graduation level (US\$2 444), also becomes eligible for graduation, even if it fails to meet the other two criteria.

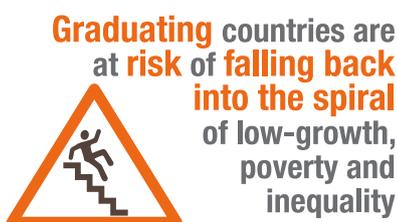
Map 1. LDCs by graduation status, 2022



Source: CDP Secretariat (2022).

The concern of the approaching wave of graduations is that an increasing number of graduating countries have exhibited a low level of economic diversification, usually relying for its development on a handful of sectors, examples being: Equatorial Guinea on natural gas, Samoa and Vanuatu on fisheries and tourism, Cape Verde on fisheries, tourism and remittances, whereas Angola, soon to graduate, relies on oil. Indeed, the latter country

intends to graduate using “income only” criterion. Thus, the issue remains about countries’ economic vulnerability and subsequently sustainability of their development trajectory. Reliance on a very limited number of sectors makes a graduating country particularly fragile towards external shocks, e.g., fluctuations in the international price of the commodity it trades. One can easily imagine that a country risks falling back into the spiral of low growth, poverty and inequality, as state revenues diminish.



Vulnerability towards external shocks is not limited to unpredictability of international prices. The lack of economic resilience among developing countries has been particularly blatant since the onset of the COVID-19 pandemic and its adverse economic repercussions.

In the case of graduating LDCs, the situation is exacerbated by the anticipated withdrawal of special treatment, including market access, initially guaranteed by the LDC status. To make the situation worse in terms of capability for long-term sustainable development, growth in many graduating countries has relied on sectors other than manufacturing, a labour-intensive industry traditionally considered very effective in poverty reduction and an important driver of industrialization and structural transformation (UNCTAD, 2016).

The key role of productive capacities in progressing towards the SDGs

The solution for current LDCs and graduating countries lies in building and enhancing their productive capacities. Productive capacities are key to achieving the SDGs in a multidimensional and coherent manner. They enable kick starting structural economic transformation, which adds value to the economy and, if properly managed, leads to economic diversification, accelerated growth, greater resilience and ultimately faster poverty reduction and improved standard of living, with resources and space to ensure environmental sustainability and social cohesion.

To measure productive capacities, UNCTAD developed a multidimensional PCI which assists in identifying gaps and limitations in productive capacities (UNCTAD, 2021). Within the PCI, there are eight categories – human capital, natural capital, energy, transport, ICT, institutions, private sector, structural change – measured by 46 indicators. Each of the categories refers to a particular aspect of productive capacities development and organic links between and among the categories. Out of these 46 indicators, 11 relate directly to SDG indicators (Table 1), thus contributing to the important interdependence between the PCI and the SDG indicators. PCI is also highly correlated with other conventional measures of economic and sustainable development (UNCTAD, 2021).

 **Table 1. SDG Indicators included in UNCTAD PCI**

PCI Categories*	SDG indicators included
Energy	7.1.1: Proportion of population with access to electricity
	7.2.1: Renewable energy share in the total final energy consumption
Human capital	9.5.1: Research and development expenditure as a proportion of GDP
	9.5.2: Researchers (in full-time equivalent) per million inhabitants
	1.a.2: Proportion of total government spending on essential services (education, health and social protection)**
ICTs	17.6.1: Fixed Internet broadband subscriptions per 100 inhabitants, by speed
	5.b.1: Proportion of individuals who own a mobile telephone, by sex**
	17.8.1: Proportion of individuals using the Internet
Institutions	16.1.3: Proportion of population subjected to (a) physical violence, (b) psychological violence and (c) sexual violence in the previous 12 months**
Natural capital	15.1.1: Forest area as a proportion of total land area
Transport	9.1.2: Passenger and freight volumes, by mode of transport

* Only PCI categories including SDG indicators are shown here.

** The SDG indicator is taken in a slightly different form in the PCI.

Source: UNCTAD

Available evidence and development experience show that productive capacities are critically important in i) kickstarting structural transformation and export diversification; ii) breaking the low-income trap; iii) building socioeconomic resilience and reducing vulnerability to external shocks; iv) achieving sustained and inclusive growth; and v) taking advantage of regional and global trade and investment opportunities, including ISMs (UNCTAD, 2022a).

Africa's LDCs show lower PCI scores

Productive capacities are crucial to enabling smooth transition from the LDC category. They are critical for graduating with a momentum and that the developmental drive which allowed for graduation continues beyond as it is essential for attaining sustainable development and achieving structural transformation.

Unfortunately, data show that productive capacities, as measured by the PCI, are limited among the majority of LDCs (based on UNCTADstat, see UNCTAD, 2022b). This is equally valid for countries which will soon graduate, like Angola, and for those who for the first time met the graduation criteria, like Zambia, and those for whom the graduation process will take longer, like Ethiopia.

Despite relatively high GNI per capita, Angola has recorded a very low performance in the PCI, with a score of 22.16 in 2018 (figure 1), which is below the average of all LDCs (24.04). This performance ranks it 178th globally and 39th in Africa (based on UNCTADstat, see UNCTAD, 2022b). Over time, Angola has shown improvement before plateauing around 2013, nevertheless its score is significantly lower than its peers' both regionally and in similar stages of development, and too low to have a substantial impact on structural transformation in its economy (UNCTAD, 2022a).

Productive capacities are crucial to graduating with momentum and achieving structural transformation



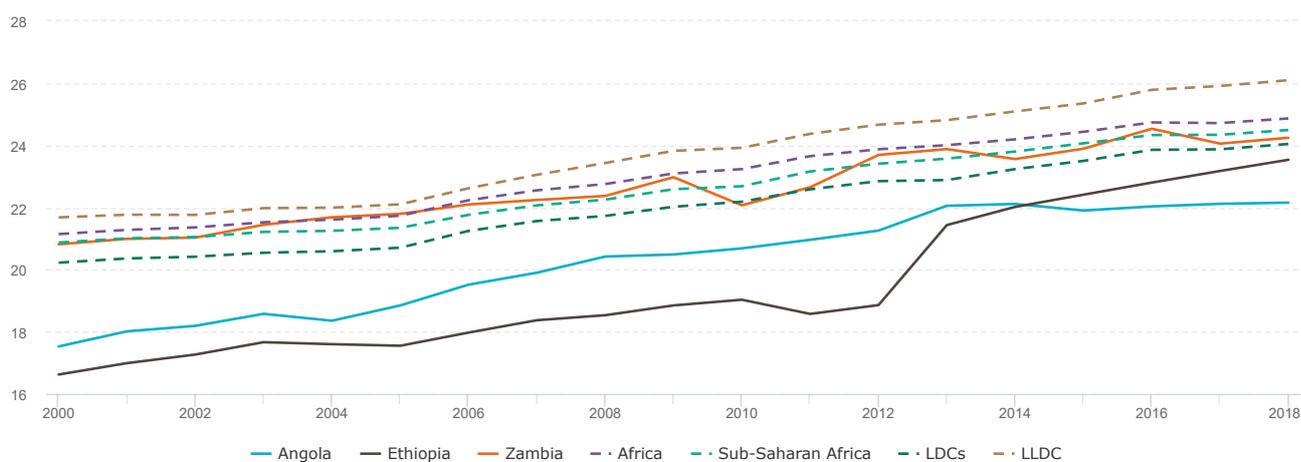
In 2018, Angola, Zambia and Ethiopia ranked 178th, 162nd and 170th in the 2018 PCI score



Zambia's performance in the PCI is also low, with a score of 24.24 on the composite index in 2018 (figure 1). This score is at par with the median score for LDCs (24.04), but lower than that of the LLDCs (26.09) - two groups to which Zambia belongs. Moreover, it is below the African and world best by 13.15 and 26.27 points, respectively. Zambia's relatively poor ranking is further reflected in its global position (162nd) and average continental position (25th). At current rates of improvement, it will take 37 years for Zambia to reach the average level of PCI performance seen in other developing countries (UNCTAD, 2022c).

Ethiopia's overall score is 23.5, hence lower than that of Zambia (Figure 1), though higher than Angola, making it 170th in the world, and 17th in Africa. Among the three countries it has achieved the greatest progress since 2000, when its score was 16.6, though it remains below the average for LDCs and LLDCs.

Figure 1. PCI for selected countries and regions



Source: UNCTADstat (UNCTAD, 2022b).

Interestingly, the same order in ranking is within the category on structural change, which depicts the movement of labour and other productive resources from low-productivity to high-productivity economic activities (Figure 2). Structural change category demonstrates the difficulties that Angola, Ethiopia, and, to some extent, Zambia and many other LDCs face with economic diversification, making their economies vulnerable to external shocks. In Angola, the low economic complexity and high merchandise export concentration with a persisting index value of more than 0.8 (based on UNCTADstat, see UNCTAD, 2022b) show the preponderance of extractive sectors in driving Angola's socioeconomic development. This has been the case for a number of LDCs. UNCTAD's National Productive Capacities Gap Assessment points to the economy's low propensity to generate employment and inclusive growth (UNCTAD, 2022a).

Policies centred on fostering economy-wide productive capacities and structural transformation should be a priority for LDCs. Zambia's economy has shown some structural shifts over the years with industry and services sector contributing a lion's share to the country's GDP. Within Africa, Zambia's scores in structural change component show some volatility, but mostly the country has performed above its peers in the region and countries at similar stages of development for the period 2000-2018 (UNCTAD, 2022c). In Ethiopia, although agriculture makes up more than a third of GDP, its share has been steadily shrinking. Over the past decade, Ethiopia's high growth rates have been driven primarily by the service and industrial sectors which, respectively, accounted for 36.5 per cent and 27.3 per cent of GDP in 2018. The substantial increase in the score between 2000 and 2018 gives hope for further advancements.

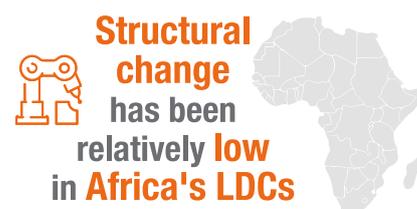
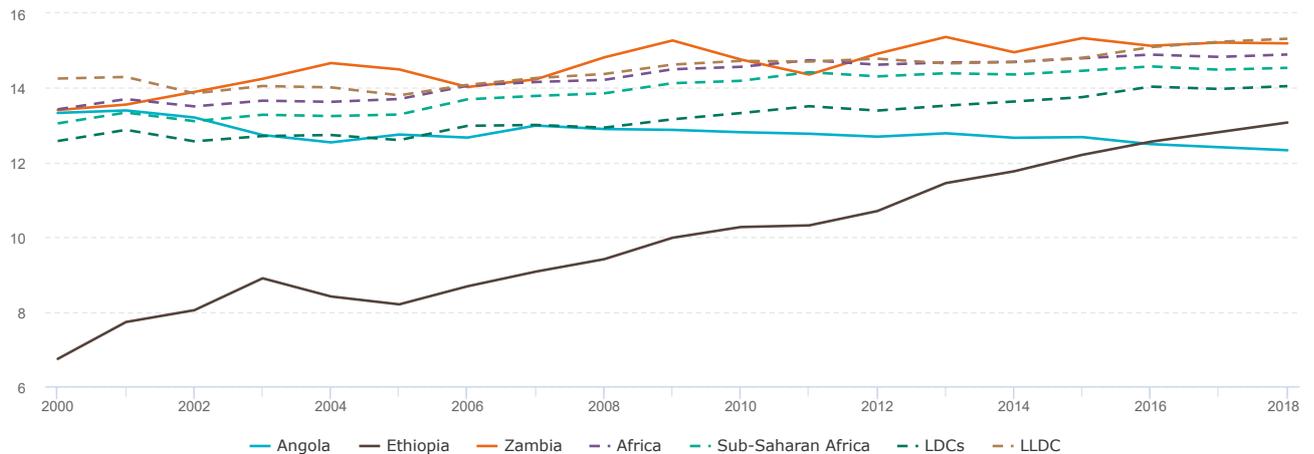


Figure 2. Structural change component of the PCI for selected countries and regions



Source: UNCTADstat (UNCTAD, 2022b).

Bolstering structural change with economic diversification

Angola's, Ethiopia's and Zambia's development predicaments – as depicted by their PCI – are illustrative of the situation in many LDCs. Like many African LDCs, however, the countries are well placed to build up their productive capacities, eventually graduate with momentum and embark on the sustainable development trajectory. Ensuring that rents generated through resource extraction are used to foster productive capacities is among the first steps for Angola and Zambia; both have ranked relatively high in the natural capital category of PCI.

Enhancing productive capacities requires a greater focus on economic transformation and diversification, support for private sector, advancing technology use, modernisation of infrastructure, building resilience and strengthening trade and development linkages (UNCTAD, 2022c, 2022a) Sectoral policy focus should be on resilient and export-oriented sectors, whereas targeted investment and capacity building in services should support the development of backwards and forwards linkages that are essential for structural transformation and productive capacities.

Economic diversification should support backward and forward linkages essential for structural transformation

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UNCTAD IN ACTION

UNCTAD technical cooperation in support of SDGs

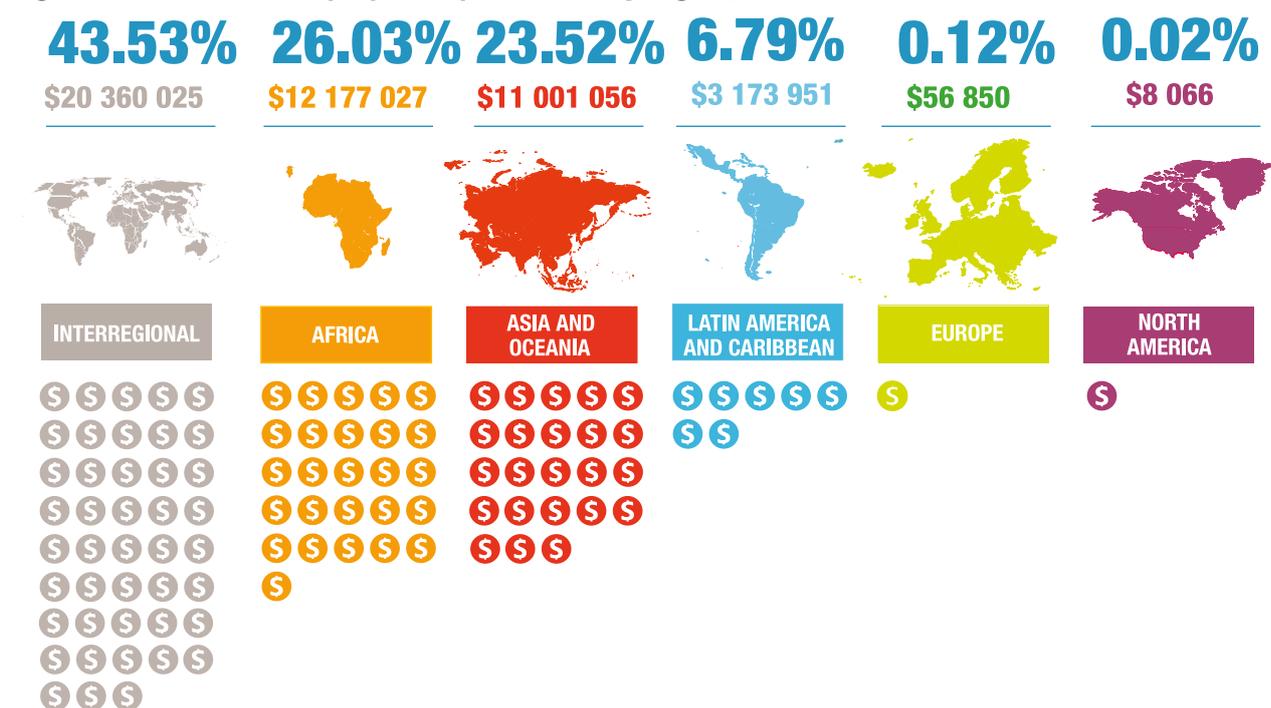


UNCTAD technical cooperation in support of SDGs

UNCTAD gears its technical cooperation towards contributing to the achievement of the 2030 Agenda. The UNCTAD Toolbox (UNCTAD, 2020) has been developed to better align technical cooperation with the SDGs. Total technical cooperation expenditure of UNCTAD surpassed US\$46 million in 2021, delivered through 217 projects in 74 countries. UNCTAD’s technical cooperation projects are delivered at the interregional, regional and country levels (see figure 1).



Figure 1. Distribution of project expenditures by region, 2021



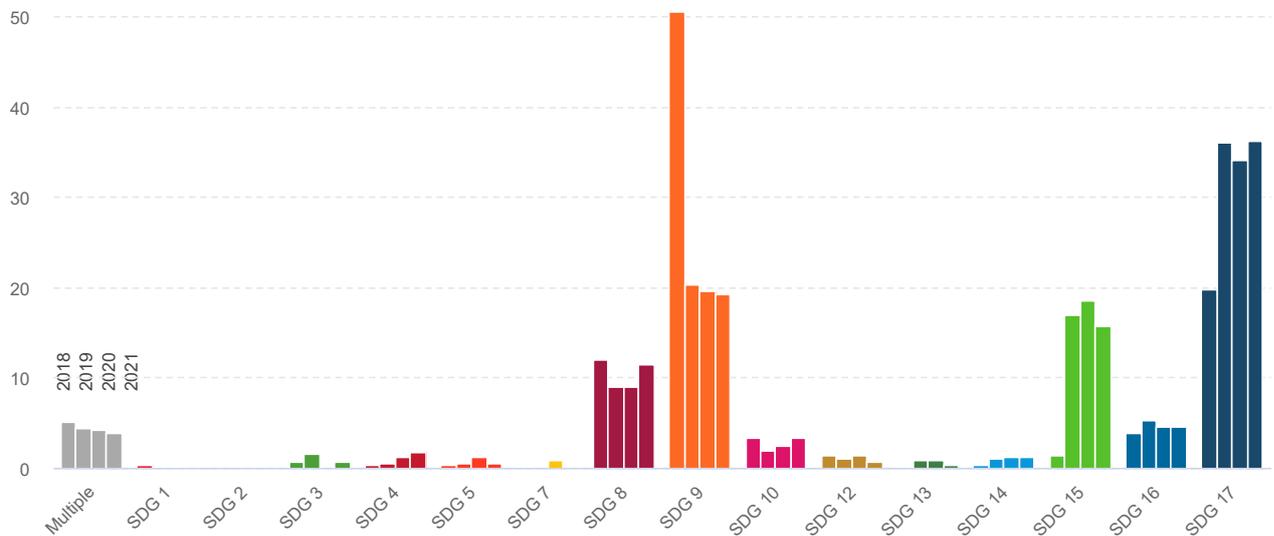
Source: UNCTAD (2022)

Project expenditure by SDG has not experienced a major shift in the last few years, as it has after 2018, when relative expenditures on SDG 9 (industry, innovation and infrastructure) more than halved, offset by significant increases after 2018 in expenditures to support SDG 16 (peace, justice and strong institutions) and SDG 17 (partnership for the goals) (see figure 2). SDGs 17, 9, 15 (life on land), and 8 (decent work and economic growth) dominate project expenditures. The amount of expenditures not directed to a specific SDG (marked as ‘multiple’ in figure 2) has slowly diminished in 2018-2021; also, for the first time, in 2021 some project expenditure (albeit very small) was directed to support SDG 2 (zero hunger).



Figure 2. Percentage distribution of project expenditures by SDG, 2018-2021

(In percentage of total expenditure)



Source: UNCTAD (forthcoming)

UNCTAD in action on various topics

With more than 450 staff members, UNCTAD delivers high-quality technical support to many areas benefiting countries and national stakeholders, as well as the international community, building partnerships to jointly address the challenges of today. Only a handful of activities are selected here to showcase hard numbers speaking for UNCTAD’s work in support of member States in the pursuit of the 2030 Agenda:

TRAINFORTRADE

TRAINFORTRADE provides technical assistance to developing countries focusing on three areas: (1) port management; (2) international e-commerce; and (3) international trade statistics. The aim of the programme is to empower countries to participate in, and reap the benefits of, international trade in an equitable and sustainable manner. The programme has enhanced capacities of more than **11 000 participants** from **208 different countries** from 2017 to 2021. **44 per cent** of all participants were **female**.



Debt management and Financial Analysis System (DMFAS)

The UNCTAD DMFAS programme advises developing economies in debt management and helps them to record and report reliable debt statistics for policy making. Timely, comprehensive and reliable debt statistics contribute to the formulation of financial policies and strategies, and consequently to improvement of financial stability and governance – even more so relevant in the face of

challenges raised by the COVID-19 pandemic, climate change, and the war in Ukraine.

The DMFAS programme offers countries a set of practical solutions for the management of public liabilities and the production of debt statistics, including software, training and advisory services. DMFAS has trained over **6 300 experts** from **67 countries** in debt management.

Over the last 10 year the **number of countries** recording domestic debt using DMFAS has increased from 4 to 42



Empretec – Inspiring entrepreneurship

UNCTAD Empretec promotes entrepreneurship and enhances the productive capacity and international competitiveness of SMEs in developing countries. Empretec training is delivered by **centres in 41 countries** around the world. Since its inception in 1988, Empretec has successfully trained more than **481 000 people**. The programme's Women in Business Awards rewards outstanding businesswomen previously trained by the programme.

Seven rounds of Women in Business Awards since 2008



Trade facilitation – making trade easier and faster

Trade facilitation contributes to the achievement of the 2030 Agenda, in particular to the integration of developing countries to global trade, tackling trade barriers and improving the efficiency of trade by reducing delays and transaction costs. Since 2016, UNCTAD has developed capacity in **56 countries** around the world to improve their trade facilitation. UNCTAD Empowerment Programme, providing intensive professional programme for NTFCs, has trained almost **2 500 people** in 34 countries, with average **female participation** at **42 per cent**.

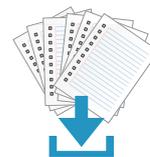
Since 2016, **34 countries** have completed the Empowerment Programme



Research on trade and sustainable development

In July 2017, UNCTAD launched a new research paper series. Since that time and up until March 2020, **41 research papers** have been published, which have been **downloaded** almost **86 000 times**. The importance of SDGs 9 (industry, innovation and infrastructure), 10 (reduced inequalities) and 17 (partnership for the goals) is evident in UNCTAD research papers.

Research papers downloaded almost **86 000 times** since July 2017



The convening power of UNCTAD

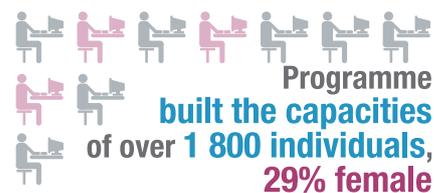
UNCTAD uses its convening power to bring together governments, businesses, civil society, academia and other international organizations to advance sustainable development and inclusive trade and economy for all. Since 2016, almost **60 000 participants** attended more than 1200 official and registered meetings; share of **female participants** has steadily increased, reaching **47 per cent** in 2022.

Almost **60 000 participants** attended UNCTAD meetings in 2016-2022



Enhancing productive capacities – project with Angola

UNCTAD has been supporting Angola in building institutional capacities to foster economic diversification through the EU-UNCTAD Joint Programme of Angola: TRAINFORTRADE II (2017-2023). **Over 1 800 people** were trained on enhancing economic strength of Angola in 2021 and 2022, **29 per cent female**. Many similar activities are ongoing also in other countries to support them in fostering their productive capacities.



Mobilizing development finance

Mobilizing financial resources for recovering from the pandemic is essential to achieving the SDGs. The project produced research papers, policy tools and sessions to support policy makers: **22 research papers** have been provided and more than **400 people** registered for the events, of which **44 per cent** were **female**. The web-based virtual knowledge platform MobilizingDevFinance.org gathers and disseminates the project's outputs, and makes them accessible to member countries, CSOs, scholars, researchers and the general public.

 **More than 400 people** registered for the events, of which **44% were female**.

 **The project provided 22 research papers with 9 female co-authors.**

Measuring illicit financial flows

UNCTAD supports member States to strengthen their statistical capacity to define, measure and disseminate statistics on IFFs as a custodian of SDG indicator 16.4.1 with UNODC. UNCTAD has organized **33 workshops** to enhance national capacity to measure IFFs in **twelve pioneering countries in Africa** and **two in Asia** with partner organizations in 2021-2022. In total, **1 561 participants** attended these capacity-enhancement activities, **one quarter women**.

Twelve pioneering countries in Africa and two in Asia are measuring tax and commercial IFFs



The pilots have showed us that much hinges on concerted action – collaboration across borders and the ability to establish a whole of government approach. IFFs cannot be curbed in silos, national authorities – central banks, customs, tax, financial intelligence, statistical offices and ministries – must pool their data, expertise and political powers.

— Rebeca Grynspan, SG of UNCTAD, The fifty-fourth session of the Conference of African Ministers of Finance, Planning and Economic Development, Senegal, May 2022

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UNCTAD TRAINFORTRADE – Strengthening knowledge for sustainable economic development

The UNCTAD TRAINFORTRADE programme provides bespoke technical assistance to developing countries. The aim of the programme is to empower countries to participate in, and reap the benefits of, international trade in an equitable and sustainable manner. The programme has three goals:

1. Build sustainable networks of knowledge to enhance South-South cooperation and national ownership;
2. Promote digital solutions and innovative thinking to enhance capacities of international trade players;
3. Encourage development-oriented trade policy to reduce poverty and to promote transparency and good practices in trade.

The course on statistics on international trade in services helped me to understand the complexities, while also providing great accurate reference documents on the methodology for measuring trade in services, such as digital trade and its applications.

— Cynthia Aryshandy, Technical officer, Ministry of Marine Affairs and Fisheries, Republic of Indonesia (2021)

TRAINFORTRADE contributes to the achievement of SDGs concerning life below water (SDG 14), industry innovation and infrastructure (SDG 9), decent work and economic growth (SDG 8), gender equality (SDG 5) and ending poverty in all forms (SDG 1). TRAINFORTRADE also contributes to SDG 17, most directly to SDG Target 17.9, by building the capacity of developing countries to support the implementation of sustainable development goals in trade. Furthermore, in addition to timely management of the goods received, ports must prepare for the coming effects of climate change: rising temperatures, rising waters and extreme weather events; they must also ensure the environmental sustainability of their practices as part of global value chains. TRAINFORTRADE also organises specialised workshops addressing climate change and the carbon market, thus contributing to SDG 13 also.



More than 11 000 participants from 2017 to 2021

Over the past five years, the programme has enhanced the capacities of 11 304 participants¹, completing, on average, eight full days of training. In total, between 2017 and 2021, participants received training equivalent to almost 94 000 full days, or 518 000 hours (see table 1).



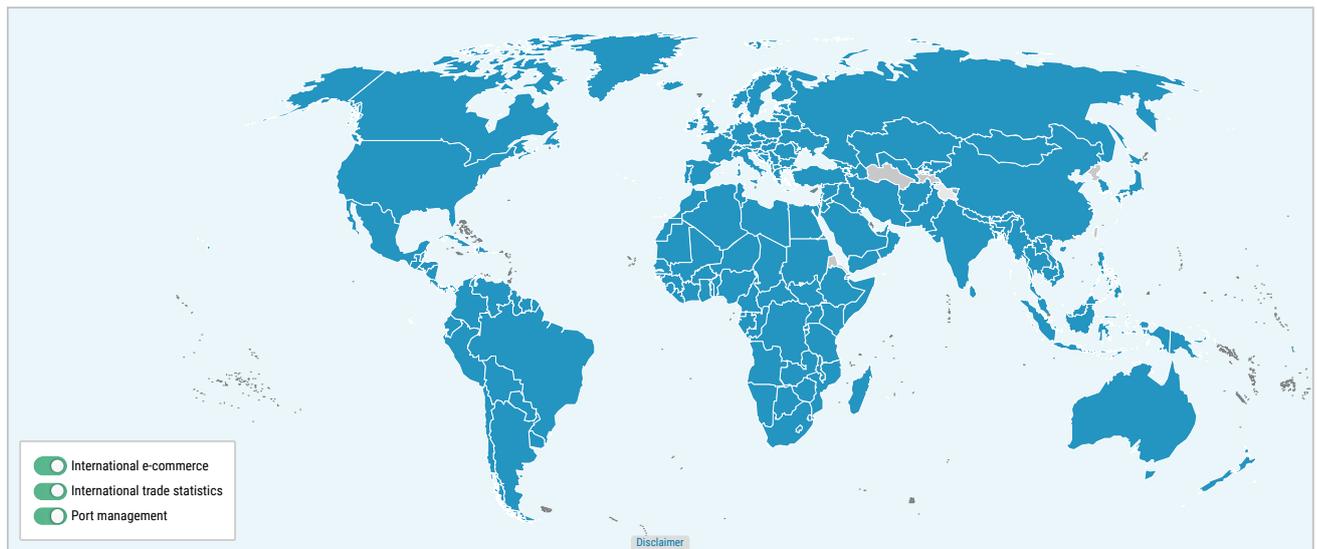
**Table 1. Total capacity development provided by TRAINFORTRADE**

Year(s)	Number of participants total	Proportion female	Total amount of training in hours	Total amount of training in days	Number of countries receiving training
2017	1 211	36%	78 629	13 006	81
2018	862	36%	66 939	10 604	70
2019	2 939	47%	128 109	22 352	170
2020	4 457	43%	92 695	17 880	177
2021	4 457	43%	148 631	29 426	184
2017 - 2021	11 304	44%	515 003	93 268	208

Source: UNCTAD TRAINFORTRADE.

Note: For activities lasting longer than a single year, the number of participants is represented in each year. For that reason, the number of participants does not add up to the 2017-2021 total.

TRAINFORTRADE trained 11 304 participants from 208 different countries during this 5-year period (see map 1). Asia and the Pacific, Africa, and Americas regions accounted for the bulk of this capacity development, with 43 per cent, 29 per cent and 19 per cent of all participants, respectively.

**Map 1. Nationalities of participants in TRAINFORTRADE courses, 2017-2021**

Source: UNCTAD TRAINFORTRADE.

Focus on port management and international trade

During the last five years, TRAINFORTRADE has focused on three areas: (1) port management; (2) international e-commerce; and (3) international trade statistics. Port management supports port communities in implementing efficient and competitive port management services. The e-commerce training covers legal aspects of e-commerce, best practices and digital identity, while the statistics training pertains to the compilation and use of trade in services statistics and merchandise trade statistics. Courses are currently offered in English, French and Spanish.

TRAINFORTRADE combines e-learning with face-to-face activities. This is an environmentally friendly and cost-efficient method of delivering high-quality capacity building that offers considerable flexibility, making it a pragmatic approach for today's busy world (for more information, see UNCTAD, 2022). Between 2017 and 2021, TRAINFORTRADE held a total of 117 TRAINFORTRADE courses and events, in either face-to-face, online or hybrid formats.



44% of participants were female

Overall, 44 per cent of all participants between 2017 and 2021 were female (table 2). The lower proportion of female participants is partly explained by the fact that some courses are aimed at sectors that are themselves male-dominated. This is especially true of, for instance, port management, an area with 32 per cent of female participation, which influences the overall ratio. In contrast, activities on e-commerce and trade statistics are well balanced, with the ratio at 49 per cent. Additionally, online courses seem to be better gender-balanced in terms of participation as compared to other type of activities, with an overall female proportion of 48 per cent.

Table 2. Capacity development provided by TRAINFORTRADE by programme area, course and delivery mode, 2017-2021

Programme Area	Course	Delivery mode	Number of participants	Proportion Female	Number of days of training	Number of hours of training
Port Management	Port Management Programme	Advisory services	48	31%	125	478
		Coaching	110	29%	548	4 384
		Juries	155	17%	0	0
		National deliveries	1 057	28%	37 282	231 980
		Port conference	38	24%	120	960
		Port performance	57	25%	156	468
		Study tour	82	37%	428	3 424
		Training of trainers	214	32%	1 971	15 768
		Webinar	233	36%	466	932
			Building Port Resilience Against Pandemics	Online course	985	35%
		Webinar	261	43%	261	522
e-Commerce	e-Commerce Best Practices	Online course	816	53%	5 329	26 228
		Hybrid workshop	110	39%	330	2 640
		Webinar	123	46%	123	246
		Physical workshop	80	54%	365	2 920
	Digital Identity for Trade and Development	Online course	417	45%	2 543	12 028
		Physical workshop	26	38%	104	832
e-Commerce Generic Course	Advisory services	21	38%	63	126	
Trade Statistics	International Merchandise Trade Statistics	Online course	3 184	50%	20 160	97 632
		Physical workshop	72	56%	338	2 704
	Statistics on International Trade in Services	Online course	2 863	49%	18 320	88 174
		Webinar	218	43%	218	436
		Physical workshop	134	41%	670	5 360
Total			11 304	44%	93 728	517 942

Source: UNCTAD TRAINFORTRADE.

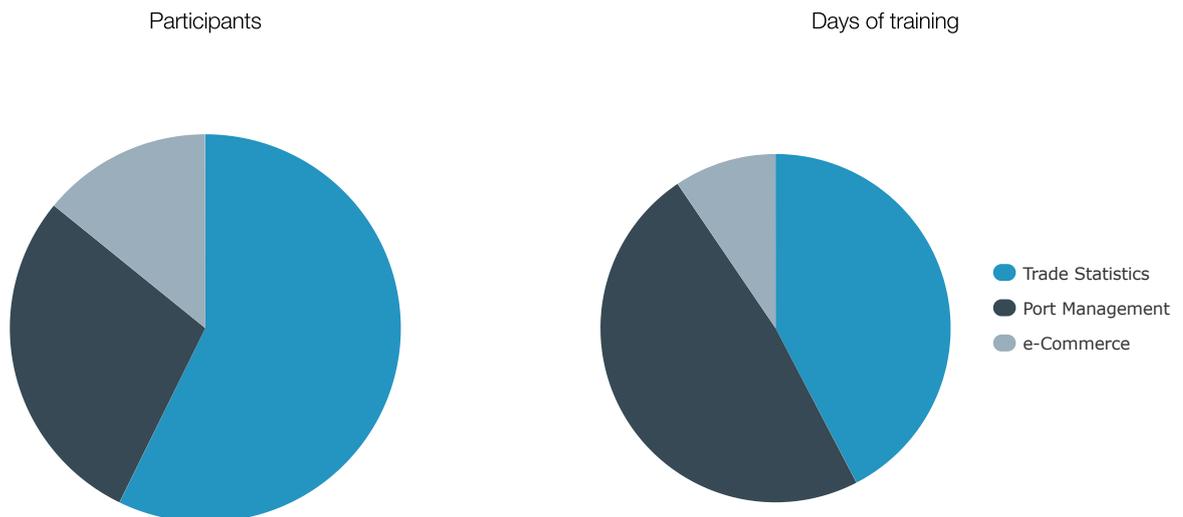
Notes: For detailed information, see [appendix 1](#).

Table 2 and the panels in figure 1 below show the most active programme area in terms of participation is trade statistics, which accounts for 57 per cent of all participants. This includes, for example, international merchandise trade statistics and statistics on international trade in services, courses that are jointly run by UNCTAD Statistics, UNSD, WTO and TRAINFORTRADE, and begin with a six-week online course

moderated by international experts. Until 2019, candidates who successfully completed the course and passed the online tests may have been invited to regional face-to-face workshops to further develop their knowledge. From 2020, the face-to-face component was replaced by webinars due to restrictions related to the COVID-19 pandemic.

In terms of training days, the area of port management accounts for 48 per cent of total training time. It is an intensive development programme designed to support ports to implement efficient and competitive port management services to increase trade flows and foster sustainable economic development. Recently it was enriched with a special course on building port resilience against pandemics.

Figure 1. Participation in TRAINFORTRADE programme areas, by (a) number of participants and (b) days of training, percentage, 2017-2021



Source: UNCTAD TRAINFORTRADE.

The cooperation in the port management network with UNCTAD TRAINFORTRADE is important to reboot our economies from the COVID-19 crisis in a sustainable and inclusive manner.

— Godwin Alini, CEO, Office of Ports and Harbours of Gabon (2021)

Over 320 people trained and employed as trainers –promoting South- South cooperation



324 trainers' skills developed in 2017-2021

Training of trainers is an important component of the port management training programme. Between 2017 and 2021, 324 trainers were trained and employed as trainers. In most cases, these trainers were employed in their own countries. Out of these 324 trainers, 26 per cent were female (see table 3). The African region observed the largest number of trainers from the South, with these trainers largely serving West Africa. An essential element of this initiative is to develop trainers from the South for each of the three language networks (English, French, Spanish), who then go on to train others from the South, i.e., a

trainer from one developing country trains trade practitioners in another developing country in a face-to-face or on-line setting. In doing so, TRAINFORTRADE makes an important, although indirect, contribution to South-South cooperation – an important ambition of SDG 17.

 **Table 3. Total number of trainers trained by TRAINFORTRADE, 2017-2021**

Region	Participants	Proportion female	Countries
Africa	167	31%	11
Americas	89	26%	9
Asia	65	38%	5
Europe	3	0%	1
Total	324	31%	26

Source: UNCTAD TRAINFORTRADE.

Capacity building entrenched in the results-based management

All TRAINFORTRADE activities follow the results-based management principle linked to average score and satisfaction rate. TRAINFORTRADE enjoys very high and stable levels of these indicators (see table 4). Between 2017 and 2021, 6 321 participants received certificates after having completed their courses and passed online exams (46 per cent female). The average score obtained by participants was 78 per cent. The satisfaction rate reported by participants was also very high, at 89 per cent.



6321 certificates issued with average score and satisfaction rate
 ★★★★★
close to 80% and 90%, respectively

 **Table 4. TRAINFORTRADE certificates, average score and satisfaction rate, 2017-2021**

Year(s)	Total participants certified	Proportion female	Average score	Satisfaction rate
2017	578	39%	78%	89%
2018	397	44%	78%	87%
2019	1 431	51%	78%	89%
2020	1 388	45%	79%	89%
2021	2 527	47%	79%	90%
2017-2021	6 321	46%	78%	89%

Source: UNCTAD TRAINFORTRADE.

Notes: Proportion female and satisfaction rate based on activities that have those figures recorded. For some courses, a low certification rate does not reflect participants failing their tests, but rather not being able to attend the course due to various constraints.

Testimonials

E-commerce has become a trend even before the pandemic. TRAINFORTRADE's course opened my mind on the why's and how's of being in this modern world utilizing e-commerce and the digital world.

— Mary Louise Macalino, Acting Division Manager, Philippine Ports Authority (2021)

“
I got great detailed information on compiling the trade statistics and the rules that you have to take into account. It was also very interesting to know how other countries compile data and how they implement rules to have quality figures.

— Ines Maria Silva Correia, Statistician, Centrale Bank of Curaçao (2021)
”

“
The experience that I carry with me from the TRAINFORTRADE trainings is the networking and exchange of knowledge with other great port professionals.

— Jacqueline Paredes Corrales, Head of social development, Matarani Port, Peru (2021)
”

“
I learned the importance of quality metadata, timely dissemination and also the international recommendations on international merchandise trade statistics.

— Malinshyo Chisenga, Accounting Specialist at SVAS International, Tanzania (2021)
”

For additional testimonials, see the TRAINFORTRADE testimonials (UNCTAD, 2022).

Notes

1. As some persons participate in more than one course, the number of participants does not equal the number of individuals.

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UNCTAD DMFAS programme – Strengthening debt management in support of good governance

Concerns regarding rising levels of debt and vulnerabilities in developing economies have drawn attention to problems with the completeness and transparency of debt statistics. There is broad consensus across the international community, including the G20 (World Bank and IMF, 2018) and the United Nations General Assembly (United Nations, 2021), that enhancing information sharing could help to avoid new episodes of debt distress.

Mandated by the UN General Assembly (United Nations, 2021) and UNCTAD member States (UNCTAD, 2021 para. 89 and 127), the UNCTAD DMFAS programme (UNCTAD, 2022) advises developing economies in debt management and helps them to record and report reliable debt statistics for policy making. UNCTAD works on the recording, reporting and monitoring of debt statistics (the ‘downstream’ areas of debt management) and complements the work of the World Bank and the IMF, which primarily focus on data sustainability analysis and medium-term debt strategies (‘upstream’ debt management). The DMFAS programme follows a four-year strategic plan, currently focusing on the Programme’s comparative advantages in technical assistance in the area of operational debt management, from debt data recording and statistical reporting up through basic debt analysis (UNCTAD, 2020).

The Programme is funded through bilateral donor contributions, cost-sharing by beneficiaries, which has steadily increased over the past 10 years, and UNCTAD’s regular budget. The current donors include Germany, Ireland, the Netherlands, Switzerland and the European Union. Donors consider the DMFAS programme crucial for improving debt management:

We congratulate the DMFAS program and the DMFAS user countries for the successful implementation of the 2016-2019 Strategy and the positive evaluation findings which demonstrate the effectiveness and clear added-value of the Programme.

The DMFAS Programme provides a modern, effective and reliable system to register and store debt data, perform safe and accurate debt transactions and facilitate reporting and transparency. More importantly, the DMFAS program offers a comprehensive capacity development framework that accompanies users from the installation of the system up to the point of reporting and analysis.

— Donor’s statement, November 2019

UNCTAD’s DMFAS system contributes to improvements in governance by increasing data availability... DMFAS has contributed to more complete and transparent reporting on debt.

— Assessment of UNCTAD: MI 9.3.

Debt trends in developing countries make such programs more important than ever. The solid work accomplished by DMFAS has convinced us.

— Ministry of Europe and Foreign affairs of France, 2021

A huge provider of technical assistance is the UN DMFAS Programme and its work is vital at a downstream granular level to helping countries improve their debt transparency.

— Mark Flanagan, Assistant Director, Strategy Policy and Review Department, Head of Debt Policy Division, IMF

Sustainable debt is important for sustainable development

Timely and comprehensive statistics on the levels and composition of debt are a prerequisite not only for the effective management of public liabilities but also for identifying risks of debt crises and limiting their impact (UNCTAD, 2021), and even more so in the face of challenges raised by the COVID-19 pandemic and climate change (Bouhia, 2021). Reliable debt statistics contribute to the formulation of financial policies and strategies, and consequently to improvement of financial stability and governance.

[The General Assembly] reiterates that timely and comprehensive data on the level and composition of debt are necessary for, inter alia, building early warning systems aimed at limiting the impact of debt crises, calls for debtor and creditor countries to intensify their efforts to collect and release data.

— United Nations, Resolution adopted by the General Assembly on 17 December 2021

The DMFAS programme contributes directly to the achievement of SDG 17 of the 2030 Agenda, more specifically, its target 17.4 of the 2030 Agenda as it assists “in attaining long-term debt sustainability through coordinated policies aimed at fostering debt financing, debt relief and debt restructuring”. Training workshops, capacity-development and software tools enable better debt management and reporting that help developing countries to improve their financial policies. The work also contributes indirectly to poverty reduction (SDG 1) as better debt management and debt relief can help to take steps towards economic recovery for heavily indebted poor countries.



[The DMFAS Advisory Group] agrees that DMFAS has had an important impact on establishing effective information systems for debt recording, debt validation and reporting, and that the performance indicators show clear improvements in debt data coverage and quality, debt data reporting and debt portfolio analysis.

— UNCTAD, Final conclusions of the 12th DMFAS advisory group meeting November 2019

[The DMFAS Advisory Group] is reassured that the Programme continues to make a significantly positive impact in the long term in terms of its relevance, effectiveness, efficiency and country specific sustainability.

— UNCTAD, Final conclusions of the 12th DMFAS advisory group meeting November 2019

DMFAS offers software, training and advisory services

The DMFAS programme offers countries a set of practical solutions for the management of public liabilities and the production of debt statistics. These include:

- DMFAS debt management and financial analysis software designed to meet the operational, statistical and analytical needs of debt managers and public debt strategies. This includes training in the installation, maintenance and use of the software.
- Capacity development in debt management skills through modules on debt data validation, statistics, debt portfolio analysis and operational risk management.
- Advisory services, including needs assessments and advice on technical, administrative, legal and institutional debt management. This includes assistance interfacing the DMFAS database with countries' integrated financial management systems.

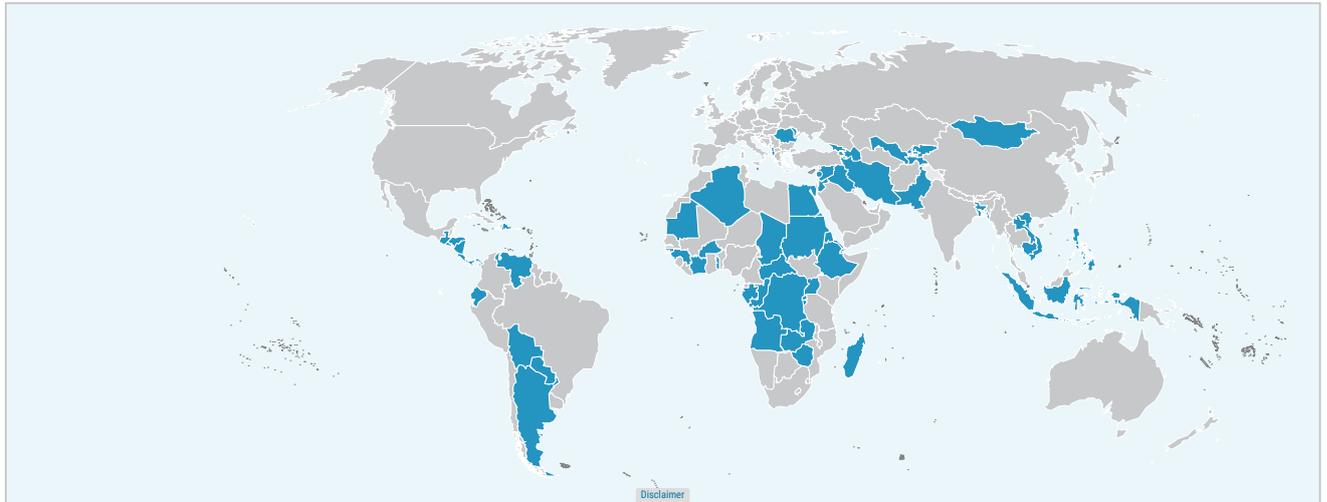
**DMFAS software
is available in
English, French,

Russian and Spanish
and used in 58 countries
by 83 institutions**

Currently, 58 countries and 83 institutions around the world use DMFAS software for debt management. The software has been continuously improved and is now in its sixth edition since 1982. The software is available in four languages (English, French, Russian and Spanish).



Map 1. Geographical distribution of active DMFAS countries, February 2022



Source: UNCTAD reporting.

DMFAS has trained experts from 67 countries in debt management

Table 1 shows the number of officers that have benefited from training in debt management procedures and best practices between 2011 and 2021. In total, in over ten years, 6368 people from 67 countries were trained by DMFAS. In addition, on average 370 experts participated in each UNCTAD Debt Management Conference held every second year since 2011.

Over **6200 participants** from debt offices over the last 10 years

Table 1. Number of participants in capacity development events organized by DMFAS

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total	
Capacity development for debt offices	Training in debt validation, reporting and analysis	90	345	195	240	138	282	184	209	200	72	350	2 305
	Functional training in using DMFAS	324	276	192	245	120	244	134	233	159	91	225	2 226
	IT related training and advisory services	100	125	80	70	60	152	71	132	43	54	35	922
	Other advisory services	55	90	96	95	27	73	95	123	95	144	3	915
Total	569	836	563	650	345	751	484	697	497	361	613	6 368	
UNCTAD debt management conference	380	-	310	-	343	-	390	-	430	-	-	1 853	

Source: UNCTAD reporting.

Since 2016, DMFAS has systematically recorded detailed statistics on DMFAS activities. In the six years from 2016 to 2021, 380 workshops have been provided, to over 4200 participants. These participants were from 67 different countries and 42 per cent were female (see table 2).



380 training and capacity development workshops delivered between 2016 and 2021

Table 2. Number of DMFAS capacity development events organized by UNCTAD and number of participants, 2016-2021

			Number of events	Total participant	Proportion female
Capacity development for debt offices	Training in debt validation, reporting and analysis	Data validation (initial)	24	279	53%
		Data validation (follow-up)	10	192	59%
		Debt statistics (initial)	14	324	43%
		Debt statistics (follow-up)	3	35	46%
		Debt portfolio analysis (initial)	10	141	36%
		Debt portfolio analysis (follow-up)	3	40	43%
		Other debt related training	17	286	41%
	Functional training in using DMFAS	Functional training in using DMFAS	80	1 048	47%
	IT related training and advisory services	DMFAS Installation and other IT workshops	51	239	28%
		Interfacing DMFAS with other systems ¹	33	248	40%
	Other advisory services	Implementation in partnership with DMF ²	20	109	37%
		Workshops in coordination with partners	38	274	41%
		Expertise exchange study tours	36	171	51%
		Workshops relating to countries' projects	39	19	47%
Total			378	3 405	44%
UNCTAD debt management conference			2	820	33%

Source: UNCTAD reporting.

Notes:

¹ Workshops in interfacing DMFAS with other financial management information systems

² Debt Management Facility (World Bank, 2020), including missions in DMFAS user countries for debt management performance assessment, medium-term debt management strategy and debt management reform plans

Increasing DMFAS debt coverage facilitates debt management

Debt data recorded with the DMFAS software are easier to manage and report transparently to support financial policy and stability. The DMFAS software facilitates the recording of both external and domestic debt. The DMFAS programme uses a 90 per cent threshold to determine whether a country has comprehensive coverage of their government external debt; i.e., if a country has at least 90 per cent of external debt instruments covered in the DMFAS system it is considered comprehensive. The same 90 per cent threshold is set for government domestic debt.

**Over the last 10 year
the number of countries
recording domestic debt
using DMFAS has
increased from 4 to 42**



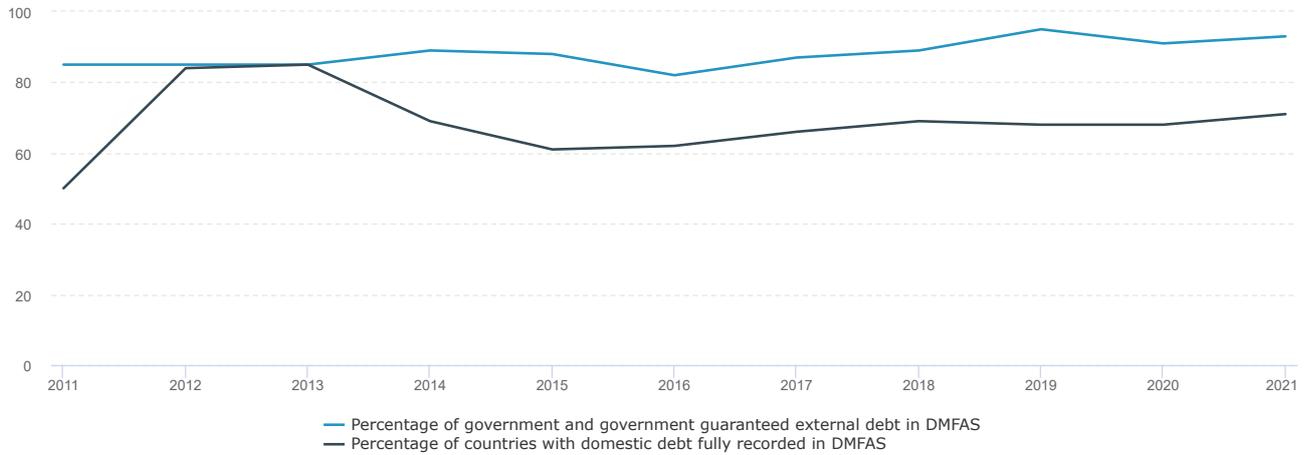
Figure 1 shows that over the last ten years, a consistently high proportion of DMFAS countries had comprehensive data on external debt. In 2021, 93 per cent of countries using DMFAS had comprehensive external debt instruments recorded in DMFAS database.

Figure 1 also shows an increasing number of countries using DMFAS to record domestic debt. The number of countries with comprehensive data on domestic debt also increased over the time period, but the figure shows that it takes some time for new DMFAS users to develop a more comprehensive debt database. In 2021, 71 per cent of countries using DMFAS had comprehensive domestic debt records in DMFAS database.



Figure 1. Completeness of debt records

(Percentage)



Source: UNCTAD reporting.

Notes: Between 2013 and 2015, the increase in the number of countries, adopting DMFAS 6 and with the responsibility of managing domestic debt, largely exceeded the increase in the number of countries having a complete domestic debt database, as it takes time for countries to build the required statistical capacity. This explains the drop in the "Percentage of countries with domestic debt fully recorded in DMFAS" over that time period.

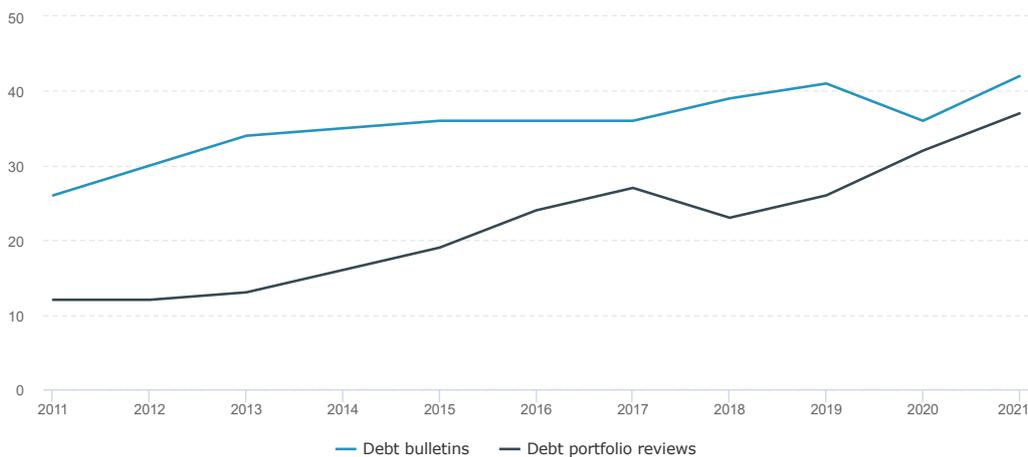
DMFAS helps to improve transparency and quality of debt reporting

The DMFAS programme also supports its clients in disseminating debt statistics and performing debt analysis. The programme does this by offering initial and follow-up capacity development modules. For example, a first module helps countries to develop their first debt statistics bulletin; a second helps them to review and improve the content of the existing publications.

Both the number of DMFAS user countries that publish debt statistics bulletins and that publish debt portfolio reviews on a regular basis has increased during the last ten years (see figure 2), despite a setback in 2020 mainly due to the disruptions related to the COVID-19 crisis. Over the ten years, countries publishing debt statistics have increased from 26 to 42 and countries publishing debt analysis have increased from 12 to 37.



Figure 2. Number of DMFAS-supported countries publishing debt reports on a regular basis

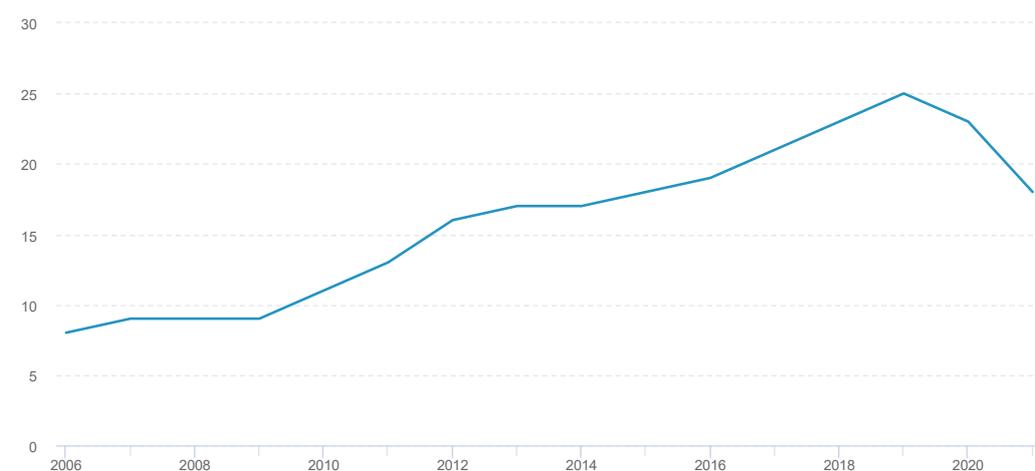


Source: UNCTAD reporting.

More integrated operation risk management with DMFAS

Several countries have asked that the DMFAS debt management operations be integrated with other financial management systems, such as those typically used by treasury departments and budget departments. The latest version of DMFAS software includes this facility, improving the accuracy and timeliness of debt service payments and debt data. As a result, the number of countries where DMFAS is integrated with other financial management information systems has increased from 8 countries in 2006 to 18 countries in 2021 (figure 3). The decrease in 2020-2021 was mainly due to the need to upgrade interfaces while countries are updating to DMFAS 6 system.

 **Figure 3. Number of countries with interfaces between DMFAS database and other financial management information systems**



Source: UNCTAD reporting.

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UNCTAD Empretec – Inspiring entrepreneurship

UNCTAD Empretec (UNCTAD, 2022) promotes entrepreneurship and enhances the productive capacity and international competitiveness of SMEs in developing countries. The Empretec programme is implemented through its national centres, established in 41 countries. Empretec's core product, the Entrepreneurship Training Workshop, promotes behavioural changes helping entrepreneurs put their ideas into action and fledgling businesses to grow.

This training [Empretec] changes your mindset, as you learn the concepts for your lifetime and you can use this knowledge if you plan to start any other business too.

— Melissa de León, Chef and Food Blogger, Panama

Empretec enhances entrepreneurial skills and competences

The objective of Empretec training workshops is to develop entrepreneurship. In practice, this means developing and promoting a set of specific competencies and practices that can be recognized, acquired and applied by entrepreneurs. Training is delivered by more than 500 local, certified trainers and by a pool of 40 international, master trainers. All trainers are themselves entrepreneurs.

Target beneficiaries include micro-, small- and medium-sized businesses; youth entrepreneurs; women entrepreneurs; and intrapreneurs. The Empretec programme targets SMEs with a track record of high business performance, potential entrepreneurs with promising business ideas, and start-up companies with bankable project proposals. Training should lead to SME growth, linkages with larger enterprises including MNEs, job creation and increasing investment. Empretec also supports and promotes entrepreneurship among women, and it provides tailored mentoring and training. The Women in Business Awards also contribute to realizing these aims.

Empretec trains managers and intrapreneurs to identify business opportunities. It also trains employees to adapt to changes, like downsizing or outsourcing, as well as persons who have lost their job and would like to start their own businesses. Empretec also participates in the Global Entrepreneurship Week (Global Entrepreneurship Network, 2022) with the aim of inspiring young people to embrace innovation, imagination and creativity.

Empretec contributes directly to SDG 4 and its target 4.4 “by 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship”. It also supports SDG 8 and its target 8.3 “promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services”. In addition, Empretec supports the achievement of the 2030 Agenda more widely, by contributing indirectly to SDGs 1 (no poverty), 2 (zero hunger), 5 (gender equality), 10 (reduced inequalities), and 17 (partnerships for the SDGs). See the UNCTAD Toolbox (UNCTAD, 2020) on entrepreneurship development for more details about the link between Empretec and the SDGs.

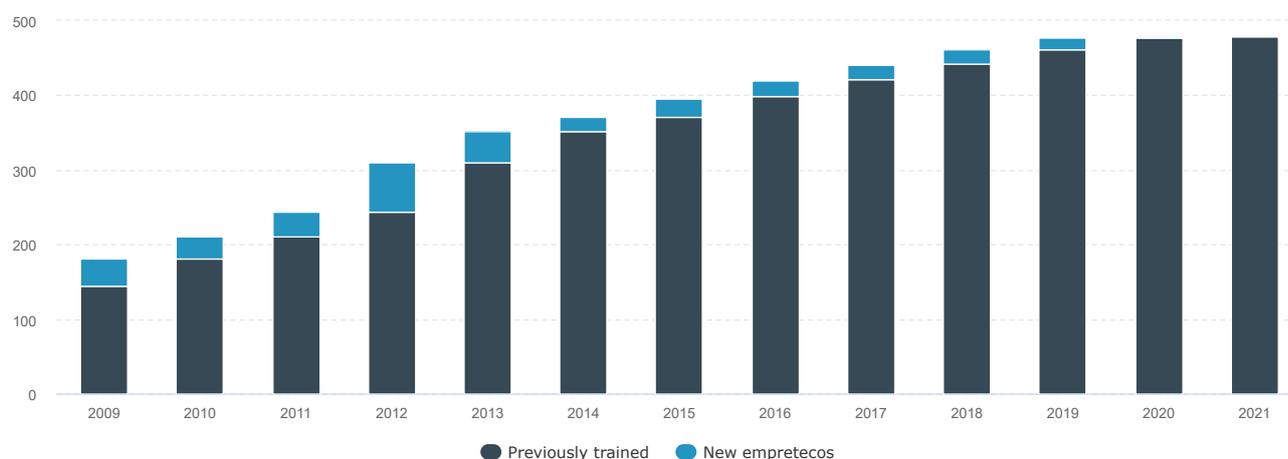


Entrepreneurs train entrepreneurs in Empretec training activities

Empretec training is delivered by centres in 41 countries around the world. Since its inception in 1988, Empretec has successfully trained more than 481 000 people, "empretecos", helping them to found or expand businesses and create jobs in the process. Figure 1 shows the severe impact of COVID-19 pandemic on Empretec training. Empretec, being an in-person training, could not deliver any training events from March 2020 to July 2021 due restrictions related to the COVID-19 pandemic. Empretec centres started slowly resuming their activities in the second half of 2021.

**Almost half a million
persons trained since 1988**
481000

Figure 1. Cumulative number of empretec
(Thousands of persons)



Source: UNCTAD Empretec.

Over 5000 workshops between 2014 and 2021



Since 2014, Empretec has collected activity and outcome statistics on a regular and systematic basis. Between 2014 and 2021, more than 5 000 workshops were held in which nearly 123 000 people were trained, where the training in 2020 and 2021 was heavily impacted by the COVID-19 pandemic (see table 1). Latin America and Sub-Saharan Africa accounted for the bulk of this capacity development, accounting for 80 and 18 per cent of the workshops, respectively, and 72 and 26 per cent of all persons trained.

Table 1. Number of Empretec workshops and persons trained, by region, 2014-2021

Region	Workshops		Number of people trained							
	Total	2014	2015	2016	2017	2018	2019	2020	2021	2014 - 2021
Sub-Saharan Africa	916	6 144	6 928	5 939	5 182	4 909	492	1 642	1 116	32 352
Latin America and the Caribbean	4 058	12 299	17 280	14 941	13 828	14 859	14 639	51	572	88 469
Western Asia	63	365	93	32	-	22	-	250	514	1 276
Southern Asia	34	75	21	96	-	72	-	87	82	433
South-eastern Asia	9	-	176	-	-	-	19	-	-	195
Europe	11	120	-	113	-	-	10	-	-	243
Total	5 091	19 003	24 498	21 121	19 010	19 862	15 160	2 030	2 284	122 968

Source: UNCTAD Empretec.

In recent years, the share of women participating in Empretec training workshops has been monitored consistently. The female share increased in all regions between 2020 and 2021 (see table 2). In 2020, around one quarter of persons trained in the programme were women. In 2021, this share soared to 40 per cent. High growth was recorded in Southern Asia. This was strongly driven by eleven workshops organized in India, in which 78 out of 82 participants were female. For Sub-Saharan Africa, data are available also for 2019, revealing an increasing trend already from 2019 to 2020 in that region.



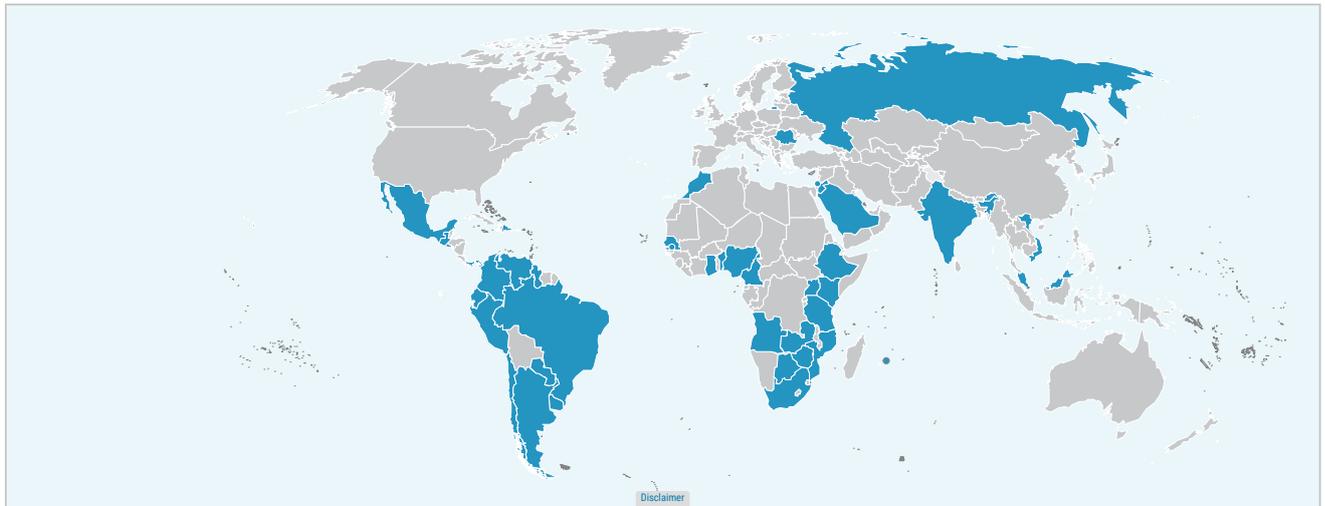
Table 2. Share of women participating at Empretec workshops, by region, 2019-2021

Region	2019	2020	2021
Sub-Saharan Africa	20%	23%	36%
Latin America and the Caribbean	-	12%	32%
Western Asia	-	48%	49%
Southern Asia	-	37%	95%
Overall	20%	26%	40%

Source: UNCTAD Empretec.



Map 1. Geographical distribution of Empretec training centres



Sources: UNCTAD Empretec.

“
Empretec has had a remarkable effect on the growth of my business.
 — Kayan Motashaw, Founder of LivRite and of the honey brand “Beelicious”, India
 ”

“
Empretec helped me consolidate certain characteristics that had a positive impact on my enterprise and on the way I behaved.
 — Uneiza Ali Issufo, Founder of ConsMoz Ltd, Mozambique
 ”

Empretec’s Women in Business Awards rewards outstanding businesswomen previously trained by the programme

In 2008, Empretec launched the Women in Business Awards for developing countries. The award is granted every other year to women who have participated in Empretec training and later shown outstanding performance and success as entrepreneurs. Since 2008, seven rounds of Women in Business Awards have seen the participation of 280 women (see table 3). African and Latin American countries account for the majority of applicants in these awards, 43 per cent and 45 per cent respectively. This is a clear reflection of these regions’ overall higher participation in the Empretec training workshops, as shown already in table 1 above. On average, however, the three regions in Asia (Western, Southern and South-eastern) seem to exhibit a higher relative share of applicants among trained women (between 1 and 2 per cent) than in other regions, where the relative share of applicants is below 1 per cent.



Despite a modest absolute number of applicants, Western Asia, in particular Jordan, has been very successful, garnering five podium positions, including three first places, in 2008, 2014 and 2020.¹

**Table 3. Women in Business Awards, number of applicants, by region, 2008-2020**

Region	2008	2010	2012	2014	2016	2018	2020	Total
Sub-Saharan Africa	14	23	9	15	26	25	7	119
Latin America and the Caribbean	9	18	27	17	21	16	19	127
Western Asia	1	2	3	5	5	4	3	23
Southern Asia	-	-	-	-	1	1	3	5
South-eastern Asia	-	-	1	-	1	-	2	4
Europe	-	-	-	-	-	-	2	2
Total	24	43	40	37	54	46	36	280

Source: UNCTAD Empretec.

Empretec is a steppingstone to more business activity

Empretec has recently performed an impact assessment on a series of training workshops conducted in Angola under the TRAINFORTRADE II EU-UNCTAD Joint Programme for Angola (UNCTAD, 2021). Results confirm earlier assessments of Empretec's workshops for which participants were followed up on four measures: sales, number of employees, profitability of the participants' businesses, and number of business start-ups among participants. Over the five-year period from 2013 to 2017, the average increase over three months ranged from 12 per cent for the number of people employed to 25 per cent for the number of new businesses created. The corresponding numbers after twelve months were 34 and 38 per cent, respectively.²

In the impact assessment of the Angola programme, economic impact of the workshop on over 340 Angolan entrepreneurs has been assessed. Results reveal, among other developments, that:

- 22 per cent of the interviewees started new businesses after their participation in the Empretec Entrepreneurship Training Workshop;
- The number of job posts generated by the companies managed by empretecose rose from 439 to 732 within a period of around two years. This represents a 30 per cent average annual increase in the number of job posts generated by empretecose – in a period when the Angolan GDP dropped for three consecutive years in a row;
- 85 per cent of the companies included in the survey reported sales growth after the workshop, and 87 per cent of the entrepreneurs believed sales would increase from 2022 to 2023;
- On a scale from zero to 10, entrepreneurs on average rank Empretec at 9.24 points, showing a highly positive assessment of the programme by its participants;
- When comparing Empretec with other business training tools, almost 84 per cent of the empretecose regard it as better than average (UNCTAD, 2021).



**9.24 out of 10 -
Empretec workshops
are highly valued
by participants in Angola**



Notes

1. More can be found on their website: <https://unctad.org/webflyer/Empretec-women-business-awards-2020>.
2. Unfortunately, no control groups are available. Therefore, the growth figures presented here cannot be compared with enterprises in same sectors and size classes that did not participate in Empretec

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Adding to the sum of knowledge with research on trade and sustainable development

In July 2017, UNCTAD launched a new research paper series (UNCTAD, 2020). Since that time, 41 research papers have been published, which have been downloaded almost 86,000 times. This chapter provides a brief statistical overview of this series.

*“Research is to see what everybody else has seen,
and to think what nobody else has thought*
— Albert Szent-Gyorgyi

The papers cover a wide variety of topics, ranging from Brexit, to digital platforms, to fishery subsidies. For the purposes of this analysis, the research papers have been categorized into seven broad themes (see table 1). This is of course a simplification, as most papers deal with several complex themes simultaneously.

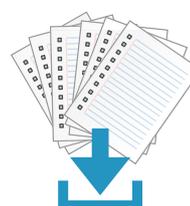


Table 1. Number of research papers published, by broad theme

Year of publication	Broad theme							Total
	Trade	Development / SDGs	Digital	Finance	Competition	Climate change	Industrialisation	
Jan - Mar 2020	2	0	-	-	1	-	-	3
2019	7	2	0	2	-	-	-	11
2018	7	2	1	1	-	1	-	12
July - Dec 2017	8	3	2	1	-	-	1	15
Total	24	7	3	4	1	1	1	41

Source: UNCTAD calculations based on data from UNCTAD (2020).

Trade related papers accounted for almost 60 per cent of all research papers published. They cover a rich variety of topics including tariffs, non-tariff measures, subsidies, [gender-in-trade](#), [global gender indices](#), [nowcasting trade](#), [development status](#), free trade agreements and value chains. Sustainable development, which included papers dealing with the political economy of SDG measurement, the digital and infrastructural divide, Big Data, enterprise contribution to SDGs and inclusive development, accounted for a further 17 per cent.



**Research papers
downloaded almost
86 000 times
since July 2017**

Since the series was launched in July 2017, almost 86,000 papers have been downloaded. Unsurprisingly, trade-related papers account for the bulk of these (70 per cent) – see table 2.

**Table 2. Number of downloads by year of publication, year of download**

Year	Number of downloads							Total
	Trade	Development / SDGs	Digital	Finance	Competition	Climate change	Industrialisation	
Per year of publication								
Jan - Mar 2020	2 420	-	-	-	853	-	-	3 273
2019	24 752	1 945	-	1 429	-	-	-	28 126
2018	9 559	2 218	2 259	441	-	4 110	-	18 587
July - Dec 2017	23 091	5 900	4 047	701	-	-	2 167	35 906
Total	59 822	10 063	6 306	2 571	853	4 110	2 167	85 892
Per year of download								
Jan - Mar 2020	14 019	1 117	930	357	853	795	145	18 216
2019	31 698	4 278	3 915	1 525	-	1 669	812	43 897
2018	13 521	3 724	1 461	689	-	1 646	923	21 964
July - Dec 2017	584	944	-	-	-	-	287	1 815
Total	59 822	10 063	6 306	2 571	853	4 110	2 167	85 892

Source: UNCTAD calculations based on data from UNCTAD (2020).

Table 2 shows that downloads have been steadily increasing, from less than 2,000 in the first year (2017), to almost 44,000 two years later.

The monthly UNCTAD research papers views are illustrated in figure 1. The total number of downloads has steadily increased since 2019, reaching more than 10 thousand in November 2019.

**Figure 1. Publication downloads per month**

(Thousands)



Source: UNCTAD calculations based on data from UNCTAD (2020).

The three most downloaded research papers are:

16,423 downloads: African Continental Free Trade Area: Challenges and Opportunities of Tariff Reductions (Saygili et al., 2017).**13,776 downloads:** Trade and trade diversion effects of United States tariffs on China (Nicita, 2019).**6,114 downloads:** Brexit. Implications for Developing Countries (Nicita et al., 2019).

These three papers account for more than 36,000 downloads, or 42 per cent of all UNCTAD research papers downloaded.

**Table 3. Number of research papers by UNCTAD Division**

Year of publication	UNCTAD divisions					External	All
	ALDC	DGDS	DIAE	DITC	DTL		
Jan - Mar 2020	-	-	-	3	-	-	3
2019	-	6	-	5	-	-	11
2018	2	4	1	4	1	-	12
July - Dec 2017	5	1	-	5	1	3	15
Total	7	11	1	17	2	3	41

Source: UNCTAD calculations based on data from UNCTAD (2020).

Table 3 shows the number of research papers by division. In cases where a paper was co-authored by an UNCTAD staff member and an external author, that paper was classified to the division of the UNCTAD staff member. In cases where no UNCTAD staff were authors, papers were classified as 'external'. Given the prominence of trade related papers, it is not surprising that DITC accounted for more than 40 per cent of papers published.

**Table 4. Number of research papers by SDG**

Year of publication	SDG								All
	1	5	8	9	10	13	14	17	
Jan - Mar 2020	-	-	-	1	2	-	-	3	6
2019	-	1	-	1	2	-	3	8	15
2018	-	-	1	1	-	1	-	10	13
July - Dec 2017	1	-	-	3	2	-	-	12	18
Total	1	1	1	6	6	1	3	33	52

Source: UNCTAD calculations based on data from UNCTAD (2020).

The research papers have been coded to SDGs. As with theme classification, this is necessarily a simplification, as several papers deal with more than one SDG. In table 4, some papers are classified to two SDG goals, hence the total of 52 rather than 41. The importance of goals 9, 10 and 17 is evident.

**Most
UNCTAD
research papers
focus on SDG 17**



It is important to note that research papers are only one of the release channels employed by UNCTAD. A number of flagship reports, publications, policy briefs, conference documents and news articles have also been published on topics relevant for sustainable development.

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Trade facilitation – making trade easier and faster

SDG indicators

SDG 10: Reduce inequality within and among countries

SDG target 10.a: Implement the principle of special and differential treatment for developing countries, in particular least developed countries, in accordance with World Trade Organization agreements

SDG 16: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

Target 16.6: Develop effective, accountable and transparent institutions at all levels

SDG 17: Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development

SDG target 17.11: Significantly increase the exports of developing countries, in particular with a view to doubling the least developed countries' share of global exports by 2020

SDG target 17.12: Realize timely implementation of duty-free and quota-free market access on a lasting basis for all least developed countries, consistent with World Trade Organization decisions, including by ensuring that preferential rules of origin applicable to imports from least developed countries are transparent and simple, and contribute to facilitating market access

Administrative hurdles and cumbersome border procedures can account for 75 per cent of all delays to shipments. The main objective of trade facilitation is to reduce the complexities and costs associated with lengthy border procedures and controls, while maintaining efficient compliance controls. Trade facilitation contributes to the achievement of the 2030 Agenda, in particular to the integration of developing countries to global trade, tackling trade barriers and improving the efficiency of trade by reducing delays and transaction costs.

To facilitate the implementation of the technical and institutional obligations arising from the 2017 WTO TFA, the UNCTAD Trade Facilitation Programme UNCTAD (2020a) improves trade processes and competitiveness of developing countries, including economies in transition, LDCs, LLDCs and SIDS. The programme aims to support trade facilitation reforms and countries' capacity to comply with related international and regional rules and standards, including WTO commitments.

I have learned so much in this programme. Now, I think of trade facilitation in a different way. I understand better all the things that the Sudan can do and how important it is to mainstream trade facilitation in its development policy.

— Mohammed Adam, rapporteur of Sudan NTFC

Supporting national trade facilitation committees

By providing intensive professional training - via the Empowerment Programme for National Trade Facilitation Committees – UNCTAD helps committees fulfil their mandate and implement, in a coordinated manner, trade facilitation reforms, including the provisions of the Agreement on Trade Facilitation, and monitor implementation. UNCTAD also supplies technical assistance, including: tailored training in trade, transit and transport facilitation¹; advisory services on ratification of the Agreement; and assistance in the creation and sustainable operation of national trade facilitation committees.

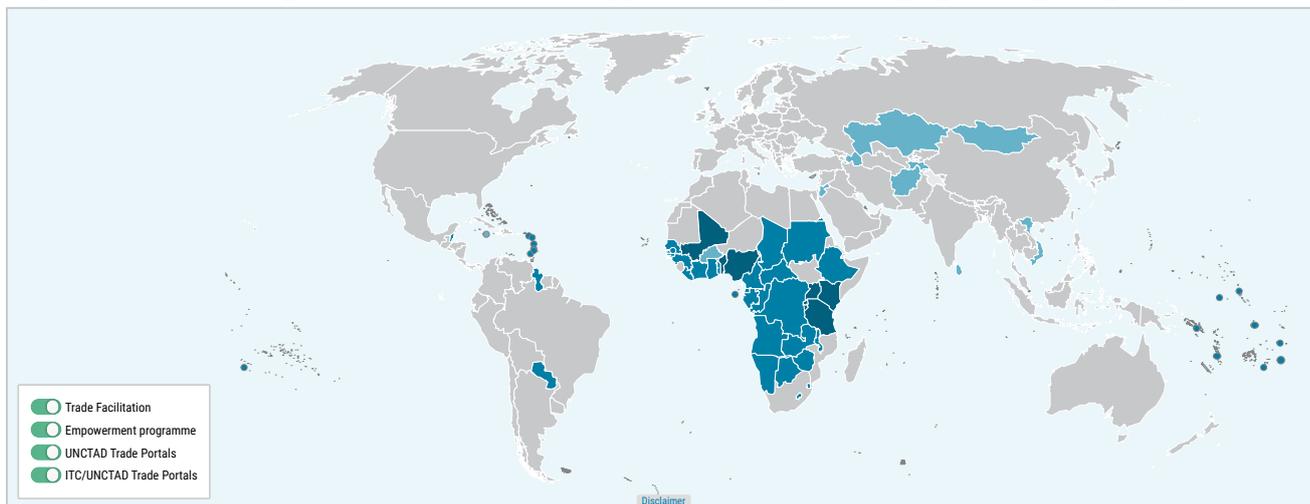
The UNCTAD Trade Facilitation Programme assists developing countries with the implementation of trade facilitation measures, such as needs assessments and development of national trade facilitation and project plans. UNCTAD capacity building and advisory services help countries to monitor and evaluate trade facilitation initiatives, establish legal frameworks for trade-related single windows, simplify trade procedures and train national transit coordinators. UNCTAD also supports regional trade facilitation initiatives.

The effectiveness of the programme stems from strong cooperation not only with external partners such as the World Customs Organization and the International Trade Centre, but also with other experts within UNCTAD, working at the crossroads of trade facilitation with customs automation and e-commerce or non-tariff measures.

Trade facilitation – has assisted 56 countries since 2016

Since 2016, UNCTAD has developed capacity in 56 countries around the world to improve their trade facilitation. Of these, 34 countries were in Africa, 10 in Latin America and the Caribbean and 12 in Asia and Oceania. In total, 21 countries were SIDS and 17 LLDCs (see Map 1). 60 per cent of capacity development was done in English, 35 per cent in French, and 5 per cent in Portuguese.

 **Map 1. Countries receiving UNCTAD trade facilitation support in the empowerment programme (4 categories)**



Source: UNCTAD (2020a).

Of those 56 countries, 45 are WTO Members. 89 per cent of them have ratified the WTO trade facilitation agreement and 96 per cent have notified to the WTO Committee on Trade Facilitation their category A, B and C provisions.

The UNCTAD Trade Facilitation Programme builds on the cooperation with other related UNCTAD technical assistance programmes, such as the UNCTAD ASYCUDA, which is used by the Customs administrations of over 90 countries, and UNCTAD Trade Portals. These programmes are key instruments for the implementation of various provisions of the WTO TFA.

UNCTAD Empowerment Programme

The UNCTAD Empowerment Programme (UNCTAD, 2020b), as part of the wider Trade Facilitation programme, provides an intensive professional programme for NTFCs. The main objective is to help them implement trade facilitation reforms in a coordinated manner, including the provisions of the WTO TFA. This programme is undertaken in cooperation with a number of partners, including the ITC, Deutsche Gesellschaft für Internationale Zusammenarbeit, UNECE, UNIDO, World Bank Group, World Customs Organization and the WTO.

Almost 2,500 participants trained since 2016

Since 2016, the Empowerment Programme has trained almost 2,500 people in 34 countries. Of these, 24 countries completed the full empowerment programme and 10 received other support to their NTFCs. 26 countries are African, and eight were from Latin America and the Caribbean (see Map 1). On average female participation was 42 per cent, but this ranged from as high as 73 per cent in some countries to no female participation in one country. 19 per cent of participants were from the private sector and 81 per cent from the public. Members of the NTFCs accounted for 57 per cent of course participants on average. 80 per cent of participants sat the exams, with 91 per cent of those successfully passing. In 2020, a further eight countries in Africa began receiving support.

34
Since 2016,
34 countries
have completed the
Empowerment Programme

**Table 1. Total capacity development training provided by Empowerment Programme**

Year	Number of					Per cent			
	Countries	Participants	Events	Languages	Female participation	NTFC Members participation	Participants Sitting Exams	Participants Passed Exams	
2016	3	291	9	1	45	43	96	94	
2017	14	1 162	30	3	29	69	71	84	
2018	12	402	18	3	45	54	74	96	
2019	12	636	35	1	52	61	78	91	
2016-2019	34	2 491	92	3	42	57	80	91	

Source: UNCTAD, based on answers received to an UNCTAD survey circulated from July to September 2019.

Empowerment programme supports NTFCs

The knowledge shared by the resource experts has encouraged greatly the inter-agency collaboration in Nigeria to enhance trade and reduce time as well as cost of imports and exports.

— Austin Oko Opiege, Member of Nigeria NTFC



94% of countries apply the knowledge acquired

UNCTAD evaluates the training by collecting feedback from participants. According to this feedback, 94 per cent of respondents reported using the knowledge acquired during training. 87 per cent reported improved knowledge of trade facilitation, and 78 per cent felt they were in a better position to support their NTFCs.

**Table 2. Feedback on training**

(Percentage)

Year	Improved knowledge of trade facilitation	Improved specific knowledge	Taking exams helped	Practical Exercises helped	Participants better able to support NTFC
2016	85	82	66	84	75
2017	79	76	43	72	70
2018	88	85	51	69	78
2019	97	95	63	95	90
2016-2019	87	84	56	80	78

Source: UNCTAD, based on answers received to an UNCTAD survey circulated from July to September 2019.

All countries make changes after training

All 34 countries reported making changes during and after taking the UNCTAD Empowerment Programme. 10 countries introduced supporting legislation, 20 drafted terms of reference, 20 prepared trade facilitation roadmaps and 26 issued notifications in preparation for the WTO TFA.

Table 3. Number of countries implementing changes

(by type of changes and year)

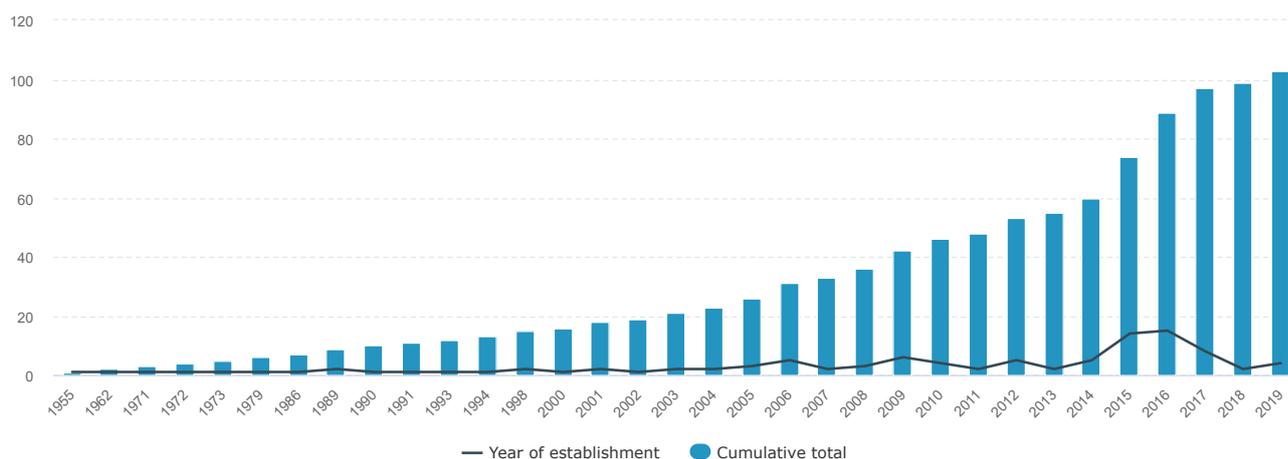
Year	Countries implementing changes	Types of changes implemented								
		Legislation	ToRs	Project proposal	Roadmap	Knowledge Transfer Strategies	Repository Case	NTFC Workplans	Notifications to WTO TFA	Other
2016	3	1	2	1	1	1	1	2	2	0
2017	14	2	5	4	4	3	9	2	10	5
2018	12	3	6	2	7	3	3	5	5	0
2019	12	4	7	7	8	6	0	7	9	4
2016-2019	34	10	20	14	20	13	13	16	26	9

Source: UNCTAD, based on answers received to an UNCTAD survey circulated from July to September 2019.

The feedback shows that the Empowerment Programme has helped countries prepare for the WTO trade facilitation negotiations and for the Agreement itself. Today, according to data gathered in the UNCTAD Repository for NTFCs (UNCTAD, 2020c), 103 countries have established NTFCs. 29 of these committees have only been established since 2016.

76% of participating countries send notification for 2017 WTO Trade Facilitation Agreement

Figure 1. "Year of establishment and cumulative number of NTFC



Source: UNCTAD (2020c).

In 2019, UNCTAD launched a series of online courses which recapitulate some of the key lessons of the Empowerment Programme. Since their launch in September 2019, up to March 2020, the online courses had registered 3,500 users, who have benefited from over 1,000 training hours. During 2020, UNCTAD plans to make these courses available additionally in French and Portuguese.

The courses show that trade facilitation is much more than just the Trade Facilitation Agreement, in that they also help to put the Agreement into a broader perspective by addressing the intricate interplay of the various provisions with commerce and the wider sustainable development agenda.

— Ricky Jnbaptiste, Attaché, Mission of the Organisation of Eastern Caribbean States in Geneva

Outcomes

UNCTAD's approach to supporting NTFCs in developing economies, including LDCs, seems to be working. This is reflected in the results of a survey undertaken during the summer of 2019, where countries benefitting from the Empowerment Programme reported being more optimistic about the sustainability of their Committees. On a scale of 0 to 100, LDCs that have been supported by UNCTAD rated the sustainability of their Committees at 63, compared to 50 for those committees that were not assisted by UNCTAD.

Notes

1. For more information, please see UNCTAD transport and trade facilitation newsletter (UNCTAD, 2020d).

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The convening power of UNCTAD

SDG indicators

SDG 17: Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development

SDG target 17.16: Enhance the global partnership for sustainable development, complemented by multi-stakeholder partnerships that mobilize and share knowledge, expertise, technology and financial resources, to support the achievement of the sustainable development goals in all countries, in particular developing countries.

SDG target 17.17: Encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships.

The UN brings the world together to advance sustainable development and inclusive trade and economy for all. Important for a better future for people and the planet, it cannot be realized without increased and effective cooperation of all stakeholders at all levels (Sustainability Knowledge Group, 2019). UNCTAD uses its convening power to bring together governments, businesses, civil society, academia and other international organizations. Together they debate, exchange experiences, identify best practices, and develop global standards on the most pressing issues of the day. Most of these meetings and events take place at UNCTAD headquarters in Geneva, Switzerland.¹

“Alone we can do so little; together we can do so much.”

— Helen Keller, American author

By doing so, UNCTAD supports SDG 17 “Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development” at its targets 17.16 “Enhance the global partnership for sustainable development, complemented by multi-stakeholder partnerships that mobilize and share knowledge, expertise, technology and financial resources, to support the achievement of the sustainable development goals in all countries, in particular developing countries” and 17.17 “Encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships”.

Since 2014 and up until April 2022, UNCTAD held 1508 formal meetings. This only includes formal meetings registered in the ‘Indico’ conference management system. More than half of these meetings were not categorized². These statistics only cover meetings and events organised by UNCTAD at its headquarters in Geneva. Many other meetings organised by UNCTAD at the regional or national level, outside Geneva, are not counted.

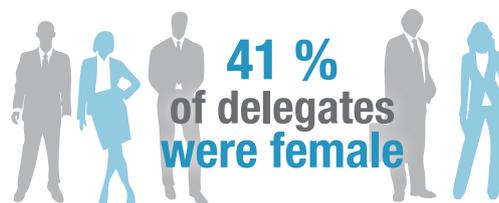
UNCTAD held more than
1 500 formal
meetings
since 2014

A blue circular icon with a gear-like border. Inside the circle, the text '1500 meetings' is written in white.

Due to the COVID-19 pandemic, all physical meetings on the UNCTAD premises were put on hold in March 2020. UNCTAD has been able to react quickly to these novel circumstances organising and hosting a myriad of online events, consultations and webinars from spring 2020. However, the number of in-person events held in 2020 halved from 2019, and in 2021 only one third were left. Prior to 2020, no online or hybrid events were registered at ‘Indico’ conference management system, but the share of such events reached 11 per cent in 2020 and stayed stable throughout 2021. Over the first four months of

2022, 5 per cent of UNCTAD events registered in 'Indico' occurred online or in a hybrid form. However, most UNCTAD online events do not feature in 'Indico'. In 2020-2021, the majority of UNCTAD events were held virtually.

Since 2016, for when data on participants are available, almost 59 000 participants have attended more than 1200 events (see table 1). This is an underestimate because not all meetings in Indico system required participants details to be registered. In fact, only about half of events had registration requiring participants' details: e.g., 57 per cent in 2019, just above 50 per cent in 2020 and back up to 54 per cent in 2021.



The share of female participants has steadily increased in the period from about 38 per cent in 2016 up to 47 per cent in the first four months 2022. Overall female participation in the studied period has been 41 per cent (see table 1).

Table 1. Total participants and share of female participants at events at UNCTAD, 2016-2021

Year	Number of events	Number of total participants	Share of female participants
2016	180	9 565	38%
2017	225	7 287	37%
2018	268	11 407	38%
2019	294	9 345	42%
2020	151	6 063	43%
2021	108	11 694	44%
Total	1 265	58 885	41%

Source: UNCTAD calculations based on data from (UNOG, 2022)

Note: The table only includes meetings registered in the 'Indico' conference management system.

The meetings include ministerial and other high-level meetings, intergovernmental meetings, such as the TDB and its subsidiary bodies, the Working Party on strategic framework and programme budget, and fora, such as the Global Commodities Forum and e-Commerce Week. They also include study visits, seminars, short courses for diplomats and bilateral government visits, and internal UNCTAD events (see table 2).

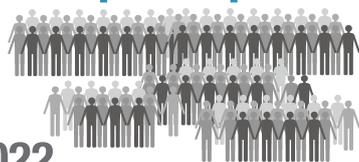
**Table 2. Number of official UNCTAD meetings, by type, 2020-2021**

Type of event	2020	2021	Total
Ministerial and other high level meetings	17	8	25
Trade and Development Board	6	5	11
WP on the Strategic Framework and Programme Budget	2	2	4
Expert group meetings, panels and forums	14	18	32
Trainings and workshops	14	19	33
Seminars and publication launches	8	4	12
eCommerce	4	4	8
Visits, celebrations and other events	13	0	13
UNCTAD Internal	11	18	29
Not categorized	62	30	92
Total	151	108	259

Source: UNCTAD calculations based on data from (UNOG, 2022)

Note: The table only includes meetings registered in the 'Indico' conference management system.

Almost 60 000 participants attended UNCTAD meetings in 2016-2022



during the COVID-19 pandemic from 30 per cent in 2020 to 23 per cent in 2022 so far.

More than one third of participants did not record the country they represent, since they typically represented international organisations, NGOs, academia, or the private sector rather than countries. Of participants representing governments, from 2016 to 2022, about one third came from Africa. Asia and Oceania accounted for another one third of government representatives. Latin America and the Caribbean

and Europe increased their relative presence in the time of the COVID-19 pandemic to around 19 per cent both from about 15 per cent. Representatives from North America accounted for just over half a per cent (see table 3). Such overall participation pattern is reflective of the number of countries in the regions, Africa and Asia and Oceania each having more than 50 countries, and, on the other hand, only a few countries present in North America.

Representatives from national governments are the single largest group attending UNCTAD meetings, accounting for between 35 per cent in 2016 and 53 per cent in 2022, depending on the year. Academia, the private sector and non-governmental organizations together accounted for between 23 and 47 per cent of participants in the same period. The number of these participants has dropped

More than one third of government representatives come from Africa, with their shares dropping during COVID-19





Table 3. Number of government representatives and female shares by geographic region, 2016-2022

Region		2016	2017	2018	2019	2020	2021	2022	Total
Africa	Number of representatives	1 622	1 191	1 917	1 298	862	787	58	7 735
	Share of female representatives	29%	24%	29%	32%	35%	36%	40%	30%
Asia and Oceania	Number of representatives	817	1 124	984	1 408	1 038	1 031	59	6 461
	Share of female representatives	26%	29%	28%	31%	34%	36%	34%	31%
Europe	Number of representatives	460	526	497	558	547	467	40	3 095
	Share of female representatives	42%	48%	38%	39%	45%	47%	45%	43%
Latin America and the Caribbean	Number of representatives	376	524	437	571	570	552	42	3 072
	Share of female representatives	45%	38%	42%	43%	49%	51%	62%	45%
North America	Number of representatives	26	19	21	29	15	13	1	124
	Share of female representatives	73%	84%	67%	59%	80%	85%	100%	73%
Total	Number of representatives	3 301	3 384	3 856	3 864	3 032	2 850	200	20 487
	Share of female representatives	32%	32%	32%	35%	39%	41%	44%	35%

Source: UNCTAD calculations based on data from (UNOG, 2022)

Notes: The table only includes meetings registered in the 'Indico' conference management system. 2022 includes events up to 29 April 2022.

The share of female government representatives has steadily increased from 32 per cent in 2016 to 44 per cent in 2022. Regional differences exist, with overall shares lower for Africa and Asia and Oceania, and higher in Latin America and the Caribbean, Europe, and notably higher for North America with over 80 per cent in 2020-2021 (see table 3).

Notes

1. More information about the UNCTAD upcoming events and the UNCTAD meetings calendar are available online (UNCTAD, 2022).
2. These statistics only cover meetings and events organized by UNCTAD at its headquarters in Geneva. Many other meetings organized by UNCTAD at the regional or national level, outside Geneva, are not counted. The data also do not include meetings co-organized by UNCTAD outside the Palais and do not include events where registration was not managed in Indico such as World Investment Forum 2018.

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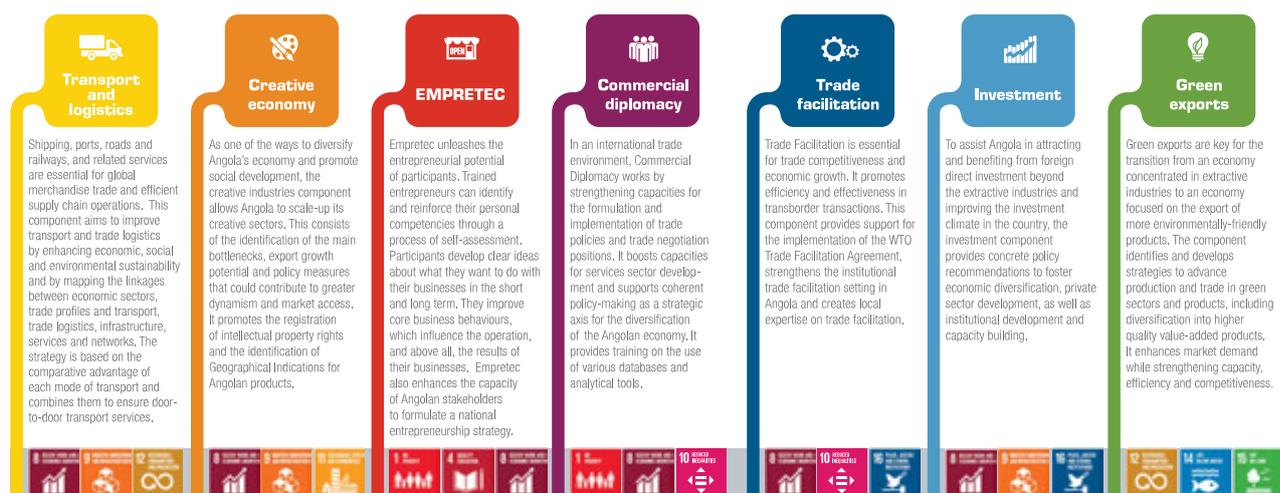
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Enhancing Angola's productive capacities: EU-UNCTAD Joint Programme for Angola: TRAINFORTRADE II

UNCTAD strengthening productive capacities in a project with Angola

Angola's graduation challenges lie in building economic resilience to external shocks and climate related vulnerabilities¹. To address these, UNCTAD has been supporting Angola in building institutional capacities to foster economic diversification through the EU-UNCTAD Joint Programme of Angola: TRAINFORTRADE II (2017-2023), a capacity building programme offering representatives of public, private and academic sectors in Angola an opportunity to draw on best practices, explore new opportunities to diversify activities and craft more sustainable ways to harness Angola's economic potential (UNCTAD, 2017). The programme's holistic approach consists of seven components that address the main constraints to social and economic growth in Angola: transport and logistics, creative economy, Empretec, commercial diplomacy, trade facilitation, investment, green exports (see figure 1).

 **Figure 1. TRAINFORTRADE II: Angola project components**



Source: UNCTAD (2017)

Successfully addressing the related challenges will significantly enhance progress in achieving the SDGs, particularly as far as Goals 1 (no hunger), 4 (quality education), 8 (decent work and economic growth), 9 (industry innovation and infrastructure), 10 (reduced inequalities), 11 (sustainable cities and communities), 12 (responsible consumption and production), 14 (life below water), 15 (life on land), 16 (peace, justice and strong institutions), and 17 (partnerships for the goals) are concerned.

The objective of the *EU-UNCTAD Joint Programme for Angola: TRAINFORTRADE II* is to improve human and institutional capacities to foster appropriate economic diversification policies and to help the country build a more resilient economy capable of eradicating poverty. In sum, it aims to support building and enhancing Angola's productive capacities, which will facilitate an accelerated path to sustainable development.

UNCTAD's interventions focus on key challenges, previously identified by the government of Angola, that undermine efforts to achieve accelerated, inclusive and sustainable economic growth and development. The key areas identified are:

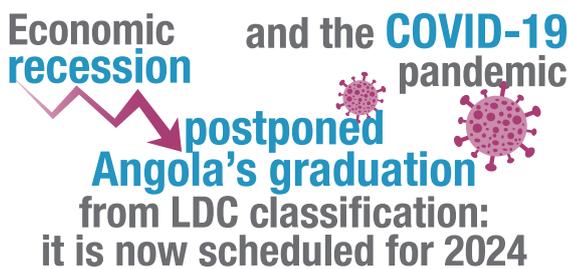
- (a) Trade policy and negotiations
- (b) Trade facilitation
- (c) Transport and trade logistics
- (d) SME development
- (e) Investment
- (f) Scoping non-oil trade opportunities and diversification (including in selected agricultural products and creative industries)
- (g) Holistic support to the creative economy.

The above activities were designed to enhance the economic strengths of Angola and help the government address the vulnerabilities by building productive capacity (see Box 1).

Box 1: Angola's economic context – strengths and vulnerabilities

Angola is an LDC, a designation created by the United Nations in 1971 (United Nations, 1971) to depict those countries with particular development challenges due to their low level of development, who also require particular attention and support. Angola's development trajectory in recent years has had its ups and downs. The country's economic growth averaged an impressive 4.6 per cent between 2010 and 2015, with a negative trend between 2016 and 2020, averaging -1.94 per cent due to the combination of the COVID-19 pandemic and depressed global demand for commodities, especially oil, the country's dominant export item. Angola is the second largest African exporter of oil after Nigeria (UNCTAD, 2022a). In 2019, Angola's GDP reached US\$89.4 billion which put it in the top-five economies in sub-Saharan Africa (UNCTAD, 2022b).

Structurally, Angola's economy is extractive-industry led: in 2019, 7 per cent of GDP came from agriculture, 52 per cent from industry, including oil (down to 47 per cent in 2020) and 41 per cent from services (UNCTAD, 2022b). In terms of employment, the share of agriculture is more than 55 per cent, up from 44 per cent in 2014, followed by the services sector (38 per cent) and the remaining in industry and mining (UNCTAD, 2022a). Angola's export structure is overwhelmingly dominated by fuel, which accounted for 92 per cent of exports in 2020. Ores and metal exports contribute another four per cent, making the Angolan economy almost entirely dependent on extractive exports. The export concentration index for Angola, at above 0.8, is thus the highest among developing countries, demonstrating excessive dependence on a single export item (UNCTAD, 2022a, 2022b).

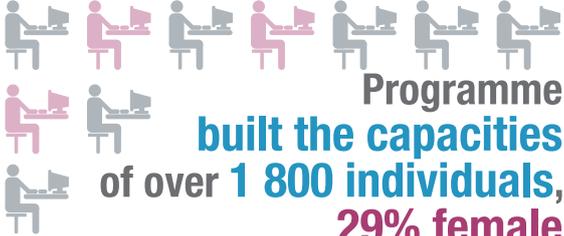
Economic recession and the COVID-19 pandemic

postponed
Angola's graduation
from LDC classification:
it is now scheduled for 2024

Angola was initially scheduled to graduate from the LDC category in 2018, having been found eligible for graduation during the 2012 and 2015 triennial reviews. However, a long-running recession since 2016 has muddled the country's graduation path. Another date was set for 2021. However, the country was granted an additional 3-year preparatory period due to the devastating health and economic impacts of the

COVID-19 pandemic. It is now scheduled to graduate in 2024.

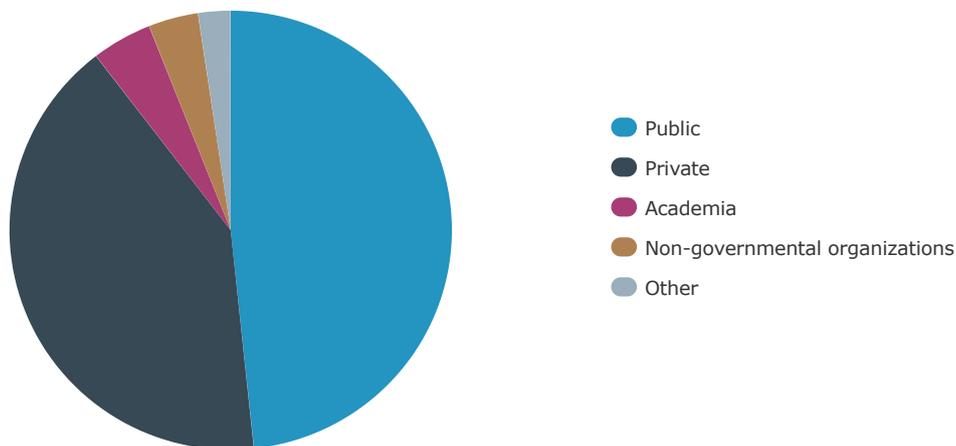
1900 people trained on enhancing economic strength of Angola in 2021 and 2022

There were a number of activities carried out from April 2021 to February 2022 in support of enhancing Angola’s capacities aimed at sustainable development. By the end of February 2022, the programme had built the capacities of 1 864 individuals. Out of these, 48 per cent came from the public sector, taking the number of government officials trained through the programme to 901 individuals. The share of private sector participants was 41 per cent (769 individuals).



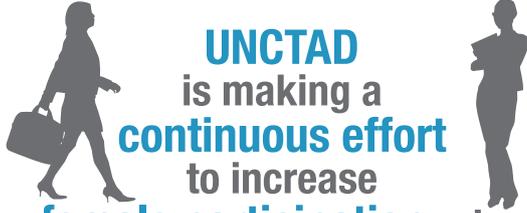
Programme built the capacities of over 1 800 individuals, 29% female

Figure 2. Total number of participants by sector, 2021-2022



Source: UNCTAD TRAINFORTRADE II: Angola

The female participation rate of 29.3 per cent lagged behind the programme’s target of 40 per cent. These shares are the result of several workshops with particularly heavy male participation due to the nature of the sectors involved. UNCTAD is making continuous efforts to improve the situation. The measures include highlighting the need to consider gender balance when making government nominations to training events; the requirement is not only included



UNCTAD is making a continuous effort to increase female participation rates

in concept notes and letters communicating on the matter with the government, but the issue is also brought up in discussions with the government when the nomination process is ongoing. These approaches have borne fruit, as the female share of government participants increasingly adheres to the target. A further challenge remains in some parts of private sector participation, particularly in provincial activities. UNCTAD has made efforts to boost female participation among private sector actors by actively identifying – through research and contacts – female producers, farmers and entrepreneurs in different areas. UNCTAD’s strategy to attract private sector female participants in the future will continue to rely on the active identification of female participants corresponding to the expected profile, in partnership with local institutions and partners. Further, specific calls for participation targeting women will be implemented. Dedicated support and incentives enabling female participation will also be employed, such as identification and organization of meeting

facilities with internet connection for hybrid meetings, with the provision of internet credit and transport support to the participants.



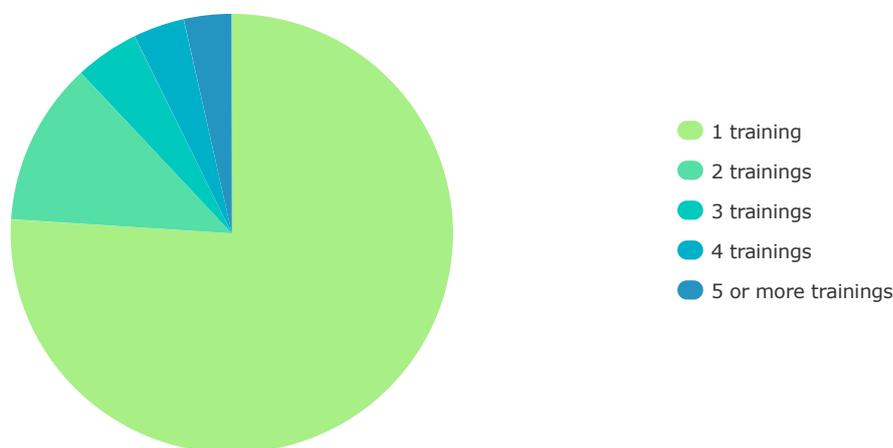
**60 persons
trained as trainers,
with more than 38%
of them women**

Another overall target relates to persons trained as trainers. 60 persons were trained as trainers, which exceeded the lower threshold of the overall programme target of 50–80 persons. The share of female trainers trained reached 38.3 per cent.

The majority of participants, over three quarters, attended one training; 12 per cent of participants attended two trainings, below five per cent three, and 3.7 per cent four trainings – see figure 3.

The majority of participants, over three quarters, attended one training; 12 per cent of participants attended two trainings, below

 **Figure 3. Number of participants attending training events, 2021-2022**



Source: UNCTAD TRAINFORTRADE II: Angola

Capacity development events in seven main components

Several capacity development events took place within the TRAINFORTRADE II Programme in seven components: National Green Export Review, Trade Policy, Trade Facilitation, Trade Logistics, Investment Policy Review, Entrepreneurship Policy, Empretec and Creative Economy (see table 1). Under the National Green Export Review component, 506 participants (103 of whom were female), including also participants from academia and NGOs, were trained through six training events. The trainings included fully-fledged multi-day in-person events and technical webinars. One of the in-person trainings focused on the honey sector. Furthermore, the component trained 30 persons as trainers, out of which 24 were trained as trainers in honey sector development in collaboration with the University José Eduardo dos Santos of Huambo.

Government officials also increased their knowledge and capacity in Trade Policy formulation through eight trainings and capacity building events with a total of 234 individuals (90 females), the majority of them (205 individuals) from the public sector. 83 individuals (26 females) also benefitted from capacity building through the Trade Facilitation component. Four fully-fledged training events were held by the component on Trade Logistics, building capacities of altogether 267 participants, of whom 72 were female. In July 2021, two webinars on PPPs for Logistics hubs in Angola were organized, with 146 people taking part (35 females).

The Investment Policy Review has organized eight training sessions since the start of implementation, of which four took place between April 2021 and February 2022. Through its training events, the component has so far built the capacities of 109 participants (45 female), most of them representing the public sector (78).

A number of government officials were trained by UNCTAD on Entrepreneurship Policy, while private sector representatives were trained through the hands-on entrepreneurship training programme. The total number of beneficiaries trained by the Empretec component reached 723 individuals (240 females), of whom 423 came from the private sector and 227 from the public sector. Out of the 423 private sector representatives trained (135 females), 354 individuals were trained through the fully-fledged six-day in-person Entrepreneurship Training Workshops, while others participated in discussions and workshops related to entrepreneurship policy as well as provincial workshops. Out of these 354 individuals, 96 underwent training delivered independently by national trainers.

Until February 2022, altogether 132 individuals (32 females) were trained through the Creative Economy component. Out of these, 71 came from the public sector and 44 from the private sector.



Table 1. Number of participants in capacity development events within TRAINFORTRADE II: Angola project, by component, years 2021–2022

Component	Number of participants	Share of women
National Green Export Review	506	20.4%
Trade Policy	234	38.5%
Trade Facilitation	83	31.3%
Trade Logistics	267	27.0%
Investment Policy Review	109	41.3%
Empretec	723	33.2%
Creative Economy	132	24.2%

Source: UNCTAD TRAINFORTRADE II: Angola

Note: The period covered is from April 2021 to February 2022. Some participants participated in more than one training event.

With close to four years of active implementation of the programme, TRAINFORTRADE II has been highly successful. The programme achieved important results and milestones through the coordinated action of UNCTAD and the institutions within the Angolan Government, with the coordinating and facilitating role of the Ministry of Industry and Commerce, as well as the financial support and technical partnership of the European Union. High-level participation from sectoral ministries and the active engagement of the EU Delegation in Luanda has provided further impetus for strong institutional engagement and direction for the effective implementation of areas identified for intervention. The programme has demonstrated its effectiveness through value for money, which is highest not only in terms of achieving concrete results, but also in sustaining programme-interventions for a relatively long period of time as well as in terms of progress in the sustainability and national ownership of the action.

Notes

1. Related information can be found at the website of High-level mission to Angola and Graduation with Momentum Workshop here: <https://unctad.org/fr/node/37030>

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UNCTAD Project: – Mobilizing financial resources for development in the time of COVID-19

The COVID-19 pandemic has created a series of simultaneous and reinforcing shocks that has exposed and exacerbated economic, financial and debt vulnerabilities of LICs and MICs. Mobilizing financial resources for recovering from the pandemic is essential to achieving the SDGs.

Financing development, from domestic and external public and private sources, is intricately linked to poverty eradication, an essential ingredient of inclusion and an overarching goal of the 2030 Agenda for Sustainable Development. Recovering more sustainably and resiliently from the current crisis depends on the world's ability to effectively mobilize and deploy the needed financial resources and achieve progress on the Sustainable Development Goals.

— (UNCTAD, 2021)

Rising to this challenge, a United Nations Development Account project "Response and Recovery: Mobilizing financial resources for development in the time of COVID-19" led by UNCTAD, in partnership with UNECA, ECLAC and ESCAP, was conceived in response to the pandemic. It aims to strengthen the capacity of LICs and MICs from Africa, Asia and the Pacific, and Latin America and the Caribbean to:

- diagnose their macro-financial, fiscal, external financial and debt fragilities in the global context, and
- design appropriate and innovative policy responses to the COVID-19 pandemic leading toward recoveries aligned with the achievement of the SDGs.

The web-based virtual knowledge platform MobilizingDevFinance.org gathers and disseminates the project's outputs, and makes them accessible to member countries, CSOs, scholars, researchers and the general public.

Mobilizing financial resources is crucial for sustainable development

The project is primarily linked with the following targets of SDG 17 (partnership for the goals):

- **17.1:** Strengthen domestic resource mobilization, including through international support to developing countries, to improve domestic capacity for tax and other revenue collection.
- **17.3:** Mobilize additional financial resources for developing countries from multiple sources
- **17.4:** Assist developing countries in attaining long-term debt sustainability through coordinated policies aimed at fostering debt financing, debt relief and debt restructuring, as appropriate, and address the external debt of highly indebted poor countries to reduce debt distress.

A successful response to and recovery from the COVID-19 pandemic is required for attaining economic growth with decent work and simultaneously reducing inequalities. For this reason, the project is also linked to SDG 8 (decent work and economic growth) and 10 (reduced inequalities). Moreover, since the achievement of SDG 8 increases fiscal revenues and governments' capacity to scale up social policies and infrastructure investment without jeopardizing debt sustainability, the project could have spillovers on SDGs 1 (no poverty), 2 (zero hunger), 3 (good health and well-being), 4 (quality education) and 5 (gender equality).



MobilizingDevFinance aims to enable developing countries to respond and recover better

The project produced research papers, policy tools and sessions to support policy makers. The latter were, due to COVID-19 pandemic, delivered on-line or in a hybrid format. Sessions mostly actively engage stakeholders through Groups of Experts Meetings. As table 1 shows, female participation was slightly higher in on-line than in hybrid events.

 The project organized 16 sessions on dissemination and engagement with stakeholders. More than 400 people registered for the events, of which 44% were female.

 The project provided 22 research papers with 9 female co-authors.

 **Table 1. Sessions within the MobilizingDevFinance project, by type, 2021-2022**

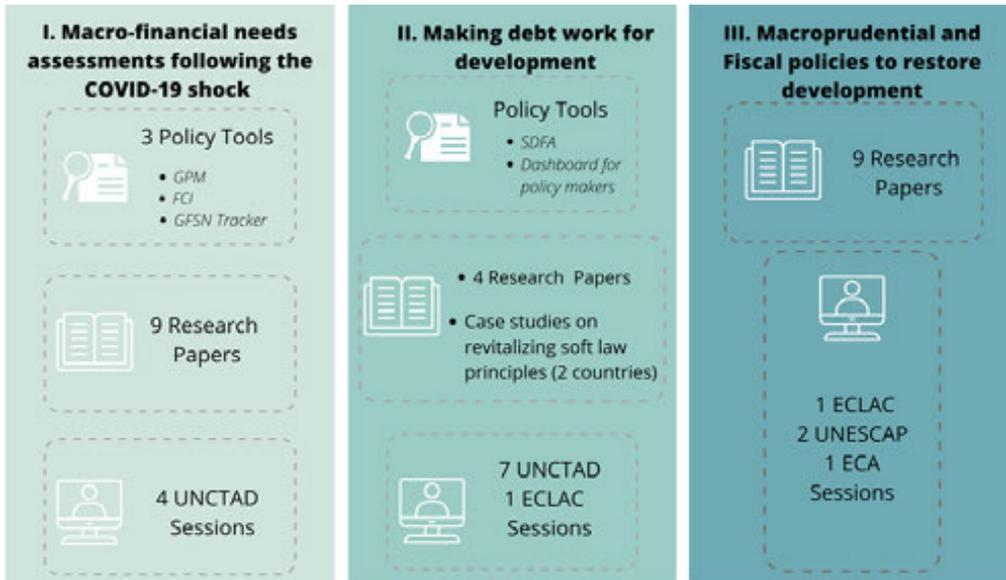
Year	Type of session	Type of meeting	Number of events	Number of participants	Share of female participants
2021	Group of experts	On-line	3	87	49%
2022	Group of experts	Hybrid	1	76	38%
	Group of experts	On-line	11*	338	45%
	Side event	On-line	1	51	49%

* Six sessions which will be organized in June and July 2022 are included.
Source: UNCTAD MobilizingDevFinance project.

The project is divided into three clusters:

- I. Macro-financial needs assessments following the COVID-19 disruptions, focusing on macro-financial dimension issues assessing both global macroeconomic developments and financial and economic conditions likely to affect developing countries.
- II. Making debt work for development focusing on external finance as well as external and public debt issues, including a SDFA Framework that will estimate development needs of selected developing countries to achieve the SDGs 1 to 4 without jeopardizing debt sustainability.
- III. Macroprudential and fiscal policies to restore development drawing on policy recommendations for recovery on macroeconomic aspects that have been strongly impacted by the COVID-19 crisis: management of capital flows, macroprudential measures, and fiscal policies.

 **Figure 1. Three clusters of the MobilizingDevFinance project**

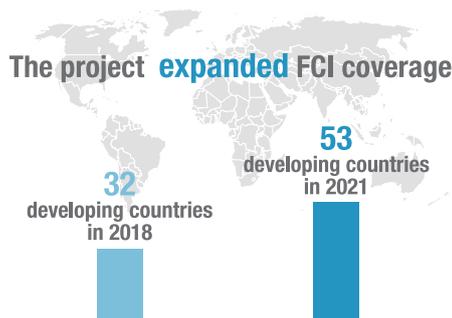


Source: UNCTAD MobilizingDevFinance project.

Clusters 1 and 2 provide four policy tools: the Financial Conditions Indicator, the Sustainable Development Finance Assessment, the Global Policy Model, and the Global Financial Safety Net Tracker.

1. Financial Conditions Indicator

 **Figure 2. FCI coverage within MobilizingDevFinance project**



Source: UNCTAD MobilizingDevFinance project.

The purpose of monitoring financial conditions in developing countries is to provide an early warning of financial stress before it causes adverse effects on the real economy. The new generation of the *UNCTAD FCI*, developed under this project, enables the assessment of the financial conditions for clusters of developing countries based on a single indicator that synthesizes a wide range of financial variables from various sources (for instance, real interest rates, stock and bond market indices, commodity and market prices, volatility indices, exchange rates, residential real price index, debt service ratios and capital flows). The new generation UNCTAD FCI is built on updated data with higher-frequency (monthly) and offers a useful diagnostic tool for countries in which data inadequacies preclude country-specific analysis.



2. Sustainable Development Finance Assessment

The UNCTAD SDFA framework identifies the development finance needs of makers in developing countries to achieve the most significant SDGs and provides insight on how to make this compatible with external financial sustainability and with external and public debt sustainability. Taking as point of departure UNCTAD's Gap-Analysis Tool, which estimated the impact of achieving the SDGs 1 to 4 on public debt sustainability in selected developing countries, this framework goes beyond standard Debt Sustainability Analysis by focusing on the development finance requirements for sustainable development and considering all sources of external financing.

In-depth SDFA analysis conducted for Pakistan and Sri Lanka



“ At a time of rapid change, I encourage societies to discuss what are the most essential and valued public goods and the best means of ensuring their delivery, bearing in mind the roles of both the public and private sectors and building on the Sustainable Development Goals. I would also urge investment in public systems and ensuring quality public servants, as the main point of contact between the State and people. The international system needs to better support countries that lack the capacity and funding to make such investments.

— United Nations Secretary General, 2021 ”

The SDFA framework enhances the capability of developing countries to design debt strategies to overcome external and public overhangs and to attain the SDGs as quickly as possible. In the scope of the project, in-depth country analysis was conducted for Pakistan and Sri Lanka.

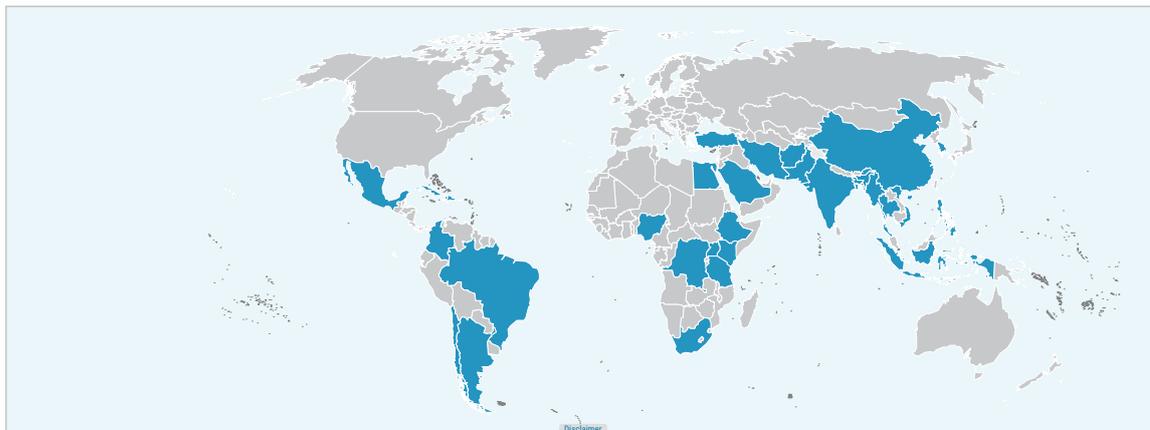
3. Global Policy Model

Global macroeconomic developments affect developing countries in their options for effective domestic policy design. The UNCTAD Global Policy Model provides a coherent and up-to-date global macroeconomic model for an evolving analysis of the world economic situation in the light of the COVID-19 pandemic, and, in particular, of its impact on developing countries. The global crisis triggered by the COVID-19 shock is placed into the historical context of weak and fragile recoveries since the global financial crisis and, as a consequence, of climate change challenges. The Global Policy Model is expanded to include the macroeconomic and financial conditions of 40 countries, of which 30 are developing countries.

Global Policy Model includes 40 countries, 30 of which are developing



Map 1. Global Policy Model of MobilizingDevFinance project



Source: UNCTAD MobilizingDevFinance project

4. The Global Financial Safety Net Tracker

The GFSN tracker (gfsntracker.com), built in collaboration with the Boston University and the Institute for Latin American Studies at the Free University of Berlin, is an innovative tool that provides comprehensive information on short-term external liquidity provision at the global, regional and the bilateral level, such as IMF lending lines, RFA and central bank currency swaps for all UN member countries. It provides regularly updated information on both potential lending capacity and actual utilization of liquidity sources, which together make up the GFSN.

Figure 3. GFSN tracker



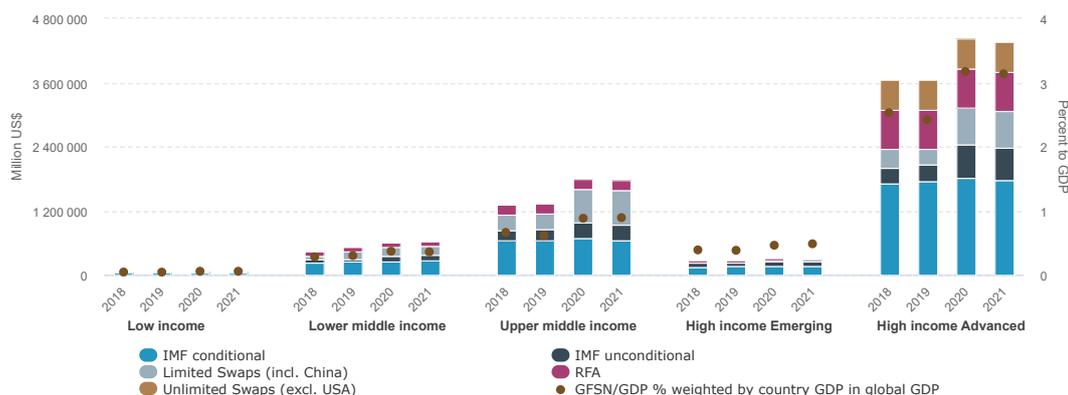
Source: UNCTAD MobilizingDevFinance project.

The GFSN tracker reveals that the current GFSN does not allow support for all income country groups to adequately respond to a global liquidity crisis, as caused by the COVID-19 pandemic. As figure 4 shows, the poorer nations are systematically excluded from the most voluminous crisis finance elements, such as new regional funds or central bank currency swaps. This jeopardizes their recovery efforts. Moreover, adequate access to the GFSN depends on the development categorization and economic size of countries. The data shows that HIDs (mostly SIDS) have low access to the GFSN because they do not have access to swap agreements as they are not systematically considered by countries that offer the swaps.¹

GFSN Tracker shows poorer nations are systematically excluded from crisis finance elements

“ Uneven resilience. Uneven capacities to deal with crisis. This is the biggest lesson this pandemic has given us. The fact that inequality breeds fragility. That the higher the inequality, the greater the impact, and the slower and weaker the recovery. — (UNCTAD, 2022) ”

Figure 4. GFSN liquidity provision of the GFSN by income level, 2018–2021
(left scale: million US\$; right scale: per cent to GDP; (Weighted GDP averages per country group))



Source: Muehlich et al. (2022).

Notes

1. For further detail, see Muehlich et al. (2022).

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UNCTAD leads global efforts to measure illicit financial flows jointly with UNODC

UNCTAD supports member States to strengthen their statistical capacity to define, measure and disseminate statistics on IFFs as a custodian of SDG indicator 16.4.1 on IFFs with UNODC. This work contributes to SDG 16 (peace, justice and strong institutions) and its target 16.4 “by 2030, significantly reduce illicit financial and arms flows, strengthen the recovery and return of stolen assets and combat all forms of organized crime”. The global role was assigned to UNCTAD and UNODC by the General Assembly (United Nations, 2017), as part of the approval of the SDG indicator framework in 2017 (UNCTAD, 2021d). UNCTAD’s mandate is to develop statistical concepts and methodologies for global use in reporting on SDG 16.4.1 and build countries’ capacity to monitor trade and tax-related IFFs, while UNODC focuses on crime-related IFFs. This chapter mainly focuses on UNCTAD’s work with member States to measure tax and trade-related IFFs. This work supports countries in developing their data infrastructure for the monitoring of progress towards the 2030 Agenda and towards meeting the commitments of the Addis Ababa Action Agenda (United Nations, 2015).

In addition to target 16.4 these activities support target 16.5 “substantially reduce corruption and bribery in all their forms”. They also contribute to SDG 17 (partnerships for the SDGs) and its target 17.1 “strengthen domestic resource mobilization, including through international support to developing countries, to improve domestic capacity for tax and other revenue collection”.



Concepts and methods to measure illicit financial flows developed in global collaboration

Since UNCTAD and UNODC were assigned indicator custodians in July 2017, they have engaged in close collaboration with partners to advance work on SDG indicator 16.4.1, achieving the following milestones:

- In 2017-2018, jointly held wide expert consultations on the SDG indicator and the scope of IFFs.
- In 2018-2020, UNODC carried out early pilots on measurement of crime related IFFs in four countries of Latin America, namely, Mexico, Peru, Colombia and Ecuador (UNODC, 2021).
- In January 2019, UNCTAD and UNODC set up a global Task Force on statistical measurement of IFFs.
- In October 2019, member States in the IAEG-SDGs approved the methodology proposal by UNCTAD and UNODC and reclassified SDG indicator 16.4.1 as Tier II from Tier III.
- In October 2020, UNCTAD and UNODC released a Conceptual Framework for the Statistical Measurement of Illicit Financial Flows (UNCTAD and UNODC, 2020), developed in consultation with the Task Force.
- In 2020 – 2023, UNCTAD and UNODC engaged with ESCAP to build the capacity of Asian countries to measure IFFs¹ (see map 1).
- In 2021 – 2022, UNCTAD collaborated with the Government of Egypt to measure IFFs and develop methods to estimate the SDG financing gap².
- In May 2021, UNCTAD released the first draft of Methodological Guidelines for the Measurement of Tax and Commercial IFFs for pilot testing (UNCTAD, 2021a).
- In June 2021 – June 2022, UNCTAD and UNECA supported 11 countries to pilot test the measurement of IFFs in Africa³ (see map 1).
- In March 2022, Member States and international organizations endorsed the Conceptual Framework for Statistical Measurement of Illicit Financial Flows at the 53rd session United Nations Statistical Commission (UNSD, 2022).
- In 2023 - 2026, UNCTAD and UNODC will provide methodological and statistical support as well as guidance for capacity development as part of a global project to track and curb IFFs, implemented by UNECA jointly with other UN Regional Commissions.

Between 2017 and 2022, UNCTAD and UNODC held 19 meetings to develop methodologies to measure IFFs. Of these, four were expert consultations on the scope and measurement of IFFs (see table 1). Additionally, from January 2019 to June 2022, the Task Force on statistical measurement of IFFs⁴ has met 15 times, once in person, and continues to meet several times per year to refine methodologies. The above-mentioned Conceptual Framework and the Methodological Guidelines were developed in consultation with the Task Force. In addition to events listed in table 1, UNCTAD and UNODC contributed to several meetings of stakeholders to share information on common standards and methods to measure IFFs (e.g., World Statistics Congress by the International Statistics Institute and the Pan African Conference on IFFs and Taxation).

Table 1. UNCTAD-UNODC expert consultations and meetings of the Task Force on the statistical measurement of IFFs

Type of meeting	Number of meetings	Total number of participants	Average number of participants per meeting	Total share of women
Expert consultations	4	185	46	37%
Task force meeting	15	340	22	36%
Total	19	525	27	37%

Source: UNCTAD, MPED and ESCAP.

UNCTAD works with twelve pioneering countries in Africa and two in Asia

In 2021, UNCTAD, in collaboration with partners, conducted two regional and one national capacity development project aimed at enhancing national statistical capacities to measure IFFs and support evidence-based policy formulation. These projects included:

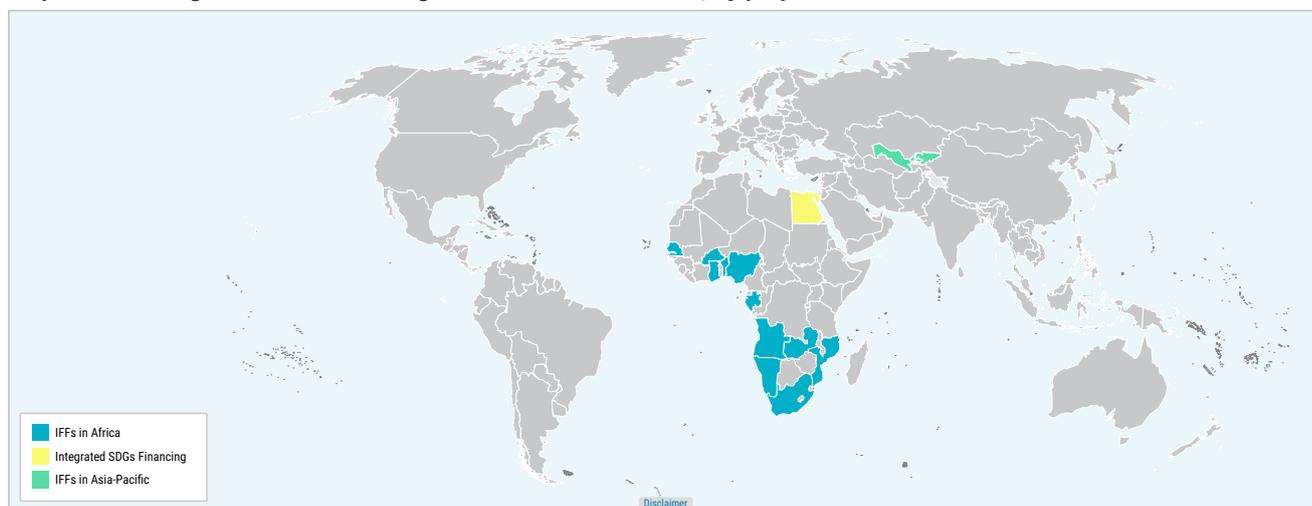
- The United Nations Development Account project on **Defining, estimating and disseminating statistics on illicit financial flows in Africa**, with eleven countries⁹ and co-led by UNECA;
- The United Nations Joint Fund Support on **Integrated SDGs Financing** with Egypt and,
- The United Nations development account project on **Statistics and data for measuring illicit financial flows in the Asia-Pacific region** with two countries⁹ measuring tax and commercial IFFs and four countries crime-related IFFs. This project is implemented with ESCAP and UNODC.

Twelve pioneering countries in Africa and two in Asia are measuring tax and commercial IFFs



The two regional projects aim at sharing knowledge on IFF concepts, methods, and policy actions; the Egypt project also aims to identify financing opportunities, through better availability and quality of data, in particular on IFFs. Due to the COVID-19 pandemic, many virtual training events were held instead of in-person events. UNCTAD made [video materials](#) available to enable learning by all experts and countries interested in measuring IFFs and reporting on SDG indicator 16.4.1 (UNCTAD, 2022).

Map 1. Pioneering countries measuring tax and commercial IFFs, by project



Note: Situation reflected on the map as in May 2022.

UNCTAD Guidelines offer a suite of six statistical methods for countries

The guidelines (UNCTAD, 2021a) provide a set of six methods for pilot testing the measurement of three main types of tax and commercial IFFs:

1. Trade misinvoicing by entities

- Method #1 – Partner Country Method +
- Method #2 – Price Filter Method +

2. Aggressive tax avoidance or profit shifting by MNEs

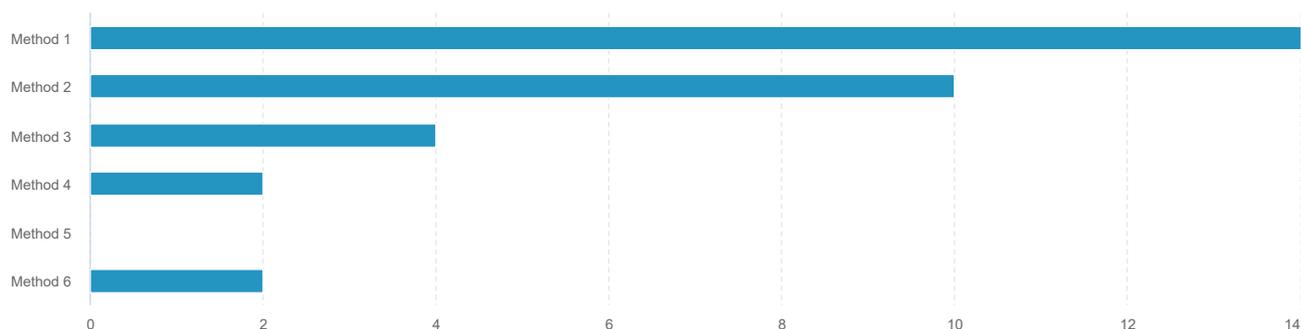
- Method #3 – Global distribution of MNEs' profits and corporate taxes
- Method #4 – MNE vs comparable non-MNE profit shifting

3. Transfer of wealth to evade taxes by individuals

- Method #5 – Flows of undeclared offshore assets indicator
- Method #6 – Flows of offshore financial wealth by country

UNCTAD invited pioneering countries to test one or two methods to measure IFFs. All 14 pioneering countries tested Method #1 – ‘Partner Country Method +’ and 10 countries tested Method #2 – ‘Price Filter Method +’ to measure trade misinvoicing (see figure 1). The selection of methods is based on data available for national institutions. Four countries tested Method #3 or two countries Method #4 to measure aggressive tax avoidance by MNEs. Method #6 on offshore financial wealth was tested by two countries. Most countries are interested to pilot test other methods in their follow up work. The first findings show that the methods on tax evasion by individuals are the most challenging methods as they require better availability of granular data. All participating countries prepared national action plans to guide further work and donor support; and the feedback will help UNCTAD refine the methodological guidelines for global use.

 **Figure 1. Methods tested by countries to measure tax and commercial IFFs**



Source: UNCTAD, MPED and ESCAP.

Almost 800 experts trained in UNCTAD’s training to measure tax and trade-related IFFs

UNCTAD has organized 33 workshops to enhance national capacity to measure IFFs within three projects with the partner organizations. In total, 1561 participants attended these capacity-enhancement activities. These include three regional workshops (UNCTAD, 2021b), eleven national kick-off events and 18 national training workshops (UNCTAD, 2021c) as well as one six-day interregional methodological training workshop (see training [videos](#)) (UNCTAD, 2021e) for Africa and Asia (see table 2).

781 experts trained in UNCTAD's workshops to measure tax and commercial IFFs



Between September 2021 and May 2022, UNCTAD held 30 national workshops in African and Asian project countries. The national training events took place mostly in-person, the COVID-19 pandemic permitting. Combining all methodological trainings and excluding any potential double-counting of follow-up events, 781 different individuals were trained, of whom approximately one quarter female.

 **Table 2. Training workshops on measuring tax and commercial IFFs, by type**

Type of workshop	Number of workshops	Total number of participants	Average number of participants per workshop	Total share of women
Regional workshop	3	478	159	16%
National kick-off workshop	11	302	27	32%
National training workshop	18	545	30	21%
Interregional training workshop	1	236	236	35%
Total	33	1 561	47	24%

Source: UNCTAD, MPED and ESCAP

Notes: The six-day online interregional training saw an overall participation of 1185 participants, from 146 to 236 participants per day. To avoid double counting between the days, a conservative estimate of the maximum value for one day has been used as a total number of participants while it is likely that some people participated only on some days making the real total number larger. The share of women can be calculated for registered participants only, which amounts to 35 per cent on average per day.

The feedback from participants of the inter-regional training events revealed that 72 per cent considered knowledge gained in the workshop useful for their work and more than 90 per cent found that the resource persons demonstrated mastery of their respective subjects. These findings confirmed the

high level of professionalism in the delivery of the workshop by UNCTAD and involved experts. Repeated requests for national and country-specific training have been voiced, indicating the need for UNCTAD's ongoing support to member states.

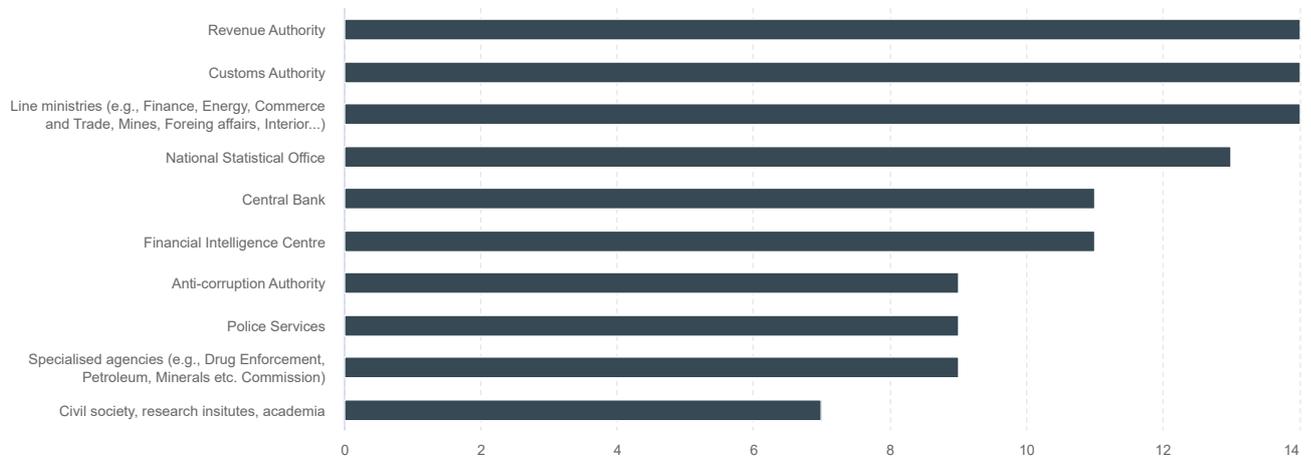
We need country specific training once the countries have chosen their methods.
 — Comment by a participant in the Interregional training workshop on statistical measurement of tax and commercial IFF,
 December 2021

National institutions track illicit finance together

Each pilot country has formed a Technical Working Group consisting of the relevant stakeholders either from the perspective of data, technical expertise or knowledge to address IFFs. These Inter-Agency Groups often consist of the national statistical office, central bank, revenue and customs offices, tax authorities, relevant ministries, financial intelligence units etc. The composition depends on the national institutional set-up. IFFs leave traces in many administrative and statistical records. The data scattered across various institutions need to be pooled together to estimate IFFs. To ensure provision of objective and neutral information for SDG indicator 16.4.1 on IFFs, reporting on SDG indicators is coordinated by the national statistical office of each country in line with the General Assembly resolution A/RES/71/313 and the Fundamental Principles of Official Statistics (United Nations, 2014). The coordination role of the national statistical office enables national institutions to come together and collaborate in a coordinated manner to compile comprehensive, reliable and high-quality statistics on IFFs. Figure 2 reflects the institutions involved in the IFF measurement pilots.



Figure 2. The number of institutions involved in measuring tax and commercial IFFs in countries



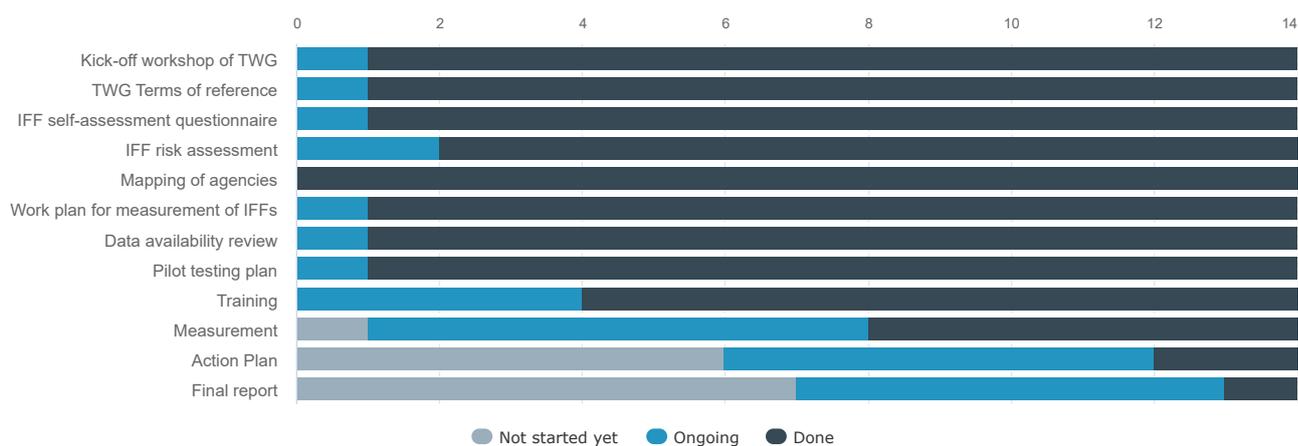
Source: UNCTAD, MPED and ESCAP.

The pilots have showed us that much hinges on concerted action – collaboration across borders and the ability to establish a whole of government approach. IFFs cannot be curbed in silos, national authorities – central banks, customs, tax, financial intelligence, statistical offices and ministries – must pool their data, expertise and political powers.
 — Rebeca Grynspan, SG of UNCTAD, The fifty-fourth session of the Conference of African Ministers of Finance, Planning and Economic Development, Senegal, May 2022

Six countries have calculated first estimates of tax and commercial IFFs

Countries are moving at different pace in the implementation of pilot studies, with eleven countries in Africa mainly finalising their work in June 2022, whereas countries in the other two projects planning to conclude their activities in December 2022. In June 2022, six countries had already finalised the application of selected methods to measure IFFs with seven more still compiling their estimates. Two countries had already finalised their national action plans for regular measurement of IFFs in the future, while six were in the process of drafting those plans (see figure 3). The action plans will inform and engage the national authorities in tracking IFFs, and inform international organizations and donors of support needed.

 **Figure 3. Status of activities to measure tax and commercial IFFs in countries as of June 2022**
(Number of countries)



Source: UNCTAD, MPED and ESCAP.

The lessons learned and early findings of pilot studies will be shared at the closing event of the project in Africa in June 2022. The event will include discussions on the process, the challenges and successes, interagency collaboration, the compilation and use of IFF estimates, and how these will enhance national policy efforts to curb IFFs. The countries will also provide feedback into refining methodological guidance for the measurement of tax and commercial IFFs globally.

Collaboration on illicit financial flows with Egypt

The previous statistics also reflect progress achieved by Egypt in a joint INFF project, where UNCTAD is actively engaged in supporting measurement of IFFs in Egypt. INFF is a UN joint programme in partnership with UNDP, UNICEF, UN Women and ILO, and coordinated by the MPED in Egypt to develop capacities and put in place systems to track, map and assess financing flows needed to achieve the SDGs. This project also aims at identifying financing opportunities, through better evidence, in particular on IFFs. Egypt is measuring IFFs in line with the UNCTAD Methodological Guidelines and UNODC's assistance on measuring drug trafficking and smuggling of migrants. As a result, in 2022, Egypt became the first pioneering country to measure IFFs in both realms towards reporting on SDG indicator 16.4.1 in the future. The method for costing achievement of SDGs, developed with Egypt, is also likely to be of interest to a number of other countries.

Kyrgyzstan and Uzbekistan to measure tax and commercial IFFs among countries in Asia

The previous statistics also highlight work by Kyrgyzstan and Uzbekistan to measure tax and commercial IFFs within the project in Asia-Pacific with the support by ESCAP, UNCTAD and UNODC. Both countries have opted to primarily apply Method#1 and Method#2, and also address the issue of aggressive tax avoidance through Method #4, as well as estimation of offshore financial wealth through Method#6. In addition, alternative methods for measuring particular trade-related IFFs and illicit remittances are considered and will be shared with other pioneering countries. Preliminary results are expected in summer 2022 and final reports and action plans in the autumn. In-person meetings to discuss the findings, the COVID-19 pandemic permitting, are planned for autumn 2022.

Notes

1. More about this project on IFFs in Asia can be found at its website here: <https://unctad.org/project/statistics-and-data-measuring-illicit-financial-flows-asia-pacific-region>.
2. More about the project on measuring IFFs in Egypt can be found at the project's website here: <https://unctad.org/project/united-nations-joint-fund-support-egypt-integrated-sdgs-financing>.
3. Project on IFFs in Africa is described here: <https://stats.unctad.org/iffs>.
4. The Task Force is composed of statistical experts from Brazil, Finland, Ireland, Italy, Peru, South Africa and the United Kingdom, representing national statistical offices, central banks, customs or tax authorities. The Task Force also includes experts from international organisations with recognised expertise in this field. ECLAC, ESCAP, Eurostat, IMF, OECD, UNECA, UNSD, UNCTAD and UNODC are represented.
5. Angola, Benin, Burkina Faso, Gabon, Ghana, Mozambique, Namibia, Nigeria, Senegal, South Africa, Zambia. See map 1.
6. Kyrgyzstan and Uzbekistan. See map 1.

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IN FOCUS: INCLUSIVE GROWTH

Stark contrasts in inclusive growth – progress towards equal opportunities needed everywhere

Stark contrasts in inclusive growth – progress towards equal opportunities needed everywhere

"We used to think of progress as if economy, society and environment were separate spheres and that mindset led to the sustainability and exclusion crisis which we are still in now. In reality, they overlap almost completely, and our mindset is changing. We must improve people's lives while at the same time we protect the environment. That's why we have 17 goals with 169 targets." said Ola Rosling when presenting the progress across all the SDGs for world leaders at the first UN SDG Moment event held in September 2020 (United Nations, 2020). The SDG Moment takes place every September as part of the UN General Assembly, to highlight successes and identify where more action is needed to achieve the Agenda 2030.

One of the challenges facing the achievement of the Agenda 2030 is sustainable economic progress. To this end, UNCTAD has developed an inclusive growth index (IGI) to contribute to the goals equal and inclusive prosperity for all. This chapter presents the index which combines aspects of living conditions, inequalities and environment with the economy. The new UNCTAD IGI builds on earlier work by UNCTAD and EEC inclusive growth (UNCTAD and EEC, 2019), first published in 2019, and aims to inform analyses and discussions on the inclusiveness of economies, particularly when taking into account social and gender inequalities. Moreover, as inclusive economy must also be sustainable to meet the needs of future generations, by preserving natural resources, the index includes a number of environmental indicators.

What is inclusive growth? Concept and background

Rising inequality and its impact on economies and societies have raised concerns among politicians, economists and the global community. Economic performance and in particular well-being should no longer be assessed by economic growth only; equality and environmental sustainability should also be considered. Many emphasize that existing levels of inequality are not only morally unacceptable, but also economically and politically damaging and corrosive (Piketty, 2014; Stiglitz, 2013).

Economic growth is still considered the most powerful instrument for reducing poverty and improving the quality of life (Bourguignon, 2003). Research suggests that growth in average income explains 70 per cent of the variation in poverty reduction in the short run, and as much as 97 per cent in the longer term. Any remaining poverty reduction is accounted for by changes in the income distribution.

But similar rates of economic growth can have different effects on poverty, employment opportunities and human development depending on the country, the underlying conditions and governance. The extent to which economic growth reduces poverty depends on the degree of equal opportunities and freedom to participate in activities generating economic growth and to benefit from those. Thus, both the pace and pattern of growth matter for reducing poverty and inequality. The challenge for policy is how to combine growth promoting policies with measures that build and enhance equal opportunities to participate in the economy and benefit from it. This includes policies to make labour markets work better, reduce discrimination, support equal access to education and skills, and increase economic and financial inclusion in all parts of society in a sustainable manner that protects the planet.

Translating inclusive growth into a measurable concept is not an easy task, however. Information on whether changes are happening and whether those changes are moving towards inclusive growth cannot be easily captured by one indicator. The challenge is that inclusive growth is a multifaceted phenomenon, the main characteristics of which are not easily presented in a statistical form.

In 2012, the United Nations Secretary-General Ban Ki-Moon, speaking at a High-Level meeting on 'Happiness and Well-being: Defining a New Economic Paradigm', noted the importance of establishing 'a Sustainable Development Index, or a set of indicators to measure progress towards sustainable development' (United Nations, 2012). There are initiatives to measure the inclusiveness and sustainability of wealth by taking into account human, social, produced and natural assets. For instance, the United Nations University's International Human Dimensions Programme on Global Environmental Change in collaboration with UNEP has developed an Inclusive Wealth Index (UNEP, 2021). The World Bank (2021) Comprehensive Wealth Index considers produced, human, and renewable and nonrenewable natural capital, as well as net foreign assets. There is a proliferation of other summaries of inclusiveness, well-being and sustainability. These summaries propose either a composite index or a dashboard approach and have different perspectives, data sources and approaches. This reflects the complexity of measuring the world and the issues that now are included in the 'progress' umbrella, such as environmental sustainability; economic stability and sustainability; social equality and health, life satisfaction, and general well-being.

Inclusive growth in the 2030 Agenda

The 2030 Agenda emphasizes the development of productive capacity as the basis for achieving inclusive and sustainable development. As part of that broad shift in emphasis towards economic, equality and environmental issues, the notion of inclusive growth has received a prominent place in the 2030 Agenda, reflected by SDG 8 in particular – *'promoting sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all'* and Target 17.19 – *'by 2030, build on existing initiatives to develop measurements of progress on sustainable development that complement GDP, and support statistical capacity-building in developing countries'*.

While the global SDG indicator framework does not directly measure inclusive growth, it includes a number of elements relevant to the concept, including related indicators of economic growth and environmental sustainability which is important from a temporal equality perspective. SDG 8 addresses full employment and decent work; SDG 16 aims to build just and peaceful societies; SDG 10 addresses reducing inequalities by closing socio-economic gaps within and across nations, generations and households; SDG 5 aims to reduce gaps between men and women; SDG 1 and SDG 2 aspire to build a more caring community that protects vulnerable population groups and provides for their most basic needs. Thus, linkages between SDG 8 and other SDGs are several and taken together are consistent with the concept of inclusive growth.

Beyond the 2030 Agenda, there are several dashboards, indicators or analytical approaches that set out to measure inclusive growth or elements of inclusive growth. For instance, increasing economic inclusion is set as one of the goals of the ADB Strategy 2020 (ADB, 2008). In its framework for inclusive growth, the ADB (2014) defines inclusive growth as economic growth with equality of opportunity. Their indicator framework proposes a set of 35 indicators centered on poverty, social inclusion, social safety and governance. Achieving inclusive growth is one of the three priorities of the European Commission (2010) strategy called "Europe 2020". In this approach, inclusive growth is defined as support for the population through the provision of high employment rates, investment in acquisition of skills, fighting poverty and modernising the labour market.

The definition of inclusive growth must, therefore, go beyond equal participation and consider how the benefits are shared equally. In this study, we define inclusive growth by building on the 1948 Universal Declaration of Human Rights and in line with the overarching principle of the 2030 Agenda to leave no-one behind. Thus, inclusive growth is defined as equal and non-discriminatory opportunities, for everyone, to both participate in the economy and to benefit from economic growth with consideration of environmental sustainability and emphasis on gender equality.

UNCTAD IGI considers economy, living conditions, equality and environment

The first iteration of IGI consisted of three pillars, namely economy, living conditions and equality (UNCTAD and EEC, 2019) and was composed of 21 indicators, including one environmental indicator (CO₂ emissions under pillar 2). This new, expanded IGI includes more equality metrics addressing gender inequality more broadly (see gender section), and includes a new separate pillar dedicated to environmental issues (see environment section). These were highlighted as potential development areas of the original index, and can now be addressed also due to progress with data availability for countries. The extended IGI is comprised of four pillars and 27 indicators (see Table 1).



Table 1. UNCTAD IGI dimensions

Pillar 1. Economy	Pillar 2. Living condition	Pillar 3. Equality	Pillar 4. Environment
<ul style="list-style-type: none"> GDP National income Power consumption Employment Trade 	<ul style="list-style-type: none"> Social and health conditions Logistics and finance 	<ul style="list-style-type: none"> Labour participation Income inequality School enrolment Political participation Gender socio-reproduction 	<ul style="list-style-type: none"> Natural capital protection (water, land, gas emissions) Energy intensity

Note: Each of the pillars is composed of a set of correlated indicators. The indicators are presented in box 1.

Taking relevance and general statistical quality into account, a review of data availability was conducted of all the major global statistical databases. As a result, the 27 indicators were selected as being the most relevant to inclusive growth from this angle and offered the best availability of robust data across countries and time (see Box 1).

Developed countries surprisingly different in inclusive growth

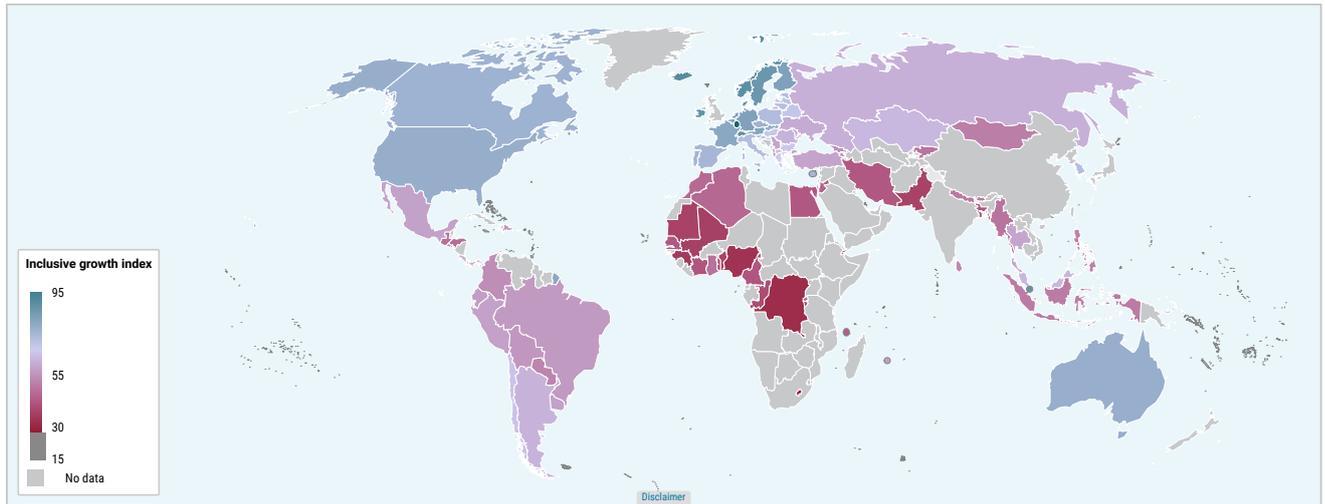
The new composite index of inclusive growth can provide insights about country performance regarding gender equality, living conditions or environmental sustainability as compared to economic development.

In general, higher levels of inclusive growth are associated with more economically advanced countries. Luxembourg, Iceland and Norway are among the highest-ranked countries¹ based on the overall index score. The top-ranking 30 countries are all developed economies (see Map 1). Luxembourg (the highest) and Lesotho (the lowest) were not maintained across the other three pillars. Although, Luxembourg also ranked highest in pillar 4, environment as well. The country has been successful in promoting sustainable transport and was the first country in the world to completely abolish public transport

fares in February 2020 (Research Luxembourg, 2021). Free public transportation is intended to reduce private car traffic, which is a major driver of climate change including CO₂ emissions and pollution, and also to address income inequality.

The overall index shows that more inclusive growth is often not achieved until a certain level of economic growth and prosperity is reached. However, some developing countries score higher than many developed countries. Developing countries in Africa tend to show the lowest index scores, with an average of 35.

 **Map 1. Inclusive growth index, 2020**



Source: UNCTAD IGI

Developed countries appear to be the most heterogeneous group characterized by the largest gap in the overall index scores. For example Luxembourg was ranked highest for the economy pillar (100) whereas the republic of Moldova was ranked lowest (11.6). Gaps between developing economies can also be large, for example Singapore scored the highest, with 81.8, compared with only 2.8 in Sudan. Even more noticeable is the difference in living conditions between countries, with Singapore scoring 88.6 and Niger at 7.0. LDCs are the most homogeneous group, with differences in index scores not exceeding 16 points for pillar 1, economy. Both developing and developed country groups are heterogeneous in terms of living conditions, equality, and environment.

The world is highly unequal in living conditions

As noted by UNCTAD member States in the Bridgetown Covenant (UNCTAD, 2021), high levels of inequality are the main obstacle to sustainable economic growth and poverty reduction. Economic recovery requires evolving policies at all levels to address these issues. Prosperity gaps between and within countries have been widening for decades. Even Before the pandemic, nearly 700 million people were living in extreme poverty, and this vulnerability meant billions of people lacked access to modern technologies, including some now considered essential, such as the internet. Women around the world remain, on average, poorer and more vulnerable than men, regardless of their country of origin. Unfortunately, the remarkable expansion of global trade, investment and technology in recent decades has not benefited everyone.²

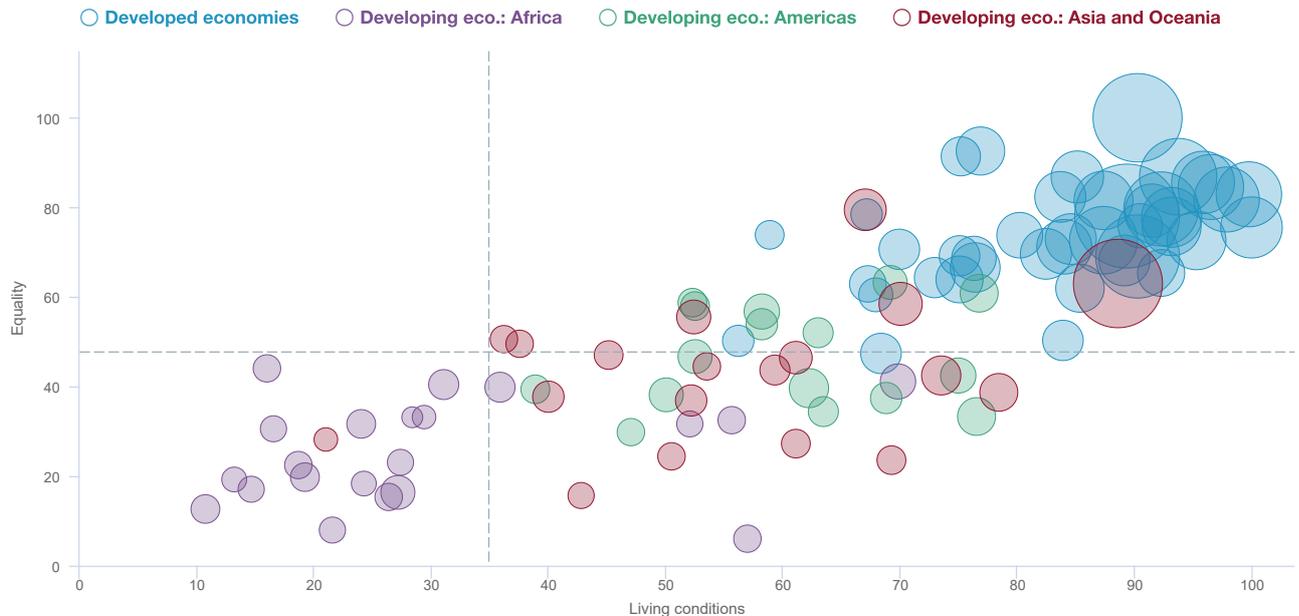
An analysis of the living conditions pillar reveals, indeed, large disparities between regions reflecting a lack of opportunities. The wide spread of countries in Figure 1 shows that living conditions in different parts of the world today are very unequal. All developed countries score above 60, except for Romania, Albania and Greece. In the rest of the world, countries like Turkey, Malaysia, Chile and Mauritius all score above 70, while others, such as Nigeria or Guinea reach a living condition score of 13 and 10, respectively. In developing Africa, Mauritius, South Africa, Egypt, Tunisia, Algeria, Morocco

and Libya scored between 50 and 70. All the remaining African countries scored below 38 for living conditions. The figure also shows the relation between living conditions and equality, with better living conditions often relating to better equality scores as well, and vice versa.

In Africa, Tunisia ranked fourth in living conditions, just after Egypt and before Algeria



Figure 1. Economic performance, living conditions and inequalities in developing countries, 2020



Source: UNCTAD IGI.

Note: The figure compares living conditions (pillar 2, x-axis) and equality (pillar 3, y-axis). The size of the bubbles refers to the score for economy (pillar 1).

Breaking down the analysis into indicator levels, the biggest challenge for Africa appears to be access to safe water. In 42 African countries half of the population has no access to clean and safe water. The challenges of inclusive growth cannot be met without infrastructure reforms, such as ensuring sustainable and safe water systems. For developing countries in the Americas, Asia and Oceania, the challenges lie in the areas of income and gender inequality. The availability of Internet connection and logistics performance vary greatly, for example Tajikistan, Afghanistan, Turkmenistan and Bhutan have an average of 1 in 100 inhabitants with a broadband internet connection. The top three developing countries on pillar equality are Kazakhstan, Argentina and Chile. Many African countries exhibit high gender inequality in terms of labour force participation with the ratio of female to male labour force participation below 0.5. At the same time, to reduce inequalities, all people need an equal opportunity to make a living, no matter who they are and where they are located, and most importantly, have their basic human rights met, including with access to safely managed drinking water.

The biggest inclusiveness challenge in Africa is access to clean and safe water

More than 50% of the population has no access

Developing countries differ greatly in environmental performance

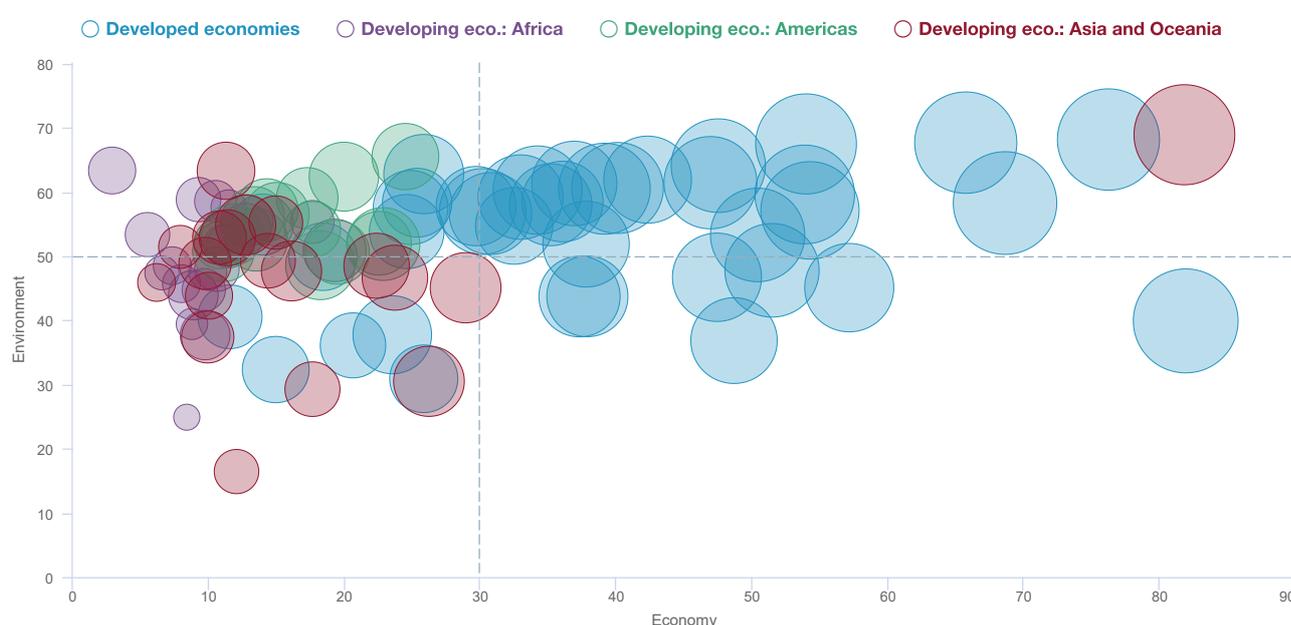
At least since the 1960s, ecological economists and researchers, such as Malte Faber, Nicholas Georgescu-Roegen, Kenneth Boulding, and Herman Daly, have developed economics that take into account limited natural resources and consider sustainable development and issues of intergenerational equity. More recent studies have raised discussions over the potential exhaustion of economic growth in a system where natural resources are limited and keep being depleted. These discussions (Heinberg, 2011; Gordon, 2016) draw attention to the damaging effects of economic growth to natural life and resources, and the growing waste and pollution problems, not to mention climate change. This discussion is increasingly fueled by growing concerns over social inequality, and the intergenerational sustainability of induced lifestyles.

Countries have responded to these challenges by proposing an ambitious vision for the future in the form of the 2030 Agenda for Sustainable Development (United Nations, 2015). The United Nations Member States pledged to ensure more sustainable and inclusive economic growth, elimination of extreme poverty, reduction of inequalities, and environmental protection.

It is undeniable that we are currently facing some of the most complex and widespread environmental challenges in history. Rapid population growth, climate change, increasing urbanization, and unsustainable consumption have all led to increased stress on the environment and increased conflict over land, water, and energy resources. To effectively address these challenges, it is necessary to measure the interrelations of economy and the environment. However, it is a difficult and complex task, requiring consideration of environmental impact (e.g., environmental impact on biodiversity, human health, ecosystem function, economic production), the spatial and temporal dimensions of environmental degradation (e.g., severity of environmental diseases, occurrence of extreme weather events), and the variety of stakeholder perspectives (e.g., environment activists, corporate executives, farmers, indigenous community members).

According to the IGI concept, economic growth and socially inclusive co-production associated with greater economic opportunity will be unsustainable without efficient and sustainable use of natural resources (water, land, energy, etc.). The key is to create more economic value with fewer resources in order to not compromise people's future well-being. (ECN, 2013). In its environment pillar, the IGI considers energy intensity, carbon dioxide emissions, water productivity, and protected land area. These address only a subset of ecological challenges, selected based on a literature review and the availability of environmental indicators for a large number of countries. See Box 1 for more details about these indicators.

Figure 2. Economic performance and environment, 2020



Source: UNCTAD IGI.

Note: The figure compares economy (pillar 1, x-axis) and environment (pillar 4, y-axis). The size of the bubble refers to the IGI. Luxembourg is excluded.

The environment pillar differentiates developing countries more than economy. Bangladesh and Lesotho, for example, have almost the same score for economic performance (around 8), but around 50 and 25, respectively, for the environment pillar. On the contrary, for developed countries, differences within the economic pillar are greater than those within the environment pillar. On the same environmental score of 40, Iceland and the republic of Moldova scored around 82 and 12, respectively, on the economic pillar. The top 5 developed countries for the environment pillar are Luxembourg (100), Malta (71.4), United Kingdom (68.8), Ireland (68.2) and Switzerland (67.7). Maldives (70.5), Singapore (69.0) and Seychelles (68.6) are the top 3 countries in the developing region. This is largely due to their good performance in water productivity and energy intensity. Switzerland also shows good performance with relatively low CO₂ emissions per unit of GDP.

As mentioned above, this is not representative of all environmental aspects as only 4 indicators are included. Furthermore, these 4 metrics only capture 60 per cent of the total variance. This pillar will be subject to development as countries start producing more environmental statistics and indicators.

Developed countries generate twice as much waste per capita as developing countries

Solid waste management has been gaining importance, especially as the population continues to grow and cities expand. Many developed countries face problems with solid waste because of its high volume and the low rate of recycling. Developing countries tend to have more individual households who manage their own waste, which leads to less reliance on centralized systems. According to the data from World Bank (2018), the amount of solid waste generated per capita in developed countries is around two times that generated in developing countries. This difference is not just due to the higher population density of developing countries, but also due to the higher levels of consumption of developed countries. In developed countries, the main sources of solid waste are from consumption (43 per cent), waste from households (30 per cent), urban development (14 per cent), and industrial

production (12 per cent). In contrast, the main source of solid waste in developing countries is from agriculture (58 per cent), with the remainder coming from urban development (26 per cent), waste from households (12 per cent), and industrial production (4 per cent).

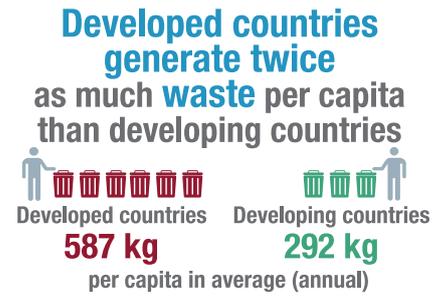
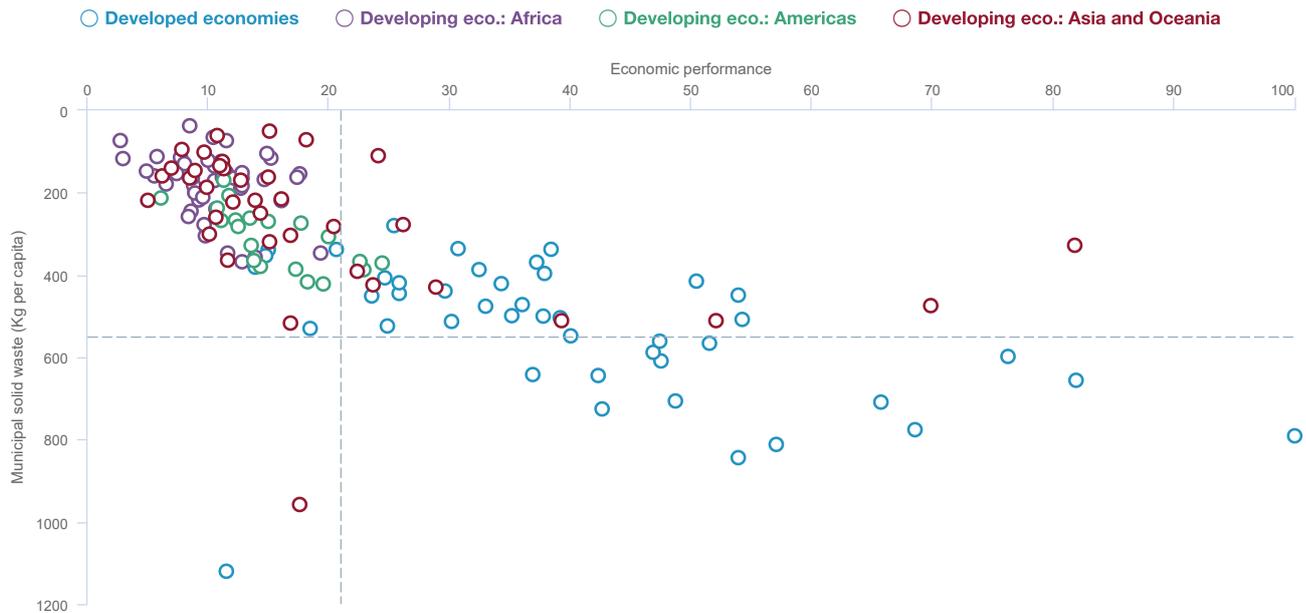


Figure 3. Economy pillar of inclusive growth and municipal solid waste

(Index: Min=0, Max=100; waste: municipal solid waste in kg per capita (inverted))

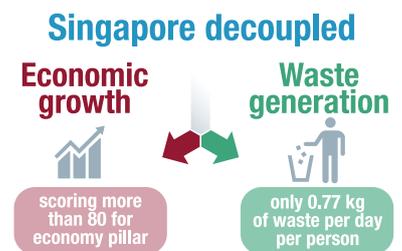


Source: UNCTAD IGI. Municipal solid waste data are from World Bank (2018). Missing data have been imputed using data from OECD (2021b) and UNSD (2022).

Note: The figure compares economy (pillar 1, x-axis) and municipal solid waste (y-axis). Municipal solid waste is the sum of residential, commercial and institutional waste. It excludes industrial, medical, hazardous, electronic, and construction and demolition waste. Definitions of waste categories and data availability varies across economies. The year for the reported amount of waste also varies from 1993 to 2019 with most data reported for 2011 or later. Per capita figures are calculated based on the population of the reported year. The y-axis is inverted so that a higher position indicates lower waste generation. For more details, please refer to World Bank (2018).

Figure 3 shows a positive correlation between economic development and the intensity of waste generation relative to population. Countries that score high on the economic pillar generate more waste per capita than others. These countries are almost all developed countries. Luxembourg has the highest score in the economic pillar, yet it generates almost 800 kg of waste per capita, annually (over 2 kg per person per day). Japan and the Republic of Korea have a better score for waste generation considering the high urbanization and population levels. The republic of Moldova, among some other eastern European economies, scores low in economic performance and generates high amounts of waste per capita Kaza et al. (2018). By contrast, countries of developing Africa generate the lowest amount of waste with an average of 0.54 kg per person per day. The same pattern is observed for the rest of the developing countries, including China with high economic performance compared to other developing countries but low waste generation (0.77 kg per person per day). However, there are few exceptions, Singapore has a relatively high economic performance with low waste generation (0.89 kg per person per day). Singapore set up a Zero Waste Masterplan aiming to increase the overall recycling rate to 70 per cent and reduce waste-to-landfill per capita per day by 30 per cent by 2030 (National Environment Agency, 2022).

Solid waste affects the quality of water, land and air and large amounts of domestic waste have many negative impacts on humans and ecosystems. Developing countries therefore face the unprecedented challenges of how to avert the low road unfortunately taken by developed countries, and marry economic growth with environmental sustainability. But the question is how?



Rather than following the same unsustainable path that associates higher economic growth with greater solid waste per capita, developing countries may find, with the support of the international community, new paths to move straight from the top left to the top right quadrant of Figure 3, representing higher economic growth with low waste generation.

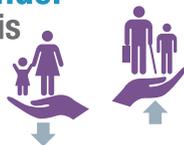
Decoupling economic growth from natural resource consumption, pollution and waste generation remains a thorny issue for which global actions and solutions are required and pressing. A sustainable future may require not only technological change but also changes in consumption and social practices (European Environment Agency, 2022).

Enhanced gender equality analysis of inclusive growth by considering care and social reproduction³

The new IGI puts more emphasis on gender equality than its predecessor by incorporating more gender equality indicators. It takes into consideration the key role of care, drawing on the framework defined by Braunstein, Bouhia and Seguino (2020).

Care can be defined as both a process and an output. As a process, it is primarily perceived as a work activity that involves close personal or emotional interaction with those being cared for (Folbre, 2006). As an output, it refers to all paid and unpaid care activities used as inputs in the production and in the maintenance of the labour force. Care activities, whatever form they may take, have considerably contributed to generating, exacerbating and perpetuating inequality between women and men. Everywhere, women are, or have been until very recent times, reported to spend exorbitantly more time on unpaid work and care than men, essentially due to deeply entrenched stereotypes according to which they are more 'nurturing' or biologically better endowed to do this work (Connelly and Kongar, 2017). As a result, forms of social determinism which give women greater responsibility for this work, have prevailed, with social penalties for failure to conform to these gender norms. Gendered norms and stereotypes about care work have been acknowledged as a key contributor to gender inequality in both the market and the home (Badgett and Folbre, 1999; Nelson and England, 2002).

The inequal gender division of care is detrimental to women but also economic development via adverse effects on social reproduction



Inequality stemming from the gender division of care within societies is detrimental as such to women, who have been carrying this 'invisible' burden at the expense of their personal, educational and professional growth, but it has also major adverse effects on economic development, especially through its impact on social reproduction. Social reproduction refers to the efforts it takes to produce, maintain and invest in the labour force, and is often expressed in terms of time and money. Braunstein, Bouhia and Seguino (2020) illustrate how social reproduction is organised—the extent to which reproduction takes place in the household, public or market sectors, and the gender distribution of the labour in each—and influences current aggregate demand and long-run productivity growth. Those advocating for greater female education and labour force participation

assume that women's care work is solely an impediment to their participation in paid labour. This ignores the labour as a resource that is produced. Care work that women disproportionately perform also has economy-wide benefits by raising human capacities and thus productivity. In the framework of inclusive or comprehensive wealth indices, care work would be seen as an investment in human capital, rather than a cost or a non-productive activity.

The IGI pillar 3 on equality includes conventional measures of gender parity in school and the labour market, through UNESCO's Gender Parity Index, ILO's rates for unemployment and labour force participation and the representation of women in national parliaments. The role of care was not directly captured in pillar 3 originally but two important aspects of it, namely public provisioning for care and reproductive infrastructure, were implicitly taken into account in the overall index, through the inclusion in pillar 2 (on living conditions) of several variables reflecting these dimensions. Infrastructure is an often-neglected aspect of the relationships between social reproduction, gender inequality and growth, but a key determinant and outcome of the gender system. It refers to goods like roads, electricity, sanitation and water that decrease the opportunity cost of market work, mostly by lowering the time intensity of care work by women, but also by lowering the price and increasing the availability of care commodities (Agénor and Agénor, 2009).

The first element added to the new IGI is men's relative contribution to social reproduction, which refers to the gender distribution of both the time and financial costs of social reproduction. The aim is to capture gender differentials in unpaid care time. Regardless of increasing availability of time use studies, there is not even nearly enough data to carry out a historical analysis. The female-to-male ratio of mean age at first marriage was selected from available proxies with the logic that the greater the gap, the greater the gender inequality embodied in intra-household gender relations, and therefore, the more unequal the distribution of unpaid care time. The female-to-male ratio of mean age at first marriage was shown to be highly correlated with the female-to-male ratio of hours spent on domestic work (Braunstein et al., 2020).

The gender wage gap is the second element enhancing the new index. It was proxied by the female-to-male ratio of the share of wage and salaried employment in total employment to capture the relative quality and productivity of employment. For developing countries in particular, where self-employment and contributing to family work is often an indicator of residual unemployment, using relative access to wage employment was deemed a reasonable proxy for gender-based wage inequality in the labour market (Braunstein et al., 2020).

The last element included is the extent and quality of the market care sector. As women's service sector work tends to be concentrated in the caring professions, women's services employment as a share of total employment (men plus women) was used as a proxy for the extent of the market care sector. This measure was discounted by the extent of income inequality in the economy (by raising it to the power of the inverse of the Palma ratio) on the argument that the more inequality, the lower the quality (and pay) of care sector work.

This new gender pillar therefore aims at measuring gender equity as the equal representation of males and females in key social activities such as education and labour participation with a view of ensuring equal opportunities and treatment at the individual level, but also capturing those countries

where gender equity is most likely to entail increases in human capacities and settle a genuine virtuous circle of gender equality, through an approach which level up women rather than a race to the bottom. Such virtuous circle of gender equality unlocks the full potential of economies to grow through a better quality and allocation of human capital, but the extent to which this effectively turns into sustainable economic development also depends on aggregate demand and macroeconomic orientation, as pointed by Braunstein, Bouhia and Seguino (Braunstein et al., 2020).

Gender equality unlocks the full potential for growth but whether this effectively turns into sustainable economic development also depends on demand and macroeconomic orientation



Regional disparities in gender inequality persist

Figure 4. Distribution of the IGI gender equality component, by region, 2020



Source: UNCTAD IGI

Figure 4 reveals contrasted situations with gender equality of inclusive growth across regions. As expected, developed economies tend to show higher scores and are located closest to each other. Nordic countries perform particularly well: all these countries are found at the very top of the distribution, along with some Eastern European economies like Slovakia, Slovenia and Belarus. In contrast, Hungary, Greece and Romania bring up the rear.

Developing Asia is the region with the widest gaps across countries. At the top, some of these countries do better than several developed countries, including a few Central Asian economies (like Azerbaijan and Kazakhstan) and high-income countries like Singapore and the United Arab Emirates. At the same time, a significant number of Asian countries is found at the bottom of the gender equality ranking, including Iran, Jordan and Bangladesh.



The bottom of the distribution is also populated with several African countries, including Egypt, Guinea and Chad. Africa is the continent with the lowest score on average on gender equality (34). However, it hides, like in Asia, stark disparities. Rwanda, Ethiopia and South Africa are the most gender egalitarian, with scores above the median for all countries.

Latin America and the Caribbean appears to be, on average, the most gender egalitarian developing region in the light of this index, with a score reaching 52. It is also more homogeneous. These countries tend to be located in the centre of the world distribution, with Chile, Argentina and Mexico at the top and Paraguay, Honduras and Uruguay at the bottom.

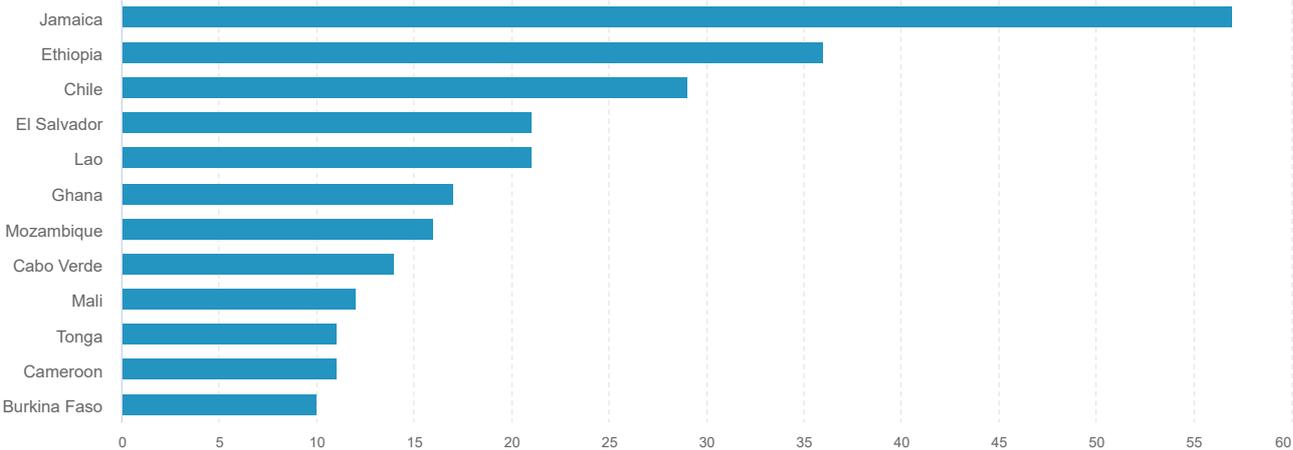
Table 3. Change in average rankings of the IGI gender equality component between 2009 and 2020

	Average of rank 2009	Average of rank 2020	Standard deviation of rank 2009	Standard deviation of rank 2020
Developed	24	22	16	16
Developing economies: Africa	80	79	20	18
Developing economies: Americas	55	56	19	18
Developing economies: Asia and Oceania	66	70	19	17

Source: UNCTAD IGI

The position of regions relative to each other has not changed much since 2009 (see Figure 4). Although some developing countries clearly improved their situation, the overall catching-up process of the South, observed in previous decades, did not seem to have occurred within these 10 years, pretty much in line with what was observed for other types of inequality. Developed economies have paradoxically reinforced their leading positions, especially with significant improvements in Eastern Europe. African countries have also slightly improved their rankings. Gaps across countries in the African continent have somewhat narrowed, mostly with countries at the bottom of the 2009 distribution catching up those at the top, such as Ethiopia, Ghana and Mozambique (see Figure 5). While developing Americas have maintained their overall position, Asian countries are those which have lost most ranks on average, given few remarkable upgrades combined with significant deterioration notably in Thailand and Kyrgyzstan. Overall, 12 developing countries show outstanding progression by climbing more than 10 ranks. Seven of these countries are located in sub-Saharan Africa.

Figure 5. Developing countries with highest relative improvement in gender equality between 2009 and 2020

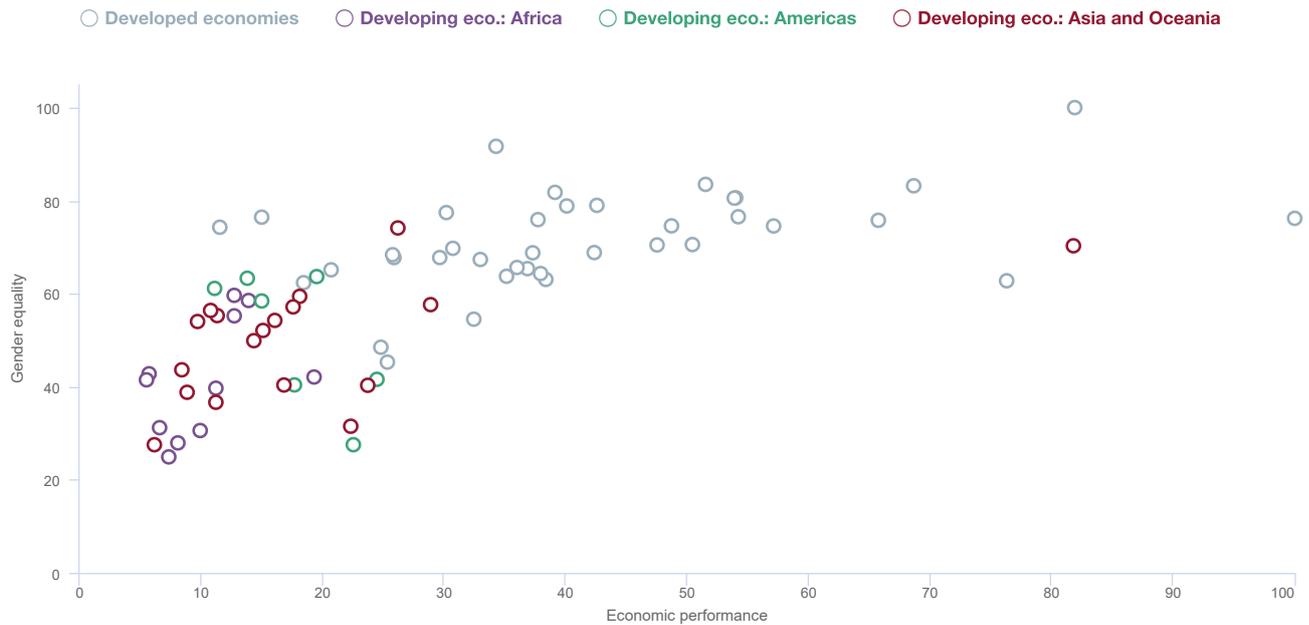


Source: UNCTAD IGI

Gender equality a challenge for low-income countries in particular

Figure 6 reveals a logarithmic pattern: the more economically developed a country, the more gender equality is observed, with marginally declining gains as economic development increases. However, this does not entail a strict causal relationship between gender equality and economic development. Countries showing higher economic development are not necessarily the best gender performers. This is consistent with gender equality, defined with a particular emphasis on care, being a necessary, albeit not sufficient, condition for long-term structural transformation.

Figure 6. Economic development and gender equality, 2020



Source: UNCTAD IGI
 Note: The figure compares economy (pillar 1, x-axis) and the IGI gender equality component (y-axis).

Countries that have achieved their structural transformation had to pass stages of development where minimum levels of equal contribution between males and females to social reproduction were required. However, in the shorter term, the extent to which gender equality will foster stable and sustained growth depends on demand and the macroeconomic structure, in particular whether growth is predominantly driven by either the wage or the profit share. In the former case, and if gender equality in care is sufficient enough to contain the adverse effect that greater participation of women may induce on human capacities, and thereby investment, higher wages for women are likely to be good for growth. Gender equality and growth reinforce one another.

The interplay between gender equality and economic structure is particularly challenging for low-income developing countries, as illustrated by the horn shape of the curve in Figure 6. These countries generally struggle to find the right mix to kickstart the virtuous circle where both gender equality and economic orientation contribute to sustainable growth in the same direction, ensuring progress in the SDGs. In this regard, social policies which increase investment in care, going hand in hand with macroeconomic policies targeting aggregated demand, can offer solutions.



The interplay between gender equality and economic structure is particularly challenging for LICs

Conclusion

The broad concept of inclusive growth envisages economic growth that simultaneously contributes to improving everyone’s quality of life equally. In practical terms however, it remains an open question as to what precisely that means. This has implications for how it should be measured and how it can be achieved.

For the purposes of IGI, inclusive growth was defined as a convergence in the quality of life for all population groups within countries, achieved not only through the governmental redistribution of economic performance outcomes, but also through the creation of favorable, non-discriminatory economic conditions, that allow each population group to achieve self-sufficiently quality of life comparable to other groups and contributing to the improved quality of life of the entire population and in a sustainable manner.

The IGI, accompanied by sub-indices and its pillars, can facilitate an understanding of trade-offs and produce rankings, which can be useful in understanding the impact of policy choices as countries need to prioritise elements of economic development, education, labour and political participation, depending on local circumstances. In this study, a dual approach is adopted whereby inclusive economic growth is examined, using a global composite indicator with rankings, combined with principal components or pillars, and assessing challenges and successes by reviewing results for individual subindicators.

As multiple factors affect the inclusiveness of economic growth, policymakers struggle to design effective measures. Statisticians too face challenges in trying to quantify inclusive growth with its complex interrelations with wellbeing and sustainability. Overall, the IGI shows the wide spread of countries’ performance in living conditions, equality and environmental sustainability, underlining the insufficiency of economic growth as a sole measure of progress

of nations. It calls for more comprehensive and balanced policies to advance wellbeing that is sustainable and equal, and strong enough to close persisting differences between countries and regions, and address pressing inequalities of opportunity and outcome.

Box 1: The UNCTAD IGI metrics, by pillar and SDG

Pillar	Column1	Indicator	SDGs
Pillar 1	1.1	GDP per capita PPP (constant 2011 international US dollars)	SDG 8.1.1
	1.2	Adjusted net national income per capita (constant 2010 USD)	
	1.3	Labour productivity, USD/person (GDP per person employed (constant 2011 PPP USD))	SDG 8.2.1
	1.4	Employment rate (ratio to labour force), 15+, total (%) (modeled ILO estimate)	SDG 8
	1.5	Electric power consumption, kWh/person	SDG 7
	1.6	Exports of goods and services (% of GDP)	SDG 17.11.1
Pillar 2	2.1	Logistics performance index: Overall (1=low to 5=high)	
	2.2	Fixed Internet broadband subscriptions per 100 people, units	SDG 17.6.1
	2.3	Under-five mortality rate (deaths per 1,000 live births)	SDG 3.2.1
	2.4	People using safely managed drinking water services (% of population)	SDG 6.1.1
	2.5	School enrollment, secondary (% gross)	SDG 4
	2.6	Coverage of essential health services	SDG 3.8.1
	2.7	Proportion of adults (15 years and older) with an account at a bank or other financial institution or with a mobile-money-service provider	SDG 8.10.2
Pillar 3	3.1	Income concentration ratio (Gini index), units	SDG 10
	3.2	Poverty headcount ratio at 5.50 USD a day (2011 PPP) (% of population)	SDG 1.1.1
	3.3	School enrollment, secondary (gross), gender parity index (GPI)	SDG 4
	3.4	Ratio of female to male employment rate (modeled ILO estimate)	SDG 8
	3.5	Ratio of youth to adult employment rate (modeled ILO estimate)	SDG 8
	3.6	Gender parity in the number of seats held by women and men in national parliaments	SDG 5.5.1
	3.7	Ratio of female to male labour force participation rate (%) (ILO modeled estimate)	SDG 8
	3.8	Ratio of female age of first marriage to male age of first marriage	
	3.9	Ratio of the share of wage and salaried workers in women's employment to men's employment	SDG 10
	3.10	Share of women's service employment to total employment, raised to the power of the inverse of the Palma ratio	
Pillar 4	4.1	CO2 emissions (kg per PPP USD of GDP)	SDG 9.4.1
	4.2	Energy intensity level of primary energy (MJ/\$2017 PPP GDP)	SDG 7.3.1
	4.3	Efficiency of water use (water productivity)	SDG 6.4.1
	4.4	Terrestrial protected areas (% of total land area)	SDG 15.1.2

Note: Most of the source indicators consist of indicators of the SDG indicator framework. The five indicators in orange are derived from indicators used in the SDG indicator framework. Data were collected from multiple sources, mainly the United Nations, World Bank (2022), ILO (ILO, 2022), IMF and WEF. More details are available in the original UNCTAD/EEC (2019) report and in a forthcoming research paper on Compiling an Inclusive Growth Index.

Notes

1. The overall IGI has been compiled for 96 countries for which all information needed for the 4 pillars were available. Thus, the ranking does not take into consideration the missing countries.
2. Conclusions of UNCTAD's fifteenth session (TD/541/Add.2, paras. 28 and 29).

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