DEVELOPMENT AND GLOBALIZATION
FACTS AND FIGURES

UNITED NATIONS
UNCTAD

DEVELOPMENT AND GLOBALIZATION
FACTS AND FIGURES

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'Sustainability' must now be viewed from a broader perspective that includes social and economic dimensions.

Foreword

Since the 1990's, 1 billion people have been lifted out of extreme poverty and the proportion of undernourished people in the developing regions has fallen by almost half. During the same period, the global under-five mortality rate has declined by more than half, dropping from 90 to 43 deaths per 1000 live births. Millions of young girls are in school now as gender disparity in primary, secondary and tertiary education has been eliminated in developing countries as a whole1. Despite the achievements of the Millennium Development Goals (MDGs), there remains more work to be done. We have seen how war, famine or natural disasters can undermine or undo years of progress almost overnight. For this reason, the Sustainable Development Goals (SDGs) renew our resolve to combat global poverty and ensure inclusive prosperity, but also strengthen our determination to tackle climate change and environmental degradation.

The 2030 Agenda for Sustainable Development sets out a very ambitious programme of work. In September 2015 the 17 goals and 169 targets of the SDGs were agreed. The challenge is now to measure these goals and targets with the most appropriate and comprehensive indicators available.

In March 2016, 230 indicators were adopted by the United Nations Statistical Commission and now await ratification. As these indicators have not yet been ratified, this first statistical report on the SDGs provides a tentative situation review, for the goals and targets that fall under UNCTAD's mandate. Although tentative, the report nevertheless puts down an early benchmark, providing a very useful early indicator of the gaps, which must be closed in order to achieve the SDGs.

Despite dramatic improvements in many aspects of development over the past two decades and over the lifespan of the MDGs, progress was uneven and several countries and regions remain vulnerable. By demonstrating that irrespective of the target, many of the same countries and regions are identified as struggling, this report highlights in a graphic and informative way, the interconnectedness of people, planet and prosperity. In doing so, the report reinforces a key message of the 2030 Agenda - that everything is interdependent and interconnected, and that we cannot look at one aspect of progress in isolation from all others, but rather we must look at things in the round and from a more holistic perspective. The determinants of development are invariably plural and inter-related, not mono causal.

The word 'sustainability' has most often been understood from a purely environmental perspective. By highlighting the interlinkages between different goals and targets, this report also illustrates how 'sustainability' must now be viewed from a broader perspective that includes social and economic dimensions. In doing so the report provides a timely reminder of some of the challenges facing economists and statisticians, not least, how to put a value on nature and ecosystems in a way that usefully allows trade-offs to be understood and helps integrate environmental and biodiversity issues to be mainstreamed into policy decisions. Equally, how to merge location and space with mainstream data and statistics, so that the interactions between economy, society, environment and location can be better understood, in such a way that confidentiality is not compromised but where the importance of geography is recognized in decision making.

As this is a statistics report, I feel I should say a few words about data in the context of sustainable development. The data demands arising from the SDGs are huge and cannot be realistically met by official data alone. Consequently a variety of data sources have been utilized to compile this report, leading to a key message from the report - there are insufficient data available at the moment to provide data to populate all 230 indicators. Thus, in order to provide benchmarks and measure subsequent progress, what I describe as 'complementary evidence' must be harnessed and utilized. This is in keeping with the philosophy of the Data Revolution report 'A World that Counts'. Naturally, using such a wide variety of sources can lead to legitimate concerns regarding data quality, but what has been presented here is plausible and provides, I think, an excellent example of how data sources can be integrated and blended to identify coherent messages. The report also clearly illustrates the links and interconnectedness of what at first reading may seem to be disparate or unconnected goals and targets. Furthermore, I would remind readers that no indicator perfectly reflects reality, each has limitations. We also see that some areas have an abundance of data and many competing indices. In other areas, there are no data at all and no indices. This SDG statistics report can play a

useful role in identifying what data are available and where the data gaps are.

There is one very important gap identified in this report, which I believe merits readers' particular attention. The importance of North-South, South-South and triangular aid and cooperation is clear from the 2030 Agenda, as are the data gaps in this area. A significant lacuna exists with regard to South-South Cooperation, and the SDGs bring in to sharp focus the need to address these data gaps as a matter of urgency. The past two decades have seen South-South and Triangular cooperation grow rapidly in scale and intensity. Yet, the availability of information and quality of research on the scale and impact of this cooperation has not kept pace with the growing demand among Southern partners for peer learning to further improve. Knowledge gaps and uneven access to solutions are currently major obstacles hindering the scaling-up of South-South Cooperation and the maximization of its impact on sustainable development.

Finally, this report illustrates in a very concrete and informative way, the strength and depth of UNCTAD's expertise on measuring and monitoring SDG achievement, and re-affirms the relevance of UNCTAD's comprehensive approach to development, which has long argued that we must take into account not just economic factors, but also social, institutional and environmental factors too.

Mukhisa Kituyi

Secretary-General of UNCTAD

Note

1 See http://www.un.org/millenniumgoals/gender.shtml for more facts.

Introduction

Welcome to the 2016 edition of the UNCTAD Development and Globalization: Facts and Figures. This edition is dedicated to the Sustainable Development Goals that were adopted by the United Nations in September 2015 (2030 Agenda Declaration) (United Nations General Assembly, 2015). At the time of writing (June 2016), the indicators for measuring progress towards these Goals that have been proposed by the Inter-agency Expert Group on Sustainable Development Goal Indicators (IAEG-SDG) and accepted by the United Nations Statistical Commission (United Nations Statistical Commission, 2016) have not yet been endorsed by the General Assembly. Nevertheless, we think it is useful to give an early or preliminary assessment of progress for a selection of the 17 Sustainable Development Goals and 169 targets.

The 2030 Agenda Declaration stresses the importance of quality, accessible, timely and reliable disaggregated data to measure progress and to ensure that no one is left behind. The Declaration also states that data and information from existing reporting mechanisms should be used where possible. This report is in keeping with that philosophy; it has been compiled using a wide variety of data sources, both official and unofficial, to present a broad overview. The purpose of this report is not to present an in-depth review or analysis, but rather to provide a situation summary and highlight some key facts and messages, and give a fair synopsis of how things stand today, at the beginning of this 15-year agenda.

The selection of the targets presented in this report reflects UNCTAD's mandate. UNCTAD is responsible for dealing with economic and sustainable development issues with a focus on trade, finance, investment and technology. Through these actions, UNCTAD contributes to progress on 52 specific Sustainable Development Goal targets, grouped under 10 of the 17 Sustainable Development Goals. Nevertheless, the report presents some general statistical analysis for all 17 Goals, as it is considered desirable to highlight the interdependencies of all the Goals, just as it is to underline the interconnectedness of all aspects of development. Readers will note that two themes, prosperity and partnership, are given priority in this report, as these are the areas where UNCTAD's expertise contributes most.

The report is organized in five broad themes or sections:

- People: Goals 1–5
- Planet: Goals 6 and 12–15
- Prosperity: Goals 7–11
- Peace: Goal 16
- Partnership: Goal 17

Along with the Goals, selected targets are discussed. The full list of the Goals and targets presented in this report is given below. A special note is also included in the report on global and regional population projections and demographic changes. This has been included as, over the lifetime of the 2030 Agenda for Sustainable Development and in the years following, the global population will increase significantly. These changes provide an important context for the implementation of the Agenda.

There are many important messages highlighted in this report. We would like to emphasize just two: one regarding data and one regarding the not-unrelated issue of resources. The 2030 Agenda has placed much greater emphasis than the Millennium Development Goal agenda on the need for improved data and statistics. In the lead up to adopting the 2030 Agenda, the High-Level Panel of Eminent Persons (United Nations, 2013) called for a data revolution. The United Nations Secretary-General Ban Ki-moon subsequently established an Independent Expert Advisory Group on a Data Revolution for Sustainable Development. In its 2014 report A world that counts – Mobilizing the data revolution for sustainable development (Independent Expert Advisory Group on a Data Revolution for Sustainable Development, 2014), the question was raised of whether unequal access to data should in fact be a recognized form of inequality. A dilemma exists concerning the fact that data availability is usually weakest for the poorest countries of the world, while these are the countries for which they are needed the most in the context of monitoring sustainable development. This leads to the second message. The cost of implementing the 2030 Agenda will be significant. Estimates of how many additional resources will be required vary. Ambassador Macharia Kamau of Kenya, one of the co-facilitators of the intergovernmental consultative process, anticipates that the implementation of the 2030 Agenda could cost between US$3.5 trillion and US$5 trillion per year (Inter Press Service, 2016). Ibrahim Thiaw, United Nations Assistant Secretary-General and Deputy Executive Director of the United Nations Environment Programme, estimates it will cost at least an additional US$1.5 trillion annually over the Millennium Development Goals (Thiaw, 2016). One thing is clear – these sums are far in excess of existing funding. We would ask readers to think about data as infrastructure; infrastructure every bit as important as broadband or electricity networks. These issues are touched on in Goals 9 and 17. In order to provide policymakers around the world with the coherent information they need to inform their decisions, a lot of investment is required behind the scenes. This investment in data infrastructure will require additional resources but will yield a return consisting of a broader knowledge base, and ultimately more efficient policy formation and a better-informed public.

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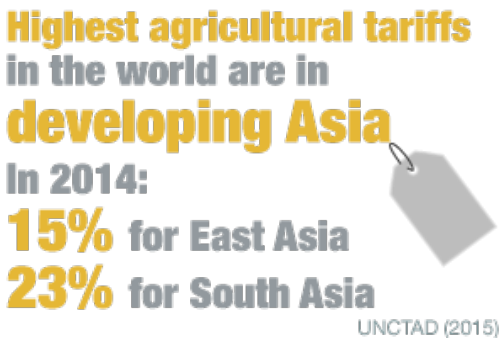
PEOPLE

"We are determined to end poverty and hunger, in all their forms and dimensions, and to ensure that all human beings can fulfil their potential in dignity and equality and in a healthy environment."

Target 2.b: Trade restrictions in agricultural markets

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.



Average prices on agricultural goods vary widely around the world. Agricultural tariffs in developing Asia, for example, are the highest in the world at around 15 per cent for East Asia and 23 per cent for South Asia. In South Asia, the weighted average agricultural prices in 2014 were higher than in 2008. This resulted from an increase in imports of higher-tariff products in the composition of agricultural imports to the region. By comparison, tariffs for manufacturing and natural resources were significantly lower in 2014 (UNCTAD, 2016). Hence the importance of target 2.b[2.15]. The indicator selected by IAEG-SDGs to measure progress towards this target is "*Percentage change in import and export tariffs on agricultural products*".

Table 2.1 presents a matrix of interregional and intraregional market access conditions in the agriculture sector. The 2014 average tariff rates were calculated based on both the most favoured nation and preferential rates. Numbers in blue show the change in the average tariff from the 2008 level.

Agricultural exports from sub-Saharan African countries to developed countries and transition economies on average face the lowest tariffs, between 1.4 and 1.8 per cent. Their exports to other developing regions are subject to higher tariffs. However, when compared with their export competitors in different importing regions, the agricultural exports of sub-Saharan African countries face relatively lower tariffs than their competitor exporting regions. Table 2.1. also shows that the average tariff rate applied to agricultural exports of Latin America to East Asia fell by 0.7 per cent between 2008 and 2014.

Table 2.1. Tariff barriers to agricultural exports in 2014 and change from 2008 level
(2014 average tariff rate; percentage point change from 2008 level (in bold))

Importing region	Exporting region: Developed countries	East Asia	Latin America	South Asia	Sub-Saharan Africa	Transition countries	W.Asia & N.Africa
Developed countries	10.3	8.4	4.5	3.8	1.4	5.1	4.0
	-0.5	**1.3**	**0.8**	**-0.2**	**-1.0**	**-1.4**	**-1.3**
East Asia	12.7	9.1	13.0	13.3	9.1	19.2	8.8
	-5.0	**-3.5**	**-0.7**	**-2.3**	**0.7**	**-4.4**	**-1.5**
Latin America	5.3	11.1	2.2	11.3	12.9	13	11.7
	-0.1	**-0.9**	**-1.7**	**0.7**	**0.4**	**8.7**	**-0.2**
South Asia	37.9	34.0	32.1	6.9	17.6	7.9	20.5
	8.3	**10.8**	**0.5**	**-0.1**	**1.5**	**0.1**	**-5.2**
Sub-Saharan Africa	12.0	13.3	11.0	16.3	7.7	6.4	18.5
	-0.9	**0.2**	**-0.1**	**3.9**	**-1.5**	**-11.3**	**0.6**
Transition countries	10.1	6.1	10.3	5.6	1.8	1.3	6.7
	-0.9	**-0.6**	**-2.8**	**-0.6**	**-0.9**	**1.1**	**-1.2**
W.Asia & N.Africa	13.7	9.7	6.6	4.3	7.3	22.0	2.4
	0.1	**-1.4**	**-2.3**	**0.4**	**-1.7**	**14.3**	**-1.6**

Source: UNCTAD, 2016.
Note: UN region definitions.

Between 2008 and 2014, agricultural tariffs have been falling in general, except those linked to imports and exports from South Asia. Together with relatively high tariffs against imports in South Asia, this may suggest that the region is the one least exposed to bilateral or interregional trade agreements with the rest of the world. The same tendency is found in imports and exports from sub-Saharan Africa among other developing country regions, and exports from transition economies.

A large number of sanitary and phytosanitary (SPS) measures and technical barriers to trade (TBT) aim to ensure food safety for consumers, for example, by setting quality standards and labelling requirements. Other SPS measures and TBT include inspections, quarantine or temporary import prohibitions with a view to protecting the life and health of plants and animals from imported pests and diseases (Farrell, 2013). These measures can have an immediate impact on food security in terms of the utilization and availability of healthy and nutritional food.

At the same time, however, complying with SPS measures and/or TBT can result in significant costs to domestic producers as well as to foreign producers and exporters, which can increase consumer prices of food in the domestic market. This can reduce affordability of food to low-income groups in the economy, at least in the short term. In addition, compliance requirements related to SPS measures and TBT may delay or complicate the process to import food. Hence measures aiming at food safety could have a second-order impact on food security in terms of access, availability and stability. The authors of "*A cost-benefit framework for the assessment of non-tariff measures in agro-food trade*" (van Tongeren et al., 2009) using their cost-benefit analysis framework conclude that the cost to consumers of further tightening certain European Union regulations could surpass potential gains to the initial beneficiaries of such measures.

It is also important to note that SPS measures and TBT for a given agricultural food product applied by a significant importer in world food trade can have a significant, at times damaging, impact on exporters of developing countries. The policy study of Otsuki et al. (2001) shows that European Union standards on aflatoxin levels that go beyond Codex guidelines may prevent up to 2.3 cancer deaths in the European Union per year, but may cost African exporters an annual US$670 million. According to a recent study (Murina and Nicita, 2014), the trade-reducing impact of SPS measures in the European Union can be significantly larger (around US$3 billion) on exporters from low-income countries than on their competitors in other countries.

Notes and references

Notes

2.15 The Addis Ababa Action Agenda also states "*In accordance with one element of the mandate of the Doha Development Agenda, we call on World Trade Organization (WTO) members to correct and prevent trade restrictions and distortions in world agricultural markets, including through the parallel elimination of all forms of agricultural export subsidies and disciplines on all export measures with equivalent effect.*" - Addis Ababa Action Agenda of the third International Conference on Financing for Development, paragraph 83, see http://www.un.org/esa/ffd/wp-content/uploads/2015/08/AAAA_Outcome.pdf.

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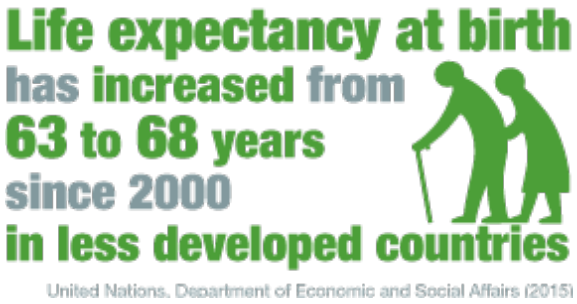
Goal 3: Good health and well-being

Ensure healthy lives and promote well-being for all at all ages.

Today people are living longer. In developing countries, this is mainly as a result of reductions in childbirth and childhood mortality and improvements in the eradication or reduction of infectious diseases. In developed countries, there has been a steady increase in life expectancy owing to declining mortality among the elderly. Combined, these changes are leading to a significant shift in demographic patterns, with important implications for dependency ratios, the length of working lives, and pension and health-care provision (See Special note on population projections and demography). Figure 3.1 presents a simple global, health and wealth chart mapping of life expectancy at birth cross-referenced with gross domestic product (GDP) per capita for the period 1990–2013. Although not an official Sustainable Development Goal indicator, this presents a reasonably good summary of the trends of global heath and its relationship with economic performance over the past 24 years.



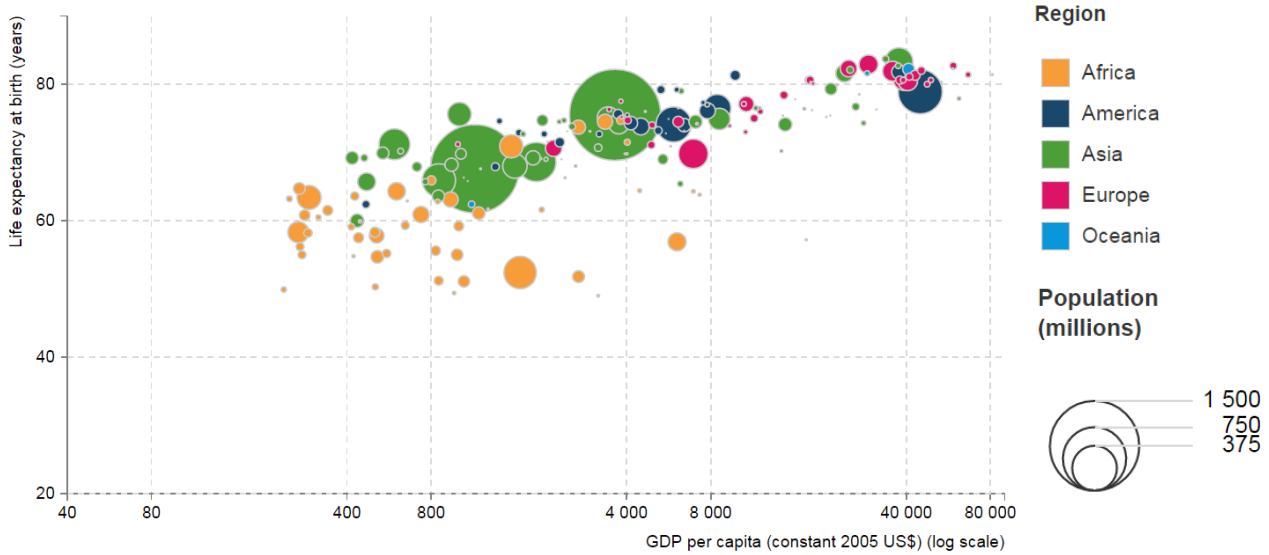
The general evolution in figure 3.1 shows a tightening or clustering of countries towards the top right-hand corner, signifying a general improvement in income and life expectancy. But the chart also shows that since 1990 there has been uneven progress across the regions of the world. Throughout Asia there has been a general improvement, and in particular for countries like Israel, Japan, Qatar and Singapore. But it is also evident that some countries, such as Afghanistan, have experienced notable gains in life expectancy but not in income.

In Africa, there have been some dramatic improvements, most notably for Equatorial Guinea, but generally while improvements have been made for many African countries on the health front, there has been less progress regarding wealth. Despite individual improvements, it is also evident that many African countries, as signified by their position in the bottom left-hand corner of the chart, have below-global-average income and health outcomes. In Oceania, improvements in health and wealth are very evident in Australia and New Zealand, but much less so for the remaining Pacific islands. Within Europe, improvements are clear across the entire region, but once again uneven progress can be seen, in particular less progress is evident for parts of Eastern Europe and the former Soviet Republics. In the Americas, Canada has made steady improvements whereas Haiti has not.

Health and well-being

The importance of physical health has been long recognized, but in recent years there has been increasing attention given to improving our understanding of what constitutes "*subjective well-being*" and the factors that influence it. There is, however, no international consensus on how to define well-being. This is not surprising, as many cultural elements impact on it. Nevertheless, there appears to be broad agreement that well-being is made

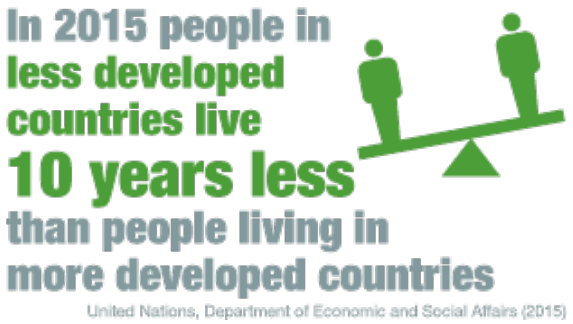
Figure 3.1. Evolution of life expectancy at birth and GDP per capita by region, 1990-2014



Sources: United Nations, Department of Economic and Social Affairs (2015) World Population Prospects: The 2015 Revision (life expectancy at birth) and UNCTADstat (population and GDP data)

Note: Data on GDP per capita are shown in logarithmic scale. The size of the bubbles refers to the total population.

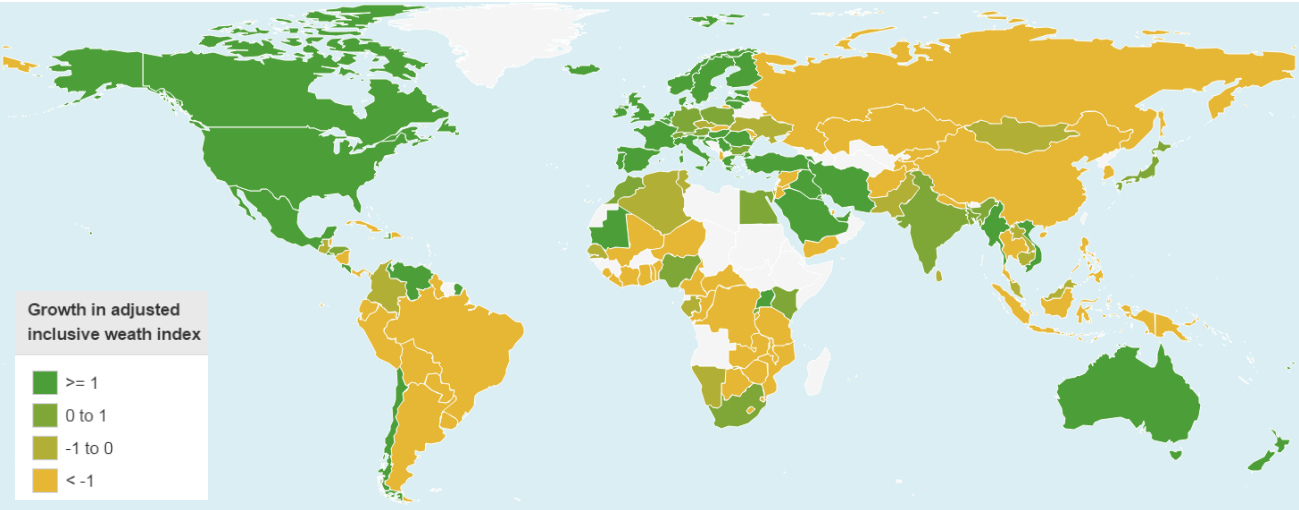
of positive emotions and moods (for example, contentment and happiness), the absence of negative emotions (for example, depression and anxiety), satisfaction with life and general fulfilment. Thus, well-being is a complex mix of physical, psychological, emotional, social and economic health. Typical dictionary definitions tend to describe well-being as a good or satisfactory condition of existence; a state characterized by comfort, health, happiness, and prosperity or welfare. Not surprisingly, there continues to be much debate about how to define well-being and how to measure it.



More recently, the quest to understand and measure well-being has become intertwined with the idea of human progress and sustainability. This has led to the development of several competing indicators, all attempting in one way or another to provide metrics on human well-being and socioeconomic progress[3.1]. Some of the better-known indices include the Organization for Economic Cooperation and Development Better Life Index, the United Nations Environment Programme Inclusive Wealth Index, the United Nations Development Programme Human Development Index, the Genuine Progress Indicator (Talberth et al., 2006) and the index of Gross National Happiness.

Each measure of well-being will indicate different degrees of progress depending on the lens through which progress is being examined. From a global perspective, many of the overall patterns, irrespective of the index used, are quite similar. The adjusted Inclusive Wealth Index, which attempts to capture the interdependencies of economy, society and environment, provides one version of progress. While one may argue with elements of the index, the regions identified as vulnerable are consistent with many of the other measures noted above. Over a 20-year time horizon, from 1990 to 2010, gains in wealth, as defined and measured by the adjusted Inclusive Wealth Index, appear to be generally confined to the northern hemisphere (with a few southern-hemisphere exceptions, such as Kenya, the Bolivarian Republic of Venezuela and Zimbabwe). The most evident declines arise in the Plurinational State of Bolivia, Chile, China, India, Indonesia, Myanmar, Paraguay, Peru, Thailand and throughout much of Sub-Saharan Africa. It is noted by the *2014 Inclusive Wealth Report* (United Nations University International Human Dimensions Programme and United Nations Environment Programme, 2014) that during this period human capital generally contributed to a growth in inclusive wealth, whereas depreciation of natural capital generally contributed to a decline. Figure 3.2 presents four distinct five-year time periods, running consecutively from 1991 to 2010, allowing a more nuanced examination of the trends. For example, in each of the four periods China experienced negative growth of inclusive wealth. The Russian Federation enjoyed a growth in inclusive wealth, but at a declining rate for the first 10 years (1991–2000) before experiencing a decline in inclusive wealth for the subsequent 10 years. The pattern in Canada and the United States of America was the opposite – in these countries negative inclusive wealth growth in the first decade turned positive in the second (2001–2010). India experienced negative growth for the first three periods but inclusive wealth grew in the last period, arising from progress in human capital. In general, most countries in sub-Saharan Africa for which there are data were more or less consistently negative throughout – but with some important exceptions, such as South Africa.

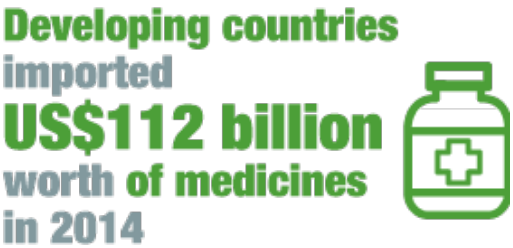
Figure 3.2. Growth in adjusted Inclusive Wealth Index, 1990-2010(Average annual growth rates, in percentage)



Source: United Nations University International Human Dimensions Programme and United Nations Environment Programme (2014).

Health and trade

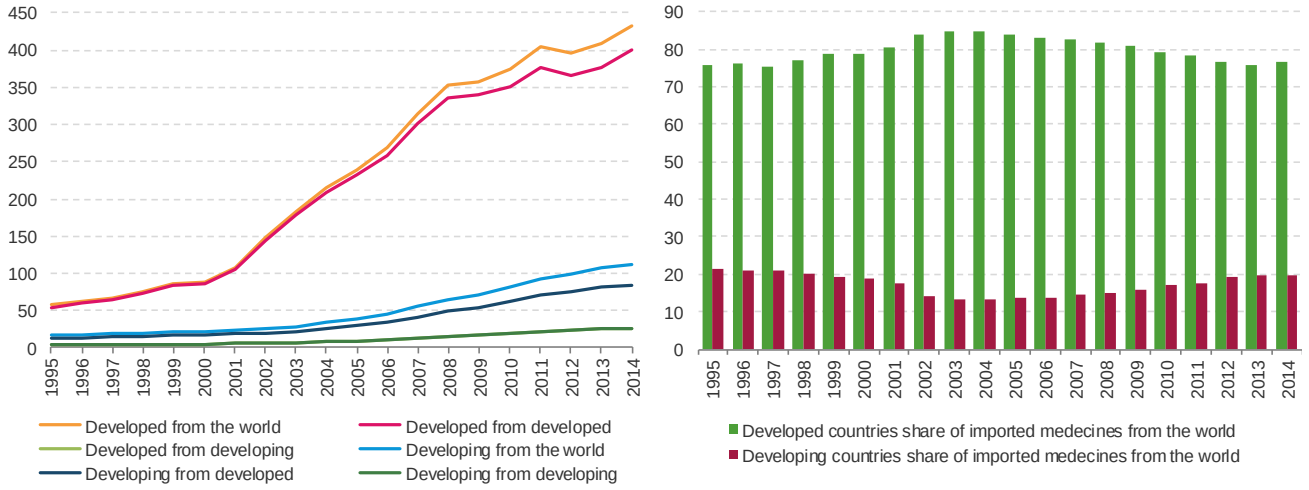
There is, of course, an important trade element to health and well-being, both in terms of health and medical tourism and also in terms of the international trade in essential vaccinations, medicines and other health care products. Trade can play a vitally important role in making affordable medicines available to developing countries. Figure 3.3 illustrates the value of imports of total medicines[3.2] between developed and developing economies over the past twenty years. In 1995, developing economies imported approximately US$16 billion worth of medicines, accounting for almost one quarter of global imports of medicines. In 2014, the overall situation had not changed significantly; developing economies imported medicines valued at about US$112 billion, accounting for about 23 per cent of global imports of medicines.



The international trade of medicines cannot be properly analysed or understood without considering price. To assess the impact of trade in medicines on drug affordability and accessibility to populations in developing countries, it is necessary to study how the price of medicine varies across countries and levels of gross national income (GNI). Using the price and availability of direct-acting antiviral drugs (DAA), specifically those used in the treatment of hepatitis C virus (HCV) as an example, the importance of price (and by extension trade) may be outlined. HCV treatments provide a good case study as hepatitis C is a major affliction in developing countries but is also quite prevalent in developed countries, thus allowing comparisons between the two development categories.

A study by Andrieux-Meyer et al. (2015) on the correlation between GNI and the price of HCV treatments found substantial variabilities in the price of several HCV drugs[3.3] within developed countries (where little correlation between drug prices and GNI was evident) and between high- and middle-to-low-income countries, where prices were generally substantially lower. While in general the study showed that DAA prices are higher in high-income countries and lower in low-income countries, a number of outliers, such as Malaysia and Turkey, where drug prices appear to be unusually high, are identified. Additionally, the study shows that price differentiation mechanisms may discriminate against developing countries. For example, Côte d'Ivoire pays almost three times as much for the generic equivalent of sofosbuvir as India (US$500 compared with US$161 per bottle) despite having a lower GNI. In another example, the authors identify that South Africa pays US$6,100 per bottle for simeprevir compared to only US$1,000 in Brazil, despite again having a lower GNI (see figure 3.4.b). The authors conclude by noting the poor availability of DAAs generally in low-income countries, the high diversity of market prices across countries in all income brackets, and that manufacturing costs of DAAs are estimated to be far lower than current market prices. The authors also highlight the importance of patent and licence barriers to using branded and generic DAAs (See Goal 17 target 11).

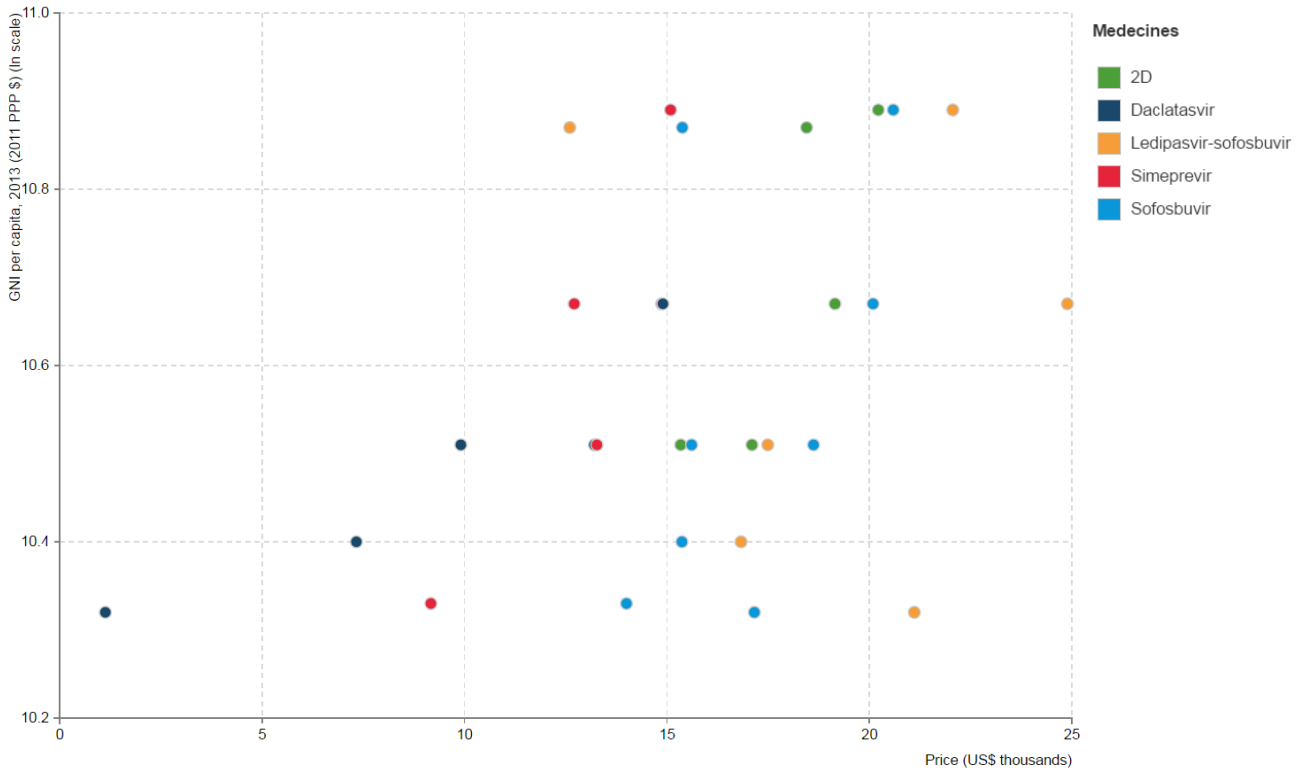
Figure 3.3. Imports of medicines, 1995-2014(US$ billions; percentage of total medicines imports)



Source: UNCTADstat

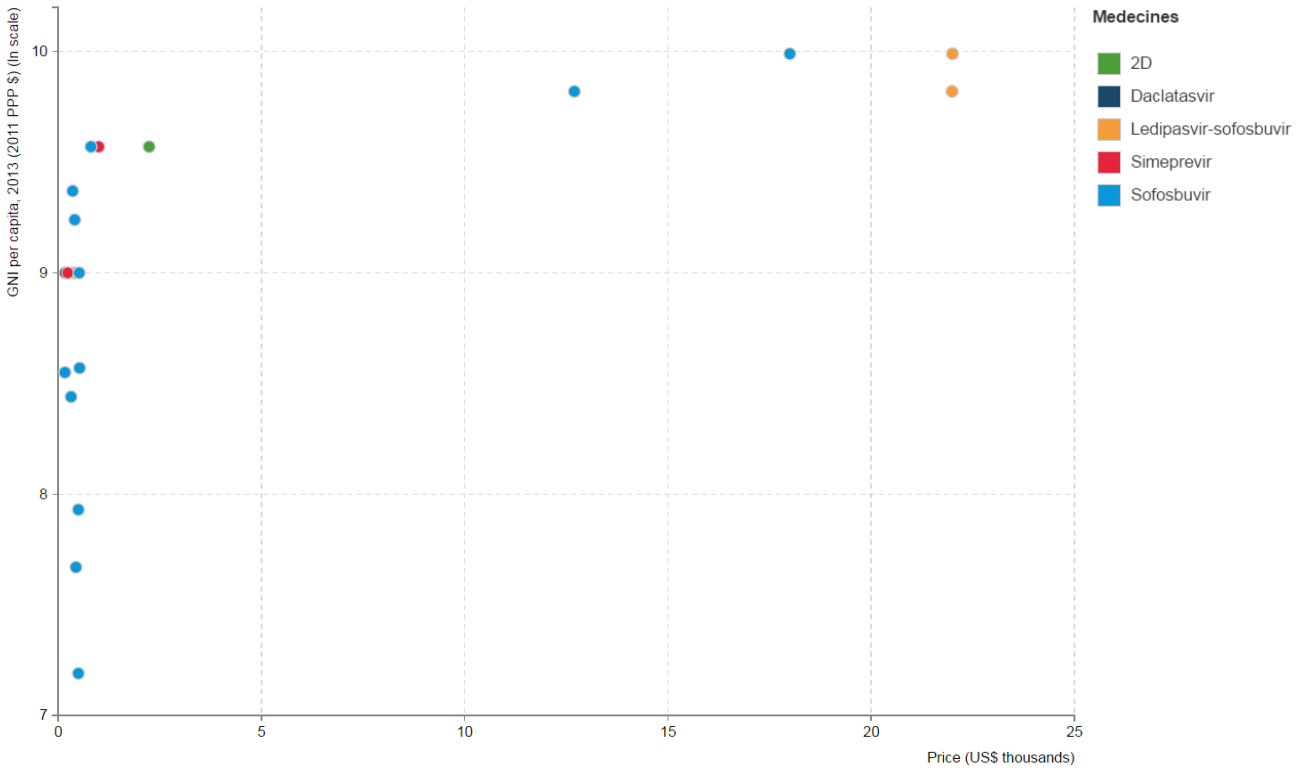
Notes: The second axis shows the share of developed or developing economies in imported medicines (Standard International Trade Classification 541 and 542) as percentage of world totals.

Figure 3.4.a. Correlation between drug prices and GNI by income level: High-income countries(US$)



Source: Andrieux-Meyer et al. (2015)

Figure 3.4.b. Correlation between drug prices and GNI by income level: Low-income and middle-income countries(US$)



Source: Andrieux-Meyer et al. (2015)

Notes and references

Notes

3.1 See Yang (2014) for a very comprehensive review of all the different approaches to measuring well-being, including consideration of the economy, environment, gender, globalization, governance, human capability, human progress, poverty, quality of life, security, social exclusion, social progress, subjective well-being, sustainability, technology and vulnerability perspectives.

3.2 Standard International Trade Classification codes 541 and 542.

3.3 The Andrieux-Meyer et al. (2015) study focuses on the availability and affordability of drugs such as sofosbuvir, daclatasvir, ledipasvir-sofosbuvir, simeprevir, ombitasvir-paritaprevir-ritonavir and dasabuvir.

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PLANET

"We are determined to protect the planet from degradation, including through sustainable consumption and production, sustainably managing its natural resources and taking urgent action on climate change, so that it can support the needs of the present and future generations."

Target 12.6: Sustainable practices in companies

Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle.

The Sustainable Development Goal agenda has placed a new focus on corporate performance, behaviour and risk management, creating new demands for information on corporate reporting. Target 12.6 explicitly acknowledges the critical role that corporate sustainability reporting[12.1] must play. Done properly, corporate reporting can enrich and enhance the Sustainable Development Goal monitoring framework by providing governments, enterprises, society and other stakeholders with the means to assess the economic, environmental and social impact of companies on sustainable development. Consequently, the Inter-Agency Expert Group on Sustainable Development Goal Indicators (IAEG-SDGs) selected the "*Number of companies publishing sustainability reports*" as the indicator to measure progress towards this target.

Reporting activities that contribute to sustainability will be increasingly important to companies, as it will allow them to make customers aware of their contribution to sustainable development. Investors may also have specific interests in such reporting to assess how companies are addressing financial and reputational risks associated with sustainability challenges. But further work is needed to integrate environmental, social and governance (ESG) reporting into existing company financial and non-financial reporting models; facilitate harmonization of sustainability reporting requirements and practices; and assure the comparability and reliability of information and data provided by companies on non-financial issues. While there currently exists a myriad of international or supraregional reporting initiatives[12.2], there is no universal agreement on what a sustainability report is or what such a report might include[12.3] in order to be defined as one. According to recent research by UNCTAD, out of the Forbes world 100 largest listed companies, 99 corporations produce some sort of ESG reporting, 51 refer to the United Nations Global Compact, 62 to the Carbon Disclosure Protocol, 10 to ISO 26000, 48 to other ISO certificates, and 72 to the Global Reporting Initiative (both G3 and G4) (UNCTAD, 2016). KPMG et al. (2016) recently published a report, "*Carrot & Sticks*", that identifies almost 400 sustainability reporting instruments across 64 countries. Consequently, further work is required to develop a set of core corporate sustainability indicators and align these with overall Sustainable Development Goal monitoring.

Some challenges ahead

Sustainability reporting lacks a single international institution to coordinate and harmonize its activities. The challenges associated with the absence of consistent financial reporting arrangements over the last decade illustrate why such an institution is desirable, or at the very least why it is necessary to identify areas of consistency between the different reporting frameworks to promote global consistency and convergence (International Federation of Accountants, 2013). The wide range of indicators, frameworks and guidelines issued by multiple organizations creates not only a significant duplication of effort but also a lack of clarity and a wide variety in the quality of information. The result is that corporate reports, which are often difficult to understand and compare, vary widely in terms of comprehensiveness and quality.

Agenda 2030 poses additional challenges for the harmonization, comparability and integration of related indicators. It is not yet clear what approach will be used to ensure the usefulness of corporate reports in assessing the private sector contribution towards attaining the Sustainable Development Goals. The majority of sustainability reporting requirements and initiatives are focused on listed and large private companies because they have the largest sustainability impact. But arguably a mechanism is also required for small and medium-sized enterprises; a cost-benefit analysis is required to determine a suitable reporting requirement.

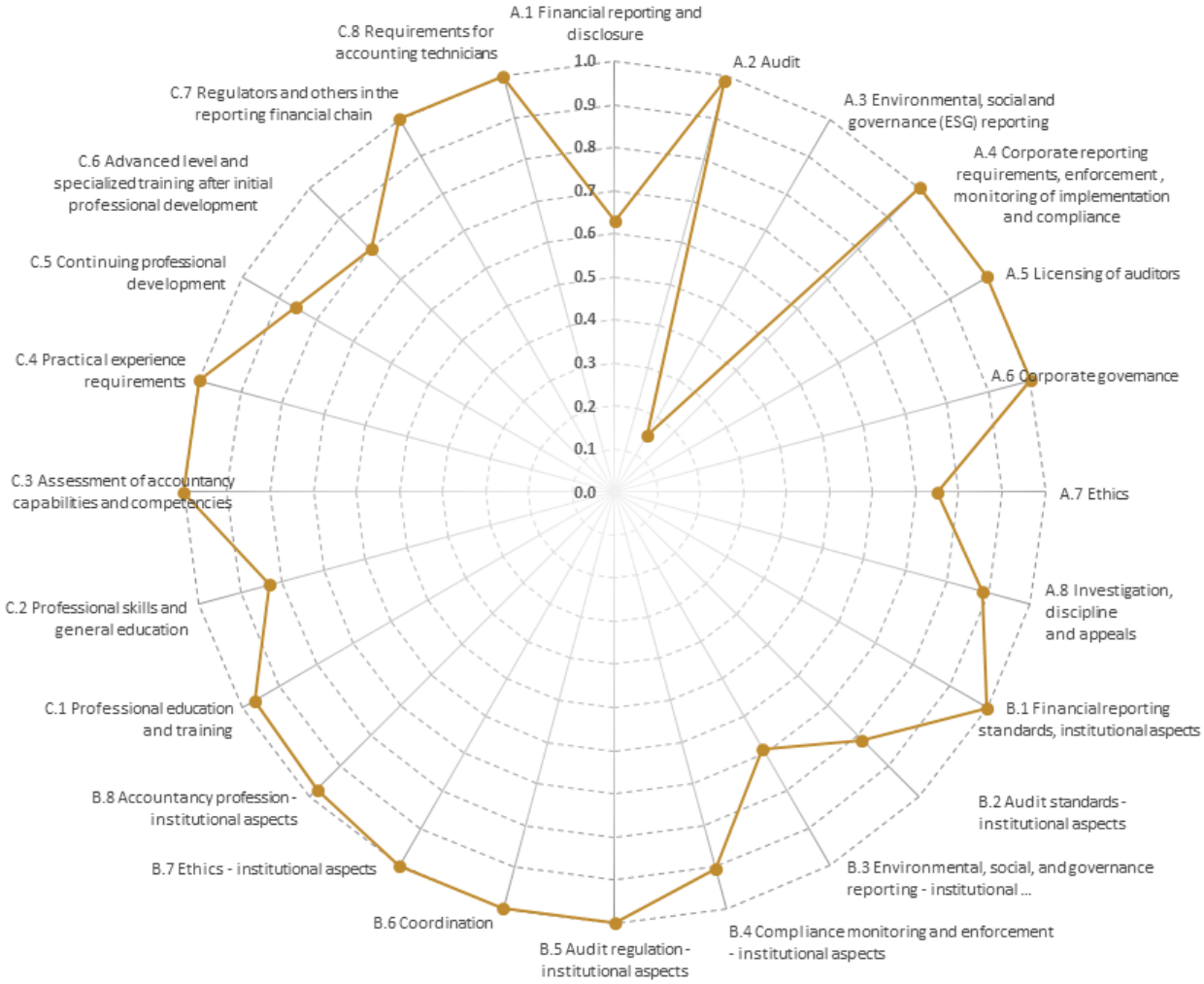
Developing a harmonization approach to reporting on ESG information faces a number of challenges, such as those of methodology[12.4]; materiality[12.5]; burden[12.6]; consistency[12.7]; data quality[12.8]; mandatory or voluntary approaches[12.9]; and compliance[12.10]. UNCTAD promotes harmonized transparent corporate accounting and assists developing transition economies to align their corporate reporting requirements with international standards and best practices through the Intergovernmental Working Group of Experts on International Standards of Accounting and Reporting (ISAR). Sustainable reporting was incorporated into the agenda in 1993 following the United Nations Conference on Environment and Development, also known as the Rio Earth Summit. In particular, UNCTAD has developed a number of products in the area of environmental, social, governance disclosure and sustainability reporting: *Integrating Environmental and Financial Performance at the Enterprise Level* (UNCTAD, 2000); *Guidance Manual - Accounting and Financial Reporting for Environmental Costs and Liabilities* (UNCTAD, 2002); *A Manual for the Preparers and Users of Eco-efficiency Indicators*

(UNCTAD, 2004); *Guidance on Good Practices in Corporate Governance Disclosure* (UNCTAD, 2006); *Guidance on Corporate Responsibility Indicators in Annual Reports* (UNCTAD, 2008); *Best Practice Guidance for Policymakers and Stock Exchanges on Sustainability Reporting Initiatives* (UNCTAD, 2014a).

UNCTAD has also developed the Accounting Development Tool, a quantitative tool that helps countries assess their corporate reporting infrastructure using international standards and best practices as a benchmark. The Accounting Development Tool includes a separate chapter focusing on ESG reporting (see the example given in figure 12.2).

At the thirty-second session of ISAR (November 2015) member States asked UNCTAD to conduct further work in the area of sustainability reporting by identifying good practices of corporate reporting on the Sustainable Development Goals and facilitating the harmonization of sustainability reporting. To respond to the new demands posed by the Sustainable Development Goal 2030 Agenda, UNCTAD, jointly with the United Nations Environment Programme and the Group of Friends of Paragraph 47[12.11], is evaluating existing reporting frameworks to identify key principles and core Goal indicators to help companies reflect their impact on their implementation, and provide a basis to monitor and assess the progress towards the Goals at a national level.

Figure 12.2. Accounting Development Tool - Belgium



Sources: UNCTAD, 2016, DIAE/ISAR/Accounting development tool.

Notes and references

Notes

12.1 Sustainability reporting allows organizations to consider their impacts on a wide range of sustainability issues, enabling them to be more transparent about the risks and opportunities they face and to take informed strategic decisions.

12.2 UNCTAD corporate social responsibility indicators; eco-efficiency indicators (environmental accounting and reporting); corporate governance disclosure; the United Nations Environment Programme report Advancing Environmental Disclosure in Sustainability Reporting; the United Nations Global Compact; the European Union Directive on Non-financial Reporting (2014/95/EU); the Organization for Economic Cooperation and Development Guidelines for Multinational Enterprises and Principles on Corporate Governance; the Global Reporting Initiative Sustainability Reporting Framework; the International Integrated Reporting Council Integrated Reporting Framework; the International Accounting Standards Board Framework for preparation and presentation of financial statements.

12.3 These might include, for example, regulatory, institutional and human resource capacity-building, enhanced public-private sector partnerships and cooperation and coordination in this area.

12.4 Defining a common set of comparable indicators remains a challenge. Finding such indicators that are comparable, universal and material is not straightforward across a variety of geographies, sectors and firm-specific operations. Alignment with the Sustainable Development Goal agenda adds to the complexity.

12.5 Information is material if its omission or misstatement could influence users' decisions (UNCTAD, 2008). The principle of materiality is critical in determining which information should be included in a sustainability report. Materiality must be considered across the whole value chain, as company decisions also generate positive and negative impacts upstream (for example, sourcing of raw materials) and downstream (for example, the use and disposal of products and services). There is always a risk that companies undertaking materiality assessments may only disclose those indicators that show a positive impact. The Sustainable Development Goal reporting brings a new dimension that requires a broader spectrum of stakeholders to be considered, including government and society.

12.6 Harmonization of reporting should be based on existing frameworks to avoid placing an excessive burden on enterprises. The costs and benefits for enterprises as well as other stakeholders should be considered when developing new indicators and how to communicate them.

12.7 There must be consistency between financial and non-financial reporting to ensure the comparability and meaningfulness of related data and indicators.

12.8 Data quality regarding sustainability issues remains a concern and challenge for all stakeholders. This is especially relevant in the case of multinationals that have operations in different jurisdictions. The International Organization of Supreme Audit Institutions highlights that assurance of sustainability reports is still developing and is as yet mostly voluntary. To date, assurance statements vary greatly in terms of content and type of assurance provided. The majority of companies restrict themselves to assurance on specific information or datasets, and few cover the full corporate sustainability report.

12.9 Some investors believe that reporting in certain areas should be mandatory, obliging companies to report on both good and poor performance, thus providing more accurate information for investment decision-making. In making such a decision there are a number of factors to consider, including the level of development of relevant legislation and regulation; standards of reporting and the institutional setting for their monitoring and enforcement; capacity of the accountancy profession and other participants in the reporting chain; and different cultural, political, legal and other aspects of the business environment. For example, France has adopted mandatory sustainability reporting for public and large companies. The Grenelle II Act (2010) requires mandatory annual sustainability reporting (environmental, social and societal impacts of business activities and on companies' commitments to sustainable development) for France-based public and large companies. These reports must be independently verified by a third party (http://www.diplomatie.gouv.fr/en/IMG/pdf/Mandatory_reporting_built_on_consensus_in_France.pdf).

12.10 An efficient compliance system, including enforcement mechanisms to ensure that requirements are adequately implemented, will also be required. There is evidence of the positive impact of enforcement on corporate transparency and the quality of reporting in the financial reporting area. (UNCTAD, 2014a) has published a note on good practices for monitoring and enforcement, and compliance mechanisms, including on sustainability issues. The UNCTAD Accounting Development Tool also provides a useful reference to support countries in their efforts to strengthen their accounting and reporting infrastructures (http://unctad.org/en/Pages/DIAE/ISAR/Accounting-Development-Tool.aspx).

12.11 The Group of Friends of Paragraph 47 is a government-led initiative, formed in 2012 following the United Nations Conference on Sustainable Development, whose objective is to foster a culture of sustainability reporting. The Group's current members are Argentina, Austria, Brazil, Chile, Colombia, Denmark, France, Norway, South Africa and Switzerland (http://www.unep.org/resourceefficiency/Portals/24147/Business-Ressource%20Efficency/GoFP47_TwoPagerComms_FINAL.Jan14.pdf).

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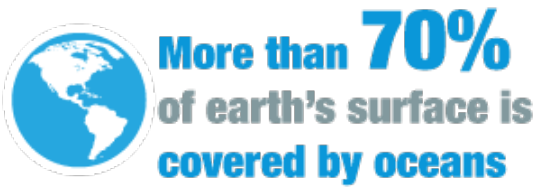
Goal 14: Life below water

Conserve and sustainably use the oceans, seas and marine resources for sustainable development.



Oceans cover more than 70 per cent of the earth's surface and are central to life on earth. They are a rich source of food and valuable minerals, a vast waterway for international commerce and movement of people, and for many, a giant recreation and cultural heritage space. Today more than two thirds of the world's population lives within 100 kilometres of coastlines. Oceans act as the lungs of the earth, together with rain forests. It is estimated that the ocean's phytoplankton produce over half the oxygen that humans and all other land animals breathe. Oceans are also a CO2 sink, absorbing vast amounts of this greenhouse gas (GHG) and acting as a buffer against global warming[14.1] and climate change. Unfortunately over the past decades, ocean degradation has grown, resulting in an erosion of marine biodiversity, habitats and species and endangering marine ecosystems on which humans depend heavily. The sources of these threats include overfishing and destructive fishing, overharvesting of maritime resources, pollution and waste disposal, oil spills and climate change.

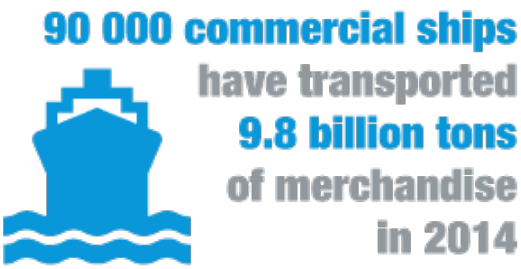
"The least movement is of importance to all nature. The entire ocean is affected by a pebble."
- Blaise Pascal

Restoring the health and resilience of our oceans is thus a global priority. A global response started with the Millennium Development Goals. Millennium Development Goal 7 on environmental sustainability focused primarily on life on land, although target 7.b aimed at protecting land and marine ecosystems. Agenda 2030 and specifically Goal 14 takes a broader perspective of sustainably using and managing oceans, maritime resources and related ecosystems for sustainable development. It outlines an ambitious set of targets to address the impact of pollution and land-based activities; protect marine ecosystems; reduce acidification; regulate harvesting and fishing to restore fish stocks; introduce special and differential treatment for developing countries and least developed countries (LDCs) in World Trade Organization (WTO) negotiations on fishing subsidies; improve sustainable management of fisheries, aquaculture and tourism, especially for small island developing States (SIDS) and LDCs; give access to small-scale artisanal fishermen and women to marine resources and markets; and improve scientific knowledge to advance ocean health. Agenda 2030, therefore, provides further impetus to the mandates for clean, heathy, productive and resilient oceans and related marine resources that were promulgated in outcomes of major summits and conferences, including: The Future We Want from the Rio+20 outcome, the Samoa Pathway for SIDS, the Istanbul Programme of Action for LDCs, the Addis Ababa Action Agenda on Financing for Development and the Paris Agreement on climate change.

Sustainable Development Goal 14 will require robust international cooperation and coordination if its objectives to protect oceans and preserve fish and other marine resources are to be achieved. The current oceans and fisheries governance universe is characterized by a myriad of international and regulatory agreements, often implemented in a disjointed manner by a variety of agencies. This multi-agency and multilayer treaty system needs to be streamlined and implemented to ensure more effective ocean and fisheries management. In respect of fish and fish trade, Goal 14 is a catalyst for governments to take actions to implement more effectively existing treaties and soft law instruments. These include the United Nations Fish Stock Agreement (1995); the Food and Agriculture Organization of the United Nations (FAO) (1) Compliance Agreement (1993), (2) Code of Conduct for Responsible Fisheries (1995), (3) International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing, and (4) Port State Measures Agreement (2009), not yet in force; and relevant United Nations General Assembly resolutions (UN General Assembly, 2013, 2014).

Ocean trade

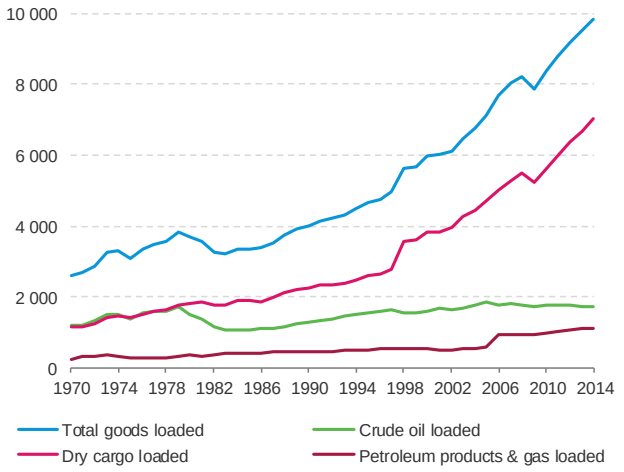
The oceans provide vast waterways that carry the bulk of merchandise goods imported and exported around the world. Those goods are transported by a merchant fleet that in 2014 comprised almost 90,000 commercial ships, with a deadweight tonnage of 1.75 million, of which 13 per cent were container ships, 26 per cent oil tankers and 43 per cent bulk carriers.



In 2014, approximately 9.8 billion tons of merchandise were transported by sea compared with 6.2 billion tons in 2000 - an increase of 57 per cent. Of those 9.8 billion tons, 2.8 billion tons, or 29 per cent, were crude oil and petroleum goods. In the same year, some 684 million 20-foot equivalent unit (TEU) containers were shipped, a 32 per cent increase compared with 2008.

Figure 14.1 shows the dramatic increase in maritime cargo traffic, in particular since the turn of the century. The figure also shows that the growth in the total cargo volumes has been driven by the growth in "*dry cargo*".

Figure 14.1. World seaborne trade by cargo type, 1970-2014
(Million metric tons)



Source: UNCTADstat

There are clearly environmental costs to such growth. In 2012, CO2 emissions from international shipping were estimated at 2.2 per cent of global CO2 emissions (International Maritime Organization, 2014). While the contribution of international shipping to global carbon emissions may be relatively low when assessed per unit of cargo and distance travelled, these emissions are, however, likely to grow if left unchecked. Forecast scenarios for the medium term suggest that international shipping carbon emissions could increase 50-250 per cent by 2050, depending on economic growth and global energy demand (UNCTAD, 2015). Equally, international freight, including maritime transport, is projected to more than quadruple by 2050, with associated CO2 emissions generated by all modes engaged in international trade between 2010 and 2050 growing by a factor of 3.9 (International Transport Forum and Organization for Economic Cooperation and Development (OECD), 2015). Continued dependence on fossil fuels and related technologies by maritime transport will perpetuate such transport patterns.

Notes and references

Notes

14.1 It is estimated that the oceans have already absorbed 50 per cent of the CO2 emissions since the industrial revolution. Available at http://cmore.soest.hawaii.edu/oceanacidification/documents/PML_TechnicalSheet_high_CO2_world.pdf.

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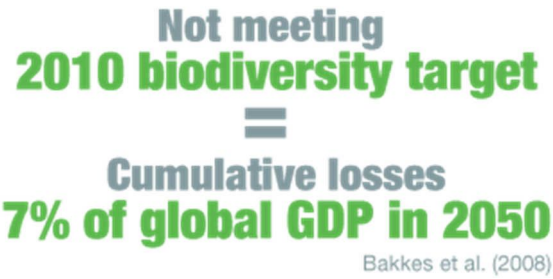
UN General Assembly (2013, 2014). General Assembly resolution A/RES/69/109 69(b) Sustainable fisheries, including through the 1995 Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, and related instruments and A/RES/68/71 of 2013 Sustainable fisheries, including through the 1995 Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, and related instruments.

Target 15.9: Ecosystems and biodiversity

By 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts.



The Earth's biological resources are vital to humanity's economic and social development. As a result, there is a growing recognition that biological diversity is a global asset of tremendous value to present and future generations. At the same time, the threat to species and ecosystems has never been as great as it is today. Species extinction caused by human activities continues at an alarming rate (Convention on Biological Diversity, 2010). Given the opportunities for income and job generation, and economic growth and development that can be derived from biodiversity-based resources, and the global risks associated with the accelerating loss of biodiversity, the implementation of Goal 15 requires both urgent attention and a holistic approach.

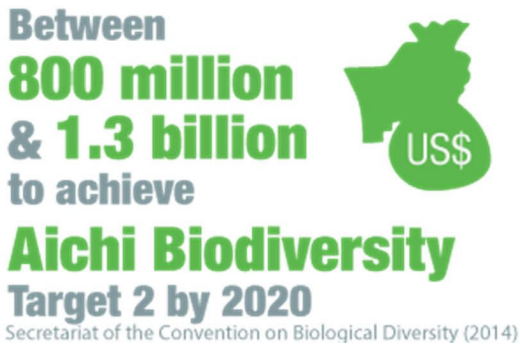
"*Biodiversity loss must be addressed and prevented, and the use of biodiversity-based resources must be managed in a sustainable, equitable and inclusive manner.*" - Mukhisa Kituyi, Secretary-General of UNCTAD (2013)

Regulatory frameworks and well-tested development programmes can be used to provide incentivizing policies and actions that will conserve biodiversity and ensure its sustainable use, rather than degrade and destroy it. Multilateral environmental agreements can play an important role in this regard.

Seven biodiversity-related conventions in particular set the framework for implementation of actions at the national, regional and international levels to reach shared goals of conservation and sustainable use of biodiversity: (1) Convention on Biological Diversity; (2) Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES); (3) Convention on the Conservation of Migratory Species of Wild Animals (CMS); (4) International Treaty on Plant Genetic Resources for Food and Agriculture; (5) Convention on Wetlands or Ramsar Convention; (6) World Heritage Convention; (7) International Plant Protection Convention (IPPC).

Aichi Biodiversity Targets

With specific objectives and shared targets, the biodiversity-related conventions have developed a number of complementary approaches (site-, species-, genetic resources- and/or ecosystem-based) and operational tools (for example, programmes of work, trade permits and certificates, multilateral systems for access and benefit-sharing, regional agreements, site listings, funds, and the like). A Liaison Group of Biodiversity-related Conventions was established in 2004 between the secretariats of the seven biodiversity-related conventions to enhance coherence and cooperation and foster closer linkages in supporting implementation of the global biodiversity goals, namely resulting in the Strategic Plan on Biodiversity 2011-2020 and the Aichi Biodiversity Targets. This group will be instrumental in ensuring a coordinated approach towards the implementation of Goal 15.



The Inter-agency Expert Group on Sustainable Development Goal indicators selected "*Progress towards national targets established in accordance with Aichi Biodiversity Target 2 of the Strategic Plan for Biodiversity 2011-2020*" as the best indicator to measure progress for target 15.9. The Aichi Biodiversity Target 2 is *"By 2020, at the latest, biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems"*. The secretariat of the Convention on Biological Diversity reports on progress for each of the Aichi Biodiversity Targets. In its latest report (2014) the secretariat notes progress in mainstreaming the integration of biodiversity in national strategic plans, albeit uneven, but also highlights that quantifying progress is very difficult owing to the complexity of the target, stating that "*there are no globally harmonized datasets that fulfil the data requirements to monitor this target*". The report also notes that concrete measures to include biodiversity into subnational and local plans are less obvious, identifying fragmentation of decision-making, limited communication between stakeholders and the lack of economic valuation of biodiversity as reasons. The report also notes that despite many national legal requirements, many environmental impact assessments do not take into account the impacts on biodiversity or do so only partially. Many assessments are restricted to protected species and areas and do not consider wider ecosystems at all.

Difficulties with valuation

A major challenge to the inclusion of biodiversity in national and local development and poverty reduction strategies and decision-making processes, noted in the secretariat of the Convention on Biological Diversity report (2014) are the manifold difficulties with valuation. Putting a value on biodiversity is a complex and multidimensional task. One approach is to use the total economic value[15.3], which has the benefit of using a common monetary unit, making communications easier and comparisons or cost-benefit trade-offs possible. However, several aspects of biodiversity and ecosystems cannot be measured in monetary terms, such as spiritual importance or aesthetic value. Challenges regarding potential double counting, designing a single valuation methodology that works equally well across all ecosystems, and problems with regard to data availability all pose major problems when making comparisons. Other complications arise from the intrinsic multidisciplinarity of biodiversity and ecosystems, requiring a broad range of technical and scientific knowledge, and from the lack of research capacity to undertake robust valuation exercises. The choice of discount rate also remains a controversial issue, unsupported by technically objective guidelines on the appropriate rate. Finally, most economic valuation studies are based on marginal changes to ecosystems assuming that such systems are stable. However, little is known about the stability of ecosystems and their response to change - an unstable ecosystem may pass a critical threshold and trigger a structural change, at which point the marginality assumption and the valuation may no longer hold.

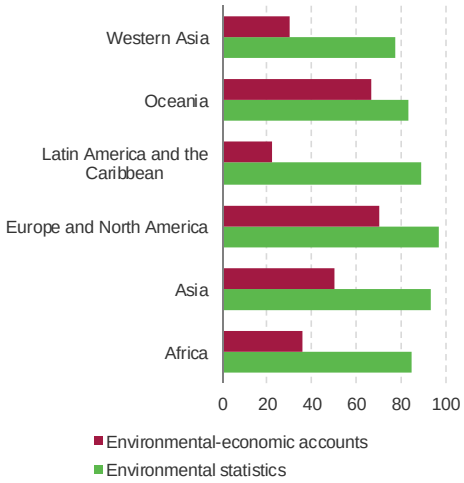
It is for this reason the experimental System of Environmental-Economic Accounting (United Nations, 2014) was published as the international statistical standard[15.4]. These accounts are coherent with the accounting concepts used in the System of National Accounts and are intended to provide "*a better measurement of the crucial role of the environment as a source of natural capital and as a sink of by-products generated during the production of [hu]man-made capital and other human activities*". In 2007, the United Nations Statistics Division (UNSD) carried out a global assessment of the implementation of environmental statistics and environment-economic accounting.

From the 100 respondent countries (52 per cent of the total), 90 per cent compiled some environmental statistics and 50 per cent were producing an environmental-economic account - see figure 15.2 for 2006 regional implementation rates.

The focus of these accounts, however, is frequently quite different between developed and developing countries. For example, developed countries tend to focus on compiling accounts for energy and emissions, environmental protection expenditure and material flow/waste.

Most developing countries tend to compile accounts for water, energy and emissions, mineral assets and forestry (Secretariat of the Convention on Biological Diversity, 2014).

Figure 15.2. Environment statistics and environmental–economic accounting programmes availability by region, 2006
(Percentage of responding countries)



Source: UNSD, 2007

Biodiversity and trade

UNCTAD's BioTrade Initiative[15.5] is a good example of another long-standing programme which aims to harmonize trade with the sustainable use of biological resources, while respecting the principles of conservation of the Convention on Biological Diversity - sustainable use, and fair and equitable sharing of benefits. This initiative was launched in 1996 and is supplemented by independent national, regional and international BioTrade programmes. BioTrade entails the collection, production, transformation and commercialization of goods and services derived from native biodiversity, respecting the criteria of environmental, social and economic sustainability as expounded in the seven BioTrade principles: (1) conservation of biodiversity; (2) sustainable use of biodiversity; (3) equitable benefit sharing; (4) socioeconomic sustainability; (5) local compliance; (6) respect for actors' rights; (7) clear land tenure and access to resources.

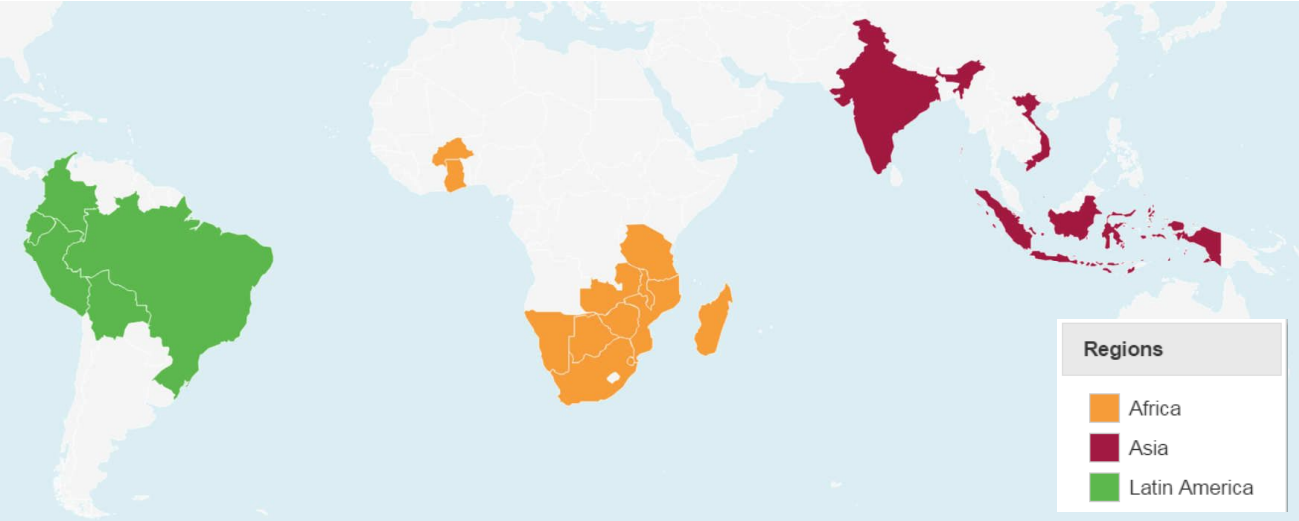
The BioTrade principles and criteria differentiate it from other trade and biodiversity initiatives, as all activities (downstream and upstream) along the value chain operate in compliance with these principles (UNCTAD, 2007).

The BioTrade Initiative seeks to develop tradable sectors through value chain development and facilitate trade of products and services that are derived sustainably from

native species and ecosystems (UNCTAD, 2014b). Over 3,600 supply chains have been developed in such sectors as: personal care (essential oils, natural dyes, creams, cosmetics); pharmaceuticals (extracts and infusions from medicinal plants); food (fruit pulps, juices, snacks, sauces, spices, nuts, food supplements); fashion (leather from caiman or snake skins); ornamental flora and fauna (orchids, butterflies, and the like); handicrafts (jewellery, decorative objects based on native species); textiles and natural fibres (such as furniture based on natural fibres); and sustainable tourism (ecotourism, nature-based tourism, and the like) (Lojenga and Oliva, 2016).

Over 20 developing countries have been implementing BioTrade in Africa, Asia and Latin America (see figure 15.3) with the support of national, regional and international BioTrade partners, including ministries of environment and trade, trade promotion agencies and business associations, involving the public and private sectors. Partnerships have also been conducted with the Development Bank for Latin America, Helvetas in Viet Nam, PhytoTrade Africa and the Union for Ethical BioTrade (UNCTAD, 2012; 2013a; 2013b; 2014a; 2016). Around 5 million people were involved in BioTrade activities and the sales of companies in BioTrade amounted to €4 billion in 2015 (Lojenga and Oliva, 2016).

Figure 15.3. Developing countries implementing BioTrade



Source: UNCTAD (2016)

Notes and references

Notes

15.3 *"Total economic value"* incorporates both "*use*" and "*non-use*" values. "*Use*" comprises direct, indirect and optional use and refers to the benefits that can be taken directly from an ecosystem, indirectly as societal or functional benefits derived from an ecosystem, or optionally as potential future direct or indirect use. "*Non-use*" is comprised of existence and bequest values. Existence value concerns the value put on knowing that species and ecosystems will continue to exist, while bequest value concerns the value put on maintaining or preserving biodiversity and ecosystems, perceived as having no use now, so that they will be available for future generations.

15.4 The System of Environmental-Economic Accounting (SEEA) accounts for resources of minerals and energy, land, soil, timber, aquatic environments and water; in terms of ecosystem services it focuses on the provisioning services for which market prices exist.

15.5 UNCTAD's BioTrade Initiative is supported by several countries, with the State Secretariat for Economic Affairs of Switzerland as a major partner providing continuous support.

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PROSPERITY

"We are determined to ensure that all human beings can enjoy prosperous and fulfilling lives and that economic, social and technological progress occurs in harmony with nature."

Goal 9: Industry, innovation and infrastructure

Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.

Infrastructure can be defined as the basic physical systems of a nation. So, typically, when we think of infrastructure, we think of roads, bridges, water, sewage, electricity networks, air and seaports, and so on. Infrastructure of course includes communications, so we must also include telephones, broadband, and the like. But in an information age, more attention must also be given to what can be termed "*soft infrastructure*". In particular, given the growing complexity of policy trade-offs and the growing amount of information required by national administrations to run a modern State, it is essential that countries put in place a well-organized and coherent national data infrastructure (NDI) (MacFeely and Dunne, 2014). A NDI is also of paramount importance from a statistical perspective, as modern national statistical systems must be able to access and use administrative data from all parts of the national administrative system if they are expected to meet the significant information requirements of Agenda 2030 and the Addis Ababa Action Agenda.

National public administrations typically collect, maintain and update sizeable volumes of data on a regular basis. These data pertain to the wide range of administrative functions in which States are involved, ranging from individual and enterprise tax payments to social welfare claims and education and farming grants. Typically, these administrative records are collected and maintained at the lowest level of aggregation (that is, transactions or interactions by individual taxpayers/applicants/recipients with the State) making these data very rich from an analytical perspective and critical to the ideal that no one gets left behind.

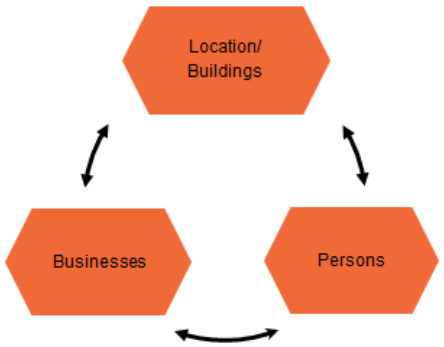
National administrations expend considerable resources ensuring that administrative records are maintained and accurate. With some additional effort these records could become exponentially more powerful, not only as a tool to help design and appraise policy but also as an instrument to assist in implementing policy itself. In effect, administrative data should be viewed not as an unfortunate burden or cost to the State but as a valuable asset. Well-organized and open public-sector information can contribute to democratic transparency, administrative efficiency and economic value (United Kingdom of Great Britain and Northern Ireland Cabinet Office, 2013; Commission of the European Communities, 2003; National Statistics Board of Ireland, 2011). Administrative data are an essential part of the "*soft infrastructure*" necessary to efficiently run a modern State and fuel a modern statistical service.

A national data infrastructure

The architectural design for an NDI must take a whole-of-system perspective to ensure that all the important elements of a national administration are integrated in a way that allows data systems to "*talk*" to one another. If designed properly, the resulting data infrastructure will not only contribute to public-sector efficiency but also better support public policy design, implementation and evaluation by allowing public-sector data to be shared between the different parts of government.

An NDI could take various shapes and designs. One design, proposed by MacFeely and Dunne, is to develop an NDI centred on three key national databases: (1) a database of all persons in the State; (2) a database of all businesses in the State; (3) a database of all locations/buildings (see figure 9.1) (MacFeely and Dunne, 2014). Each database would have a set of unique and permanent identifiers to facilitate interlinkages between them. These unique, permanent, official and commonly used identifiers would permit public-sector data to be analysed in a way that would facilitate the identification of longitudinal, latitudinal, spatial and relational linkages. These linkages would allow movements in time and space to be properly understood. Thus, an "*object*" or unit (individuals, enterprises or buildings) can be tracked over time, as can their "*attributes*" or characteristics (for example, spatial location) and their relations to other units (for example, family, employer, school, car). Hence, the importance of an NDI, to both understand geography and space and also to develop dynamic indicators, is clear. The significance of permanent or "*persistent*" official identifiers is central to this approach.

Figure 9.1. Basic components of an NDI



Source: MacFeely and Dunne (2014).

The importance of being able to reuse and match public-sector information cannot be overstated, both for the compilation of modern official statistics and also for the efficient running of a modern State. Quite obviously, if the data made available to the national statistical organization can be shared across the statistical system it will have a profoundly positive impact on the quality and range of official statistics that can be made available.

It is vital that the underlying data generated or associated with these services are organized in a coordinated way using the permanent public service identifiers and the same internationally agreed classifications and codes. By better organizing and coordinating the management of administrative data, the potential of that information can be unlocked. To get maximum benefit from such an information system, the architectural design is crucial and must involve the relevant permanent and official unique identifiers associated with each database or register. For those interacting with the State in any service or activity, use of these official identifiers should be mandatory. A move to such a universal design will broaden the operational use of systems. Only with such systems can the interactions and interrelationships between citizens, business and the State be measured and understood.

Target 9.1: Resilient infrastructure

Develop quality, reliable, sustainable and resilient infrastructure, including regional and trans-border infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all.

Transport infrastructure is integral to any national, regional and transborder infrastructural assets. Existing definitions of sustainable and resilient transport vary and tend to promote one particular dimension, such as the environment (green transport), society (inclusive transport) or the economic dimension (efficient and competitive transport). A clearer definition and an improved understanding of the concept is, however, required to help better identify relevant sustainability and resilience criteria. A universally agreed definition would facilitate a better assessment and quantification of progress (UNCTAD, 2015a). Sustainable and resilient transport infrastructure entails, among other features, the ability to provide transportation that is safe, socially inclusive, accessible, reliable, affordable, fuel-efficient, environmentally friendly, low-carbon, and resilient to shocks and disruptions, including those caused by climate change and natural disasters (UNCTAD, 2015a).

Figure 9.2. The three pillars of sustainable and resilient transport infrastructure

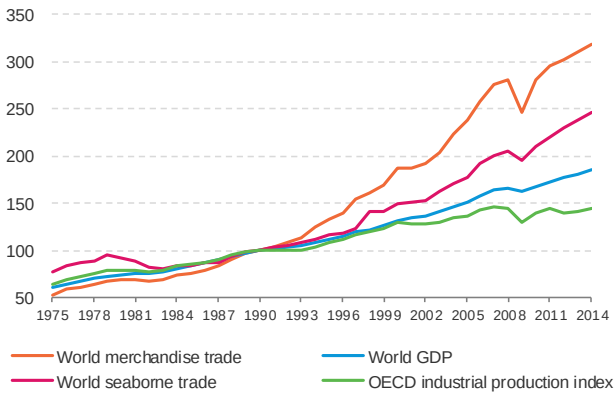
Source: UNCTAD (2015a).

Figure 9.2 illustrates the intersection between the economic, social and environmental dimensions of sustainable development as applicable to transport and the transport infrastructure. Given the strong nexus between trade-led growth, energy use and environmental concerns, including those related to climate change, integrated consideration of these issues is required to devise policies that ensure sustainable and inclusive long-term growth. Achieving Goal 9 will require that relevant sustainability and resilience criteria be integrated and mainstreamed into all modes of transport.

Recognizing the importance of transport infrastructure, the Inter-agency and Expert Group on Sustainable Development Goal Indicators (IAEG-SDGs) has proposed that "*freight volumes, including by mode of transport*" be used to measure progress towards the realization of target 9.1. The proposed indicator recognizes that absent or insufficient transport infrastructure capacity, including ports, rail and road networks, can significantly jeopardize and constrain the levels and movement of freight volumes. Maritime freight is critical in particular given the role of maritime transport as the backbone of globalization that underpins regional and international cross-border transport networks, and supports supply chains, cross-border trade and international production processes. The added importance and relevance of freight volumes as an indicator of the state of infrastructure stems from the role of the transport sector in enabling industrial development through, inter alia, driving manufacturing growth, linking rural and urban economies, enhancing the productivity of farmers, bringing together consumers, intermediate and capital-goods industries, generating employment, and promoting regional economic and trade integration.

Although freight volumes provide a useful measure from which to infer the quality and adequacy of the underlying transport infrastructure, it should be noted that apart from infrastructure, other factors also contribute to driving freight volume levels. Demands for transport infrastructure, and by extension freight volumes, are also derived from growth in, among others, the economy, population, consumption needs, industrial activity, urbanization and trade (see figure 9.3).

Figure 9.3. The Organization for Economic Cooperation and Development (OECD) Industrial Production Index and indices for world gross domestic product (GDP), merchandise trade and seaborne shipments, 1975–2014
(1990=100)



Source: UNCTAD (2015b).
Note: World merchandise trade refers to exports. The seaborne trade data reflect goods loaded at ports worldwide (a proxy or equivalent to exports). Data on goods loaded at ports worldwide and carried on international maritime routes are compiled by the UNCTAD secretariat on the basis of data supplied by reporting countries and as published on the relevant government and port-industry websites, and by specialist sources.

Maritime freight volumes

UNCTAD has an extensive set of time series measuring international maritime freight volume as well as other related performance indicators that could be used to indicate the level and quality of the underlying transport infrastructure, such as transport costs and the Liner Shipping Connectivity Index (UNCTADstat). Latest UNCTAD estimates for 2014 indicate that international seaborne trade volumes grew by 3.4 per cent in 2014, adding more than 300 million tons and taking the total volume to an estimated 9.8 billion tons (UNCTAD, 2015b). UNCTAD further estimates that maritime freight accounted for about 80 per cent of world merchandise trade by volume in 2014.

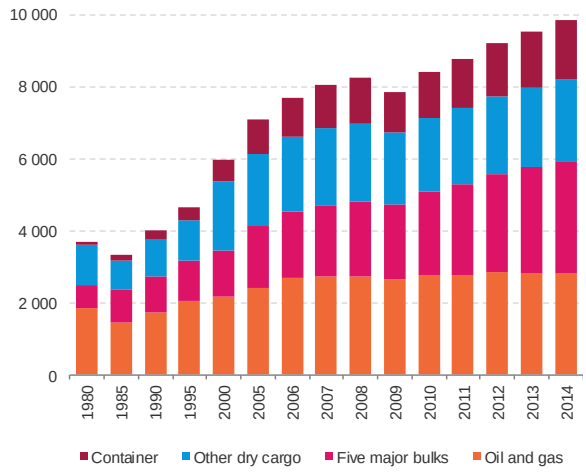
In value terms, some observers such as Lloyd's List Intelligence have estimated the share of maritime seaborne trade at 55 per cent in 2013, while other estimates are closer to 70 per cent (Bingham, 2016). Containerized trade accounts for most of the total value.

Table 9.1. Development in international seaborne trade, selected years
(Millions of tons loaded)

Year	Oil and gas	Main bulks	Other dry cargo	Total (all cargoes)
1970	1 440	448	717	2 605
1980	1 871	608	1 225	3 704
1990	1 755	988	1 265	4 008
2000	2 163	1 295	2 526	5 984
2005	2 422	1 709	2 978	7 109
2006	2 698	1 814	3 188	7 700
2007	2 747	1 953	3 334	8 034
2008	2 742	2 065	3 422	8 229
2009	2 642	2 085	3 131	7 858
2010	2 772	2 335	3 302	8 409
2011	2 794	2 486	3 505	8 784
2012	2 841	2 742	3 614	9 197
2013	2 829	2 923	3 762	9 514
2014	2 826	3 112	3 903	9 842

Source: UNCTAD (2015b).
Note: Iron ore, grain, coal, bauxite/alumina and phosphate rock.

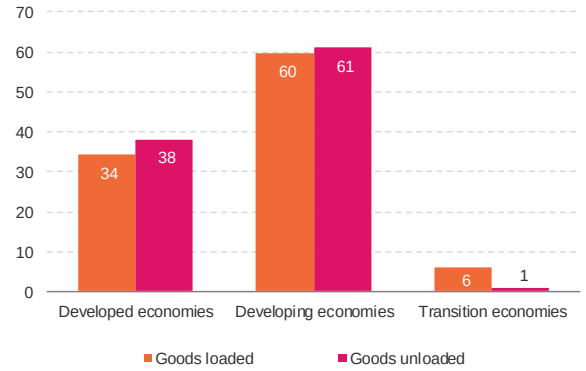
Figure 9.4. International seaborne trade, selected years
(Millions of tons loaded)



Source: UNCTAD (2015b).
Note: The seaborne trade data reflect goods loaded at ports worldwide (a proxy or equivalent to exports). Data on goods loaded at ports worldwide and carried on international maritime routes are compiled by the UNCTAD secretariat on the basis of data supplied by reporting countries and as published on the relevant government and port-industry websites, and by specialist sources.

The critical role of sustainable and resilient infrastructure cannot be overemphasized for the attainment of Sustainable Development Goal 9, considering, in particular, the rise of developing countries as key exporters and importers. Developing countries are contributing larger shares to international maritime freight volumes, with their 2014 contribution in terms of global goods loaded being estimated at 60 per cent and their import demand as measured by the volume of goods unloaded having reached 61 per cent (see figure 9.5).

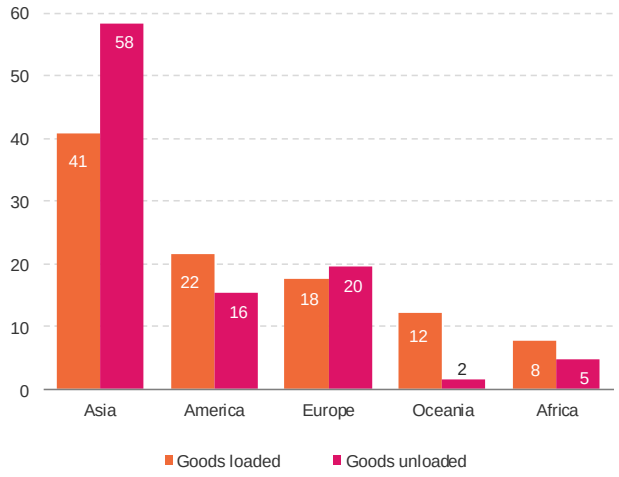
Figure 9.5. World seaborne trade by country group, 2014
(Percentage share in world tonnage)



Source: UNCTAD (2015b).
Note: The seaborne trade data reflect goods loaded at ports worldwide (a proxy or equivalent to exports). Goods loaded (or exports) are generally used as the main measure of seaborne trade. It is assumed that if goods were loaded from ports on board deep sea ships (that is, sailing on international maritime routes) somewhere, they will end up being unloaded (imports) somewhere else. Data on goods loaded at ports worldwide and carried on international maritime routes are compiled by the UNCTAD secretariat on the basis of data supplied by reporting countries and as published on the relevant government and port-industry websites, and by specialist sources.

Behind the headline figures however, the individual contributions vary by region and type of cargo, reflecting, among other factors, differences in countries' economic structures, composition of trade, urbanization, levels of development, levels of integration into global trading networks and supply chains, and the quality of transport infrastructure.

Figure 9.6. World seaborne trade by region, 2014
(Percentage share in world tonnage)



Source: UNCTAD (2015b).
Note: The seaborne trade data reflect goods loaded at ports worldwide (a proxy or equivalent to exports). Data on goods loaded at ports worldwide and carried on international maritime routes are compiled by the UNCTAD secretariat on the basis of data supplied by reporting countries and as published on the relevant government and port-industry websites, and by specialist sources.

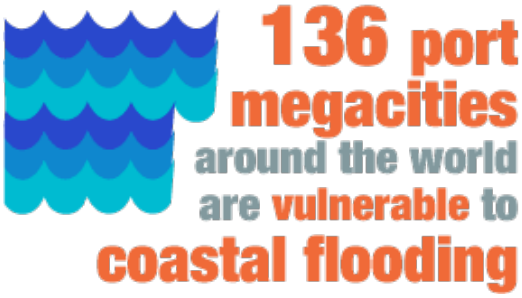
In recent decades, developing countries have incrementally shifted their patterns of trade. Since the 1970s the distribution between the goods loaded and unloaded has been altered significantly, with developing countries becoming major importers and exporters and a key driving force underpinning maritime freight volumes and demand for maritime transport services. Developing countries are no longer simply sources of supply of raw materials, but are now key players in globalized manufacturing processes and a growing source of demand. In terms of regional influence, Asia remained the main loading and unloading area in 2014, followed by the Americas, Europe, Oceania and Africa (figure 9.6).

Sustainable and resilient transport

Sustainable and resilient transport infrastructure systems are a prerequisite for successful trade and economic integration, as well as for attracting investment, developing enterprise and building productive capacities. However, with transport being a derived demand that responds to developments and trends in the world economy, significant pressures are being imposed on international transport systems.Trade-related international freight is expected to grow more than fourfold by 2050 (compared with 2010). It is projected that one third of trade in 2050 will occur among developing economies (compared to 15 per cent in 2010) (OECD and International Transport Forum (ITF), 2015). World road and rail freight volumes are expected to increase by 230 per cent and 420 per cent, respectively, by 2050 (compared with 2010), depending on freight intensity of GDP growth. The share of road freight in international freight tonnage is expected to increase by 40 per cent by 2050 (OECD and ITF, 2015).

These pressures increase exposure to global risks such as unsustainable energy use, high oil prices, environmental degradation and climate change. Indeed, in addition to raising transport costs and acting as a barrier to trade, heavy reliance on oil for propulsion undermines resource-conservation objectives and leads to environmental deterioration through pollution as well as carbon emissions. Carbon dioxide (CO2) emissions generated by all modes engaged in international trade between 2010 and 2050 are projected to grow by a factor of 3.9 (OECD and ITF, 2015). In this context, locking in fossil fuels and related technologies into freight transport, including maritime transport, will perpetuate unsustainable transport patterns. Breaking away from fossil-fuel-intensive maritime transport systems and a shift towards greater sustainability and resilience, including through tailored and targeted policies, regulations, incentives and programmes, is an imperative for freight transport.

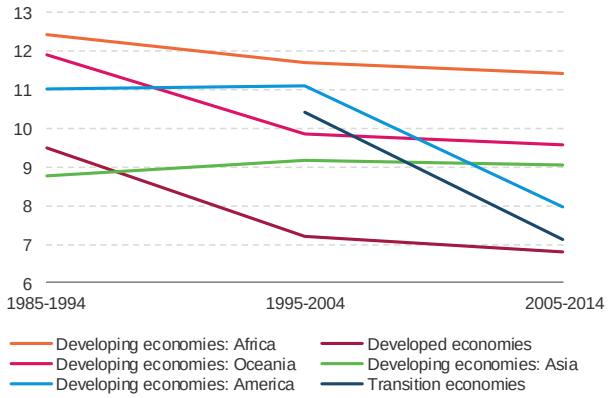
While reducing greenhouse gas emissions (GHG) remains an urgent imperative to ensure manageable global warming levels, the effects of climate variability and change – irrespective of the causes – are already being felt, often in the poorest countries with low adaptive capacity. Transport networks and coastal transport infrastructure in particular ports are likely to be highly affected by climate change factors given the ports' location and vulnerability. One study estimated in 2005, that the value of potential damage induced by the exposure of 136 port megacities to coastal flooding was US$3 trillion (Nicholls et al., 2008). Assuming a sea level rise of half a metre by 2050, the asset exposure of these 136 ports was projected to be US$28 trillion (Lenton et al., 2009). Building climate resilience of transport infrastructure, including maritime and inland, is therefore a pre-condition for sustainability. The special case of the geographically disadvantaged and economically vulnerable countries, namely landlocked developing countries (LLDCs) and small island developing States (SIDS) requires particular focus given the underlying vulnerabilities and the particular transport and logistical challenges, as well as the sustainable development gaps facing these economies.



For many developing countries these pressures are compounded by persistent challenges such as relatively

high transport costs and important infrastructure gaps and requirements. Prohibitive transport costs undermine the ability to achieve a more inclusive trade-led growth, requiring access to affordable, reliable and cost-effective transport systems. Although maritime freight costs as a percentage of the value of traded goods has fallen globally by around 15 per cent over the last two decades, it remains very high for many developing countries (see figure 9.7). To level the playing field and enable developing countries to effectively compete in the global market place and therefore make progress towards sustainable and resilient transport systems, managing transport costs is crucial.

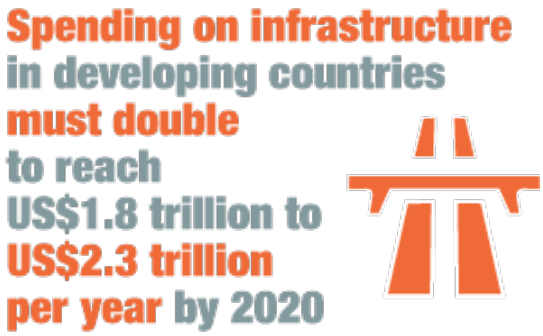
Figure 9.7. International freight costs by country group, 1985–2014
(Percentage of value of imports, 10-year averages)



Source: UNCTAD (2015b).

In addition to transport costs, addressing the persistent infrastructure issues (that is, insufficiency, inadequacy, congestion, and poor maintenance) is key to ensuring the sustainability and resilience of transport systems that support trade flows and freight movements. Transport infrastructure gaps are a challenge that raise costs, reduce access and undermine effective participation in global transport networks.

Infrastructure development needs, and the associated financing gaps, have been widely acknowledged. Various estimates for future investment needs in the transport sector have been put forward. These include: US$1.1 trillion per annum worldwide over the period 2013–2030 (International Energy Agency (IEA), 2014); around US$1.1 trillion per annum worldwide over the period of 2014–2025 (PricewaterhouseCoopers and Oxford Economics, 2015); US$2.5 trillion in 2008 prices (comprising US$1.8 trillion for new capacity and US$0.7 trillion to replace life-expired assets) in 30 countries in Asia for the period 2010–2020 (Asian Development Bank (ADB) and ADB Institute, 2009); US$1.4 trillion per annum worldwide over the period 2013–2030 (The Economist, 2014); and US$11 trillion over the 2009–2030 period (OECD, 2011).



To close the gap on the large infrastructure deficit in developing countries, including in transportation, existing estimates indicate that spending must reach US$1.8 trillion-US$2.3 trillion per year by 2020, compared with the current levels of US$0.8 trillion–US$0.9 trillion (United Nations Development Programme, 2013) (See Goal 7). Currently, 60 per cent of estimated total annual transport infrastructure investments are allocated to countries of the Organization for Economic Cooperation and Development (OECD) (Partnership on Sustainable Low Carbon Transport, 2015). Sustainability, resilience, affordable and equitable access require that investment in transport infrastructure be scaled up and that a greater share of relevant investments be channelled towards the transport infrastructure of developing countries. Furthermore, new sources and mechanisms of finance and greater cooperation between public and private investment partners are required.

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PEACE

"We are determined to foster peaceful, just and inclusive societies which are free from fear and violence. There can be no sustainable development without peace and no peace without sustainable development."

Goal 16: Peace, justice and strong institutions

Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels.

For international peace and security, 2014 was not a good year. The year witnessed the highest number of refugees and displaced people since World War II. At the start of 2015, 59.5 million people were classified as forcibly displaced worldwide, either as a result of persecution, conflict, generalized violence or human rights violations. An estimated 13.9 million people were newly displaced by conflict in 2014, including 2.9 million new refugees. The continued fighting in the Syrian Arab Republic brought the number of displaced persons in that country to 7.6 million, the highest number anywhere in the world (Office of the United Nations High Commissioner for Refugees (UNHCR), 2015).

"Every gun that is made, every warship launched, every rocket fired signifies in the final sense, a theft from those who hunger and are not fed, those who are cold and are not clothed. This world in arms is not spending money alone. It is spending the sweat of its laborers, the genius of its scientists, the hopes of its children."
- Dwight D. Eisenhower (1953)

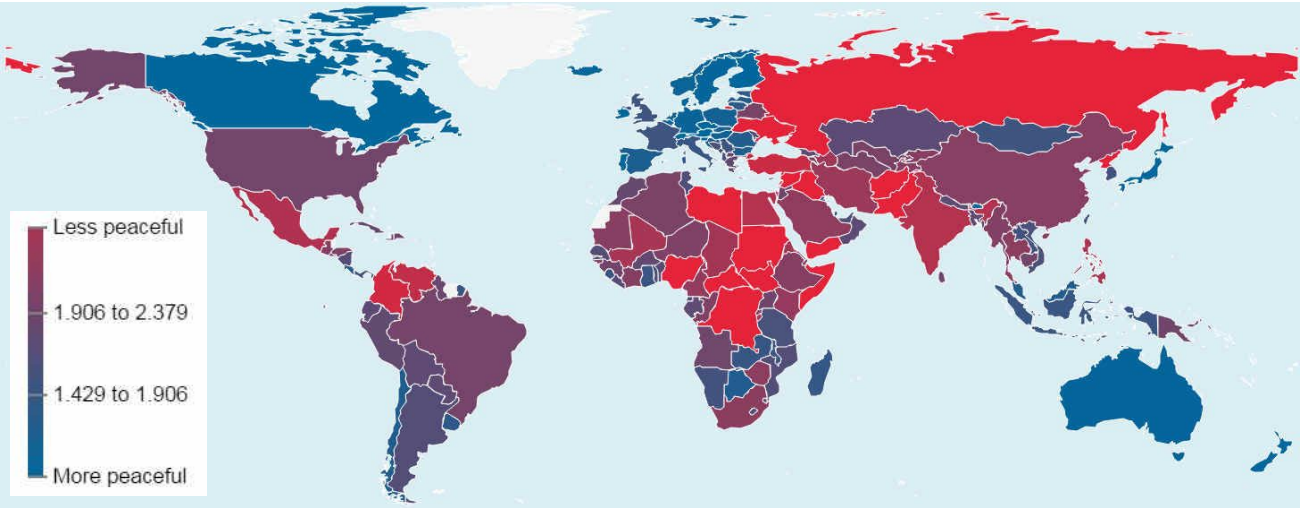
The year 2014 also witnessed the highest number of "*battle-related deaths*" in 25 years. There were approximately 101,000 battle-related deaths that year compared with 72,000 the previous year and 80,000 in 1990. The increases compared with 2013 arose from notable rises in casualties in Afghanistan, Iraq, Israel, Pakistan, South Sudan, the Syrian Arab Republic, Ukraine and Yemen. Global terrorism continued to rise in 2014. The Institute for Economics and Peace (2015) estimates that the total number of terrorism deaths in 2014 was approximately 32,700, an 80 per cent increase on the previous year and the highest level ever recorded. The number of people who have died from terrorist activities has increased ninefold since the year 2000. Not surprisingly, the economic cost of terrorism also reached its highest ever level in 2014, estimated at US$53 billion.

"Peace is the only battle worth waging."
- Albert Camus (1945)

The Institute for Economics and Peace also estimates that the cost of containing terrorism (approximately US$117 billion) was more than double the direct cost of terrorism. Schippa (2016) estimates that the combined economic impact of this violence was US$13.6 trillion, the equivalent of US$5 per day for every person on the planet[16.1] or more than 13 per cent of world gross domestic product.

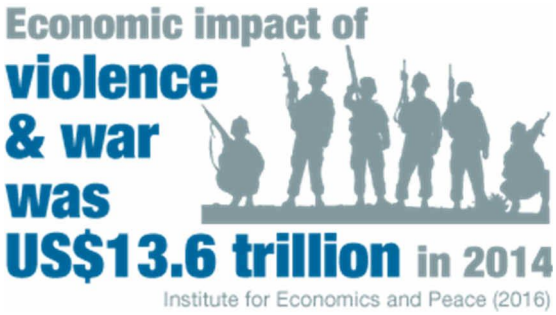
The Global Peace Index (Institute for Economics and Peace, 2016) provides a summary overview of the global state of peace see figure 16.1). The index suggests that the world as a whole in 2015 was less peaceful compared with 2014, due largely to deteriorating scores in societal safety and security, ongoing conflicts and global terrorism. But across countries, patterns were quite varied.

Figure 16.1. Global Peace Index, 2016



Source: Institute for Economics and Peace (2016).

Peace inequality increased as 81 countries registered improvements in peacefulness, while in 79 countries peacefulness deteriorated. That deterioration was most evident in the Middle East and North Africa, particularly in Afghanistan, Iraq, Libya, Pakistan, the Syrian Arab Republic and Yemen. Europe remained the most peaceful region in the world, where Iceland and Denmark were identified as the most peaceful countries. Other countries have also been identified as having weak or unstable peace conditions, notably the Democratic People's Republic of Korea, the Democratic Republic of the Congo, Nigeria, the Russian Federation, Somalia, South Sudan, Sudan and Ukraine.



Over the past decade more than 250 conflicts have affected all parts of the world, with about 55,000 people perishing annually as a direct consequence. The widespread availability of small arms and light weapons and their ammunition is a key enabler of these conflicts. Arms and ammunition, often originating in small-scale consignments and from varied sources (including government depots), have a destabilizing impact, enabling terrorists, pirates or other armed groups to operate (United Nations Security Council, 2015). Small arms are thought to be used in 44 per cent of all violent deaths (Geneva Declaration on Armed Violence and Development, 2015).

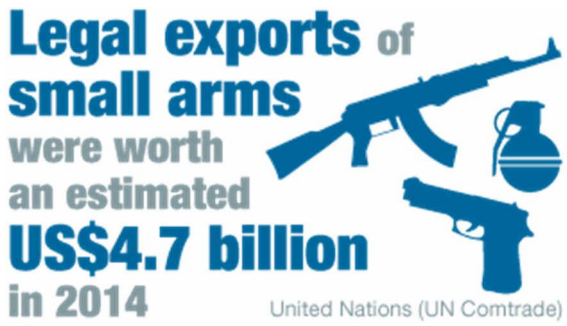
Approximately US$4.7 billion in small arms and light weapons were exported legally in 2014[16.2]. This compares with US$1.6 billion in 2000. The top 10 exporting countries in 2014 accounted for sales of US$3.6 billion or 76 per cent of all small arms and light weapons exports. Coincidently, the top 10 importing countries that year accounted for purchases of US$3.6 billion or 74 per cent of all small arms and light weapons legally imported (see table 16.1). The United Nations in 2006 estimated that about 25 per cent of the annual global trade in small arms is "*illicit*" or not recorded as required by law (United Nations, 2006). If this estimation is valid, then the global value of exports might be closer to US$5.9 billion.

Research suggests that close to 80 countries currently produce small arms ammunition, but only 60 have the capacity to produce complete light weapon systems or components. More than half of these countries are capable of producing human-portable air-defence systems or anti-tank guided weapons. The granting of licences and production rights and the spread of technology have enabled many countries to produce small arms and light weapons without undertaking expensive or time-consuming research and development programmes. The Graduate Institute of International and Development Studies, Small Arms Survey (2015) estimates that between 530,000 and 580,000 military small arms are produced annually either under licence or as unlicensed copies.

Table 16.1. Top 10 authorised small arms and light weapons exporting and importing countries, 2014
(US$ millions; percentage)

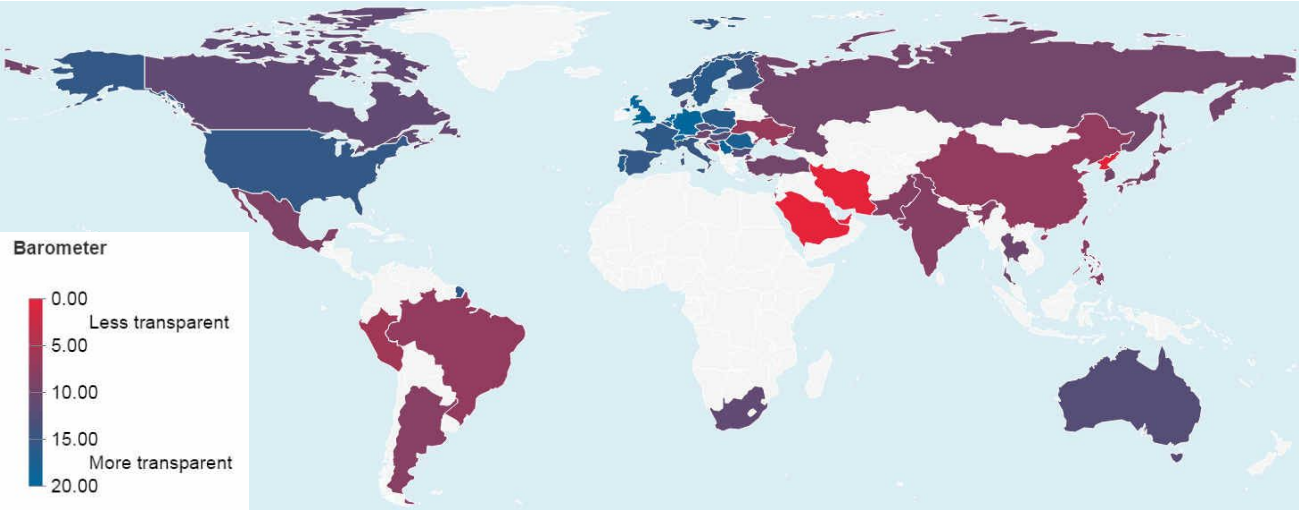
Exports			Imports		
	Value	Percentage		Value	Percentage
United States	1 165	25	United States	2 213	46
Italy	608	13	Canada	359	7
Germany	431	9	Indonesia	244	5
Korea,Republic of	341	7	Australia	163	3
Brazil	310	7	Germany	156	3
Turkey	197	4	Norway	110	2
Czech Republic	145	3	France	98	2
Croatia	141	3	United Kingdom	84	2
Switzerland	136	3	Korea,Republic of	76	2
Spain	97	2	Thailand	73	2
Top 10	**3 569**	**76**	**Top 10**	**3 577**	**74**
Total	**4 725**	**100**	**Total**	**4 857**	**100**

Source: UNCTAD calculations based on UN Comtrade.
Note: 2014 data have been used, as 2015 data are partially complete (90 economies have reported to UN Comtrade at the time of writing). It should be noted however that 2014 data are not fully complete either and that some important gaps exist. Notably, no data for Israel are available since 2011. That year this country was ranked the eighth most important exporter of small arms and light weapons in the world.



The Small Arms Survey Small Arms Trade Transparency Barometer assesses the transparency of the main exporters (see figure 16.2). The assessment is based on information gathered from national and regional arms export reports, the United Nations Register of Conventional Arms and the United Nations Comtrade. The scoring is based on the quality of the data regarding timeliness, access and consistency, clarity, comprehensiveness, deliveries, and licences granted and refused. The barometer identifies a wide range of country practices. The United States of America, the biggest exporter in the world, has an aggregate score of only 11.25 (out of a possible maximum of 25). Italy, the second largest exporter, is more transparent with an aggregate score of 15. Germany, the third largest exporter of small arms, has a transparency rating of 19.75. Other major exporters such as Brazil, the Republic of Korea and Turkey only have scores of 7.0, 9.75 and 9.75, respectively. Quite a few other countries have low transparency regarding their weapons exports: Argentina (8); China (7); the Russian Federation (9.75) and Ukraine (6.75). Other countries have no transparency at all - Iran (0) and Saudi Arabia (0), for example.

Figure 16.2. Small Arms Trade Transparency Barometer, 2016



Source: Pavesi (2016)

Notes and references

Notes

16.1 It should be remembered that the threshold for extreme poverty is US$1.90 per day and the total value of official development assistance was US$137 billion in 2014 (See Goal 17).

16.2 UNCTAD calculations based on United Nations Comtrade, using the following Harmonized System codes: 930100, 930120, 930190, 930200, 930320, 930330, 930510, 930520, 930521, 930529, 930621 and 930630.

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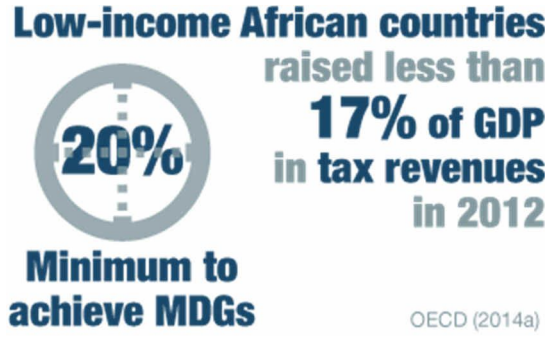
PARTNERSHIP

"We are determined to mobilize the means required to implement this Agenda through a revitalized Global Partnership for Sustainable Development, based on a spirit of strengthened global solidarity, focused in particular on the needs of the poorest and most vulnerable and with the participation of all countries, all stakeholders and all people."

Target 17.1: Domestic resource mobilization

Strengthen domestic resource mobilization, including through international support to developing countries, to improve domestic capacity for tax and other revenue collection.



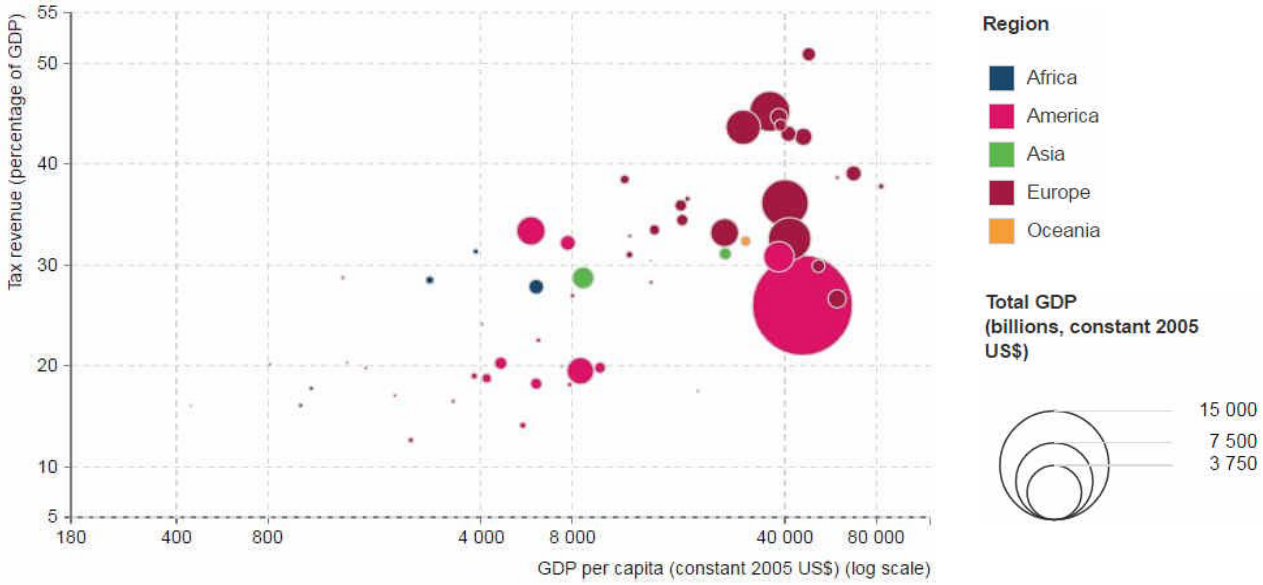
The ability of a State to mobilize its own resources and collect taxes to pay for essential services (education, health, social protection, security, and the like) is at the very heart of a properly functioning government. It is also essential for public investment in equitable and sustainable development and the reduction of dependence on aid. It has also been argued that domestic taxation also increases accountability and "*creates a platform for governments to engage with their citizens*" thus creating a social or "*fiscal contract*" between State and citizens (Organization for Economic Cooperation and Development (OECD), 2014a). The Monterrey Consensus (United Nations, 2003), the Doha Declaration on Financing for Development (United Nations, 2008) and most recently the Addis Ababa Action Agenda (United Nations, 2015) have all highlighted the important role of domestic financial resources for development and offsetting vulnerability.

As John Di (2010) points out, taxation is a useful and often neglected indicator, not just on resource mobilization but also for measuring State performance. Examining several tax indicators contributes to identifying State authority and legitimacy and the likelihood of State resilience. The ability of sovereign States to raise taxes and implement independent tax policies can be undermined by financial globalization as individuals and corporations evade domestic taxation by moving assets. Movements of speculative capital also pose problems in this regard, heightening risks of capital flight. This problem may be more pronounced for developing countries (Helleiner, 1999; UNCTAD, 2015a).

"Once you realize that trickle-down economics does not work, you will see the excessive tax cuts for the rich as what they are - a simple upward redistribution of income, rather than a way to make all of us richer, as we were told." - Chang H-J (2011)

Over the past decade, as developing countries have become wealthier, there has been a corresponding growth in domestic revenues available. Figure 17.1 shows the positive relationship between government revenues as a share of GDP and per capita GDP. Cross-country comparisons also show that OECD and other high-income countries tend to levy higher tax revenues as a percentage of GDP than developing or low/middle income countries.

Figure 17.1. Evolution of tax revenues and GDP per capita, 2014



Sources: OECD Tax database (Tax revenues) and UNCTADstat (GDP per capita).
Notes: Data on tax revenues refer to general government revenues. Data on per capita GDP are shown in logarithmic scale. The size of the bubbles refers to the total GDP.

But within developing countries a wide variety of tax policies and regimes are employed, yielding a wide range of tax per GDP levels. For example, the Bahamas enjoy a relatively high per capita GDP[17.12] but collect a proportionately low level of tax[17.13].

Meanwhile the Plurinational State of Bolivia, Morocco, Trinidad and Tobago, and Turkey have very varied per capita GDP[17.14] but all with tax revenues equating to about 28 per cent of GDP[17.15]. At the other extreme, Rwanda had a very low per capita GDP in 2012[17.16] but still generated the equivalent of 16 per cent of GDP through tax.

Within the high-income group of countries Canada, Ireland, New Zealand and the United Kingdom of Great Britain and Northern Ireland have quite high standards of per capita GDP but all have proportionately high tax revenues relative to the average[17.17]. Denmark collects the highest proportionate tax, 50.9 per cent in 2014, and interestingly is classified as the happiest country in the world (World Happiness Report). One of the challenges with such cross-country analyses is that the results can vary dramatically depending on the data source used. The analysis above is based on calculations using OECD data and UNCTADstat. Had World Bank data been used, a different picture would have emerged (World Development Indicators).

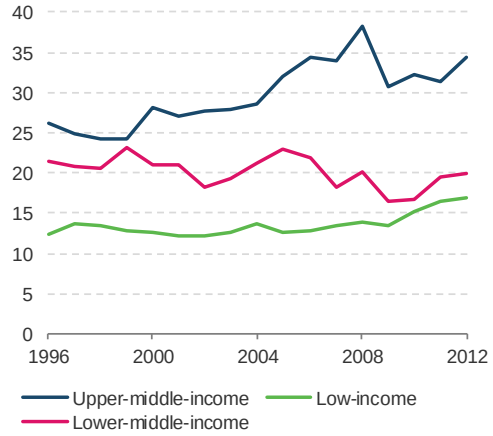
In order to achieve the ambitious Sustainable Development Goal Agenda, developing countries will need to raise more revenues. While external sources will play their part, most of those revenues will be domestic. To balance increased revenues with equitable development, taxation will need to be progressive and used efficiently and transparently.

The Center for Strategic and International Studies (CSIS) estimates that during 2012 developing and emerging economies mobilized US$7.7 trillion in domestic resources (CSIS, 2014). Even in sub-Saharan Africa, where the pace of development has been slower, CSIS estimates that domestic resources exceeded US$530 billion. Yet the report African Economic Outlook (African Development Bank Group (ADBG et al., 2014) notes that in 2012 low-income African countries only mobilized an average 16.8 per cent of their GDP in tax revenues, below the minimum level of 20 per cent considered by the United Nations as necessary to achieve the Millennium Development Goals (United Nations Development Programme (UNDP, 2010)).

Lower- and middle-income African countries fell just short of the minimum target, with an average share of tax revenues/GDP of almost 20 per cent. Upper- and middle-income countries came closer to the OECD average of 35 per cent, at 34.4 per cent. For Africa as a whole, the tax burden stood at 26 per cent of GDP in 2012.

Figure 17.2 shows that the total tax take (as a percentage of GDP) has been growing slowly but fairly steadily for low-income African countries (from 12 per cent in 1996 to 17 per cent in 2012). For lower-middle-income countries the path has been more erratic and hasn't led to any improvement but rather a worsening, from 21 per cent in 1996 to 20 per cent in 2012.

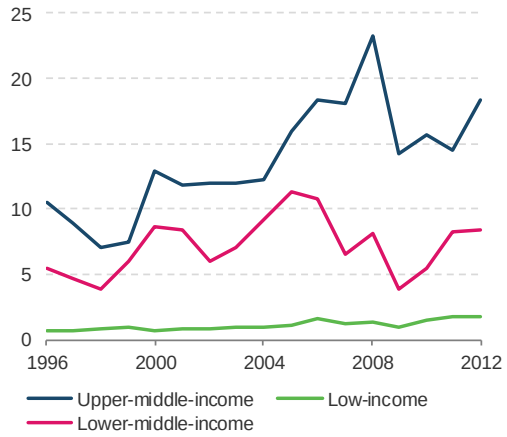
Figure 17.2. Average total tax burden in African States by income group, 1996-2012
(Percentage of GDP)



Source: UNCTAD calculations based on data from ADBG et al. (2014)
Note: World Bank lending group definitions.

For upper- and middle-income African countries the trend has also been quite volatile, but nevertheless an improving situation is evident with a tax burden in 2012 of 34 per cent (up from 26 per cent in 1996). While these improvements are welcome, some of the growth in domestic mobilization arose from the commodities boom or super-cycle, which now appears to have ended. These natural-resource-related tax revenues are reflected in other taxes (figure 17.3).

Figure 17.3. Average 'Other' taxes in African States, by income group, 1996-2012
(Percentage of GDP)



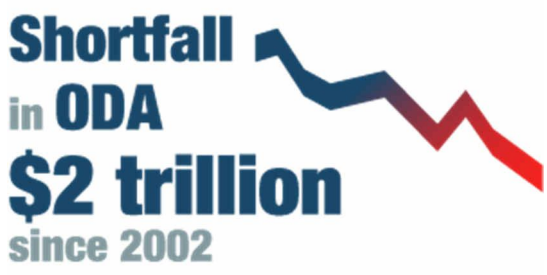
Source: ADBG et al. (2014)
Note: World Bank lending group definitions.

In 2012, other taxes represented US$242 billion, amounting to 46 per cent of total tax revenue in Africa (ADBG et al., 2014). Such resource taxes and the rapid growth in private capital flows represent increasing vulnerabilities for developing and transition countries (UNCTAD, 2015a). Other taxes accounted for more than half of the total tax burden for African upper- and middle-income countries in 2012.

Target 17.2: ODA commitments

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 ODA/GNI to developing countries and 0.15 to 0.20 per cent to 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.

The shortfall in the Official Development Assistance (ODA) is a subset of external official aid provided by developed to developing countries. The need to establish a stable flow of ODA was recognized as far back as the 1960s. In fact, a target of official flows equivalent to 0.75 per cent of each developed country's gross national product (GNP) was initially adopted at the second conference of UNCTAD in New Delhi in 1968. This proposal was accepted by most, but not all, developed countries; but after further negotiations, this initiative was approved by the United Nations General Assembly on October 1970, although the target was lowered to 0.7 per cent of GNP.



Following a period of decline and stagnation in the 1990s, despite a call for renewed efforts from the Monterrey Consensus on Financing for Development (United Nations, 2003), registered ODA flows to developing countries increased significantly in the 2000s (figure 17.4 and figure 17.5).

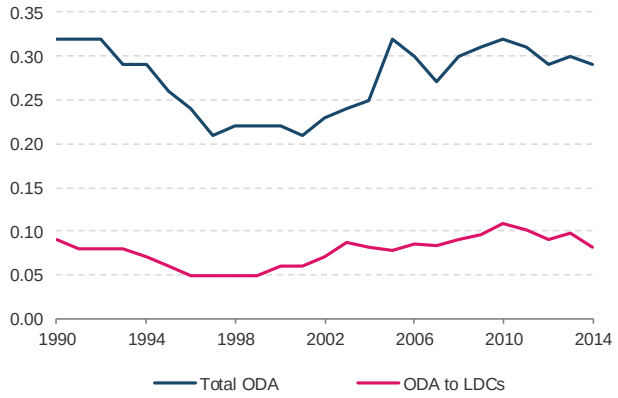
"ODA, estimated at US$135 billion a year, provides a fundamental source of financing, especially in the poorest and most fragile countries. But more is needed. Investment needs in infrastructure alone reach up to US$1.5 trillion a year in emerging and developing countries". - (World Bank, 2015)

Net disbursements by members of the Development Assistance Committee (DAC) of OECD rose from US$89 billion in 2002 to US$134 billion in 2014 (in constant 2013 United States dollar terms) – a 51 per cent increase, though an amount slightly below the record levels in 2010 and 2013. However, this still represents only 0.29 per cent of members' GNI, which is far short of the committed target of 0.7 per cent of GNI and is lower than the shares in the early 1990s[17.18].

Figure 17.4. ODA provided by DAC countries, 1990-2014
(At constant prices; 2013 US$ billions)

Source: UNCTAD Trade and Development Report 2015 (UNCTAD, 2015a).

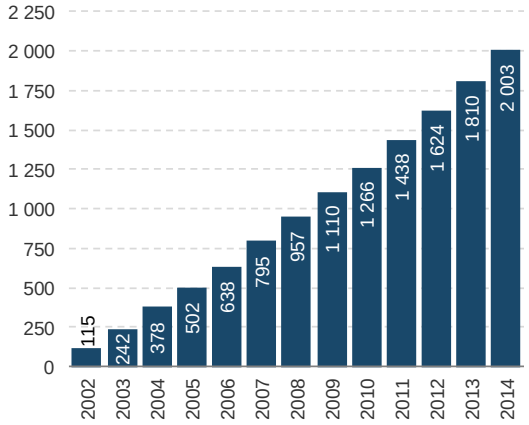
Figure 17.5. ODA provided by DAC countries, 1990-2014
(Percentage of DAC countries' GNI at current prices)



Source: UNCTAD Trade and Development Report 2015 (UNCTAD, 2015a).

Moreover, this percentage has been on a declining trend since 2010, both for total ODA and for ODA to the LDCs. Around one third of ODA has been directed towards these countries, where, on average, it accounts for over 70 per cent of external financing (United Nations, 2014). In constant dollar terms, it more than doubled between 2000 and 2010, but it has been falling in recent years. Indeed, bilateral aid to LDCs declined by 16 per cent in 2014 (OECD, 2015b).

Figure 17.6. Cumulative 0.7 per cent ODA gap, 2002-2014
(US$ billions at current prices)



Source: UNCTAD secretariat calculations based on OECD Development Finance Statistics.

Moreover, spending plans by major donors suggest that there is unlikely to be a significant growth of ODA flows in the medium term (OECD, 2014b). For a more detailed discussion on this topic, see UNCTAD Trade and Development Report 2015, 17.3 and 17.9.

Since the 2002 Monterrey Consensus, approximately US$1.4 trillion in ODA has been delivered, representing an average effort of 0.29 per cent of GNI (figure 17.6). During this period, the gap or shortfall between pledged and delivered ODA, between 0.29 per cent and 0.7 per cent of GNI, equates to just over US$2 trillion (in current prices). The ODA gap for 2014 alone was more than US$192 million[17.19].

In 2000, an important milestone was achieved with the adoption of the United Nations Millennium Declaration In this declaration, the international community formally committed itself to the pursuit of sustainable development and poverty eradication. As emphasized by DAC, "*Development was recognized not as charity from rich countries, but as a collective responsibility that addresses the interests of all the world's nations by upholding the principles of human dignity, equality, and global equity*" (DAC, 2011).

Target 17.5: Investment promotion for LDCs

Adopt and implement investment promotion regimes for least developed countries.

The Sustainable Development Goals will have very significant resource implications across the developed and developing world. Global investment needs will be between $5 trillion to $7 trillion per year. Estimates for investment needs in developing countries alone range from $3.3 trillion to $4.5 trillion per year, mainly for basic infrastructure (roads, rail and ports; power stations; water and sanitation), food security (agriculture and rural development), climate change mitigation and adaptation, health, and education.

At current levels of investment in Sustainable Development Goal-relevant sectors, developing countries alone face an annual gap of $2.5 trillion (UNCTAD, 2014a). In developing countries, especially in LDCs and other vulnerable economies, public finances are central to investment in the Sustainable Development Goals. However, they cannot meet all Sustainable Development Goal-implied resource demands. The role of private sector investment will be indispensable.

Today, the private sector's participation is relatively low. Only a fraction of the worldwide invested assets of banks, pension funds, insurers, foundations and endowments, as well as transnational corporations, is in Sustainable Development Goal sectors. Their input is even lower in developing countries, particularly in the poorest ones. Private investment can play an important role in the development of infrastructure, health, education and climate change mitigation activities.

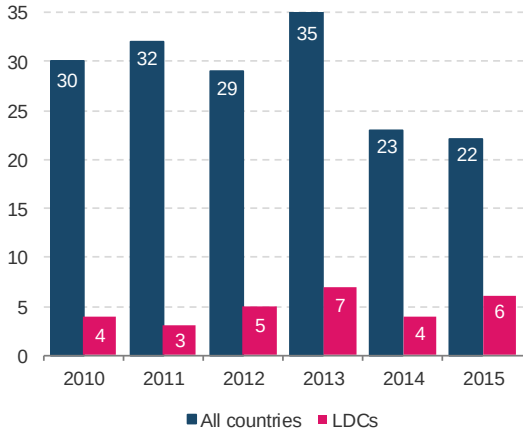
Unfortunately, countries do not appear to have paid much attention so far to the importance of channelling investment into sectors that are particularly important for sustainable development, and more proactive policy measures are needed to increase investment flows (UNCTAD, 2015b).

Most countries have set up promotion schemes to attract and facilitate foreign investment. Promotion and facilitation measures often include the granting of fiscal or financial incentives and the establishment of special economic zones or one-stop shops.

Many countries have also set up special investment promotion agencies (IPAs) to attract foreign investors through image-building, investor-targeting, investment facilitation, investor aftercare and policy advocacy. (UNCTAD, 2014b);(UNCTAD, 2014c). Some of these agencies are actively promoting investment in the Sustainable Development Goals, including low-carbon investment (UNCTAD, 2013a). Today, 39 (81 per cent) of the 48 LDCs have an IPA in place.

The Inter-agency Expert Group on Sustainable Development Goal Indicators (IAEG-SDGs) selected the "*Number of countries that adopt and implement investment promotion regimes for least developed countries*" as the indicator to measure progress towards this target. During the six years from 2010 and 2015, at least 171 new investment promotion and facilitation policies were introduced around the world, of which 29 were introduced by LDCs (figure 17.9).

Figure 17.9. Number of new national investment promotion and facilitation policies, 2010-2015
(Number of policies)



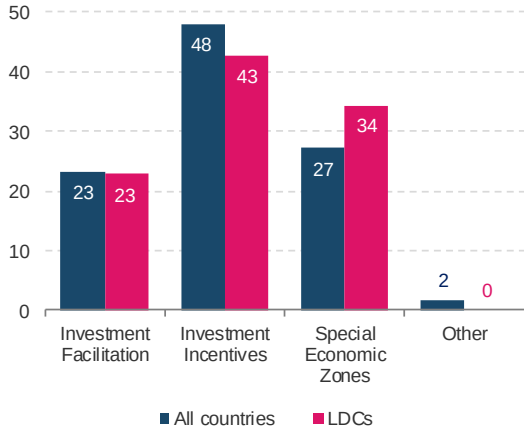
Source: UNCTAD Investment Policy Monitor.
Notes: Data coverage: positive and non-neutral/indeterminate measures (total of 79 countries). Between 2010 and 2015 no cancellation or termination of promotion measures was reported.

Africa and Asia accounted for the bulk of new promotion and facilitation policies introduced by all countries over the past six years, both accounting for 32 per cent each. Not surprisingly, Africa accounted for 90 per cent of all new promotion and facilitation policies introduced by LDCs during this period, with Asia accounting for the residual. Some LDCs have introduced several new promotion and facilitation policies recently.

For example, Angola introduced five separate promotion measures, Ethiopia introduced three, while Myanmar was the most active country in Asia introducing three separate policies.

Investment promotion and facilitation policies can be classified into four broad categories: investment facilitation; "*investment incentives*"; special economic zones (SEZ) and other. Figure 17.10 shows that out of all promotion policies introduced in recent years, investment incentives are the most common mechanism, accounting for almost half of all new policies. While the pattern was similar for LDCs, a greater balance of investment incentive measures and SEZs were adopted when compared with the global distribution.

Figure 17.10. Distribution of new national investment promotion and facilitation policies by category, 2010-2015
(Percentage of all promotion policies)

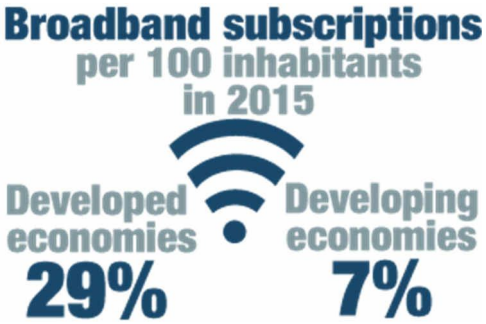


Source: UNCTAD Investment Policy Monitor.
Note: Aggregation of subcategory measures may not add up to total measures because some of the measures can be classified under more than one subcategory.

Target 17.6: Partnership and knowledge sharing

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.

The Internet has become an increasingly important tool for development, providing access to information to science, technology and innovation, fostering and enhancing regional and international cooperation and knowledge-sharing. High-speed access is important to ensure that Internet users can take advantage of the growing amount of its content - including user-generated content, services and information.



While the number of fixed broadband subscriptions has increased substantially over the last years and while service providers offer increasingly higher speeds, fixed Internet broadband can vary tremendously by speed, thus affecting the quality and functionality of Internet access.

"The rapid development of broadband networks is widely considered essential if developing countries are to leverage the benefits now available through ICTs and avoid the widening of development divides that could result from differential rates of growth in digital technology." - UNCTAD (2015c)

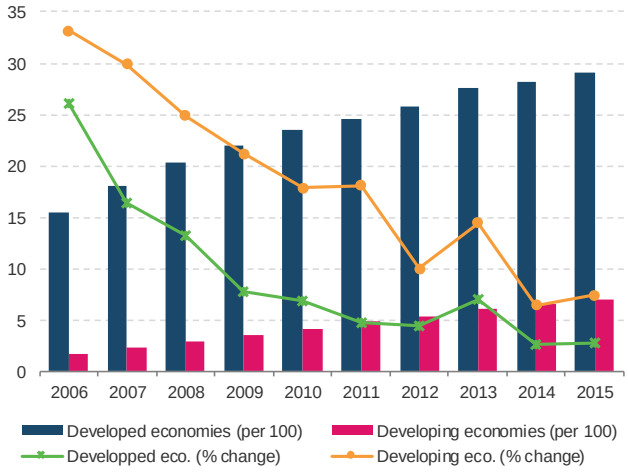
Many countries, especially in the developing world, have not only very limited fixed broadband subscriptions, but also these are at very low speeds. This limitation is a barrier to maximizing the potential of the Internet. Internet access can also be used as a measure of the digital divide, which, if not properly addressed, will aggravate inequalities in all development domains.

Hence, IAEG-SDGs has selected "*Fixed Internet broadband subscriptions per 100 inhabitants, by speed*" as the appropriate indicator serving as a broad barometer on the divides noted above.

Figure 17.11 shows that while developed economies were at a much higher base in 2005, more than 15 subscriptions per 100 inhabitants in developed economies compared with less than 2 per 100 in developing economies, the growth in fixed broadband subscriptions have been much higher in developing economies over the past decade.

Today, developed economies have an average of 29 broadband subscriptions per 100 inhabitants compared with only 7 per 100 in developing economies.

Figure 17.11. Fixed broadband subscriptions by development status
(Per 100 inhabitants and percentage change)



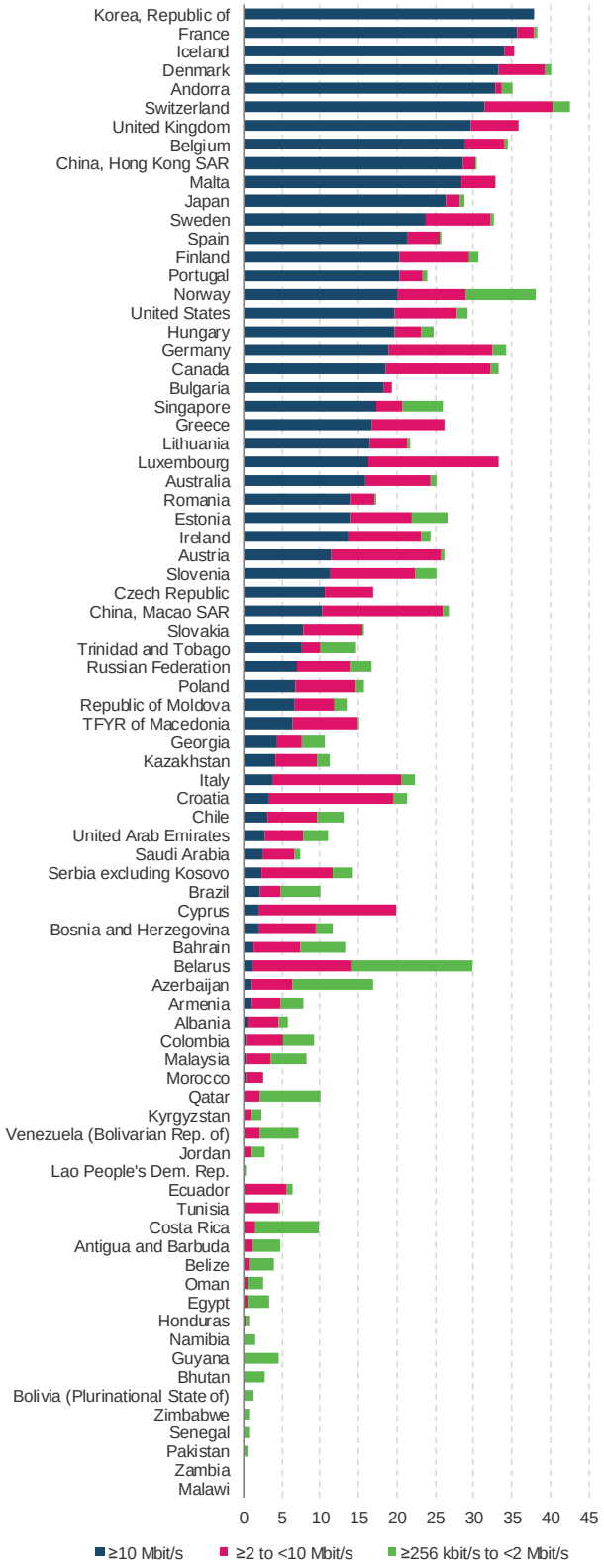
Source: International Telecommunication Union (ITU) statistics aggregate data.
Note: ITU region definitions.

The indicator also demands that fixed Internet broadband subscriptions are categorized by advertised broadband download speeds[17.23]. ITU collects data for this indicator broken down into three speeds: (1) 256 kbit/s and < 2 Mbit/s[17.24]; (2) 2 Mbit/s and < 10 Mbit/s[17.25]; (3) >= 10 Mbit/s[17.26]. Figure 17.12 shows the distribution of Internet broadband speeds for selected countries where data are available.

For example, all of the Republic of Korea's broadband is at least 10 Mbits per second, whereas in Germany broadband speeds are available at three different speeds, with more than half (56 per cent) of inhabitants using high speed (>= 10 Mbit/s), 39 per cent using medium speed broadband (2 Mbit/s and < 10 Mbit/s) and the remaining 5 per cent using low-speed broadband Internet access.

Several countries do not have high-speed broadband at all. For example, while Tunisia does have high-speed broadband, the vast majority (96 per cent) of Internet users subscribe to medium speed. In contrast, in Egypt only 15 per cent of inhabitants access the Internet via medium-speed broadband, with the great majority reliant on low-speed broadband. In countries such as the Plurinational State of Bolivia, Guyana, Pakistan, Senegal, Zambia and Zimbabwe, the small numbers that do have access to the Internet only have access to low-speed connections.

Figure 17.12. Fixed broadband subscriptions by speed, selected countries, 2014
(Per 100 inhabitants)



Source: ITU Statistics aggregate data.

UNCTAD has also drawn attention to the importance of the digital divide in broadband capacity and quality, noting that it creates other divisions between countries and regions in terms of the extent to which individuals, businesses, economies and societies are able to take advantage of new ICT innovations and applications (UNCTAD, 2013b).

The importance of broadband infrastructure for seizing the full opportunities from e-commerce, including leveraging cloud solutions and purchasing digital products that require high quality broadband service, has also been highlighted (UNCTAD, 2015d). The fundamental importance of affordable and reliable ICT infrastructure for e-commerce has also been stressed.

The UNCTAD report notes "*...there should be universal coverage of high-speed broadband, with regular upgrading of infrastructure, and reduced or eliminated artificial regulatory barriers to service providers wishing to access the network or other services. In addition, the international regulatory environment for ICT infrastructure and related services should be open, competitive and transparent*" (UNCTAD, 2016a).

Target 17.7: Environmentally sound technology

Promote the development, transfer, dissemination and diffusion of environmentally sound technologies to developing countries on favorable terms, including on concessional and preferential terms, as mutually agreed.

The Inter-agency Expert Group on Sustainable Development Goal Indicators (IAEG-SDG) selected as an indicator, the "*Total amount of approved funding for developing countries to promote the development, transfer, dissemination and diffusion of environmentally sound technologies*". However, at the time of writing there were no data or metadata available for this indicator. Therefore, an alternate indicator, the "*average applied tariffs imposed on environmental goods*" is presented. For more information see UNCTAD (2016b).

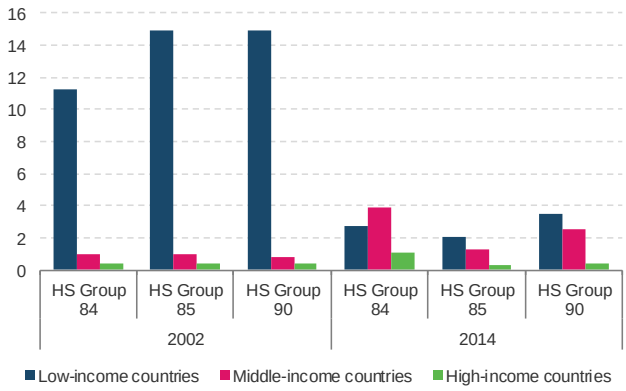
Trade liberalization on environmental goods has been discussed in a multilateral and regional setting. In 2001, World Trade Organization (WTO) members agreed at the Doha Ministerial Conference that they would negotiate on the reduction or elimination of tariff and non-tariff barriers on environmental goods and services. Despite the increasing awareness of the WTO members of the potential win-win-win situation for trade, trade liberalization of environmental goods (at the multilateral level) has stumbled over problems identifying which products were environmental goods contributing to environmental protection and climate change mitigation. In 2012, a ground-breaking move on trade of environmental goods was made outside WTO. The Asia-Pacific Economic Cooperation (APEC) member countries came up with a list of 54 environmental goods whose tariffs were to be reduced or eliminated among them. The Leaders' Declaration, adopted at the 24th annual gathering of APEC leaders, stated that the APEC "*members will reduce applied tariff rates to 5 per cent or less by the end of 2015*" for the 54 products listed as APEC's environmental goods, which "*would directly and positively contribute to green growth and sustainable development objectives*"[17.27].

To illustrate the current market access conditions for environmental goods, 44 products were selected from the APEC list[17.28] on the basis that they can be mapped to the World Customs Organization's Harmonized Commodity Description and Coding System, or Harmonized System (HS) at the two-digit level[17.29]. Note that the 44 products studied here do not take into account so-called "*ex outs*" of different APEC members that are specified in the APEC list[17.30]. Figures 17.13 and 17.14 provide weighted average tariffs applied to the imports (figure 17.13) and exports (figure 17.14) of the 44 environmental goods in markets for different income groups.

In 2014, the average tariffs on the imports of environmental goods were below 4 per cent across all income groups. Between 2002 and 2014, the average tariffs on imports of environmental goods in low-income countries declined by almost two thirds. The average applied tariff for the products in the HS-85 group, for instance, was 15 per cent in 2002; in 2014 it was 2 per cent.

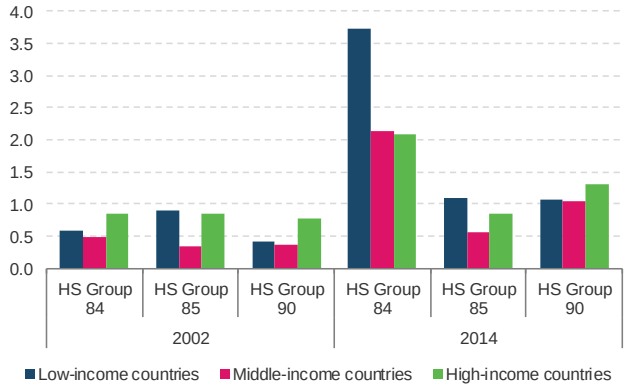
The picture is different for the middle-income countries, whose 2014 weighted average tariff on products under HS-84 was almost four times higher than the level in 2002. As discussed above, this change was not a result of tariff increase but arose from the change in the shift of imported environmental goods from lower-tariff to higher-tariff ones. Environmental tariffs in 2014 in high-income countries were around 1 per cent or less.

Figure 17.13. Weighted average tariffs on environmental goods, 2002 and 2014
(Percentage, by importer groups and HS two-digit level)



Sources: UNCTAD calculations based on United Nations Comtrade, the World Integrated Trade Solution (WITS) and Trade Analysis and Information System (TRAINS) database and UNCTAD data on non-tariff measures (NTMs).

Figure 17.14. Weighted average tariffs on environmental goods, 2002 and 2014
(Percentage, by exporter groups and HS two-digit level)



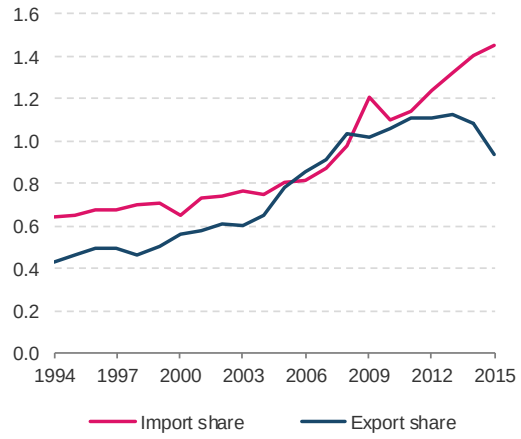
Sources: UNCTAD calculations based on United Nations Comtrade, the World Integrated Trade Solution (WITS) and Trade Analysis and Information System (TRAINS) database and UNCTAD data on non-tariff measures (NTMs).

Target 17.11: Double exports from developing countries

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

The indicator that the Inter-agency Expert Group on Sustainable Development Goal Indicators (IAEG-SDG) selected is Developing countries' and least developed countries' share of global exports. Figure 17.23 and 17.24 present the changes in the share of exports and imports in merchandise and services for least developed countries (LDCs) since 1994 for merchandise and 2005 for services. The statistics presented for services exports are based on the definitions of services as prescribed in the sixth edition of the International Monetary Fund (IMF) Balance of Payments and International Investment Position Manual (IMF, 2009), the data of which are available only from 2005.

Figure 17.23. Shares of LDCs' merchandise exports and imports in global trade, 1994-2015
(Percentage)

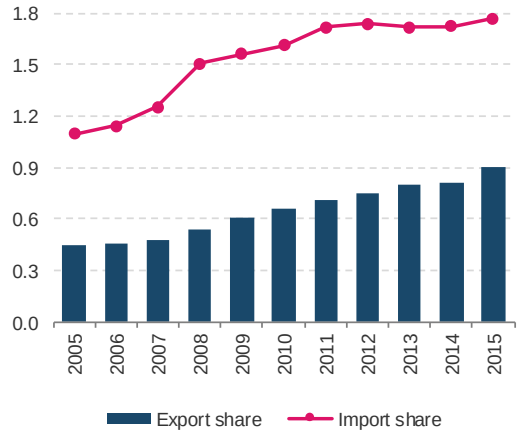


Sources: UNCTADstat.
Note: 2015: estimates.

In 2015, the value of merchandise exports from LDCs was US$154 billion. The LDC share of world exports almost doubled over 15 years, from 0.6 per cent in 2000 to 1 per cent in 2015 (see figure 17.23). The LDC share of world merchandise imports increased even more, from 0.7 per cent in 2000 to 1.5 per cent in 2015, to reach an estimated US$241 billion. The key driver of export growth over this period was the massive rise in the price of fuels, ores and metals, reflecting the high demand in developing countries, most notably China.

For services trade, in 2015 the LDC share of world services exports (US$4.7 trillion) was 0.9 per cent (US$42 billion), showing a significant increase from 0.5 per cent (US$12 billion) in 2005. As for services imports, the share in 2015 was 1.8 per cent (US$82 billion), up from 1.1 per cent (US$28 billion) in 2005 (see figure 17.24).

Figure 17.24. Changes in the share of LDC exports and imports of services in global trade, 2005-2015
(Percentage)



Sources: UNCTADstat.
Note: 2015: estimates.

UNCTAD investigates whether an improvement in market access conditions in terms of tariff preferences would be enough to double the export shares of LDCs (UNCTAD, 2016b). As noted in Goal 17 target 10, applied tariffs have been reduced, if not eliminated, in various settings, including via bilateral or regional free trade agreements. In April 2015, the number of regional trade agreements (RTA) notified to WTO was 612, of which 406 are currently in force. The number of RTAs in force in 1994 was approximately 100. Few RTAs involve LDCs. In this context, even if LDCs receive duty-free and quota-free market access treatment, the value of the relative preferential margin (RPM) also falls. Nicita and Rollo estimate that one unit fall in the preferential margin (in RPMs) reduces the exports of preference-receiving countries by on average 0.3 percentage points and that the proliferation of RTAs outside sub-Saharan Africa could limit new export opportunities via a reduction in RPMs (Nicita and Rollo, 2013). As tariff rates have fallen globally in the past decades, market access conditions for LDCs have been increasingly determined by non-tariff measures such as sanitary and phytosanitary measures and technical barriers to trade. UNCTAD estimates that more than 50 per cent of the exported products of developing countries face some type of non-tariff measure, the majority of which are sanitary and phytosanitary measures and technical barriers to trade (UNCTAD, 2013c). Non-tariff measures for key LDC exports, such as textiles and clothing, and footwear and agricultural products, are substantial, ranging at around 10-27 per cent of the tariff equivalent. Trade costs arising from non-tariff measures on exports are disproportionately larger for LDCs than for high income countries (Nicita and Murina, 2014).

An additional question regarding market access of LDC exports concerns their physical connectivity to international markets. Reducing tariffs or non-tariff measures faced by LDC exports will do little to increase their price competitiveness if LDCs cannot bring their goods to market at a reasonable cost. This point is well illustrated, for example, by the Liner Shipping Connectivity Matrix, many LDCs are at the bottom of rankings of direct maritime connectivity measured by the average number of trans-shipments. (For more information see UNCTAD Review of Maritime Transport series.) The absence of a direct connection may be associated with export losses of 42-55 per cent (Fugazza, 2015).

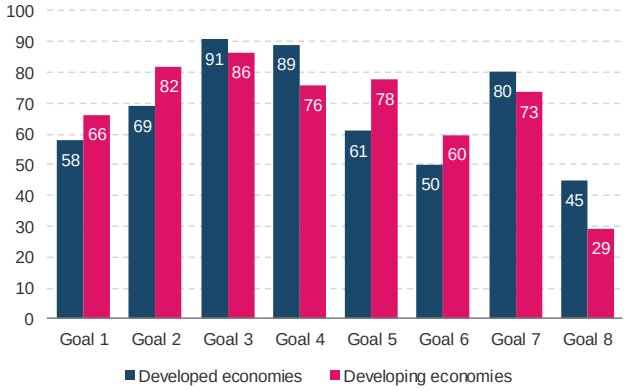
Target 17.18: Capacity-building for reliable data availability

By 2020, enhance capacity-building support to developing countries, including for least developed countries and small island developing States, to increase significantly the availability of high-quality, timely and reliable data disaggregated by income, gender, age, race, ethnicity, migratory status, disability, geographic location and other characteristics relevant in national contexts.

The Inter-Agency and Expert Group on Sustainable Development Goal Indicators (IAEG-SDG) has selected the "*Proportion of sustainable development indicators produced at the national level with full disaggregation when relevant to the target, in accordance with the Fundamental Principles of Official Statistics*"[17.91] as the best indicator to measure progress towards this target. Unfortunately, this indicator cannot be compiled until all of the other Sustainable Development Goal indicators are formally populated.

As the Millennium Development Goal programme was completed at the end of 2015, the availability of data can be assessed. The Millennium Development Goals were comprised of 8 Goals, 19 targets and 61 indicators.

Figure 17.30. Average data availability rates for Millennium Development Goal indicators in 2015 by development status
(Percentage of total)



Source: UNCTAD secretariat calculations based on UNSD.
Note: Data availability is defined as having at least one data point.

Figure 17.30 shows that even after 15 years, sizeable data gaps exist across all Goals, particularly for Goal 8[17.92] where average data availability for developing regions was only 29 per cent in 2015. Across all the Goals, in 2015, the average data availability was only 68 per cent.

The Sustainable Development Goals are a much more ambitious and complex proposition comprising 17 Goals, 169 targets and 230 indicators. This represents an almost three-fold increase in the number of indicators required by the new monitoring framework.

But such a simple volume measure underestimates the real data challenge ahead, as the widening of scope and complexity of the Sustainable Development Goals compared with the Millennium Development Goals has greatly added to the task. For example, UNSD estimates that just less than half (47 per cent) of the indicators agreed by the United Nations Statistical Commission in March 2016 are categorized as tier 1 indicators meaning concepts, methodologies, standards and data exist for compiling the indicator (United Nations, Department of Economic and Social Affairs, Statistics Division, 2016).

A further quarter of all indicators (24 per cent) are categorized as tier 2 with the residual indicators (28 per cent) categorized as tier 3. While UNSD notes that this estimate is very preliminary in nature, it nevertheless gives an indication of the magnitude of the task that awaits the global statistical community.

The gaps in data availability to measure progress towards the Millennium Development Goals suggest that populating the Sustainable Development Goal monitoring framework will be very challenging. In turn this suggests that a very significant investment in both national and international statistics, data infrastructures[17.93] and capacity-building, including statistical literacy, will be necessary to fulfil the requirements of the Sustainable Development Goal monitoring framework.

Notes and references

Notes

17.12 Bahamas US$20,977 (2014).

17.13 Bahamas 17.5 per cent (2014).

17.14 The Plurinational State of Bolivia (2014): per capita GDP US$1,373; Morocco (2014): per capita GDP US$2,600; Turkey (2014): per capita GDP US$8,868; Trinidad and Tobago (2014): per capita GDP US$14,417.

17.15 The Plurinational State of Bolivia (2014): tax revenue as a percentage of GDP 28.7 per cent; Morocco (2014): tax revenue as a percentage of GDP 28.5 per cent; Turkey (2014): tax revenue as a percentage of GDP 28.7 per cent; Trinidad and Tobago (2014): tax revenue as a percentage of GDP 28.3 per cent.

17.16 Rwanda (2014): per capita GDP US$398 and tax revenue as a percentage of GDP 16.1 per cent.

17.17 Canada (2014): per capita GDP US$47,592 and tax revenue as a percentage of GDP 33.4 per cent; Ireland (2014): per capita GDP US$48,681 and tax revenue as a percentage of GDP 29.9 per cent; New Zealand (2014): per capita GDP US$29,709 and tax revenue as a percentage of GDP 32.4 per cent; United Kingdom (2014): per capita GDP US$41,598 and tax revenue as a percentage of GDP 32.6 per cent.

17.18 Only five members reached or exceeded the target of 0.7 per cent of GNI: Denmark, Luxembourg, Norway, Sweden and the United Kingdom (OECD, 2015a)

17.19 UNCTAD secretariat estimates based on DAC figures. OECD DAC data.

17.23 The indicator fixed Internet broadband subscriptions, by speed, in other words the number of fixed broadband subscriptions to the public Internet, is based on an internationally agreed definition. It is also a core indicator of the Partnership on Measuring ICT for Development's core list of indicators, which has been endorsed by the United Nations Statistical Commission.

17.24 All fixed broadband Internet subscriptions with advertised download speeds equal to or greater than 256 kbit/s and less than 2 Mbit/s. Mbit/s is the data transfer rate, that is, the average number of bits per second passing between equipment in a data transmission system. Data transfer rates for modern high-speed Internet connections are most commonly expressed in multiples of bits per second, such as megabits per second (Mbit/s). A megabit per second, Mbit/s or Mb/s, is 1,000,000 or 106 bits per second.

17.25 All fixed broadband Internet subscriptions with advertised download speeds equal to or greater than 2 Mbit/s and less than 10 Mbit/s.

17.26 All fixed broadband Internet subscriptions with advertised download speeds equal to, or greater than, 10 Mbit/s.

17.27 The APEC countries themselves have, in their 2012 Vladivostok Declaration, committed to reduce tariffs on these 54 goods to 5 per cent or less by 2015. See ANNEX C - APEC List of Environmental Goods.

17.28 Of the 54 APEC products, 44 were selected, based on: those identified in the HS Nomenclature 2002 Edition; and those that had a corresponding code in the HS Nomenclature 2012 Edition. This approach facilitated a comparison of tariff rates and trade flows between 2002 and 2014.

17.29 Of the 44 products, 20 fall under HS-84 group (boilers, machinery and mechanical appliances, and the like); 9 under HS-85 group (electrical machinery and equipment and parts thereof); and 15 under HS-90 group (measuring, checking, precision instruments and apparatus and parts and accessories thereof).

17.30 National tariff lines are more detailed than the HS six-digit level. Once "ex outs" are taken into account, the actual coverage of products for tariff reduction can be quite restricted (Sugathan and Brewer, 2012).

17.91 The United Nations Fundamental Principles of Official Statistics were endorsed by the General Assembly in 2014 (Resolution 68/261 of 29 January 2014) and updated with a revised preamble in 2013 (E/RES/2013/21). The text sets out 10 key principles deemed necessary to support good quality, independent official statistics. See http://unstats.un.org/unsd/dnss/gp/FP-Rev2013-E.pdf.

17.92 Develop a global partnership for development.

17.93 A data infrastructure is a whole-of-system approach to organizing data whereby different datasets can be linked at unit record level through the use of unique identifiers (MacFeely and Dunne, 2014; Dunne and MacFeely, 2014).

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Abbreviations

ADB	Asian Development Bank
ADBG	African Development Bank Group
AOI	Agriculture Orientation Index
APEC	Asia–Pacific Economic Cooperation
BBC	British Broadcasting Corporation
BP	British Petroleum
BRICS	Brazil, the Russian Federation, India, China and South Africa
CBD	Convention on Biological Diversity
CDI	Commitment to Development Index
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CMS	Convention on the Conservation of Migratory Species of Wild Animals
CO2	carbon dioxide
COP 21	Twenty-first session of the Conference of the Parties (UNFCCC)
CSIS	Center for Strategic and International Studies
DAA	direct-acting antiviral drug
DAC	Development Assistance Committee (OECD)
DESA	United Nations Department of Economic and Social Affairs
ECA	Economic Commission for Africa
ECOSOC	United Nations Economic and Social Council
EDI	Education for All Development Index
EFA	education for all
EIA	United States Energy Information Administration
EIU	Economist Intelligence Unit
ESG	environmental, social and governance
FAO	Food and Agriculture Organization of the United Nations
FDI	foreign direct investment
FiBL	Forschungsinstitut für biologischen Landbau (Research Institute of Organic Agriculture)
FTT	Financial Transaction Taxation
GATT	General Agreement on Tariffs and Trade
GDP	gross domestic product
GERD	gross domestic expenditure on research and development
GGI	Gender Gap Index
GHG	greenhouse gas
GII	Gender Inequality Index
GNI	gross national income
GNP	gross national product
GPEDC	Global Partnership for Effective Development Cooperation
GPI	Genuine Progress Indicator
GSMA	Groupe Speciale Mobile Association
HCV	hepatitis C virus
HS	Harmonized System
IAEG-SDs	Inter-agency and Expert Group on Sustainable Development Goal Indicators
IBRD	International Bank for Reconstruction and Development
ICT	information and communications technology
IEA	International Energy Agency
IFOAM	International Federation of Organic Agriculture Movements
IGME	United Nations Inter-agency Group for Child Mortality Estimation
ILO	International Labour Organization
IMF	International Monetary Fund

IPCC	Intergovernmental Panel on Climate Change
IPPC	International Plant Protection Convention
ISAR	Intergovernmental Working Group of Experts on International Standards of Accounting and Reporting
ITF	International Transport Forum
ITU	International Telecommunication Union
IUU	illegal, unreported and unregulated
IWI	Inclusive Wealth Index
LDC	least developed country
LLDC	landlocked developing country
MFN	most favoured nation
MHT	medium- and high-technology
MVA	manufacturing value added
NASA	United States National Aeronautics and Space Administration
NDI	national data infrastructure
n.e.c	not elsewhere classified
ODA	official development assistance
ODCs	other developing countries
OECD	Organization for Economic Cooperation and Development
PCD	policy coherence for development
PPP	purchasing-power-parity (Goal 8); public–private partnership (Goal 17)
PTR	pupil–teacher ratio
RCA	revealed comparative advantage
RFMA	regional fisheries management arrangement
RFMO	regional fisheries management organization
RPM	relative preferential margin
SEEA	System of Environmental–Economic Accounting
SIDS	small island developing States
SIGI	Social Institutions and Gender Index
SME	small and medium-sized enterprise
SPS	sanitary and phytosanitary
TBT	technical barriers to trade
TRAINS	Trade Analysis and Information System
TSA	Tourism Satellite Account
UNCCD	United Nations Convention to Combat Desertification
UNCLOS	United Nations Convention on the Law of the Sea
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
UNHCR	Office of the United Nations High Commissioner for Refugees
UNICEF	United Nations Children's Fund
UNIDO	United Nations Industrial Development Organization
UNSD	United Nations Statistics Division
UNWTO	World Tourism Organization
WEF	World Economic Forum
WEOI	Women's Economic Opportunity Index
WFP	World Food Programme
WHO	World Health Organization
WITS	World Integrated Trade Solution
WSIS	World Summit on the Information Society
WTO	World Trade Organization