Handbook on Integrated Regional Indicators Framework of Agenda 2030 and Agenda 2063:

Concepts and Definitions
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WCMC  World Conservation Monitoring Centre
WDI   World Development Index
WDPA  World Database on Protected Areas
WHO   World Health Organization
WHS   World Health Survey
WTO   World Trade Organization
Background

At the sixty-fifth session which was held in September 2010 (UNGA 2010), the General Assembly requested the Secretary-General to report annually on progress in the implementation of the Millennium Development Goals (MDGs) until 2015 and to make recommendations in his annual reports, as appropriate, for further steps to advance the United Nations development agenda beyond 2015.

During the summit the General Assembly recognized that progress, including on poverty eradication, is being made despite setbacks, including setbacks caused by the financial and economic crisis. In this context, the Assembly recognized the deeply inspiring examples of progress made by countries in all regions of the world through cooperation, partnerships, actions and solidarity. However, the General Assembly was deeply concerned that the number of people living in extreme poverty and hunger surpasses 1 billion and that inequalities between and within countries remains a significant challenge and also about the alarming global levels of maternal and child mortality. The General Assembly believed that eradication of poverty and hunger, as well as combating inequality at all levels, is essential to create a more prosperous and sustainable future for all. Furthermore, the General Assembly was deeply concerned about the impact of the financial and economic crisis, the worst since the Great Depression. The crisis has reversed development gains in many developing countries and threatens to seriously undermine the achievement of the MDGs by 2015.

In the Outcome of the Rio+ 20 United Nations Conference on Sustainable Development (UN 2012), the Heads of State and Government and high-level representatives remain firmly committed to the full and timely achievement of the MDGs. The Conference participants recognized that the development of goals could also be useful for pursuing focused and coherent action on sustainable development. They further recognized the importance and utility of a set of sustainable development goals (SDGs), based on Agenda 21 (UN 1992) and the Johannesburg Plan of Implementation (UN 2002), which fully respect all the Rio Principles, taking into account different national circumstances, capacities and priorities, are consistent with international law, build upon commitments already made, and contribute to the full implementation of the outcomes of all major summits in the economic, social and environmental fields, including the present outcome document. The goals should address and incorporate in a balanced way all three dimensions of sustainable development and their interlinkages. The goals should be coherent with and integrated into the United Nations development agenda beyond 2015, thus contributing to the achievement of sustainable development and serving as a driver for implementation and mainstreaming of sustainable development in the United Nations system as a whole. They pointed out that the development of the goals should not divert focus or effort from the achievement of the MDGs.

The Heads of State and Government and high-level representatives also underscored that sustainable development goals should be action oriented, concise and easy to communicate, limited in number, aspirational, global in nature and universally applicable to all countries while taking into account different national realities, capacities and levels of development and respecting national policies and priorities. They also recognized that the goals should address and be focused on priority areas for the achievement of sustainable development, being guided by the present outcome document. Governments should drive implementation with the active involvement of all relevant stakeholders, as appropriate. They also resolved to establish an inclusive and transparent intergovernmental process on sustainable development goals that is open to all stakeholders, with a view to developing global sustainable development goals to be agreed by the General Assembly.
Open Working Group on Sustainable Development Goals

The outcome document of the United Nations Conference on Sustainable Development, entitled “The future we want” (UN 2012), inter alia, set out a mandate to establish an open working group to develop a set of sustainable development goals for consideration and appropriate action by the General Assembly at its sixty-eighth session. It also provided the basis for their conceptualization. The document gave the mandate that the sustainable development goals should be coherent with and integrated into the United Nations development agenda beyond 2015.

In its decision 67/555 UNGA 2013), the General Assembly welcomed the membership of the Open Working Group as designated by the five United Nations regional groups and reiterated that the Open Working Group would submit its report at the sixty-eighth session.

The sustainable development goals are accompanied by targets and will be further elaborated through indicators focused on measurable outcomes. They are action oriented, global in nature and universally applicable. They take into account different national realities, capacities and levels of development and respect national policies and priorities. They build on the foundation laid by the MDGs, seek to complete the unfinished business of the MDGs and respond to new challenges. They constitute an integrated, indivisible set of global priorities for sustainable development. Targets are defined as aspirational global targets, with each Government setting its own national targets guided by the global level of ambition, but taking into account national circumstances. The goals and targets integrate economic, social and environmental aspects and recognize their interlinkages in achieving sustainable development in all its dimensions.

On 10 September 2014, the UN General Assembly adopted a resolution (UNDESA 2014) that paves the way for the incorporation of the SDGs into the post-2015 development agenda. In adopting the “Report of the Open Working Group on Sustainable Development Goals established pursuant to General Assembly resolution 66/288” UNGA 2014) the Assembly decided that the Open Working Group’s outcome document would be the main basis for integrating the SDGs into the future development agenda. The resolution states that other inputs would also be considered during the intergovernmental negotiation process at the upcoming General Assembly session.

The Heads of State and Government and High Representatives, meeting at United Nations Headquarters in New York from 25 to 27 September 2015 (UNGA 2015) as the Organization celebrates its seventieth anniversary, have decided on new global Sustainable Development Goals. They adopted a historic decision on a comprehensive, far-reaching and people-centred set of universal and transformative Goals and targets. They committed themselves to working tirelessly for the full implementation of this Agenda by 2030; recognized that eradicating poverty in all its forms and dimensions, including extreme poverty, is the greatest global challenge and an indispensable requirement for sustainable development; committed to achieving sustainable development in its three dimensions —economic, social and environmental —in a balanced and integrated manner; and will also build upon the achievements of the MDGs and seek to address their unfinished business.
Inter-Agency and Expert Group on Sustainable Development Goal Indicators

To monitor the implementation of the SDGs, it will be important to improve the availability of and access to data and statistics disaggregated by income, gender, age, race, ethnicity, migratory status, disability, geographic location and other characteristics relevant in national contexts. There is a need to take urgent steps to improve the quality, coverage and availability of disaggregated data to ensure that no one is left behind.

The General Assembly of the United Nations adopted the Resolution on Transforming our world: the 2030 Agenda for Sustainable Development on 15 September 2015 (UNGA 2015). The General Assembly under paragraph 75 of its Resolution decided that the goals and targets of the SDGs will be followed up and reviewed using a set of global indicators. The global indicators will be complemented by indicators at the regional and national levels which will be developed by member States, in addition to the outcomes of work undertaken for the development of the baselines for those targets where national and global baseline data does not yet exist.

Furthermore, the General Assembly indicated that the global indicator framework will be developed by the Inter-Agency and Expert Group on Sustainable Development Goal Indicators, will be agreed by the Statistical Commission by March 2016 and adopted thereafter by the United Nations Economic and Social Council and the General Assembly, in line with existing mandates. Moreover, the General Assembly pointed out that this framework will be simple yet robust, address all sustainable development goals and targets, including for the means of implementation, and preserve the political balance, integration and ambition contained therein.

Accordingly, the United Nations Statistical Commission established the Inter-Agency and Expert Group on Sustainable Development Goal Indicators (IAEG-SDGs) in March 2015 (UNSC 2015). The IAEG-SDGs has 27 members from the national statistical offices of member States, and regional as well as international organizations as observers. In the IAEG-SDGs Africa is represented by 7 countries; Algeria from North Africa, Cabo Verde and Senegal from West Africa; Cameroon from Central Africa, Tanzania and Uganda from Eastern Africa, and Botswana from Southern Africa. Since March 2017, Uganda was replaced by Ethiopia, Ghana and Niger are representing West Africa replacing Cabo Verde and Senegal. Furthermore, Egypt is the member of IAEG-SDGs representing Africa which brings the total number of African countries which are members of the IAEG-SDGs to 8.

The IAEG-SDGs has been tasked to develop and implement the global indicator framework for the Goals and targets of the 2030 Agenda for Sustainable Development. The group’s terms of reference are to (UNSD 2017b):

- Develop an indicator framework for the follow-up and review of the Goals and targets of the 2030 Agenda for Sustainable Development at the global level, taking into account existing efforts by different groups of countries and organizations, including regional and international agencies, regional commissions, academia, civil society and other relevant international organizations, to be adopted by the Statistical Commission at its forty-seventh session, in 2016;
• Provide technical support for the implementation of the approved indicator and monitoring framework over the 15-year period towards 2030; ensure the use of harmonized and agreed indicator definitions; share experiences on monitoring the Sustainable Development Goals; and encourage good practices and innovations, including in the area of national capacity-building;

• Regularly review methodological developments and issues related to the indicators and their metadata;

• Regularly review capacity-building activities in statistical areas relevant to Sustainable Development Goal monitoring and make recommendations to be considered by the Statistical Commission, the High Level Group for Partnership, Coordination and Capacity-Building for Statistics for the 2030 Agenda for Sustainable Development and the Committee for the Coordination of Statistical Activities; and

• Review and support work by the Secretariat for the development of a Sustainable Development Goal data-user forum, tools for data analysis and an open dashboard on the state of the Sustainable Development Goals.

The first meeting of the IAEG-SDGs was held at the United Nations Headquarters in New York from 1 to 2 June 2015 (UNSD 2017b). The meeting had set up the process for the development of the indicator framework; developed a work plan and agreed on the way forward; established the methods of work of the group; and discussed technical issues, including the inter-linkages across targets and data disaggregation.

The IAEG-SDGs held its second meeting on 26-28 October 2015 (UNSD 2017b) at the United Nations Conference Centre in Bangkok, Thailand and hosted by the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP). The objectives of the meeting were to review the list of possible global indicators, to discuss the global indicator framework, interlinkages across targets and critical issues including data disaggregation, as well as to discuss the work plan and next steps.

In March 2016 the IAEG-SDGs presented its report (UNSC 2016) on the global indicator framework for the sustainable development goals to the United Nations Statistical Commission. The Commission agreed, as a practical starting point, with the proposed global indicator framework for the goals and targets of the 2030 Agenda for Sustainable Development of 230 indicators, subject to future technical refinement; and requested the Inter-Agency and Expert Group to take into account the specific proposals for refinements of the indicators made by member States during the discussion. Furthermore, the Commission asked the IAEG-SDGs to report back at its forty-eighth session on progress made in developing and improving the global indicators, especially on plans to develop methodologies for indicators in tier III, including for work on definitions and standards, to be agreed at the international level, with a view to guaranteeing international comparability.

The third meeting of the IAEG-SDGs was held from 30 March to 1 April 2016 in Mexico City, Mexico (UNSD 2017b). The meeting which was hosted jointly by the National Institute of Statistics and Geography (INEGI) and the Ministry of Foreign Affairs of Mexico had the following objectives: To establish a tier system for indicators; to establish procedures for the methodological review of indicators, including approval mechanisms of needed revisions; to develop the global reporting mechanisms, including identifying entities responsible for compiling data for global reporting on
individual indicators and to discuss data flow from the national to the global level; and discussion of the work plan and next steps.

The IAEG-SDGs fourth meeting, which was hosted by the United Nations Economic Commission for Europe was held from 15 to 18 November 2016 in Geneva, Switzerland (UNSD 2017b). The objectives of the meeting were to: finalize the initial tier system for indicators; establish a process for the refinement of indicators; review work plans for tier III indicators; discuss options for those indicators that do not have a proposed custodian agency; review data flows from national to regional and global level, and to discuss best practices for the delivery of these data.

Between the face-to-face meetings, open online consultations of members, observers and other stakeholders were also held on some indicators that need further refinement.

As requested by the United Nations Statistical Commission, the IAEG-SDGs submitted its report to the forty-eighth session held from 7 to 10 March 2017 in New York (UNSC 2017). The Commission agreed on the revised global indicator framework for the Sustainable Development Goals and targets of Agenda 2030, including refinements on several indicators, as presented in the report of the IAEG-SDGs and stressed that this agreement fulfills substantially the promise of delivering a global indicator framework for the Goals and targets of the 2030 Agenda for Sustainable Development, as requested by the General Assembly; emphasized that the global indicator framework is intended for global follow-up and review and are not necessarily applicable to all national contexts and that alternative or complementary indicators for regional, national and subnational levels of monitoring will be developed at the regional and national levels on the basis of national priorities, realities, capacities and circumstances; and recognized that continuous work and adjustments will be required to ensure that the global indicators fully address the level of ambition of the 2030 Agenda for Sustainable Development, and agreed with the proposed plan for annual refinements of the indicators and the two comprehensive reviews to be presented to the Commission in 2020 and 2025.

The Global Sustainable Development Indicator Framework which was agreed upon by the United Nations Statistical Commission was adopted at the Coordination Management Meeting of the United Nations Economic and Social Council that was held in June 2017. The Resolution will be transmitted to the United Nations General Assembly for adoption.

During its fifth meeting which was hosted by Statistics Canada and held from 28 to 31 March 2017 in Ottawa, Canada (UNSD 2017b); the IAEG-SDGs presented the updated tier system, discussed the role of custodian agencies, discussed the strategy to address those indicators that remain without a custodian agency and/or a work plan, reviewed work plans for tier III indicators and the proposals for new concepts and definitions and develop a mechanism to ensure completion of work, presented the IAEG-SDG work plan on data disaggregation, and presented the timeline for finalizing the proposals on possible additional indicators.

The global SDG indicators have been classified into tiers according to methodological development and data availability. The definitions of the three indicator tier levels, based on an updated explanation developed by the IAEG-SDG at the 5th meeting of March 2017 are:

**Tier 1:** Indicator is conceptually clear, has an internationally established methodology and standards are available, and data are regularly produced by countries for at least 50 per cent of countries and of the population in every region where the indicator is relevant;
Table 1: Regional Indicators of Agenda 2030 and Agenda 2063

<table>
<thead>
<tr>
<th>SDG code</th>
<th>Indicator description</th>
<th>A2063 code</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1.1</td>
<td>Proportion of population below the international poverty line, by sex, age, employment status and geographical location (urban/rural)</td>
<td>No</td>
</tr>
<tr>
<td>1.2.1</td>
<td>Proportion of population living below the national poverty line, by sex and age</td>
<td>No</td>
</tr>
<tr>
<td>1.2.2</td>
<td>Proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions*</td>
<td>No</td>
</tr>
<tr>
<td>1.3.1</td>
<td>Proportion of population covered by social protection floors/systems, by sex, distinguishing children, unemployed persons, older persons, persons with disabilities, pregnant women, newborns, work-injury victims and the poor and the vulnerable</td>
<td>No</td>
</tr>
<tr>
<td>1.5.2</td>
<td>Direct economic loss attributed to disasters in relation to global gross domestic product (GDP)</td>
<td>No</td>
</tr>
<tr>
<td>1.a.1</td>
<td>Proportion of domestically generated resources allocated by the government directly to poverty reduction programmes*</td>
<td>No</td>
</tr>
<tr>
<td>1.a.2</td>
<td>Proportion of total government spending on essential services (education, health and social protection)*</td>
<td>No</td>
</tr>
<tr>
<td>2.1.1</td>
<td>Prevalence of undernourishment</td>
<td>No</td>
</tr>
<tr>
<td>2.1.2</td>
<td>Prevalence of moderate or severe food insecurity in the population, based on the Food Insecurity Experience Scale (FIES)</td>
<td>A1G5P1T9I1</td>
</tr>
<tr>
<td>2.2.1</td>
<td>Prevalence of stunting (height for age &lt;-2 standard deviation from the median of the World Health Organization (WHO) Child Growth Standards) among children under 5 years of age</td>
<td>A1G1P2T5I2</td>
</tr>
<tr>
<td>2.2.2</td>
<td>Prevalence of malnutrition (weight for height &gt;+2 or &lt;-2 standard deviation from the median of the WHO Child Growth Standards) among children under 5 years of age, by type (wasting and overweight)</td>
<td>No</td>
</tr>
<tr>
<td>2.3.1</td>
<td>Volume of production per labour unit by classes of farming/pastoral/forestry enterprise size*</td>
<td>A1G5P1T2I1</td>
</tr>
<tr>
<td>2.4.1</td>
<td>Proportion of agricultural area under productive and sustainable agriculture*</td>
<td>A1G7P1T1I1</td>
</tr>
<tr>
<td>2.a.1</td>
<td>The agriculture orientation index for government expenditures</td>
<td>No</td>
</tr>
<tr>
<td>2.a.2</td>
<td>Total official flows (official development assistance plus other official flows) to the agriculture sector</td>
<td>No</td>
</tr>
<tr>
<td>2.b.1</td>
<td>Producer support estimate</td>
<td>No</td>
</tr>
<tr>
<td>3.1.1</td>
<td>Maternal mortality ratio</td>
<td>A1G3P1T3I1</td>
</tr>
<tr>
<td>3.1.2</td>
<td>Proportion of births attended by skilled health personnel</td>
<td>A1G3P1T3I4</td>
</tr>
<tr>
<td>3.2.1</td>
<td>Under five mortality rate</td>
<td>A1G3P1T3I3</td>
</tr>
<tr>
<td>3.2.2</td>
<td>Neo-natal mortality rate</td>
<td>A1G3P1T3I2</td>
</tr>
<tr>
<td>3.3.1</td>
<td>Number of new HIV infections per 1,000 uninfected population, by sex, age and key populations</td>
<td>A1G3P1T6I1</td>
</tr>
<tr>
<td>3.3.2</td>
<td>Tuberculosis incidence per 100,000 population</td>
<td>A1G3P1T6I2</td>
</tr>
<tr>
<td>3.3.3</td>
<td>Malaria incidence per 1,000 population*</td>
<td>A1G3P1T6I3</td>
</tr>
<tr>
<td>3.3.4</td>
<td>Hepatitis B incidence per 100,000 population*</td>
<td>No</td>
</tr>
<tr>
<td>3.3.5</td>
<td>Number of people requiring interventions against neglected tropical diseases</td>
<td>No</td>
</tr>
<tr>
<td>3.4.1</td>
<td>Mortality rate attributed to cardiovascular disease, cancer, diabetes or chronic respiratory disease</td>
<td>No</td>
</tr>
<tr>
<td>3.6.1</td>
<td>Death rate due to road traffic injuries</td>
<td>No</td>
</tr>
<tr>
<td>3.7.1</td>
<td>Proportion of women of reproductive age (aged 15-49 years) who have their need for family planning satisfied with modern methods</td>
<td>A1G3P1T2I1</td>
</tr>
<tr>
<td>3.7.2</td>
<td>Adolescent birth rate (aged 10-14 years; aged 15-19 years) per 1,000 women in that age group</td>
<td>No</td>
</tr>
<tr>
<td>3.9.1</td>
<td>Mortality rate attributed to household and ambient air pollution</td>
<td>No</td>
</tr>
<tr>
<td>3.9.2</td>
<td>Mortality rate attributed to unsafe water, unsafe sanitation and lack of hygiene (exposure to unsafe Water, Sanitation and Hygiene for All (WASH) services)</td>
<td>No</td>
</tr>
<tr>
<td>3.b.1</td>
<td>Proportion of the target population covered by all vaccines included in their national programme*</td>
<td>No</td>
</tr>
<tr>
<td>3.c.1</td>
<td>Health worker density and distribution</td>
<td>No</td>
</tr>
<tr>
<td>4.2.2</td>
<td>Participation rate in organized learning (one year before the official primary entry age), by sex</td>
<td>No</td>
</tr>
<tr>
<td>SDG code</td>
<td>Indicator description</td>
<td>A2063 code</td>
</tr>
<tr>
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</tr>
<tr>
<td>4.4.1</td>
<td>Proportion of youth and adults with information and communications technology (ICT) skills, by type of skill</td>
<td>No</td>
</tr>
<tr>
<td>4.c.1</td>
<td>Proportion of teachers in: (a) pre-primary; (b) primary; (c) lower secondary; and (d) upper secondary education who have received at least the minimum organized teacher training (e.g. pedagogical training) pre-service or in-service required for teaching at the relevant level in a given country</td>
<td>No</td>
</tr>
<tr>
<td>5.2.1</td>
<td>Proportion of ever-partnered women and girls aged 15 years and older subjected to physical, sexual or psychological violence by a current or former intimate partner in the previous 12 months, by form of violence and by age*</td>
<td>A6G17P2T1I1</td>
</tr>
<tr>
<td>5.3.1</td>
<td>Proportion of women aged 20-24 years who were married or in a union before age 15 and before age 18</td>
<td>A6G18P1T5I2</td>
</tr>
<tr>
<td>5.3.2</td>
<td>Proportion of girls and women aged 15-49 years who have undergone female genital mutilation/cutting, by age</td>
<td>A6G17P2T2I1</td>
</tr>
<tr>
<td>5.5.1</td>
<td>Proportion of seats held by women in (a) national parliaments and (b) local governments*</td>
<td>A6G17P1T3I2</td>
</tr>
<tr>
<td>5.5.2</td>
<td>Proportion of women in managerial positions</td>
<td>No</td>
</tr>
<tr>
<td>5.a.1</td>
<td>(a) Proportion of total agricultural population with ownership or secure rights over agricultural land, by sex*</td>
<td>A6G17P1T1I4</td>
</tr>
<tr>
<td>5.a.1</td>
<td>(b) share of women among owners or rights-bearers of agricultural land, by type of tenure*</td>
<td>A6G17P1T2I2</td>
</tr>
<tr>
<td>5.b.1</td>
<td>Proportion of individuals who own a mobile telephone, by sex</td>
<td>A2G10P1T5I2</td>
</tr>
<tr>
<td>6.1.1</td>
<td>Proportion of population using safely managed drinking water services</td>
<td>A1G1P4T3I1</td>
</tr>
<tr>
<td>6.2.1</td>
<td>Proportion of population using safely managed sanitation services, including a hand-washing facility with soap and water</td>
<td>No</td>
</tr>
<tr>
<td>6.4.2</td>
<td>Level of water stress: freshwater withdrawal as a proportion of available freshwater resources</td>
<td>No</td>
</tr>
<tr>
<td>6.5.1</td>
<td>Degree of integrated water resources management implementation (0-100)</td>
<td>No</td>
</tr>
<tr>
<td>7.1.1</td>
<td>Proportion of population with access to electricity</td>
<td>A1G1P4T6I1</td>
</tr>
<tr>
<td>7.1.2</td>
<td>Proportion of population with primary reliance on clean fuels and technology</td>
<td>No</td>
</tr>
<tr>
<td>7.2.1</td>
<td>Renewable energy share in the total final energy consumption</td>
<td>No</td>
</tr>
<tr>
<td>7.3.1</td>
<td>Energy intensity measured in terms of primary energy and GDP</td>
<td>No</td>
</tr>
<tr>
<td>7.b.1.</td>
<td>Investments in energy efficiency as a proportion of GDP and the amount of foreign direct investment in financial transfer for infrastructure and technology to sustainable development services*</td>
<td>No</td>
</tr>
<tr>
<td>8.1.1</td>
<td>Annual growth rate of real GDP per capita</td>
<td>A1G4P1T1I1</td>
</tr>
<tr>
<td>8.2.1</td>
<td>Annual growth rate of real GDP per employed person</td>
<td>No</td>
</tr>
<tr>
<td>8.3.1</td>
<td>Proportion of informal employment in non-agriculture employment, by sex*</td>
<td>No</td>
</tr>
<tr>
<td>8.4.1</td>
<td>Material footprint, material footprint per capita, and material footprint per GDP</td>
<td>No</td>
</tr>
<tr>
<td>8.4.2</td>
<td>Domestic material consumption, domestic material consumption per capita, and domestic material consumption per GDP</td>
<td>No</td>
</tr>
<tr>
<td>8.5.1</td>
<td>Average hourly earnings of female and male employees, by occupation, age and persons with disabilities*</td>
<td>No</td>
</tr>
<tr>
<td>8.5.2</td>
<td>Unemployment rate, by sex, age and persons with disabilities</td>
<td>A6G18P1G1I1</td>
</tr>
<tr>
<td>8.6.1</td>
<td>Proportion of youth (aged 15-24 years) not in education, employment or training</td>
<td>No</td>
</tr>
<tr>
<td>8.7.1</td>
<td>Proportion and number of children aged 5-17 years engaged in child labour, by sex and age</td>
<td>A6G18P1T5I1</td>
</tr>
<tr>
<td>8.8.1</td>
<td>Frequency rates of fatal and non-fatal occupational injuries, by sex and migrant status</td>
<td>No</td>
</tr>
<tr>
<td>8.8.2</td>
<td>Level of national compliance of labour rights (freedom of association and collective bargaining) based on International Labour Organization (ILO) textual sources and national legislation, by sex and migrant status*</td>
<td>No</td>
</tr>
<tr>
<td>8.9.1</td>
<td>Tourism direct GDP as a proportion of total GDP and in growth rate*</td>
<td>A1G4P4T1I1</td>
</tr>
<tr>
<td>8.9.2</td>
<td>Proportion of jobs in sustainable tourism industries out of total tourism jobs*</td>
<td>No</td>
</tr>
<tr>
<td>8.10.2</td>
<td>Proportion of adults (15 years and older) with an account at a bank or other financial institution or with a mobile-money-service provider</td>
<td>No</td>
</tr>
<tr>
<td>SDG code</td>
<td>Indicator description</td>
<td>A2063 code</td>
</tr>
<tr>
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</tr>
<tr>
<td>8.b.1</td>
<td>Existence of a developed and operationalized national strategy for youth employment, as a distinct strategy or as part of a national employment strategy*</td>
<td>No</td>
</tr>
<tr>
<td>9.1.1</td>
<td>Proportion of the rural population who live within 2 km of an all-season road*</td>
<td>No</td>
</tr>
<tr>
<td>9.1.2</td>
<td>Passenger and freight volumes, by mode of transport</td>
<td>No</td>
</tr>
<tr>
<td>9.2.1</td>
<td>Manufacturing value added as a proportion of GDP and per capita</td>
<td>A1G4P2T1I1</td>
</tr>
<tr>
<td>9.2.2</td>
<td>Manufacturing employment as a proportion of total employment</td>
<td>No</td>
</tr>
<tr>
<td>9.4.1</td>
<td>CO2 emission per unit of value added</td>
<td>No</td>
</tr>
<tr>
<td>9.5.1</td>
<td>Research and development expenditure as a proportion of GDP</td>
<td>A1G4P3T6I1</td>
</tr>
<tr>
<td>9.b.1</td>
<td>Proportion of medium and high-tech industry value added in total value added</td>
<td>No</td>
</tr>
<tr>
<td>10.1.1</td>
<td>Growth rates of household expenditure or income per capita among the bottom 40 per cent of the population and the total population</td>
<td>No</td>
</tr>
<tr>
<td>10.2.1</td>
<td>Proportion of people living below 50 per cent of median income, by sex, age and persons with disabilities*</td>
<td>A1G1P2T3I1</td>
</tr>
<tr>
<td>10.4.1</td>
<td>Labour share of GDP, comprising wages and social protection transfers</td>
<td>A1G1P2T3I1</td>
</tr>
<tr>
<td>10.c.1</td>
<td>Remittance costs as a proportion of the amount remitted*</td>
<td>No</td>
</tr>
<tr>
<td>11.1.1</td>
<td>Proportion of urban population living in slums, informal settlements or inadequate housing</td>
<td>No</td>
</tr>
<tr>
<td>11.2.1</td>
<td>Proportion of population that has convenient access to public transport, by sex, age and persons with disabilities</td>
<td>No</td>
</tr>
<tr>
<td>11.3.1</td>
<td>Ratio of land consumption rate to population growth rate</td>
<td>No</td>
</tr>
<tr>
<td>11.5.1</td>
<td>Number of deaths, missing persons and directly affected persons attributed to disasters per 100,000 population</td>
<td>No</td>
</tr>
<tr>
<td>11.5.2</td>
<td>Direct economic loss in relation to global GDP, damage to critical infrastructure and number of disruptions to basic services, attributed to disasters</td>
<td>No</td>
</tr>
<tr>
<td>11.6.1</td>
<td>Proportion of urban solid waste regularly collected and with adequate final discharge out of total urban solid waste generated, by cities</td>
<td>No</td>
</tr>
<tr>
<td>11.6.2</td>
<td>Annual mean levels of fine particulate matter (e.g. PM2.5 and PM10) in cities (population weighted)</td>
<td>No</td>
</tr>
<tr>
<td>11.7.1</td>
<td>Average share of the built-up area of cities that is open space for public use for all, by sex, age and persons with disabilities</td>
<td>No</td>
</tr>
<tr>
<td>12.1.1</td>
<td>Number of countries with sustainable consumption and production (SCP) national action plans or SCP mainstreamed as a priority or a target into national policies*</td>
<td>No</td>
</tr>
<tr>
<td>12.2.1</td>
<td>Material footprint, material footprint per capita, and material footprint per GDP</td>
<td>No (same as 8.4.1)</td>
</tr>
<tr>
<td>12.2.2</td>
<td>Domestic material consumption, domestic material consumption per capita, and domestic material consumption per GDP</td>
<td>No (same as 8.4.2)</td>
</tr>
<tr>
<td>12.4.2</td>
<td>Hazardous waste generated per capita and proportion of hazardous waste treated, by type of treatment*</td>
<td>No</td>
</tr>
<tr>
<td>12.c.1</td>
<td>Amount of fossil-fuel subsidies per unit of GDP (production and consumption) and as a proportion of total national expenditure on fossil fuels*</td>
<td>No</td>
</tr>
<tr>
<td>13.1.2</td>
<td>Number of countries that adopt and implement national disaster risk reduction strategies in line with the Sendai Framework for Disaster Risk Reduction 2015-2030</td>
<td>No</td>
</tr>
<tr>
<td>14.4.1</td>
<td>Proportion of fish stocks within biologically sustainable levels</td>
<td>No</td>
</tr>
<tr>
<td>14.5.1</td>
<td>Coverage of protected areas in relation to marine areas</td>
<td>A1G7P1T2I2</td>
</tr>
<tr>
<td>14.7.1</td>
<td>Sustainable fisheries as a proportion of GDP in small island developing States, least developed countries and all countries*</td>
<td>A1G6P1T1I1</td>
</tr>
<tr>
<td>15.1.1</td>
<td>Forest area as a proportion of total land area</td>
<td>No</td>
</tr>
<tr>
<td>15.1.2</td>
<td>Proportion of important sites for terrestrial and freshwater biodiversity that are covered by protected areas, by ecosystem type</td>
<td>A1G7P1T2I2</td>
</tr>
<tr>
<td>15.4.1</td>
<td>Coverage by protected areas of important sites for mountain biodiversity</td>
<td>No</td>
</tr>
<tr>
<td>15.7.1</td>
<td>Proportion of traded wildlife that was poached or illicitly trafficked</td>
<td>No</td>
</tr>
<tr>
<td>SDG code</td>
<td>Indicator description</td>
<td>A2063 code</td>
</tr>
<tr>
<td>----------</td>
<td>---------------------------------------------------------------------------------------</td>
<td>------------</td>
</tr>
<tr>
<td>16.1.2</td>
<td>Conflict-related deaths per 100,000 population, by sex, age and cause*</td>
<td>A4G13P1T1I1</td>
</tr>
<tr>
<td>16.2.2</td>
<td>Number of victims of human trafficking per 100,000 population, by sex, age and form of exploitation</td>
<td>A6G18P1T5I3</td>
</tr>
<tr>
<td>16.5.1</td>
<td>Proportion of persons who had at least one contact with a public official and who paid a bribe to a public official, or were asked for a bribe by those public officials, during the previous 12 months</td>
<td>A3G12P1T1I1</td>
</tr>
<tr>
<td>16.7.2</td>
<td>Proportion of population who believe decision-making is inclusive and responsive, by sex, age, disability and population group*</td>
<td>A3G11P1T1I1</td>
</tr>
<tr>
<td>16.9.1</td>
<td>Proportion of children under 5 years of age whose births have been registered with a civil authority, by age</td>
<td>A6G17P2T3I3</td>
</tr>
<tr>
<td>16.10.1</td>
<td>Number of verified cases of killing, kidnapping, enforced disappearance, arbitrary detention and torture of journalists, associated media personnel, trade unionists and human rights advocates in the previous 12 months*</td>
<td>A3G11P1T2I1</td>
</tr>
<tr>
<td>17.1.1</td>
<td>Total government revenue as a proportion of GDP, by source*</td>
<td>No</td>
</tr>
<tr>
<td>17.1.2</td>
<td>Proportion of domestic budget funded by domestic taxes*</td>
<td>A7G20P2T1I1</td>
</tr>
<tr>
<td>17.3.1</td>
<td>Foreign direct investments (FDI), official development assistance and South-South Cooperation as a proportion of total domestic budget</td>
<td>A7G20P3T1I1</td>
</tr>
<tr>
<td>17.3.2</td>
<td>Volume of remittances (in United States dollars) as a proportion of total GDP</td>
<td>No</td>
</tr>
<tr>
<td>17.4.1</td>
<td>Debt service as a proportion of exports of goods and services</td>
<td>No</td>
</tr>
<tr>
<td>17.6.2</td>
<td>Fixed Internet broadband subscriptions per 100 inhabitants, by speed</td>
<td>No</td>
</tr>
<tr>
<td>17.8.1</td>
<td>Proportion of individuals using the internet</td>
<td>A1G1P4T6I2</td>
</tr>
<tr>
<td>17.9.1</td>
<td>Dollar value of financial and technical assistance (including through North-South, South-South and triangular cooperation) committed to developing countries</td>
<td>No</td>
</tr>
<tr>
<td>17.18.2</td>
<td>Number of countries that have national statistical legislation that complies with the Fundamental Principles of Official Statistics*</td>
<td>A7G19P1T4I1</td>
</tr>
<tr>
<td>17.18.3</td>
<td>Number of countries with a national statistical plan that is fully funded and under implementation, by source of funding</td>
<td>A7G19P1T4I2</td>
</tr>
<tr>
<td></td>
<td>GNI per capita</td>
<td>A1G1P1T1I1</td>
</tr>
<tr>
<td></td>
<td>Percentage of households using electricity</td>
<td>A1G1P4T6I1</td>
</tr>
<tr>
<td></td>
<td>Percentage of population with access to internet</td>
<td>A1G1P4T6I2</td>
</tr>
<tr>
<td></td>
<td>Percentage of children in pre-school age attending pre school</td>
<td>A1G2P1T1I1</td>
</tr>
<tr>
<td></td>
<td>Secondary school net enrolment rate</td>
<td>A1G2P1T4I1</td>
</tr>
<tr>
<td></td>
<td>Percentage of eligible population with HIV having access to ARV treatment</td>
<td>A1G3P1T1I1</td>
</tr>
<tr>
<td></td>
<td>Percentage of small-scale farmers graduating into small-scale commercial farming</td>
<td>A1G5P1T7I1</td>
</tr>
<tr>
<td></td>
<td>Marine biotechnology value added as a Percentage of GDP</td>
<td>A1G6P1T3I1</td>
</tr>
<tr>
<td></td>
<td>Number of Non-tariff barriers (NTBs) reported and eliminated</td>
<td>A2G8P1T4I2</td>
</tr>
<tr>
<td></td>
<td>Change in volume of intra-African trade</td>
<td>A2G8P1T5I1</td>
</tr>
<tr>
<td></td>
<td>Percentage of the progress made on the implementation of Trans-African Highway Missing link</td>
<td>A2G10P1T1I1</td>
</tr>
<tr>
<td></td>
<td>Percentage of the progress made on the implementation the African High Speed Rail Network</td>
<td>A2G10P1T2I1</td>
</tr>
<tr>
<td></td>
<td>Number of protocols on African open skies implemented</td>
<td>A2G10P1T3I1</td>
</tr>
<tr>
<td></td>
<td>Number of Mega Watts added into the national grid</td>
<td>A2G10P1T4I1</td>
</tr>
<tr>
<td></td>
<td>ICT sector value addition as a percentage share of GDP</td>
<td>A2G10P1T5I3</td>
</tr>
<tr>
<td></td>
<td>Percentage of people who believe that the elections are free, fair and transparent.</td>
<td>A3G11P1T3I1</td>
</tr>
<tr>
<td></td>
<td>African Charter on Democracy signed*</td>
<td>A3G11P1T8I1</td>
</tr>
<tr>
<td></td>
<td>African Charter on Democracy ratified*</td>
<td>A3G11P1T8I2</td>
</tr>
</tbody>
</table>

Standards are available, but data are not regularly produced by countries; and
Tier 3: No internationally established methodology or standards are yet available for the indicator, but methodology/standards are being (or will be) developed or tested.

According to the classification there are 83 Tier I, 67 Tier II, 88 Tier III, and 6 multi-tier global SDG indicators. See Annex I for details.

Agenda 2063

On the occasion of the Golden Jubilee Summit of the Organization of African Unity (OAU) / African Union (AU) in May 2013, the continent rededicated herself to the attainment of the Pan African Vision of "An integrated, prosperous and peaceful Africa, driven by its own citizens, representing a dynamic force in the international arena". To achieve the vision, the Summit came up with a solemn declaration in areas covering social and economic development, integration, democratic governance, and peace and security amongst others as the planks of the vision (AUC 2015).

In order to make the solemn declaration a reality and within the context of the AU Vision, the Golden Jubilee Summit of the Union directed the AUC, supported by the New Partnership for Africa's Development (NEPAD) Planning and Coordinating Agency (NPCA), the African Development Bank (AfDB) and the UN Economic Commission for Africa (ECA), to prepare a continental 50-year agenda through a people-driven process outlining the Africa We Want, namely Agenda 2063 (AUC 2015).

Furthermore, the Seven Aspirations for the "Africa We Want "are indicated to be: A prosperous Africa based on inclusive growth and sustainable development; An integrated continent, politically united and based on the ideals of Pan-Africanism and the vision of Africa's Renaissance; An Africa of good governance, democracy, respect for human rights, justice and the rule of law; A peaceful and secure Africa; An Africa with a strong cultural identity, common heritage, values and ethics; An Africa where development is people-driven, unleashing the potential of its women and youth; and Africa as a strong, united and influential global player and partner (AUC 2014).

Agenda 2063 is a strategic framework for the socio-economic transformation of the continent over the next 50 years. Its builds on, and seeks to accelerate the implementation of past and existing continental initiatives for growth and sustainable development. Some of the past and current initiatives it builds on include: The Lagos Plan of Action, The Abuja Treaty, The Minimum Integration

<table>
<thead>
<tr>
<th>SDG code</th>
<th>Indicator description</th>
<th>A2063 code</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>African Charter on Democracy integrated*</td>
<td>A3G11P1T8I3</td>
</tr>
<tr>
<td>No</td>
<td>Number of armed conflicts*</td>
<td>A4G14P1T11I1</td>
</tr>
<tr>
<td>No</td>
<td>Existence of a national peace council.</td>
<td>A4G15P1T2I1</td>
</tr>
<tr>
<td>No</td>
<td>Proportion of the content of the curricula on indigenous African culture, values and language in primary and secondary schools</td>
<td>A5G16P1T11I1</td>
</tr>
<tr>
<td>No</td>
<td>Level of implementation of the provisions of the African Charter on the Rights of the Youth by member States</td>
<td>A6G18P1T8I1</td>
</tr>
<tr>
<td>No</td>
<td>Existence of formal institutional arrangements for the coordination of the compilation of official statistics</td>
<td>A7G19P1T4I3</td>
</tr>
<tr>
<td>No</td>
<td>Proportion of development expenditure contributed by national capital markets</td>
<td>A7G20P1T11I1</td>
</tr>
<tr>
<td>No</td>
<td>Resources raised through innovative financing mechanisms as a percentage of national budget</td>
<td>A7G20P3T1I2</td>
</tr>
</tbody>
</table>

*:-No metadata
Program, the Program for Infrastructural Development in Africa (PIDA), the Comprehensive Africa Agricultural Development Program (CAADP), NEPAD, Regional Plans and Programs and National Plans. It is also built on national, regional, continental best practices in its formulation (AUC 2017b).

After the adoption of the Agenda 2063 Framework Document by the Summit in January 2015 as the basis for Africa’s long term socio-economic and integrative transformation, the Summit directed the AUC to prepare the First Ten Year Implementation Plan of Agenda 2063 (2014 – 2023). This plan, the first in a series of five ten year plans over the fifty-year horizon was adopted by the Summit in June 2015 as a basis for the preparation of medium term development plans of member states of the Union, the Regional Economic Communities (RECs) and the AU Organs (AUC 2015).

Agenda 2063 has 7 Aspirations, 20 Goals, 37 Priority Areas and 173 National Targets. The National Targets under each Aspirations, Goals and Priority Areas are as indicated in Annex II.

**Agenda 2063 Indicator Framework**

In the development of the indicator framework for Agenda 2063’s First Ten-Year Implementation Plan (FTYIP), eight workshops were organized by the African Union Commission (AUC) in collaboration with its partners. The workshops were held in Johannesburg, South Africa (22 - 24 September 2015); Nairobi, Kenya (16 - 18 November 2015); Lusaka, Zambia (6 - 11 March 2016); Nairobi, Kenya (13 - 17 April 2016); Pretoria, South Africa (12 - 15 September 2016); Nairobi, Kenya (19 - 20 January 2017); Nairobi, Kenya (5 - 8 March 2017); and Nairobi, Kenya, (15 - 18 May 2017).

The main objective of the 7th workshop which was organized from 5 to 8 March 2017 in Nairobi, Kenya was to finalize the monitoring and evaluation framework and the handbook of core Agenda 2063 FTYIP indicators. The workshop endorsed the 63 core indicators that will be used to monitor and report on the progress of implementation of the FTYIP of Agenda 2063. In addition to the core indicators, 61 complementary indicators have been added from the global list of SDG indicators. The AUC therefore has come up with 124 indicators that will be used in monitoring and reporting of Agenda 2063 (for full list see Annex III).

In summary, the indicators are classified as follows:

<table>
<thead>
<tr>
<th>Classification</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of indicators</td>
<td>124</td>
</tr>
<tr>
<td>Core indicators</td>
<td>63</td>
</tr>
<tr>
<td>Complementary indicators</td>
<td>61</td>
</tr>
<tr>
<td>Indicators that fully mapped with SDGs</td>
<td>102</td>
</tr>
<tr>
<td>Indicators with no overlap with SDGs</td>
<td>10</td>
</tr>
<tr>
<td>Indicators which are Africa specific</td>
<td>12</td>
</tr>
</tbody>
</table>
Regional Indicator Framework for Agenda 2030 and Agenda 2063

In 2015 AUC, AfDB and ECA conducted the matching exercise of the goals and targets of the two agendas. As mentioned earlier, Agenda 2063 has 7 aspirations, 20 goals, 37 priority areas and 173 targets while Agenda 2030 includes 17 goals and 169 targets. The matching exercise was done at the target level starting with Agenda 2063 national targets and then identifying corresponding Agenda 2030 target(s). It was found out that the targets from both agendas do not exactly match but they overlap. In general, the overlapping levels of Agenda 2063 and Agenda 2030 for Sustainable Development at goal and target levels are as follows.

- All the goals of Agenda 2030 overlap with at least one goal of Agenda 2063. On the other hand, 17 Agenda 2063 goals overlap with at least one Agenda 2030 goals while there are three Agenda 2063 goals that do not have any overlap with Agenda 2030 goals. The three Agenda 2063 goals that do not overlap with any of the SDGs are Goal 9: Key Continental Financial and Monetary Institutions established and functional; Goal 14: A Stable and Peaceful Africa; and Goal 15: A Fully Functional and Operational African Peace and Security Architecture.

- At the target level, there are 36 Agenda 2063 targets (21%) that do not have any overlap in Agenda 2030, while the number of Agenda 2030 targets that do not have any overlap in Agenda 2063 are 56 (33%);

The Conference of African Ministers of Finance, Planning and Economic Development that was held in March 2016 resolved that the monitoring and evaluation of the two agendas to be done in an integrated manner. Accordingly, the three Pan-African institutions need to come up with a common list of regional indicators which will follow-up and report on the implementation of the agendas.

In March 2017 AUC came up with 63 core indicators that will be used to follow-up and report on the progress of the First Ten-Year Implementation Plan (2014 – 2023) of Agenda 2063. Moreover, AUC selected 61 complementary indicators, which are taken from the global SDG indicators, that will be used in the follow-up and review process of Agenda 2063.

With regards to the selection of regional indicators for sustainable development goals, the African Centre for Statistics has been working with the substantive divisions of ECA that include Macroeconomic Policy Division; Trade, Regional Integration and Infrastructure Division; Social Development Policy Division, Special Initiative Division; and Gender Centre. The African Centre for Statistics, in consultation with the substantive divisions has come up with the regional set of 199 SDG indicators, of which 99 of them are already included in the AUC list, that could be used to follow-up and monitor the progress of implementation of Agenda 2030. However, in the task force meeting of the Africa Regional Forum for Sustainable Development (ARFSD) which was held on 8 June 2017, it was agreed to use all the indicators selected by AUC as the basis for the integrated regional indicator framework and add a few more tier I indicators. Accordingly, the Special Initiative Division and the African Centre for Statistics of ECA added 14 more indicators, taken from the
global SDG indicators, to the ones selected by AUC. The full list of indicators that will be used for the integrated regional follow-up and reporting of both agendas is provided in Table 1.

The integrated regional indicator framework has to be endorsed by the Statistical Commission of Africa (StatCom-Africa) / Committee of Directors General (CoDGs), the Conference of African Ministers of Finance, Planning and Economic Development as well as the AU Heads of State and Government before it is implemented.

Metadata Sheet

The metadata used in this handbook are taken from two sources: the Global SDG database at https://unstats.un.org/sdgs/metadata/ and the Agenda 2063 First Ten-Year Implementation Plan Core indicators Profile Handbook for Member States (March 2017) (AUC 2017a). For further information, the readers could use the indicated sources.

For each regional indicator used to measure progress towards the targets and goals, the handbook provides all or some of the following information:

- Definition
- Rationale
- Concepts
- Comments and limitations
- Disaggregation
- Data sources
- Collection process
- Data providers
- Data compilers
- References

The handbook covers the metadata of 106 regional indicators. There are 36 regional indicators for which there are no metadata. These indicators are mainly tier III indicators and tier II indicators (20 tier III and 9 tier II). There are also four indicators without metadata that focus on the African Charter for Democracy and armed conflicts. However, the information on these Africa specific indicators could easily be obtained at AUC.

In the selection of the metadata priority was given to global SDG database as the metadata there are internationally agreed and standardized concepts and definitions. The Core Indicators Profile Handbook of AUC was used when there is no metadata in the global SDG database on the specific indicator or when the indicators are not SDG indicators.

The coding of Agenda 2063 indicators is similar to the one used in the Core indicators Profile Handbook of AUC. In the indicator coding A stands for Aspiration, G for Goal, P for Priority Area, T for national Target and I for Indicator. The order of the numbering is based on the full list given in Annex II.
Indicator 1.1.1: Proportion of population below the international poverty line, by sex, age, employment status and geographical location (urban/rural)

Goal 1: End poverty in all its forms everywhere

Target 1.1: By 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than $1.25 a day

Definition:

The Proportion of population below the international poverty line is defined as the percentage of the population living on less than $1.90 a day at 2011 international prices. The ‘international poverty line’ is currently set at $1.90 a day at 2011 international prices.

Rationale:

Monitoring poverty is important on the global development agenda as well as on the national development agenda of many countries. The World Bank produced its first global poverty estimates for developing countries in the World Development Report 1990: Poverty using household survey data for 22 countries. Since then there has been considerable expansion in the number of countries that field household income and expenditure surveys. The World Bank’s Development Research Group maintains a database that is updated annually as new survey data become available and conducts a major reassessment of progress against poverty every year. PovcalNet is an interactive computational tool that allows users to replicate these internationally comparable $1.90 and $3.10 a day global, regional and country-level poverty estimates and to compute poverty measures for custom country groupings and for different poverty lines.

Concepts:

In assessing poverty in a given country, and how best to reduce poverty, one naturally focuses on a poverty line that is considered appropriate for that country. But how do we talk meaningfully about “global poverty?” Poverty lines across countries vary in terms of their purchasing power, and they have a strong economic gradient, such that richer countries tend to adopt higher standards of living in defining poverty. But to consistently measure global absolute poverty in terms of consumption we need to treat two people with the same purchasing power over commodities the same way—both are either poor or not poor—even if they live in different countries.

Since World Development Report 1990, the World Bank has aimed to apply a common standard in measuring extreme poverty, anchored to what poverty means in the world’s poorest countries. The welfare of people living in different countries can be measured on a common scale by adjusting for differences in the purchasing power of currencies. The commonly used $1 a day standard, measured in 1985 international prices and adjusted to local currency using PPPs, was chosen for World Development Report 1990 because it was typical of the poverty lines in low-income countries at the time. As differences in the cost of living across the world evolve, the international
poverty line has to be periodically updated using new PPP price data to reflect these changes. The last change was in October 2015, when the World Bank adopted $1.90 as the international poverty line using the 2011 PPP. Prior to that, the 2008 update set the international poverty line at $1.25 using the 2005 PPP. Poverty measures based on international poverty lines attempt to hold the real value of the poverty line constant across countries, as is done when making comparisons over time. Early editions of the World Bank’s World Development Indicators (WDI) used PPPs from the Penn World Tables to convert values in local currency to equivalent purchasing power measured in U.S dollars. Later editions used 1993, 2005, and 2011 consumption PPP estimates produced by the World Bank’s International Comparison Program (ICP).

Comments and limitations:

Despite progress in the last decade, the challenges of measuring poverty remain. The timeliness, frequency, quality, and comparability of household surveys needs to increase substantially, particularly in the poorest countries. The availability and quality of poverty monitoring data remains low in small states, countries with fragile situations, and low-income countries and even some middle-income countries. The low frequency and lack of comparability of the data available in some countries create uncertainty over the magnitude of poverty reduction.

Besides the frequency and timeliness of survey data, other data quality issues arise in measuring household living standards. The surveys ask detailed questions on sources of income and how it was spent, which must be carefully recorded by trained personnel. Income is generally more difficult to measure accurately, and consumption comes closer to the notion of living standards. And income can vary over time even if living standards do not. But consumption data are not always available.

However, even similar surveys may not be strictly comparable because of differences in timing or in the quality and training of enumerators. Comparisons of countries at different levels of development also pose a potential problem because of differences in the relative importance of the consumption of nonmarket goods. The local market value of all consumption in kind, including own production, particularly important in underdeveloped rural economies, should be included in total consumption expenditure but may not be. Most survey data now include valuations for consumption or income from own production, but valuation methods vary.

Computation Method:

To measure poverty across countries consistently, the World Bank’s international measures apply a common standard, anchored to what “poverty” means in the world’s poorest countries. The original "$1-a-day" line was based on a compilation of national lines for only 22 developing countries, mostly from academic studies in the 1980s. While this was the best that could be done at the time, the sample was hardly representative of developing countries even in the 1980s. Since then, national poverty lines have been developed for many other countries. Based on a new compilation of national lines for 75 developing countries, Ravallion, Chen and Sangraula proposed a new international poverty line of $1.25 a day. This is the average poverty line for the poorest 15 countries in their data set.

The current extreme poverty line is set at $1.90 a day in 2011 PPP terms, which represents the mean of the national poverty lines found in the same poorest 15 countries ranked by per capita consumption. The new poverty line maintains the same standard for extreme poverty, the poverty
line typical of the poorest countries in the world, but updates it using the latest information on the cost of living in developing countries.

When measuring international poverty of a country, the international poverty line at PPP is converted to local currencies in 2011 price and is then converted to the prices prevailing at the time of the relevant household survey using the best available Consumer Price Index (CPI). Equivalently, the survey data on household consumption or income for the survey year are expressed in the prices of the ICP base year, and then converted to PPP $’s. Then the poverty rate is calculated from that survey. All inter-temporal comparisons are real, as assessed using the country-specific CPI. Interpolation / extrapolation methods are used to line up the survey-based estimates with these reference years.

**Disaggregation:**

Work is underway at the World Bank for disaggregated poverty estimates.

**Data sources:**

The World Bank typically receives data from National Statistical Offices (NSOs) directly. In other cases, it uses NSO data received indirectly. Data is also obtained through country specific programs, including technical assistance programs and joint analytical and capacity building activities. The World Bank has relationships with NSOs on work programs involving statistical systems and data analysis. Poverty economists from the World Bank typically engage with NSOs broadly on poverty measurement and analysis as part of technical assistance activities. Within the World Bank, the Global Poverty Working Group (GPWG) is in charge of the collection, validation and estimation of poverty estimates. GPWG archives the datasets obtained from NSOs and then harmonizes them, applying common methodologies.

**Collection process:**

The World Bank transparently shares and makes public the methodologies for all kinds of adjustments to original data through its PovcalNet website and its various analytical documents. The poverty estimates are developed by economists, who work closely with national government counterparts concerning each poverty data update.

**Data compilers:**

World Bank

**References:**

www.worldbank.org
Indicator 1.2.1: Proportion of population living below the national poverty line, by sex and age

Goal 1: End poverty in all its forms everywhere

Target: 1.2 By 2030, reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions

Definition:

The national poverty rate is the percentage of the total population living below the national poverty line. The rural poverty rate is the percentage of the rural population living below the national poverty line or in cases where a separate, rural poverty line is used, the rural poverty line. Urban poverty rate is the percentage of the urban population living below the national poverty line or in cases where a separate, urban poverty line is used, the urban poverty line.

Rationale:

Monitoring national poverty is important for country-specific development agendas. National poverty lines are used to make more accurate estimates of poverty consistent with the country’s specific economic and social circumstances, and are not intended for international comparisons of poverty rates.

Concepts:

In assessing poverty in a given country, and how best to reduce poverty according to national definitions, one naturally focuses on a poverty line that is considered appropriate for that country. Poverty lines across countries vary in terms of their purchasing power, and they have a strong economic gradient, such that richer countries tend to adopt higher standards of living in defining poverty. Within a country, the cost of living is typically higher in urban areas than in rural areas. Some countries may have separate urban and rural poverty lines to represent different purchasing powers.

Comments and limitations:

National poverty estimates are derived from household survey data. Caveats and limitations inherent to survey data applying to the construction of indicator 1.1.1 apply here as well.

To be useful for poverty estimates, surveys must be nationally representative. They must also include enough information to compute a comprehensive estimate of total household consumption or income, including consumption or income from own production, and to construct a correctly weighted distribution of consumption or income per person. Consumption is the preferred welfare indicator for a number of reasons. Income is generally more difficult to measure accurately. For example, the poor who work in the informal sector may not receive or report monetary wages; self-employed workers often experience irregular income flows; and many people in rural areas depend on idiosyncratic, agricultural incomes. Moreover, consumption accords better with the idea
of the standard of living than income, which can vary over time even if the actual standard of living does not. Thus, whenever possible, consumption-based welfare indicators are used to estimate the poverty measures reported here. But consumption data are not always available.

Consumption is measured by using household survey questions on food and non-food expenditures as well as food consumed from the household’s own production, which is particularly important in the poorest developing countries. This information is collected either through recall questions using lists of consumption items or through diaries in which respondents record all expenditures daily. But these methods do not always provide equivalent information, and depending on the approach used, consumption can be underestimated or overestimated. Different surveys use different recall or reference periods. Depending on the true flow of expenditures, the rate of spending reported is sensitive to the length of reporting period. The longer the reference period, the more likely respondents will fail to recall certain expenses, especially food items, thus resulting in underestimation of true expenditure. The national poverty rate, a “headcount” measure, is one of the most commonly calculated measures of poverty. Yet it has the drawback that it does not capture income inequality among the poor or the depth of poverty. Policymakers seeking to make the largest possible impact on the headcount measure might be tempted to direct their poverty alleviation resources to those closest to the poverty line. Issues may also arise when comparing poverty measures within countries when urban and rural poverty lines represent different purchasing powers.

**Computation Method:**

The formula for calculating the proportion of the total, urban and rural population living below the national poverty line, or headcount index, is as follows:

\[
P_o = \frac{1}{N} \sum_{i=1}^{N} \mathbb{1}(Y_i < z) = \frac{N_p}{N}
\]

Where \( \mathbb{1}(\cdot) \) is an indicator function that takes on a value of 1 if the bracketed expression is true, and 0 otherwise. If individual consumption or income \( Y_i \) is less than the national poverty line \( z \), for example in absolute terms the line could be the price of a consumption bundle or in relative terms a percentage of the income distribution, then \( \mathbb{1}(\cdot) \) is equal to 1 and the individual is counted as poor. \( N_p \) is the total, urban or rural number of poor. \( N \) is the total, urban or rural population.

Consumption or income data are gathered from nationally representative household surveys, which contain detailed responses to questions regarding spending habits and sources of income. Consumption, including consumption from own production, or income is calculated for the entire household. In some cases, an “effective” household size is calculated from the actual household size to reflect assumed efficiencies in consumption; adjustments may also be made to reflect the number of children in a household. The number of people in those households is aggregated to estimate the number of poor persons.

National poverty rates use a country specific poverty line, reflecting the country’s economic and social circumstances. In some case, the national poverty line is adjusted for different areas, such as
urban and rural within the country, to account for differences in prices or the availability of goods and services. Typically, the urban poverty line is set higher than the rural poverty line; reflecting the relatively higher costs of living in urban areas.

**Disaggregation:**

By rural and urban areas.

**Data sources:**

National poverty estimates are typically produced and owned by country governments, and sometimes with technical assistance from the World Bank and UNDP. Upon release of the national poverty estimates by the government, the GPWG of the World Bank assesses the methodology used by the government, validates the estimates with raw data whenever possible, and consults the country economists for publishing.

The World Bank periodically prepares poverty assessments of countries in which it has an active program, in close collaboration with national institutions, other development agencies, and civil society groups, including poor people’s organizations. Poverty assessments report the extent and causes of poverty and propose strategies to reduce it.

**Collection process:**

Source collection is ongoing by the GPWG of the World Bank. The data in World Development Indicators (WDI) are updated quarterly following the WDI database updating schedule.

**Data providers:**

National Statistics Offices.

**Data compilers:**

World Bank.

**References:**

http://povertydata.worldbank.org/poverty/home/
Indicator 1.3.1: Proportion of population covered by social protection floors/systems, by sex, distinguishing children, unemployed persons, older persons, persons with disabilities, pregnant women, newborns, work-injury victims, the poor and the vulnerable

Goal 1: End poverty in all its forms everywhere

Target 1.3: Implement nationally appropriate social protection systems and measures for all, including floors, and by 2030 achieve substantial coverage of the poor and the vulnerable

Definition:

Coverage of social protection and labour programs (SPL) is the percentage of population participating in social insurance, social safety net, and unemployment benefits and active labour market programs. Estimates include both direct and indirect beneficiaries.

Rationale:

ASPIRE (Atlas of Social Protection – Indicators of Resilience and Equity) coverage indicators refer to the ‘effective’ coverage definition, measuring the direct and indirect beneficiaries who are actually receiving social protection benefits at the time nationally representative household survey data are collected, as within a target group. ‘Effective’ coverage is directly relevant to SDG 1 of ending poverty in all its forms. ASPIRE indicators do not include those who are protected by law, or those who have benefits guaranteed but are not necessarily receiving them at the time the survey is administered.

Concepts:

This indicator is estimated by program type, for the entire population and by quintiles of both the post-transfer and pre-transfer welfare distribution. Programs are aggregated into social assistance, social insurance and labour market according to ASPIRE classification. Indicators for all Social Protection and Labour (SPL) programs provide the totals summing up the social assistance, social insurance and labour market figures.

ASPIRE is the World Bank’s premier compilation of SPL indicators gathered from officially-recognized international household surveys in order to analyse the distributional and poverty impact of SPL programs. ASPIRE is an ongoing project that aims to improve SPL data quality, comparability and availability to better inform SPL policies and programs.

Comments and limitations:
Household surveys have limitations. It is important to note that the extent to which information on specific transfers and programs is captured in the household surveys can vary a lot across countries. Often household surveys do not capture the universe of SPL programs in the country, in best practice cases just the largest programs. Many household surveys have limited information on SPL programs, some surveys collect information only on participation without including the transfer amounts; and others include program information mixed with private transfers, making it difficult to isolate individual SPL programs. Therefore, information on country SPL programs included in ASPIRE is limited to what is captured in the respective national household survey and does not necessarily represent the universe of programs existing in the country. In addition, the availability of ASPIRE indicators depends on the type of questions included in the survey. If transfer amounts are available, for example, adequacy and impact on poverty indicators can be generated. If only program participation questions are included in the survey, only non-monetary indicators can be generated such as coverage or beneficiary incidence. As a consequence, ASPIRE performance indicators are not fully comparable across harmonized program categories and countries.

However, household surveys have the unique advantages of allowing analysis of program impact on household welfare. With such caveats in mind, ASPIRE indicators based on household surveys provide an approximate measure of social protection systems performance.

**Computation Method:**

Data are calculated from national representative household surveys using ASPIRE:

Coverage = Number of beneficiaries in the total population (or group) / Total population (or group).

Generally, ASPIRE indicators are based on a first level analysis of original household survey data and on a unified methodology that does not necessarily reflect country-specific knowledge and in depth country analysis relying on different data sources.

**Disaggregation:**

Disaggregation would be possible by sex, age group, income quintiles, etc.

**Data sources:**

ASPIRE

**Collection process:**

Unit-record data of national household surveys are collected by national governments and given to the World Bank for analytical purposes. The ASPIRE team harmonizes these household surveys to make them reasonably comparable across country and over time.

**Data providers:**

National Statistical System
Data compilers:

World Bank

References:

www.worldbank.org
Indicator 1.5.2: Direct disaster economic loss in relation to global gross domestic product (GDP)[a]

Goal 1: End poverty in all its forms everywhere

Target 1.5: By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters

Definition:

Direct economic loss: the monetary value of total or partial destruction of physical assets existing in the affected area. Direct economic loss is nearly equivalent to physical damage.

[a] An open-ended intergovernmental expert working group on indicators and terminology relating to disaster risk reduction established by the General Assembly is developing a set of indicators to measure global progress in the implementation of the Sendai Framework. These indicators will eventually reflect the agreements on the Sendai Framework indicators.

Rationale:

The disaster loss data is significantly influenced by large-scale catastrophic events, which represent important outliers. The United Nations Office for Disaster Risk Reduction (UNISDR) recommends countries to report the data by event, so complementary analysis can be done by both including and excluding such catastrophic events that can represent important outliers.

Comments and limitations:

Not every country has a comparable national disaster loss database that is consistent with these guidelines. Therefore, by 2020, it is expected that all countries will build / adjust national disaster loss databases according to the recommendations and guidelines by the Open-ended Intergovernmental Working Group (OEIWG).

Computation Method:

The computation methodology for several indicators is very comprehensive, very long (about 180 pages). It is advisable to refer to the outcome of the OEIWG, which provides a full detailed methodology for each indicator and sub-indicator.

The original national disaster loss databases usually register physical damage value (housing unit loss, infrastructure loss etc.), which needs conversion to monetary value according to the UNISDR methodology. The converted global value is divided by global GDP (inflation adjusted, constant USD) calculated from the WDI.

Disaggregation:
By country, by event, by hazard type (e.g. disaggregation by climatological, hydrological, meteorological, geophysical, biological and extra-terrestrial for natural hazards is possible following IRDR classification); asset loss category (health/education/road etc.); transportation mode; service sector

**Data sources:**

National disaster loss database

**Collection process:**

The official counterpart(s) at the country level will build/adjust national disaster loss databases according to the recommendations and guidelines by the OEIWG.

**Data providers:**

In most countries national disaster loss databases are established and managed by special purpose agencies including national disaster management agencies, civil protection agencies, and meteorological agencies, and disaster data collected by line ministries. Some exceptions include Academic institutions conducting long term research programs, NGO’s engaged in Disaster Risk Reduction (DRR) and Disaster Risk Management (DRM), and insurance databases or data sources when market penetration is very high.

**Data compilers:**

UNISDR

**References:**

http://www.preventionweb.net/
Indicator 2.1.1: Prevalence of undernourishment

Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture

Target 2.1: By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round

Definition:

The prevalence of undernourishment (PoU) is an estimate of the proportion of the population whose habitual food consumption is insufficient to provide the dietary energy levels that are required to maintain a normal active and healthy life. It is expressed as a percentage.

Rationale:

The indicator has been used by Food and Agricultural Organization of the United Nations (FAO) to monitor the World Food Summit Target and the MDG Target 1C, at national, regional and global levels, since 1999. It allows monitoring trends in the extent of dietary energy inadequacy in a population over time, generated as a result of the combination of changes in the overall availability of food, in the households' ability to access it, and in the socio-demographic characteristics of the population, as well as differences across countries and regions in any given moment in time.

The parametric approach adopted by FAO allows obtaining reliable estimate for relatively large population groups. As it reflects a severe condition of lack of food, it is fully consistent with the spirit of a goal that aims at reducing hunger.

Concepts:

Undernourishment is defined as the condition by which a person has access, on a regular basis, to amounts of food that are insufficient to provide the energy required for conducting a normal, healthy and active life, given his or her own dietary energy requirements.

Though strictly related, “undernourishment” as defined here is different from the physical conditions of “malnutrition” and “undernutrition” as it refers to the condition of insufficient intake of food, rather than to the outcome in terms of nutritional status. A more appropriate expression in English that would render the precise meaning of the indicator might have been “prevalence of underfeeding” but by now the term “undernourishment” has long been associated with the indicator.

While the undernourishment condition applies to individuals, due to conceptual and data-related considerations, the indicator can only be referred to a population, or group of individuals. The prevalence of undernourishment is thus an estimate of the percentage of individuals in a group that are in that condition, but it does not allow for the identification of which individuals in the group are, in fact, undernourished.
Comments and limitations:

Over the years, the parametric approach informing the computation of the PoU has been criticized, based on the presumptions that undernourishment should be assessed necessarily starting at the individual level, by comparing individual energy requirements with individual energy intakes. According to such view, the prevalence of undernourishment could be simply computed by counting the number of individuals in a representative sample of the population that is classified as undernourished, based on a comparison of individual habitual food consumption and requirements. Unfortunately, such approach is not feasible for two reasons: first, due to the cost of individual dietary intake surveys, individual food consumption is measured only in a few countries, every several years, on relatively small samples; moreover, individual energy requirements are practically unobservable with standard data collection methods. This means that even if it were possible to obtain accurate observations of the individual dietary energy consumption, this would be insufficient to infer on the undernourishment condition at individual level, unless integrated by the observation on the physical status and of its dynamic over time, of the same individual.

The model based approach to estimate the PoU developed by FAO integrates information that is available with sufficient regularity from different sources for most countries in the world, in a theoretically consistent way, thus providing what is still one of the most reliable tools to monitor progress towards reducing global hunger.

Computation Method:

The indicator is computed at the population level. To this aim, the population is represented by an “average” individual for which a probability distribution of the habitual daily dietary energy intake levels is modelled through a parametric probability density function (pdf).

Once the pdf is characterized, the indicator is obtained as the cumulative probability that daily habitual dietary energy intakes (x) are below the lower bound of the range of normal dietary energy requirements for that representative, or average individual (MDER), as in the formula below:

$$
\text{PoU} = \int_{x<\text{MDER}} f(x \mid \text{DEC}; \text{CV}; \text{Skew}) \, dx
$$

where DEC, CV and Skew are the mean, coefficient of variation and skewness that characterize the distribution of habitual dietary energy consumption levels in the population.

The probability distribution f(x) is modelled as a three-parameter pdf, able to represent different degrees of skewness, ranging from that of a symmetric Normal distribution to that of the positively skewed Log-normal distribution. The flexibility in capturing different degrees of skewness is needed to take into account the fact that human energy consumption levels are naturally bounded by physiological limits. It is thus conceivable that, as mean consumption levels increases, the skewness of the distribution decreases, gradually moving from Log-normal distributions, typical of populations where average food consumption is relatively low, towards Normal distributions. The skew-normal and skew-lognormal families of distribution allow for the characterization of all possible intermediate degrees of positive skewness.
A custom R function is available from the Statistics Division at FAO to compute the PoU, given the four parameters DEC, CV, Skew and MDER.

Different data sources can be used to estimate the different parameters of the model.

The mean of the distribution of dietary energy consumption levels for the average individual in a population (DEC) corresponds, by definition, to the average, daily per capita food consumption level in the population. DEC can be estimated from data on food consumption obtained through surveys that are representative of the population of interest. Depending on the survey design, they can be used to estimate DEC at national and at sub national levels, either by geographic areas or by socio-economic population groups. Unfortunately, though the situation is rapidly improving, representative surveys that collect food consumption data are still not available for every country and every year.

For the national population only, DEC can be estimated also from accounts of the total supply and utilization of all food commodities in a country, where the contribution of each commodity to the availability of food for human consumption is expressed in their dietary energy content, and their total is divided by the size of the population. The major source of data on national food balances are the Food Balance Sheets (FBS) maintained by FAO for most countries in the world, informed by official data reported by member countries, and disseminated through FAOSTAT.

CV Surveys that contain information on food consumption at individual or household level are the only available source to directly estimate the CV of habitual food consumption for the representative individual in the population. Unfortunately, survey data on food consumption are fraught by many problems that complicate the reliable estimation of CV.

In principle, repeated observations of daily consumption for each individual in a sample would be needed to estimate levels of habitual consumption and to control for measurement errors. Moreover, data should be collected in different periods of the year on the same individuals or households to account for possible seasonal variation in levels of dietary energy consumption. Due to their cost, nationally representative individual dietary intake surveys with such characteristics are very rare, and virtually inexistent for most developing countries. As a consequence, the most common sources of data to estimate CV are multipurpose household surveys, such as Living Standard Measurement Surveys, Household Incomes and Expenditure Surveys, that collect also information on food consumption. When using data collected at household level however, careful attention should be taken in distinguishing levels of food purchases or acquisitions from levels of actual utilization during the identified reference period and in properly recording the number of individuals who participate in consumption; moreover, household level data will mask the variability due to intra-household allocation of food.

For all these reasons, the coefficient of variation calculated on the series of average per capita daily dietary energy consumption levels recorded for each household included in a survey is never a reliable estimate of CV, which should reflect variability in the levels of habitual daily dietary energy consumption level, at the individual level. Empirical estimates of CV from household survey data are upward biased due to the spurious variability induced by measurement error, differences between occasional and habitual consumption, differences between acquisition and actual consumption and seasonality. Moreover, they do not reflect the variability in dietary energy consumption in the population associated with individual characteristics of the household members, such as sex, age, body mass and physical activity levels.
When using data collected through household surveys, CV is thus best estimated indirectly, controlling for spurious variability, and adjusted to reflect inter-individuals, in addition to inter-households variability. The simplest way to proceed is to classify households into homogeneous groups and to calculate the coefficient of variation of the average per capita dietary energy consumption across household groups. This yields an estimate of the inter-household component of CV, labelled CV_H. An estimate of the inter-individual component of the CV, labelled CV_I, is obtained, for each population, from its structure by sex, age and body masses, and the two components are combined to obtain the needed estimate as:

\[ CV^2 = \sqrt{(CV_H)^2 + (CV_I)^2} \]

For countries and years when no data from household survey are available, an indirect estimate of the CV, CV_IND, is obtained via a regression that projects the values of per capita GDP, Gini coefficient of income, and an index of the relative price of food (FPI) on the CV, while controlling for a regional shifter (REG).

\[ CV^2_{\text{IND}} = \beta_0 + \beta_1 \text{GDP} + \beta_2 \text{GINI} + \beta_3 \text{FPI} + \beta_4 \text{REG}. \]

Coefficients of the regression are estimated from the set of data and years for which data on CV, GDP, GINI and FPI are available.

Skew

As skewness is not strongly affected by the presence of spurious variability, Skew is estimated directly from household level data on the average daily dietary consumption, with the only exception of eliminating rare extremely high or extremely low values. If the empirically estimated skewness exceeds the value that would correspond to the skewness of Log-normal distribution with given mean and coefficient of variation, the parameter is neglected and a two parameter lognormal distribution is used for f(x).

MDER

Human energy requirements are computed by multiplying normative requirements for basic metabolic rate (BMR, expressed per kg of body mass) by the ideal weight of a healthy person of given height, and then multiplied by a coefficient of physical activity level (PAL). Ranges of normal energy requirements are thus computed for each sex and age group of the population, observing that there exist a whole range of Body Mass Index (BMI) values, from 18.5 to 25, that are compatible with health. This implies that any given attained height might correspond to a whole range of healthy body weights, and therefore to a range of values for energy requirement for BMR.

Given information on the median height and the consideration that the group might contain individuals engaged in different levels of physical activity, the minimum, average and maximum dietary energy requirement can be computed for every sex and age class by taking into consideration special allowances for growth in individuals aged 0 to 21 and for pregnancy and lactation. The MDER for a given population group, including for the national population, is obtained as the
weighted average of the minimums of the energy requirements ranges of each sex and age class, using the population size in each class as weights.

In computing the prevalence of dietary energy inadequacy in a population there has often been confusion between the concept of MDER and that of the Recommended Dietary Energy Intake, and regarding the appropriate threshold to be used to compute the probability of inadequacy. The reason why the probability of dietary energy inadequacy should be computed with reference to the MDER, and not the ADER (which, instead, can be used as an estimate of the average recommended dietary intake level for the whole population) is simply to recognize the fact that in any population there exists a certain range of normal variability in requirements; using the ADER as a threshold would greatly overestimate undernourishment as it would count also the proportion of the healthy population that consumes less than average, simply because of having less than average requirements. When needed, the ADER, or the average Recommended Dietary Energy Intake level in a population must be used instead to compute the dietary energy gap.

**Disaggregation:**

Due to reliance on national FBS data to estimate mean caloric consumption levels in the population, the indicator is available at national level only.

**Data sources:**

The ideal source of data to estimate the PoU would be a carefully designed and skilfully conducted individual dietary intake survey. Due to their cost, however, such surveys are rare. In principle, a well-designed household survey that collects information on food acquisitions might be sufficient to inform a reliable estimate of the Prevalence of Undernourishment in a population, at a reasonable cost and with the necessary periodicity to inform the SDG monitoring process.

**Collection process:**

Official information on food commodity production, trade and utilization used by FAO to compile FBS is provided mainly by Statistical Units of the Ministry of Agriculture. FAO sends out a data collection questionnaire every year to an identified focal point.

Microdata of household surveys are generally owned and provided by NSOs. When available, data is sourced by FAO directly through the NSOs’ website. In several cases, when microdata is not available in the public domain, bilateral agreements have been signed, usually in the contexts of technical assistance and capacity development programs.

Data on the population size and structure for all monitored countries is obtained from the United Nations Population Division (UNPD), World Population Prospects.

**Data providers:**

Given the various data sources, national data providers vary. Official information on food commodity production, trade and utilization used by FAO to compile FBS is provided mainly by Statistical Units of the Ministry of Agriculture. Microdata of household surveys are generally owned and provided by NSOs.

**Data compilers:**

FAO, Statistics Division, Food Security and Nutrition Statistics Team
References:

http://www.fao.org/
Indicator 2.1.2: Prevalence of moderate or severe food insecurity in the population, based on the Food Insecurity Experience Scale (FIES) (A2063 Indicator A1G5P1T9I1)

Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture

Target 2.1: By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round

Definition:

The indicator measures the percentage of individuals in the population who have experienced food insecurity at moderate or severe levels during the reference period. The severity of food insecurity, defined as a latent trait, is measured on the Food Insecurity Experience Scale (FIES) global reference scale, a measurement standard established by FAO through the application of the FIES in more than 140 countries worldwide, starting in 2014.

Rationale:

Food insecurity at moderate levels of severity is typically associated with the inability to regularly eat healthy, balanced diets. As such, high prevalence of food insecurity at moderate levels can be considered a predictor of various forms of diet-related health conditions in the population, associated with micronutrient deficiency and unbalanced diets. Severe levels of food insecurity, on the other hand, imply a high probability of reduced food intake and therefore can lead to more severe forms of undernutrition, including hunger.

Short questionnaires like the FIES are very easy to administer at limited cost, which is one of the main advantages of their use. The ability to precisely determine the food insecurity status of specific individuals or households, however, is limited by the small number of questions, a reason why assignment of individual respondents to food insecurity classes is best done in probability terms, thus ensuring that estimates of prevalence rates in a population are sufficiently reliable even when based on relatively small sample sizes.

As with any statistical assessment, reliability and precision crucially depend on the quality of the survey design and implementation. One major advantage of the analytic treatment of the data through the Rasch model based methods is that it permits testing the quality of the data collected and evaluating the likely margin of uncertainty around estimated prevalence rates, which should always be reported.

Concepts:
Extensive research over more than 25 years has demonstrated that the inability to access food results in a series of experiences and conditions that are fairly common across cultures and socio-economic contexts and that range from being concerned about the possibility to obtain enough food, to the need to compromise on the quality or the diversity of food consumed, to being forced to reduce the intake of food by reducing portion sizes or skipping meals, up to the extreme condition of feeling hungry and not having means to access food. Typical conditions like these form the basis to construct experience-based food insecurity measurement scales. When analysed through sound statistical methods rooted in Item Response Theory, data collected through such scales provide the basis to compute theoretically consistent, cross country comparable measures of the prevalence of food insecurity. The severity of the food insecurity condition as measured by this indicator thus directly reflects the extent of the inability of households or individuals to regularly access the food they need.

Comments and limitations:

An average of less than three minutes of survey time is estimated to collect FIES data in a well-conducted face-to-face survey, which should make it possible to include the FIES-SM (Survey Module) in a nationally representative survey in every country in the world, at a very reasonable cost. FAO provides versions of the FIES-SM adapted and translated in each of the more than 200 languages and dialects used in the Gallup World Poll.

When used in the Gallup World Poll, with sample sizes of only about 1000 individuals, the width of confidence intervals rarely exceeds 20% of the measured prevalence (i.e., prevalence rates of around 50% are estimated with margins of errors of plus or minus 5%). Obviously, confidence intervals are likely to be much smaller when national prevalence rates are estimated using larger samples.

Compared to other proposed non-official indicators of household food insecurity, the FIES based approach has the advantage that food insecurity prevalence rates are directly comparable across population groups and countries. Even if they use similar labels (such as “mild”, “moderate” and “severe” food insecurity) other approaches have yet to demonstrate the formal comparability of the thresholds used for classification, due to lack of the definition of a proper statistical models that links the values of the “indexes” or “scores” used for classification, to the severity of food insecurity. For this reason, care should be taken when comparing the results obtained with the FIES with those obtained with these other indicators, even if, unfortunately, similar labels are used to describe them.

Computation method:

Data at the individual or household level can be collected using one of several experience-based food security scale questionnaires. Any of these survey modules collects answers to questions asking to report on the occurrence of a number of typical experiences and conditions associated with food insecurity. The data can be analysed using the Rasch model, which postulates that the probability of observing an affirmative answer by respondent i to question j, is a logistic function of the distance, on an underlying scale of severity, between the position of the respondent, $a_i$, and that of the item, $b_j$.

$$\text{Prob} \{ x_{i,j} = \text{Yes} \} = \frac{\exp(a_i - b_j)}{1 + \exp(a_i - b_j)}$$
Parameters $a_i$ and $b_j$ can be estimated using maximum likelihood procedures. Parameters $a_i$, in particular, are interpreted as a measure of the severity of the food security condition for each respondent and are used to classify them into classes of food insecurity.

The FIES considers the three classes of (a) food security or mild food insecurity; b) moderate or severe food insecurity, and (c) severe food insecurity, and estimates the probability of being moderately or severely food insecure ($p_{\text{mod+sev}}$) and the probability of being severely food insecure ($p_{\text{sev}}$) for each respondent, with $0 < p_{\text{sev}} < p_{\text{mod+sev}} < 1$. The probability of being food secure or mildly food insecure can be obtained as $p_{\text{fs}} = 1 - p_{\text{mod+sev}}$.

Given a representative sample, the prevalence of food insecurity at moderate or severe levels ($F_{\text{mod+sev}}$), and at severe levels ($F_{\text{sev}}$) in the population are computed as the weighted sum of the probability of belonging to the moderate or severe food insecurity class, and to the severe food insecurity class, respectively, of all individual or household respondents in a sample:

$$F_{\text{mod+sev}} = \sum p_{\text{mod+sev}} \times w_i$$

and

$$F_{\text{sev}} = \sum p_{\text{sev}} \times w_i$$

where $w_i$ are post-stratification weights that indicate the proportion of individual or households in the national population represented by each element in the sample.

**Disaggregation:**

As the FIES or any other compatible experience-based food security questionnaire is applied through surveys, the prevalence of food insecurity can be measured in any population group for which the survey used to collect data is representative.

**Data sources:**

Data can be collected using FIES-SM developed by FAO, or any other experience-based food security scale questionnaires.

**Data providers:**

National data providers will be NSOs that are responsible for the survey in which the FIES or similar scale is included. FAO will provide data for countries where the FIES or compatible module is not included in any national survey.

**Data compilers:**

FAO, Statistics Division, Food Security and Nutrition Statistics Team.

**References:**

http://www.fao.org/
Indicator 2.2.1: Prevalence of stunting (height for age <-2 standard deviation from the median of the World Health Organization (WHO) Child Growth Standards) among children under 5 years of age Institutional information (A2063 Indicator A1G1P2T5I2)

Goal 2: End hunger, achieve food security and improved nutrition, and promote sustainable agriculture

Target 2.2: by 2030 end all forms of malnutrition, including achieving by 2025 the internationally agreed targets on stunting and wasting in children under five years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women, and older persons

Definition:

Prevalence of stunting (height-for-age <-2 standard deviation from the median of the World Health Organization (WHO) Child Growth Standards) among children under 5 years of age.

Rationale:

Child growth is an internationally accepted outcome reflecting child nutritional status. Child stunting refers to a child who is too short for his or her age and is the result of chronic or recurrent malnutrition. Stunting is a contributing risk factor to child mortality and is also a marker of inequalities in human development. Stunted children fail to reach their physical and cognitive potential.

Concepts:

NA

Comments and limitations:

Survey estimates come with levels of uncertainty due to both sampling error and non-sampling error. None of the two sources of errors have been fully taken into account for deriving estimates neither at country nor at regional and global levels.

Computation Method:

Survey estimates are based on standardized methodology using the WHO Child Growth Standards. Global and regional estimates are based on methodology outlined in UNICEF-WHO-The World Bank: Joint child malnutrition estimates - Levels and trends.

Disaggregation:
Global and regional estimates refer to the age group of children under 5 years, sexes combined. Disaggregated country data are available in a majority of household surveys.

**Data sources:**

For the majority of countries, nationally representative household surveys constitute the data source. For a limited number of countries data from surveillance systems is used if sufficient population coverage is documented (about 80%).

**Collection process:**

UNICEF, WHO and the World Bank group jointly review new data sources to update the country level estimates. Each agency uses their existing mechanisms for obtaining data.

**Data providers:**

Data providers vary and most commonly are ministries of health, NSOs, and national institutes of nutrition.

**Data compilers:**

UNICEF, WHO and the World Bank group

**References:**

data.unicef.org/

http://datatopics.worldbank.org/
Indicator 2.2.2: Prevalence of malnutrition (weight for height \(>+2\) or \(<-2\) standard deviation from the median of the WHO Child Growth Standards) among children under 5 years of age, by type (wasting and overweight)

Goal 2: End hunger, achieve food security and improved nutrition, and promote sustainable agriculture

Target 2.2: by 2030 end all forms of malnutrition, including achieving by 2025 the internationally agreed targets on stunting and wasting in children under five years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women, and older persons

Definition:

Prevalence of overweight (weight for height \(>+2\) standard deviations from the median of the WHO Child Growth Standards among children under 5 years of age.


Rationale:

Child growth is an internationally accepted outcome area reflecting child nutritional status. Child overweight refers to a child who is too heavy for his or her height. This form of malnutrition results from expending too few calories for the amount of food consumed and increases the risk of non-communicable diseases later in life. Child overweight is one of the World Health Assembly nutrition target indicators.

Child wasting refers to a child who is too thin for his or her height and is the result of recent rapid weight loss or the failure to gain weight. A child who is moderately or severely wasted has an increased risk of death, but treatment is possible. Child wasting is one of the World Health Assembly nutrition target indicators.

Concepts:

The official MDG indicator is overweight as assessed using weight for height. Overweight can however also be assessed with other indicators such body mass index for age. In general BMI for age is not used in the joint dataset but has been considered in absence of any other available estimates.

The official MDG indicator is wasting as assessed using weight for height. Wasting can however also be assessed with mid upper arm circumference (MUAC). Estimates of wasting based on MUAC are not considered for the joint dataset. In addition, while wasting constitutes the major form of moderate acute malnutrition (MAM), there are acutely malnourished children who would
not be picked up with weight for-height or MUAC, namely those presenting bilateral pitting oedema (characterized by swollen feet, face and limbs). For Surveys that report oedema cases, in the joint data set these are included in the prevalence of low weight-for-height.

Comments and limitations:

Survey estimates come with levels of uncertainty due to both sampling error and non-sampling error. None of the two sources of errors have been fully taken into account for deriving estimates neither at country nor at regional and global levels. Of particular concern for overweight is the fact that data for high income countries are scarce yet the rates are generally higher among the high income countries with data and so the lack of representation from high income countries may affect the global and even regional rates.

Surveys are carried out in a specific period of the year, usually over a few months. However, wasting can be affected by seasonality, factors related to food availability (e.g. pre-harvest periods), disease (e.g. rainy season and diarrhoea, malaria, etc.), and natural disasters and conflicts. Hence, country-year estimates may not necessarily be comparable over time. Consequently, only latest estimates are provided.

Computation Method:

Survey estimates are based on standardized methodology using the WHO Child Growth Standards. Global and regional estimates are based on methodology outlined in UNICEF-WHO-The World Bank: Joint child malnutrition estimates - Levels and trends.

Disaggregation:

Global and regional estimates refer to the age group of children under 5 years, sexes combined. Disaggregated country data are available in a majority of household surveys.

Data sources:

For the majority of countries, nationally representative household surveys constitute the data source. For a limited number of countries data from surveillance systems is used if sufficient population coverage is documented (about 80%). For both data sources, the child’s height and weight measurements have to be collected following recommended standard measuring techniques.

Collection process:

UNICEF, WHO and the World Bank group jointly review new data sources to update the country level estimates. Each agency uses their existing mechanisms for obtaining data.

Data providers:

Data providers vary and most commonly are ministries of health, NSOs and national institutes of nutrition.

Data compilers:

UNICEF, WHO and the World Bank group

References:

data.unicef.org/nutrition/malnutrition
http://datatopics.worldbank.org/child-malnutrition

**Indicator 2.a.1: The agriculture orientation index for government expenditures**

**Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture**

**Target 2.a: Increase investment, including through enhanced international cooperation, in rural infrastructure, agricultural research and extension services, technology development and plant and livestock gene banks in order to enhance agricultural productive capacity in developing countries, in particular least developed countries**

**Definition:**

The Agriculture Orientation Index (AOI) for Government Expenditures is defined as the Agriculture Share of Government Expenditures, divided by the Agriculture Share of GDP, where Agriculture refers to the agriculture, forestry, fishing and hunting sector. The measure is a currency-free index, calculated as the ratio of these two shares. National governments are requested to compile Government Expenditures according to the international Classification of Functions of Government (COFOC), and Agriculture Share of GDP according to the System of National Accounts (SNA).

**Rationale:**

An AOI greater than 1 reflects a higher orientation towards the agriculture sector, which receives a higher share of government spending relative to its contribution to economic value-added. An AOI less than 1 reflects a lower orientation to agriculture, while an AOI equal to 1 reflects neutrality in a government’s orientation to the agriculture sector.

Government spending in Agriculture includes spending on sector policies and programs; soil improvement and soil degradation control; irrigation and reservoirs for agricultural use; animal health management, livestock research and training in animal husbandry; marine / freshwater biological research; afforestation and other forestry projects; etc. Spending in these agricultural activities helps to increase sector efficiency, productivity and income growth by increasing physical or human capital and / or reducing inter-temporal budget constraints.

However, the private sector typically under-invests in these activities due to the presence of market failure. Similarly, the high risk faced by agricultural producers, particular smallholders unable to hedge against risk, often requires government intervention in terms of income redistribution to support smallholders in distress following crop failures and livestock loss from pests, droughts, floods, infrastructure failure, or severe price changes.

Government spending in agriculture is essential to address these market failures and the periodic need for income redistribution. This leads to several potential indicators for the SDGs, which include: a) the level of Government Expenditures in Agriculture (GEA); b) the Agriculture share of Government Expenditures, and c) the AOI for Government Expenditures.
An indicator that measures GEA levels fails to take into account the size of an economy. If two countries, A and B, have the same level of GEA, and the same agriculture contribution to GDP, but country A’s economy is 10 times that of country B, setting the same target levels for GEA fails to take economic size into account.

An indicator that measures the Agriculture share of Government Expenditures fails to take into account the relative contributions of the agricultural sector to a country’s GDP. Consider two countries with the same economic size, C and D, where agriculture contributes 2 per cent to C’s GDP, and 10 per cent to country D’s GDP. If total Government Expenditures were equal in both countries, C would experience greater relative investment in Agriculture than D. If total Government Expenditures differed, the result could be magnified or diluted.

The AOI index takes into account a country’s economic size, Agriculture’s contribution to GDP, and the total amount of Government Expenditures. As such, it allows for the setting of a universal and achievable target. Nonetheless, it is useful to interpret the AOI in combination with its numerator and denominator separately: the Agriculture share of Government Expenditures and the Agriculture Share of GDP.

**Concepts:**

Agriculture refers to the agriculture, forestry, fishing and hunting sector. Government Expenditures are based on the Classification of the Functions of Government (COFOG) developed by the OECD and published by the United Nations Statistics Division (UNSD).

Government Expenditures are all outlays or expenses associated with supporting a particular sector, including compensation of employees, and subsidies and grants paid as transfers to individuals or corporations in that sector.

The Agriculture Share of GDP is measured by the ratio of Agriculture Value Added over GDP, based on official data reported by countries to UNSD.

**Comments and limitations:**

Since the numerator of this data is based on administrative sources, there is no confidence interval or standard error associated with government expenditure data. For the denominator, national accounts data typically do not provide any standard error or confidence interval information.

The key limitation with this indicator is that it takes into account only central government expenditures. To the extent that some countries may have heavier intervention in Agriculture by sub-national governments, this will not be taken into account.

**Computation Method:**

\[ \text{AOI} = \frac{\text{Agriculture Share of Government Expenditures}}{\text{Agriculture Share of GDP}} \]

Where:
1) Agriculture Share of Government Expenditures = (Central Government Expenditures on Agriculture) / (Total Central Government Outlays); and

2) Agriculture Share of GDP = (Agriculture Value-Added) / GDP

Agriculture refers to the Division A of ISIC Rev 4 (Agriculture, forestry, fishing and hunting), equal to Division A+B of ISIC Rev 3.2.

Disaggregation:

Since this indicator is based on national accounts data and total central government expenditures, it does not allow for disaggregation by demographic characteristics or geographic location.

Data sources:

Data on government expenditures is collected from countries using an annual questionnaire administered by FAO. For some countries that do not report such data to FAO, data may be obtained from the IMF or from official national governmental websites.

Data on agriculture value-added and GDP are based on SNA, which is an analytical framework that compiles national data from a mix of survey, census and administrative sources. This data is obtained from the UNSD.

Collection process:

Data on government expenditures are collected from countries using a questionnaire issued by FAO, developed in collaboration with the IMF. Data from countries may be supplemented, for missing countries, with data collected by the IMF, or published on official national governmental websites. Validation and consultation were conducted through various FAO commissions and committees, including its two agricultural statistics commissions and its Committee on Agriculture.

Data providers:

NSOs, line ministries

Data compilers:

FAO

References:

www.fao.org

Indicator 2.a.2: Total official flows (official development assistance plus other official flows) to the agriculture sector

Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture

Target 2.a: Increase investment, including through enhanced international cooperation, in rural infrastructure, agricultural research and extension services, technology development and plant
and livestock gene banks in order to enhance agricultural productive capacity in developing
countries, in particular least developed countries

Definition:

Total official flows (official development assistance plus other official flows) to the agriculture
sector is defined as Gross disbursements of total Official Development Assistance (ODA) and other
official flows from all donors to the agriculture sector.

Rationale:

Total ODA and Other Official Flows (OOF) flows to developing countries quantify the public effort
(excluding export credits) that donors provide to developing countries for agriculture.

Concepts:

ODA: The OECD Development Assistance Committee (DAC) defines ODA as “those flows to
countries and territories on the DAC List of ODA Recipients and to multilateral institutions which
are i) provided by official agencies, including state and local governments, or by their executive
agencies; and ii) each transaction is administered with the promotion of the economic development
and welfare of developing countries as its main objective; and is concessional in character and
conveys a grant element of at least 25 per cent (calculated at a rate of discount of 10 per cent).

Other official flows (OOF): Other official flows (excluding officially supported export credits) are
defined as transactions by the official sector which do not meet the conditions for eligibility as ODA,
either because they are not primarily aimed at development, or because they are not sufficiently
concessional.

The agriculture sector is as defined by the DAC and comprises all Creditor Reporting System (CRS)
sector codes in the 311 series.

‘All donors’ refers to DAC donors, non-DAC donors and multilateral organisations.

Comments and limitations:

Data in the CRS are available from 1973. However, the data coverage is considered complete since
1995 for commitments at an activity level and 2002 for disbursements.

Computation Method:

The sum of ODA and OOF flows from all donors to developing countries in the agriculture sector.
A statistical reporter is responsible for the collection of DAC statistics in each providing country / agency. This reporter is usually located in the national aid agency, Ministry of Foreign Affairs or Finance etc.

**Data providers:**

Data are reported on an annual calendar year basis by statistical reporters in national administrations, Ministries of Foreign Affairs or Finance, etc.

**Data compilers:**

OECD

**References:**

www.oecd.org/dac/stats

### Indicator 2.b.1: Producer Support Estimate

**Goal 2:** End hunger, achieve food security and improved nutrition, and promote sustainable agriculture.

**Target 2b:** Correct and prevent trade restrictions and distortions in world agricultural markets including by 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.

**Definition:**

Producer Support Estimate (PSE): The annual monetary value of gross transfers from consumers and taxpayers to agricultural producers, measured at the farm-gate level, arising from policy measures that support agriculture, regardless of their nature, objectives or impacts on farm production or income. Percentage PSE (%PSE): PSE as a share of gross farm receipts (including support).

**Rationale:**

The OECD PSE indicators were developed in order to monitor and evaluate developments in agricultural policy, to establish a common base for policy dialogue among countries, and to provide economic data to assess the effectiveness and efficiency of policies. The indicators were mandated by OECD Ministers in 1987, and have since been calculated for OECD and an increasing number of non-OECD countries, and are widely referred to in the public domain.

**Concepts:**

PSE Indicators show what share of support to agriculture can be considered to be highly production and trade distorting, as opposed to be only minimally influencing markets through more decoupled...
measures of support. Domestic support notifications to the WTO are an obvious source for an indicator on target 2b as well; however, notifications often have a significant time lag and not all countries notify.

**Comments and limitations:**

**NA**

**Computation Method:**

Several key principles determine the scope of policy measures to be considered in the estimation of agricultural support and the method for measuring support, such as:

- A policy measure is included if it generates transfers to agricultural producers, regardless of the nature, objectives or impacts of the policy measure.

- Transfers are measured in gross terms, taking no account of adjustments which producers may make to receive the support, e.g. to meet compliance conditions.

- Transfers are measured at the farm gate level.

Policies are included in the estimates of support if agriculture is the only, or the major, beneficiary of the policy. It does not matter which government ministry or level of government implements the policy. Policy measures covered under PSE can be divided in two categories:

1. Policies which affect the domestic price of an agricultural commodity. Policies which increase domestic market prices (a positive MPD) create transfers to producers from consumers. When the commodity is exported, producers also receive transfers from taxpayers. When the commodity is imported, additional transfers go from consumers to others, including central government, in the form of tariff revenue. Policies which decrease domestic market prices (a negative MPD) create transfers from producers to consumers. When the commodity is imported, consumers also receive transfers from taxpayers. When the commodity is exported, additional transfers go from producers to others, including central government. The support arising from this type of policies is measured via Market Price Support (MPS), which is estimated for a set of core commodities in a given country and then extrapolated to cover total production in that country.

2. Policies that create transfers to agricultural producers via actual government expenditures on agricultural support and revenue foregone by the government and other economic agents. Budgetary transfers through all government institutions, both national and sub-national, are included, however:

Budgetary transfers associated with the administration of policies (design, implementation and evaluation) are not included in the estimates of support;

Care should be taken to avoid double counting of support, in particular in treating budgetary transfers associated with market price support policies.
Budgetary transfers are allocated to calendar years; in cases where agricultural, fiscal and calendar years do not coincide, various procedures are needed to attribute transfers appropriately.

**Disaggregation:**

Disaggregated policy-level data by commodity, policy implementation criteria and country.

**Data sources:**

Original annual data is collected by the OECD secretariat in collaboration with capitals.

**Collection process:**

Data is provided by capitals following an official request from the OECD Secretariat. Data is then treated and compiled in a standard data template by the OECD Secretariat. Each country has a designated Country Desk Officer who is responsible for data processing for that country and documenting all of the data manipulations and data sources.

**Data providers:**

Governments of the OECD member countries and national research institutes in Emerging Economies.

**Data compilers:**

OECD

**References:**

http://www.oecd.org/tad/agricultural-policies
Indicator: 3.1.1: Maternal mortality ratio (A2063 Indicator A1G3P1T3I1)

Goal 3: Ensure healthy lives and promote well-being for all at all ages

Target 3.1: By 2030, reduce the global maternal mortality ratio to less than 70 per 100,000 live births

Definition:

The maternal mortality ratio (MMR) is defined as the number of maternal deaths during a given time period per 100,000 live births during the same time period. It depicts the risk of maternal death relative to the number of live births and essentially captures the risk of death in a single pregnancy or a single live birth.

Maternal deaths: The annual number of female deaths from any cause related to or aggravated by pregnancy or its management (excluding accidental or incidental causes) during pregnancy and childbirth or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, expressed per 100,000 live births, for a specified time period.

Rationale:

All maternal mortality indicators derived from the 2015 estimation round include a point-estimate and an 80% uncertainty interval (UI). For those indicators where only point-estimates are reported in the text or tables, UIs can be obtained from supplementary materials. Both point-estimates and 80% UIs should be taken into account when assessing estimates.

For example:

The estimated 2015 global MMR is 216 (UI 207 to 249)

This means:

- The point-estimate is 216 and the 80% uncertainty interval ranges 207 to 249.
- There is a 50% chance that the true 2015 global MMR lies above 216, and a 50% chance that the true value lies below 216.
- There is an 80% chance that the true 2015 global MMR lies between 207 and 249.
- There is still a 10% chance that the true 2015 global MMR lies above 249, and a 10% chance that the true value lies below 207.
- Other accurate interpretations include:
  - We are 90% certain that the true 2015 global MMR is at least 207.
  - We are 90% certain that the true 2015 global MMR is 249 or less.
The amount of data available for estimating an indicator and the quality of that data determine the width of an indicator’s UI. As data availability and quality improve, the certainty increases that an indicator’s true value lies close to the point-estimate.

**Concepts:**

Definitions related to maternal death in ICD-10

Maternal death: The death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management (from direct or indirect obstetric death), but not from accidental or incidental causes.

Pregnancy-related death: The death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the cause of death.

Late maternal death: The death of a woman from direct or indirect obstetric causes, more than 42 days, but less than one year after termination of pregnancy.

**Comments and limitations:**

The extent of maternal mortality in a population is essentially the combination of two factors:

i. The risk of death in a single pregnancy or a single live birth.

ii. The fertility level (i.e. the number of pregnancies or births that are experienced by women of reproductive age).

**Computation Method:**

The maternal mortality ratio can be calculated by dividing recorded (or estimated) maternal deaths by total recorded (or estimated) live births in the same period and multiplying by 100 000. Measurement requires information on pregnancy status, timing of death (during pregnancy, childbirth, or within 42 days of termination of pregnancy), and cause of death.

The maternal mortality ratio can be calculated directly from data collected through vital registration systems, household surveys or other sources. There are often data quality problems, particularly related to the underreporting and misclassification of maternal deaths. Therefore, data are often adjusted in order to take these data quality issues into account. Some countries undertake these adjustments or corrections as part of specialized/confidential enquiries or administrative efforts embedded within maternal mortality monitoring programmes.

**Disaggregation:**

MMR estimates are reported at country, regional and global levels.

**Collection process:**
The Maternal Mortality Estimation Inter-Agency Group (MMEIG) maintains an input database consisting of maternal mortality data from civil registration, population based surveys, surveillance systems, censuses, and other specialized studies / surveys. This database is used to determine the number of maternal deaths and where possible the number of deaths among all women of reproductive age (WRA) to calculate the “PM” proportion of maternal deaths among WRA. The MMR is then calculated as $\text{MMR} = \text{PM} \times \frac{D}{B}$; where “D” is the number of deaths in women aged 15-49 (WRA) and “B” is the number of live births. The number of live births is based upon the UNPD World Population Prospects. Statistical modelling is undertaken to generate comparable country, regional, and global level estimates. In 2001, the WHO Executive Board endorsed a resolution seeking to “establish a technical consultation process bringing together personnel and perspectives from Member States in different WHO regions. A key objective of this consultation process is to ensure that each Member State is consulted on the best data to be used.

**Data providers:**

National level data providers may be NSOs, specialized epi monitoring bodies.

**Data compilers:**

MMEIG composed of: WHO, UNICEF, UNFPA, World Bank, and UNPD

**References:**

http://www.who.int/
Indicator 3.1.2: Proportion of births attended by skilled health personnel (A2063 Indicator A1G3P1T3I4)

Goal 3: Ensure healthy lives and promote well-being for all at all ages

Target 3.1: By 2030, reduce the global maternal mortality ratio to less than 70 per 100,000 live births

Definition:

The proportion of births attended by skilled health personnel is defined as the percentage of live births attended by skilled health personnel during a specified time period, generally up to the past five years.

Rationale:

The proportion of birth attended by skilled health personnel provides an indicator of access by pregnant women to appropriate delivery care that can provide quality management of labour and delivery, assess obstetric risks, treat and refer appropriately. When disaggregated by relevant socio-economic and geographic stratifiers, the indicator helps identified areas and groups that are not being reached with appropriate delivery care.

Concepts:

The joint Statement by the WHO, International Confederation of Widwifes, and International Federation of Gynecology and Obstetrics (WHO/ICM/FIGO) defines the skilled birth attendant as “an accredited health professional — such as a midwife, doctor or nurse — who has been educated and trained to proficiency in the skills needed to manage normal (uncomplicated) pregnancies, childbirth and the immediate postnatal period, and in the identification, management and referral of complications in women and newborns”.

Comments and limitations:

Although the indicator has been measured and reported on for decades at country, regional and global levels, data to measure it remain challenged with many limitations. Most data from low and middle income countries are from household surveys and therefore based on women’s recall of the health worker who mainly assisted with delivery and their perception of the type of cadre. In addition, definition of skilled health personnel varies largely across countries, and includes non-standard list of cadres of health workers, which can lead to serious misclassification in terms of skills. Furthermore, categories of cadres of health workers used in survey questions are not standard but vary across surveys and between countries. Finally, the indicator only provides an indication of level of contact with the health system. It does not indicate level of quality of care, nor receipt of all necessary high impact interventions.
Computation Method:

The indicator is computed as the number of live births attended by skilled health personnel (generally doctors, nurses or midwives) out of total number of live births in a specified reference period. Data generally come from household surveys or health information systems.

In national household surveys, such as Demographic and Health Survey (DHS) and Multiple Indicator Cluster Survey (MICS), women aged 15-49 who report live births in a specified recent period (up to five years before the interview), are asked about the person who assisted the delivery of each of the live births reported. Information collected is used to determine births attended by skilled health personnel. Service / facility records could be used where a high proportion of births occur in health facilities and are recorded in the health information system.

Disaggregation:

When measured from household surveys, the indicator is usually disaggregated by wealth quintile, residence, age, and geographic location. Disaggregation of data from health facility records is limited.

Data sources:

Data sources for measuring this indicator are nationally representative household surveys and health facility records. MICS and DHS use nationally representative samples based on a two-stage cluster sampling, generally using a population census frame of enumeration areas. Data from health facility records are reliable only in countries where almost all deliveries occur in health facilities, resulting in generally very high level of births attended by skilled health personnel.

Collection process:

UNICEF has established a web-based data source identification and data compilation system working with all countries offices. Data reported through nationally representative surveys are compiled and carefully reviewed to ensure sound survey methodology, consistency definition, and accurate method of computation. The web-based system is complemented by an online search carried out by WHO of survey reports and data published in countries. Adjustment may be made to the reported value of the indicator to ensure consistency with the definition. In these cases, data presented in survey reports may be different from those reported in the global databases.

Data providers:

NSOs, Health Information System Department of Ministry of Health

Data compilers:

UNICEF, WHO

References:

**Indicator 3.2.1: Under-five mortality rate (A2063 Indicator A1G3P1T3I3)**

**Goal 3: Ensure healthy lives and promote well-being for all at all ages**

**Target 3.2: By 2030, end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000 live births**

**Definition:**

Under-five mortality is the probability of a child born in a specific year or period dying before reaching the age of 5 years, if subjected to age specific mortality rates of that period, expressed per 1000 live births.

**Rationale:**

Mortality rates among young children are a key output indicator for child health and well-being, and, more broadly, for social and economic development. It is a closely watched public health indicator because it reflects the access of children and communities to basic health interventions such as vaccination, medical treatment of infectious diseases and adequate nutrition.

**Concepts:**

The under-five mortality rate as defined here is, strictly speaking, not a rate (i.e. the number of deaths divided by the number of population at risk during a certain period of time) but a probability of death derived from a life table and expressed as a rate per 1000 live births.

**Computation Method:**

The UN Inter-Agency Group for Child Mortality Estimation (UNIGME) estimates are derived from censuses, surveys or vital registration systems. The UNIGME does not use any covariates to derive its estimates. It only applies a curve fitting method to good-quality empirical data to derive trend estimates after data quality assessment. In most cases, the UNIGME estimates are close to the underlying data. The UNIGME aims to minimize the errors for each estimate, harmonize trends over time and produce up-to-date and properly assessed estimates. The UNIGME applies the Bayesian B-splines bias-reduction model to empirical data to derive trend estimates of under-five mortality for all countries.

For the underlying data mentioned above, the most frequently used methods are as follows:

Civil registration: Number of deaths at age 0-5 and population of the same age are used to calculate death rates which are then converted into age-specific probability of dying.
Census and surveys: An indirect method is used based on questions to each woman of reproductive age as to how many children she has ever given birth to and how many are still alive. The Brass method and model life tables are then used to obtain an estimate of under-five and infant mortality rates. Censuses often include questions on household deaths in the last 12 months, which can be used to calculate mortality estimates.

Surveys: A direct method is used based on birth history of a series of detailed questions on each child a woman has given birth to during her lifetime. Neonatal, post-neonatal, infant, child and under-five mortality estimates can be derived from full birth history module.

Disaggregation:

The common disaggregation for mortality indicators includes by sex, age (neonatal, infant, child), wealth quintile, residence, and mother’s education. Data from well-functioning vital registration systems can provide further geographical breakdowns.

Data sources:

Nationally-representative estimates of child mortality can be derived from a number of different sources, including civil registration and sample surveys. Civil registration data are the preferred data source for under-five, infant and neonatal mortality estimation. The majority of survey data comes in one of two forms: the full birth history, whereby women are asked for the date of birth of each of their children, whether the child is still alive, and if not the age at death; and the summary birth history, whereby women are asked only about the number of their children ever born and the number that have died, or equivalently the number still alive.

Collection process:

For under-five mortality, UNICEF and the UNIGME compile data from all available data sources, including household surveys, censuses, vital registration data etc. UNICEF and the UNIGME compile these data whenever they are available publically and then conduct data quality assessment. UNICEF also collects data through UNICEF country offices by reaching national counterpart(s), as well as vital registration data reported by ministry of health to WHO.

Adjustments of empirical data are made in high prevalence HIV settings to adjust for under reporting of under-five mortality due to missing mothers in survey data. UNIGME than applies a curve fitting method to these empirical data to derive the UNIGME trend estimates of the under-five mortality rates. Because deaths by crisis are difficult to capture in household survey or census data UNIGME adjusts the estimates for crisis mortality.

Then the UNIGME conducts a country consultation by sending the estimates, empirical data used to derive the estimates, notes on methodology etc. to NSOs through UNICEF and to Ministry of Health through WHO for feedback.

To increase the transparency of the estimation process, UNIGME has developed a child mortality database which includes all available data and shows estimates for each country. Once the new estimates are finalized, the database will be updated to reflect all available data and the new estimates.
Data providers:

NSOs or Ministry of Health

Data compilers:

UNICEF

References:

childmortality.org
data.unicef.org
Indicator 3.2.2: Neonatal mortality rate (A2063 Indicator A1G3P1T3I2)

Goal 3: Ensure healthy lives and promote well-being for all at all ages

Target 3.2: By 2030, end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000 live births

Definition:

The neonatal mortality rate is the probability that a child born in a specific year or period will die during the first 28 completed days of life if subject to age-specific mortality rates of that period, expressed per 1000 live births.

Neonatal deaths (deaths among live births during the first 28 completed days of life) may be subdivided into early neonatal deaths, occurring during the first 7 days of life, and late neonatal deaths, occurring after the 7th day but before the 28th completed day of life.

Rationale:

Mortality rates among young children are a key output indicator for child health and well-being, and, more broadly, for social and economic development. It is a closely watched public health indicator because it reflects the access of children and communities to basic health interventions such as vaccination, medical treatment of infectious diseases and adequate nutrition.

Computation Method:

UNIGME estimates are derived from national data from censuses, surveys or vital registration systems. The UNIGME does not use any covariates to derive its estimates. It only applies a curve fitting method to good-quality empirical data to derive trend estimates after data quality assessment. In most cases, the UNIGME estimates are close to the underlying data. UNIGME aims to minimize the errors for each estimate, harmonize trends over time and produce up-to-date and properly assessed estimates. UNIGME produces neonatal mortality rate estimates with a Bayesian spline regression model which models the ratio of neonatal mortality rate / (under-five mortality rate - neonatal mortality rate).

For the underlying data mentioned above, the most frequently used methods are as follows:

Civil registration: Number of children who died during the first 28 days of life and the number of births used to calculate neonatal mortality rates.

Census: Census often includes questions on household deaths in the last 12 months, which can be used to calculate mortality estimates.
Surveys: A direct method is used based on birth history a series of detailed questions on each child a woman has given birth to during her lifetime. Neonatal, post-neonatal, infant, child and under-five mortality estimates can be derived from full birth history module.

Disaggregation:

The common disaggregation for mortality indicators includes disaggregation by sex, age (neonatal, infant, child), wealth quintile, residence, and mother’s education. Data from well-functioning vital registration systems can provide further geographical breakdowns. Neonatal mortality rates can be also disaggregated by cause, including preterm birth complications, pneumonia, and diarrhoea.

Data sources:

Nationally-representative estimates of child mortality can be derived from a number of different sources, including civil registration and sample surveys. Civil registration data are the preferred data source for under-five, infant and neonatal mortality estimation. The majority of survey data comes from the full birth history, whereby women are asked for the date of birth of each of their children, whether the child is still alive, and if not the age at death.

Collection process:

For neonatal mortality, UNICEF and the UNIGME compile data from all available data sources, including household surveys, censuses, vital registration data etc. UNICEF and the UNIGME compile these data whenever they are available publically and then conduct data quality assessment. UNICEF also collects data through UNICEF country offices by reaching national counterpart(s) as well as vital registration data reported by the Ministry of Health to WHO.

Adjustments of empirical data are made in high prevalence HIV settings to adjust for under reporting of child mortality due to missing mothers in survey data. UNIGME than applies a curve fitting method to these empirical data to derive the UNIGME trend estimates of the neonatal mortality rates. Because deaths by crisis are difficult to capture in household survey or census data UNIGME adjusts the neonatal mortality estimates for crisis mortality.

Then UNIGME conducts a country consultation by sending the estimates, empirical data used to derive the estimates, notes on methodology etc. to NSOs through UNICEF and to Ministry of Health through WHO for feedback on the estimates and the empirical data. To increase the transparency of the estimation process, the UNIGME has developed a child mortality database which includes all available data and shows estimates for each country. Once the new estimates are finalized the database will be updated to reflect all available data and the new estimates.

Data providers:

NSOs or the Ministry of Health

Data compilers:

UNICEF

References:

childmortality.org
www.data.unicef.org
Indicator 3.3.1: Number of new HIV infections per 1,000 uninfected population, by sex, age and key populations (A2063 Indicator A1G3P1T6I1)

Goal 3: Ensure healthy lives and promote well-being for all at all ages

Target 3.3: By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases

Definition:

The number of new Human Immunodeficiency Virus (HIV) infections per 1,000 uninfected population, by sex, age and key populations as defined as the number of new HIV infections per 1000 person-years among the uninfected population.

Rationale:

The incidence rate provides a measure of progress toward preventing onward transmission of HIV.

Computation Method:

Longitudinal data on individuals are the best source of data but are rarely available for large populations. Special diagnostic tests in surveys or from health facilities can be used to obtain data on HIV incidence. HIV incidence is thus modelled using the Spectrum software.

Disaggregation:

General population, Key populations (men who have sex with men, sex workers, people who inject drugs, transgender people, prisoners), Age groups (0-14, 15-24, 15-49, 50+ years), for key populations (< 25, 25+ years), mode of transmission (including mother-to-child transmission), place of residence, sex

Data sources:

Spectrum modelling, household or key population surveys with HIV incidence-testing, regular surveillance system among key populations.

Collection process:

Country teams use the Joint United Nations Programme on HIV/AIDS (UNAIDS) supported software to develop estimates annually. The estimates are produced by a team consisting of ministry of health, national Acquired Immune Deficiency Syndrome (AIDS) advisory groups and development partners. The results are signed by senior managers at the ministries of health. The country teams
are comprised primarily of epidemiologists, demographers, monitoring and evaluation specialists and technical partners.

**Data providers:**

Ministries of health and NSOs.

**Data compilers:**

UNAIDS

**References:**

unaid.org
Indicator 3.3.2: Tuberculosis incidence per 100,000 population (A2063 Indicator A1G3P1T6I2)

Goal 3: Ensure healthy lives and promote well-being for all at all ages

Target 3.3: By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases

Definition:

The tuberculosis incidence per 100,000 population is defined as the estimated number of new and relapse TB cases (all forms of TB, including cases in people living with HIV) arising in a given year, expressed as a rate per 100 000 population.

Rationale:

Following two years of consultations, a new post-2015 global tuberculosis strategy was endorsed by the World Health Assembly in May 2014. Known as the End TB Strategy, it covers the period 2016-2035. The overall goal is to "End the global tuberculosis epidemic", and correspondingly ambitious targets for reductions in tuberculosis deaths and cases are set for 2030 (80% reduction in incidence rate compared with the level of 2015) and 2035 (90% reduction in incidence rate), in the context of the SDGs. The tuberculosis incidence rate was selected as an indicator for measuring reductions in the number of cases of disease burden. Although this indicator was estimated with considerable uncertainty in most countries in 2014, notifications of cases to national authorities provide a good proxy if there is limited under-reporting of detected cases and limited under or over-diagnosis of cases.

Concepts:

Direct measurement requires high-quality surveillance systems in which underreporting is negligible, and strong health systems so that under-diagnosis is also negligible; otherwise indirect estimates are based on notification data and estimates of levels of underreporting and under-diagnosis.

Comments and limitations:

TB incidence has been used for over a century as a main indicator of TB burden, along with TB mortality. The indicator allows comparisons over time and between countries. Improvement in the quality of TB surveillance data result in reduced uncertainty about indicator values.

Computation Method:

Estimates of TB incidence are produced through a consultative and analytical process led by WHO and are published annually. These estimates are based on annual case notifications, assessments of
the quality and coverage of TB notification data, national surveys of the prevalence of TB disease and information from vital registration systems.

Estimates of incidence for each country are derived, using one or more of the following approaches depending on available data: (i) incidence = case notifications / estimated proportion of cases detected; (ii) capture-recapture modelling, (iii) incidence = prevalence / duration of condition. Uncertainty bounds are provided in addition to best estimates.

Details are available from TB impact measurement: policy and recommendations for how to assess the epidemiological burden of TB and the impact of TB control and from the online technical appendix to the WHO global tuberculosis report 2015.

**Disaggregation:**

The indicator is disaggregated by country, sex and age (children vs adults).

**Data sources:**

National TB programme reports and estimations.

**Collection process:**

National TB Programmes report every year between March and June their annual TB data to WHO using a standardized online data reporting system maintained at WHO. The system includes real-time checks for data consistency. Estimates of TB burden are prepared in July-August and communicated with countries. In selected countries with new survey data, estimates are updated separately during the year. All estimates are communicated in August-September and revisions are done based on feedback. The final set of estimates is reviewed in WHO before publication in October, for compliance with specific international standards and harmonization of breakdowns for age and sex groups.

**Data providers:**

National TB Programmes, Ministries of Health

**Data compilers:**

WHO

**References:**

http://www.who.int/
Indicator 3.3.5: Number of people requiring interventions against neglected tropical diseases

Goal 3: Ensure healthy lives and promote well-being for all at all ages

Target 3.3: By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases

Definition:

Number of people requiring treatment and care for any one of the neglected tropical diseases (NTDs) targeted by the WHO NTD Roadmap and World Health Assembly resolutions and reported to WHO.

Rationale:

The average annual number of people requiring treatment and care for NTDs is the number that is expected to decrease toward “the end of NTDs” by 2030, as NTDs are eradicated, eliminated or controlled. The number of people requiring other interventions against NTDs (e.g. vector management, veterinary public health, water, sanitation and hygiene) are expected to be maintained beyond 2030 and are therefore to be addressed in the context of other targets and indicators, namely Universal Health Coverage (UHC) and universal access to water and sanitation.

This number should not be interpreted as the number of people at risk for NTDs. It is in fact a subset of the larger number of people at risk. Mass treatment is limited to those living in districts above a threshold level of prevalence; it does not include all people living in districts with any risk of infection. Individual treatment and care is for those who are or have already been infected; it does not include all contacts and others at risk of infection. This number can better be interpreted as the number of people at a level of risk requiring medical intervention – that is, treatment and care for NTDs.

Concepts:

Treatment and care is broadly defined to allow for preventive, curative, surgical or rehabilitative treatment and care. In particular, it includes both:

1. Average annual number of people requiring mass treatment known as preventive chemotherapy (PC) for at least one PC-NTD; and

2. Number of new cases requiring individual treatment and care for other NTDs.

Other key interventions against NTDs (e.g. vector management, veterinary public health, water, sanitation and hygiene) are to be addressed in the context of other targets and indicators, namely UHC and universal access to water and sanitation.
Comments and limitations:

Country reports may not be perfectly comparable over time. Improved surveillance and case-finding may lead to an apparent increase in the number of people known to require treatment and care. Some further estimation may be required to adjust for changes in surveillance and case-finding. Missing country reports may need to be imputed for some diseases in some years.

Computation Method:

Some estimation is required to aggregate data across interventions and diseases. There is an established methodology that has been tested and an agreed international standard.

1) Average annual number of people requiring mass treatment known as PC for at least one PC-NTD: People may require PC for more than one PC-NTD. The number of people requiring PC is compared across the PC-NTDs, by age group and implementation unit (e.g. district). The largest number of people requiring PC is retained for each age group in each implementation unit. The total is considered to be a conservative estimate of the number of people requiring PC for at least one PC-NTD. Prevalence surveys determine when an NTD has been eliminated or controlled and PC can be stopped or reduced in frequency, such that the average annual number of people requiring PC is reduced.

2) Number of new cases requiring individual treatment and care for other NTDs: The number of new cases is based on country reports, whenever available, of new and known cases of Buruli ulcer, Chagas disease, cysticercosis, dengue, guinea-worm disease, echinococcosis, human African trypanosomiasis (HAT), leprosy, the leishmaniases, rabies and yaws. Where the number of people requiring and requesting surgery for PC-NTDs (e.g. trichiasis or hydrocele surgery) is reported, it can be added here. Similarly, new cases requiring and requesting rehabilitation (e.g. leprosy or lymphoedema) can be added whenever available.

Populations referred to under 1) and 2) may overlap; the sum would overestimate the total number of people requiring treatment and care. The maximum of 1) or 2) is therefore retained at the lowest common implementation unit and summed to get conservative country, regional and global aggregates. By 2030, improved co-endemicity data and models will validate the trends obtained using this simplified approach.

Disaggregation:

Disaggregation by disease and by age are required for PC: pre-school-aged children (1-4 years), school-aged (5-14 years) and adults (≥ 15 years).

Data sources:

Existing country systems, and reported through joint request and reporting forms for donated medicines, the integrated NTD database, and other reports to WHO. Country data are published via the WHO Global Health Observatory and Preventive Chemotherapy Databank.

Collection process:
A joint mechanism and a set of forms have been developed to facilitate the process of application, review and reporting as well as to improve coordination and integration among different programmes. The Joint Request for Selected PC Medicines (JRSM) is designed to assist countries in quantifying the number of tablets of the relevant medicines required; the Joint Reporting Form (JRF) is designed to assist countries in reporting annual progress; and the PC Epidemiological Data Reporting Form (EPIRF) is designed to standardize national reporting of epidemiological data on lymphatic filariasis, onchocerciasis, soil-transmitted helminthiases and schistosomiasis.

The reports generated in the JRSM and in the JRF (SUMMARY worksheets) must be printed and signed by the NTD coordinator or a Ministry of Health representative to formally endorse the country’s request for these medicines and the reported annual progress of the national programme(s). The date of signature must also be included. Once signatures have been obtained, the scanned copies of the two worksheets, together with the full Excel versions of the JRSM, the JRF and the EPIRF can be jointly submitted to WHO.

The forms are submitted to the WHO Representative of the concerned WHO Country office with electronic copies to PC_JointForms@who.int and the concerned Regional focal point, no later than 15 August of the year preceding the year for which medicines are intended to be used (e.g. at the latest by 15 August 2015 for implementation of preventive chemotherapy in 2016) but at least 6-8 months before the planned PC intervention(s) to allow time for reviewing and approval of the request, placing order, manufacturing PC medicines and shipment to the country.

Data providers:
National NTD programmes within Ministries of Health

Data compilers:
WHO

References:
http://www.who.int/
Indicator 3.4.1: Mortality rate attributed to cardiovascular disease, cancer, diabetes or chronic respiratory disease

Goal 3: Ensure healthy lives and promote well-being for all at all ages

Target 3.4: By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being

Definition:

Non communicable diseases (NCDs), also known as chronic diseases, are diseases that are not passed from person to person. The probability of dying between the ages of 30 and 70 years from cardiovascular diseases, cancer, diabetes or chronic respiratory diseases is defined as the percent of 30-year-old-people who would die before their 70th birthday from cardiovascular disease, cancer, diabetes, or chronic respiratory disease, assuming that s/he would experience current mortality rates at every age and s/he would not die from any other cause of death (e.g., injuries or HIV/AIDS). This indicator is calculated using life table methods.

Rationale:

Disease burden from NCDs among adults is rapidly increasing in developing countries due to ageing. Cardiovascular diseases, cancer, diabetes and chronic respiratory diseases are the four main causes of NCD burden. Measuring the risk of dying from these four major causes is important to assess the extent of burden from premature mortality due NCDs in a population.

Concepts:

Probability of dying: The likelihood that an individual would die between two ages given current mortality rates at each age, calculated using life table methods. The probability of death between two ages may be called a mortality rate.

Life table: A table showing the mortality experience of a hypothetical group of infants born at the same time and subject throughout their lifetime to a set of age-specific mortality rates.

Cardiovascular disease, cancer, diabetes or chronic respiratory diseases: International Classification of Diseases (ICD)-10

Comments and limitations:

Cause of death estimates have large uncertainty ranges for some causes and some regions. Data gaps and limitations in high-mortality regions reinforce the need for caution when interpreting global comparative cause of death assessments, as well as the need for increased investment in population health measurement systems. The use of verbal autopsy methods in sample registration systems, demographic surveillance systems and household surveys provides some information
on causes of death in populations without well-functioning death registration systems, but there remain considerable challenges in the validation and interpretation of such data, and in the assessment of uncertainty associated with diagnoses of underlying cause of death.

**Computation Method:**

There are 4 steps involved in the calculation of this indicator:


3. Calculation of age-specific mortality rates from the four main NCDs for each five-year age range between 30 and 70.

4. Calculation of the probability of dying between the ages of 30 and 70 years from cardiovascular diseases, cancer, diabetes or chronic respiratory diseases.

The methods used for the analysis of causes of death depend on the type of data available from countries:

For countries with a high-quality vital registration system including information on cause of death, the vital registration that member states submit to the WHO Mortality Database were used, with adjustments where necessary, e.g. for under-reporting of deaths.

For countries without high-quality death registration data, cause of death estimates are calculated using other data, including household surveys with verbal autopsy, sample or sentinel registration systems, special studies and surveillance systems. In most cases, these data sources are combined in a modelling framework.

The probability of dying between ages 30 and 70 years from the four main NCDs was estimated using age-specific death rates of the combined four main NCD categories. Using the life table method, the risk of death between the exact ages of 30 and 70, from any of the four causes and in the absence of other causes of death, was calculated using the equation below. The ICD codes used are: Cardiovascular disease: I00-I99, Cancer: C00-C97, Diabetes: E10-E14, and Chronic respiratory disease: J30-J98.

Formulas to calculate age-specific mortality rate for each five-year age group between 30 and 70, to translate the 5-year death rate into the probability of death in each 5-year age range, and to calculate the probability of death from age 30 to age 70, independent of other causes of death are as given below.

To calculate age-specific mortality rate for each five-year age group and country, for each 5-year age range between 30 and 70:
\[5^Mx = \frac{\text{Total deaths from four NCD causes between exact age } x \text{ and exact age } x + 5}{\text{Total population between exact age } x \text{ and exact age } x + 5}\]

Then translate the 5-year death rate to the probability of death in each 5-year age range is:

\[5^qx = \frac{5^Mx \times 5}{1 + 5^Mx \times 2.5}\]

The probability of death from age 30 to age 70, independent of other causes of death can be calculated as:

\[40^a30 = \frac{65}{1 - \prod_{x=30}^{65} (1 - 5^qx)}\]

Disaggregation:

Sex

Data sources:

The preferred data source is death registration systems with complete coverage and medical certification of cause of death. Other possible data sources include household surveys with verbal autopsy, and sample or sentinel registration systems.

Collection process:

WHO conducts a formal country consultation process before releasing its cause-of-death estimates.

Data providers:

NSOs and / or ministries of health.

Data compilers:

WHO

References:

http://www.who.int/
Indicator 3.6.1: Death rate due to road traffic injuries

Goal 3: Ensure healthy lives and promote well-being for all at all ages

Target 3.6: By 2020, halve the number of global deaths and injuries from road traffic accidents

Definition:

Death rate due to road traffic injuries is defined as the number of road traffic fatal injury deaths per 100,000 population.

Concepts:

Numerator: Number of deaths due to road traffic crashes. It is absolute figure indicating the number of people who die as a result of a road traffic accidents.

Denominator: Population (number of people in a country)

Comments and limitations:

There are no vital registration data for all countries to make comparison against the data received on the survey. Only confidence intervals are published for countries that have poor completeness of vital registration data. Besides, road traffic data cannot be collected every year, and there will also be the possibility of underreporting.

Computation Method:

The model is based on the quality of data received. As a health organization, WHO relies primarily on the submission of vital registration data from countries’ Ministries of Health to WHO (through the official channels). These data, on all causes of death, are then analysed in the Health Information Systems department to decide on how good the data are, that is, determining if there is good completeness and coverage of deaths for all causes.

Countries are classified into 4 categories or groups namely,

Group1: Countries with death registration data (good vital / death registration data)
Group2: Countries with other sources of information on causes of death
Group3: Countries with population less than 150,000
Group4: Countries without eligible death registration data.

The Health Information Systems department analyses the quality and the completeness of the data. For the road safety model, if the country is considered by WHO to have good vital registration data this means that the country is in Group1, then WHO does not apply a regression model to come up with an estimate. It may, however, project forward if the vital registration data are dated.
If the country is considered in group 4 then WHO applies a negative binomial regression where $N$ is the total road traffic deaths, $C$ is constant term, $X_i$ are a set of explanatory covariates, $Pop$ is the population for the country-year, and $ɛ$ is the negative binomial error term.

For the countries from group 2, the regression method described above was used to project forward the most recent year for which an estimate of total deaths was available.

Finally, the countries from group 3 which have a population less than 150,000 and did not have eligible death registration data, regression estimates were not used. Only the reported death was used directly without adjustment.

More details about this estimation process is available in Global Status Report on Road Safety 2015.

**Disaggregation:**

Data are disaggregated by types of road users, age, sex, income groups and WHO regions

**Data sources:**

For the road traffic deaths there are two sources of data. Data from Global Status Report on Road Safety survey and Vital registration or certificate deaths data that WHO receive every year from member states (ministries of health). For the population, UNPD World Population Prospects data are used.

**Collection process:**

The methodology involved collecting data from a number of different sectors and stakeholders in each country is as follows. National Data Coordinators (NDCs), who were nominated by their governments, were trained in the project methodology. As representatives of their ministries, they were required to identify up to eight other road safety experts within their country from different sectors (e.g. health, police, transport, nongovernmental organizations and/or academia) and to facilitate a consensus meeting of these respondents. While each expert responded to the questionnaire based on their expertise, the consensus meeting facilitated by NDCs allowed for discussion of all responses, and the group used this discussion to agree on one final set of information that best represented their country’s situation at the time (up to 2014, using the most recent data available). This was then submitted to the World Health Organization (WHO). A guide to the questionnaire describing age groups and other dimensions was provided to countries in order to standardize data collected.

**Data providers:**

The road traffic deaths data were provided nationally by mainly three ministries, namely, ministry of health, ministry of interior and ministry of transport

**Data compilers:**

WHO is the organization responsible for compilation and reporting on this indicator at the global level

**References:**
http://www.who.int/
**Indicator 3.7.1: Proportion of women of reproductive age (aged 15-49 years) who have their need for family planning satisfied with modern methods (A2063 Indicator A1G3P1T2I1)**

**Goal 3: Ensure healthy lives and promote well-being for all at all ages**

**Target 3.7: By 2030, ensure universal access to sexual and reproductive health-care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programmes**

**Definition:**

The percentage of women of reproductive age (15-49 years) who desire either to have no (additional) children or to postpone the next child and who are currently using a modern contraceptive method.

**Rationale:**

The proportion of demand for family planning satisfied with modern methods is useful in assessing overall levels of coverage for family planning programmes and services. Access to and use of an effective means to prevent pregnancy helps enable women and their partners to exercise their rights to decide freely and responsibly the number and spacing of their children and to have the information, education and means to do so. Meeting demand for family planning with modern methods also contributes to maternal and child health by preventing unintended pregnancies and closely spaced pregnancies, which are at higher risk for poor obstetrical outcomes. Levels of demand for family planning satisfied with modern methods of 75 per cent or more are generally considered high, and values of 50 per cent or less are generally considered as very low.

**Concepts:**

The percentage of women of reproductive age (15-49 years) who have their need for family planning satisfied with modern methods is also referred to as the proportion of demand satisfied by modern methods. The components of the indicator are contraceptive prevalence (any method and modern methods) and unmet need for family planning. Contraceptive prevalence is the percentage of women who are currently using, or whose sexual partner is currently using, at least one method of contraception, regardless of the method used. Unmet need for family planning is defined as the percentage of women of reproductive age, either married or in a union, who want to stop or delay childbearing but are not using any method of contraception. For analytical purposes, contraceptive methods are often classified as either modern or traditional. Modern methods of contraception include female and male sterilization, the intra-uterine device (IUD), the implant, injectables, oral contraceptive pills, male and female condoms, vaginal barrier methods (including the diaphragm, cervical cap and spermicidal foam, jelly, cream and sponge), lactational amenorrhea method (LAM), emergency contraception and other modern methods not reported separately (e.g., the contraceptive patch or vaginal ring). Traditional methods of contraception include rhythm (e.g.,...
fertility awareness-based methods, periodic abstinence), withdrawal and other traditional methods not reported separately.

Comments and limitations:

Differences in the survey design and implementation, as well as differences in the way survey questionnaires are formulated and administered can affect the comparability of the data. The most common differences relate to the range of contraceptive methods included and the characteristics (age, sex, marital or union status) of the persons for whom contraceptive prevalence is estimated (base population). The time frame used to assess contraceptive prevalence can also vary. In most surveys there is no definition of what is meant by “currently using” a method of contraception. In some surveys, the lack of probing questions, asked to ensure that the respondent understands the meaning of the different contraceptive methods, can result in an underestimation of contraceptive prevalence, in particular for traditional methods. Sampling variability can also be an issue, especially when contraceptive prevalence is measured for a specific subgroup (according to method, age-group, level of educational attainment, place of residence, etc.) or when analyzing trends over time. When data on married or in-union women aged 15 to 49 are not available, information for the next most comparable group of persons is reported. Illustrations of base populations that are sometimes presented are: married or in-union women aged 15-44, sexually active women (irrespective of marital status), evermarried women, or men and women who are married or in a union. Notes in the data set indicate any differences between the data presented and the standard definitions of contraceptive prevalence or unmet need for family planning or where data pertain to populations that are not representative of all married or in-union women of reproductive age.

Computation Method:

The numerator is the percentage of women of reproductive age (15-49 years old) who are currently using, or whose sexual partner is currently using, at least one modern contraceptive method. The denominator is the total demand for family planning (the sum of contraceptive prevalence (any method) and the unmet need for family planning). Estimates are with respect to women who are married or in a union.

Disaggregation:

Age, education, number of living children, marital status, socioeconomic status, geographic location and other categories, depending on the data source and number of observations.

Data Sources:

This indicator is calculated from nationally-representative household survey data.

Collection process:

Data are collected by administering multi-country survey programmes such as, Contraceptive Prevalence Surveys (CPS), Demographic and Health Surveys (DHS), Fertility and Family Surveys (FFS), Reproductive Health Surveys (RHS), Multiple Indicator Cluster Surveys (MICS), Performance Monitoring and Accountability 2020 surveys (PMA), World Fertility Surveys (WFS), and other international survey programmes and national surveys.
Data providers:

Survey data are obtained from national household surveys that are internationally coordinated and other nationally-sponsored surveys.

Data compilers:

This indicator is produced at the global level by UNDP in collaboration with the United Nations Population Fund (UNFPA).

References:


www.UnfpaOpendata.org
Indicator 3.7.2: Adolescent birth rate (aged 10-14 years; aged 15-19 years) per 1,000 women in that age group

Goal 3: Ensure healthy lives and promote well-being for all at all ages

Target 3.7: By 2030, ensure universal access to sexual and reproductive health-care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programmes

Definition:

Annual number of births to females aged 10-14 or 15-19 years per 1,000 females in the respective age group.

Rationale:

Reducing adolescent fertility and addressing the multiple factors underlying it are essential for improving sexual and reproductive health and the social and economic well-being of adolescents. There is substantial agreement in the literature that women who become pregnant and give birth very early in their reproductive lives are subject to higher risks of complications or even death during pregnancy and birth and their children are also more vulnerable. Therefore, preventing births very early in a woman’s life is an important measure to improve maternal health and reduce infant mortality. Furthermore, women having children at an early age experience a curtailment of their opportunities for socioeconomic improvement, particularly because young mothers are unlikely to keep on studying and, if they need to work, may find it especially difficult to combine family and work responsibilities. The adolescent birth rate also provides indirect evidence on access to pertinent health services since young people, and in particular unmarried adolescent women, often experience difficulties in access to sexual and reproductive health services.

Concepts:

The adolescent birth rate represents the risk of childbearing among females in the particular age group. The adolescent birth rate among women aged 15-19 years is also referred to as the age-specific fertility rate for women aged 15-19.

Comments and limitations:

Discrepancies between the sources of data at the country level are common and the level of the adolescent birth rate depends in part on the source of the data selected. For civil registration, rates are subject to limitations which depend on the completeness of birth registration, the treatment of infants born alive but die before registration or within the first 24 hours of life, the quality of the reported information relating to age of the mother, and the inclusion of births from previous periods. The population estimates may suffer from limitations connected to age misreporting and coverage.
For survey and census data, both the numerator and denominator come from the same population. The main limitations concern age misreporting, birth omissions, misreporting the date of birth of the child, and sampling variability in the case of surveys.

With respect to estimates of the adolescent birth rate among females aged 10-14 years, comparative evidence suggests that a very small proportion of births in this age group occur to females below age 12. Other evidence based on retrospective birth history data from surveys indicates that women aged 15-19 years are less likely to first births before age 15 than women from the same birth cohort when asked five years later at ages 20–24 years.

The adolescent birth rate is commonly reported as the age-specific fertility rate for ages 15-19 years in the context of calculation of total fertility estimates. It has also been called adolescent fertility rate. A related measure is the proportion of adolescent fertility measured as the percentage of total fertility contributed by women aged 15-19.

**Computation Method:**

The adolescent birth rate is computed as a ratio. The numerator is the number of live births to women aged 15-19 years, and the denominator an estimate of exposure to childbearing by women aged 15-19 years. The computation is the same for the age group 10-14 years. The numerator and the denominator are calculated differently for civil registration, survey and census data.

In the case of civil registration data, the numerator is the registered number of live births born to women aged 15-19 years during a given year, and the denominator is the estimated or enumerated population of women aged 15-19 years. In the case of survey data, the numerator is the number of live births obtained from retrospective birth histories of the interviewed women who were 15-19 years of age at the time of the births during a reference period before the interview, and the denominator is person-years lived between the ages of 15 and 19 years by the interviewed women during the same reference period. The reported observation year corresponds to the middle of the reference period. For some surveys without data on retrospective birth histories, computation of the adolescent birth rate is based on the date of last birth or the number of births in the 12 months preceding the survey.

With census data, the adolescent birth rate is computed on the basis of the date of last birth or the number of births in the 12 months preceding the enumeration. The census provides both the numerator and the denominator for the rates. In some cases, the rates based on censuses are adjusted for underregistration based on indirect methods of estimation. For some countries with no other reliable data, the own-children method of indirect estimation provides estimates of the adolescent birth rate for a number of years before the census. If data are available, adolescent fertility at ages 10-14 years can also be computed.

**Disaggregation:**

Age, education, number of living children, marital status, socioeconomic status, geographic location and other categories, depending on the data source and number of observations.

**Data sources:**
Civil registration is the preferred data source. Census and household survey are alternate sources when there is no reliable civil registration.

**Collection process:**

For civil registration data, data on births or the adolescent birth rate are obtained from country-reported data from the UNSD or regional Statistics Divisions or statistical units. The population figures are obtained from the last revision of the UNPD World Population Prospects and only exceptionally from other sources. Survey data are obtained from national household surveys that are internationally coordinated and other nationally-sponsored surveys. The data are taken from published survey reports or, in exceptional cases, other published analytical reports. Whenever the estimates are available in the survey report, they are directly taken from it. If clarification is needed, contact is made with the survey sponsors or authoring organization, which occasionally may supply corrected or adjusted estimates in response. In other cases, if microdata are available, estimates are produced by UNDP based on national data. For census data, the estimates are preferably directly obtained from census reports. In such cases, adjusted rates are only used when reported by the NSO. In other cases, the adolescent birth rate is computed from tables on births in the preceding 12 months by age of mother, and census population distribution by sex and age. In addition to obtaining data and estimates directly from the websites of National Statistical Offices.

**Data providers:**

For civil registration data, data on births or the adolescent birth rate are obtained from country-reported data from UNSD or regional Statistics Divisions or statistical units. The population figures are obtained from the last revision of UNDP World Population Prospects and only exceptionally from other sources. Survey data are obtained from national household surveys that are internationally coordinated and other nationally-sponsored surveys. Data from censuses are obtained from country-reported data from UNSD or regional Statistics Divisions or statistical units or directly from census reports.

**Data compilers:**

This indicator is produced at the global level by UNPD in collaboration with UNFPA.

**References:**


www.UnfpaOpendata.org
Indicator 3.9.1: Mortality rate attributed to household and ambient air pollution

Goal 3: Ensure healthy lives and promote well-being for all at all ages

Target 3.9: By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination

Definition:

The mortality attributable to the joint effects of household and ambient air pollution can be expressed as number of deaths, and death rates. Death rates are calculated by dividing the number of deaths by the total population (or indicated if a different population group is used, e.g. children under 5 years).

Evidence from epidemiological studies have shown that exposure to air pollution is linked, among others, to the important diseases taken into account in this estimate:

- Acute respiratory infections in young children (estimated under 5 years of age);
- Cerebrovascular diseases (stroke) in adults (estimated above 25 years);
- Ischaemic heart diseases (IHD) in adults (estimated above 25 years);
- Chronic obstructive pulmonary disease (COPD) in adults (estimated above 25 years); and
- Lung cancer in adults (estimated above 25 years).

Rationale:

As part of a broader project to assess major risk factors to health, the mortality resulting from exposure to ambient (outdoor) air pollution and household (indoor) air pollution from polluting fuel use for cooking was assessed. Ambient air pollution results from emissions from industrial activity, households, cars and trucks which are complex mixtures of air pollutants, many of which are harmful to health. Of all of these pollutants, fine particulate matter has the greatest effect on human health. By polluting fuels is understood as wood, coal, animal dung, charcoal, and crop wastes, as well as kerosene.

Air pollution is the biggest environmental risk to health. The majority of the burden is borne by the populations in low and middle-income countries.

Concepts:

The mortality resulting from exposure to ambient (outdoor) air pollution and household (indoor) air pollution from polluting fuels use for cooking was assessed. Ambient air pollution results from emissions from industrial activity, households, cars and trucks which are complex mixtures of air pollutants, many of which are harmful to health. Of all of these pollutants, fine particulate matter has the greatest effect on human health. By polluting fuels is understood kerosene, wood, coal, animal dung, charcoal, and crop wastes.
Comments and limitations:

An approximation of the combined effects of risk factors is possible if independence and little correlation between risk factors with impacts on the same diseases can be assumed. In the case of air pollution, however, there are some limitations to estimate the joint effects: limited knowledge on the distribution of the population exposed to both household and ambient air pollution, correlation of exposures at individual level as household air pollution is a contributor to ambient air pollution, and non-linear interactions. In several regions, however, household air pollution remains mainly a rural issue, while ambient air pollution is predominantly an urban problem. Also, in some continents, many countries are relatively unaffected by household air pollution, while ambient air pollution is a major concern. If assuming independence and little correlation, a rough estimate of the total impact can be calculated, which is less than the sum of the impact of the two risk factors.

Computation Method:

Attributable mortality is calculated by first combining information on the increased (or relative) risk of a disease resulting from exposure, with information on how widespread the exposure is in the population (e.g. the annual mean concentration of particulate matter to which the population is exposed, proportion of population relying primarily on polluting fuels for cooking). This allows calculation of the ‘population attributable fraction’ (PAF), which is the fraction of disease seen in a given population that can be attributed to the exposure (e.g in that case of both the annual mean concentration of particulate matter and exposure to polluting fuels for cooking).

Applying this fraction to the total burden of disease (e.g. cardiopulmonary disease expressed as deaths), gives the total number of deaths that results from exposure to that particular risk factor (in the example given above, to ambient and household air pollution).

To estimate the combined effects of risk factors, a joint population attributable fraction is calculated, as described in Ezzati et al (2003). The mortality associated with household and ambient air pollution was estimated based on the calculation of the joint population attributable fractions assuming independently distributed exposures and independent hazards as described in (Ezzati et al, 2003).

The joint population attributable fraction (PAF) were calculated using the following formula:

\[ PAF = 1 - \text{PRODUCT} (1 - PAF_i) \]

where PAFi is PAF of individual risk factors. The PAF for ambient air pollution and the PAF for household air pollution were assessed separately, based on the Comparative Risk Assessment (Ezzati et al, 2002) and expert groups for the Global Burden of Disease (GBD) 2010 study (Lim et al, 2012; Smith et al, 2014).

For exposure to ambient air pollution, annual mean estimates of particulate matter of a diameter of less than 2.5 um (PM25) were modelled as described in (WHO 2016, forthcoming), or for Indicator 11.6.2.

For exposure to household air pollution, the proportion of population with primary reliance on polluting fuels use for cooking was modelled (see Indicator 7.1.2 [polluting fuels use=1-clean fuels use]). Details on the model are published in (Bonjour et al, 2013).
The integrated exposure-response functions (IER) developed for the GBD 2010 (Burnett et al, 2014) and further updated for the GBD 2013 study (Forouzanfar et al, 2015) were used.

The percentage of the population exposed to a specific risk factor (here ambient air pollution, i.e. PM2.5) was provided by country and by increment of 1 ug/m3; relative risks were calculated for each PM2.5 increment, based on the IER. The counterfactual concentration was selected to be between 5.6 and 8.8 ug/m3, as described elsewhere (Ezzati et al, 2002; Lim et al, 2012). The country population attributable fraction for ALRI, COPD, IHD, stroke and lung cancer were calculated using the following formula:

\[ PAF = \frac{\sum (P_i(RR-1))}{\sum (RR-1) + 1} \]

where \( i \) is the level of PM2.5 in ug/m3, and \( P_i \) is the percentage of the population exposed to that level of air pollution, and \( RR \) is the relative risk.

The calculations for household air pollution are similar, and are explained in detailed elsewhere (WHO 2014a).

**Disaggregation:**

The data is available by country, by sex, by disease, and by age.

**Data Sources:**

Exposure: Proportion of population with primary reliance on clean fuels and technologies was used as exposure indicator for household air pollution.

Annual mean concentration of particulate matter of less than 2.5 um was used as exposure indicator for ambient air pollution. The data is modelled according to methods described for Indicator 11.6.2.

Exposure-risk function: The integrated exposure-response functions (IER) developed for the GBD 2010 (Burnett et al, 2014) and further updated for the GBD 2013 study (Forouzanfar et al, 2015) were used.

Health data: The total number of deaths by disease, country, sex and age group have been developed by the World Health Organization (WHO 2014b).

**Data providers:**

Ministry of Health, Ministry of Environment.

**Data compilers:**

WHO

**References:**

www.who.int/
**Indicator 3.9.2: Mortality rate attributed to unsafe water, unsafe sanitation and lack of hygiene (exposure to unsafe Water, Sanitation and Hygiene for All (WASH) services)**

**Goal 3: Ensure healthy lives and promote well-being for all at all ages**

**Target 3.9: By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination**

**Definition:**

The mortality rate attributed to unsafe water, unsafe sanitation and lack of hygiene (exposure to unsafe Water, Sanitation and Hygiene for All (WASH) services) as defined as the number of deaths from unsafe water, unsafe sanitation and lack of hygiene (exposure to unsafe WASH services) in a year, divided by the population, and multiplied by 100,000.

**Rationale:**

The indicator expresses the number of deaths from inadequate water, sanitation and hygiene (with focus on WASH services) which could be prevented by improving those services and practices. It is based on both the WASH service provision in the country, as well as the related health outcomes, and therefore provides important information on the actual disease caused by the risks measured.

**Concepts:**

Deaths attributable to unsafe water, sanitation and hygiene focusing on inadequate WASH services, expressed per 100,000 population; The included diseases are the WASH attributable fractions of diarrhoea (ICD-10 code A00, A01, A03, A04, A06-A09), intestinal nematode infections (ICD-10 code B76-B77, B79) and protein-energy malnutrition (ICD-10 code E40-E46).

**Comments and limitations:**

Data rely on (a) statistics on WASH services, which are well assessed in almost all countries, and (b) data on deaths. Data on deaths are also widely available from countries from death registration data or sample registration systems, which are certainly feasible systems. Such data are crucial for improving health and reducing preventable deaths in countries. The main limitation is that not all countries do have such registration systems to date, and data need to be completed with other type of information.

**Computation Method:**

The methods with agreed international standard have been developed, reviewed and published in various documents:
Disaggregation:

Since this indicator is population-based, geographic location is the most natural disaggregation. Data also exists for age group and sex. Data can further be disaggregated by wealth quintile.

Data sources:

Data are mainly obtained from country and other databases.

Collection process:

Complementary data are used from various databases in order to maximize the data for robust estimates, to reduce duplication of data collection, and to avoid further data reporting burden on countries. WHO conducts a formal country consultation process before releasing its cause-of-death estimates.

Data providers:

NSOs, various line ministries and databases covering civil registration with complete coverage and medical certification of cause of death.

Data compilers:

WHO

References:

http://www.who.int/

http://www.who.int/water_sanitation_health/gbd_poor_water/en/

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4255749/

Indicator 3.c.1: Health worker density and distribution

Goal 3: Ensure healthy lives and promote well-being for all at all ages

Target 3.c: Substantially increase health financing and the recruitment, development, training and retention of the health workforce in developing countries, especially in least developed countries and small island developing States
**Definition:**

Density of physicians: The density of physicians is defined as the number of physicians, including generalists and specialist medical practitioners per 1000 population in the given national and/or subnational area.

Density of nursing and midwifery personnel: The density of nursing and midwifery personnel is defined as the number of nursing and midwifery personnel per 1000 population in the given national and/or subnational area.

Density of dentistry personnel: The density of dentistry personnel is defined as the number of dentists, dental technician/assistants and related occupation personnel per 1000 population in the given national and/or subnational area.

Density of pharmaceutical personnel: The density of pharmaceutical personnel is defined as the number of pharmacists, pharmaceutical, technicians/assistants and related occupation personnel per 1000 population in the given national and/or subnational area.

**Comments and limitations:**

Data on health workers tend to be more complete for the public sector and may underestimate the active workforce in the private, military, nongovernmental organization and faith-based health sectors. As data is not always published annually for each country, the latest available data has been used. Due to the differences in data sources, considerable variability remains across countries in the coverage, periodicity, quality and completeness of the original data.

**Computation method:**

Though, traditionally, this indicator has been estimated using 2 measurements: density of physicians, and density of nursing and midwifery personnel. In the context of the SDG agenda, the dataset is expanded to physicians, nursing personnel, midwifery personnel, dentistry personnel and pharmaceutical personnel. The dataset is planned to progressively move to cover all health cadres.

The method of estimation for number of physicians (including generalist and specialist medical practitioners) depending on the nature of the original data source may include practising physicians only or all registered physicians.

The figures for number of nursing and midwifery include nursing personnel and midwifery personnel, whenever available. In many countries, nurses trained with midwifery skills are counted and reported as nurses. This makes the distinction between nursing personnel and midwifery personnel difficult to draw.
The figures for number of dentistry personnel include dentists, dental technicians/assistants and related occupations. Due to variability of data sources, the professional-level and associate-level occupations may not always be distinguishable.

The figures for number of pharmaceutical personnel include pharmacists, pharmaceutical technicians/assistants and related occupations. Due to variability of data sources, the professional-level and associate-level occupations may not always be distinguishable.

In general, the denominator data for workforce density (i.e. national population estimates) are obtained from the United Nations Population Division’s World Population Prospects database. In cases where the official health workforce report provides density indicators instead of counts, estimates of the stock were then calculated using the population estimated from the United Nations Population Division's World population prospects database (2015).

**Disaggregation:**

National level data

**Data sources:**

The data is compiled from routine administrative information systems (including reports on public expenditure, staffing and payroll as well as professional training, registration and licensure), population censuses, labour force and employment surveys and health facility assessments. Most of the data from administrative sources are derived from published national health sector reviews and/or official country reports to WHO offices.

**Data providers:**

Ministries of health and NSOs

**Data compilers:**

WHO

**References:**

http://www.who.int/
Indicator 4.2.2: Participation rate in organized learning (one year before the official primary entry age), by sex

Goal 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

Target 4.2: By 2030, ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education

Definition:

The participation rate in organized learning (one year before the official primary entry age), by sex is defined as the percentage of children in the given age range who participate in one or more organized learning programmes, including programmes which offer a combination of education and care. Participation in early childhood and in primary education are both included. The age range will vary by country depending on the official age for entry to primary education.

Rationale:

The indicator measures children’s exposure to organized learning activities in the year prior to the start of primary school. A high value of the indicator shows a high degree of participation in organized learning immediately before the official entrance age to primary education.

Concepts:

An organized learning programme is one which consists of a coherent set or sequence of educational activities designed with the intention of achieving pre-determined learning outcomes or the accomplishment of a specific set of educational tasks. Early childhood and primary education programmes are examples of organized learning programmes.

Early childhood and primary education are defined in the 2011 revision of the International Standard Classification of Education (ISCED 2011). Early childhood education is typically designed with a holistic approach to support children’s early cognitive, physical, social and emotional development and to introduce young children to organized instruction outside the family context. Primary education offers learning and educational activities designed to provide students with fundamental skills in reading, writing and mathematics and establish a solid foundation for learning and understanding core areas of knowledge and personal development. It focuses on learning at a basic level of complexity with little, if any, specialisation.

The official primary entry age is the age at which children are obliged to start primary education according to national legislation or policies. Where more than one age is specified, for example, in different parts of a country, the most common official entry age (i.e. the age at which most children...
in the country are expected to start primary) is used for the calculation of this indicator at the global level.

**Comments and limitations:**

Participation in learning programmes in the early years is not full time for many children, meaning that exposure to learning environments outside of the home will vary in intensity. The indicator measures the percentage of children who are exposed to organized learning but not the intensity of the programme, which limits the ability to draw conclusions on the extent to which this target is being achieved. More work is needed to ensure that the definition of learning programmes is consistent across various surveys and defined in a manner that is easily understood by survey respondents, ideally with complementary information collected on the amount of time children spend in learning programmes.

**Computation method:**

The number of children in the relevant age group who participate in an organized learning programme is expressed as a percentage of the total population in the same age range. The indicator can be calculated both from administrative data and from household surveys. If the former, the number of enrolments in organized learning programmes are reported by schools and the population in the age group one year below the official primary entry age is derived from population estimates. For the calculation of this indicator at the global level, population estimates from the UNPD are used. If derived from household surveys, both enrolments and population are collected at the same time.

\[
\text{PROL0t1,AG(a-1)} = \frac{E0t1,AG(a-1)}{\text{SAPAG(a-1)}}
\]

where:

\[
\text{PROL0t1,AG(a-1)} = \text{participation rate in organized learning one year before the official entry age a to primary education}
\]

\[
E0t1,AG(a-1) = \text{enrolment in early childhood or primary education (ISCED levels 0 and 1) aged one year below the official entry age a to primary education}
\]

\[
\text{SAPAG(a-1)} = \text{school-age population aged one year below the official entry age a to primary education}
\]

**Disaggregation:**

By age and sex from administrative sources, and by age, sex, location and income from household surveys.

**Data sources:**

Administrative data from schools and other centres of organized learning or from household surveys on enrolment by single year of age in early learning programmes; population censuses and
surveys for population estimates by single year of age (if using administrative data on enrolment); administrative data from ministries of education on the official entrance age to primary education.

**Collection process:**

The United Nations Educational, Scientific and Cultural Organization (UNESCO) Institute for Statistics (UIS) produces time series based on enrolment data reported by Ministries of Education or National Statistical Offices and population estimates produced by the UNPD. The enrolment data are gathered through the annual Survey of Formal Education. Countries are asked to report data according to the levels of education defined in ISCED to ensure international comparability of resulting indicators.

The data received are validated using electronic error detection systems that check for arithmetic errors and inconsistencies and trend analysis for implausible results. Queries are taken up with the country representatives reporting the data so that corrections can be made (of errors) or explanations given (of implausible but correct results). During this process countries are also encouraged to provide estimates for missing or incomplete data items. In addition, countries also have an opportunity to see and comment on the main indicators the UIS produces in an annual "country review" of indicators.

**Data providers:**

Ministries of Education and / or NSOs.

**Data compilers:**

UIS

**References:**

http://www.uis.unesco.org/
Indicator 4.4.1: Proportion of youth and adults with information and communications technology (ICT) skills, by type of skill

Goal 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

Target 4.4: By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship

Definition:

The proportion of youth and adults with information and communications technology (ICT) skills, by type of skill as defined as the percentage of youth (aged 15-24 years) and adults (aged 15 years and above) that have undertaken certain computer-related activities in a given time period (e.g. last three months).

Rationale:

ICT skills determine the effective use of information and communication technology. The lack of such skills continues to be one of the key barriers keeping people, and in particular women, from fully benefitting from the potential of information and communication technologies.

Concepts:

Computer-related activities to measure ICT skills include:

- Copying or moving a file or folder
- Using copy and paste tools to duplicate or move information within a document
- Sending e-mails with attached files (e.g. document, picture, and video)
- Using basic arithmetic formulae in a spreadsheet
- Connecting and installing new devices (e.g. modem, camera, printer)
- Finding, downloading, installing and configuring software
- Creating electronic presentations with presentation software (including text, images, sound, video or charts)
- Transferring files between a computer and other devices
- Writing a computer program using a specialised programming language

A computer refers to a desktop computer, a laptop (portable) computer or a tablet (or similar handheld computer). It does not include equipment with some embedded computing abilities, such as smart TV sets or cell phones.

Comments and limitations:

This indicator is relatively new but based on an internationally-agreed definition and methodology, which have been developed under the coordination of International Telecommunications Union.
(ITU), through its Expert Groups and following an extensive consultation process with countries. It is also one of the Partnerships on Measuring ICT for Development’s Core List of Indicators, which was endorsed by the UN Statistical Commission in 2014.

The indicator is based on the responses provided by interviewees regarding certain computer-related activities that they have carried out in a reference period of time. However, it is not a direct assessment of skills nor do we know if those activities were undertaken effectively.

One main issue is that the definition of the International Energy Agency (IEA) assessment does not include programming while ITU definition does. Although both have application meaning using computer and computer with internet connection as a tool in everyday life, IEA’s assessment of ICT skills definition is more restricted as compare to ITU’s definition. If a common framework is to be established the definition of both will need to be harmonized.

**Computation Method:**

The indicator is calculated as the percentage of people in a given population who have responded ‘yes’ to a selected number of variables e.g. the use of ICT skills in various subject areas or learning domains, the use of ICT skills inside or outside of school and/or workplace, the minimum amount of time spent using ICT skills inside and outside of school and/or workplace, availability of internet access inside or outside of school and/or workplace, etc.

\[
P_{ICTa} = \frac{ICTa}{Pa}
\]

where:

\[
P_{ICTa,s} = \text{percentage of people in age group } a \text{ who have ICT skills}
\]

\[
ICTa,s = \text{number of people in age group } a \text{ who have ICT skill } s
\]

\[
Pa = \text{population in age group } a
\]

**Disaggregation:**

By age or age-group of students, sex, location and socio-economic status if collected in the relevant survey.

**Data sources:**

School or household surveys which collect data on the use of selected ICT skills.

**Collection process:**

Data were provided by the respective organizations responsible for each survey, such as ITU.

**Data providers:**
Bodies responsible for conducting household surveys or learning assessments (including Ministries of Education, NSOs and other data providers) in which information on the use of ICT skills is collected. For cross-national purposes, data provider include ITU.

**Data compilers:**

UIS

**References:**

http://www.uis.unesco.org/

http://www.itu.int/

**Indicator 4.c.1: Proportion of teachers in: (a) pre-primary; (b) primary; (c) lower secondary; and (d) upper secondary education who have received at least the minimum organized teacher training (e.g. pedagogical training) pre-service or in-service required for teaching at the relevant level in a given country**

**Goal 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all**

**Target 4.c: By 2030, substantially increase the supply of qualified teachers, including through international cooperation for teacher training in developing countries, especially least developed countries and small island developing States**

**Definition:**

The percentage of teachers by level of education taught (pre-primary, primary, lower secondary and upper secondary education) who have received at least the minimum organized pedagogical teacher training pre-service and in-service required for teaching at the relevant level in a given country

**Rationale:**

Teachers play a key role in ensuring the quality of education provided. Ideally all teachers should receive adequate, appropriate and relevant pedagogical training to teach at the chosen level of education and be academically well-qualified in the subject(s) they are expected to teach. This indicator measures the share of the teaching work force which is pedagogically well-trained. A high value indicates that students are being taught by teachers who are pedagogically well-trained to teach.

**Concepts:**
A teacher is trained if they have received at least the minimum organized pedagogical teacher training pre-service and in-service required for teaching at the relevant level in a given country.

**Comments and limitations:**

It is important to note that national minimum training requirements can vary widely from one country to the next. This variability between countries lessens the usefulness of global tracking because the indicator would only show the percent reaching national standards, not whether teachers in different countries have similar levels of training. Further work would be required if a common standard for teacher training is to be applied across countries.

**Computation Method:**

The number of teachers in a given level of education who are trained is expressed as a percentage of all teachers in that level of education.

\[
\text{PTT}_n = \frac{\text{TT}_n}{\text{T}_n}
\]

where:

\[
\text{PTT}_n = \text{percentage of trained teachers at level } n \text{ of education}
\]

\[
\text{TT}_n = \text{trained teachers at level } n \text{ of education}
\]

\[
\text{T}_n = \text{total teachers at level } n \text{ of education}
\]

\[
 n = 0 \text{ (pre-primary), 1 (primary), 2 (lower secondary), 3 (upper secondary) and 23 (secondary)}
\]

**Disaggregation:**

By sex, level of education and type of institution (public / private), sub-national.

**Data sources:**

Administrative data from schools and other organized learning centres.

**Collection process:**

UIS produces time series based on teachers’ data reported by Ministries of Education or NSOs. The data are gathered through the annual Survey of Formal Education. Countries are asked to report data according to the levels of education defined in ISCED to ensure international comparability of resulting indicators.
The data received are validated using electronic error detection systems that check for arithmetic errors and inconsistencies and trend analysis for implausible results. Queries are taken up with the country representatives reporting the data so that corrections can be made (of errors) or explanations given (of implausible but correct results). During this process countries are also encouraged to provide estimates for missing or incomplete data items. In addition, countries also have an opportunity to see and comment on the main indicators the UIS produces in an annual “country review” of indicators.

Data providers:

Ministries of Education and/or NSOs.

Data compilers:

UIS

References:

http://www.uis.unesco.org/
Indicator 5.3.1: Proportion of women aged 20-24 years who were married or in a union before age 15 and before age 18 (A2063 Indicator A6G18P1T5I2)

Goal 5: Achieve gender equality and empower all women and girls

Target 5.3: Eliminate all harmful practices, such as child, early and forced marriage and female genital mutilation

Definition:

Proportion of women aged 20-24 years who were married or in a union before age 15 and before age 18

Rationale:

Marriage before the age of 18 is a fundamental violation of human rights. Child marriage often compromises a girl’s development by resulting in early pregnancy and social isolation, interrupting her schooling, limiting her opportunities for career and vocational advancement and placing her at increased risk of intimate partner violence. In many cultures, girls reaching puberty are expected to assume gender roles associated with womanhood. These include entering a union and becoming a mother. The practice of early/child marriage is a direct manifestation of gender inequality.

The issue of child marriage is addressed in a number of international conventions and agreements. Although marriage is not mentioned directly in the Convention on the Rights of the Child, child marriage is linked to other rights – such as the right to freedom of expression, the right to protection from all forms of abuse, and the right to be protected from harmful traditional practices.

Concepts:

Both formal (i.e., marriages) and informal unions are covered under this indicator. Informal unions are generally defined as those in which a couple lives together for some time, intends to have a lasting relationship, but for which there has been no formal civil or religious ceremony (i.e., cohabitation).

Comments and limitations:

There are existing tools and mechanisms for data collection that countries have implemented to monitor the situation with regards to this indicator. The modules used to collect information on marital status among women and men of reproductive age (15-49 years) in the DHS and MICS have been fully harmonized.

Computation Method:
Number of women aged 20-24 who were first married or in union before age 15 (or before age 18) divided by the total number of women aged 20-24 in the population multiplied by 100

**Disaggregation:**

Age, income, place of residence, geographic location, education, ethnicity (for some countries)

**Data sources:**

Household surveys such as MICS and DHS have been collecting data on this indicator in low- and middle-income countries since around the late 1980s. In some countries, such data are also collected through national censuses or other national household surveys.

**Collection process:**

UNICEF undertakes an annual process to update its global databases, called Country Reporting on Indicators for the Goals (CRING). This exercise is done in close collaboration with UNICEF country offices with the purpose of ensuring that UNICEF global databases contain updated and internationally comparable data. UNICEF Country Offices are invited to submit, through an online system, any updated data for a number of key indicators on the well-being of women and children. Updates sent by the country offices are then reviewed by sector specialists at UNICEF headquarters to check for consistency and overall data quality of the submitted estimates. This review is based on a set of objective criteria to ensure that only the most recent and reliable information is included in the databases. Once reviewed, feedback is made available on whether or not specific data points are accepted, and if not, the reasons why. New data points that are accepted are then entered into UNICEF’s global databases and published in the State of the World’s Children statistical tables, as well as in all other data-driven publications/material. The updated databases are also posted online at data.unicef.org.

UNICEF also searches throughout the year for additional sources of data that are vetted by the UNICEF country office before they are included in the global databases.

**Data providers:**

NSOs (in most cases)

**Data compilers:**

UNICEF

**References:**

data.unicef.org
Indicator 5.3.2: Proportion of girls and women aged 15-49 years who have undergone female genital mutilation/cutting, by age (A2063 Indicator A6G17P2T2I1)

Goal 5: Achieve gender equality and empower all women and girls

Target 5.3: Eliminate all harmful practices, such as child, early and forced marriage and female genital mutilation

Definition:

Proportion of girls and women aged 15-49 years who have undergone Female Genital Mutilation/Cutting (FGM/C) is currently being measured by the proportion of girls aged 15-19 years who have undergone FGM/C.

Rationale:

FGM/C is a violation of girls’ and women’s human rights. There is a large body of literature documenting the adverse health consequences of FGM/C over both the short and long term. The practice of FGM/C is a direct manifestation of gender inequality.

FGM/C is condemned by a number of international treaties and conventions. Since FGM/C is regarded as a traditional practice prejudicial to the health of children and is, in most cases, performed on minors, it violates the Convention on the Rights of the Child. Existing national legislation in many countries also include explicit bans against FGM/C.

Concepts:

FGM/C refers to all procedures involving partial or total removal of the female external genitalia or other injury to the female genital organs for non-medical reasons.

Comments and limitations:

There are existing tools and mechanisms for data collection that countries have implemented to monitor the situation with regards to this indicator. The modules used to collect information on the circumcision status of girls aged 0-14 and women aged 15-49 in the DHS and MICS have been fully harmonized.

Computation Method:

Number of girls and women aged 15-49 who have undergone FGM/C divided by the total number of girls and women aged 15-49 in the population multiplied by 100
Disaggregation:

Age, income, place of residence, geographic location, ethnicity, education

Collection process:

UNICEF undertakes an annual process to update its global databases, called Country Reporting on Indicators for the Goals (CRING). This exercise is done in close collaboration with UNICEF country offices with the purpose of ensuring that UNICEF global databases contain updated and internationally comparable data. UNICEF Country Offices are invited to submit, through an online system, any updated data for a number of key indicators on the well-being of women and children. Updates sent by the country offices are then reviewed by sector specialists at UNICEF headquarters to check for consistency and overall data quality of the submitted estimates. This review is based on a set of objective criteria to ensure that only the most recent and reliable information is included in the databases. Once reviewed, feedback is made available on whether or not specific data points are accepted, and if not, the reasons why. New data points that are accepted are then entered into UNICEF’s global databases and published in the State of the World’s Children statistical tables, as well as in all other data-driven publications/material. The updated databases are also posted online at data.unicef.org.

UNICEF also searches throughout the year for additional sources of data that are vetted by the UNICEF country office before they are included in the global databases.

Data providers:

NSOs (in most cases)

Data compilers:

UNICEF

References:

data.unicef.org
Indicator 5.5.2: Proportion of women in managerial positions

Goal 5: Achieve gender equality and empower all women and girls

Target 5.5: Ensure women’s full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life

Definition:

This indicator refers to the proportion of females in the total number of persons employed in senior and middle management. For the purposes of this indicator, senior and middle management correspond to major group 1 in both the International Standard Classification of Occupations (ISCO-08 and ISCO-88) minus category 14 in ISCO-08 (hospitality, retail and other services managers) and minus category 13 in ISCO-88 (general managers), since these comprise mainly managers of small enterprises. If statistics are not disaggregated at the sub-major level, then major group 1 of ISCO-88 and ISCO-08 could be used as a proxy.

Rationale:

The indicator provides information on the proportion of women who are employed in decision-making and management roles in government, large enterprises and institutions, thus providing some insight into women’s power in decision making and in the economy (especially compared to men’s power in those areas).

Concepts:

ISCO organizes jobs into a clearly defined set of groups according to the tasks and duties undertaken in the job. Employed persons are all persons of working age who during a specified brief period, such as one week or one day, were in the following categories: a) paid employment (whether at work or with a job but not at work); or b) self-employment (whether at work or with an enterprise but not at work). For more detailed information, please refer to the Resolution concerning statistics of work, employment and labour underutilization, adopted by the Nineteenth International Conference of Labour Statisticians in October 2013.

Comments and limitations:

This indicator’s main limitation is that it does not reflect differences in the levels of responsibility of women in these high and middle level positions or the importance of the enterprises and organizations in which they are employed. Its quality is also heavily dependent on the reliability of the employment statistics by occupation at the two-digit level of the ISCO.

Computation Method:
Proportion of women in managerial positions = (Women employed in ISCO-08 category 1 - Women employed in ISCO-08 category 14) / (All persons employed in ISCO-08 category 1 - all persons employed in ISCO-08 category 14) * 100

or

Proportion of women in managerial positions = (Women employed in ISCO-88 category 1 - Women employed in ISCO-88 category 13) / (All persons employed in ISCO-88 category 1 - all persons employed in ISCO-88 category 13) * 100

Disaggregation:

This indicator requires no disaggregation per se, although employment statistics both by sex and by occupation are needed to calculate it. If statistics are available and the sample size permits, it may be of interest to cross-tabulate this indicator by economic activity or disaggregate further to observe the share of women across more detailed occupational groups.

Data Sources:

The recommended source for this indicator is a labour force survey or, if not available, other similar types of household surveys, including a module on employment. In the absence of any labour-related household survey, establishment surveys or administrative records may be used to gather information on the female share of employment by the required ISCO groups. In cases where establishment surveys or administrative records are used, the coverage is likely to be limited to formal enterprises or enterprises of a certain size. Information on the enterprises covered should be provided with the figures. When comparing figures across years, any changes in the versions of ISCO that are used should be taken into account.

Collection process:

The International Labour Organization (ILO), Department of Statistics sends out its annual questionnaire on labour statistics every year, usually in the 2nd quarter, with a view to receiving the requested statistics by the 3rd quarter or the end of the year at most.

Data providers:

NSOs

Data compilers:

ILO

References:

www.ilo.org/ilostat
Indicator 5.b.1: Proportion of individuals who own a mobile telephone, by sex (A2063 Indicator A2G10P1T5I2)

Goal 5: Achieve gender equality and empower all women and girls

Target 5.b: Enhance the use of enabling technology, in particular information and communications technology, to promote the empowerment of women

Definition:

The proportion of individuals who own a mobile telephone, by sex is defined as the ‘proportion of individuals who own a mobile telephone, by sex’.

Rationale:

Mobile phone networks have spread rapidly over the last decade and the number of mobile-cellular subscriptions is quasi equal to the number of the people living on earth. However, not every person uses, or owns a mobile-cellular telephone. Mobile phone ownership, in particular, is important to track gender equality since the mobile phone is a personal device that, if owned and not just shared, provides women with a degree of independence and autonomy, including for professional purposes. A number of studies have highlighted the link between mobile phone ownership and empowerment, and productivity growth.

Existing data on the proportion of women owning a mobile phone suggest that less women than men own a mobile phone. This indicator highlights the importance of mobile phone ownership to track and to improve gender equality, and monitoring will help design targeted policies to overcome the gender divide. The collection of this indicator was proposed by the Task Group on Gender of the Partnership on Measuring ICT for Development.

Concepts:

An individual owns a mobile cellular phone if he/she has a mobile cellular phone device with at least one active SIM card for personal use. Mobile cellular phones supplied by employers that can be used for personal reasons (to make personal calls, access the internet, etc.) are included. Individuals who have only active SIM card(s) and not a mobile phone device are excluded. Individuals who have a mobile phone for personal use that is not registered under his/her name are also included. An active SIM card is a SIM card that has been used in the last three months.

A mobile (cellular) telephone refers to a portable telephone subscribing to a public mobile telephone service using cellular technology, which provides access to the PSTN. This includes analogue and digital cellular systems and technologies such as IMT-2000 (3G) and IMT-Advanced. Users of both postpaid subscriptions and prepaid accounts are included.

Comments and limitations:
While the data on the 'proportion of individuals who own a mobile telephone' currently only exist for very few countries, ITU is encouraging all countries to collect data on this indicator through national household surveys and the indicator is expected to be added to the Partnership on Measuring ICT for Development's Core List of Indicators. The number of countries with official data for this indicator is expected to increase in the near future.

**Computation Method:**

Countries can collect data on this indicator through national household surveys. This indicator is calculated by dividing the total number of in-scope individuals who own a mobile phone by the total number of in-scope individuals.

**Disaggregation:**

For countries that collect this indicator through a national household survey, and if data allow breakdown and disaggregation, the indicator can be broken down not only by sex but also by region (geographic and/or urban/rural), by age group, by educational level, by labour force status, and by occupation.

**Data sources:**

This indicator is a newly developed ITU indicator that was approved by the World Telecommunication/ICT Indicators Symposium (WTIS) 2014. The indicator’s definition and methodology were developed under the coordination of ITU, through its Expert Groups and following an extensive consultation process with countries. Data for the proportion of individuals owning a mobile phone were first collected in 2015, through an annual questionnaire that ITU sends to NSOs. Data are usually not adjusted, but discrepancies in the definition, age scope of individuals, reference period or the break in comparability between years are noted in a data note. For this reason, data are not always strictly comparable.

**Collection process:**

ITU collects data on this indicator through an annual questionnaire that it sends to the heads of the NSOs. In this questionnaire, through which ITU already collects a number of ICT indicators, ITU collects absolute values. The percentages are calculated a-posteriori. The survey methodology is verified to ensure that it meets adequate statistical standards. The data are verified to ensure consistency with previous years' data and other relevant country-level indicators.

**Data providers:**

NSOs.

**Data compilers:**

ITU

**References:**

http://www.itu.int/
Indicator 6.1.1: Proportion of population using safely managed drinking water services (A2063 Indicator A1G1P4T3I1)

Goal 6: Ensure availability and sustainable management of water and sanitation for all

Target 6.1: By 2030, achieve universal and equitable access to safe and affordable drinking water for all

Definition:
Proportion of population using safely managed drinking water services is currently being measured by the proportion of population using an improved basic drinking water source which is located on premises and available when needed and free of faecal (and priority chemical) contamination. ‘Improved’ source defined the same as used for MDG monitoring i.e. piped water into dwelling, yard or plot; public taps or standpipes; boreholes or tube wells; protected dug wells; protected springs and rainwater.

Rationale:
MDG target 7C called for ‘sustainable access’ to ‘safe drinking water’. At the start of the MDG period, there was a complete lack of nationally representative data about drinking water safety in developing countries, and such data were not collected through household surveys or censuses. The Joint Monitoring Programme (JMP) developed the concept of ‘improved’ water sources, which was used as a proxy for ‘safe water’, as such sources are likely to be protected against faecal contamination, and this metric has been used since 2000 to track progress towards the MDG target. International consultations since 2011 have established consensus on the need to build on and address the shortcomings of this indicator; specifically, to address normative criteria of the human right to water including accessibility, availability and quality.

The above consultation concluded that JMP should go beyond the basic level of access and address safe management of drinking water services, including dimensions of accessibility, availability and quality.

Concepts:
Improved drinking water sources include the following: piped water into dwelling, yard or plot; public taps or standpipes; boreholes or tube wells; protected dug wells; protected springs and rainwater. Packaged drinking water is considered improved if households use an improved water source for other domestic purposes A water source is considered to be ‘located on premises’ if the point of collection is within the dwelling, yard, or plot.

‘Available when needed’: households are able to access sufficient quantities of water when needed.
‘Free from faecal and priority chemical contamination’: water complies with relevant national or local standards. In the absence of such standards, reference is made to the WHO Guidelines for Drinking Water Quality.

Comments and limitations:

Data on availability and safety of drinking water is increasingly available through a combination of household surveys and administrative sources including regulators, but definitions have yet to be standardized. Data on faecal and chemical contamination, drawn from household surveys and regulatory databases, will not cover all countries immediately. However, sufficient data exist to make global and regional estimates of safely managed drinking water services from 2017.

Computation Method:

Household surveys and censuses currently provide information on types of basic drinking water sources listed above, and also indicate if sources are on premises. These data sources often have information on the availability of water and increasingly on the quality of water at the household level, through direct testing of drinking water for faecal or chemical contamination. These data will be combined with data on availability and compliance with drinking water quality standards (faecal and chemical) from administrative reporting or regulatory bodies.

The JMP for Water Supply and Sanitation estimates access to basic services for each country, separately in urban and rural areas, by fitting a regression line to a series of data points from household surveys and censuses. This approach was used to report on use of ‘improved water’ sources for MDG monitoring. The JMP is evaluating the use of alternative statistical estimation methods as more data become available.

Disaggregation:

Place of residence (urban/rural) and socioeconomic status (wealth, affordability) are possible for all countries. Disaggregation by other stratifiers of inequality (subnational, gender, disadvantaged groups, etc.) will be made where data permit. Drinking water services will be disaggregated by service level (including no services, basic, and safely managed services) following the JMP drinking water ladder.

Data sources:

Currently the JMP database holds over 1,600 surveys, and for over 140 countries at least five data points are available which include information about basic water and sanitation for the period 1990-2015. In high-income countries where household surveys or censuses do not usually collect information on basic access, estimates are drawn from administrative records.

Data on availability and faecal and chemical quality of drinking water, and regulation by appropriate authorities will be collected by JMP through consultation with the government departments responsible for drinking water supply and regulation. JMP routinely conducts country consultations with national authorities before publishing country estimates. Data on availability and quality of water supplies are currently available from household surveys or administrative sources including regulators for over 70 high-income countries, and at least 30-40 low- and middle-income countries.
The population data used by JMP, including the proportion of the population living in urban and rural areas, are those routinely updated by the UNPD.

**Collection process:**

All JMP estimates undergo rigorous country consultations facilitated by WHO and UNICEF country offices. Often these consultations give rise to in-country visits, and meetings about data reconciliations. JMP has been engaged with more than fifty countries over the last 10 years in explaining JMP estimates, and reasons for discrepancies if any. JMP has also developed an online tool to facilitate future data validation and expanded its online capabilities so that these reconciliations could be done in much more interactive and real time manner, reducing cost of reconciliations missions.

**Data providers:**

NSOs, Ministries of water, sanitation, health, environment. Regulators of water and sanitation services.

**Data compilers:**

WHO/UNICEF

**Description:**

**References:**

www.wssinfo.org
Indicator 6.2.1: Proportion of population using safely managed sanitation services, including a hand-washing facility with soap and water

Goal 6: Ensure availability and sustainable management of water and sanitation for all

Target 6.2: By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations

Definition:

The Proportion of population using safely managed sanitation services, including a hand-washing facility with soap and water is currently being measured by the proportion of the population using an improved basic sanitation facility at the household level which is not shared with other households and where excreta is safely disposed in situ or treated off-site. ‘Improved’ source defined the same as used for MDG monitoring i.e. flush or pour flush toilets to sewer systems, septic tanks or pit latrines, ventilated improved pit latrines, pit latrines with a slab, and composting toilets.

Population with a handwashing facility: a device to contain, transport or regulate the flow of water to facilitate handwashing with soap and water in the household.

Rationale:

MDG target 7C called for ‘sustainable access’ to ‘basic sanitation’. The JMP developed the metric of use of ‘improved’ sanitation facilities, which are likely to hygienically separate human excreta from human contact, and has used this indicator to track progress towards the MDG target since 2000. International consultations since 2011 have established consensus on the need to build on and address the shortcomings of this indicator; specifically, to address normative criteria of the human right to water including accessibility, acceptability, and safety. Furthermore, the safe management of faecal wastes should be considered, as discharges of untreated wastewater into the environment create public health hazards.

The above consultation concluded that post-2015 targets, which apply to all countries, should go beyond the basic level of access and address indicators of safe management of sanitation services, including dimensions of accessibility, acceptability and safety. The Expert Working Group called for analysis of faecal waste management along the sanitation chain, including containment, emptying of latrines and septic tanks, and safe on-site disposal or transport of wastes to designated treatment sites. Classification of treatment will be based on categories defined by the System of Economic and Environmental Accounting (SEEA) and the International Recommendations for Water Statistics and following a laddered approach (primary, secondary and tertiary treatment).

Handwashing with soap is widely agreed to be the top hygiene priority for improving health outcomes. In 2008 and 2009, the JMP supported a review of indicators of handwashing practice,
and determined that the most practical approach leading to reliable measurement of handwashing in national household surveys was observation of the place where household members wash their hands and noting the presence of water and soap (or local alternative) at that location. This provides a measure of whether households have the necessary tools for handwashing and is a proxy for their behaviour. Observation by survey enumerators represents a more reliable, valid and efficient indicator for measuring handwashing behaviour than asking individuals to report their own behaviour.

**Concepts:**

Improved sanitation facilities include the following: flush or pour flush toilets to sewer systems, septic tanks or pit latrines, ventilated improved pit latrines, pit latrines with a slab, and composting toilets.

Safely disposed in situ; when pit latrines and septic tanks are not emptied, the excreta may still remain isolated from human contact and can be considered safely managed. For example, with the new SDG indicator, households that use twin pit latrines or safely abandon full pit latrines and dig new facilities, a common practice in rural areas, would be counted as using safely managed sanitation services.

Treated offsite; not all excreta from toilet facilities conveyed in sewers (as wastewater) or emptied from pit latrines and septic tanks (as faecal sludge) reaches a treatment plant. For instance, a portion may leak from the sewer itself or, due to broken pumping installations, be discharged directly to the environment. Similarly, a portion of the faecal sludge emptied from containers may be discharged into open drains, to open ground or water bodies, rather than being transported to a treatment plant. And finally, even once the excreta reaches a treatment plant a portion may remain untreated, due to dysfunctional treatment equipment or inadequate treatment capacity, and be discharged to the environment. For the purposes of SDG monitoring, adequacy of treatment will be assessed through consideration of both the overall treatment effectiveness and end-use/disposal arrangements.

A handwashing facility with soap and water: a handwashing facility is a device to contain, transport or regulate the flow of water to facilitate handwashing. This indicator is a proxy of actual handwashing practice, which has been found to be more accurate than other proxies such as self-reports of handwashing practices.

**Comments and limitations:**

A framework for measuring faecal waste flows and safety factors has been developed and piloted in 12 countries (World Bank Water and Sanitation Program, 2014), and is being adopted and scaled up within the sanitation sector. This framework has served as the basis for indicators 6.2.1 and 6.3.1. Data on safe disposal and treatment are not available for all countries immediately. However, sufficient data exist to make global and regional estimates of safely managed sanitation services from 2017.

Presence of a handwashing station with soap and water does not guarantee that household members consistently wash hands at key times, but has been accepted as the most suitable proxy.
**Computation Method:**

Method of computation: Household surveys and censuses provide data on use of types of basic sanitation facilities listed above, as well as the presence of handwashing materials in the home.

The percentage of the population using safely managed sanitation services is calculated by combining data on the proportion of the population using different types of basic sanitation facilities with estimates of the proportion of faecal waste which is safely disposed in situ or treated off-site.

The JMP estimates access to basic sanitation facilities for each country, separately in urban and rural areas, by fitting a regression model to a series of data points from household surveys and censuses. This approach was used to report on use of 'improved sanitation' facilities for MDG monitoring. The JMP is evaluating the use of alternative statistical estimation methods as more data become available.

The Methodological Note describes in more detail how estimates of the proportion of household wastewater that is safely disposed of in situ or treated off-site will be combined with data on use of different types of sanitation facilities, as recorded in the current JMP database.

**Disaggregation:**

Place of residence (urban/rural) and socioeconomic status (wealth, affordability) is possible for all countries. Disaggregation by other stratifiers of inequality (subnational, gender, disadvantaged groups, etc.) will be made where data permit. Sanitation services will be disaggregated by service level (including no services, basic, and safely managed services) following the JMP sanitation ladder.

**Data sources:**

Currently the JMP database holds over 1,600 surveys, and for over 140 countries at least five data points are available which include information about basic water and sanitation for the period 1990-2015. In high-income countries where household surveys or censuses do not usually collect information on basic access, estimates are drawn from administrative records.

Estimates of excreta management will be collected from countries and used to adjust the data on use of basic sanitation facilities as needed. Administrative, population and environmental data can also be combined to estimate safe disposal or transport of excreta, when no country data are available. Data on disposal or treatment of excreta are limited but estimates for safe management of faecal wastes can be calculated based on faecal waste flows associated with the use of different types of basic sanitation facility.

Since the handwashing with soap survey questions were standardized in 2009, over 50 DHS and MICS surveys have included the module. JMP published handwashing data from 12 countries in its 2014 update report, and for 54 countries in the 2015 report. The population data used by JMP, including the proportion of the population living in urban and rural areas, are those established by the UNPD.

**Collection process:**
All JMP estimates undergo rigorous country consultations facilitated by WHO and UNICEF country offices. Often these consultations give rise to in-country visits, and meetings about data reconciliations. JMP has been engaged with more than fifty countries over the last 10 years in explaining JMP estimates, and reasons for discrepancies if any. JMP has also developed an online tool to facilitate future data validation and expanded its online capabilities so that these reconciliations could be done in much more interactive and real time manner, reducing cost of reconciliations missions.

**Data providers:**

NSOs, ministries of water, sanitation, health, environment. Regulators of water and sanitation services.

**Data compilers:**

WHO/UNICEF

**References:**

www.wssinfo.org
Indicator 6.4.2: Level of water stress: freshwater withdrawal as a proportion of available freshwater resources

Goal 6: Ensure availability and sustainable management of water and sanitation for all

Target 6.4: By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity

Definition:

The level of water stress: freshwater withdrawal as a proportion of available freshwater resources is the ratio between total freshwater withdrawn by all major sectors and total renewable freshwater resources, after taking into account environmental water requirements. Main sectors, as defined by the International Standard Industrial Classification (ISIC) standards, include agriculture; forestry and fishing; manufacturing; electricity industry; and services. This indicator is also known as water withdrawal intensity.

Rationale:

The purpose of this indicator is to show the degree to which water resources are being exploited to meet the country’s water demand. It measures a country’s pressure on its water resources and therefore the challenge on the sustainability of its water use. It tracks progress in regard to “withdrawals and supply of freshwater to address water scarcity”, i.e. the environmental component of target 6.4.

The indicator shows to what extent water resources are already used, and signals the importance of effective supply and demand management policies. It indicates the likelihood of increasing competition and conflict between different water uses and users in a situation of increasing water scarcity. Increased water stress, shown by an increase in the value of the indicator, has potentially negative effects on the sustainability of the natural resources and on economic development. On the other hand, low values of the indicator indicate that water does not represent a particular challenge for economic development and sustainability.

Concepts:

This indicator provides an estimate of pressure by all sectors on the country’s renewable freshwater resources. A low level of water stress indicates a situation where the combined withdrawal by all sectors is marginal in relation to the resources, and has therefore little potential impact on the sustainability of the resources or on the potential competition between users. A high level of water stress indicates a situation where the combined withdrawal by all sectors represents a substantial share of the total renewable freshwater resources, with potentially larger impacts on
the sustainability of the resources and potential situations of conflicts and competition between users.

Total renewable freshwater resources (TRWR) are expressed as the sum of internal and external renewable water resources. The terms “water resources” and “water withdrawal” are understood here as freshwater resources and freshwater withdrawal.

Internal renewable water resources are defined as the long-term average annual flow of rivers and recharge of groundwater for a given country generated from endogenous precipitation.

External renewable water resources refer to the flows of water entering the country, taking into consideration the quantity of flows reserved to upstream and downstream countries through agreements or treaties.

Total freshwater withdrawal (TWW) is the volume of freshwater extracted from its source (rivers, lakes, aquifers) for agriculture, industries and households. It is estimated at the country level for the following three main sectors: agriculture, households (including domestic water withdrawal) and industries. Freshwater withdrawal includes primary freshwater (not withdrawn before), secondary freshwater (previously withdrawn and returned to rivers and groundwater, such as discharged wastewater and agricultural drainage water) and fossil groundwater. It does not include non-conventional water, i.e. direct use of treated wastewater, direct use of agricultural drainage water and desalinated water. TWW is in general calculated as being the sum of total water withdrawal by sector minus direct use of wastewater, direct use of agricultural drainage water and use of desalinated water.

Environmental water requirements (Env.) are the quantities of water required to sustain freshwater and estuarine ecosystems. Water quality and also the resulting ecosystem services are excluded from this formulation which is confined to water volumes. This does not imply that quality and the support to societies which are dependent on environmental flows are not important and should not be taken care of. Methods of computation of Env. are extremely variable and range from global estimates to comprehensive assessments for river reaches. For the purpose of the SDG indicator, water volumes can be expressed in the same units as the TWW, and then as percentages of the available water resources.

Comments and limitations:

Water withdrawal as a percentage of water resources is a good indicator of pressure on limited water resources, one of the most important natural resources. However, it only partially addresses the issues related to sustainable water management.

Supplementary indicators that capture the multiple dimensions of water management would combine data on water demand management, behavioural changes with regard to water use and the availability of appropriate infrastructure, and measure progress in increasing the efficiency and sustainability of water use, in particular in relation to population and economic growth. They would also recognize the different climatic environments that affect water use in countries, in particular in agriculture, which is the main user of water. Sustainability assessment is also linked to the critical thresholds fixed for this indicator and there is no universal consensus on such threshold. Trends in water withdrawal show relatively slow patterns of change. Usually, three-five years are a minimum
frequency to be able to detect significant changes, as it is unlikely that the indicator would show meaningful variations from one year to the other.

Estimation of water withdrawal by sector is the main limitation to the computation of the indicator. Few countries actually publish water use data on a regular basis by sector.

Renewable water resources include all surface water and groundwater resources that are available on a yearly basis without consideration of the capacity to harvest and use this resource. Exploitable water resources, which refer to the volume of surface water or groundwater that is available with an occurrence of 90% of the time, are considerably less than renewable water resources, but no universal method exists to assess such exploitable water resources.

There is no universally agreed method for the computation of incoming freshwater flows originating outside of a country’s borders. Nor is there any standard method to account for return flows, the part of the water withdrawn from its source and which flows back to the river system after use. In countries where return flow represents a substantial part of water withdrawal, the indicator tends to underestimate available water and therefore overestimate the level of water stress.

Other limitations that affect the interpretation of the water stress indicator include:

- difficulty to obtain accurate, complete and up-to-date data;
- potentially large variation of sub-national data;
- lack of account of seasonal variations in water resources;
- lack of consideration to the distribution among water uses;
- lack of consideration of water quality and its suitability for use; and
- the indicator can be higher than 100 per cent when water withdrawal includes secondary freshwater (water withdrawn previously and returned to the system), non-renewable water (fossil groundwater), when annual groundwater withdrawal is higher than annual replenishment (over-abstraction) or when water withdrawal includes part or all of the water set aside for environmental water requirements.

Some of these issues can be solved through disaggregation of the index at the level of hydrological units and by distinguishing between different use sectors. However, due to the complexity of water flows, both within a country and between countries, care should be taken not to double-count.

**Computation Method:**

The indicator is computed as the total freshwater withdrawn (TWW) divided by the difference between the total renewable freshwater resources (TRWR) and the environmental water requirements (Env.), multiplied by 100. All variables are expressed in km³/year (109 m³/year).

\[
\text{Stress} (%) = \frac{\text{TWW}}{\text{TRWR} - \text{Env.}} \times 100
\]

It is proposed to classify the level of water stress in three main categories (levels): low, high and very high. The thresholds for the indicator could be country specific, to reflect differences in climate and national water management objectives. Alternatively, uniform thresholds could be proposed using existing literature and taking into account environmental water requirements.
Disaggregation:

To compute this indicator sectoral data are needed. The indicator can be disaggregated to show the respective contribution of different sectors to the country’s water stress, and therefore the relative importance of actions needed to contain water demand in the different sectors (agriculture, households, and enterprises and establishments).

At national level, water resources and withdrawal are estimated or measured at the level of appropriate hydrological units (river basins, aquifers). It is therefore possible to obtain a geographical distribution of water stress by hydrological unit, thus allowing for more targeted response in terms of water demand management.

Data sources:

Data for this indicator are usually collected by national ministries and institutions having water-related issues in their mandate, such as ministries of water resources, agriculture, or environment. Data are mainly published within national water resources and irrigation master plans, national statistical yearbooks and other reports (such as those from projects, international surveys or results and publications from national and international research centres).

The data for the indicator are collected through questionnaires to be answered by the relevant institutions in each country.

Collection process:

i. Official counterparts at country level are the line ministry for water resources and the NSOs

ii. Countries are expected to put in place a process of Quality Control (QC), Quality Assurance (QA) and data verification. The process should be carried out internally for the QC part, ensuring that all the planned steps are properly carried out at each round of data collection. The QA should be carried out by independent experts, either national or international, to assess the consistence and robustness of the data produced. Finally, where possible the resulting data should be verified by comparison with similar data from other sources.

iii. As the data will be collected through different questionnaires, harmonization will be needed among the eventual differences in definitions and aggregations.

Moreover, the UNSD / UNEP Questionnaires are used to collect data from countries on water and waste statistics on biennial basis. The Questionnaires briefly explain the indicators to be completed by countries.

Data providers:

NSOs, and line ministries. The institutions responsible for data collection at national level vary according to countries. However, in general data for this indicator are provided by the Ministry of
Agriculture, Ministry of Water and Ministry of Environment, and sometimes channelled through the NSOs, etc.

**Data compilers:**

FAO

UNSD / UNEP

**References:**

www.fao.org/nr/aquastat

https://unstats.un.org/unsd
Indicator 6.5.1: Degree of integrated water resources management implementation (0-100)

Goal 6: Ensure availability and sustainable management of water and sanitation for all

Target 6.5: By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate

Definition:

The indicator degree of implementation of Integrated Water Resources Management (IWRM), measured in per cent (%) from 0 (implementation not yet started) to 100 (fully implemented) is currently being measured in terms of different stages of development and implementation of WRM.

The definition of IWRM is based on an internationally agreed definition, and is universally applicable. IWRM was officially established in 1992 and is defined as a process which promotes the coordinated development and management of water, land and related resources in order to maximise economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems.

The method builds on official UN IWRM status reporting, from 2008 and 2012, of the Johannesburg Plan of Implementation from the UN World Summit for Sustainable Development in 1992.

Rationale:

The indicator provides a direct progress measurement of the first part of Target 6.5 “...implement integrated water resources management at all levels ...”. The percentage score provides an easy and understandable way of measuring progress towards the target, with ‘0’ interpreted as no implementation of IWRM, and ‘100’ interpreted as IWRM being fully implemented.

To further aid interpretation and comparison, the indicator results can be categorized in a similar way to the survey questions: Degree of implementation

<table>
<thead>
<tr>
<th>Not yet developed</th>
<th>Very low (0 - 9.9)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under development</td>
<td>Low (10 - 29.9)</td>
</tr>
<tr>
<td>Developed, not implemented</td>
<td>Medium-low (30 - 49.9)</td>
</tr>
<tr>
<td>Implementation started</td>
<td>Medium-high (50 - 69.9)</td>
</tr>
<tr>
<td>Implemented, advanced</td>
<td>High (70 - 89.9)</td>
</tr>
<tr>
<td>Fully implemented</td>
<td>Very high (90 - 100)</td>
</tr>
</tbody>
</table>

The concept of the survey is that it provides sufficient information to be of real value to the countries in determining their progress towards the target, and through this, various aspects of IWRM. A balance has been sought between providing sufficient information to cover the core
principles of IWRM, and thus providing a robust indicator value, and not overburdening countries with unnecessary reporting requirements. Countries are encouraged to provide additional information on each question, which may help to qualify their choice of score, and/or put that score into their national context.

Indicator 6.5.1 is supported by indicator 6.5.2 “Proportion of transboundary basin area with an operational arrangement for water cooperation”, which directly addresses the portion of Target 6.5 “…, including through transboundary cooperation as appropriate.”.

**Concepts:**

The concept of IWRM is measured in 4 main components:

1. **Enabling environment:** this includes the policies, laws, plans and strategies which create the ‘enabling environment’ for IWRM.
2. **Institutions:** includes the range and roles of political, social, economic and administrative institutions that help to support the implementation of IWRM.
3. **Management Instruments:** The tools and activities that enable decision-makers and users to make rational and informed choices between alternative actions.
4. **Financing:** Budgeting and financing made available and used for water resources development and management from various sources.

The indicator is based on a national survey structured around these four main components. Each component is split into two parts: questions concerning the ‘National level’ and ‘Other levels’ respectively. ‘Other levels’ includes sub-national (including provinces/states for federated countries), basin level, and the transboundary level as appropriate. These two parts address the wording of Target 6.5 ‘implement [IWRM] at all levels …’.

**Comments and limitations:**

The challenge of subjectivity in responses associated with this type of survey is being addressed in a number of ways:

a) Draft responses are reviewed by a number of governmental and non-governmental stakeholders in an open, inclusive and transparent process.

b) Countries are encouraged to provide further information to qualify their responses and/or set them in the national context.

c) Guidelines are provided for each of the four main components, each question, and each of the six thresholds for every single question, to ensure responses are as objective as possible, and are comparable both between countries, and between reporting periods.

To achieve robust indicator results requires a country process involving a wide range of stakeholders which will require a certain amount of time and resources. The advantage of this is that it puts in place a process that addresses the integrated and indivisible nature of the SDG targets, as well as stressing the importance of “leaving no one behind”.
Computation Method:

1. The survey contains 32 questions divided into the four main components described above.

2. Each question is given a score between 0 and 100, in increments of 10, based on the following 6 main categories:
   - Very low (0)
   - Low (20)
   - Medium-low (40)
   - Medium-high (60)
   - High (80)
   - Very high (100)

3. The un-weighted average of the question scores within each of the four components is calculated to give a score of 0 – 100 for each component.

4. The component scores are averaged (un-weighted) to give the indicator score, expressed as a percentage between 0 and 100.

Disaggregation:

The strength of the indicator lies in the potential for disaggregating the country score into the four main components of IWRM, and further to the questions in the survey. This provides countries with a quick assessment of which aspects of IWRM are progressing well, and which aspects require increased efforts to obtain the target.

The nature of the target, indicator and survey does not lend itself to disaggregation by sex, age group, income etc. However, social equality is an integral part of IWRM, and there are questions which directly address issues such as gender, vulnerable groups, geographic coverage and broad stakeholder participation in water resources development and management. These questions provide an indication of the national and sub-national situation regarding social equality.

Data sources:

Monitoring progress on meeting SDG 6.5 is owned by and is the responsibility of the national government. The government will assign a ministry with the primary responsibility for overseeing this survey, which will be asked to take on the responsibility of coordinating the national IWRM monitoring and reporting process. As water issues, and water management issues in particular, cut across a wide number of sectors, often overseen by different ministries and other administrative bodies at national or other levels, the process should be inclusive. Major stakeholders should be involved in order to contribute to well informed and objective answers to the questionnaire.

The ministry may wish to nominate a national “IWRM focal point”, who may or may not be a government official. The UN will provide support where needed and possible. The following steps are suggested as guidance only, as it is up to countries to decide which process or processes would best serve their needs. It should also be noted that the following steps represent a ‘ladder’ approach, in that completing all the steps will generally lead to a more robust indicator. However, it may not be possible or necessary for all countries to complete all steps.
1. The responsible ministry or IWRM focal point contacts other relevant ministries/agencies to compile responses to the questionnaire. Each possible response option has a score which will be used to calculate the overall indicator score.

2. The completed draft questionnaire is reviewed by government stakeholders. These stakeholders could include those involved in water-relevant sectors, such as agriculture, energy, water supply and environment, as well as water management at different administrative levels. This process may be electronic (e.g., via email) and/or through workshops.

3. The revised draft questionnaire is validated at a multi-stakeholder workshop. Apart from government representatives these stakeholders could include water user associations, private sector, interest groups concerned with e.g., environment, agriculture, poverty, and academia. The suggested process is through a workshop but alternative means of consultation e.g., email, online call for public submissions could be considered. Note that steps 2 and 3 could be combined if desired.

4. The responsible ministry or IWRM focal point discusses with relevant officials and consolidates the input into a final version. This version will be the basis for calculating the degree of IWRM implementation (0-100) for global reporting. Countries can enter responses electronically into an online version of the survey, which will automatically calculate the degree of IWRM implementation score, and also generate graphs and automatic reports to help countries identify areas for attention.

5. The responsible ministry submits the final indicator score to the national statistics office responsible for compiling all national SDG target data.

Based on the national survey, UN-Water will periodically prepare synthesis reports for regional and global levels to provide overall progress on meeting SDG target 6.5.

**Temporal Coverage:** A reporting cycle of three years is recommended.

**Collection process:**

Official counterparts at the country level and the validation and consultation process. The survey has been designed so that the indicator is comparable between countries and time periods. No adjustments are foreseen.

**Data providers:**

The survey questionnaire will be filled by Ministry of Water, Ministry of Environment, Ministry of Finance, Ministry of Planning, Ministry of Lands and Agriculture, Ministry of Industry and Mining etc. As the survey questionnaire is filled by various ministries there is a need for coordination. Government and non-government stakeholder will participate in validating the question scores which then leads to a more robust indicator score and facilitate tracking progress over time.

**Data compilers:**

UNEP and UN-Water partners, under GEMI (Integrated Monitoring of Water and Sanitation Related Targets)

**References:**

http://www.unepdhi.org
Indicator 7.1.1: Proportion of population with access to electricity (A2063 Indicator A1G1P4T6I1)

Goal 7: Ensure access to affordable, reliable, sustainable and modern energy for all

Target 7.1: By 2030, ensure universal access to affordable, reliable and modern energy services

Definition:

Proportion of population with access to electricity is the percentage of population with access to electricity.

Rationale:

Access to electricity addresses major critical issues in all the dimensions of sustainable development. The target has a wide range of social and economic impacts, including facilitating development of household-based income generating activities and lightening the burden of household tasks.

Concepts:

Please see method of computation for more details.

Comments and limitations:

While the existing global household survey evidence base provides a good starting point for tracking household energy access, it also presents a number of limitations that will need to be addressed over time. In many parts of the world, the presence of an electricity connection in the household does not necessarily guarantee that the energy supplied is adequate in quality and reliability or affordable in cost and it would be desirable to have fuller information about these critical attributes of the service, which have been highlighted in SDG7.

Substantial progress has already been made toward developing and piloting a new methodology known as the Multi-Tier Framework for Measuring Energy Access (World Bank) which is able to capture these broader dimensions of service quality and would make it possible to go beyond a simple yes/no measure of energy access to a more refined approach that recognizes different levels of energy access, and also takes into account the affordability and reliability of energy access explicitly referenced in the language of SDG7. The methodology for the Multi-Tier Framework for Measuring Energy Access has already been published based on a broad consultative exercise and represents a consensus view across numerous international agencies working in the field. A first Global Energy Access Survey using this methodology has already been launched and is underway expecting to yield results. Discussions are also progressing with the World Bank’s Household Survey Technical Working Group regarding the mainstreaming of this methodology into the standardized household questionnaire design that will be applied every three years in all low income countries between 2015 and 2030 as part of the broader SDG monitoring exercise. The adoption of this methodology will allow – over time – the more refined measurement of energy access, making it possible to report more disaggregated information regarding the type of electricity supply (grid or off-grid), the capacity of electricity supply provided (in Watts), the duration of service (daily hours...
and evening hours), the reliability of service (in terms of number and length of unplanned service interruptions), the quality of service (in terms of voltage fluctuations), as well as affordability and legality of service.

Another advantage of this approach is that they can be applied not only to measuring energy access at the household level, but also its availability to support enterprises and deliver critical community services, such as health and education.

**Computation Method:**

Given the low frequency and the regional distribution of some surveys, a number of countries have gaps in available data. To develop the historical evolution and starting point of electrification rates, a simple modelling approach was adopted to fill in the missing data points - around 1990, 2000, 2010 and 2012. This modelling approach allowed the estimation of electrification rates for 212 countries over these time periods. The SE4ALL Global Tracking Framework Report (2013) provides more details on the suggested methodology for tracking access to energy (Chapter 2, Section 1, page 82-87).

**Disaggregation:**

Disaggregation of access to electricity by rural or urban place of residence is possible for all countries.

**Data sources:**

Data for access to electricity are collected entirely from household surveys (and occasionally censuses), tapping into a wide number of different household survey types including: DHS and Living Standards Measurement Surveys (LSMS), MICS, the World Health Survey (WHS), other nationally developed and implemented surveys, including those by various government agencies (for example, ministries of energy and utilities).

The World Bank is the agency that has taken responsibility for compiling a meta database of statistics on electricity access harvested from the full global body of household surveys. The World Bank Electrification Database covers more than 180 countries for the period 1990-2012 and is updated regularly.

**Data providers:**

NSOs, power utilities, ministry of health, etc.

**Data compilers:**

World Bank

**References:**

www.worldbank.org
Indicator 7.1.2: Proportion of population with primary reliance on clean fuels and technology

Goal 7: Ensure access to affordable, reliable, sustainable and modern energy for all

Target 7.1: By 2030, ensure universal access to affordable, reliable and modern energy services

Definition:

Proportion of population with primary reliance on clean fuels and technology is calculated as the number of people using clean fuels and technologies for cooking, heating and lighting divided by total population reporting that any cooking, heating or lighting, expressed as percentage. “Clean” is defined by the emission rate targets and specific fuel recommendations (i.e. against unprocessed coal and kerosene) included in the normative guidance WHO guidelines for indoor air quality: household fuel combustion.

Clean fuels include: compressed natural gas (CNG); liquefied petroleum gas (LPG); city diesel; hydrogen; alcohol fuels; and battery operated vehicles (http://www.enviropedia.org.uk/Air_Quality/Cleaner_Fuels.php).

Rationale:

Cooking, lighting and heating represent a large share of household energy use across the low- and middle-income countries. For cooking and heating, households typically rely on solid fuels (such as wood, charcoal, biomass) or kerosene paired with inefficient technologies (e.g. open fires, stoves, space heaters or lamps). It is well known that reliance on such inefficient energy for cooking, heating and lighting is associated with high levels of household (indoor) air pollution. The use of inefficient fuels for cooking alone is estimated to cause over 4 million deaths annually, mainly among women and children. This is more than TB, HIV and malaria combined. These adverse health impacts can be avoided by adopting clean fuels and technologies for all main household energy end- or in some circumstances by adopting advanced combustion cook stoves (i.e. those which achieve the emission rates targets provided by the WHO guidelines) and adopting strict protocols for their safe use. Given the importance of clean and safe household energy use as a human development issue, universal access to energy among the technical practitioner community is currently taken to mean access to both electricity and clean fuels and technologies for cooking, heating and lighting. For this reason, clean cooking forms part of the universal access objective under the UN Secretary General’s Sustainable Energy for All initiative.

Concepts:

Current global data collection focuses on the primary fuel used for cooking, categorized as solid or non-solid fuels, where solid fuels are considered polluting and non-modern, while non-solid fuels are considered clean. This single measure captures a good part of the lack of access to clean cooking fuels, but fails to collect data on type of device or technology is used for cooking, and also fails to capture other polluting forms of energy use in the home such as those used for lighting and heating. New evidence-based normative guidance from the WHO (i.e. WHO Guidelines for indoor
air quality guidelines: household fuel combustion), highlights the importance of addressing both fuel and the technology for adequately protecting public health. These guidelines provide technical recommendations in the form of emissions targets for as to what fuels and technology (stove, lamp, and so on) combinations in the home are clean. These guidelines also recommend against the use of unprocessed coal and discourage the use of kerosene (a non-solid but highly polluting fuel) in the home. They also recommend that all major household energy end uses (e.g. cooking, space heating, lighting) use efficient fuels and technology combinations to ensure health benefits.

For this reason, the technical recommendations in the WHO guidelines, access to modern cooking solution in the home will be defined as “access to clean fuels and technologies” rather than “access to non-solid fuels.” This shift will help ensure that health and other “nexus” benefits are better counted, and thus realized.

**Comments and limitations:**

The indicator uses the type of primary fuels and technologies used for cooking, heating, and lighting as a practical surrogate for estimating human exposure to household (indoor) air pollution and its related disease burden, as it is not currently possible to obtain nationally representative samples of indoor concentrations of criteria pollutants, such as fine particulate matter and carbon monoxide. However epidemiological studies provide a science-based evidence for establishing those estimates using these surrogates.

The indicator is based on the main type of fuel and technology used for cooking as cooking occupies the largest share of overall household energy needs. However, many households use more than one type of fuel and stove for cooking and, depending on climatic and geographical conditions, heating with polluting fuels can also be a contributor to household (indoor) air pollution levels. In addition, lighting with kerosene, a very polluting and hazardous fuel is also often used, and in some countries is the main fuel used for cooking.

While the existing global household survey evidence base provides a good starting point for tracking household energy access for cooking fuel, it also presents a number of limitations that will need to be addressed over time. Currently there is a limited amount of available data capturing the type of fuel and devices used in the home for heating and lighting. Accordingly, WHO in cooperation with World Bank, and the Global Alliance for Clean Cook stoves, is leading a survey enhancement process with representatives from country statistical offices and national household surveying agencies (e.g. DHS, MICS, LSMS) to better gather efficiently and harmoniously information on the fuels and technologies for cooking, heating and lighting. This process is currently in the piloting phase with expected rollout of the final household surveys questions (~6 questions in total) expected in the coming year. These few questions will replace and slightly expand the current set of questions commonly used on national multipurpose surveys to assess household energy.

Substantial progress has already been made toward developing and piloting a new methodology known as the Multi-Tier Framework for Measuring Energy Access (World Bank) which is able to capture the affordability and reliability of energy access explicitly referenced in the language of SDG7 and harnesses the normative guidance in the WHO guidelines to benchmark tiers of energy access.
access. The methodology for the Multi-Tier Framework for Measuring Energy Access has already been published based on a broad consultative exercise and represents a consensus view across numerous international agencies working in the field. A first Global Energy Access Survey using this methodology has already been launched and is underway expecting to yield results by early 2017.

**Computation Method:**

The indicator is modelled with household survey data compiled by WHO. The information on cooking fuel use and cooking practices comes from about 800 nationally representative surveys and censuses. Survey sources include DHS, LSMS), MICS, WHS, and other nationally developed and implemented surveys.

Estimates of primary cooking energy for the total, urban and rural population for a given year are obtained separately using a multilevel model. The model only accounts for regions, countries and time as a spline function, and estimates are restricted to values ranging from zero to one.

Estimates for countries with no available surveys were obtained as follows:

When survey data is available for a country, the regional population-weighted mean is used to derive aggregate estimates at a regional or global level, however no country point estimate is given for that country reported.

Countries classified as high-income with a Gross National Income (GNI) of more than US$ 12,746.- per capita are assumed to have made a complete transition to using clean fuels and technologies as the primary domestic energy source for cooking and the primary reliance on polluting (unclean) fuels and technologies use is reported to be less than 5% and assumed as zero for regional and global estimates.

For estimating the fraction of the population relying on clean fuels and technologies for heating and lighting, the same methodology using survey data to derive country estimates for a particular year will be used using the same above mentioned assumptions.

**Disaggregation:**

Disaggregated estimates for different end-uses (i.e. cooking, heating and lighting), with expected improvements in household surveys, will be possible all countries.

Disaggregation of access to clean fuel and technologies for cooking by rural or urban place of residence is possible for all countries.

Gender disaggregation by main user (i.e. cook) of cooking energy will be available with expected improvements in household surveys.

Gender disaggregation of head of household for cooking, lighting and heating is available. Gender equality.

Energy is a service provided at the household, rather than individual level.
Data Sources:

Primary household fuels and technologies, particularly for cooking, is routinely collected at the national levels in most countries using censuses and surveys.

Collection process:

WHO is the agency that has taken responsibility for compiling a database of statistics on access to clean and polluting fuels and technologies harvested from the full global body of household surveys for cooking, heating and lighting. Currently, the WHO Database covers cooking energy, lighting and heating data for countries. Presently WHO is working with national surveying agencies, country statistical offices and other stakeholders (e.g. researchers) to enhance multipurpose household survey instruments to gather data on the fuels and technologies used for heating and lighting.

Data providers:

NSOs or any national providers of household surveys and censuses.

Data compilers:

WHO

References:

www.who.int/gho/phe
Indicator 7.2.1: Renewable energy share in the total final energy consumption

Goal 7: Ensure access to affordable, reliable, sustainable and modern energy for all

Target 7.2: By 2030, increase substantially the share of renewable energy in the global energy mix

Definition:

The renewable energy share in total final consumption is the percentage of final consumption of energy that is derived from renewable resources.

Rationale:

The target “By 2030, increase substantially the share of renewable energy in the global energy mix” impacts all three dimensions of sustainable development. Renewable energy technologies represent a major element in strategies for greening economies everywhere in the world and for tackling the critical global problem of climate change. A number of definitions of renewable energy exist; what they have in common is highlighting as renewable all forms of energy that their consumption does not deplete their availability in the future. These include solar, wind, ocean, hydropower, geothermal resources, and bioenergy (in the case of bioenergy, which can be depleted, sources of bioenergy can be replaced within a short to medium-term frame). Importantly, this indicator focuses on the amount of renewable energy actually consumed rather than the capacity for renewable energy production, which cannot always be fully utilized. By focusing on consumption by the end user, it avoids the distortions caused by the fact that conventional energy sources are subject to significant energy losses along the production chain.

Concepts:

Renewable energy consumption includes consumption of energy derived from: hydro, solid biofuels, wind, solar, liquid biofuels, biogas, geothermal, marine and waste. Total final energy consumption is calculated from national balances and statistics as total final consumption minus non-energy use. Comments with regard to specific renewable energy resources:

- Solar energy consumption includes solar photovoltaic (PV) and solar thermal
- Liquid biofuel energy consumption includes biogasoline, biodiesels and other liquid biofuels
- Solid biofuel consumption includes fuelwood, animal waste, vegetable waste, black liquor, bagasse and charcoal
- Waste energy covers energy from renewable municipal waste

Comments and limitations:
• A limitation with existing renewable energy statistics is that they are not able to distinguish whether renewable energy is being sustainably produced. For example, a substantial share of today’s renewable energy consumption comes from the use of wood and charcoal by households in the developing world, which sometimes may be associated with unsustainable forestry practices. There are efforts underway to improve the ability to measure the sustainability of bio-energy, although this remains a significant challenge.

• Off-grid renewables data is limited and not sufficiently captured in the energy statistics.

• The method of allocation of renewable energy consumption from electricity and heat output assumes that the share of transmission and distribution losses are the same between all technologies. However, this is not always true because renewables are usually located in more remote areas from consumption centers and may incur larger losses.

• Likewise, imports and exports of electricity and heat are assumed to follow the share of renewability of electricity and heat generation, respectively. This is a simplification that in many cases will not affect the indicator too much, but that might do so in some cases, for example, when a country only generates electricity from fossil fuels but imports a great share of the electricity it uses from a neighboring country’s hydroelectric power plant.

• Methodological challenges associated with defining and measuring renewable energy.

**Computation Method:**

It is calculated by dividing consumption of energy from all renewable sources by total final energy consumption. Renewable energy consumption is derived from three tables of the IEA world energy statistics and balances: total final consumption, electricity output and heat output. All volumes reported in the total final consumption table are taken as reported. Since volumes for electricity and heat in the final consumption table are not broken down by technology, electricity and heat output tables are used instead to break down final consumption of electricity and heat by technology. The allocation by technology is done by deriving the share of technology in electricity and heat output tables and multiplying that share by final energy consumption of electricity and heat, respectively. For instance, if total final consumption table reports 150 TJ for biogas energy, while total final consumption of electricity is 400 TJ and heat 100 TJ, and the share of biogas in total electricity output is 10 percent and 5 percent in heat, the total reported number for biogas consumption will be 195 TJ (150 TJ+400TJ*10%+100TJ*5%).

**Disaggregation:**

Disaggregation of the data on consumption of renewable energy, e.g. by resource and end-use sector, could provide insights into other dimensions of the goal, such as affordability and reliability. For solar energy, it may also be of interest to disaggregate between grid and off-grid capacity.

**Data Sources:**

Data on renewable energy consumption are available through national Energy Balances produced by the IEA and UNSD. The energy balances make it possible to trace all the different sources and
uses of energy at the national level. Some technical assistance may be needed to improve these statistics, particularly in the case of renewable energy sources. Specialized industry surveys (e.g. on bioenergy use) or household surveys (in combination with the measurement of other indicators) would be feasible approaches to filling in data gaps (e.g. for use of firewood, off-grid solar energy).

**Collection process:**

Data is collected on an annual basis. UNSD also administers Annual Questionnaire on Energy Statistics to collect data from countries.

Data providers:

NSOs, line ministries

Data compilers:

IEA and UNSD

References:

https://www.iea.org/

https://unstats.un.org/
Indicator 7.3.1: Energy intensity measured in terms of primary energy and GDP

Goal 7: Ensure access to affordable, reliable, sustainable and modern energy for all

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

Definition:
Energy intensity is defined as the energy supplied to the economy per unit value of economic output.

Rationale:
Energy intensity is an indication of how much energy is used to produce one unit of economic output. It is a proxy of the efficiency with which an economy is able to use energy to produce economic output. A lower ratio indicates that less energy is used to produce one unit of output.

Concepts:
Total energy supply, as defined by the International Recommendations for Energy Statistics (IRES), is made up of production plus net imports minus international marine and aviation bunkers plus-stock changes. Gross Domestic Product (GDP) is the measure of economic output. For international comparison purposes, GDP is measured in constant terms at purchasing power parity.

Comments and limitations:
Energy intensity is only an imperfect proxy for energy efficiency. It can be affected by a number of factors, such as climate, structure of the economy, nature of economic activities etc. that are not necessarily linked to pure efficiency.

Computation Method:
Energy intensity is obtained by dividing total energy supply by GDP.

Disaggregation:
At present it is only feasible to calculate disaggregation for the following sectors – industry, residential, transport, agriculture, households – as reported in the SE4ALL Global Tracking Framework.

Data Sources:
Total energy supply is typically calculated in the making of national energy balances. Energy balances are available for larger economies from IEA and for all countries in UNSD.

**Collection process:**

Data is collected on an annual basis.

**Data providers:**

NSOs

**Data compilers:**

IEA and UNSD

**References:**

worldbank.org; iea.org
unstats.un.org
**Indicator 8.1.1: Annual growth rate of real GDP per capita (A2063 Indicator A1G4P1T1I1)**

**Goal 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all**

**Target 8.1: Sustain per capita economic growth in accordance with national circumstances and, in particular, at least 7 per cent gross domestic product growth per annum in the least developed countries**

**Definition:**

Annual growth rate of real GDP per capita is calculated as the percentage change in the real GDP per capita between two consecutive years. Real GDP per capita is calculated by dividing GDP at constant prices by the population of a country or area. The data for real GDP are measured in constant US dollars to facilitate the calculation of country growth rates and aggregation of the country data.

**Rationale:**

Real GDP per capita is a proxy for the average standard of living of residents in a country or area. A positive percentage change in annual real GDP per capita can be interpreted as an increase in the average standard of living of the residents in a country or area.

**Concepts:**

GDP measures the monetary value of final goods and services—that is, those that are bought by the final user—produced in an economic territory of a country in a given period of time (say a quarter or a year). It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. GDP can be measured using the expenditure approach as the sum of expenditure on final consumption plus gross capital formation plus exports less imports, the production approach as the value of output less intermediate consumption plus any taxes less subsidies on products not already included in the value of output, or the income approach as compensation of employees plus gross operating surplus plus gross mixed incomes plus taxes less subsidies on both production and imports.

**Comments and limitations:**

Although countries or areas calculate GDP using the common principles and recommendations in the United Nations System of National Accounts (SNA), there are still problems in international comparability of GDP estimates. These include:

a) Different versions of the SNA (for example, 1968, 1993 or 2008) countries or areas use in calculating their GDP estimates
b) Different degree of coverage of informal and non-observed economic activities in the GDP estimates.

Further, as a necessary condition to being a key economic performance indicator of sustainable development, one of the often-cited limitations of GDP is that it does not account for the social and environmental costs of production. It is designed as a measure of the level of overall well-being. For example, growth in real GDP per capita reveals nothing concerning energy and material interactions with the environment.

**Computation Method:**

The annual growth rate of real GDP per capita is calculated as follows:

a) Convert annual real GDP in domestic currency at 2005 prices for a country or area to US dollars at 2005 prices using the 2005 exchange rates.

b) Divide the result by the population of the country or area to obtain annual real GDP per capita in constant US dollars at 2005 prices.

c) Calculate the annual growth rate of real GDP per capita in year t+ 1 using the following formula:

\[
\frac{(G(t+1) - G(t))/G(t)}{\times 100\%}
\]

where \(G(t+1)\) is real GDP per capita in 2005 US dollars in year \(t+1\) and \(G(t)\) is real GDP per capita in 2005 US dollars in year \(t\)

**Disaggregation:**

It is possible to disaggregate the country data by region, if countries can make available the underlying regional data which are consistent with the national accounts data to perform the disaggregation.

**Data sources:**

The underlying annual GDP estimates in domestic currency are collected from countries or areas annually through national accounts questionnaire (NAQ), while the underlying population estimates are obtained from UNPD.

**Collection process:**

Each year, the national accounts section of the UNSD sends a pre-filled NAQ to countries or areas to collect the latest data on official annual national accounts in domestic currency. In order to lighten the reporting burden of countries to different international and regional organizations the UNSD receives data from OECD, the United Nations Economic Commission for Europe (ECE) and the Caribbean Community (CARICOM) on behalf of their constituents.
The official national accounts data in domestic currency are then validated to check for errors. The validation procedure involves ensuring that aggregates are equal to the sum of their components and that data series which are provided in multiple tables are represented consistently. After that, the current and constant price GDP series are converted into US dollars by applying the corresponding market exchange rates as reported by the International Monetary Fund (IMF). When these conversion rates are not available other IMF rates are used (official rates or principal rates).

For countries whose exchange rates are not reported by the IMF, the annual average of United Nations operational rates of exchange (UNOPs) is applied. The UNOPs are conversion rates that are applied in official transactions of the United Nations with these countries. These exchange rates are based on official, commercial and/or tourist rates of exchange.

In cases where a country experiences considerable distortion in the conversion rates, the UNSD uses price-adjusted rates of exchange (PARE) as an alternative to the exchange rates reported by the IMF or UNOPs. The conversion based on PARE corrects the distorting effects of uneven price changes that are not well reflected in the other conversion rates. Consequently, unrealistic levels in GDP and other national accounts aggregates expressed in US Dollars may have been adjusted for certain time periods to improve the economic analysis at national, regional and local levels.

The constant-price GDP series for each country is then divided by its population to obtain its real GDP per capita.

The estimated data are checked for consistency by ensuring that aggregates are equal to the sum of their components and that data series which are represented in multiple tables are represented consistently. The estimates derived for each year are compared to previous years to ensure that estimates are prepared consistently from year to year. Additionally, the growth rate from year to year is analysed to identify anomalies in the data.

Data providers:

NSOs, central banks or national agencies responsible for compiling official national accounts estimates for a country or area

Data compilers:

UNSD

References:

http://unstats.un.org/unsd
Indicator 8.2.1: Annual growth rate of real GDP per employed person

Goal 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

Target 8.2: Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors

Definition:

Annual growth rate of real GDP per employed person conveys the annual percentage change in real GDP per employed person.

Rationale:

The real GDP per employed person being a measure of labour productivity, this indicator represents a measure of labour productivity growth, thus providing information on the evolution, efficiency and quality of human capital in the production process. Economic growth in a country can be ascribed either to increased employment or to more effective work by those who are employed. This indicator casts light on the latter effect, being therefore a key measure of economic performance. Labour productivity (and growth) estimates can support the formulation of labour market policies and monitor their effects. They can also contribute to the understanding of how labour market performance affects living standards.

Concepts:

GDP is the main measure of national output, representing the total value of all final goods and services produced in a particular economy (that is, the dollar value of all goods and services produced within a country’s borders in a given year). According to the SNA, “GDP is the sum of gross value added of all resident producer units plus that part (possibly the total) of taxes on products, less subsidies on products, that is not included in the valuation of output ... GDP is also equal to the sum of the final uses of goods and services (all uses except intermediate consumption) measured at purchasers’ prices, less the value of imports of goods and services. GDP is also equal to the sum of primary incomes distributed by resident producer units.”

Real GDP refers to the GDP calculated at constant prices, that is, the volume level of GDP, excluding the effect of inflation and favouring comparisons of quantities beyond price changes. Constant price estimates of GDP are calculated by expressing values in terms of a base period. In theory, the price and quantity components of a value are identified and the price in the base period is substituted for that in the current period.
Employed persons are persons of working age (usually defined as persons aged 15 and above) who, during a short reference period such as a day or a week, (i) did some work (even for just one hour) for pay, profit or family gain, in cash or in kind; or (ii) were attached to a job or had an enterprise from which they were ‘temporarily’ absent during this period (for such reasons as illness, maternity, parental leave, holiday, training, industrial dispute).

**Comments and limitations:**

Output measures are obtained from national accounts and represent, as much as possible, GDP at market prices for the aggregate economy. However, despite common principles that are mostly based on SNA, there are still significant problems in international consistency of national accounts estimates, based on factors such as differences in the treatment of output in services sectors, differences in methods used to correct output measures for price changes (in particular, the use of different weighting systems to obtain deflators) and differences in the degree of coverage of informal economic activities. Moreover, data on employment used in the denominator of this indicator refer, as much as possible, to the average number of persons with one or more paid jobs during the year. That is, the reliability of the employment data is also dependent on the degree of coverage of informal activities by the statistical source used.

**Computation Method:**

Real GDP per employed person = GDP at constant prices / Total number of employed persons where the numerator and denominator refer to the same reference period, for example, the same calendar year.

If we call the real GDP per employed person "LabProd", then the annual growth rate of real GDP per employed person is calculated as follows:

\[
\text{Annual growth rate of real GDP per employed person} = \frac{(\text{LabProd in year } n - \text{LabProd in year } n-1)}{\text{LabProd in year } n-1} \times 100
\]

**Disaggregation:**

No disaggregation is required for this indicator.

**Data sources:**

Output measures used in the nominator of this indicator (Gross Domestic Product) are best obtained from the production side of national accounts and represent, as much as possible, GDP at market prices for the aggregate economy (adjusted for inflation, in constant prices).

Employment data used in the denominator are preferably derived from labour force or other household surveys with an employment module. In the absence of a household survey, establishment surveys, administrative records or official estimates based on reliable sources can be used as well as population censuses. It is however important to note that employment data from establishment surveys will capture the number of jobs and not the number of persons employed as preferred for the denominator. Also, establishment surveys cover, in many cases, the formal sector and employers and employees only, not accounting for the whole economy.
When calculating this indicator, it is important to ensure that the coverage of the employment data is consistent with that of the national accounts.

**Data providers:**

Mainly NSOs, in some cases Labour Ministries or other related agencies.

**Data compilers:**

ILO

**References:**

www.ilo.org/ilostat
Indicator 8.4.1: Material Footprint, material footprint per capita, and material footprint per GDP

Goal 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

Target 8.4: Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-Year Framework of Programmes on Sustainable Consumption and Production, with developed countries taking the lead

Definition:

Material Footprint (MF) is the attribution of global material extraction to domestic final demand of a country. The total material footprint is the sum of the material footprint for biomass, fossil fuels, metal ores and non-metal ores.

Material Footprint per capita is MF divided by the total mid-year population of a country while MF per GDP is MF divided by the GDP.

Rationale:

Material footprint of consumption reports the amount of primary materials required to serve final demand of a country and can be interpreted as an indicator for the material standard of living/level of capitalization of an economy. Per-capita MF describes the average material use for final demand.

Concepts:

Domestic Material Consumption (DMC) and MF need to be looked at in combination as they cover the two aspects of the economy, production and consumption. The DMC reports the actual amount of material in an economy, MF the virtual amount required across the whole supply chain to service final demand. A country can, for instance have a very high DMC because it has a large primary production sector for export or a very low DMC because it has outsourced most of the material intensive industrial process to other countries. The material footprint corrects for both phenomena.

Comments and limitations:

The global material flows database is based on country material flow accounts from the European Union and Japan and estimated data for the rest of the world.

Computation Method:

It is calculated as raw material equivalent of imports (RMEIM) plus domestic extraction (DE) minus raw material equivalents of exports (RMEEX). For the attribution of the primary material needs of final demand a global, multi-regional input-output (MRIO) framework is employed. The attribution
method based on I-O analytical tools is described in detail in Wiedmann et al. 2015. It is based on
the EORA MRIO framework developed by the University of Sydney, Australia (Lenzen et al. 2013)
which is an internationally well-established and the most detailed and reliable MRIO framework
available to date.

Disaggregation:

The MF indicator can be disaggregated to four main material categories, a varying number of
economic sectors whose expenditure require materials and to three domestic final demand sectors
(household consumption, government consumption and capital investment) and foreign final
demand (i.e. exports).

Data sources:

The global material flows database is based on country material flow accounts from the European
Union and Japan and estimated data for the rest of the world. Estimated data is produced on the
bases of data available from different national or international datasets in the domain of agriculture,
forestry, fisheries, mining and energy statistics. International statistical sources for DMC and MF
include the IEA, United States Geological Survey (USGS), FAO and COMTRADE databases.

Collection process:

The IRP Global Material Flows and Resource Productivity working group compiles the data from
countries and from other sources.

Data providers:

NSOs

Data compilers:

UNEP, OECD and EUROSTAT

References:
Indicator 8.4.2: Domestic material consumption (DMC) and DMC per capita, per GDP

Goal 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

Target 8.4: Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-Year Framework of Programmes on Sustainable Consumption and Production, with developed countries taking the lead

Definition:

DMC is a standard material flow accounting (MFA) indicator and reports the apparent consumption of materials in a national economy. DMC per capita is DMC divided by the total mid-year population of a country while DMC per GDP is DMC divided by the GDP.

Rationale:

DMC reports the amount of materials that are used in a national economy. DMC is a territorial (production side) indicator. DMC also presents the amount of material that needs to be handled within an economy, which is either added to material stocks of buildings and transport infrastructure or used to fuel the economy as material throughput. DMC describes the physical dimension of economic processes and interactions. It can also be interpreted as long-term waste equivalent. Per-capita DMC describes the average level of material use in an economy – an environmental pressure indicator – and is also referred to as metabolic profile.

Concepts:

DMC and MF need to be looked at in combination as they cover the two aspects of the economy, production and consumption. The DMC reports the actual amount of material in an economy, MF the virtual amount required across the whole supply chain to service final demand. A country can, for instance have a very high DMC because it has a large primary production sector for export or a very low DMC because it has outsourced most of the material intensive industrial process to other countries. The material footprint corrects for both phenomena.

Comments and limitations:

DMC cannot be disaggregated to economic sectors which limits its potential to become a satellite account to SNA.

Computation Method:

It is calculated as direct imports (IM) of material plus domestic extraction (DE) of materials minus direct exports (EX) of materials measured in metric tonnes. DMC measure the amount of
materials that are used in economic processes. It does not include materials that are mobilized the process of domestic extraction but do not enter the economic process. DMC is based on official economic statistics and it requires some modelling to adapt the source data to the methodological requirements of the MFA. The accounting standard and accounting methods are set out in the EUROSTAT guidebooks for MFA accounts in the latest edition of 2013. MFA accounting is also part of the central framework of SEEA.

**Disaggregation:**

The DMC indicator can be disaggregated into imports, domestic extraction and exports by a large number of material flow categories. At the highest level of aggregation biomass, fossil fuels, metal ores and non-metallic minerals are distinguished.

**Data sources:**

The global material flows database is based on country material flow accounts from the European Union and Japan and estimated data for the rest of the world. Estimated data is produced on the bases of data available from different national or international datasets in the domain of agriculture, forestry, fisheries, mining and energy statistics. International statistical sources for DMC and MF include the IEA, USGS, FAO and COMTRADE databases.

**Collection process:**

The IRP Global Material Flows and Resource Productivity working group compiles the data from countries and from other sources.

**Data providers:**

NSOs

**Data compilers:**

UNEP, OECD and EUROSTAT

**References:**
8.5.2: Unemployment rate, by sex, age and persons with disabilities (A2063 Indicator A6G18P1G1I1)

Goal 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

Target 8.5: By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value Indicator

Definition:

The unemployment rate conveys the percentage of persons in the labour force who are unemployed.

Rationale:

The unemployment rate is a useful measure of the underutilization of the labour supply. It reflects the inability of an economy to generate employment for those persons who want to work but are not doing so, even though they are available for employment and actively seeking work. It is thus seen as an indicator of the efficiency and effectiveness of an economy to absorb its labour force and of the performance of the labour market. Short-term time series of the unemployment rate can be used to signal changes in the business cycle; upward movements in the indicator often coincide with recessionary periods or in some cases with the beginning of an expansionary period as persons previously not in the labour market begin to test conditions through an active job search.

Concepts:

Persons in unemployment are defined as all those of working age (usually persons aged 15 and above) who were not in employment, carried out activities to seek employment during a specified recent period and were currently available to take up employment given a job opportunity, where:
(a) “not in employment” is assessed with respect to the short reference period for the measurement of employment;
(b) to “seek employment” refers to any activity when carried out, during a specified recent period comprising the last four weeks or one month, for the purpose of finding a job or setting up a business or agricultural undertaking;
(c) the point when the enterprise starts to exist should be used to distinguish between search activities aimed at setting up a business and the work activity itself, as evidenced by the enterprise’s registration to operate or by when financial resources become available, the necessary infrastructure or materials are in place or the first client or order is received, depending on the context;
(d) “currently available” serves as a test of readiness to start a job in the present, assessed with respect to a short reference period comprising that used to measure employment (depending on national circumstances, the reference period may be extended to include a short subsequent period not exceeding two weeks in total, so as to ensure adequate coverage of unemployment situations among different population groups). Persons in employment are defined as all those of working age (usually persons aged 15 and above) who, during a short reference period, were engaged in any activity to produce goods or provide services for pay or profit. They comprise: (a) employed persons “at work”, i.e. who worked in a job for at least
one hour; (b) employed persons "not at work" due to temporary absence from a job, or to working-time arrangements (such as shift work, flexitime and compensatory leave for overtime) The labour force corresponds to the sum of persons in employment and in unemployment.

**Comments and limitations:**

Even though in most developed countries the unemployment rate continues to prove its usefulness as an important indicator of labour market performance, and specifically, as a key measure of labour underutilization, in many developing countries, however, the significance and meaning of the unemployment rate could be questioned. In the absence of unemployment insurance systems or social safety nets, persons of working age must avoid unemployment, resorting to engaging in some form of economic activity, however insignificant or inadequate. Thus, in this context, other measures should supplement the unemployment rate to comprehensively assess labour underutilization.

**Computation Method:**

Unemployment rate = Unemployed persons / Persons in the labour force *100

**Disaggregation:**

This indicator should, ideally, be disaggregated by sex, age group and disability status.

**Data Sources:**

The preferred official national data source for this indicator is a household-based labour force survey. The population census and/or other household surveys with an appropriate employment module may also be used to obtain the required data. Unemployment registers can serve as instruments to collect data on unemployment levels, and used to supplement the information obtained in household surveys.

**Data providers:**

Mainly NSOs, and in some cases Labour Ministries or other related agencies.

**Data compilers:**

ILO

**References:**

www.ilo.org/ilostat
**Indicator 8.6.1: Proportion of youth (aged 15-24 years) not in education, employment or training**

**Goal 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all**

**Target 8.6: By 2020, substantially reduce the proportion of youth not in employment, education or training**

**Definition:**

This proportion of youth (aged 15-24 years) not in education, employment or training, also known as “the NEET rate”, conveys the number of young persons not in education, employment or training as a percentage of the total youth population.

**Rationale:**

The share of youth not in employment, education or training (NEET rate) provides a measure of youth who are outside the educational system, not in training and not in employment, and thus serves as a broader measure of potential youth labour market entrants than youth unemployment. It includes discouraged worker youth as well as those who are outside the labour force due to disability and engagement in household chores, among other reasons. NEET is also a better measure of the current universe of potential youth labour market entrants as compared with the youth inactivity rate, as the latter includes those youths who are outside the labour force and are in education, and thus cannot be considered currently available for work.

**Concepts:**

For the purposes of this indicator, youth is defined as all persons between the ages of 15 and 24 (inclusive). According to ISCED, education is defined as organized and sustained communication designed to bring about learning. Formal education is defined in ISCED as education that is institutionalized, intentional, and planned through public organizations and recognized private bodies and, in their totality, make up the formal education system of a country. Non-formal education, like formal education is defined in ISCED as education that is institutionalized, intentional and planned by an education provider but is considered an addition, alternative and/or a complement to formal education. It may be short in duration and/or low in intensity and it is typically provided in the form of short courses, workshops or seminars. Informal learning is defined in ISCED as forms of learning that are intentional or deliberate, but not institutionalized. It is thus less organized and less structured than either formal or non-formal education. Informal learning may include learning activities that occur in the family, in the work place, in the local community, and in daily life, on a self-directed, family directed or socially-directed basis. For the purposes of this indicator, persons will be considered in education if they are in formal or non-formal education, as described above, but excluding informal learning. Persons in employment are defined as all those who, during a short reference period, were engaged in any activity to produce goods or provide services for pay or profit. They comprise: (a) employed persons “at work”, i.e. who worked in a job for at least one hour; (b) employed persons “not at work” due to temporary absence from a job, or to working-
time arrangements (such as shift work, flexitime and compensatory leave for overtime). For the purposes of this indicator, persons are considered to be in training if they are in a non-academic learning activity through which they acquire specific skills intended for vocational or technical jobs. Vocational training prepares trainees for jobs that are based on manual or practical activities, and for skilled operative jobs, both blue and white collar related to a specific trade, occupation or vocation. Technical training on the other hand imparts learning that can be applied in intermediate-level jobs, in particular those of technicians and middle managers. The coverage of vocational and technical training includes only programmes that are solely school-based vocational and technical training. Employer-based training is, by definition, excluded from the scope of this indicator.

Comments and limitations:

The calculation of this indicator requires to have reliable information on both the labour market status and the participation in education or training of young persons. The quality of such information is heavily dependent on the questionnaire design, the sample size and design and the accuracy of respondents’ answers. In terms of the analysis of the indicator, in order to avoid misinterpreting it, it is important to bear in mind that it is composed of two different sub-groups (unemployed youth not in education or training and youth outside the labour force not in education or training). The prevalence and composition of each sub-group would have policy implications, and thus, should also be considered when analyzing the NEET rate.

Computation Method:

The indicator is calculated as follows:

\[
\text{NEET rate} = \frac{(\text{Youth} - \text{Youth in employment} - \text{Youth not in employment but in education or training})}{\text{Youth} \times 100}
\]

It is important to note here that youth both in employment and education or training simultaneously should not be double counted when subtracted from the total number of youth.

The formula can also be expressed as:

\[
\text{NEET rate} = \frac{((\text{Unemployed youth} + \text{Youth outside the labour force}) - (\text{Unemployed youth in education or training} + \text{Youth outside the labour force in education or training}))}{\text{Youth} \times 100}
\]

Disaggregation:

No disaggregation required for this indicator, although having it disaggregated by sex could be highly enlightening.

Data Sources:

The preferred official national data source for this indicator is a household-based labour force survey. The population census and/or other household surveys with an appropriate employment module can also be used to obtain the required data.
Data providers:

NSOs

Data compilers:

ILO

References:

www.ilo.org/ilostat
**Indicator 8.7.1: Proportion and number of children aged 5-17 years engaged in child labour, by sex and age (A2063 Indicator A6G18P1T5I1)**

**Goal 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all**

**Target 8.7: Take immediate and effective measures to eradicate forced labour, end modern slavery and human trafficking and secure the prohibition and elimination of the worst forms of child labour, including recruitment and use of child soldiers, and by 2025 end child labour in all its forms**

**Definition:**

Proportion (and number) of children aged 5-17 years engaged in child labour is the number of children aged 5-17 years who are reported to have been engaged in child labour in the past week divided by the total number of children aged 5-17 in the population

**Rationale:**

Children around the world are routinely engaged in paid and unpaid forms of work that are not harmful to them. However, children are considered to be involved in child labour when they are either too young to work or are involved in activities harmful to their health and development. Children's involvement in hazardous work can compromise their physical, mental, social and educational development.

The issue of child labour is guided by three main international conventions: ILO Convention No. 138 concerning minimum age for admission to employment and Recommendation No. 146 (1973); ILO Convention No. 182 concerning the prohibition and immediate action for the elimination of the worst forms of child labour and Recommendation No. 190 (1999); and the United Nations Convention on the Rights of the Child (Article 32), including its Optional Protocol on the sale of children, child prostitution and child pornography. These conventions frame the concept of child labour and form the basis for child labour legislation enacted by countries that are signatories.

**Concepts:**

In December 2008, the International Conference of Labour Statisticians (ICLS) adopted the Resolution concerning the measurement of working time. The resolution confirmed that any type of work (including involvement in household chores) undertaken by children should be considered in the measurement of child labour, in addition to economic activities. The target population for the resolution is children aged 5 to 17 years who, during a specified time period, were engaged in one or more of the following categories of activities: worst forms of child labour, employment below the minimum age, and unpaid household services.
UNICEF’s standard indicator definition for child labour includes the following:

- **Age 5 to 11 years**: At least 1 hour of economic work or 28 hours of unpaid household services per week.
- **Age 12 to 14 years**: At least 14 hours of economic work or 28 hours of unpaid household services per week.
- **Age 15 to 17 years**: At least 43 hours of economic or unpaid household services per week.

**Comments and limitations:**

There are existing tools and mechanisms for data collection that countries have implemented to monitor the situation with regards to this indicator. However, there is no internationally agreed standard for the measurement of child labour as yet.

**Computation Method:**

Number of children aged 5-17 years who are reported to have been engaged in child labour in the past week divided by the total number of children aged 5-17 in the population multiplied by 100.

**Disaggregation:**

Sex, age, income, place of residence, geographic location

**Data sources:**

Household surveys such as MICS, DHS and Statistical Information and Monitoring Programme on Child Labour (SIMPOC) have been collecting data on this indicator in low- and middle-income countries since around 2000. Many countries also produce national labour estimates and reports that often include data on child labour and/or employment among children.

**Collection process:**

UNICEF undertakes an annual process to update its global databases, called Country Reporting on Indicators for the Goals (CRING). This exercise is done in close collaboration with UNICEF country offices with the purpose of ensuring that UNICEF global databases contain updated and internationally comparable data. UNICEF Country Offices are invited to submit, through an online system, any updated data for a number of key indicators on the well-being of women and children. Updates sent by the country offices are then reviewed by sector specialists at UNICEF headquarters to check for consistency and overall data quality of the submitted estimates. This review is based on a set of objective criteria to ensure that only the most recent and reliable information is included in the databases. Once reviewed, feedback is made available on whether or not specific data points are accepted, and if not, the reasons why. New data points that are accepted are then entered into UNICEF’s global databases and published in the State of the World’s Children statistical tables, as well as in all other data-driven publications/material. The updated databases are also posted online at data.unicef.org.
UNICEF also searches throughout the year for additional sources of data that are vetted by the UNICEF country office before they are included in the global databases.

**Data providers:**

NSOs (for the most part) and line ministries/other government agencies that have conducted labour force or employment surveys for which data on child labour were collected.

**Data compilers:**

UNICEF, ILO

**References:**

data.unicef.org

www.ilo.org/ilostat
Indicator 8.8.1: Frequency rates of fatal and non-fatal occupational injuries, by sex and migrant status

Goal 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

Target 8.8: Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment

Definition:

The frequency rates of fatal and non-fatal occupational injuries provide information on the number of cases of fatal and non-fatal occupational injury per hours worked by the concerned population during the reference period. It is a measure of the risk of having a fatal or a non-fatal occupational injury based on the duration of exposure to adverse work-related factors.

Rationale:

This indicator provides valuable information that could be used to formulate policies and programmes for the prevention of occupational injuries, diseases and deaths. It could also be used to monitor the implementation of these programmes and to signal particular areas of increasing risk such as a particular occupation, industry or location. Although the principal objective of this indicator is to provide information for prevention purposes, it may be used for a number of other purposes, such as to identify the occupations and economic activities with the highest risk of occupational injuries; to detect changes in the pattern and occurrence of occupational injuries, so as to monitor improvements in safety and reveal any new areas of risk; to inform employers, employers’ organizations, workers and workers’ organizations of the risks associated with their work and workplaces, so that they can take an active part in their own safety; to evaluate the effectiveness of preventive measures; to estimate the consequences of occupational injuries, particularly in terms of days lost or costs; and to provide a basis for policy-making aimed at encouraging employers, employers’ organizations, workers and workers’ organizations to introduce accident prevention measures.

Concepts:

Definitions of the main concepts presented below are derived from the Resolution concerning statistics of occupational injuries.

Occupational accident: an unexpected and unplanned occurrence, including acts of violence, arising out of or in connection with work which results in one or more workers incurring a personal injury, disease or death. Occupational accidents are to be considered travel, transport or road traffic accidents in which workers are injured and which arise out of or in the course of work; that is, while engaged in an economic activity, or at work, or carrying out the business of the employer.
Occupational injury: any personal injury, disease or death resulting from an occupational accident. An occupational injury is different from an occupational disease, which comes as a result of an exposure over a period of time to risk factors linked to the work activity. Diseases are included only in cases where the disease arose as a direct result of an accident.

Workers in the reference group: workers in the reference group refer to the average number of workers in the particular group under consideration and who are covered by the source of the statistics on occupational injuries (for example, those of a specific sex or in a specific economic activity, occupation, region, age group, or any combination of these, or those covered by a particular insurance scheme, accident notification systems, or household or establishment survey).

Fatal occupational injury: an occupational injury leading to death within one year of the day of the occupational accident.

Case of fatal occupational injury: the case of a worker fatally injured as a result of one occupational accident, and where death occurred within one year of the day of the accident.

Comments and limitations:

There may be problems of under reporting of occupational injuries, and proper systems should be put in place to ensure the best reporting and data quality. Under reporting is thought to be present in countries at all levels of development, but may be particularly problematic in some developing countries. Data users should be aware of this issue when analysing the data.

Double-counting of cases of occupational injury may also happen in cases where data from several registries (records kept by different agencies, for example) are consolidated to have more comprehensive statistics.

Because data quality issues may be present, it may be more relevant to analyse indicator trends rather than levels. When measured over a period of time, the data can reveal progress or deterioration in occupational safety and health, and thus point to the effectiveness of prevention measures. This indicator is volatile and strong annual fluctuations may occur due to unexpected but significant accidents or national calamities. The underlying trend should therefore be analysed.

Computation Method:

The frequency rates of fatal and non-fatal occupational injuries will be calculated separately, since statistics on fatal injuries tend to come from a different source than those on non-fatal injuries, which would make their sum into total occupational accidents inaccurate. The fatal occupational injury frequency rate is calculated as the number of new cases of fatal injury during the reference year divided by the total number of hours worked by workers in the reference group during the reference year, multiplied by 1,000,000.

Similarly, the non-fatal occupational injury frequency rate is calculated as the number of new cases of non-fatal injury during the reference year divided by the total number of hours worked by workers in the reference group during the reference year, multiplied by 1,000,000.
Ideally, the denominator should be the number of hours actually worked by workers in the reference group. When this is not possible, the denominator can be calculated on the basis of normal hours of work taking into account entitlements to periods of paid absence from work, such as paid vacations, paid sick leave and public holidays. If the data needed to calculate frequency rates is not available, incidence rates may be calculated instead.

The fatal occupational injury incidence rate is calculated as the number of new cases of fatal injury during the reference year divided by the average number of workers in the reference group during the reference year, multiplied by 100 000.

Similarly, the non-fatal occupational injury incidence rate is calculated as the number of new cases of non-fatal injury during the reference year divided by the average number of workers in the reference group during the reference year, multiplied by 100 000.

In calculating the average number of workers, the number of part-time workers should be converted to full-time equivalents. For the calculation of rates, the numerator and the denominator should have the same coverage. For example, if self-employed persons are not covered by the source of statistics on fatal occupational injuries, they should also be taken out of the denominator.

**Disaggregation:**

This indicator should be disaggregated by both sex and migrant status. Wherever possible, it would also be useful to have information disaggregated by economic activity and occupation.

**Data Sources:**

The recommended data sources are different types of administrative records, such as records of national systems for the notification of occupational injuries (labour inspection records and annual reports; insurance and compensation records, death registers), supplemented by household surveys (especially in order to cover informal sector enterprises and the self-employed) and/or establishment surveys.

The metadata should clearly specify (i) whether the statistics relate to cases of occupational injury which have been reported (to an accident notification system or to an accident compensation scheme), compensated (by an accident insurance scheme) or identified in some other way (for example through a survey of households or establishments) and (ii) whether cases of occupational disease and cases of injury due to commuting accidents are excluded from the statistics, as recommended.

**Data providers:**

Labour Ministries, Labour Inspection, National Insurances, and/or NSOs.

**Data compilers:**

ILO

**References:**

www.ilo.org/ilostat
Indicator 8.10.2: Proportion of adults (15 years and older) with an account at a bank or other financial institution or with a mobile-money-service provider

Goal 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

Target 8.10: Strengthen the capacity of domestic financial institutions to encourage and expand access to banking, insurance and financial services for all

Definition:

The percentage of adults (ages 15+) who report having an account (by themselves or together with someone else) at a bank or another type of financial institution or personally using a mobile money service in the past 12 months.

Rationale:

Access to formal financial services such as savings, insurance, payments, credit and remittances is essential to the ability of people—regardless of income level, gender, age, education or where they live—to manage their lives, build their futures, and grow their businesses. Having access to an account is an important starting point for people to access a range of financial services.

Concepts:

Account at a financial institution includes respondents who report having an account at a bank or at another type of financial institution, such as a credit union, microfinance institution, cooperative, or the post office (if applicable), or having a debit card in their own name. In addition, it includes respondents who report receiving wages, government transfers, or payments for agricultural products into an account at a financial institution in the past 12 months; paying utility bills or school fees from an account at a financial institution in the past 12 months; or receiving wages or government transfers into a card in the past 12 months. Mobile money account includes respondents who report personally using GSMA Association (GSMA) Mobile Money for the Unbanked (MMU) services in the past 12 months to pay bills or to send or receive money. In addition, it includes respondents who report receiving wages, government transfers, or payments for agricultural products through a mobile phone in the past 12 months.

Comments and limitations:

World Bank’s Global Findex database is based on individual level surveys worldwide, conducted every three years. The first round of the survey was done in 2011, and the second in 2014. The third round will be done in 2017. The database covers about 140 countries.

Computation Method:

The indicator is based on data collected through individual level surveys in each country with representative samples. Appropriate sampling weights are used in calculating country-level aggregates.
Disaggregation:

Disaggregation by Income; Age; Education level; Urban/rural; Gender

Data Sources:

The indicators in the 2014 Global Financial Inclusion (Global Findex) database are drawn from survey data covering almost 150,000 people in more than 140 economies—representing more than 97 percent of the world’s population. The survey was carried out over the 2014 calendar year by Gallup, Inc. as part of its Gallup World Poll, which since 2005 has continually conducted surveys of approximately 1,000 people in each of more than 160 economies and in over 140 languages, using randomly selected, nationally representative samples. The target population is the entire civilian, noninstitutionalized population age 15 and above.

Collection process:

Data are comparable across countries by design.

Data providers:

NA

Data compilers:

World Bank

References:

www.worldbank.org
Indicator 9.1.2: Passenger and freight volumes, of air transport

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

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

Definition:

Passenger and freight volumes is the sum of the passenger and freight volumes reported for the air carriers in terms of number of people and metric tonnes of cargo respectively.

Rationale:

Develop quality, reliable, sustainable and resilient infrastructure, including regional and trans-border infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all. Trans-border infrastructure development is best captured by passenger and freight volumes moved by member States and Regions. A growth in passenger and freight volumes shows a robust infrastructure development happening in states and regions along with the resultant socio-economic benefit. Air Transport is particularly important not only for the economic and job benefits but also because it is one of the only mode of transport that can be relied on during emergencies and disease outbreaks to reach food, medicines, medical personnel, vaccines and other supplies speedily to the affected persons in the affected areas.

Concepts:

The International Civil Aviation Organization (ICAO) through its Statistics Division have established standard methodologies and definitions to collect and report traffic (passenger and freight volume) data related to air transport. These standards and methodologies have been adopted by the 191 member States of ICAO and also by the industry stakeholders i.e air carriers and airports. The data of ICAO is used by states and also the World Bank for its development indicators. ICAO uses Air Transport Reporting Forms A, AS, B and C to arrive at the passenger and freight volumes for air transport.

Precise definition of all different concepts and metadata related to Air Transport Reporting Forms A, AS, B and C to arrive at the passenger and freight volumes for air transport, approved by the ICAO Statistics Division and Member States can be found at the ICAO website.

Comments and limitations:

Coverage is for all ICAO 191 Member States

Computation Method:

The indicator is calculated through a sum of the passenger and freight volumes reported for the air carriers through ICAO Air Transport Reporting Forms and grouped by member States of ICAO.
**Disaggregation:**

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

**Data Sources:**

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

**Data providers:**

Data provided to ICAO by ICAO member States from its Ministry of Transport, Infrastructure or Aviation

**Data compilers:**

ICAO

**References:**

www.icao.int
**Indicator 9.2.1: Manufacturing value added as a proportion of GDP and per capita (A2063 Indicator A1G4P2T1I1)**

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

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

**Definition:**
Manufacturing value added (MVA) as a proportion of GDP and per capita is the total value of goods and services net of intermediate consumption. It is generally compiled as the sum of the value added of all manufacturing activity units in operation in the reference period. For the purpose on comparability over time and across countries MVA is estimated in terms of constant prices in USD. The current series are given at constant prices of 2010.

**Rationale:**
MVA is a well-recognized and widely used indicator by researchers and policy makers to assess the level of industrialization of a country. MVA measures the contribution of manufacturing to economy. The indicator is exceptionally good for international comparison. Share of MVA in GDP establishes the role of manufacturing in the economy. In other words, this indicator specifies the contribution of the manufacturing sector to total production. MVA per capita is the basic indicator of a country’s level of industrialization adjusted for the size of the economy. And finally, the MVA growth provides insight into the general direction and magnitude of growth for the manufacturing sector. In practice, it is a measure of the rate of change that an economy’s MVA goes through from one year to another at constant prices.

**Concepts:**
MVA may differ from the industry value added which measures value added of a particular industrial sector at two-digit or at more detail level as per ISIC or other classification compatible to it such as nomenclature statistique des activités économiques dans la Communauté européenne (NACE) or North American Industry Classification System (NAICS). Industry value added data is obtained from the annual industrial surveys, while MVA is obtained from the national accounts data.

**Comments and limitations:**
This is a widely used and a matured indicator.

**Computation Method:**

\[
\text{MVA proportion to GDP} = \frac{\text{MVA}}{\text{GDP}} \times 100.
\]

\[
\text{MVA per capita} = \frac{\text{MVA}}{\text{population}}
\]
**Disaggregation:**

Data can be presented for country groups and the world regions. Industry value added can also be presented by sector.

**Data sources:**

Unite Nations Industrial Development Organization (UNIDO) maintains MVA database which is updated every year. Figures for updates are obtained from national account estimates produced by NSOs and MVA data in USD are also taken from UNSD. National currency data are converted to USD by using IMF exchange rates.

**Collection process:**

The country data are obtained from their official publication or official web-sites.

**Data providers:**

NSOs

**Data compilers:**

UNIDO

**References:**

www.unido.org/statistics
Indicator 9.2.2: Manufacturing employment as a proportion of total employment

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

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

Definition:
Employment is defined as a work performed for pay or profit. The value is obtained by summing up the number of employed in all manufacturing activities. The manufacturing employment indicator is presented in absolute terms as well as relative to total employment.

Rationale:
This indicator represents the contribution of manufacturing in job creation. It is universally important indicator. For industrialized countries it represents sustained growth, for developing countries it shows the ability of manufacturing to absorb surplus labour from traditional sectors. Compared to the indicator 9.2.1 it measures the labour productivity – another key indicator for measuring technological progress.

Concepts:
Definition recommended in International Recommendations for Industrial Statistics (IRIS) is strictly followed.

Comments and limitations:
Industrial surveys in some country uses cut-off point implying that small manufacturing units that are not in register are not included in the survey. It underestimates the employment data.

Computation Method:
Number of persons employed in manufacturing activities / Total number of employment in all activities × 100

Disaggregation:
Data can be presented for country groups and the world regions. Gender disaggregated data are available.

Data sources:
Employment in manufacturing is reported in annual industrial surveys. Total employment data is obtained from the census and employment surveys including household surveys.

**Collection process:**

Data are collected through General Industrial Statistics Questionnaire which is distributed to NSOs every year. In case of OECD member countries data are obtained from OECD.

**Data providers:**

NSOs

**Data compilers:**

UNIDO

**References:**

www.unido.org/statistics
Indicator 9.4.1: CO2 emission per unit of value added

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

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

Definition:
Carbon dioxide (CO2) emission per unit of value added is a ratio indicator between carbon dioxide emissions and value added.

The indicator CO2 emission per unit of value added is currently being measured by CO2 emission per GDP PPP.

Rationale:
CO2 emission per unit of value added is a universal indicator for measuring the impact of industrial production on environment. It captures the intensity of energy use, energy efficiency of production technology and most importantly use of fossil fuels.

Concepts:
CO2 emission accounts for around 80% of all Green House Gas (GHG) emission from the manufacturing processes. This is an important measure not only for emission but also for use and type of energy consumed. CO2 emission refers to mainly fossil fuel based energy. This measure reflects the progress made by countries from fossil-fuel based to renewable energy sources.

Comments and limitations:
Collection of energy and emission data is not systematized in many countries. National data source can be statistical office, Energy Departments and Environment agencies. Energy consumption data and value added data are coming from different data sources which may encounter the compatibility problem.

Computation Method:
CO2 emissions are estimated from data on energy consumption. It is computed as: amount of CO2 emission (in physical measurement unit such as tonne) divided by value added (in US$). This indicator can also be presented as CO2 emission per unit of output.
Disaggregation:

Data can be presented by industry; by country group.

Data sources:

Energy consumption and value added data are available for more than 150 countries from UNIDO database and UNSD energy database as well as IEA database. Emission data are directly reported by NSOs in many cases.

Collection process:

UNIDO data collection is carried out regularly through general industrial statistics questionnaire

Data providers:

NSOs and national energy data collecting agencies

Data compilers:

UNIDO compiles the data using its source for value added data and IEA for energy consumption and CO2 data.

References:

www.unido.org/statistics
Indicator 9.5.1: Research and development expenditure as a proportion of GDP (A2063 Indicator A1G4P3T6I1)

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

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

Definition:

Research and development (R&D) expenditure as a proportion of GDP is the amount of R&D expenditure divided by the total output of the economy.

Rationale:

The indicator is a direct measure of R&D spending referred to in the target.

Concepts:

The OECD Frascati Manual (OECD, 2015) provides the relevant definitions for research and experimental development, gross domestic expenditure on R&D and researchers. Although an OECD manual, the application is global. During the 6th revision of the Frascati Manual, developing country issues were mainstreamed in the core of the Manual. The 7th edition was released in October 2015.

The following definitions, taken from the 2015 edition of the Frascati Manual are relevant for computing the indicator.

Research and experimental development (R&D) comprise creative and systematic work undertaken in order to increase the stock of knowledge – including knowledge of humankind, culture and society – and to devise new applications of available knowledge.

Expenditures on intramural R&D represent the amount of money spent on R&D that is performed within a reporting unit.

Comments and limitations:

R&D data need to be collected through surveys, which are expensive, and are not done on a regular basis in many developing countries. Furthermore, (developing) countries do not always cover all sectors of performance. In particular, the business sector is not always covered.
Computation Method:

R&D expenditure / GDP *100

Disaggregation:

R&D expenditure can be broken down by sector of performance, source of funds, field of science, type of research and type of cost.

Data sources:

Data are collected through national R&D surveys, either by NSOs or a line ministry (such as the Ministry for Science and Technology).

Collection process:

UIS sends out a questionnaire every year to collect R&D data from all countries (around 125 countries), which are not covered by the data collections of the other partner organizations such as OECD, Eurostat and the Network on Science and Technology Indicators – Ibero-American and Inter-American (RICYT). In agreement with these three organisations, their data are directly obtained from the respective databases. There is also collaboration in Africa with the African STI Indicators Initiative (ASTII) of AU/NEPAD, which may lead to a joint data collection in the future.

Data providers:

Data are collected through national R&D surveys, either by NSOs or a line ministry such as the Ministry for Science and Technology.

Data compilers:

UIS, OECD, Eurostat, RICYT, and ASTII of AU/NEPAD

References:

www.uis.unesco.org

Indicator 9.b.1: Proportion of medium and high-tech industry value added in total value added

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

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

Proportion of medium and high-tech industry value added in total value added shows the level of technological intensity of manufacturing in an economy. It is based on classification of industry into high, high-medium, low-medium and low technology sectors. Designation of an industry to high or medium level of technology is determined by R&D intake in manufacturing value added. A higher the share of R&D expenditure means a higher level of technological intensity.

**Rationale:**

This indicator captures the innovation and technology endowment in manufacturing. It reveals the level of production technology in manufacturing of an economy, which makes it highly policy relevant indicator.

**Concepts:**

Increase in the share of medium high and high technology (MHT) sectors is regarded as the structural change to technologically intensive industries. Labour productivity in high-technological sectors are relatively high, thus the products are more competitive in world market. Increasing share of MHT sectors reflect the impact of innovation.

**Comments and limitations:**

Value added data should be reported at least at 3-digit ISIC for compiling MHT values

**Computation Method:**

The indicator is calculated as the share of the sum of the value added of MHT sectors to the total value added of manufacturing.

**Disaggregation:**

This indicator synthesizes the contribution of several sectors. Data can be presented at regional level

**Data sources:**

Data are obtained from NSOs collected by them through annual industrial surveys

**Collection process:**

Data are collected using General Industrial Statistics Questionnaire which are filled by NSOs and submitted to UNIDO annually.

**Data providers:**

NSOs

OECD provides data to UNIDO for OECD countries

**Data compilers:**

UNIDO

**References:**

www.unido.org/statistics
Indicator 10.1.1: Growth rates of household expenditure or income per capita among the bottom 40 per cent of the population and the total population

Goal 10: Reduce inequality within and among countries

Target 10.1: By 2030, progressively achieve and sustain income growth of the bottom 40 per cent of the population at a rate higher than the national average

Definition:

The growth rate in the welfare aggregate of bottom 40% is computed as the annualized average growth rate in per capita real consumption or income of the bottom 40% of the income distribution in a country from household surveys over a roughly 5-year period. The national average growth rate in the welfare aggregate is computed as the annualized average growth rate in per capita real consumption or income of the total population in a country from household surveys over a roughly 5-year period.

Rationale:

Improvements in shared prosperity require both a growing economy and a consideration of equity. Shared prosperity explicitly recognizes that while growth is necessary for improving economic welfare in a society, progress is measured by how those gains are shared with its poorest members. Moreover, in an inclusive society it is not sufficient to raise everyone above an absolute minimum standard of living; it must ensure that economic growth increases prosperity among the poor over time.

The decision to measure shared prosperity based on income or consumption was not taken to ignore the many other dimensions of welfare. It is motivated by the need for an indicator that is easy to understand, communicate, and measure—though measurement challenges exist. Indeed, shared prosperity comprises many dimensions of well-being of the less well-off, and when analyzing shared prosperity in the context of a country, it is important to consider a wide range of indicators of welfare.

Concepts:

Promoting shared prosperity is defined as fostering income growth of the bottom 40 percent of the welfare distribution in every country and is measured by calculating the annualized growth of mean per capita real income or consumption of the bottom 40 percent. The choice of the bottom 40 percent as the target population is one of practical compromise. The bottom 40 percent differs across countries depending on the welfare distribution, and it can change over time within a country. Because boosting shared prosperity is a country-specific goal, there is no numerical target defined globally.
Comments and limitations:

There are mainly two limitations of shared prosperity indicators: data availability and data quality.

Data availability

Lack of household survey data is even more problematic for monitoring shared prosperity than for monitoring poverty. To monitor shared prosperity, two surveys of a country have to be conducted within five years or so during a chosen period, e.g. 2007-12. They have to be reasonably comparable to each other in terms of both the survey design and the construction of the welfare aggregates. Thus, not every survey that can generate poverty estimates can generate shared prosperity estimates.

The second consideration is the coverage of countries, with data that are as recent as possible. Since shared prosperity must be estimated and used at the country level, there are good reasons for obtaining a wide coverage of countries, regardless of the size of their population. Moreover, for policy purposes it is important to have indicators for the most recent period possible for each country. The selection of survey years and countries needs to be made consistently and transparently, achieving a balance between matching the time period as closely as possible across all countries, including the most recent data, and ensuring the widest possible coverage of countries, across regions and income levels. In practice, this means that time periods will not match perfectly across countries. This is a compromise: while it introduces a degree of incomparability, it also creates a database that includes a larger set of countries than would be otherwise possible.

Data quality

Like for poverty rates, estimates of annualized growth of mean per capita real income or consumption are based on income or consumption data collected in household surveys. The same quality issues applying to poverty rates apply here. Specifically, measuring household living standards has its own complications. Surveys ask detailed questions on sources of income and how it was spent, which must be carefully recorded by trained personnel. Income is difficult to measure accurately, and consumption comes closer to the notion of living standards. Moreover, income can vary over time even if living standards do not. But consumption data are not always available: the latest estimates reported here use consumption for about two-thirds of countries.

Similar surveys may not be strictly comparable because of differences in timing, sampling frames, or the quality and training of enumerators. Comparisons of countries at different levels of development also pose problems because of differences in the relative importance of the consumption of nonmarket goods. The local market value of all consumption in kind (including own production, particularly important in underdeveloped rural economies) should be included in total consumption expenditure, but in practice are often not. Most survey data now include valuations for consumption or income from own production, but valuation methods vary.

The statistics reported here are based on consumption data or, when unavailable, on income data. Analysis of some 20 countries for which both consumption and income data were available from the same surveys found income to yield a higher mean than consumption but also higher inequality. When poverty measures based on consumption and income were compared, the two effects roughly cancelled each other out: there was no significant statistical difference.
Invariably some sampled households do not participate in surveys because they refuse to do so or because nobody is at home during the interview visit. This is referred to as “unit nonresponse” and is distinct from “item nonresponse,” which occurs when some of the sampled respondents participate but refuse to answer certain questions, such as those pertaining to income or consumption. To the extent that survey nonresponse is random, there is no concern regarding biases in survey-based inferences; the sample will still be representative of the population. However, households with different incomes may not be equally likely to respond. Richer households may be less likely to participate because of the high opportunity cost of their time or because of privacy concerns. It is conceivable that the poorest can likewise be underrepresented; some are homeless or nomadic and hard to reach in standard household survey designs, and some may be physically or socially isolated and thus less likely to be interviewed. This can bias both poverty and inequality measurement if not corrected for.

**Computation Method:**

Growth rates are calculated as annualized average growth rates over a roughly five-year period. Since many countries do not conduct surveys on a precise five-year schedule, the following rules guide selection of the survey years used to calculate the growth rates in the 2015 update: the final year of the growth period (T1) is the most recent year of a survey but no earlier than 2010, and the initial year (T0) is as close to T1 – 5 as possible, within a two-year band. Thus the gap between initial and final survey years ranges from three to seven years. If two surveys are equidistant from T1 – 5, other things being equal, the more recent survey year is selected as T0. The comparability of welfare aggregates (income or consumption) for the years chosen for T0 and T1 is assessed for every country. If comparability across the two surveys is a major concern, the selection criteria are re-applied to select the next best survey year.

Once two surveys are selected for a country, the annualized growth of mean per capita real income or consumption is computed by first estimating the mean per capita real income or consumption of the bottom 40 percent of the welfare distribution in years T0 and T1 and then computing the annual average growth rate between those years using a compound growth formula, \((\text{Mean in } T_1)/\text{(Mean in } T_0)\)?^(1/(T_1 - T_0)) - 1. Growth of mean per capita real income or consumption of the total population is computed in the same way using data for the total population.

**Disaggregation:**

No disaggregation

**Data sources:**

The Global Database of Shared Prosperity was prepared by the Global Poverty Working Group, which comprises poverty measurement specialists of different departments of the World Bank Group. The database’s primary source of data is the World Bank Group’s PovcalNet database, an interactive computational tool that allows users to replicate the World Bank Group’s official poverty estimates measured at international poverty lines ($1.90 or $3.10 per day per capita). The datasets included in PovcalNet are provided and reviewed by the members of the Global Poverty Working Group. The choice of consumption or income to measure shared prosperity for a country is consistent with the welfare aggregate used to estimate extreme poverty rates in PovcalNet, unless there are strong arguments for using a different welfare aggregate. The practice adopted by the World Bank Group for estimating global and regional poverty rates is, in principle, to use per
capita consumption expenditure as the welfare measure wherever available and to use income as the welfare measure for countries for which consumption data are unavailable. However, in some cases data on consumption may be available but are outdated or not shared with the World Bank Group for recent survey years. In these cases, if data on income are available, income is used for estimating shared prosperity.

**Collection process:**

To generate measures of shared prosperity that are reasonably comparable across countries, the World Bank Group has a standardized approach for choosing time periods, data sources, and other relevant parameters. The Global Database of Shared Prosperity is the result of these efforts. Its purpose is to allow for cross-country comparison and benchmarking, but users should consider alternative choices for surveys and time periods when cross-country comparison is not the primary consideration.

**Data providers:**

The World Bank typically receives data from NSOs directly. In other cases, it uses NSO data received indirectly.

**Data compilers:**

World Bank

**References:**

www.worldbank.org
Indicator 10.4.1: Labour share of GDP, comprising wages and social protection transfers

Goal 10: Reduce inequality within and among countries

Target 10.4: Adopt policies, especially fiscal, wage and social protection policies, and progressively achieve greater equality

Definition:

Labour share of GDP is the total compensation of employees given as a percent of GDP, which is a measure of total output. It provides information about the relative share of output which is paid as compensation to employees as compared with the share paid to capital in the production process for a given reference period.

Rationale:

Labour share of GDP seeks to inform about the relative share of GDP which accrues to employees as compared with the share which accrues to capital in a given reference period.

In order to interpret this indicator effectively, it is important to consider it together with economic growth trends. The share of labour compensation in national output can highlight the extent to which economic growth translates into higher incomes for employees over time. In periods of economic recession, the wage share provides an indication of the extent to which falling output reduces labour incomes relative to profits. If labour incomes fall at a greater rate than profits, the wage share will be expected to fall. By contrast, if there is a sharper decline in profits than in labour incomes, the wage share will rise. For any given level of GDP and profits, the wage share can fall as a result of falling wage employment, falling wages or a combination of both.

Increased production and GDP often lead to improved living standards of individuals in the economy, but this will depend on the distribution of real income and public policy among other factors.

If there is a large number of non-resident border or seasonal workers or inflows and outflows of property income such that the value of production differs from the income of residents, there may be a situation of over or understating the living standards of residents.

Concepts:

Compensation of employees is the total in-cash or in-kind remuneration payable to the employee by the enterprise for the work performed by the employee during the accounting period. Compensation of employees includes: (i) wages and salaries (in cash or in kind) and (ii) social insurance contributions payable by employers. This concept views compensation of employees as a cost to employer, thus compensation equals zero for unpaid work undertaken voluntarily.
Moreover, it does not include taxes payable by employers on the wage and salary bill, such as payroll tax.

The indicator should be produced using data that cover all employees and all economic activities.

GDP represents the market value of all final goods and services produced during a specific time period (for the purposes of this indicator, an year) in a country’s territory.

Employees are all those workers who hold the type of job defined as paid employment jobs, that is, jobs where the incumbents hold explicit or implicit employment contracts giving them a basic remuneration not directly dependent on the revenue of the unit for which they work. Total employment is made up by employees and the self-employed.

**Comments and limitations:**

In general, labour share in GDP will underestimate the proportion of GDP accrued to total employment, as it covers only the compensation of employees and does not include the labour income of the self-employed. Thus the indicator may be less relevant in countries where a large proportion of employment is in self-employment. However, an adjusted labour share may be estimated to take into account the labour income of self-employed workers.

GDP may exclude or underreport activities that are difficult to measure, such as transactions in the informal sector or in illegal markets, etc. thus understating the GDP. Moreover, GDP does not account for the social and environmental costs of production, and is therefore not a good measure of the level of over-all wellbeing.

**Computation Method:**

Labour share of GDP = Total compensation of employees / GDP * 100

**Disaggregation:**

No disaggregation is required for this indicator.

**Data sources:**

The recommended primary data sources for this indicator are the national accounts estimates of GDP and compensation of employees. The periodicity of this indicator will hence depend on the national accounts data produced in the given country. The source of the data should be presented when providing estimates of the indicator, as well as the SNA, preferably SNA 2008. The concept definition of compensation of employees that is used should be specified, or alternatively, if another wage or labour income concept is used, this should be clearly indicated.

**Data providers:**

NSOs

**Data compilers:**

ILO

**References:**

www.ilo.org/ilostat
Indicator 11.1.1: Proportion of urban population living in slums, informal settlements or inadequate housing

Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable

Target 11.1: By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums

Definition:

This indicator integrates the component of the population living in slums that has been monitored for the last 15 years by UN-Habitat in mostly developing countries with two new components – people living in inadequate housing and informal settlements - that aim at broadening the spectrum of inadequate living conditions to capture realities also present in more developed countries and wealthier urban contexts. By integrating these three components, the indicator is now universal and can be monitored in both developing and developed regions. This indicator will focus on documenting the limitations manifested in realizing the right to adequate housing for all as measured through the proportion of the population that live in slums, informal settlements or inadequate housing. The below definitions and concepts are important for reporting on this indicator. The proportion of urban population living in slums, informal settlements or inadequate housing is currently being measured by the proportion of urban population living in slums.

Rationale:

As the MDGs are turning a page, the unprecedented proliferation of slums and informal settlements, and a chronic lack of adequate housing, continue to be amongst the major challenges of urbanization and its sustainability. Slums, informal settlements and inadequate housing are the face of poverty and inequality in cities, and no transformative action will be achieved in the world without addressing the challenge of urban poverty represented by them. Therefore, it is necessary to further ensure access for all to adequate housing and basic services and upgrade slums, for the full recognition of the urban poor as rightful urban dwellers, for realizing their potential and for enhancing their prosperity, and thus the prosperity of the whole urban environ.

This indicator is extremely relevant since it is partly a continuation of the MDGs Target 7.D and provides therefore also a comprehensive baseline for developing countries worldwide. As per all the agreed goals and targets, to measure the achievement of this indicator will require the mobilisation of the means required to efficiently monitor them, calling up for a revitalised partnership with the participation of all countries, all stakeholders and all communities concerned.

Today, in our world, one in eight people live in slums (UN-Habitat, 2016; UN-Habitat, 2015b). This means that a quarter of the world’s urban population are slum dwellers. In several cities, poor families struggle to access adequate housing. Living in central locations often equals to inadequate living conditions, while living in peripheries, where housing can be more affordable, entails deprivation of basic services, urban amenities and access to livelihoods.
Slum upgrading and adequate housing have an equalizing impact in the distribution of prosperity, thus helping urban environs to be inclusive and end urban poverty in the world. In order to address the wording proposed by Target 11.1 and Indicator 11.1.1, and to provide a statistical continuity between MDGs and SDGs in what refers to the people living in slums, the five components of the ‘slum household’ definition (access to improved water, access to improved sanitation, structural durability, overcrowding and security of tenure; all of them part of the definition of adequate housing) must form the basis to monitor SDG 11 Target 11.1, complemented by the extra indicators that will allow measurements referring to informal settlements and inadequate housing, respectively. It is suggested that one extra indicator for inadequate housing and one for informal settlements – totalling seven variables to be measured – could keep the tracking of this target feasible. For example, in the case of informal settlements, the existence of a municipal permit is a workable means of measurement, while inadequate housing could be effectively measured through the affordability criteria.

**Concepts:**

In the Revised Africa Addendum to the Principles and Recommendations of Population and Housing Censuses, Rev. 3 (forthcoming), it is recommended that the definition of "slum" used in censuses takes into consideration the physical boundaries and establishes that a particular slum is part of the city. It is encouraged that data produced on slums are disaggregated as part of city data to include specific characteristics of: the housing types in an area; the interchangeability of terms associated with the slum definition (such as squatter, shanty town, informal settlement) and the spatial dimension with respect to the location within the city.

Countries are encouraged to capture the site of information as this helps in the enumeration and exploitation of collated data that are specifically relevant to the characteristics of the slum (de jure population, housing conditions, economic activities, infrastructure and services). Countries may also wish to capture the slum as a part of a city placing emphasis on the spatial dimension to establish the location of the slum within the city.

It is recommended that the definitions of “slum” used in censuses takes into account the physical boundaries and that the fact that a slum is part of the city. It is advisable that data produced on slums be disaggregated as part of city data to include specific characteristics such as housing types, housing conditions, economic activities, infrastructure, services and spatial dimension with respect to the location within the city. Countries are encouraged to capture the site of information as this helps in the enumeration and exploitation of collated data specifically relevant to the characteristics of the slum (de jure population). Countries may wish to capture the slum as a part of a city, placing emphasis on the spatial dimension to establish the location of the slum within the city.

**Comments and limitations:**

Different local characteristics of poor housing units around the world and the under recognition of the slum challenge by some concerned authorities and stakeholders, have made it difficult to agree universally on some definitions and characteristics when referring to poor informal housing. The lack of appropriate tools at national and city levels to measure all the components required to monitor indicator 11.1.1 has often brought challenges for statistics offices to reliably include all components that measure slums, sometimes resulting in the underestimation of poor housing units or slum households. UN-Habitat has scheduled several technical workshops and expert group
meetings that will help build the capacity for reporting in the first 3 years of the 2030 Agenda for Sustainable Development. In the case of security of tenure, its complicated relation with land and property makes it a difficult aspect to include in the different related surveys and, therefore, to measure and monitor due to lack of routine data. However, the most recent years, important progress has been made to integrate the measurement of this component into major surveys and censuses in several countries. Also, Indicator 11.1.1 does not capture homelessness, as it is not included in household surveys. Finally, many countries still have limited capacities for data management, data collection and monitoring, and continue to grapple with limited data on large or densely populated geographical areas. This means that complementarity in data reporting will be key to ensure that both national and global figures achieve consistencies in the final reported data.

**Computation Method:**

This indicator considers three components to be computed as follows: a) Slum households (SH): = 100\(\frac{\text{Number of people living in slum}}{\text{City population}}\) b) Informal settlements households (ISH): = 100\(\frac{\text{No.of people living in informal settlements households}}{\text{City population}}\) c) Inadequate housing households (IHH): = 100\(\frac{\text{No. of people living in inadequate housing}}{\text{City population}}\) The unit of measurements for all these indicators will be percent. At a later stage an index of measurements will be developed that will incorporate all measures and provide one estimate. The data for this indicator is already being reported in nearly all developing countries in what refers to the slum component. We expect to carry this success, lessons learnt and experiences to the reporting of informal settlements and inadequate housing data for all countries.

**Disaggregation:**

Potential Disaggregation: Disaggregation by location (intra-urban), income group, sex, race, ethnicity, religion, migration status (head of household), age (household members), disability (household members)

**Data sources:**

Data for the slum and informal settlement components of the indicator can be computed from census and national household surveys, including DHS and MICS. Data for the inadequate housing component can be computed by using income and expenditure household surveys that capture household expenditures. UN-Habitat collects information related to slums and improved shelter as part of the City Prosperity Initiative (CPI) including several other related indicators, such as: i) improved shelter; ii) access to improved water; iii) access to improved sanitation; and iv) overcrowding. Data is being collected for nearly 1000 cities around the world. The method of data collection and the use of this information are critical for the understanding of indicator 11.1.1. The inadequate housing component of the indicator has extensive evidence, studies and analysis that have been undertaken using collected data and some of these documents are listed as part of biographic references.

**Collection process:**

We expect that investments in improved data collection and monitoring at country level will produce incentives for governments to improve reporting and performance and also greater readiness to engage with multiple stakeholders in data collection and analysis and in achieving better understanding of the strengths and weaknesses of existing slum definitions and their
applications. This will lessen the errors and improve the quality and timeliness of data reporting at the national level.

**Data providers:**

NSOs, UN-Habitat, UNEP, Cities Alliance, Slum dwellers International, and World Bank

**Data compilers:**

UN-Habitat

**References:**

http://unhabitat.org/
Indicator 11.2.1: Proportion of population that has convenient access to public transport, by sex, age and persons with disabilities

Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable

Target 11.2: By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons

Definition:

This indicator will be monitored by the proportion of the population that has convenient access to public transport. The access to public transport is considered convenient when an officially recognized stop is accessible within a distance of 0.5 km from a reference point such as a home, school, work place, market, etc. Additional criteria for defining public transport that is convenient include:

a) Public transport accessible to all special-needs customers, including those who are physically, visually, and/or hearing-impaired, as well as those with temporary disabilities, the elderly, children and other people in vulnerable situations.

b) Public transport with frequent service during peak travel times

c) Stops present a safe and comfortable station environment

Rationale:

This indicator aims to successfully monitor the use of and access to the public transportation system and the move towards easing the reliance on the private means of transportation, improving the access to areas with a high proportion of transport disadvantaged groups such as elderly citizens, physically challenged individuals, and low income earners or areas with specific dwelling types such as high occupancy buildings or public housing and reducing the need for mobility by decreasing the number of trips and the distances travelled. The accessibility based urban mobility paradigm also critically needs good, high-capacity public transport systems that are well integrated in a multimodal arrangement with public transport access points located within comfortable walking or cycling distances from homes and jobs for all.

The ability of residents including persons with disabilities and businesses to access markets, employment opportunities, and service centers such as schools and hospitals is critical to urban economic development. The transport system provides access to resources and employment opportunity. Moreover, accessibility allows planners to measure the effects of changes in transport and land use systems. The accessibility of jobs, services and markets also allow policymakers, citizens and businesses to discuss the state of the transport system in the comprehensible way.
The transportation system is a critical enabler of economic activities and social inclusion. The access to transport SDG indicator addresses a significant gap that was never addressed by the MDGs, i.e. directly addressing transport as a critical enabler of economic activities and social inclusion. Already, the “externalities” associated with transport in terms of GHG Emissions, traffic congestion and road traffic accidents have been increasing. Emissions from transport are now responsible for 23% of global GHG Emissions and are increasing faster than any other source; outdoor air pollution alone, a major source of which is transport, is responsible for 3.7 million deaths annually, road traffic accidents kill more than 1.2 million people every year and severe traffic congestion is choking cities and impacting on GDPs. Achieving SDG 11 requires a fundamental shift in the thinking on transport- with the focus on the goal of transport rather than on its means. With accessibility to services, goods and opportunities for all as the ultimate goal, priority is given to making cities more compact and walkable through better planning and the integration of land-use planning with transport planning. The means of transport are also important but the SDG’s imperative to make the city more inclusive means that cities will have to move away from car-based travel to public transport and active modes of transport such as walking and cycling with good inter-modal connectivity.

The rising traffic congestion levels and the resulting negative air quality in many metropolitan areas have elevated the need for a successful public transportation system to ease the reliance on the private means of transportation. Cities that choose to invest in effective public transportation options stand out to gain in the long-run. Cities that have convenient access to public transport, including access by persons with disabilities are more preferred as these are more likely to offer lower transportation costs while improving on the environment, congestion and travel times within the city. At the same time, improving the access to areas with a high proportion of transport disadvantaged groups such as elderly citizens, physically challenged individuals, and low income earners or areas with specific dwelling types such as high occupancy buildings or public housing also helps increase the efficiency and the sustainability of the public transport system. Public transport is a very important equalizer of income, consumption and spatial inequalities. This indicator is empirically proven that public transport makes cities more inclusive, safe and sustainable. Effective and low-cost transportation is critical for reducing urban poverty and inequalities and enhancing economic development because it provides access to jobs, health care, education services and other public goods.

Clean public transport is a very efficient mean for the reduction of CO2 emissions and therefore it contributes to climate change and lower levels of energy consumption. Most importantly public transport need to be easily accessible to the elderly and disabled citizens.

Concepts:

This indicator will be monitored by the proportion of the population that has convenient access to public transport. Because most public transport users walk from their trip origins to public transport stops and from public transport stops to their trip destination, local spatial availability and accessibility is sometimes evaluated in terms of pedestrian (walk) access, as opposed to park and ride or transfers.

Hence, the access to public transport is considered convenient when an officially recognized stop is accessible within a distance of 0.5 km from a reference point such as a home, school, work place, market, etc. Additional criteria for defining public transport that is convenient include:
a. Public transport accessible to all special-needs customers, including those who are physically, visually, and/or hearing-impaired, as well as those with temporary disabilities, the elderly, children and other people in vulnerable situations.

b. Public transport with frequent service during peak travel times

c. Stops present a safe and comfortable station environment

Public transport is defined as a shared passenger transport service that is available to the general public. It includes cars, buses, trolleys, trams, trains, subways, and ferries that are shared by strangers without prior arrangement. However, it excludes taxis, car pools, and hired buses, which are not shared by strangers without prior arrangement. It also excludes informal, unregulated modes of transport (para-transit), motorcycle taxis, three-wheelers, etc.

Public transport refers to a public service that is considered as a public good that has well designed ‘stops’ for passengers to embark and disembark in a safe manner and demarcated ‘routes’ that are both officially and/or formally recognized.

Comments and limitations:

No internationally agreed methodology exists for measuring convenience and service quality of public transport. Harmonized global/local data on urban transport systems do not exist, nor are they comparable at the world level.

It is recognized that convenience measured as distance does not categorize the quality of the public transport which will vary from country to country. Nevertheless, the proposed indicator is a comparable and objective measurement that can be assessed in cities across regions.

Other factors of this indicator such as affordability, safety, and universal accessibility may influence the usage of public means of mobility beyond proximity to the transport stop. Yet, the provision of widely accessible public transport is a precondition for its usage.

Finally, high capacity public transport, such as trains allows for a larger capture area, beyond the 0.5km of the proposed indicator.

It is also recognized that there are various forms of public transport in the member countries that are not fully defined or captured in this methodology. In particular, many developing countries have access to public transport that is available anywhere on the streets and not necessarily at designated public transport stops. The creation of designated stops is a precondition of measurement in these countries.

Computation Method:

This indicator is computed based on the following criteria:

The identification of service areas is typically achieved using the buffering operation (using GIS) by constructing lines of equal proximity around each public transport stop or each public transport
route. The buffering operation clearly involves at least two decisions. The first decision is whether routes or stops should be used as the reference of measurement. The two approaches may lead to very different values of spatial availability. But generally, public transport stops offer a more appropriate basis than routes for estimating service area coverage because stops are the actual locations where public transport users access the system. The other decision involved in the buffering operation is the buffer size. A common practice in public transport planning is to assume that people are served by public transport if they are within 0.5km (or 500m) of either a public transport route or stop. Once a distance threshold is defined, buffers are created around the public transport features. Some studies measure the distance based on air, or Euclidean, distance, while others use network distance (that is, the walk distance computed using the street network to reach a public transport feature. Since the network distance between two locations in space is greater than, or equal to, the corresponding air distance, the size of a coverage area defined by the network distance will be smaller than, or equal to, that defined by air distance. Network distance measures are likely to be more realistic because they reflect the configuration of the street network and recognize the presence of any man-made barriers preventing direct access to public transport features. In addition to using the above mentioned distance measures, others have suggested the use of travel time to public transport features as a measure of proximity. Using travel time is preferable to distance as a measure of proximity because travel time measures account for such pedestrian-unfriendly factors such as steep terrains. However, because of the additional data requirements and the amount of processing effort involved, travel time measures are rarely used in practice. For this indicator the public transport stop will be used as the point of service.

The identification of the population served

Once a service buffer is constructed, the next step is to overlay the buffer onto other polygons, such as census tracts, for which socio-demographic data (such as population figures, disabled persons, type of residence area, etc. is available. These polygons are referred to as the analysis zones. Typically, a service buffer (denoted as i) intersects, either fully or partially, with more than one analysis zone j (j=1,...,J). The population served by the public transport service in buffer i, Pi, is thus equal to the sum of the population in each of the intersecting areas, Pij. Hence

\[ P_i = \sum P_{ij} \]

Where, Pij is estimated based on the amount of interaction between service buffer i and analysis zone j.

In estimating Pij it is assumed that the population is uniformly distributed within the analysis zones.

Integrating local temporal availability.

The methodology described above covers public transport service solely based on spatial access to stops or routes and does not address the temporal dimension associated with the availability of public transport. We note that temporal aspect of public transport availability is important because a service within walking distance is not necessarily considered as available if waiting times go beyond a certain threshold level that is required. This wait time for public transport is related to the frequency of the service as well as the threshold for tolerable waits for potential public transport users. We will leave out completely the temporal measurement for global comparison, but countries that can additionally capture this component are encouraged to collect and report this information as part of the disaggregation.
Finally, the population with access to public transport out of the entire city population will be computed as; 

\[
\text{Percentage with access to Public transport} = 100 \times \frac{\text{population with convenient access to Public transport}}{\text{City Population}}
\]

**Disaggregation:**

Information can be disaggregated as shown below, including potential disadvantages such as disability, but it requires strong efforts and changes in mainstream mechanisms of data collection:

- Disaggregation by location (intra-urban).
- Disaggregation by income group.
- Disaggregation by sex (female-headed household).
- Disaggregation by race (head of household).
- Disaggregation by ethnicity (head of household).
- Disaggregation by migratory status (head of household).
- Disaggregation by age (households inhabitant).
- Disaggregation by mode of public transport.

**Data sources:**

The actual and recommended data sources for this indicator are the following:

- Data on location of public transport stops in city: city administration or service providers, GIS data
- Dwelling units within 500m of public transport stops: Census, GIS data
- Number of residents per dwellings unit: Census/household survey
- Household surveys that collect information on the proportion of households that declare they have access to public means of transport within 0.5 km. These surveys can also collect information about the quality of the service.

Due to its spatial nature, the use of the urban agglomeration is a precondition for the measurement and comparability of this indicator.

**Collection process:**

At the Global level, all this data will be assembled and compiled for international consumption and comparison by the UN-Habitat and other partners. UN-Habitat and partners will explore several capacity building options to ensure that uniform standards for generation, reporting and analysing data for this indicator are applied by all countries and regions.

**Data providers:**

National Focal Points could be from ministries, NSOs, academic or research institutions, Civil Society Organisations, operators or a combination of these working under an agreement facilitated by the National Government. A secretariat or resource centre, comprising UN-Habitat and its partner organizations will work with the National Focal Points, providing capacity building and quality assurance support. The resource centre will also ensure the exchange of knowledge and experience between participating countries. Specific agreements will be drawn up with respective countries and cities for collaboration in the monitoring. The monitoring framework will be disseminated in
UITP and other transport events. A dedicated team combining UN-Habitat and the International Association of Public Transport (UITP) staff will be set up and these will lead the annual monitoring and reporting. Comprehensive reporting will be undertaken on a biennial basis. Reports will be published in the public domain with data available in the UN-Habitat global databases.

**Data compilers:**

UN-Habitat

**References:**

http://unhabitat.org/
**Indicator 11.3.1: Ratio of land consumption rate to population growth rate**

**Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable**

**Target 11.3: By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries**

**Definition:**

This indicator requires defining the two components of population growth and land consumption rate. Computing the population growth rate is more straightforward and more readily available, while land consumption rate is slightly challenging, and requires the use of new techniques. In estimating the land consumption rate, one needs to define what constitutes “consumption” of land since this may cover aspects of “consumed” or “preserved” or available for “development” for cases such as land occupied by wetlands. Secondly, there is not one unequivocal measure of whether land that is being developed is truly “newly-developed” (or vacant) land, or if it is at least partially “redeveloped”. As a result, the percentage of current total urban land that was newly developed (consumed) will be used as a measure of the land consumption rate. The fully developed area is also sometimes referred to as built up area.

**Rationale:**

Globally, land cover today is altered principally by direct human use: by agriculture and livestock raising, forest harvesting and management and urban and suburban construction and development. A defining feature of many of the world’s cities is an outward expansion far beyond formal administrative boundaries, largely propelled by the use of the automobile, poor urban and regional planning and land speculation. A large proportion of cities both from developed and developing countries have high consuming suburban expansion patterns, which often extend to even further peripheries. A global study on 120 cities shows that urban land cover has, on average, grown more than three times as much as the urban population; in some cases, similar studies at national level showed a difference that was three to five times fold. In order to effectively monitor land consumption growth, it is not only necessary to have the information on existing land use cover but also the capability to monitor the dynamics of land use resulting out of both changing demands of increasing population and forces of nature acting to shape the landscape.

Cities require an orderly urban expansion that makes the land use more efficient. They need to plan for future internal population growth and city growth resulting from migrations. They also need to accommodate new and thriving urban functions such as transportation routes, etc., as they expand. However, frequently the physical growth of urban areas is disproportionate in relation to population growth, and these results in land use that is less efficient in many forms. This type of growth turns out to violate every premise of sustainability that an urban area could be judged by including impacting on the environment and causing other negative social and economic consequences such as increasing spatial inequalities and lessening of economies of agglomeration.
This indicator is connected to many other indicators of the SDGs. It ensures that the SDGs integrate the wider dimensions of space, population and land adequately, providing the framework for the implementation of other goals such as poverty, health, education, energy, inequalities and climate change. The indicator has a multipurpose measurement as it is not only related to the type/form of the urbanization pattern. It is also used to capture various dimensions of land use efficiency: economic (proximity of factors of production); environmental (lower per capita rates of resource use and GHG emissions); social (reduced travel distance and cost expended). Finally, this indicator integrates an important spatial component and is fully in line with the recommendations made by the Data Revolution initiative.

**Concepts:**

Population growth rate (PGR) is the increase of a population in a country during a period, usually one year, expressed as a percentage of the population at the start of that period. It reflects the number of births and deaths during a period and the number of people migrating to and from a country.

Land consumption includes: (a) the expansion of built-up area which can be directly measured; (b) the absolute extent of land that is subject to exploitation by agriculture, forestry or other economic activities; and (c) the over-intensive exploitation of land that is used for agriculture and forestry.

**Comments and limitations:**

In some cases, it is difficult to measure the urban expansion by conurbations of two or more urban areas that are in close proximity; to whom to attribute the urban growth and how to include it as one metric usually becomes a challenge. At the same time, data would not always coincide to administrative levels, boundaries and built-up areas. However, the European Commission highlights some possible drawbacks of this indicator that can be technically addressed. Efforts to use the area of reference at the level of the built-up area of the urban agglomeration should be taken into consideration. The delimitation of city boundaries may be another methodological problem that a clear agreed definition can solve.

The indicator may experience difficulties in capturing cities with negative or zero population growth; or cities that due to severe disaster have lost part of their territories. To face this challenge, the baseline/benchmark of population density and its change over time must be taken into consideration. Reducing densities below sustainable levels have impacts on the cities’ sustainability.

In the absence of the GIS layers, this indicator may not be computed as defined. As a result, more alternative measures for land that is developed or consumed per year can be adequately used. Alternatively, one can monitor the efficient use of urban land by measuring how well we are achieving the densities in residential zones that any city plans or international guidance call for. Comparing achieved to planned densities is very useful at the city level. However, planned densities vary greatly from country to country, and at times from city to city. At the sub-regional or city levels, it is more appropriate to compare average densities achieved currently to those achieved in the recent past. While building more densely does use land more efficiently, high density neighborhoods, especially in and around urban centers, have a number of other advantages. They support more frequent public transportation, and more local stores and shops; they encourage pedestrian activity to and from local establishments; and they create lively (and sometimes safer) street life.
Computation Method:

The formula to estimate the land use efficiency will be provided with two stages.

Stage 1: Estimate the population growth rate.

Population Growth rate i.e. \( PGR = \frac{\ln\left(\frac{Pop_{(t+n)}}{Pop_t}\right)}{y} \)

Where

- \( Pop_t \): Total population within the city in the past/initial year
- \( Pop_{(t+n)} \): Total population within the city in the current/final year
- \( y \): The number of years between the two measurement periods

Stage 2: Estimating the land consumption rate

This rate gives us a measure of compactness which indicates a progressive spatial expansion of a city.

Land consumption rate i.e \( LCR = \frac{\ln\left(\frac{Urb_{(t+n)}}{Urb_t}\right)}{y} \)

Where

- \( Urb_t \): Total areal extent of the urban agglomeration in km2 for past/initial year
- \( Urb_{(t+n)} \): Total areal extent of the urban agglomeration in km2 for current year
- \( y \): The number of years between the two measurement periods

The formula to estimate the ratio of land consumption rate to population growth rate (LCRPGPGR) is provided as follows:

\[
LCRPGR = \left(\frac{\ln\left(\frac{Urb_{(t+n)}}{Urb_t}\right)}{y}\right)\left(\frac{\ln\left(\frac{Pop_{(t+n)}}{Pop_t}\right)}{y}\right)
\]

The periods for both urban expansion and population growth rates should be at comparable scale.

Disaggregation:

Potential Disaggregation:

- Disaggregation by location (intra-urban)
- Disaggregation by income level
- Disaggregation by urban typology

Data sources:

Data for this indicator is available for all cities and countries (UNPD data) and satellite images from open sources. Several sources of information are required for this computation: Satellite imagery from open sources or the exact measurements in km squared of the built up areas or the land that is fully developed in Km squared, annual urban population data for the reference years of analysis.
Data for the size of the city land that is currently considered as developed is usually available from the urban planning units of the cities. New options using remote sensing techniques have also been developed to estimate the land that is currently developed or considered as built up areas out of the total city land. This option also accurately extracts land that is considered as wetlands and hence unlikely to be occupied now or in the future.

When the spatial measurement option is used, the use of the urban agglomeration (built-up area) is a precondition for the measurement and comparability of this indicator. Data for this indicator can be easily availed using global and local sources. The indicator has been collected and analysed since 2000 by several municipalities and countries.

**Collection process:**

National level capacity building initiatives will aim to balance the knowledge and understanding of the analysis, compilation and reporting of this indicator. Global reporting will rely on the estimates that come from NSOs. With uniform standards in computation at the national level, few errors of omission or bias will be observed at the global/regional level. A rigorous analysis routine will be used to re-assess the quality and accuracy of the data at the regional and global levels. This will involve cross-comparisons with expected ranges of the values reported for cities.

**Data providers:**

The global responsibility of building the capacity of national governments and NSOs to report on this indicator will be led by UN-Habitat. National governments will have the primary responsibility of reporting on this indicator at national level.

**Data compilers:**

UN-Habitat with the support of other selected partners will lead the compilation of data for this indicator.

**References:**

http://unhabitat.org/
Indicator 11.5.1: Number of deaths, missing persons and persons affected by disaster per 100,000 people

Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable

Target 11.5: By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations

Definition:

A disaster is a serious disruption, occurring over a relatively short time, of the functioning of a community or a society involving widespread human, material, economic or environmental loss and impacts, which exceeds the ability of the affected community or society to cope using its own resources (https://en.wikipedia.org/wiki/Disaster).

Death: The number of people who died during the disaster, or directly after, as a direct result of the hazardous event

Missing: The number of people whose whereabouts is unknown since the hazardous event. It includes people who are presumed dead although there is no physical evidence. The data on number of deaths and number of missing are mutually exclusive.

Affected: People who are affected, either directly or indirectly, by a hazardous event.

Directly affected: People who have suffered injury, illness or other health effects; who were evacuated, displaced, relocated or have suffered direct damage to their livelihoods, economic, physical, social, cultural and environmental assets.

Indirectly affected: People who have suffered consequences, other than or in addition to direct effects, over time due to disruption or changes in economy, critical infrastructures, basic services, commerce, work or social, health and psychological consequences.

The indicator, given the difficulties in assessing the full range of all affected (directly and indirectly), UNISDR proposes the use of an indicator that would estimate "directly affected" as a proxy for the number of affected.

Rationale:

The disaster loss data on mortality is significantly influenced by large-scale catastrophic events, which represents important outliers in terms of mortality, as they normally imply considerable numbers of people killed. UNISDR recommends countries to report the data by event, so complementary
analysis to determine true trends can be done by both including and excluding such catastrophic
events that can represent important outliers in terms of mortality.

Concepts:

See under Definitions.

Comments and limitations:

Not every country has a comparable national disaster loss database that is consistent with these
guidelines (although current coverage exceeds 89 countries). Therefore, by 2020, it is expected that
all countries will build/adjust national disaster loss databases according to the recommendations
and guidelines by the OEIWG.

As stated by member States in the First and Second Sessions of the OEIWG, data of "Missing/
Presumed dead" is not consistently collected. For many countries, the separation of data on
"Missing/Premeisuued dead" from "Deaths/Deceased", or the collection of data on "Missing/Premeisuued
dead" will require to report against the two separate indicators.

Computation Method:  

Note: Computation methodology for several indicators is very comprehensive, very long (about 180
pages) and probably out of the scope of this Metadata. UNISDR prefers to refer to the outcome
of the OEIWG, which provides a full detailed methodology for each indicator and sub-indicator.

A short summary:

Summation of data on related sub-indicators from national disaster loss databases divided by the
sum of relative figures of global population data (e.g. World Bank or UN Statistics information).

Affected people will be calculated as summation of sub-indicators. Several of sub-indicators will be
calculated based on country averages of inhabitants per household, number of workers per hectare
of agriculture, per livestock, per industry and per commerce.

Disaggregation:

Further to the recommendations of both the OEIWG and the IAEG-SDGs, the Secretariat
recommends disaggregating data:

- By country, by event, by hazard type, by hazard family (e.g. using the IRDR classification, natural
  hazards can be disaggregated as climatological, hydrological, meteorological, geophysical, biological
  and extra-terrestrial)

  - By deaths / missing
  - Additionally, the OEIWG proposed disaggregation by age, sex, location of residence and
    other characteristics (e.g. disability) as relevant and possible, in order to align with SDG’s
    requirements. The Secretariat encourages the adoption of these recommendations.
• Aggregation of “location of residence”: ideally by sub-national administrative unit, similar to municipality.

**Data sources:**

National disaster loss database, reported to UNISDR

**Collection process:**

The official counterpart(s) at the country level will build/adjust national disaster loss databases according to the recommendations and guidelines by the OEIWG.

**Data providers:**

In most countries national disaster loss databases are established and managed by special purpose agencies including national disaster management agencies, civil protection agencies, and meteorological agencies, and disaster data collected by line ministries. Some exceptions include Academic institutions conducting long term research programs, NGO’s engaged in DRR and DRM, and insurance databases or data sources when market penetration is very high.

**Data compilers:**

UNISDR

**References:**

http://www.preventionweb.net/
Indicator 11.5.2: Direct disaster economic loss in relation to global GDP, including disaster damage to critical infrastructure and disruption of basic services

Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable

Target 11.5: By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations

Definition:

Direct economic loss: the monetary value of total or partial destruction of physical assets existing in the affected area. Direct economic loss is nearly equivalent to physical damage.

Rationale:

The disaster loss data is significantly influenced by large-scale catastrophic events, which represent important outliers. UNISDR recommends countries to report the data by event, so complementary analysis can be done by both including and excluding such catastrophic events that can represent important outliers.

Comments and limitations:

Not every country has a comparable national disaster loss database that is consistent with these guidelines (although current coverage exceeds 89 countries). Therefore, by 2020, it is expected that all countries will build/adjust national disaster loss databases according to the recommendations and guidelines by the OEIWG.

Computation Method:

Note: Computation methodology for several indicators is very comprehensive, very long (about 180 pages) and probably out of the scope of this Metadata. UNISDR prefers to refer to the outcome of the Open Ended Intergovernmental Working Group, which provides a full detailed methodology for each indicator and sub-indicator.

A short summary:

The original national disaster loss databases usually register physical damage value (housing unit loss, infrastructure loss etc.), which needs conversion to monetary value according to the UNISDR methodology. The converted global value is divided by global GDP (inflation adjusted, constant USD) calculated from the World Bank Development Indicators.
Disaggregation:

By country, by event, by hazard type (e.g. disaggregation by climatological, hydrological, meteorological, geophysical, biological and extra-terrestrial for natural hazards is possible following IRDR classification)

By asset loss category (health/education/road etc.)

By transportation mode

By service sector

Data sources:

National disaster loss database, reported to UNISDR

Collection process:

The official counterpart(s) at the country level will build/adjust national disaster loss databases according to the recommendations and guidelines by the OEIWG.

Data providers:

In most countries national disaster loss databases are established and managed by special purpose agencies including national disaster management agencies, civil protection agencies, and meteorological agencies, and disaster data collected by line ministries. Some exceptions include Academic institutions conducting long term research programs, NGO’s engaged in DRR and DRM, and insurance databases or data sources when market penetration is very high.

Data compilers:

UNISDR

References:

http://www.preventionweb.net/
Indicator 11.6.1: Proportion of urban solid waste regularly collected and with adequate final discharge out of total urban solid waste generated, by cities

Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable

Target 11.6: By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management

Definition:
Proportion of urban solid waste regularly collected and with adequate final discharge out of total urban solid waste generated. The goal of this indicator aims to generate the proportion of urban solid waste regularly collected and that is adequately discharged out of all the total urban waste generated by the city.

Rationale:
The target addressed, Target 11.6, is reducing the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management by 2030.

Waste collection is the collection and transportation of waste to the place of treatment or discharge by municipal services or similar institutions, or by public or private corporations, specialized enterprises or general government.

A prosperous city seeks to collect and manage appropriately all its solid waste and improve standards of living, cleanliness and hence decrease the chances of having disease outbreaks related to the improper management of waste.

Urban households and businesses produce substantial amounts of solid waste, including industrial, construction and hazardous waste that must be collected regularly and disposed-off properly in order to maintain healthy and sanitary living conditions. Such waste collection is available through formal or informal means. Uncollected and improperly managed solid waste can end up in drains and dumps leading to blocked drainages and cause unsanitary conditions. Vectors such as mosquitoes usually breed in blocked drainages and dumps that are not well managed. In summary, waste collection management is intended to reduce adverse effects of waste on health, the environment or aesthetics, and the entire ecosystems that support the city or urban area. Sustainable solid waste management is essential for the sustainability of cities especially if it includes waste reduction, reuse, recycling and composting, incineration, and disposal in landfills. Within a waste management hierarchy, waste prevention and reuse are the most preferred methods and should be promoted, as they reduce the demand on scarce environmental resources, reduce energy use, and minimize the quantity of waste that must eventually be recycled, incinerated or disposed in landfills.
Regardless of the context, managing solid waste is one of the important challenges of urban areas of all sizes. According to UN-Habitat’s Solid Waste Management in the World’s Cities, when the current modernization process started in developed countries during the 1970s, solid waste management was seen largely as a technical problem with engineering solutions. That changed during the 1980s and 1990s when it became clear that municipalities could not successfully collect and remove waste without active cooperation from the service users. Cities also learned that technologies depend on institutional, governance and policy frameworks, which are highly varied and complex, and directly related to local conditions. The way in which waste is produced and discarded gives us a key insight into how people live, and the quality of waste management services is a good indicator of a city’s governance.

Target 11.6 also has linkages to the health, poverty, and water goals. For instance there are significant linkages to water targets, including sanitation and hygiene (6.2), water quality and wastewater management (6.3), water-related ecosystems (6.5) and integrated water resources management (6.5). Such links may be relevant to planning and implementation at the country level and it will be important to harness synergies and manage potential conflicts or trade-offs both within and between the targets. This will require collaboration across institutions that are traditionally structured in silos that focus on specific sectors. New ways of collaborative working in partnerships with either informal or formal mechanisms are needed to facilitate collaboration such that policy makers, managers and experts with different responsibilities are able to harness the synergies between goals and targets. This will be a major challenge in implementation of the 2030 Agenda.

Having in place an appropriate monitoring framework that is founded on the key components of the ISWM framework for the SDG 11 target 6.1, enhanced coordination amongst the relevant national and local institutions in the process of implementation, and a full engagement of particularly the national statistical entities and responsible governmental agencies in the process, will go a long way to assist national governments to be able to rationalise their efforts to collect, analyse, validate data and information and report on a regular basis within a context that facilitates comparisons among countries.

An integrated solid waste management system is strongly connected to three dimensions: urban environmental health, the environment and resource management. Moreover, a regular solid waste management strategy is clear indicator of the effectiveness of a municipal administration. Good waste governance that is inclusive, financially sustainable and based on sound institutions is one of the key challenges of the 21st century, and one of the key responsibilities of a city government.

Moving towards modern disposal has generally followed a step-by-step process: first phasing out uncontrolled disposal, then introducing, and gradually increasing, environmental standards for a disposal facility. In the process, controlling water pollution and methane emissions from sanitary landfills, and air pollution from incinerators, receive increasing attention.

Many developing and transitional country cities still have an active informal sector and micro-enterprise recycling, reuse and repair; often achieve recycling and recovery rates comparable to those in the west, resulting in savings to the waste management budget of the cities. There is a major opportunity for the city to build on these existing recycling systems, reducing some unsustainable practices and enhancing them to protect and develop people’s livelihoods, and to reduce still further the costs to the city of managing the residual wastes. The formal and informal sectors need to work together, for the benefit of both.
Concepts:

It will be necessary to define the following components to compute the proportion of urban solid waste regularly collected that is adequately discharged out of all the total urban waste generated by the city.

Urban Solid waste or municipal solid waste is generally composed of waste from households, offices, shops, schools and industries. These include food waste, garden (yard) and park waste, paper and cardboard, wood, textiles, nappies (disposable diapers), rubber and leather, plastics, metal, glass (and pottery and china), health-care waste, electronic waste (such as discarded computers, printers, mobile phones, TVs and refrigerators) and refuse such as ash, dirt, dust, soil construction and demolition waste. It excludes waste water. The aggregate tonnes of all the solid waste from all the sources mentioned above give us the total solid waste generated by the city.

Municipal Solid Waste is waste generated by households, and waste of a similar nature generated by commercial and business establishments, industrial and agricultural premises, institutions such as schools and hospitals, public spaces such as parks and streets and construction sites. Generally, it is non-hazardous wastes composed of food waste, garden waste, paper and cardboard, wood, textiles, nappies (disposable diapers), rubber and leather, plastics, metal, glass, and refuse such as ash, dirt and dust. Sewage sludge and faecal sludge is also included in the category of municipal solid waste but it excludes wastewater.

Other Solid Waste is waste that require special treatment such as hazardous waste from industrial processes, agricultural activities and mining wastes, hospital waste, end of life vehicles, construction and demolition waste and WEEE (Waste Electrical and Electronic Equipment). Cities in developed countries in general have special treatment and disposal system that are designed to collect and handle these separately from municipal solid waste, while it is not uncommon that these are mixed and dumped in an uncontrolled manner in cities in developing countries.

Regularly Collected Waste refers to waste that is routinely collected from specific addresses or designated collection points. Waste collection is conducted directly by municipal authorities or private contractors licensed/commissioned by municipal authorities with a regular schedule of the day of the week and time of collection. In some cases, private waste collection companies have contracts with clients individually and provide collection services.

Uncollected Waste refers to waste generated in a city but uncollected due to the lack of collection services. In many cities informal settlements areas do not have access to this basic services. The amount of uncollected waste can be estimated by waste generation per capita in the city multiplied by the population who does not have access to the solid waste collection service.

Total Waste Generated by the City is sum of municipal solid waste and other solid waste, or the sum of regularly collected waste and uncollected waste. This excludes some portion that was taken and recycled before the solid waste collection. Adequate Final Discharge refers to waste that is recycled in regulated recycling facilities, composted or incinerated in regulated composting and incineration facilities and disposed in sanitary landfills in environmentally adequate ways. It excludes waste handled in recycling, composting, incineration facilities that do not have necessary pollution control systems and labour safety standards required by international guidelines or national and local legislations such as waste water treatment and air pollution prevention systems.
and provision of necessary equipment for workers. It also excludes solid waste that is incinerated and burned openly or disposed to open dumb without leachate facility.

Recycling is defined as the process by which materials otherwise destined for disposal are collected, processed, and remanufactured or reused except reuse as fuel. Direct recycling within industrial plants at the place of generation should be excluded.

Composting is defined as a biological process that involves aerobic biological decomposition of organic materials to produce stable humus-like product. Biodegradation is a natural, ongoing biological process that is a common occurrence in both human-made and natural environments.

Incinerating is thermal treatment of waste during which chemically fixed energy of combusted matters is transformed into thermal energy. Combustible compounds are transformed into combustion gases leaving the system as flue gases. Incombustible inorganic matters remain in the form of slag and fly ash. Incinerating includes incinerating with or without energy recovery.

Landfilling is the environmentally sound disposal of waste that cannot be reduced, recycled, composted, incinerated or processed in some other manner. A landfill is needed for disposing of residues from recycling, composting, incinerating or other processing facilities and can be used if the alternative facilities break down.

The concept of integrated and sustainable (solid) waste management, known as Integrated solid waste management (ISWM), is designed to improve the performance of solid waste system and to support sound decision-making. It comprises three key physical elements that all need to be addressed for an ISWM system to work well and to work sustainably over the long term. These are:

1. Public health: maintaining healthy conditions in cities, particularly through a good waste collection service;
2. Environment: protection of the environment throughout the waste chain, especially during treatment and disposal; and
3. Resource management: 'closing the loop' by returning both materials and nutrients to beneficial use, through preventing waste and striving for high rates of organics recovery, reuse and recycling.

These three key physical elements require appropriately designed governance strategies to deliver a well-functioning system. Three interrelated requirements for a "good waste governance" system are to:

1. Be inclusive, providing transparent spaces for stakeholders to contribute as users, providers and enablers;
2. Be financially sustainable, which means cost-effective and affordable; and
3. Rest on a base of sound institutions and pro-active policies.

Comments and limitations:

In many countries and sub-national governments, solid waste collection and management data are currently incomplete or not available. Countries have varying policies that define appropriate waste management, with different levels of treatment and data collection. Cities and countries that have more advanced systems should report other aspects of waste management such as
recycling that can be disaggregated by different components. Since this indicator has two points of reporting, i.e., the source for establishing if waste is collected regularly or not regularly, and the final discharge point and its level of adequacy, there is a need to integrate them in the monitoring. Some countries/cities have the data and monitoring systems needed to report and others may require training and capacity development to enhance their capacities.

Feasibility

Collection of indicators and data cannot be said infeasible but it might require training and capacity development. The data for the indicator such as total solid waste generation is globally available although the precision of data is disputable. This means that many countries have some data collection system but there are rooms for improvement. Also the collection of the data such as amount of waste adequately discharged will be a challenge for many of national and local governments. Introducing this data collection system globally is not only feasible since they usually have basic data collection system but will also contribute to enhance the solid waste monitoring capacity both at the national and local level.

Suitability

Many cities generate more solid waste than they can dispose of. Even when municipal budgets are adequate for collection, the safe disposal of collected wastes often remains a problem. Dumping and uncollected landfills are sometimes the main disposal methods in many developing countries; sanitary landfills are the norm in only a handful of cities. While, regular solid waste collection is a clear indicator of the effectiveness of a municipal administration, appropriate waste management is an excellent mechanism to reduce the adverse per capita environmental impact of cities and in this sense, the indicator is very suitable.

This indicator is used in many countries and can also be tracked and monitored in many local governments or cities globally. Solid waste management is essential for the sustainability of cities especially if it includes: waste reduction, reuse, recycling and composting, incineration, and disposal in landfills. Within a waste management hierarchy, waste prevention and reuse are the most preferred methods and should be promoted, as they reduce the demand on scarce environmental resources, reduce energy use, and minimize the quantity of waste that must eventually be recycled, incinerated or disposed in landfills.

Relevance

Waste collection is the collection and transportation of waste to the place of treatment or discharge by municipal services or similar institutions, or by public or private corporations, specialized enterprises or general government. A prosperous city seeks to collect and manage appropriately all its solid waste and improve standards of living, cleanliness and hence decrease the chances of having disease outbreaks related to the improper management of waste.

Urban households and businesses produce substantial amounts of solid waste, including industrial, construction and hazardous waste that must be collected regularly and disposed-off properly in order to maintain healthy and sanitary living conditions. Such waste collection is available through formal or informal means. Uncollected and improperly managed solid waste can end up in drains and dumps leading to blocked drainages and cause unsanitary conditions. Vectors such as mosquitos usually breed in blocked drainages and dumps that are not well managed. In summary, waste
collection management is intended to reduce adverse effects of waste on health, the environment or aesthetics, and the entire ecosystems that support the city or urban area.

Limitations

Countries have varying policies that define appropriate waste management, with different levels of treatment and data collection. To ensure comparability the indicator should limit to the methodology and definitions presented above. However some countries/cities have the data and monitoring systems able to report the indicator here but others may require training and capacity development to enhance their capacities.

**Computation Method:**

In order to generate the proportion of urban solid waste regularly collected and that is adequately discharged out of all the total urban waste generated by the city, there is a need to define the two components that are core to this indicator i.e. what constitutes urban waste and appropriate final discharge.

A two stage process is proposed for computing this indicator. First, cities will have to monitor the total waste generated by the city. Out of this tonnage, they will have to compute the proportion of the waste that was regularly collected from the various sources that generate city waste.

Solid waste regularly collected = Summation in tonnes of all regularly collected waste for all sources

Total solid waste generated = Sum of all waste generated by the city or urban area including collected and uncollected solid waste

At the second stage, cities will have to estimate the proportion of all waste that was regularly collected and was adequately discharged.

Adequately discharged solid waste = Regularly collected Solid waste that is reported as adequately discharged

Solid waste regularly collected and with adequate final discharge

= $100 \left( \frac{\text{Adequately discharged urban solid waste}}{\text{total tonnage of waste generated by the city}} \right)$

**Disaggregation:**

Data for this indicator can be disaggregated at the city and town levels. Information from municipal records, service providers, community profiles and household surveys allow collecting the information.

- Disaggregation by location (intra-urban)
- Disaggregation by income group
- Disaggregation by source of waste generation e.g. residential, industrial, office, etc.
- Disaggregation by type of final discharge
Data sources:

UN-Habitat is collecting information on this indicator in more than 400 cities that are part of the City Prosperity Initiative. Data for this indicator is available and can be disaggregated at the city and town levels. Information can be from municipal records, service providers, community profiles and household surveys. However, in many cities, solid waste collection and recycling data are currently incomplete or not available. The development of adequate data collection systems may require a significant effort in some jurisdictions.

Collection process:

National level estimates and reporting will be done by the national governments/NSOs. UN-Habitat and other partners will lead the reporting at the regional and global levels.

Data providers:

UN-Habitat, National statistical agencies and city management teams

Data compilers:

UN-Habitat

References:

http://unhabitat.org/
**Indicator 11.6.2: Annual mean levels of fine particulate matter (e.g. PM2.5 and PM10) in cities (population weighted)**

**Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable**

**Target 11.6: By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management**

**Definition:**

The mean annual concentration of fine suspended particles of less than 2.5 microns in diameters (PM2.5) is a common measure of air pollution. The mean is a population-weighted average for urban population in a country.

In the Revised Africa Addendum to the Principles and Recommendations of Population and Housing Censuses, Rev.3, a City is defined as follows. “Countries might wish to be guided by specific characteristics and criteria relating to the concept of a city in Africa as an inhabited place larger than a village or town, that has an organized population with varied skills, economic and political functions that touch national and international spheres, administrative boundaries, also taking into consideration changes that are spatial and temporal, demographic (population size and growth rate), and socio-economic (living conditions such as health, transport commuting, employment and housing conditions), and the sustainable aspects such as energy consumption and energy types, air emissions and land consumption. The added item in the census questionnaire, such as place of activity, could serve to measure inter-labour market connections across cities. It is recommended that, for purposes of regional comparisons, countries define a city by having a population of over 20,000 inhabitants. Census data should provide the population size and the actual geographical size of the city, the metropolitan area or wider region with designated administrative functions and information on whether inhabitants are in the periphery of nearby settlements and commute to the city on a daily or weekly basis. Countries may wish to elaborate further the specific function(s) of the city over time, as the function is not static and may change. Elaboration would be for the purposes of positioning and mapping the African city within the national and international system of production of goods and services. Countries may also wish to consider the spatial aspects of the actual boundaries of cities, including the core city beyond it being an administrative hub”.

**Rationale:**

Air pollution consists of many pollutants, among other particulate matter. These particles are able to penetrate deeply into the respiratory tract and therefore constitute a risk for health by increasing mortality from respiratory infections and diseases, lung cancer, and selected cardiovascular diseases.

**Comments and limitations:**

Urban/rural data: while the data quality available for urban/rural population is generally good for high-income countries, it can be relatively poor for some low- and middle income areas. Furthermore, the definition of urban/rural may greatly vary by country.
Computation Method:

The annual urban mean concentration of PM2.5 is estimated with improved modelling using data integration from satellite remote sensing, population estimates, topography and ground measurements.

Disaggregation:

The indicator is available by 0.1° x 0.1° grid size for the world.

Data Sources:

Sources of data include ground measurements from monitoring networks, collected for 3,000 cities and localities around the world, satellite remote sensing, population estimates, topography, information on local monitoring networks and measures of specific contributors of air pollution.

Data providers:

Ministry of Health, Ministry of the Environment

Data compilers:

WHO

References:

www.who.int/gho/phe
**Indicator 11.7.1: Average share of the built-up area of cities that is open space for public use for all, by sex, age and persons with disabilities**

**Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable**

**Target 11.7: By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities**

**Definition:**

Average share of the built-up area of cities that is open space for public use for all.

The ‘Built-up area’ of a city is defined as the contiguous area occupied by buildings and other impervious surfaces including the urban vacant areas in and around them but excluding rural areas beyond the urban fringe. The ‘population’ of a city is defined as the sum of the population in the set of administrative districts that together encompass the ‘built-up area’ of that ‘city’ in the year that measurements are taken.

**Rationale:**

This indicator provides information about the amount of open public areas in a city. Cities that improve and sustain the use of public space, including streets, enhance community cohesion, civic identity, and quality of life. Having access to open public spaces does not only improve the quality of life: it is also a first step toward civic empowerment and greater access to institutional and political spaces.

Cities function in an efficient, equitable, and sustainable manner only when private and public spaces work in a symbiotic relationship to enhance each other. In optimal conditions, they need to be secured and laid out in advance of urbanization to ensure orderly urban expansion. In existing cities, there is a need to revise and expand the ratio of public space in cities to make them more efficient, prosperous and sustainable. And they are needed in adequate amounts. Uncontrolled rapid urbanization creates disorderly settlement patterns with dangerously low shares of public space. Many cities in developed countries are also experiencing a dramatic reduce of public space.

The road network is the integrative tissue that binds cities together. It organizes the geographic space of cities, integrates them both as job markets and as local political spaces.

Cities that are walkable and transit-friendly require a highly connected network of paths and streets around small, permeable blocks. A tight network of paths and streets offering multiple routes to many destinations also make walking and cycling trips varied and enjoyable. This has clear implications in making cities more energy efficient.
Adequate public spaces in cities contribute to the achievement of other targets of Goal 11 and have positive implications in various Sustainable Development Goals. Notably public spaces increase social cohesion, networks and human exchange.

**Concepts:**

The method to estimate the area of public space is based on three steps: a) spatial analysis to delimit the built-up area of the city; b) estimation of the total open public space and; c) estimation of the total area allocated to streets.

a) Spatial analysis to delimit the built-up area. Delimit the built-up area of the urban agglomeration and calculate the total area (square kilometers). Land use maps, inventories to be locally generated to identify public spaces if possible complemented by fieldwork.

b) Computation of total area of open public space. Map and calculate the total areas of open public space within the defined urban boundaries based on the built-up area. The inventory of open public spaces is digitalized and vectorised using GIS software to allow computation of surfaces. The total of open public area is divided by the total built-up area of the city to obtain the proportion of land allocated to public spaces.

c) Estimation of the land allocated to streets. Calculation of the total area allocated to streets based on sampling techniques with a random sample of 10 hectares locales is selected out of a complete listing of the all hectares locales that form the city, using the built-up area definition indicated above.

**Comments and limitations:**

Cities vary considerably in size, history, development patterns, designs, shapes and citizen’s attitudes towards public spaces. Measuring how much public space a city has is only one part of measuring whether residents actually benefit from the space.

Gaps in the currently available data for monitoring target 11.7 along with some recommendations of upcoming opportunities for filling such gaps are provided below. As a new and innovative indicator, data availability may be scarce. Many cities do not have an inventory of public space, or have one that is not up-to-date. Efforts should be done to expand the availability of data in the developing world. UN-Habitat has developed tools, programmes and guidelines to assist cities in measuring, and expanding the availability of public space in cities. Some cities in the developing world lack of formal recognized public space that are publicly maintained. Innovative tools like the use of satellite imagery, and community-based mapping can support the identification of open space in public use.

The indicator quantifies the amount of open space in public use in cities, but does not capture the quality of the space that may impede its proper use. However, it is a precondition that open space is existing, and that its public use is guaranteed, to allow city authorities and other stakeholders to further improve its quality and increase its use.

**Computation Method:**

The sampling relies on a Halton Sequence of coordinates that, when repeated, always selects the same points.
Locales are defined as a set of city blocks surrounded by streets, and bounded by the medians of all blocks that intersect the randomly selected 10-hectare circle. Blocks are considered built-up if more than half of the block is built-up.

The share of the land in streets in the locale is then calculated as the ratio of the area of the locale in streets and boulevards and the total built-up area in the locale.

The share of the land occupied streets in the locale is then calculated as the ratio of the area of the locale occupied by streets and boulevards and the total built-up area in the locale.

The average share of land in streets in a given city is then calculated by sampling more and more locales until the variance between the shares of land in streets declines below an agreed-upon value. Using this stopping rule, it becomes possible to obtain a statistically reliable average value.

\[
\text{Share of the built up area of the city that is open space in public use (\%)} = \frac{\text{(Total surface of open public space + Total surface of land allocated to streets)}}{\text{(Total surface of built up area of the urban agglomeration)}}
\]

**Disaggregation:**

**Disaggregation by location (intra-urban)**

- Disaggregation by qualities of the open public space (safe, inclusive, accessible, green)
- Using qualitative data tagged to the public spaces it will be possible to disaggregate information by the share of built-up area is safe open space in public use
- The share of built-up area is green open space in public use
- The share of built-up area is universally accessible open space in public use, particularly for disable persons.

**Data sources:**

Satellite imagery (open sources), legal documents outlining publicly owned land, and community-based maps are the main sources of data.

For estimating the total Surface of Built-up area. Satellite imagery: Use of existing layers of satellite imagery ranging from open sources such as Google Earth and US Geological Survey/NASA imagery Landsat to more sophisticated and higher resolution land cover data sets. Images are to be analysed for the latest available year.

For the Inventory of open public space. Information can be obtained from legal documents outlining publicly owned land and well-defined land use plans. In some cases, where this information is lacking, incomplete or out-dated, open sources, informants in the city and community-based maps, which are increasingly recognized as a valid source of information, can be a viable alternative.

The share of land in public open spaces cannot be obtained directly from the use of high-resolution satellite imagery, because it is not possible to determine the ownership or use of open spaces by
remote sensing. But additional meta-data that helps to describe the land use patterns in the locale is additionally required to map out land that is for public and non-public use.

**Collection process:**

It is expected that investments in improved data collection and monitoring at country level will produce incentives for governments to improve monitoring of the public spaces in cities and also offer more opportunities to engage with multiple stakeholders in data collection and analysis and in achieving better understanding of the strengths and weaknesses of existing public space management policies and practices. This will ensure that internationally comparable data for global monitoring improved over time in terms of quality and timeliness of reporting. Where applicable, appropriate population weighting schemes will be used at the stage of computing regional and global estimates for this indicator. This will include catering for adjustments where public space definitions are different.

**Data providers:**

UN-Habitat

**Data compilers:**

UN-Habitat

**References:**

http://unhabitat.org/
Indicator 12.2.1: Material Footprint, material footprint per capita, and material footprint per GDP

Goal 12: Ensure sustainable consumption and production patterns

Target 12.2: By 2020, achieve the sustainable management and efficient use of natural resources.

METADATA SAME AS Indicator 8.4.1

Indicator 12.2.2: Domestic material consumption (DMC) and DMC per capita, per GDP

Goal 12: Ensure sustainable consumption and production patterns

Target 12.2: By 2030, achieve the sustainable management and efficient use of natural resources

METADATA SAME AS Indicator 8.4.2
Indicator 13.1.2: Number of countries that adopt and implement national disaster risk reduction strategies in line with the Sendai Framework for Disaster Risk Reduction 2015-2030

Goal 13: Take urgent action to combat climate change and its impacts

Target 13.1: Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries

Definition:
NA

An open-ended intergovernmental expert working group on indicators and terminology relating to disaster risk reduction established by the General Assembly (resolution 69/284) is developing a set of indicators to measure global progress in the implementation of the Sendai Framework. These indicators will eventually reflect the agreements on the Sendai Framework indicators.

Rationale:
The indicator will build bridge between the SDGs and the Sendai Framework for DRR. Increasing number of national governments that adopt and implement national and local DRR strategies, which the Sendai Framework calls for, will contribute to sustainable development from economic, environmental and social perspectives.

Impacts of climate change on sustainable development are observed through both slow-onset events (e.g. sea level rise, increasing temperatures, ocean acidification, glacial retreat and related impacts, salinization, land and forest degradation, loss of biodiversity and desertification) and extreme events. Proactive DRR strategies will address climate change impact and strengthening of economic, social, health and environmental resilience.

Comments and limitations:
The HFA Monitor started in 2007 and over time, the number of countries reporting to UNISDR increased from 60 in 2007 to 140+ countries now undertaking voluntary self-assessment of progress in implementing the HFA. During the four reporting cycles to 2015 the HFA Monitor has generated the world’s largest repository of information on national DRR policy inter alia. Its successor, provisionally named the Sendai Monitor, is under development and will be informed by the recommendations of the OEIWG. A baseline as of 2015 is expected to be created in 2016-2017 that will facilitate reporting on progress in achieving the relevant targets of both the Sendai Framework and the SDGs.
Members of both the OEIWG and the IAEG-SDGs have addressed that indicators that simply count the number of countries are not recommended, instead that, indicators to measure progress over time have been promoted. Further to the deliberations of the OEIWG as well as the IAEG, UNISDR has proposed computation methodologies that allow the monitoring of improvement in national and local DRR strategies over time. These methodologies range from a simple quantitative assessment of the number of these strategies to a qualitative measure of alignment with the Sendai Framework, as well as population coverage for local strategies.

**Computation Method:**

Computation methodology for several indicators is very comprehensive, very long (about 180 pages) and probably out of the scope of this Metadata. UNISDR prefers to refer to the outcome of the Open Ended Intergovernmental Working Group, which provides a full detailed methodology for each indicator and sub-indicator.

A short summary:

Summation of data from National Progress Reports of the Sendai Monitor

**Disaggregation:**

- By country
- By city (applying sub-national administrative units)

**Data sources:**

National Progress Report of the Sendai Monitor, reported to UNISDR

**Collection process:**

The official counterpart(s) at the country level will provide National Progress Report of the Sendai Monitor.

**Data providers:**

**Name:**

The coordinating lead institution chairing the National DRR platform which is comprised of special purpose agencies including national disaster agencies, civil protection agencies, and meteorological agencies.

**Data compilers:**

UNISDR

**References:**

http://www.preventionweb.net/
**Indicator 14.4.1: Proportion of fish stocks within biologically sustainable levels**

**Goal 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development**

**Target 14.4: By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics**

**Definition:**

The indicator Proportion of fish stocks within biologically sustainable levels measures the sustainability of the world's marine capture fisheries by their abundance. A fish stock of which abundance is at or greater than the level, that can produce the maximum sustainable yield (MSY) is classified as biologically sustainable. In contrast, when abundance falls below the MSY level, the stock is considered biologically unsustainable.

**Rationale:**

The indicator measure the sustainability of fish resources based on two major considerations: yield and reproduction. When a stock is fished biologically sustainable, it produces good yield without impairing the stock's reproductivity, reaching a good balance between human use and ecological conservation.

The proportion is just calculated based on stock numbers, without weighting either by its production volume or stock abundance, that is every fish stock is considered of the same importance.

**Concepts:**

Fish stock assessment science defines the long term sustainability of fish resources as their abundance is fished at the level that produces the maximum sustainable level. The basic benchmarks for the sustainability of fisheries are set by the UN Convention on the Law of the Sea.

**Comments and limitations:**

The indicator measures the sustainability of fishery resources very well, and is an end-result measure of Target 14.2. However, its derivation is not only data hungry, but also technically demanding as it needs stock assessment. This is also the reason why there is no data at country level.

**Computation Method:**

Fishery sustainability is defined based on stock abundance. To know stock abundance, one needs to carry out stock assessment that uses fish catch statistics, fishing effort data and biological
information and fit the data to a population dynamics model. After completing stock assessment for all stocks concerned, fish stocks that have abundance at or above the level associated with the maximum sustainable yield are counted as biologically sustainable, and otherwise are considered as overfished.

**Disaggregation:**

Disaggregation by country is not possible for the moment.

**Data Sources:**

Stock assessment needs several different kinds of data that come from different sources. For example, catch data are often reported to FAO by member countries, but fishing effort data and other biological data may come from other sources. A great effort must be made to collect data that are needed for stock assessment. Also, it is worth noting that this indicator cannot be directly calculated from the data, but only through stock assessment which is a mathematical modelling process.

**Data providers:**

FAO, line ministries responsible for fisheries

**Data compilers:**

FAO

**References:**

http://www.fao.org
Indicator 14.5.1: Coverage of protected areas in relation to marine areas (A2063 Indicator A1G7P1T2I2)

Goal 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development

Target 14.5: By 2020, conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on the best available scientific information

Definition:

The indicator Coverage of protected areas in relation to marine areas shows temporal trends in the percentage of important sites for marine biodiversity (i.e., those that contribute significantly to the global persistence of biodiversity) that are wholly covered by designated protected areas.

Rationale:

The safeguard of important sites is vital for stemming the decline in biodiversity and ensuring long term and sustainable use of marine natural resources. The establishment of marine protected areas is an important mechanism for achieving this aim, and this indicator serves as a means of measuring progress toward the conservation, restoration and sustainable use of marine ecosystems and their services, in line with obligations under international agreements. Importantly, while it can be disaggregated to report on any given single ecosystem of interest, it is not restricted to any single ecosystem type.

Levels of access to protected areas vary among the protected area management categories. Some areas, such as scientific reserves, are maintained in their natural state and closed to any other use. Others are used for recreation or tourism, or even open for the sustainable extraction of natural resources. In addition to protecting biodiversity, protected areas have high social and economic value: supporting local livelihoods; maintaining fisheries; harbouring an untold wealth of genetic resources; supporting thriving recreation and tourism industries; providing for science, research and education; and forming a basis for cultural and other non-material values.

This indicator adds meaningful information to, complements and builds from traditionally reported simple statistics of marine area covered by protected areas, computed by dividing the total protected area within a country by the total territorial area of the country and multiplying by 100. Such percentage area coverage statistics do not recognise the extreme variation of biodiversity importance over space, and so risk generating perverse outcomes through the protection of areas which are large at the expense of those which require protection.

The indicator is used to track progress towards the 2011–2020 Strategic Plan for Biodiversity, and was used as an indicator towards the Convention on Biological Diversity’s 2010 Target.

Concepts:

Protected areas, as defined by the International Union for Conservation of Nature, are clearly defined geographical spaces, recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and
cultural values. Importantly, a variety of specific management objectives are recognised within this definition, spanning conservation, restoration, and sustainable use:

- Category Ia: Strict nature reserve
- Category Ib: Wilderness area
- Category II: National park
- Category III: Natural monument or feature
- Category IV: Habitat/species management area
- Category V: Protected landscape/seascape
- Category VI: Protected area with sustainable use of natural resources

The status “designated” is attributed to a protected area when the corresponding authority, according to national legislation or common practice (e.g., by means of an executive decree or the like), officially endorses a document of designation. The designation must be made for the purpose of biodiversity conservation, not de facto protection arising because of some other activity (e.g., military).

Sites contributing significantly to the global persistence of biodiversity are identified following globally standard criteria for the identification of Key Biodiversity Areas applied at national levels. Two variants of these standard criteria have been applied in all countries to date. The first is for the identification of Important Bird & Biodiversity Areas, that is, sites contributing significantly to the global persistence of biodiversity, identified using data on birds, of which >12,000 sites in total have been identified from all of the world’s countries. The second is for the identification of Alliance for Zero Extinction sites, that is, sites holding effectively the entire population of at least one species assessed as Critically Endangered or Endangered on the IUCN Red List of Threatened Species. In total, 587 Alliance for Zero Extinction sites have been identified for 920 species of mammals, birds, amphibians, reptiles, conifers, and reef-building corals. A global standard for the identification of Key Biodiversity Areas unifying these approaches along with other mechanisms for identification of important sites for other species and ecosystems was approved by IUCN.

**Comments and limitations:**

Quality control criteria are applied to ensure consistency and comparability of the data in the World Database on Protected Areas (WDPA). New data are validated at United Nations Environment – World Conservation Monitoring Centre (UNEP-WCMC) through a number of tools and translated into the standard data structure of the WDPA. Discrepancies between the data in the WDPA and new data are minimised by provision of a manual and resolved in communication with data providers. Similar processes apply for the incorporation of data into the World Database of Key Biodiversity Areas.

The indicator does not measure the effectiveness of protected areas in reducing biodiversity loss, which ultimately depends on a range of management and enforcement factors not covered by the indicator. A number of initiatives are underway to address this limitation. Most notably, numerous mechanisms have been developed for assessment of protected area management, which can be synthesised into an indicator (Leverington et al. 2010). This is used by the Biodiversity Indicators Partnership as a complementary indicator of progress towards Aichi Biodiversity Target 11. However, there may be little relationship between these measures and protected area outcomes. More recently, approaches to “green listing” have started to be developed, to incorporate both
management effectiveness and the outcomes of protected areas, and these are likely to become progressively important as they are tested and applied more broadly.

Data and knowledge gaps can arise due to difficulties in determining whether a site conforms to the IUCN definition of a protected area, and some protected areas are not assigned management categories. Moreover, “other effective area-based conservation measures”, as specified by Aichi Biodiversity Target 11 of the Strategic Plan for Biodiversity 2011–2020, recognise that some sites beyond the formal protected area network, while not managed primarily for nature conservation, may nevertheless be managed in ways which are consistent with the persistence of the biodiversity for which they are important. However, standard approaches to documentation of “other effective area-based conservation measures” are so far still in their infancy. As these are consolidated, “other effective area-based conservation measures” will be included into the WDPA and thus this indicator accordingly.

Regarding important sites, the biggest limitation is that site identification to date has focused on specific subsets of biodiversity, for example birds (for Important Bird and Biodiversity Areas) and highly threatened species (for Alliance for Zero Extinction sites). While IBAs have been documented to be good surrogates for biodiversity more generally, the application of the unified standard for identification of Key Biodiversity Areas sites across different levels of biodiversity (genes, species, ecosystems) and different taxonomic groups remains a high priority, building from efforts to date.

Key Biodiversity Area (KBA) identification has been validated for a number of countries and regions where comprehensive biodiversity data allow formal calculation of the site importance (or “irreplaceability”) using systematic conservation planning techniques.

Future developments of the indicator will include: a) expansion of the taxonomic coverage of marine KBAs through application of the Key Biodiversity Areas standard to a wide variety of marine vertebrates, invertebrates, plants and ecosystem type; b) improvements in the data on protected areas by continuing to increase the proportion of sites with documented dates of designation and with digitised boundary polygons (rather than coordinates); and c) exploring other methods for assessing and presenting temporal trends in protected area coverage.

**Computation Method:**

This indicator is calculated from data derived from a spatial overlap between digital polygons for protected areas from the WDPA and digital polygons for marine Key Biodiversity Areas (from the World Database of Key Biodiversity Areas, including Important Bird and Biodiversity Areas, Alliance for Zero Extinction sites, and other Key Biodiversity Areas; available through the Integrated Biodiversity Assessment Tool. Any marine Key Biodiversity Areas for which >98% of their area is overlapped by one or more protected areas was defined as completely protected (to allow for resolution and digitisation errors in the underlying spatial datasets). The value of the indicator at a given point in time, based on data on the year of protected area establishment recorded in the WDPA, is then computed by dividing the total number of KBAs wholly covered by protected areas by the total number of KBAs in each country, and multiplying by 100.

Year of protected area establishment is unknown for 12% of protected areas in the WDPA, generating uncertainty around changing protected area coverage over time. To reflect this uncertainty, a year was randomly assigned from another protected area within the same country, and then this procedure repeated 1,000 times, with the median plotted.
**Disaggregation:**

Given that data for the global indicator are compiled at national levels, it is straightforward to disaggregate to national and regional levels, or conversely to aggregate to the global level. Key Biodiversity Areas span all ecosystem types through the marine environment and beyond. The indicator can therefore be reported in combination across marine systems along with terrestrial or freshwater systems, or disaggregated among them. However, individual Key Biodiversity Areas can encompass marine, terrestrial, and freshwater systems simultaneously, and so determining the results is not simply additive. Finally, the indicator can be disaggregated according to different protected area management categories (categories I–VI) to reflect differing specific management objectives of protected areas.

**Data Sources:**

Protected area data are compiled by ministries of environment and other ministries responsible for the designation and maintenance of protected areas. Protected Areas data for sites designated under the Ramsar Convention and the UNESCO World Heritage Convention are collected through the relevant convention international secretariats. Protected area data are aggregated globally into the WDPA by the UNEP-WCMC, according to the mandate for production of the United Nations List of Protected Areas. They are disseminated through Protected Planet, which is jointly managed by UNEP-WCMC and IUCN and its World Commission on Protected Areas.

Key Biodiversity Areas are identified at national scales through multi-stakeholder processes, following standard criteria and thresholds. Key Biodiversity Areas data are aggregated into the World Database on Key Biodiversity Areas, managed by BirdLife International. Specifically, data on Important Bird and Biodiversity Areas are available online and data on Alliance for Zero Extinction sites are available online. Both datasets, along with Key Biodiversity Areas identified through other processes, and the WDPA, are also disseminated through the Integrated Biodiversity Assessment Tool for Research and Conservation Planning, available online.

**Collection process:**

See other sections.

**Data providers:**

Protected area data are compiled by ministries of environment and other ministries responsible for the designation and maintenance of protected areas. Key Biodiversity Areas are identified at national scales through multi-stakeholder processes, following standard criteria and thresholds.

**Data compilers:**

UNEP-WCMC, IUCN

**References:**

http://www.unep-wcmc.org/
http://www.birdlife.org/
http://www.iucn.org/
Indicator 15.1.1: Forest area as a proportion of total land area

Goal 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

Target 15.1: By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements

Definition:
Forest area as a proportion of total land area

Rationale:

Forests fulfil a number of functions that are vital for humanity, including the provision of goods (wood and non-wood forest products) and services such as habitat for biodiversity, carbon sequestration, coastal protection and soil and water conservation.

The indicator provides a measure of the relative extent of forest in a country. The availability of accurate data on a country’s forest area is a key element for forest policy and planning within the context of sustainable development.

Changes in forest area reflect the demand for land for other uses and may help identify unsustainable practices in the forestry and agricultural sector.

Forest area as percentage of total land area may be used as a rough proxy for the extent to which the forests in a country are being conserved or restored, but it is only partly a measure for the extent to which they are sustainably managed.

Concepts:

In order to provide a precise definition of the indicator, it is crucial to provide a definition of “Forest” and “Total Land Area”.

According to the FAO definitions, Forest is defined as: “land spanning more than 0.5 hectares with trees higher than 5 meters and a canopy cover of more than 10 percent, or trees able to reach these thresholds in situ. It does not include land that is predominantly under agricultural or urban land use”. More specifically:
• Forest is determined both by the presence of trees and the absence of other predominant land uses. The trees should be able to reach a minimum height of 5 meters.
• It includes areas with young trees that have not yet reached but which are expected to reach a canopy cover of at least 10 percent and tree height of 5 meters or more. It also includes areas that are temporarily unstocked due to clear-cutting as part of a forest management practice or natural disasters, and which are expected to be regenerated within 5 years. Local conditions may, in exceptional cases, justify that a longer time frame is used.
• It includes forest roads, firebreaks and other small open areas; forest in national parks, nature reserves and other protected areas such as those of specific environmental, scientific, historical, cultural or spiritual interest.
• It includes windbreaks, shelterbelts and corridors of trees with an area of more than 0.5 hectares and width of more than 20 meters.
• It includes abandoned shifting cultivation land with a regeneration of trees that have, or are expected to reach, a canopy cover of at least 10 percent and tree height of at least 5 meters.
• It includes areas with mangroves in tidal zones, regardless whether this area is classified as land area or not.
• It includes rubberwood, cork oak and Christmas tree plantations.
• It includes areas with bamboo and palms provided that land use, height and canopy cover criteria are met.
• It excludes tree stands in agricultural production systems, such as fruit tree plantations, oil palm plantations, olive orchards and agroforestry systems when crops are grown under tree cover. Note: Some agroforestry systems such as the “Taungya” system where crops are grown only during the first years of the forest rotation should be classified as forest.

Total land area is the total surface area of a country less the area covered by inland waters, like major rivers and lakes.

The indicator is expressed as percent.

Comments and limitations:

Assessment of forest area is carried out at infrequent intervals in many countries. Access to remote sensing imagery has improved in recent years, but remote sensing techniques have limitations. In particular, there are limitations to assess land use (remote sensing primarily assesses land cover), and some slow changes such as forest regrowth cannot easily be observed with remote sensing techniques and require long time periods in order to detect. In addition, forest area with low canopy cover density (e.g. 10-30%) are difficult to detect with remote sensing techniques.

Computation Method:

Forest area (reference year) / Land area (2015) * 100

This indicator can be aggregated to global or regional level by adding all country values globally or in a specific region.
Disaggregation:

No further disaggregation of this indicator

Data sources:

FAO has been collecting and analyzing data on forest area since 1946. This is done at intervals of 5-10 years as part of the Global Forest Resources Assessment (FRA).

Collection process:

All data are provided to FAO by countries in the form of a country report following a standard format, which includes the original data and reference sources and descriptions of how these have been used to estimate the forest area for different points in time.

Officially nominated national correspondents and their teams prepare the country reports for the assessment. Some prepare more than one report as they also report on dependent territories. For the remaining countries and territories where no information is provided, a report is prepared by FAO using existing information and a literature search.

Once received, the country reports undergo a rigorous review process to ensure correct use of definitions and methodology as well as internal consistency. A comparison is made with past assessments and other existing data sources. Regular contacts between national correspondents and FAO staff by e-mail and regional/sub-regional review workshops form part of this review process. All country reports (including those prepared by FAO) are sent to the respective Head of Forestry for validation before finalization. The data are then aggregated at sub-regional, regional and global levels by the FRA team at FAO.

Data providers:

Officially nominated national correspondents and their teams prepare the country reports for the assessment. Some prepare more than one report as they also report on dependent territories. For the remaining countries and territories where no information is provided, a report is prepared by FAO using existing information and a literature search.

Data compilers:

FAO

References:

http://www.fao.org/
Indicator 15.1.2: Proportion of important sites for terrestrial and freshwater biodiversity that are covered by protected areas, by ecosystem type (A2063 Indicator A1G7P1T2I1)

Goal 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

Target 15.1: By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements

Definition:

This indicator Proportion of important sites for terrestrial and freshwater biodiversity that are covered by protected areas shows temporal trends in the percentage of important sites for terrestrial and freshwater biodiversity (i.e., those that contribute significantly to the global persistence of biodiversity) that are wholly covered by designated protected areas.

Rationale:

The safeguard of important sites is vital for stemming the decline in biodiversity and ensuring long term and sustainable use of terrestrial and freshwater natural resources. The establishment of protected areas is an important mechanism for achieving this aim, and this indicator serves as a means of measuring progress toward the conservation, restoration and sustainable use of terrestrial and freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements. Importantly, while it can be disaggregated to report on any given single ecosystem of interest (e.g., forests), it is not restricted to any single ecosystem type, and so faithfully reflects the intent of SDG target 15.1.

Levels of access to protected areas vary among the protected area management categories. Some areas, such as scientific reserves, are maintained in their natural state and closed to any other use. Others are used for recreation or tourism, or even open for the sustainable extraction of natural resources. In addition to protecting biodiversity, protected areas have high social and economic value: supporting local livelihoods; protecting watersheds from erosion; harbouring an untold wealth of genetic resources; supporting thriving recreation and tourism industries; providing for science, research and education; and forming a basis for cultural and other non-material values. This indicator adds meaningful information to, complements and builds from traditionally reported simple statistics of terrestrial and freshwater area covered by protected areas, computed by dividing the total protected area within a country by the total territorial area of the country and multiplying by 100. Such percentage area coverage statistics do not recognise the extreme variation of biodiversity importance over space, and so risk generating perverse outcomes through the protection of areas which are large at the expense of those which require protection.
The indicator is used to track progress towards the 2011–2020 Strategic Plan for Biodiversity, and was used as an indicator towards the Convention on Biological Diversity's 2010 Target.

**Concepts:**

Protected areas, as defined by IUCN, are clearly defined geographical spaces, recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values. Importantly, a variety of specific management objectives are recognised within this definition, spanning conservation, restoration, and sustainable use:

- **Category Ia:** Strict nature reserve
- **Category Ib:** Wilderness area
- **Category II:** National park
- **Category III:** Natural monument or feature
- **Category IV:** Habitat/species management area
- **Category V:** Protected landscape/seascape
- **Category VI:** Protected area with sustainable use of natural resources

The status "designated" is attributed to a protected area when the corresponding authority, according to national legislation or common practice (e.g., by means of an executive decree or the like), officially endorses a document of designation. The designation must be made for the purpose of biodiversity conservation, not de facto protection arising because of some other activity (e.g., military).

Sites contributing significantly to the global persistence of biodiversity are identified following globally standard criteria for the identification of Key Biodiversity Areas applied at national levels. Two variants of these standard criteria have been applied in all countries to date. The first is for the identification of Important Bird & Biodiversity Areas, that is, sites contributing significantly to the global persistence of biodiversity, identified using data on birds, of which >12,000 sites in total have been identified from all of the world's countries (BirdLife International 2014). The second is for the identification of Alliance for Zero Extinction sites (Ricketts et al. 2005), that is, sites holding effectively the entire population of at least one species assessed as Critically Endangered or Endangered on The IUCN Red List of Threatened Species. In total, 587 Alliance for Zero Extinction sites have been identified for 920 species of mammals, birds, amphibians, reptiles, conifers, and reef-building corals. A global standard for the identification of Key Biodiversity Areas unifying these approaches along with other mechanisms for identification of important sites for other species and ecosystems was approved by IUCN.

The Ramsar Convention on Wetlands and the Convention concerning the Protection of World Cultural and Natural Heritage are also essential in explaining important sites.

**Comments and limitations:**

Quality control criteria are applied to ensure consistency and comparability of the data in the WDPA. New data are validated at UNEP-WCMC through a number of tools and translated into the standard data structure of the WDPA. Discrepancies between the data in the WDPA and new data are minimised by provision of a manual and resolved in communication with data providers. Similar processes apply for the incorporation of data into the World Database of Key Biodiversity Areas.
The indicator does not measure the effectiveness of protected areas in reducing biodiversity loss, which ultimately depends on a range of management and enforcement factors not covered by the indicator. A number of initiatives are underway to address this limitation. Most notably, numerous mechanisms have been developed for assessment of protected area management, which can be synthesised into an indicator. This is used by the Biodiversity Indicators Partnership as a complementary indicator of progress towards Aichi Biodiversity Target 11. However, there may be little relationship between these measures and protected area outcomes. More recently, approaches to "green listing" have started to be developed, to incorporate both management effectiveness and the outcomes of protected areas, and these are likely to become progressively important as they are tested and applied more broadly.

Data and knowledge gaps can arise due to difficulties in determining whether a site conforms to the IUCN definition of a protected area, and some protected areas are not assigned management categories. Moreover, "other effective area-based conservation measures", as specified by Aichi Biodiversity Target 11 of the Strategic Plan for Biodiversity 2011–2020, recognise that some sites beyond the formal protected area network, while not managed primarily for nature conservation, may nevertheless be managed in ways which are consistent with the persistence of the biodiversity for which they are important. However, standard approaches to documentation of "other effective area-based conservation measures" are so far still in their infancy. As these are consolidated, "other effective area-based conservation measures" will be included into the WDPA and thus this indicator accordingly.

Regarding important sites, the biggest limitation is that site identification to date has focused on specific subsets of biodiversity, for example birds (for Important Bird and Biodiversity Areas) and highly threatened species (for Alliance for Zero Extinction sites). While IBAs have been documented to be good surrogates for biodiversity more generally, the application of the unified standard for identification of Key Biodiversity Areas sites across different levels of biodiversity (genes, species, ecosystems) and different taxonomic groups remains a high priority, building from efforts to date.

Key Biodiversity Area identification has been validated for a number of countries and regions where comprehensive biodiversity data allow formal calculation of the site importance (or "irreplaceability") using systematic conservation planning techniques.

Future developments of the indicator will include: a) expansion of the taxonomic coverage of terrestrial and freshwater KBAs through application of the Key Biodiversity Areas standard to a wide variety of terrestrial and freshwater vertebrates, invertebrates, plants and ecosystem type; b) improvements in the data on protected areas by continuing to increase the proportion of sites with documented dates of designation and with digitised boundary polygons (rather than coordinates); and c) exploring other methods for assessing and presenting temporal trends in protected area coverage.

Computation Method:

This indicator is calculated from data derived from a spatial overlap between digital polygons for protected areas from the WDPA and digital polygons for terrestrial and freshwater Key Biodiversity Areas from the World Database of Key Biodiversity Areas, including Important Bird and Biodiversity Areas, Alliance for Zero Extinction sites, and other Key Biodiversity Areas; available through the Integrated Biodiversity Assessment Tool. Any terrestrial and freshwater Key Biodiversity Areas for which >98% of their area is overlapped by one or more protected areas was defined as completely
protected (to allow for resolution and digitisation errors in the underlying spatial datasets). The value of the indicator at a given point in time, based on data on the year of protected area establishment recorded in the WDPA, is then computed by dividing the total number of KBAs wholly covered by protected areas by the total number of KBAs in each country, and multiplying by 100.

Year of protected area establishment is unknown for 12% of protected areas in the WDPA, generating uncertainty around changing protected area coverage over time. To reflect this uncertainty, a year was randomly assigned from another protected area within the same country, and then this procedure repeated 1,000 times, with the median plotted.

**Disaggregation:**

Given that data for the global indicator are compiled at national levels, it is straightforward to disaggregate to national and regional levels, or conversely to aggregate to the global level. Key Biodiversity Areas span all ecosystem types, including marine, freshwater, and mountains. The indicator can therefore be reported in combination across terrestrial and freshwater (and indeed marine) systems, or disaggregated among them. However, individual Key Biodiversity Areas can encompass terrestrial, freshwater, and marine systems simultaneously, and so determining the results is not simply additive. Finally, the indicator can be disaggregated according to different protected area management categories (categories I–VI) to reflect differing specific management objectives of protected areas.

**Data Sources:**

Protected area data are compiled by ministries of environment and other ministries responsible for the designation and maintenance of protected areas. Protected Areas data for sites designated under the Ramsar Convention and the UNESCO World Heritage Convention are collected through the relevant convention international secretariats. Protected area data are aggregated globally into the WDPA by the UNEP-WCMC, according to the mandate for production of the United Nations List of Protected Areas. They are disseminated through Protected Planet, which is jointly managed by UNEP-WCMC and IUCN and its World Commission on Protected Areas.

Key Biodiversity Areas are identified at national scales through multi-stakeholder processes, following standard criteria and thresholds. Key Biodiversity Areas data are aggregated into the World Database on Key Biodiversity Areas, managed by BirdLife International. Specifically, data on Important Bird and Biodiversity Areas are available online and data on Alliance for Zero Extinction sites are available online. Both datasets, along with Key Biodiversity Areas identified through other processes, and the WDPA, are also disseminated through the Integrated Biodiversity Assessment Tool for Research and Conservation Planning.

**Collection process:**

UNEP-WCMC produces the UN List of Protected Areas every 5–10 years, based on information provided by national ministries/agencies. In the intervening period between compilations of UN Lists, UNEP-WCMC works closely with national ministries/agencies and NGOs responsible for the designation and maintenance of protected areas, continually updating the WDPA as new data become available. The World Database of Key Biodiversity Areas is also updated on an ongoing basis, as new national data are submitted.
Data providers:

Protected area data are compiled by ministries of environment and other ministries responsible for the designation and maintenance of protected areas. Key Biodiversity Areas are identified at national scales through multi-stakeholder processes, following standard criteria and thresholds.

Data compilers:

UNEP-WCMC, IUCN

References:

http://www.unep-wcmc.org/

http://www.birdlife.org/

http://www.iucn.org/
Indicator 15.4.1: Coverage by protected areas of important sites for mountain biodiversity

Goal 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

Target 15.4: By 2030, ensure the conservation of mountain ecosystems, including their biodiversity, in order to enhance their capacity to provide benefits that are essential for sustainable development

Definition:

This indicator Coverage by protected areas of important sites for mountain biodiversity shows temporal trends in the percentage of important sites for mountain biodiversity (i.e., those that contribute significantly to the global persistence of biodiversity) that are wholly covered by designated protected areas.

According to the Convention on Biological Diversity, the world’s mountains encompass some of the most spectacular landscapes, a great diversity of species and habitat types, and distinctive human communities. Mountains occur on all continents, in all latitude zones, and within all the world’s principal biome types. Mountains provide freshwater for more than half of humanity, and are, in effect, the water towers of the world.

Rationale:

The safeguard of important sites is vital for stemming the decline in biodiversity and ensuring long term and sustainable use of mountain natural resources. The establishment of protected areas is an important mechanism for achieving this aim, and this indicator serves as a means of measuring progress toward the conservation, restoration and sustainable use of mountain ecosystems and their services, in line with obligations under international agreements. Importantly, while it can be disaggregated to report on any given single ecosystem of interest, it is not restricted to any single ecosystem type, and so faithfully reflects the intent of SDG target 15.1.

Levels of access to protected areas vary among the protected area management categories. Some areas, such as scientific reserves, are maintained in their natural state and closed to any other use. Others are used for recreation or tourism, or even open for the sustainable extraction of natural resources. In addition to protecting biodiversity, protected areas have high social and economic value: supporting local livelihoods; protecting watersheds from erosion; harbouring an untold wealth of genetic resources; supporting thriving recreation and tourism industries; providing for science, research and education; and forming a basis for cultural and other non-material values.

This indicator adds meaningful information to, complements and builds from traditionally reported simple statistics of mountain area covered by protected areas, computed by dividing the total protected area within a country by the total territorial area of the country and multiplying by 100. Such percentage area coverage statistics do not recognise the extreme variation of biodiversity
importance over space, and so risk generating perverse outcomes through the protection of areas which are large at the expense of those which require protection.

The indicator is used to track progress towards the 2011–2020 Strategic Plan for Biodiversity, and was used as an indicator towards the Convention on Biological Diversity's 2010 Target.

**Concepts:**

Protected areas, as defined by IUCN, are clearly defined geographical spaces, recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values. Importantly, a variety of specific management objectives are recognised within this definition, spanning conservation, restoration, and sustainable use:

- Category Ia: Strict nature reserve
- Category Ib: Wilderness area
- Category II: National park
- Category III: Natural monument or feature
- Category IV: Habitat/species management area
- Category V: Protected landscape/seascape
- Category VI: Protected area with sustainable use of natural resources

The status "designated" is attributed to a protected area when the corresponding authority, according to national legislation or common practice (e.g., by means of an executive decree or the like), officially endorses a document of designation. The designation must be made for the purpose of biodiversity conservation, not de facto protection arising because of some other activity (e.g., military).

Sites contributing significantly to the global persistence of biodiversity are identified following globally standard criteria for the identification of Key Biodiversity Areas applied at national levels. Two variants of these standard criteria have been applied in all countries to date. The first is for the identification of Important Bird & Biodiversity Areas, that is, sites contributing significantly to the global persistence of biodiversity, identified using data on birds, of which >12,000 sites in total have been identified from all of the world's countries. The second is for the identification of Alliance for Zero Extinction sites, that is, sites holding effectively the entire population of at least one species assessed as Critically Endangered or Endangered on The IUCN Red List of Threatened Species. In total, 587 Alliance for Zero Extinction sites have been identified for 920 species of mammals, birds, amphibians, reptiles, conifers, and reef-building corals. A global standard for the identification of Key Biodiversity Areas unifying these approaches along with other mechanisms for identification of important sites for other species and ecosystems was approved by IUCN.

**Comments and limitations:**

Quality control criteria are applied to ensure consistency and comparability of the data in the WDPA. New data are validated at UNEP-WCMC through a number of tools and translated into the standard data structure of the WDPA. Discrepancies between the data in the WDPA and new data are minimised by provision of a manual and resolved in communication with data providers. Similar processes apply for the incorporation of data into the World Database of Key Biodiversity Areas.
The indicator does not measure the effectiveness of protected areas in reducing biodiversity loss, which ultimately depends on a range of management and enforcement factors not covered by the indicator. A number of initiatives are underway to address this limitation. Most notably, numerous mechanisms have been developed for assessment of protected area management, which can be synthesised into an indicator. This is used by the Biodiversity Indicators Partnership as a complementary indicator of progress towards Aichi Biodiversity Target 11. However, there may be little relationship between these measures and protected area outcomes. More recently, approaches to “green listing” have started to be developed, to incorporate both management effectiveness and the outcomes of protected areas, and these are likely to become progressively important as they are tested and applied more broadly.

Data and knowledge gaps can arise due to difficulties in determining whether a site conforms to the IUCN definition of a protected area, and some protected areas are not assigned management categories. Moreover, “other effective area-based conservation measures”, as specified by Aichi Biodiversity Target 11 of the Strategic Plan for Biodiversity 2011–2020, recognise that some sites beyond the formal protected area network, while not managed primarily for nature conservation, may nevertheless be managed in ways which are consistent with the persistence of the biodiversity for which they are important. However, standard approaches to documentation of “other effective area-based conservation measures” are so far still in their infancy. As these are consolidated, “other effective area-based conservation measures” will be included into the WDPA and thus this indicator accordingly.

Regarding important sites, the biggest limitation is that site identification to date has focused on specific subsets of biodiversity, for example birds (for Important Bird and Biodiversity Areas) and highly threatened species (for Alliance for Zero Extinction sites). While IBAs have been documented to be good surrogates for biodiversity more generally, the application of the unified standard for identification of Key Biodiversity Areas sites across different levels of biodiversity (genes, species, ecosystems) and different taxonomic groups remains a high priority, building from efforts to date.

Key Biodiversity Area identification has been validated for a number of countries and regions where comprehensive biodiversity data allow formal calculation of the site importance (or “irreplaceability”) using systematic conservation planning techniques.

Future developments of the indicator will include: a) expansion of the taxonomic coverage of mountain Key Biodiversity Areas standard (KBAs) through application of the KBAs to a wide variety of mountain vertebrates, invertebrates, plants and ecosystem type; b) improvements in the data on protected areas by continuing to increase the proportion of sites with documented dates of designation and with digitised boundary polygons (rather than coordinates); and c) exploring other methods for assessing and presenting temporal trends in protected area coverage.

Computation Method:

This indicator is calculated from data derived from a spatial overlap between digital polygons for protected areas from the WDPA, Key Biodiversity Areas (from the World Database of Key Biodiversity Areas, including Important Bird and Biodiversity Areas, Alliance for Zero Extinction sites, and other Key Biodiversity Areas; available through the Integrated Biodiversity Assessment Tool,
and mountains. Any mountain Key Biodiversity Areas for which >98% of their area is overlapped by one or more protected areas was defined as completely protected (to allow for resolution and digitisation errors in the underlying spatial datasets). The value of the indicator at a given point in time, based on data on the year of protected area establishment recorded in the WDPA, is then computed by dividing the total number of KBAs wholly covered by protected areas by the total number of KBAs in each country, and multiplying by 100.

Year of protected area establishment is unknown for 12% of protected areas in the WDPA, generating uncertainty around changing protected area coverage over time. To reflect this uncertainty, a year was randomly assigned from another protected area within the same country, and then this procedure repeated 1,000 times, with the median plotted.

**Disaggregation:**

Given that data for the global indicator are compiled at national levels, it is straightforward to disaggregate to national and regional levels, or conversely to aggregate to the global level. Key Biodiversity Areas span all ecosystem types, including mountains. The indicator can therefore be reported in combination across terrestrial and freshwater systems, or disaggregated among them. However, individual Key Biodiversity Areas can encompass terrestrial and freshwater (and indeed marine) systems simultaneously, and so determining the results is not simply additive. Finally, the indicator can be disaggregated according to different protected area management categories (categories I–VI) to reflect differing specific management objectives of protected areas.

In addition to the aggregation of the coverage of protected areas across important sites for mountain biodiversity as an indicator towards SDG 15.4, other disaggregations of coverage of protected areas of particular relevance as indicators towards SDG targets include:

- **SDG 6.6** Coverage by protected areas of important sites for freshwater biodiversity.
- **SDG 14.5** Coverage of protected areas in relation to marine areas.
- **SDG 15.1** Proportion of important sites for terrestrial and freshwater biodiversity that are covered by protected areas, by ecosystem type.

Protected area coverage data can be combined with other data sources to yield further, complementary, indicators. For example, protected area overlay with ecoregional maps can be used to provide information on protected area coverage of different broad biogeographical regions. Protected area coverage of the distributions of different groups of species (e.g., mammals, birds, amphibians) can similarly provide indicators of trends in coverage of biodiversity at the species level. Protected area coverage can be combined with the Red List Index to generate indicators of the impacts of protected areas in reducing biodiversity loss. Finally, indicators derived from protected area overlay can also inform sustainable urban development; for example, the overlay of protected areas onto urban maps could provide an indicator of public space as a proportion of overall city space.
Data sources:

Protected area data are compiled by ministries of environment and other ministries responsible for the designation and maintenance of protected areas. Protected Areas data for sites designated under the Ramsar Convention and the UNESCO World Heritage Convention are collected through the relevant convention international secretariats. Protected area data are aggregated globally into the WDPA by the UNEP-WCMC, according to the mandate for production of the United Nations List of Protected Areas. They are disseminated through Protected Planet, which is jointly managed by UNEP-WCMC and IUCN and its World Commission on Protected Areas.

Key Biodiversity Areas are identified at national scales through multi-stakeholder processes, following standard criteria and thresholds. Key Biodiversity Areas data are aggregated into the World Database on Key Biodiversity Areas, managed by BirdLife International. Specifically, data on Important Bird and Biodiversity Areas are available online and data on Alliance for Zero Extinction sites are available online. Both datasets, along with Key Biodiversity Areas identified through other processes, and the WDPA, are also disseminated through the Integrated Biodiversity Assessment Tool for Research and Conservation Planning, available online.

Collection process:

See information under other categories.

Data providers:

Protected area data are compiled by ministries of environment and other ministries responsible for the designation and maintenance of protected areas. Key Biodiversity Areas are identified at national scales through multi-stakeholder processes, following standard criteria and thresholds.

Data compilers:

UNEP-WCMC, IUCN

References:

http://www.unep-wcmc.org/

http://www.birdlife.org/

http://www.iucn.org/
Indicator 15.7.1: Proportion of traded wildlife that was poached or illicitly trafficked

**Goal 15:** Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

**Target 15.7:** Take urgent action to end poaching and trafficking of protected species of flora and fauna and address both demand and supply of illegal wildlife products

**Definition:**

The share of all trade in wildlife detected as being illegal.

**Rationale:**

There are over 35,000 species under international protection, so it is impossible to monitor all poaching. Illegal trade, however, is an indirect indicator of poaching. Wildlife seizures represent concrete instances of illegal trade, but the share of overall wildlife crime they represent is unknown and variable. In addition, the number of species under international protection continues to grow. Legal international trade in protected species, by definition, is 100% captured in the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) Trade Database, which now contains over 16 million records of trade in CITES-listed species. To ground the illegal trade data in a complete indicator, the ratio of aggregated seizures to total trade is estimated. An increase in the share of total wildlife trade that is illegal would be interpreted as a negative indicator, and a decrease as a positive one.

Because the illegal wildlife trade represents thousands of distinct products, a means of aggregation is necessary. The legal trade value does not represent the true black market value of the items seized, nor the true value of the legal shipments, because it is derived from a single market source. It does, however, present a logical and consistent means of aggregating unlike products.

**Concepts:**

“All trade in wildlife” is the sum of the values of legal and illegal trade

“Legal trade” is the sum of the value of all shipments made in compliance with CITES, using valid CITES permits and certificates.

“Illegal trade” is the sum of the value of all CITES/listed specimens seized.

**Comments and limitations:**

Seizures are an incomplete indicator of trafficking, and subject to considerable volatility. Universal coverage is not presently available, although 120 countries are represented in the present database.
Since the indicator looks at the relationship between two values, changes in the relationship could be due to changes in either value.

**Computation Method:**

The value of a species-product unit is derived from the weighted average of prices declared for legal imports of analogous species product units, as acquired from United States Law Enforcement Monitoring and Information System of the Fish and Wildlife Service (US LEMIS).

The value of legal trade is the sum of all species-product units documented in CITES export permits as reported in the CITES Annual Reports times the species-product unit prices as specified above.

The value of illegal trade is the sum of all species-product units documented in the World WISE seizure database times the species-product unit prices as specified above.

The indicator is value of illegal trade/(value of legal trade + value of illegal trade)

**Disaggregation:**

Where source data are available, the data could be disaggregated to the national level. As a form of trade data, issues of gender, age, and disability status are not applicable.

**Data sources:**

The legal trade data are reported annually by Parties to CITES and stored in the CITES Trade Database, managed by the UNEP-WCMC in Cambridge.

The detected illegal trade data have been gathered from a number of sources and combined in a United Nations Office on Drugs and Crime (UNODC) database called “World WISE”. This database will be filled, from 2017, with data from the new annual CITES Illegal Trade reporting requirement.

The US LEMIS price data for CITES-listed species are also provided to UNEP-WCMC within the U.S. annual report to CITES.

**Collection process:**

Some adjustment/validation is necessary between countries, but standardized codes for the legal wildlife trade have been developing since 1975. The basic fields necessary for the global indicator (species, product, and unit) are well established and present in every seizure. Some unit conversions (e.g. logs to MT to m³ for timber) are necessary for some products. For many commodities, for instance trade in live animals and trophies, it is possible to aggregate based on “whole individuals”. To do regional or national breakdowns, however, data on the source of the shipment are necessary (as the impact of poaching pertains to the source country, not the seizure country), and these data are not available for every seizure.

**Data providers:**

The CITES Management Authority of each country

**Data compilers:**

UNODC, UNEP-WCMC

**References:**

www.unodc.org

http://www.unodc.org/
Indicator 16.2.2: Number of victims of human trafficking per 100,000 population, by sex, age and form of exploitation (A2063 Indicator A6G18P1T5I3)

Goal 16: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

Target 16.2: End abuse, exploitation, trafficking and all forms of violence against and torture of children

Definition:

The indicator is defined as the ratio between the total number of victims of trafficking in persons detected or living in a country and the population resident in the country, expressed per 100,000 populations.

According to Article 3, paragraph (a) of the UN Trafficking in Persons Protocol, trafficking in persons is defined as "the recruitment, transportation, transfer, harbouring or receipt of persons, by means of the threat or use of force or other forms of coercion, of abduction, of fraud, of deception, of the abuse of power or of a position of vulnerability or of the giving or receiving of payments or benefits to achieve the consent of a person having control over another person, for the purpose of exploitation. Exploitation shall include, at a minimum, the exploitation of the prostitution of others or other forms of sexual exploitation, forced labour or services, slavery or practices similar to slavery, servitude or the removal of organs".

Article 3, (b) states "the consent of a victim of trafficking in persons to the intended exploitation set forth in subparagraph (a) of this article shall be irrelevant where any of the means set forth in subparagraph (a) have been used";

Article 3, (c) states "the recruitment, transportation, transfer, harbouring or receipt of a child for the purpose of exploitation shall be considered trafficking in persons even if this does not involve any of the means set forth in subparagraph (a);"

Rationale:

The rationale is measuring the prevalence of the number of victims of trafficking according to the victims' profile and the forms of exploitation.

Concepts:

According to the definition given in the Trafficking in Persons Protocol, trafficking in persons has three constituent elements: The Act (Recruitment, transportation, transfer, harbouring or receipt of persons), the Means
(Threat or use of force, coercion, abduction, fraud, deception, abuse of power or of a position of vulnerability, or giving payments or benefits to a person in control over another person) and the Purpose (at minimum exploiting the prostitution of others, sexual exploitation, forced labour, slavery or similar practices and the removal of organs).

The definition implies that the exploitation does not need to be in place, as the intention by traffickers to exploit the victim is sufficient to define a trafficking offence. Furthermore, the list of exploitative forms is not limited, which means that other forms of exploitation may emerge and they could be considered to represent additional forms of trafficking offences.

Comments and limitations:

The count of detected victims of trafficking has the benefit of referring to victims as defined by the UN Protocol where the act, the mean and the purpose of trafficking have been identified by the national authorities. However, it does not cover the dark number of crime, i.e. the number of victims non detected by the authorities. While information on detected victims can provide valuable information to monitor sex and age profile of detected victims, as well as on forms of exploitation, trafficking flows, the number of detected victims per se doesn't monitor the level of trafficking of persons so interpretation of trends should be done with caution, as changes in detected victims of trafficking can be due to multiple factors such as intensity of trafficking flows but also to changes of law enforcement practices, changes in legislation, or changes in victims attitudes,.

Computation Method:

This numerator of this indicator is composed of two parts: detected and undetected victims of trafficking in persons. The detected part of trafficking victims, as resulting from investigation and prosecution activities of criminal justice system, is counted and reported by national law enforcement authorities.

Methodology to estimate the number of undetected victims of trafficking in persons is under development: some methods have been identified, but further testing is needed to produce a consolidated and agreed upon approach. The method to estimate undetected victims will have to allow the estimation of victims’ characteristics (sex and age) and the forms of exploitation suffered.

The indicator will be calculated as the ratio between the sum of detected and undetected victims of trafficking and the population resident in the country, multiplied by 100,000.

Disaggregation:

"Recommended disaggregations for this indicator are:

- sex and age of victims
- form of exploitation"
Data sources:

Data on detected victims of trafficking are typically provided by national authorities competent in detecting trafficking victims, law enforcement institutions, or services assisting the victims. Data are collected by UNODC through a questionnaire sent to national authorities through their Permanent Missions to the United Nations in Vienna (or any other competent authority designated by the Ministry of Foreign Affairs) and published in the UNODC Global Report on Trafficking in Persons every two years.

Collection process:

UNODC collects data from national authorities competent in detecting victims of trafficking through a common questionnaire. Once consolidated, before publication data are shared with countries to check their accuracy.

Data providers:

UNODC collects data from national authorities (normally designated by the Ministry of Foreign Affairs) competent in detecting victims of trafficking, either law enforcement institutions or national agencies responsible for assisting victims of trafficking.

Data compilers:

UNODC

References:

www.unodc.org
Indicator 16.5.1: Proportion of persons who had at least one contact with a public official and who paid a bribe to a public official, or were asked for a bribe by those public officials, during the previous 12 months (A2063 Indicator A3G12P1T1I1)

Goal 16: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

Target 16.5: Substantially reduce corruption and bribery in all their forms

Definition:
This indicator is defined as the percentage of persons who paid at least one bribe (gave a public official money, a gift or counter favour) to a public official, or were asked for a bribe by these public officials, in the last 12 months, as a percentage of persons who had at least one contact with a public official in the same period.

Rationale:
Corruption is an antonym of equal accessibility to public services and of correct functioning of the economy; as such, it has a negative impact on fair distribution of resources and development opportunities. Besides, corruption erodes public trust in authorities and the rule of law; when administrative bribery becomes a recurrent experience of large sectors of the population and businesses, its negative effects have an enduring negative impact on the rule of law, democratic processes and justice. By providing a direct measure of the experience of bribery, this indicator provides an objective metric of corruption, a yardstick to monitor progress in the fight against corruption.

Concepts:
In the International Classification of Crime for Statistical Purposes (ICCS), bribery is defined as: ‘Promising, offering, giving, soliciting, or accepting an undue advantage to or from a public official or a person who directs or works in a private sector entity, directly or indirectly, in order that the person act or refrain from acting in the exercise of his or her official duties’. This definition is based on definitions of bribery of national public officials, bribery of foreign public officials and official of international organisations and bribery in the private sector that are contained in the United Nations Convention against Corruption (articles 15, 16, and 21).

While the concept of bribery is broader, as it includes also actions such as promising or offering, and it covers both public and private sector, this indicator focuses on specific forms of bribery that are more measurable (the giving and/or requesting of bribes) and it limits the scope to the public sector.
The concept of undue advantage is operationalized by reference to giving of money, gifts or provision of a service requested/offered by/to a public official in exchange for a special treatment. This indicator captures the often called ‘administrative bribery’, which is often intended as the type of bribery affecting citizens in their dealings with public administrations and/or civil servants. For this indicator, public official refers to persons holding a legislative, executive, administrative or judicial office. In the operationalization of the indicator, a list of selected officials and civil servants is used.

Comments and limitations:

In the experience of several surveys conducted at national and international level, the so-called bribery prevalence rate is defined as the percentage of persons who paid at least one bribe (gave a public official money, a gift or counter favour) to a public official in the last 12 months, as a percentage of persons who had at least one contact with a public official in the same period. In this formulation the share of population who was asked a bribe but did not give it is not included. Available data at national and international level usually refers to this formulation, while the collection of data according to the formulation included in the SDG framework will depend on the adaptation of relevant survey tools and the calculation by national authorities. It is expected that data according to the current definition will become available gradually.

On a more general level, it should be noted that this indicator provides solid information on the experience of bribery occurring in the interaction between citizens and the public sector in the context of service delivery/transactions, while it does not cover other forms of corruption, such as ‘grand corruption’, trading in influence or abuse of power.

Computation Method:

The indicator is calculated as the total number of persons who paid at least one bribe to a public official in the last 12 months, or were asked for a bribe in the same period, over the total number of persons who had at least one contact with a public official in the same period, multiplied by 100.

Disaggregation:

Recommended disaggregation for this indicator are:

- age and sex of bribe-givers
- type of official
- income level of bribe-givers
- education attainment of bribe-givers

Data sources:

This indicator is derived from household surveys on corruption experience and/or victimisation surveys with a module on bribery.

The indicator refers to individual experience of the respondent, who is randomly selected among the household members, while experience of bribery by other members is not to be included.
Experience of bribery is collected through a series of questions on concrete contacts and experiences of bribery with a list of public official and civil servants.

The denominator refers only to those persons that had at least one direct interaction with a public official/civil servant as they form the population group at risk of experiencing bribery.

UNODC collects data on the prevalence of bribery through its annual data collection United Nations Surveys on Crime Trends and the Operations of Criminal Justice Systems (UN-CTS). The data collection through the UN-CTS is facilitated by a network of over 130 national Focal Points appointed by responsible authorities.

Collection process:

At international level, data are collected by UNODC through the annual UN-CTS data collection. Data on bribery indicator are sent to UNODC by member states, usually through national UN-CTS Focal Points (around 130 appointed Focal Points as of 2016) which in most cases are national institutions responsible for data production in the area of crime and criminal justice (NSOs, Ministry of Interior, Ministry of Justice, etc.). When necessary, other data sources are used, including from websites, publications, other forms of communication.

Data for SDG monitoring will be sent to countries for consultation prior to publication.

Data providers:

Data on bribery are sent to UNODC by member states, usually through national UN-CTS Focal Points which in most cases are national institutions responsible for data production in the area of crime and criminal justice (NSOs, Ministry of Interior, Ministry of Justice, etc.). The primary source of data on the indicator of bribery experience is usually the institution responsible for surveys on corruption/victimisation surveys (NSOs, Anti-Corruption Agency, etc.).

Data compilers:

UNODC

References:

www.unodc.org
Indicator 16.9.1: Proportion of children under 5 years of age whose births have been registered with a civil authority, by age (A2063 Indicator A6G17P2T3I3)

Goal 16: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

Target 16.9: By 2030, provide legal identity for all, including birth registration

Definition:

Proportion of children under 5 years of age whose births have been registered with a civil authority.

Rationale:

Registering children at birth is the first step in securing their recognition before the law, safeguarding their rights, and ensuring that any violation of these rights does not go unnoticed.

Children without official identification documents may be denied health care or education. Later in life, the lack of such documentation can mean that a child may enter into marriage or the labour market, or be conscripted into the armed forces, before the legal age. In adulthood, birth certificates may be required to obtain social assistance or a job in the formal sector, to buy or prove the right to inherit property, to vote and to obtain a passport.

Children’s right to a name and nationality is enshrined in the Convention on the Rights of the Child (CRC) under Article 7.

Comments and limitations:

The number of children who have acquired their right to a legal identity is collected mainly through censuses, civil registration systems and household surveys. Civil registration systems that are functioning effectively compile vital statistics that are used to compare the estimated total number of births in a country with the absolute number of registered births during a given period. However, the systematic recording of births in many countries remains a serious challenge. In the absence of reliable administrative data, household surveys have become a key source of data to monitor levels and trends in birth registration. In most low- and middle-income countries, such surveys represent the sole source of this information.

Computation Method:

Number of children under age of five whose births are reported as being registered with the relevant national civil authorities divided by the total number of children under the age of five in the population multiplied by 100

Disaggregation:
Sex, age, income, place of residence, geographic location.

**Data sources:**

Censuses, household surveys such as MICS and DHS and national vital registration systems

**Collection process:**

UNICEF undertakes an annual process to update its global databases, called Country Reporting on Indicators for the Goals (CRING). This exercise is done in close collaboration with UNICEF country offices with the purpose of ensuring that UNICEF global databases contain updated and internationally comparable data. UNICEF Country Offices are invited to submit, through an online system, any updated data for a number of key indicators on the well-being of women and children. Updates sent by the country offices are then reviewed by sector specialists at UNICEF headquarters to check for consistency and overall data quality of the submitted estimates. This review is based on a set of objective criteria to ensure that only the most recent and reliable information is included in the databases. Once reviewed, feedback is made available on whether or not specific data points are accepted, and if not, the reasons why. New data points that are accepted are then entered into UNICEF’s global databases and published in the State of the World’s Children statistical tables, as well as in all other data-driven publications/material. The updated databases are also posted online.

UNICEF also searches throughout the year for additional sources of data that are vetted by the UNICEF country office before they are included in the global databases.

**Data providers:**

NSOs (for the most part) and line ministries/other government agencies responsible for maintaining national vital registration systems.

**Data compilers:**

UNICEF

**References:**

data.unicef.org
Indicator 17.3.1: Foreign direct investments (FDI), official development assistance (ODA) and South-South Cooperation as a proportion of total domestic budget (A2063 Indicator A7G20P3T1I1)

Goal 17: Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development

Target 17.3: Mobilize additional financial resources for developing countries from multiple sources

Definition:

Foreign direct investment (FDI) is an investment in a business by an investor from another country for which the foreign investor has control over the company purchased. The Organization of Economic Cooperation and Development (OECD) defines control as owning 10% or more of the business.

Official development assistance (ODA) is a term coined by the Development Assistance Committee (DAC) of OECD to measure aid. ODA is widely used as an indicator of international aid flow. It includes some loans. ODA is financial aid given by governments and other agencies to support the economic, environmental, social, and political development of developing countries.

South–South Cooperation (S-SC) is a term historically used by policymakers and academics to describe the exchange of resources, technology, and knowledge between developing countries.

Rationale:

Total ODA flows to developing countries quantify the public effort that donors provide to developing countries.

Concepts:

ODA: The DAC defines ODA as “those flows to countries and territories on the DAC List of ODA Recipients and to multilateral institutions which are i) provided by official agencies, including state and local governments, or by their executive agencies; and ii) each transaction is administered with the promotion of the economic development and welfare of developing countries as its main objective; and is concessional in character and conveys a grant element of at least 25 per cent (calculated at a rate of discount of 10 per cent).

Comments and limitations:

ODA data are available from 1960 onwards.

Computation method:
FDI divided by total domestic budget and multiplied by 100;
ODA divided by total domestic budget and multiplied by 100; and
Total value of S-SC divided by total domestic budget and multiplied by 100.

**Disaggregation:**

ODA, FDI and S-SC can be disaggregated by donor, recipient country, type of finance, type of aid, sub-sector, etc.

**Data sources:**

The OECD/DAC has been collecting data on ODA flows from 1960.

The data are reported by donors according to the same standards and methodologies.

Data are reported on an annual calendar year basis by statistical reporters in national administrations (aid agencies, Ministries of Foreign Affairs or Finance, etc.).

**Collection process:**

ODA, FDI, S-SC data: A statistical reporter is responsible for the collection of DAC statistics in each providing country/agency. This reporter is usually located in the national aid agency, Ministry of Foreign Affairs or Finance etc.

**Data providers:**

Data are reported on an annual calendar year basis by statistical reporters in national administrations (aid agencies, Ministries of Foreign Affairs or Finance, etc.).

**Data compilers:**

OECD

**References:**

www.oecd.org/
**Indicator 17.3.2: Volume of remittances (in United States dollars) as a proportion of total GDP**

**Goal 17: Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development**

**Target 17.3: Mobilize additional financial resources for developing countries from multiple sources**

**Definition:**
Personal remittances received as proportion of GDP is the inflow of personal remittances expressed as a percentage of GDP.

**Concepts:**
Personal remittances comprise of personal transfers and compensation of employees. Personal transfers consist of all current transfers in cash or in kind made or received by resident households to or from non-resident households. Personal transfers thus include all current transfers between resident and non-resident individuals. Compensation of employees refers to the income of border, seasonal, and other short-term workers who are employed in an economy where they are not resident and of residents employed by non-resident entities. Data are the sum of two items defined in the sixth edition of the IMF’s Balance of Payments Manual: personal transfers and compensation of employees.

The concepts used are in line with the Sixth Edition of the IMF’s Balance of Payments and International Investment Position Manual (BPM6).

**Computation Method:**
Personal remittances are the sum of two items defined in the sixth edition of the IMF’s Balance of Payments Manual: personal transfers and compensation of employees. World Bank staff estimates on the volume of personal remittances data are used for gap-filling purposes. GDP data, sourced from the World Bank’s WDI database, are then used to express the indicator as a percentage of GDP.

**Disaggregation:**
None

**Data Sources:**
Volume of personal remittances data are sourced from IMF’s Balance of Payments Statistics database and then gap-filled with World Bank staff estimates.
GDP data, sourced from the World Bank’s WDI database is used as the denominator. GDP data collection is conducted from national and international sources through an annual survey of economists in the Bank’s country office network – the World Bank’s principal mechanism for gathering quantitative macroeconomic information on its member countries.

Data providers:

The national data provider of personal remittances is the institution in charge of the collection and compilation of the Balance of Payments statistics. This responsibility varies and is country specific (i.e. Central Bank). World Bank staff estimates for personal remittances data are used for gap-filling purposes. Personal remittances data are not reported directly to the World Bank from the national data provider. They are reported to IMF, which is the institution in charge of overseeing balance of payment stability as part of its institutional mandate.

GDP data are sourced from the World Bank’s WDI database and are compiled in accordance to 2008 SNA methodology. GDP data collection is conducted through the Unified Survey process, the World Bank’s principal mechanism for gathering quantitative macroeconomic information on its member countries.

Data compilers:

The government agency in charge of the collection and compilation of the Balance of Payments statistics is the responsible organization for compilation and reporting of the personal remittances data. This information gets reported by the countries’ government agencies to IMF. The World Bank is the responsible agency for compilation and reporting of the GDP data.

References:

www.worldbank.org
Indicator 17.4.1: Debt service as a proportion of exports of goods and services

Goal 17: Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development

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

Definition:

Debt service as proportion of exports of goods and services is the percentage of debt services (principle and interest payments) to the exports of goods and services. Debt services covered in this indicator refer only to public and publicly guaranteed debt.

Concepts:

Concepts of public and publicly guaranteed external debt data are in accordance with the sixth edition of the Balance of Payments and International Investment Position Manual (BPM6) methodology.

"Exports of goods and services" data concepts are in accordance with the sixth edition of the Balance of Payments and International Investment Position Manual (BPM6).

Computation Method:

Public and publicly guaranteed external debt data are compiled by the World Bank based on the World Bank Debtor Reporting System Manual, dated January 2000 which sets out the reporting procedures to be used by countries. The data are provided by the countries on a loan by loan basis.

"Exports of goods and services" data are sourced from IMF's Balance of Payments Statistics database and then gap-filled with World Bank staff estimates in accordance with BPM6. Both components are used to express the indicator in percentage terms.

Disaggregation:

None

Data sources:

In accordance with the World Bank’s Operational Policy 14.10 (which includes IBRD and IDA General Conditions) external debt reporting is required to fulfil the World Bank's needs for reliable and timely external debt information to (a) assess a borrowing country’s foreign debt situation,
creditworthiness, and economic management; and (b) conduct its country economic work and assess regional and global indebtedness and debt servicing problems.

External borrowing of reporting countries is performed through the Debtor Reporting System (DRS), which was established in 1951 and captures detailed information at loan level by using standardized set of forms.

**Collection process:**

Public and publicly guaranteed debt is reported on a quarterly basis through form 1 and form 2. Specifically, the new loan commitments are reported on Form 1 and when appropriate, Form 1a (Schedule of Drawings and Principal and Interest Payments); the loan transactions are reported once a year on Form 2 (Current Status and Transactions). Form 3 is used to report corrections to data originally reported in Forms 1 and 2. Forms 1 and 1A are submitted quarterly, within 30 days of the close of the quarter. Form 2 is submitted annually, by March 31 of the year following that for which the report is made.

**Data providers:**

The agency in charge of producing the debt statistics at the national level is the World Bank with the data sourced by government agencies on a loan by loan basis. The national data provider of “Exports of Goods, and Services” is the institution in charge of the collection and compilation of the Balance of Payments statistics. This responsibility varies and is country specific (i.e. Central Bank). World Bank staff estimates for “Exports of Goods and Services” data are used for gap filling purposes. “Exports of Goods and Services” data are not reported directly to the World Bank from the national data provider. They are reported to IMF, which is the institution in charge of overseeing balance of payment stability as part of its institutional mandate.

**Data compilers:**

World Bank

**References:**

www.worldbank.org
Indicator 17.6.2: Fixed Internet broadband subscriptions per 100 inhabitants, by speed

Goal 17: Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development

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

Definition:

The indicator fixed Internet broadband subscriptions, by speed, refers to the number of fixed-broadband subscriptions to the public Internet, split by advertised download speed.

The indicator is currently broken down by the following subscription speeds:

- 256 kbit/s to less than 2 Mbit/s subscriptions: Refers to all fixed broadband Internet subscriptions with advertised downstream speeds equal to, or greater than, 256 kbit/s and less than 2 Mbit/s.
- 2 Mbit/s to less than 10 Mbit/s subscriptions: Refers to all fixed-broadband Internet subscriptions with advertised downstream speeds equal to, or greater than, 2 Mbit/s and less than 10 Mbit/s.
- Equal to or above 10 Mbit/s subscriptions (4213_G10). Refers to all fixed-broadband Internet subscriptions with advertised downstream speeds equal to, or greater than, 10 Mbit/s.

Rationale:

The Internet has become an increasingly important tool to provide access to information, and can help foster and enhance regional and international cooperation on, and access to, science, technology and innovations, and enhance knowledge sharing. High-speed Internet access is important to ensure that Internet users have quality access to the Internet and can take advantage of the growing amount of Internet 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. Many countries, especially in the developing world, have not only a very limited amount of fixed-broadband subscriptions, but also at very low speeds. This limitation is a barrier to the Target 17.6 and the indicator highlights the potential of the Internet (especially through high-speed access) to enhance cooperation, improve access to science, technology and innovation, and share knowledge. The indicator also highlights the importance of Internet use as a development enabler and helps
to measure the digital divide, which, if not properly addressed, will aggravate inequalities in all development domains. Information on fixed broadband subscriptions by speed will contribute to the design of targeted policies to overcome those divides.

**Concepts:**

Fixed Internet broadband subscriptions refer to subscriptions to high-speed access to the public Internet (a TCP/IP connection), at downstream speeds equal to, or greater than, 256 kbit/s. This includes cable modem, DSL, fibre-to-the-home/building, other fixed (wired)-broadband subscriptions, satellite broadband and terrestrial fixed wireless broadband. This total is measured irrespective of the method of payment. It excludes subscriptions that have access to data communications (including the Internet) via mobile-cellular networks. It should include fixed WiMAX and any other fixed wireless technologies. It includes both residential subscriptions and subscriptions for organizations.

The Internet is a worldwide public computer network. It provides access to a number of communication services including the World Wide Web and carries e-mail, news, entertainment and data files.

**Comments and limitations:**

Since most Internet service providers offer plans linked to download speed, the indicator is relatively straightforward to collect. Countries may use packages that do not align with the speeds used for this group of indicators. Countries are encouraged to collect the data in more speed categories so as to allow aggregation of the data according to the split shown above. In the future, ITU might start to include higher-speed categories, reflecting the increasing demand and availability of higher-speed broadband subscriptions.

**Computation Method:**

ITU collects data for this indicator through an annual questionnaire from national regulatory authorities or ICT Ministries, who collect the data from national Internet service providers. The data can be collected by asking each Internet service provider in the country to provide the number of their fixed-broadband subscriptions by the speeds indicated. The data are then added up to obtain the country totals.

**Disaggregation:**

Since data for this indicator are based on administrative data from internet service providers, no information on individual subscribers is available and therefore the data cannot be broken down by any individual characteristics. Data could in theory be broken down by geographic location and urban/rural, but ITU does not collect this information.

**Data sources:**

Data for this indicator are based on administrative data from operators.

**Collection process:**
ITU collects data for this indicator through an annual questionnaire from national regulatory authorities or ICT Ministries, who collect the data from Internet service providers.

**Data providers:**

The telecommunication/ICT regulatory authority or the Ministry in charge of ICTs within each country, who collect the data from Internet Service Providers.

**Data compilers:**

ITU

**References:**

http://www.itu.int/
**Indicator 17.8.1: Proportion of individuals using the Internet (A2063 Indicator A1G1P4T6I2)**

**Goal 17: Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development**

**Target 17.8: Fully operationalize the technology bank and science, technology and innovation capacity-building mechanism for least developed countries by 2017 and enhance the use of enabling technology, in particular information and communications technology**

**Definition:**

The indicator proportion of individuals using the Internet is defined as the proportion of individuals who used the Internet from any location in the last three months.

**Rationale:**

The Internet has become an increasingly important tool to access public information, which is a relevant means to protect fundamental freedoms. The number of Internet users has increased substantially over the last decade and access to the Internet has changed the way people live, communicate, work and do business. Internet uptake is a key indicator tracked by policy makers and others to measure the development of the information society and the growth of Internet content – including user-generated content – provides access to increasing amounts of information and services.

Despite growth in networks, services and applications, ICT access and use is still far from equally distributed, and many people cannot yet benefit from the potential of the Internet. This indicator highlights the importance of Internet use as a development enabler and helps to measure the digital divide, which, if not properly addressed, will aggravate inequalities in all development domains. Classificatory variables for individuals using the Internet – such as age, sex, education level or labour force status – can help identify digital divides in individuals using the Internet. This information can contribute to the design of targeted policies to overcome those divides.

The proportion of individuals using the Internet is an established indicator and also one of the three ICT-related MDG indicators (for Target 8F). It is part of the Partnership on Measuring ICT for Development’s Core List of Indicators, which has been endorsed by the UNSC in 2014. It is also included in the ITU ICT Development Index, and thus considered a key metric for international comparisons of ICT developments.

**Concepts:**

The Internet is a worldwide public computer network. It provides access to a number of communication services including the World Wide Web and carries e-mail, news, entertainment and data files, irrespective of the device used (not assumed to be only via a computer - it may also be by mobile telephone, tablet, PDA, games machine, digital TV etc.). Access can be via a fixed or mobile network.
Comments and limitations:

While the data on the percentage of individuals using the Internet are very reliable for countries that have collected the data through official household surveys, they are less reliable in cases where the number of Internet users is estimated by ITU. ITU is encouraging all countries to collect data on this indicator through official surveys and the number of countries with official data for this indicator is increasing.

Computation Method:

For countries that collect data on this indicator through an official survey, this indicator is calculated by dividing the total number of in-scope individuals using the Internet (from any location) in the last 3 months by the total number of in-scope individuals. For countries that have not carried out a survey, data are estimated (by ITU) based on the number of Internet subscriptions and other socioeconomic indicators (GNI per capita) and on the time series data.

Disaggregation:

For countries that collect this data on the proportion of individuals using the Internet through an official survey, and if data allow breakdown and disaggregation, the indicator can be broken down by region (geographic and/or urban/rural), by sex, by age group, by educational level, by labour force status, and by occupation. ITU collects data for all of these breakdowns from countries.

Data sources:

The indicator proportion of individuals using the Internet is based on an internationally agreed definition and methodology, which have been developed under the coordination of ITU, through its Expert Groups and following an extensive consultation process with countries. Data on individuals using the Internet are collected through an annual questionnaire that ITU sends to NSO. In this questionnaire ITU collects absolute values. The percentages are calculated a-posteriori. The survey methodology is verified to ensure that it meets adequate statistical standards. The data are verified to ensure consistency with previous years’ data and situation of the country for other related indicators (ICT and economic).

For most developed and an increasing number of developing countries, percentage of individuals using the Internet data are based on methodologically sound household surveys conducted by national statistical agencies. If the NSO has not collected Internet user statistics, then ITU estimates the percentage of individuals using the Internet.

Data are usually not adjusted, but discrepancies in the definition, age scope of individuals, reference period or the break in comparability between years are noted in a data note. For this reason, data are not always strictly comparable. Some countries conduct a household survey where the question on Internet use is included every year. For others, the frequency is every two or three years.

Collection process:

Data on individuals using the Internet are collected through an annual questionnaire that ITU sends to NSO. In this questionnaire ITU collects absolute values. The percentages are calculated
a-posteriori. The survey methodology is verified to ensure that it meets adequate statistical standards. The data are verified to ensure consistency with previous years’ data and situation of the country for other related indicators (ICT and economic).

Data providers:

NSO.

Data compilers:

ITU

References:

http://www.itu/
Indicator 17.9.1: Dollar value of financial and technical assistance (including through North-South, South-South and triangular cooperation) committed to developing countries

Goal 17: Strengthen the means of implementation and revitalise the Global Partnership for Sustainable Development

Target 17.9: Enhance international support for implementing effective and targeted capacity-building in developing countries to support national plans to implement all the Sustainable Development Goals, including through North-South, South-South and triangular cooperation

Definition:

The indicator Dollar value of financial and technical assistance (including through North-South, South-South and triangular cooperation) committed to developing countries is defined as Gross disbursements of total ODA and other official flows from all donors for capacity building and national planning.

Rationale:

Total ODA and OOF flows to developing countries quantify the public effort (excluding export credits) that donors provide to developing countries.

Concepts:

ODA: The DAC defines ODA as “those flows to countries and territories on the DAC List of ODA Recipients and to multilateral institutions which are i) provided by official agencies, including state and local governments, or by their executive agencies; and ii) each transaction is administered with the promotion of the economic development and welfare of developing countries as its main objective; and is concessional in character and conveys a grant element of at least 25 per cent (calculated at a rate of discount of 10 per cent).

OOF): Other official flows (excluding officially supported export credits) are defined as transactions by the official sector which do not meet the conditions for eligibility as ODA, either because they are not primarily aimed at development, or because they are not sufficiently concessional.

‘All donors’ refers to DAC donors, non-DAC donors and multilateral organisations.

Comments and limitations:

Data in the Creditor Reporting System are available from 1973. However, the data coverage is considered complete since 1995 for commitments at an activity level and 2002 for disbursements.
Computation Method:

The sum of ODA and OOF flows from all donors to developing countries for capacity building and national planning.

Disaggregation:

This indicator can be disaggregated by type of flow (ODA or OOF), by donor, recipient country, type of finance, type of aid, sector, etc.

Data sources:

The OECD/DAC has been collecting data on official and private resource flows from 1960 at an aggregate level and 1973 at an activity level through the Creditor Reporting System (CRS data are considered complete from 1995 for commitments at an activity level and 2002 for disbursements). The data are reported by donors according to the same standards and methodologies.

Data are reported on an annual calendar year basis by statistical reporters in national administrations (aid agencies, Ministries of Foreign Affairs or Finance, etc.).

Collection process:

A statistical reporter is responsible for the collection of DAC statistics in each providing country/agency. This reporter is usually located in the national aid agency, Ministry of Foreign Affairs or Finance etc.).

Data providers:

Data are reported on an annual calendar year basis by statistical reporters in national administrations (aid agencies, Ministries of Foreign Affairs or Finance, etc.).

Data compilers:

OECD

References:

www.oecd.org/
Indicator 17.18.3: Number of countries with a national statistical plan that is fully funded and under implementation, by source of funding (A2063 Indicator A7G19P1T4I2)

Goal 17: Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development

Target 17.18: 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

Definition:

The indicator Number of countries with a national statistical plan that is fully funded and under implementation is based on the annual Status Report on National Strategies for the Development of Statistics (NSDS). In collaboration with its partners, PARIS21 reports on country progress in designing and implementing national statistical plans. The indicator is a count of countries that are either (i) implementing a strategy, (ii) designing one or (iii) awaiting adoption of the strategy in the current year.

Concept:

The national strategies for the development of statistics are helpful to strengthen the capacities of statistical production and dissemination in countries. The assessment that has to be undertaken prior to the preparation of the NSDS will be used to identify areas where interventions are required. Strengthened capacities of national statistical systems in countries are essential in providing the necessary data and information to monitor the sustainable development goals and targets implementation.

Computation Method:

Simple count of countries that are either (i) implementing a strategy, (ii) designing one or (iii) awaiting adoption of the strategy in the current year.

Disaggregation:

The indicator can be disaggregated by geographical area.

Data sources:
Data is provided by the NSOs. The information is collected annually and verified by direct email correspondence with the national focal point for the country’s NSDS.

**Data providers:**

Partnership in Statistics for Development in the 21st Century (PARIS21)

**Data compilers:**

PARIS21

**References:**

www.paris21.org
Indicator A1G1P1T1I1: Gross National Income (GNI) per capita

Goal A1G1: A High Standard of Living, Quality of Life and Well Being for All

Target A1G1P1T1: Increase 2013 per capita income by at least 30%

Definition

Gross National Income (GNI) is the sum of value added by all resident producers plus any product taxes (less subsidies) not included in the valuation of output plus net receipts of primary income (compensation of employees and property income) from abroad.

Gross Domestic Product (GDP) is the standard measure of the value of final goods and services produced by a country during a period minus the value of imports. While GDP is the single most important indicator to capture these economic activities, it provides only a limited measure of people’s material living standards.

GNI per capita is based on Purchasing Power Parity (PPP) and is converted to international dollars using purchasing power parity rates. An international dollar has the same purchasing power over GNI as a U.S. dollar has in the United States. Data are in current international dollars. GNI, calculated in national currency, is usually converted to U.S. dollars at official exchange rates for comparisons across economies, although an alternative rate is used when the official exchange rate is judged to diverge by an exceptionally large margin from the rate actually applied in international transactions.

Computation

GNI = Gross Domestic Product (GDP) + Net Income

Unit of measurement:

US Dollars

Disaggregated by:

Rural/Urban

Data collection method: [R1]

Data Source:

National Statistical Offices

World Bank
Known Data Limitations and Significance (if any):

This is a per capita measure, and does not take into consideration the disparities between the very rich and the very poor.

GNI and GDP measure only part of the economic dimension of sustainable development. Both economic measures do not adequately capture people’s material conditions including data from the informal sector.
Indicator A1G1P4T6I1 - Percentage of households using electricity

Goal A1G1: A High Standard of Living, Quality of Life and Well Being for All

Target A1G1P4T6. Access and use of electricity and internet is increased by at least 50% of 2013 levels

Definition

Proportion of households that are connected to the national electricity grid as a percentage of total number of households

Rationale:

Modern energy services are an essential component of providing adequate food, shelter, water, sanitation, medical care, education and access to communication. Lack of access to modern energy services contributes to poverty and deprivation and limits economic development. Furthermore, adequate, affordable and reliable energy services are necessary to guarantee sustainable economic and human development.

Computation

Percentage of households using electricity = \( \frac{\text{Households connected to national electricity grid}}{\text{total number of households}} \)

Disaggregated by:

Urban, rural

Data Collection methods:

- National Service Delivery Surveys
- National Household Surveys
- National Census.

Data Sources:

- National Statistical Office for survey on households
- National Population Council / Authorities for Surveys on Households
- Ministries of Energy / Planning / National Electricity Regulatory Authorities for national electricity generation capacity
- IEA energy statistics
- Other publicly available statistics, including DHS, LSMS
Frequency and Timing of Data Collection

Annual

Analysis

Analysis will be based on type of energy, type of users e.g. industrial, household, public utility, urban rural etc.

Reporting:

Annual

Known Data Limitations and Significance (if any):

Actions Taken or Planned to Address Data Limitations:
Indicator A1G1P4T6I2: Percentage of population with access to internet

Goal A1G1: A High Standard of Living, Quality of Life and Well Being for All

Target A1G1P4T6: Access and use of electricity and internet is increased by at least 50% of 2013 levels

Definition

The share of the population that has access to the internet as a percentage of total population.

The Internet is a worldwide public computer network. It provides access to a number of communication services including the World Wide Web and carries e-mail, news, entertainment and data files, irrespective of the device used (not assumed to be only via a computer - it may also be by mobile-cellular telephone, other wireless devices, games machine, digital TV etc.). Access can be via a fixed or mobile network.

Individuals having access and using the Internet refers to those that had access and used the Internet in the last 12 months from any location.

Rationale:

Internet access, and in particular broadband Internet access, has become a key infrastructure, a key pillar to industrialization and a fundamental driver for innovation. It is an important driver for economic growth and development and can help foster wellbeing, in particular by delivering a growing number of services and applications, including in the areas of business, health, education and governance.

This indicator is an important tool for monitoring progress on the availability of the benefits of new technologies (especially information and communications), because effective communication between those involved in the development process is not possible without the necessary infrastructure. Internet allows people to exchange experiences and learn from each other, enabling higher returns on investment and avoiding problems of duplication or missing information. The use of information and communication technologies can make governments more transparent, thereby reducing corruption and leading to better governance. It can help people in rural areas find out about market prices and sell their products at a better price. It can also overcome traditional barriers to better education by making books available online and opening the door to e learning.

Besides capturing the use of the Internet, this indicator is able to measure changes in Internet access and use. In countries where many people access the Internet at work, at school, at cybercafés or other public locations, increases in public access serve to increase the number of users despite limited numbers of Internet subscriptions and of households with Internet access. Developing countries especially tend to have many Internet users per Internet subscriptions, reflecting that home access is not the primary location of access.
Computation

Percentage of population with access to the internet = \( \frac{\text{Population which can access Internet}}{\text{Total eligible population}} \)

Unit of measurement:

Percentage

Disaggregated by:

Age
Sex
Urban, rural
Frequency of use

Data Collection method:

A growing number of countries are measuring the percentage of individuals using the Internet through household surveys. Surveys usually indicate a percentage of the population for a certain age range (e.g. 15-74 years old). The percentage of individuals using the Internet in this age range is used to estimate the percentage of individuals using the Internet for the entire population. Where surveys are not available, an estimate of the percentage of individuals using the Internet may be derived based on a number of indicators such as fixed (wired)-broadband subscriptions, fixed-telephone subscriptions, active mobile-broadband subscriptions and the income of the country.

Data Source:

Data are based on:

- Surveys generally carried out by national statistical offices or estimated based on the number of Internet subscriptions.
- National household surveys
- User surveys conducted by national statistical agencies or industry associations
- Ministries of Communication and related agencies
- Internet user statistics (based largely on responses to an annual questionnaire that the ITU sends to government telecommunication agencies
- Partnership on Measuring ICT for Development’s Core List of Indicators, which has been endorsed by the UN Statistical Commission

Where surveys are not available, an estimate of the percentage of individuals using the Internet may be derived based on a number of indicators such as fixed (wired)-broadband subscriptions, fixed-telephone subscriptions, active mobile-broadband subscriptions and the income of the country.

Frequency and Timing of Data Collection

Annual
Analysis

Disaggregation by age, sex, rural/urban, type of access etc.

Reporting:

Annual

Known Data Limitations and Significance (if any):

While the data on the percentage of individuals using the Internet are very reliable for countries that have carried out official household surveys, they are much less reliable in cases where the number of Internet users is estimated based on the number of Internet subscriptions. The data can be misleading because of multiple prepaid Internet accounts, free Internet access accounts or public Internet access such as Internet cafes. The methodology used to estimate the percentage of individuals using the Internet should always be described when presenting the data.

The quality of the Internet user data varies, and the quality of data for smaller developing countries is uncertain.

Actions Taken or Planned to Address Data Limitations:

Triangulation and cross referencing
Indicator A1G2P1T1I1: Percentage of children in pre-school age attending pre school

Goal A1G2: Well Educated Citizens and Skills revolution underpinned by Science, Technology and Innovation

Target A1G2P1T1: Enrolment rate for early childhood education is at least 300% of the 2013 rate

Definition:
The percentage of children in pre-school age attending preschool is defined as the total number of official pre-primary age children enrolled in pre-primary education as a percentage of the total population in the official pre-primary education age.

Pre-primary (or pre-school) education (ISCED 0) is defined as the initial stage of organized instruction, designed primarily to introduce very young children to a school-type environment, that is, to provide a bridge between home and a school-based atmosphere. ISCED level 0 programmes should be center or school-based, be designed to meet the educational and developmental needs of children at least three years of age, and have staff that are adequately trained (i.e., qualified) to provide an educational programme for the children.

Education is a process by which human beings and societies reach their fullest potential. Education is critical for promoting sustainable development and improving the capacity of people to address environment and social economic development issues. It is critical for achieving ethical awareness, values, and skills consistent with sustainable development and effective public participation in decision-making. As such education of every age cohort is key in realising demographic dividends as it empowers people to be productive, innovative and employable.

Rationale

Policy-makers concerned with children’s access and participation in education need the indicator to determine the level of efforts required to achieve set goals in national development plans. Inadequate preparation at pre-school age has been shown to have impact on affective and cognitive development as well as achievement in later years. The goal is for all pre-school age children to access formal education by 2030.

Computation

\[
\text{Percentage of children in pre-school age attending preschool} = \frac{\text{Number of children of the official pre-school age enrolled in pre-school education}}{\text{Total number of children in pre-school age}} \times 100
\]

Unit of measurement

Percentage
Disaggregated by:

Sex (Male, female)
Age
Geographic location

**Data Collection methods:**

Surveys on number of children of official pre-school age enrolled in pre-school education

Estimates of number of children within the pre-school age – using birth registration records

**Data Source:**

Ministry's Educational Management Information System annual statistical reports

Population estimates / projections from National Population Commissions.

AU Education Observatory

**Frequency and Timing of Data Collection, Analysis and Reporting:**

Annual

**Known Data Limitations and Significance (if any):**

Lack of accurate data is a major problem when operationalizing the indicator.

Population figures are estimated and enrolment data is subject to tabulation errors and missing data.

Inaccurate population estimates and less than 100% returns of school questionnaires make enrolment rates unreliable.

Inadequate data collection applications

**Actions Taken or Planned to Address Data Limitations:**

Development of online data collection software

Capacity strengthening of Member States in data management

Strengthening of national and continental EMIS ecosystems
Indicator A1G2P1T4I1: Secondary school net enrolment rate

Goal A1G2: Well Educated Citizens and Skills revolution underpinned by Science, Technology and Innovation

Target A1G2P1T4: Universal secondary school (including technical high schools) with enrolment rate of 100%

Definition:

Secondary school net enrolment rate is defined as the total number of students in the official age group for secondary education enrolled in that level, expressed as a percentage of the total population in that age group.

Net Enrolment Rate (NER) at each level of education should be based on enrolment of the relevant age group in all types of schools and education institutions, including public, private and all other institutions that provide organized educational programmes.

Net Enrolment Rate is considered to be a measure of the education coverage in a specific level of a country’s education system.

Secondary education is the second stage found in formal education, beginning about age 11 to 13 and ending usually at age 15 to 18.

Rationale

The Continental Education Strategy for Africa (CESA 16-25) calls for compulsory completion of secondary education. Policy makers use the indicator to track the extent at which progress towards the attainment of targets on secondary education in national development plans are being attained; the insights are used to re-design policy interventions.

Computation

\[
\text{Secondary school net enrolment rate} = \frac{\text{Number of students enrolled who are of the official age group for secondary education}}{\text{Population eligible for Secondary education}} \times 100
\]

Unit of measurement:

Percentage

Disaggregated by:

Sex
Age

Geographic location

**Data Collection method:**

The NER will be extracted from the Ministry's Educational Management Information System annual statistical reports.

**Data Source:**

Ministry's Educational Management Information System annual statistical reports

Among international surveys, MICS) and DHS and sometimes also LSMS and Core Welfare Indicators Questionnaire Surveys in Africa provide school attendance data.

**Frequency and Timing of Data Collection, Analysis and Reporting:**

Annual

**Known Data Limitations and Significance (if any):**

Lack of accurate data is a major problem when operationalizing the indicator.

Population figures are estimated and secondary school net enrolment data is subject to tabulation errors and missing data.

Inaccurate population estimates and less than 100% returns of secondary school questionnaires make enrolment rates unreliable.

Inadequate data collection applications

Perverse incentives in data reporting

Definition of secondary education and attendant age ranges

**Actions Taken or Planned to Address Data Limitations:**
Indicator A1G3P1T10I1: Percentage of eligible population with HIV having access to ARV treatment

Goal A1G3: Healthy and Well-Nourished Citizens

Target A1G3P1T10: Access to Anti-Retroviral (ARV) drugs is 100%

Definition:

This is the number of people living with HIV having access to ARV treatment out of the estimated number of adults and children living with HIV.

Clarifications

Standard antiretroviral therapy (ART) consists of the combination of antiretroviral (ARV) drugs to maximally suppress the HIV virus and stop the progression of HIV disease. ART also prevents onward transmission of HIV.

Population coverage indicators generally depict national program results and describe coverage of a specific service (i.e. ARV treatment) among a population eligible for the service (i.e. number of adults and children living with HIV).

Rationale

Assists policy makers in to measure efforts being made at reductions in HIV related deaths / design appropriate policy interventions

Computation Formula

\[
\text{% of eligible population with HIV having access to ARV treatment} = \frac{\text{No. of adults and children who have access to ARV treatment at the end of the reporting period}}{\text{Estimated number of adults and children living with HIV}} \times 100
\]

Disaggregated by:

Age:

Minimum for paper-based (routine): <15, 15+

Annual data extraction of disaggregated data if not reported routinely: <5, 5–9, 10–14, 15–19, 20–24, 25–49, 50+

Electronic system: 5-year age groups
Key populations, provider type (public/private), regimen type (e.g. first line, second line), sex (Male, female)

**Data Collection method:**

Numerator: The numerator can be generated by counting the number of adults and children who had access to antiretroviral combination therapy at the end of the reporting period. Data can be collected from facility-based ART registers or drug supply management systems. These are then tallied and transferred to cross-sectional monthly or quarterly reports, which can then be aggregated for national totals. Patients having access to ARV treatment in the private sector and public sector should be included in the numerator where data are available.

Denominator: The denominator is generated by estimating the number of people with advanced HIV infection requiring (in need of/eligible for) ARV treatment. This estimation must take into consideration a variety of factors, including, but not limited to, the current number of people with HIV, the current number of patients on ART and the natural history of HIV from infection to enrolment on ART. A standard modelling HIV estimation method, such as in the Spectrum model, is recommended.

**Data Source:**

Facility reporting system

**Frequency and Timing of Data Collection, Analysis and Reporting:**

Annual

**Known Data Limitations and Significance (if any):**

Providing “access” does not necessarily guarantee that adults and children living with HIV “use” ARV treatment and thus potential health benefits are not certain to be realized from simply providing “access.”

**Actions Taken or Planned to Address Data Limitations:**
Indicator A1G5P1T7I1: Percentage of small-scale farmers graduating into small-scale commercial farming

Goal A1G5: Modern Agriculture for increased productivity and production

Target A1G5P1T7: At least 10% of small-scale farmers graduate into small-scale commercial farming and those graduating at least 30% should be women

Definition:

This is defined as the number of small scale farmers who become commercial farmers divided by the total number of small scale farmers multiplied by 100

Small-scale farmers are generally subsistence producers of staple foods with occasional marketable surplus. Small-scale farming involves growing crops, at least in part, to be used by an individual family, with farming being a significant source of their livelihood. Small-scale farmers use simple technology, low capital investment and the production of food for the individual farmer’s family is the priority. There is often no food left to sell. Most farmers manage now to sell some of their output at some times during the year.

Small-scale commercial farming involves individual farmers who wish to farm commercially, which means farming for a profit, where food is produced by more advanced technological means for sale in the market than small-scale farming. Small-scale commercial farmers will be integrated into the national economy by producing for the market.

Farmers (including herders and fishers) are: 1) men and women who have access to a plot of land (even if very small) over which they make decisions about what will be grown, how it will be grown, and how to dispose of the harvest; AND/OR 2) men and women who have animals and/or aquaculture products over which they have decision-making power. Farmers produce food, feed, and fibre, where “food” includes agronomic crops (crops grown in large scale, such as grains), horticulture crops (vegetables, fruit, nuts, berries, and herbs), animal and aquaculture products, as well as natural products (non-timber forest products or wild fisheries). These farmers may engage in processing and marketing of food, feed, and fibre and may reside in settled communities, mobile pastoralist communities, or refugee/internally displaced person camps.

Rationale

It is generally believed that to increase factor productivity in agriculture, small scale farmers must be helped to become commercial farmers. This indicator provides an inclination as to how such a policy goal is being attained

Computation

\[
\text{Percentage of small-scale farmers graduating into small-scale commercial farming} = \frac{\text{No. of small scale farmers graduating into commercial farming}}{\text{Number of small scale farmers}} \times 100
\]
Disaggregated by:

Sex, Farming activities

Data Collection method:

Data will be extracted from Ministry of Agriculture’s reports.

Data Source:

FAO

Ministry of Agriculture’s reports

Frequency and Timing of Data Collection, Analysis:

Annual (On-going)

Frequency of Reporting:

National: Annual

Continental/Regional: Biennial

Known Data Limitations and Significance (if any):

Actions Taken or Planned to Address Data Limitations:
Indicator A1G6P1T3I1: Marine biotechnology value added as a percentage of GDP

Goal A1G6: Blue / ocean economy for accelerated economic growth

Target A1G6P1T3: Marine bio-technology contribution to GDP is increased in real terms by at least 50% from the 2013 levels

Definition:

Marine-biotechnology contribution to GDP is defined as the sum of the value added (at basic prices) generated by all industries in response to marine-biotechnology activities and the amount of net taxes on products and imports included within the value of this expenditure.

Clarifications

This indicator provides an estimate of the relative importance of marine-biotechnology in the country’s economy with regard to generating national income.

Marine-biotechnology is a collection of research and development (R&D) activities in the biological, chemical and environmental sciences that occur in or are related to the marine environment. It is the application of scientific and engineering principles to the processing of materials by marine biological agents to provide goods and services. Marine biotechnology can be thought of as the use of marine bio resources as the target or source of biotechnological applications. This broad understanding of marine biotechnology thus includes both traditional forms of marine biotechnology like aquaculture and modern forms such as bioremediation, production of biofuels and genetic modification of fish. The field has already yielded some notable and wide ranging advances in the fields of medicine, cosmetics, nutraceuticals, food production, and environ-industrial applications.

Rationale

Bio-technology has been found to be a major source of income for member states especially those of the African Island States. In view of this it is becoming necessary for Member states to track their progress towards the reaping the potential from bio-technology sources.

Computation Formula

\[
\text{Marine biotechnology contribution to GDP} = \left( \frac{\text{Marine biotechnology contribution to GDP}}{\text{GDP}} \right) \times 100
\]

Disaggregated by:

None
Data Collection method:

Desk review of secondary data extracted from Ministries’ reports

Data Source:

- Ministry of Environment records
- Ministry of Education and Research documents
- Ministry of Science and Technology reports
- Ministry of Agriculture literature
- Ocean research institutes databases

Frequency and Timing of Data Collection, Analysis:

Annual

Frequency of Reporting:

- National: Annual
- Continental/Regional: Biennial

Known Data Limitations and Significance (if any):

The identification of the scope of activities within the framework of marine-bio-technology is very challenging.

Actions Taken or Planned to Address Data Limitations:
Indicator A2G8P1T4I2: Number of Non-tariff barriers (NTBs) reported and eliminated

Goal A2G8: United Africa (Federal or Confederate)

Target A2G8P1T4: Active member of the African Free Trade Area

Definition:

Non-tariff barriers to trade (NTBs) are trade barriers that restrict imports or exports of goods or services through mechanisms other than the simple imposition of tariffs. They are represented by any obstacle to international trade that is not an import or export duty.

They may take the form of import quotas, subsidies, customs delays, technical barriers, or other systems preventing or impeding trade. According to the World Trade Organization, non-tariff barriers to trade include import licensing, rules for valuation of goods at customs, pre-shipment inspections, rules of origin (‘made in’), and trade prepared investment measures.

Specifically, the different types of NTBs are:

- Licenses
  Countries may use licenses to limit imported goods to specific businesses. If a business is granted a trade license, then it permits it to import goods that otherwise are restricted for trade in the country.

- Quotas
  Countries typically use quotas for the importing and exporting of goods and services. In nontariff barrier procedures, countries agree on specified limits of goods and services that are permitted for importation to a country, typically without restrictions, up to a specified limit. Quotas can also be set for specific time frames. Additionally, quotas are also often used in international trade license agreements.

- Embargoes
  Embargoes restrict the trade of specified goods and services. Embargoes are a measure used by governments for specific political or health circumstances.

- Sanctions
  Countries impose sanctions on other countries to limit their trade activity. Sanctions can include increased administrative actions and additional customs and trade procedures that slow or limit a country’s ability to trade.
Voluntary Export Restraints

Voluntary export restraints are a type of nontariff barrier used by exporting countries. Voluntary export restraints set specified limits of goods and services to be exported to specified countries. These restraints are typically based on availability and political alliance.

Standard Tariffs

Nontariff barriers can be used in place of or in conjunction with standard tariff barriers, which are taxes that importing countries pay to exporting countries for goods or services. Tariffs are the most common type of trade barrier, and they increase the cost of goods and services for an importing country to the benefit of the exporting country.

Rational

It is one of the Continental Flagship Programmes and member states are required to track their progress

Computation Formula

No. of NTBs reported and eliminated = Total number of barriers removed

Disaggregated by:

Type of NTB

Data Collection method:

Document review,

Direct counting of NTBs reported and eliminated.

Data Source:

National Legislative Reports

National Trade and Services Reports.

Frequency and Timing of Data Collection, Analysis and Reporting:

Known Data Limitations and Significance (if any):

Actions Taken or Planned to Address Data Limitations:
Indicator A2G8P1T5I1: Percentage change in volume of intra-African Trade

Goal A2G8: United Africa (Federal or Confederate)

Target A2G8P1T5: Volume of intra-African trade is at least three times the 2013 level

Definition:

This is defined as the increase in volume of trade in goods between a member state and other member states over the previous year’s figure

Rationale

Increase intra-trade volume in Africa. The need to enhance intra-African trade among African countries led to the formation of the EAC-COMESA-SADC (East African Community; Common Market for Eastern and Southern Africa and the Southern Africa Development Community) tripartite Free Trade Agreement (TFTA), as well as to the proposed 2017 Continental FTA (CFTA) between Cairo and Cape Town. The tripartite agreement is expected to grant parties access to economies of scale and invite other benefits associated with market integration (such as income and employment generation). However, the agreement faces certain obstacle

Computation Method

\[
\% \text{ increase in volume of intra-African Trade} = \frac{\text{volume of trade in goods between a country and others in Year (i)}}{\text{volume of trade in goods between a country and others in Year (0)}} \times 100
\]

Unit of measure:

Percentage

Disaggregated by:

Type of good / service

Data Collection method:

Direct counting

Document review

Data Source:

Customs / Excise Reports
Frequency and Timing of Data Collection, Analysis and Reporting:

Known Data Limitations and Significance (if any):

It may be difficult to capture the exact volume of the intra African trade because a lot of the exchanges are done in the informal market or because countries have unreliable statistics.

Should services not be remove the definition and calculation it will be difficult to measure the volume of services. Ideally the value of services is more measurable.

Actions Taken or Planned to Address Data Limitations:
Indicator A2G10P1T1I1: Percentage of the progress made on the implementation of Trans-African Highway Missing link

Goal A2G10: World Class Infrastructure criss-crosses Africa

Target A2G10P1T1: At least national readiness for implementation of the trans African Highway Missing link is achieved

Definition:

The key components of national readiness for the implementation of the trans African Highway include (i) engineering designs and legal compliances [Xi]; (ii) costing; (iii) resource mobilization plan and securing funds for project execution [Xiii]; (iv) construction in progress [Xiv]; and (v) construction completed [Xv].

Clarifications

It has been a goal of some Regional Economic Communities / The African Union to link member states by road. In this vein, each member state is expected to construct a first class road linking its capital to the borders of her neighbours.

Rationale

The use of the indicator is to assist member states to track the extent to which they are accomplishing the goal set for the attainment of the trans African highway

Computation Formula

\[
\frac{\text{No. of stages completed (among the 7 above)}}{5} \times 100
\]

where:

Xi = Engineering designs and legal compliances

Xii = Costing

Xiii = Resource mobilization plan and securing funds for project execution

Xiv = Construction in progress; and

Xv = Construction completed
Disaggregated by:
Component

Data Collection method:
Direct counting of the number that had been completed by the end of the year.

Data Source:
Road Transport Authority Documents

Frequency and Timing of Data Collection, Analysis and Reporting:

Known Data Limitations and Significance (if any):

Actions Taken or Planned to Address Data Limitations:
Indicator A2G10P1T2I1: Percentage of the progress made on the implementation the African High Speed Rail Network

Goal A2G10: World Class Infrastructure criss-crosses Africa

Target A2G10P1T2: At least national readiness for in country connectivity to the African High Speed Rail Network is achieved by 2019

Definition

The key components of national readiness for the implementation of the African High Speed Train Network include (i) Development of National Strategy for participation in the African High Speed Train Network – [Yi]; (ii) completion of coordinating arrangements with AUC – [ Yii]; (iii) development of strategy implementation action plan – [Yiii]; (iv) resource mobilization plan – [Yiv] (v) securing of funds for project execution – [Yv]; (vi) construction in progress – [Yvi]; and (vii) construction completed [Yvii]

One of the Flagship Programme of under Agenda 2063 – First Ten Year Implementation Plan is the linking of African cities by a high speed train network. The AUC has set up a central coordinating body to oversee the execution of the assignment

Member states are to participate in the execution / attainment of that goal – as part of the continental integration Agenda

Computation

\[
\% \text{ of progress made on implementation of the African High Speed Rail Network} = \frac{\text{No. of stages completed (among the 7 above)}}{7} \times 100
\]

Disaggregated by:

Data Collection method:

Review of relevant national reports

Review of information

Data Source:

Ministry of Transport /Railways reports

Frequency and Timing of Data Collection, Analysis and Reporting: Annual

Known Data Limitations and Significance (if any):

Actions Taken or Planned to Address Data Limitations:
Indicator A2G10P1T3I1: Number of protocols on African open skies implemented

Goal A2G10: World Class Infrastructure criss-crosses Africa

Target A2G10P1T3: Skies fully opened to African airlines

Definition:

AU Protocols that member states should ratify and implement to enable African Airlines operate on the continent – from country to country – without hindrance.

Open skies is an international policy concept that calls for the liberalization of the rules and regulations of the international aviation industry—especially commercial aviation—in order to improve competition.

This is to create a free-market environment for the airline industry in Africa. Its primary objectives are:

- to liberalize the rules for international aviation markets and minimize government intervention as it applies to passenger, all-cargo, and combination air transportation as well as scheduled and charter services; and to adjust the regime under which military and other state-based flights may be permitted.

Rationale

Aspect of Agenda 2063 – Flagship Projects is free movement of people, goods and services. An open sky policy of Member States for African Airlines will contribute to the attainment of the free movement idea.

Computation

No. of protocols on African open skies Implemented = Total count of protocols implemented

Disaggregated by:

REC

Data Collection method:

Review of legislative / cabinet reports

Data Source:
Ministries of transport

**Frequency and Timing of Data Collection, Analysis and Reporting:**

**Known Data Limitations and Significance (if any):**

**Actions Taken or Planned to Address Data Limitations:**
Indicator A2G10P1T4I1: Number of Mega Watts added into the national grid

Goal A2G10: World Class Infrastructure criss-crosses Africa

Target A2G10P1T4: Increase electricity generation and distribution by at least 50% by 2020

Definition:

This is defined as the number of additional Mega Watts added onto the national grid is defined as the quantitative number of additional megawatts generated or added onto the national grid since 2013 (baseline of the FTYIP)

The addition could be from private and public sources. The addition could come from hydro, marine, wind, sun etc. sources

Rationale

Availability and use of energy – electricity is key for the transformative agenda of the First Ten Year Implementation Plan. In this regard the tracking of the indicator will enable member states know the extent to which power availability is contributing to the attainment of the transformative Agenda of the First Ten Year Implementation Plan

Computation Formula

No. of additional Mega Watts added onto the national grid = Total count of added mega wats

Unit

Megawatt

Disaggregated by:

Energy type

Data Collection method:

Document (desk) review of secondary data

Data Source:

Ministry of Energy / Power reports

Power Generating companies’ reports
Sustainable energy for all (SE4ALL) database from World Bank, Global Electrification database.

**Frequency and Timing of Data Collection, Analysis and Reporting:**

**Annual**

**Reporting:**

**Annual**

**Known Data Limitations and Significance (if any):**

**Actions Taken or Planned to Address Data Limitations:**
Indicator A2G10P1T5I3: ICT sector value addition as a percentage share of GDP

Goal A2G10: World Class Infrastructure criss-crosses Africa

Target A2G10P1T5: Double ICT penetration and contribution to GDP

Definition:

ICT contribution to GDP is defined as the sum of the value added (at basic prices) generated by all industries in response to ICT activities and the amount of net taxes on products and imports included within the value of this expenditure.

Rationale

ICT interventions have impact on productivity in many folds. As a result, there is growing demand for ICT services in all sectors of the economy. There is a general consensus that this contribution should be captured and lessons learnt used to form the basis of formulating / implementing ICT interventions.

Computation

\[
\text{ICT contribution to GDP} = \frac{\text{ICT contribution to GDP}}{\text{GDP}} \times 100
\]

Unit of measure

Percentage

Disaggregated by:

Type of connectivity

Data Collection method:

Document review

Data Source:

Customs reports on imports of ICT gear

World Bank

**Frequency and Timing of Data Collection, Analysis and Reporting:**

Annual

**Known Data Limitations and Significance (if any):**

Very difficult to get an estimate that reflects the true impact / value addition of ICT to GDP because of the absences of a stand-alone ICT sector (other than setting up ICT production equipment and software firms which are very far-fetched in most African Countries)

**Actions Taken or Planned to Address Data Limitations:**
Indicator A3G11P1T3I1: Percentage of people who believe that the elections are free, fair and transparent.

Goal A3G11: Democratic values, practices, universal principles of human rights, justice and the rule of law entrenched

Target A3G11P1T3: Double ICT penetration and contribution to GDP

Definition:

This indicator measures the proportion of the population that perceive the election to be free, fair and transparent based on the quality of the electoral process, political pluralism and participation, government corruption and transparency, and fair political treatment of diverse groups.

Some of the characteristics of free and fair include:

- free and fair executive and legislative elections; fair polling; honest tabulation of ballots;
- fair electoral laws; equal campaigning opportunities;
- the right to organize in different political parties and political groupings; the openness of the political system to the rise and fall of competing political parties and groupings;
- the existence of a significant opposition vote; the existence of a de facto opposition power, and a realistic possibility for the opposition to increase its support or gain power through elections;
- the participation of cultural, ethnic, religious, or other minority groups in political life;
- freedom from domination by the military, foreign powers, totalitarian parties, religious hierarchies, economic oligarchies, or any other powerful group in making personal political choices; and
- the openness, transparency, and accountability of the government to its constituents between elections; freedom from pervasive government corruption; government policies that reflect the will of the people

Computation

\[
\frac{\text{No. of persons in a sample who perceive the elections to be free and fair}}{\text{Total sample size}} \times 100
\]
Unit of Measurement:

Percentage

Disaggregated by:

Age, sex and region

Data Collection method:

Surveys

Data Source:

Opinion polls

Think Tank governance institutions who conduct periodic surveys in the area

National Civic Education Bodies who conduct periodic surveys in the area

Frequency and Timing of Data Collection, Analysis and Reporting: Periodic

Known Data Limitations and Significance (if any):

Actions Taken or Planned to Address Data Limitations:
Indicator A4G15P1T2I1: Existence of a national peace council (Need to review the indicator with the view to understand its function, composition and roles)


Target A4G15P1T2: National Peace Council is established by 2016

Definition:

National Peace Councils, creations under the African Peace and Security Architecture at member state level take preventive and mediating measures to avoid / resolve conflicts between political parties, ethnic groups, religious groups etc.

Rationale

Its creation at the national level is required under the African Peace and Security Architecture which is part of the African Agenda 2063 – FTYIP.

Computation

Existence (Yes / No) of a national peace council

Data Collection method

Review of secondary data

Interviews with key respondents

Data Source:

Records and interviews with staff of Ministries of Interior / Home Affairs

Frequency and Timing of Data Collection, Analysis and Reporting:

Periodic

Known Data Limitations and Significance (if any):

Actions Taken or Planned to Address Data Limitations:
Indicator A5G16P1T1I1: Proportion of the content of the curricula on indigenous African culture, values and language in primary and secondary schools

Goal A5G16: African Cultural Renaissance is pre-eminent

Target A5G16P1T1: At least 60 percent of content in educational curriculum is on indigenous African culture, values and language targeting primary and secondary schools

Definition:
This is defined as the ratio of the total number of subjects with contents on indigenous African culture, values and language in primary and secondary schools as a percentage of the total number of subjects offered.

Rationale:
The Continental Education Strategy for Africa (CESA 16-25) strongly advocate for the need for African values and ethics be introduced into the school curriculum. This is also corroborated by the Aspiration 5 – 42 of the Agenda 2063.

Computation
\[
\frac{\text{Number of subjects with indigenous African culture, values and language}}{\text{Total number of subjects offered at level}} \times 100
\]

Unit of measurement
Percentage

Disaggregated by:
Level (Primary/Secondary)
Type of institutions (Public/Private)

Data Collection method:
Use of Mobile Applications to collect data.

Total number of subjects offered at level

Total number of subjects relevant to the indicator
Data Source:

AU Education Observatory

Ministries of Education’s reports and surveys

African Academy of Languages (ACALAN)

Frequency and Timing of Data Collection, Analysis and Reporting:

Known Data Limitations and Significance (if any):

Inadequate data collection applications

Actions Taken or Planned to Address Data Limitations:

Development of data collection software

Training of member States

Strengthening of national and continental EMIS ecosystems
Indicator A6G18P1T8I1: Level of implementation of the provisions of the African Charter on the Rights of the Youth by member States

Goal A6G18: Engaged and Empowered Youth and Children

Target A6G18P1T8: Full implementation of the provision of African Charter on the Rights of the Youth is attained

Definition:

This indicator measures the extent to which member states have been able to implement the provision of the African Youth Charter.

Clarifications

This will include tracking the extent member states have undertaken the levels of implementation, (i) signing and ratification and (ii) domestication (planning and budgeting).

According to the African Youth Charter, youth or young people refers to every person between the ages of 15 and 35.

Computation Formula

There are two components – signing / ratification and domestication. Each carries 50% compliance. When both are complied with, the level is 100%.

Unit of measurement:

Percentage

Disaggregated by:

Country

Level of implementation

Data Collection method:

Review of legislative records

Review of Budgets
### Annex I: Global Sustainable Development Goals, Targets and Indicators (as of 20 April 2017)

<table>
<thead>
<tr>
<th>Goal 1. End poverty in all its forms everywhere</th>
<th>Indicator</th>
<th>Tier Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 By 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than $1.25 a day</td>
<td>1.1.1 Proportion of population below the international poverty line, by sex, age, employment status and geographical location (urban/rural)</td>
<td>Tier I</td>
</tr>
<tr>
<td>1.2 By 2030, reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions</td>
<td>1.2.1 Proportion of population living below the national poverty line, by sex and age</td>
<td>Tier I</td>
</tr>
<tr>
<td></td>
<td>1.2.2 Proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions</td>
<td>Tier II</td>
</tr>
<tr>
<td>1.3 Implement nationally appropriate social protection systems and measures for all, including floors, and by 2030 achieve substantial coverage of the poor and the vulnerable</td>
<td>1.3.1 Proportion of population covered by social protection floors/systems, by sex, distinguishing children, unemployed persons, older persons, persons with disabilities, pregnant women, newborns, work-injury victims and the poor and the vulnerable</td>
<td>Tier II</td>
</tr>
<tr>
<td>1.4 By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance</td>
<td>1.4.1 Proportion of population living in households with access to basic services</td>
<td>Tier III</td>
</tr>
<tr>
<td></td>
<td>1.4.2 Proportion of total adult population with secure tenure rights to land, with legally recognized documentation and who perceive their rights to land as secure, by sex and by type of tenure</td>
<td>Tier III</td>
</tr>
<tr>
<td>1.5 By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters</td>
<td>1.5.1 Number of deaths, missing persons and directly affected persons attributed to disasters per 100,000 population</td>
<td>Tier II</td>
</tr>
<tr>
<td></td>
<td>1.5.2 Direct economic loss attributed to disasters in relation to global gross domestic product (GDP)</td>
<td>Tier II</td>
</tr>
<tr>
<td></td>
<td>1.5.3 Number of countries that adopt and implement national disaster risk reduction strategies in line with the Sendai Framework for Disaster Risk Reduction 2015-2030</td>
<td>Tier II</td>
</tr>
<tr>
<td></td>
<td>1.5.4 Proportion of local governments that adopt and implement local disaster risk reduction strategies in line with national disaster risk reduction strategies</td>
<td>Tier III</td>
</tr>
<tr>
<td>1.a Ensure significant mobilization of resources from a variety of sources, including through enhanced development cooperation, in order to provide adequate and predictable means for developing countries, in particular least developed countries, to implement programmes and policies to end poverty in all its dimensions</td>
<td>1.a.1 Proportion of domestically generated resources allocated by the government directly to poverty reduction programmes</td>
<td>Tier III</td>
</tr>
<tr>
<td></td>
<td>1.a.2 Proportion of total government spending on essential services (education, health and social protection)</td>
<td>Tier II</td>
</tr>
<tr>
<td></td>
<td>1.a.3 Sum of total grants and non-debt-creating inflows directly allocated to poverty reduction programmes as a proportion of GDP</td>
<td>Tier III</td>
</tr>
<tr>
<td>1.b Create sound policy frameworks at the national, regional and international levels, based on pro-poor and gender-sensitive development strategies, to support accelerated investment in poverty eradication actions</td>
<td>1.b.1 Proportion of government recurrent and capital spending to sectors that disproportionately benefit women, the poor and vulnerable groups</td>
<td>Tier III</td>
</tr>
</tbody>
</table>
### Goal 2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1.1 Prevalence of undernourishment</td>
<td>Tier I</td>
</tr>
<tr>
<td>2.1.2 Prevalence of moderate or severe food insecurity in the population, based on the Food Insecurity Experience Scale (FIES)</td>
<td>Tier I</td>
</tr>
<tr>
<td>2.1.2.1 Prevalence of moderate or severe food insecurity in the population</td>
<td>Tier I</td>
</tr>
<tr>
<td>2.2.1 Prevalence of stunting (height for age &lt;-2 standard deviation from the median of the World Health Organization (WHO) Child Growth Standards) among children under 5 years of age</td>
<td>Tier I</td>
</tr>
<tr>
<td>2.2.1.1 Prevalence of stunting</td>
<td>Tier I</td>
</tr>
<tr>
<td>2.2.2 Prevalence of malnutrition (weight for height &gt;+2 or &lt;-2 standard deviation from the median of the WHO Child Growth Standards) among children under 5 years of age, by type (wasting and overweight)</td>
<td>Tier I</td>
</tr>
<tr>
<td>2.2.2.1 Prevalence of malnutrition (wasting)</td>
<td>Tier I</td>
</tr>
<tr>
<td>2.3.1 Volume of production per labour unit by classes of farming/pastoral/forestry enterprise size</td>
<td>Tier III</td>
</tr>
<tr>
<td>2.3.2 Average income of small-scale food producers, by sex and indigenous status</td>
<td>Tier III</td>
</tr>
<tr>
<td>2.3.3 Proportion of agricultural area under productive and sustainable agriculture</td>
<td>Tier III</td>
</tr>
<tr>
<td>2.4.1 Proportion of agricultural area under productive and sustainable agriculture</td>
<td>Tier III</td>
</tr>
<tr>
<td>2.5.1 Number of plant and animal genetic resources for food and agriculture secured in either medium or long-term conservation facilities</td>
<td>Tier II</td>
</tr>
<tr>
<td>2.5.2 Proportion of local breeds classified as being at risk, not-at-risk or at unknown level of risk of extinction</td>
<td>Tier II</td>
</tr>
<tr>
<td>2.6.1 Agricultural export subsidies</td>
<td>Tier I</td>
</tr>
<tr>
<td>2.6.2 Total official flows (official development assistance plus other official flows) to the agriculture sector</td>
<td>Tier I</td>
</tr>
<tr>
<td>2.6.3 The agriculture orientation index for government expenditures</td>
<td>Tier II</td>
</tr>
<tr>
<td>2.6.4 Indicator of food price anomalies</td>
<td>Tier II</td>
</tr>
</tbody>
</table>

#### 2.a. Increase investment, including through enhanced international cooperation, in rural infrastructure, agricultural research and extension services, technology development and plant and livestock gene banks in order to enhance agricultural productive capacity in developing countries, in particular least developed countries

- **2.a.1** The agriculture orientation index for government expenditures
- **2.a.2** Total official flows (official development assistance plus other official flows) to the agriculture sector

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

- **2.b.1** Agricultural export subsidies

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

- **2.c.1** Indicator of food price anomalies
### Goal 3. Ensure healthy lives and promote well-being for all at all ages

<table>
<thead>
<tr>
<th>Objective</th>
<th>Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1 By 2030, reduce the global maternal mortality ratio to less than 70 per 100,000 live births</td>
<td>3.1.1 Maternal mortality ratio Tier II, 3.1.2 Proportion of births attended by skilled health personnel Tier I</td>
</tr>
<tr>
<td>3.2 By 2030, end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000 live births</td>
<td>3.2.1 Under-five mortality rate Tier I, 3.2.2 Neonatal mortality rate Tier I</td>
</tr>
<tr>
<td>3.3 By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases</td>
<td>3.3.1 Number of new HIV infections per 1,000 uninfected population, by sex, age and key populations Tier II, 3.3.2 Tuberculosis incidence per 100,000 population Tier I, 3.3.3 Malaria incidence per 1,000 population Tier I, 3.3.4 Hepatitis B incidence per 100,000 population Tier II, 3.3.5 Number of people requiring interventions against neglected tropical diseases Tier I</td>
</tr>
<tr>
<td>3.4 By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being</td>
<td>3.4.1 Mortality rate attributed to cardiovascular disease, cancer, diabetes or chronic respiratory disease Tier II, 3.4.2 Suicide mortality rate Tier II</td>
</tr>
<tr>
<td>3.5 Strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol</td>
<td>3.5.1 Coverage of treatment interventions (pharmacological, psychosocial and rehabilitation and aftercare services) for substance use disorders Tier III, 3.5.2 Harmful use of alcohol, defined according to the national context as alcohol per capita consumption (aged 15 years and older) within a calendar year in litres of pure alcohol Tier I</td>
</tr>
<tr>
<td>3.6 By 2020, halve the number of global deaths and injuries from road traffic accidents</td>
<td>3.6.1 Death rate due to road traffic injuries Tier I</td>
</tr>
<tr>
<td>3.7 By 2030, ensure universal access to sexual and reproductive health-care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programmes</td>
<td>3.7.1 Proportion of women of reproductive age (aged 15-49 years) who have their need for family planning satisfied with modern methods Tier I, 3.7.2 Adolescent birth rate (aged 10-14 years; aged 15-19 years) per 1,000 women in that age group Tier II</td>
</tr>
<tr>
<td>3.8 Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all</td>
<td>3.8.1 Coverage of essential health services (defined as the average coverage of essential services based on tracer interventions that include reproductive, maternal, newborn and child health, infectious diseases, non-communicable diseases and service capacity and access, among the general and the most disadvantaged population) Tier III, 3.8.2 Proportion of population with large household expenditures on health as a share of total household expenditure or income Tier II</td>
</tr>
</tbody>
</table>
### 3. By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Tier</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.9.1 Mortality rate attributed to household and ambient air pollution</td>
<td>I</td>
</tr>
<tr>
<td>3.9.2 Mortality rate attributed to unsafe water, unsafe sanitation and lack of hygiene (exposure to unsafe Water, Sanitation and Hygiene for All (WASH) services)</td>
<td>II</td>
</tr>
<tr>
<td>3.9.3 Mortality rate attributed to unintentional poisoning</td>
<td>II</td>
</tr>
</tbody>
</table>

### 3.a Strengthen the implementation of the World Health Organization Framework Convention on Tobacco Control in all countries, as appropriate

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Tier</th>
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</thead>
<tbody>
<tr>
<td>3.a.1 Age-standardized prevalence of current tobacco use among persons aged 15 years and older</td>
<td>I</td>
</tr>
</tbody>
</table>

### 3.b Support the research and development of vaccines and medicines for the communicable and non-communicable diseases that primarily affect developing countries, provide access to affordable essential medicines and vaccines, in accordance with the Doha Declaration on the TRIPS Agreement and Public Health, which affirms the right of developing countries to use to the full the provisions in the Agreement on Trade-Related Aspects of Intellectual Property Rights regarding flexibilities to protect public health, and, in particular, provide access to medicines for all

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<tr>
<th>Indicator</th>
<th>Tier</th>
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<tbody>
<tr>
<td>3.b.1 Proportion of the target population covered by all vaccines included in their national programme</td>
<td>III</td>
</tr>
<tr>
<td>3.b.2 Total net official development assistance to medical research and basic health sectors</td>
<td>I</td>
</tr>
<tr>
<td>3.b.3 Proportion of health facilities that have a core set of relevant essential medicines available and affordable on a sustainable basis</td>
<td>III</td>
</tr>
</tbody>
</table>

### 3.c Substantially increase health financing and the recruitment, development, training and retention of the health workforce in developing countries, especially in least developed countries and small island developing States

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Tier</th>
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</thead>
<tbody>
<tr>
<td>3.c.1 Health worker density and distribution</td>
<td>I</td>
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</tbody>
</table>

### 3.d Strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks

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<tr>
<th>Indicator</th>
<th>Tier</th>
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<tbody>
<tr>
<td>3.d.1 International Health Regulations (IHR) capacity and health emergency preparedness</td>
<td>II</td>
</tr>
</tbody>
</table>

### Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Tier</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1 By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes</td>
<td>III (a)/ Tier II (b,c)</td>
</tr>
<tr>
<td>4.1.1 Proportion of children and young people: (a) in grades 2/3; (b) at the end of primary; and (c) at the end of lower secondary achieving at least a minimum proficiency level in (i) reading and (ii) mathematics, by sex</td>
<td></td>
</tr>
<tr>
<td>4.2 By 2030, ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education</td>
<td>III</td>
</tr>
<tr>
<td>4.2.1 Proportion of children under 5 years of age who are developmentally on track in health, learning and psychosocial well-being, by sex</td>
<td></td>
</tr>
<tr>
<td>4.2.2 Participation rate in organized learning (one year before the official primary entry age), by sex</td>
<td>I</td>
</tr>
<tr>
<td>4.3 By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university</td>
<td>II</td>
</tr>
<tr>
<td>4.3.1 Participation rate of youth and adults in formal and non-formal education and training in the previous 12 months, by sex</td>
<td></td>
</tr>
<tr>
<td>4.4 By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship</td>
<td>II</td>
</tr>
<tr>
<td>4.4.1 Proportion of youth and adults with information and communications technology (ICT) skills, by type of skill</td>
<td></td>
</tr>
<tr>
<td>4.5 By 2030, eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations</td>
<td>4.5.1 Parity indices (female/male, rural/urban, bottom/top wealth quintile and others such as disability status, indigenous peoples and conflict-affected, as data become available) for all education indicators on this list that can be disaggregated</td>
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<tr>
<td>4.6 By 2030, ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy</td>
<td>4.6.1 Proportion of population in a given age group achieving at least a fixed level of proficiency in functional (a) literacy and (b) numeracy skills, by sex</td>
</tr>
<tr>
<td>4.7 By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture’s contribution to sustainable development</td>
<td>4.7.1 Extent to which (i) global citizenship education and (ii) education for sustainable development, including gender equality and human rights, are mainstreamed at all levels in: (a) national education policies, (b) curricula, (c) teacher education and (d) student assessment</td>
</tr>
<tr>
<td>4.a Build and upgrade education facilities that are child, disability and gender sensitive and provide safe, non-violent, inclusive and effective learning environments for all</td>
<td>4.a.1 Proportion of schools with access to: (a) electricity; (b) the Internet for pedagogical purposes; (c) computers for pedagogical purposes; (d) adapted infrastructure and materials for students with disabilities; (e) basic drinking water; (f) single-sex basic sanitation facilities; and (g) basic handwashing facilities (as per the WASH indicator definitions)</td>
</tr>
<tr>
<td>4.b By 2020, substantially expand globally the number of scholarships available to developing countries, in particular least developed countries, small island developing States and African countries, for enrolment in higher education, including vocational training and information and communications technology, technical, engineering and scientific programmes, in developed countries and other developing countries</td>
<td>4.b.1 Volume of official development assistance flows for scholarships by sector and type of study</td>
</tr>
<tr>
<td>4.c By 2030, substantially increase the supply of qualified teachers, including through international cooperation for teacher training in developing countries, especially least developed countries and small island developing States</td>
<td>4.c.1 Proportion of teachers in: (a) pre-primary; (b) primary; (c) lower secondary; and (d) upper secondary education who have received at least the minimum organized teacher training (e.g. pedagogical training) pre-service or in-service required for teaching at the relevant level in a given country</td>
</tr>
<tr>
<td><strong>Goal 5. Achieve gender equality and empower all women and girls</strong></td>
<td><strong>Goal 5. Achieve gender equality and empower all women and girls</strong></td>
</tr>
<tr>
<td>5.1 End all forms of discrimination against all women and girls everywhere</td>
<td>5.1.1 Whether or not legal frameworks are in place to promote, enforce and monitor equality and non-discrimination on the basis of sex</td>
</tr>
<tr>
<td>5.2 Eliminate all forms of violence against all women and girls in the public and private spheres, including trafficking and sexual and other types of exploitation</td>
<td>5.2.1 Proportion of ever-partnered women and girls aged 15 years and older subjected to physical, sexual or psychological violence by a current or former intimate partner in the previous 12 months, by form of violence and by age</td>
</tr>
<tr>
<td>5.2.2 Proportion of women and girls aged 15 years and older subjected to sexual violence by persons other than an intimate partner in the previous 12 months, by age and place of occurrence</td>
<td>Tier II</td>
</tr>
</tbody>
</table>
### Goal 5: Achieve gender equality and empower all women and girls

<table>
<thead>
<tr>
<th>Subgoal</th>
<th>Indicator</th>
<th>Tier</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.3</td>
<td>Eliminate all harmful practices, such as child, early and forced marriage and female genital mutilation</td>
<td>5.3.1 Proportion of women aged 20-24 years who were married or in a union before age 15 and before age 18</td>
</tr>
<tr>
<td>5.4</td>
<td>Recognize and value unpaid care and domestic work through the provision of public services, infrastructure and social protection policies and the promotion of shared responsibility within the household and the family as nationally appropriate</td>
<td>5.4.1 Proportion of time spent on unpaid domestic and care work, by sex, age and location</td>
</tr>
<tr>
<td>5.5</td>
<td>Ensure women’s full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life</td>
<td>5.5.1 Proportion of seats held by women in (a) national parliaments and (b) local governments</td>
</tr>
<tr>
<td>5.6</td>
<td>Ensure universal access to sexual and reproductive health and reproductive rights as agreed in accordance with the Programme of Action of the International Conference on Population and Development and the Beijing Platform for Action and the outcome documents of their review conferences</td>
<td>5.6.1 Proportion of women aged 15-49 years who make their own informed decisions regarding sexual relations, contraceptive use and reproductive health care</td>
</tr>
<tr>
<td>5.a</td>
<td>Undertake reforms to give women equal rights to economic resources, as well as access to ownership and control over land and other forms of property, financial services, inheritance and natural resources, in accordance with national laws</td>
<td>5.a.1 (a) Proportion of total agricultural population with ownership or secure rights over agricultural land, by sex; and (b) share of women among owners or rights-bearers of agricultural land, by type of tenure</td>
</tr>
<tr>
<td>5.b</td>
<td>Enhance the use of enabling technology, in particular information and communications technology, to promote the empowerment of women</td>
<td>5.b.1 Proportion of individuals who own a mobile telephone, by sex</td>
</tr>
<tr>
<td>5.c</td>
<td>Adopt and strengthen sound policies and enforceable legislation for the promotion of gender equality and the empowerment of all women and girls at all levels</td>
<td>5.c.1 Proportion of countries with systems to track and make public allocations for gender equality and women’s empowerment</td>
</tr>
</tbody>
</table>

### Goal 6: Ensure availability and sustainable management of water and sanitation for all

<table>
<thead>
<tr>
<th>Subgoal</th>
<th>Indicator</th>
<th>Tier</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.1</td>
<td>By 2030, achieve universal and equitable access to safe and affordable drinking water for all</td>
<td>6.1.1 Proportion of population using safely managed drinking water services</td>
</tr>
<tr>
<td>6.2</td>
<td>By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations</td>
<td>6.2.1 Proportion of population using safely managed sanitation services, including a hand-washing facility with soap and water</td>
</tr>
<tr>
<td>6.3</td>
<td>By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally</td>
<td>6.3.1 Proportion of wastewater safely treated</td>
</tr>
<tr>
<td>6.3</td>
<td></td>
<td>6.3.2 Proportion of bodies of water with good ambient water quality</td>
</tr>
<tr>
<td>Goal 6.4</td>
<td>By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity</td>
<td>6.4.1 Change in water-use efficiency over time</td>
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<tr>
<td></td>
<td>6.4.2 Level of water stress: freshwater withdrawal as a proportion of available freshwater resources</td>
<td>Tier II</td>
</tr>
<tr>
<td>Goal 6.5</td>
<td>By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate</td>
<td>6.5.1 Degree of integrated water resources management implementation (0-100)</td>
</tr>
<tr>
<td></td>
<td>6.5.2 Proportion of transboundary basin area with an operational arrangement for water cooperation</td>
<td>Tier II</td>
</tr>
<tr>
<td>Goal 6.6</td>
<td>By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes</td>
<td>6.6.1 Change in the extent of water-related ecosystems over time</td>
</tr>
<tr>
<td>Goal 6.a</td>
<td>By 2030, expand international cooperation and capacity-building support to developing countries in water- and sanitation-related activities and programmes, including water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies</td>
<td>6.a.1 Amount of water- and sanitation-related official development assistance that is part of a government-coordinated spending plan</td>
</tr>
<tr>
<td></td>
<td>6.b Support and strengthen the participation of local communities in improving water and sanitation management</td>
<td>6.b.1 Proportion of local administrative units with established and operational policies and procedures for participation of local communities in water and sanitation management</td>
</tr>
<tr>
<td>Goal 7.1</td>
<td>By 2030, ensure universal access to affordable, reliable and modern energy services</td>
<td>7.1.1 Proportion of population with access to electricity</td>
</tr>
<tr>
<td></td>
<td>7.1.2 Proportion of population with primary reliance on clean fuels and technology</td>
<td>Tier I</td>
</tr>
<tr>
<td>Goal 7.2</td>
<td>By 2030, increase substantially the share of renewable energy in the global energy mix</td>
<td>7.2.1 Renewable energy share in the total final energy consumption</td>
</tr>
<tr>
<td>Goal 7.3</td>
<td>By 2030, double the global rate of improvement in energy efficiency</td>
<td>7.3.1 Energy intensity measured in terms of primary energy and GDP</td>
</tr>
<tr>
<td>Goal 7.a</td>
<td>By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology</td>
<td>7.a.1 International financial flows to developing countries in support of clean energy research and development and renewable energy production, including in hybrid systems</td>
</tr>
<tr>
<td>Goal 7.b</td>
<td>By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States and landlocked developing countries, in accordance with their respective programmes of support</td>
<td>7.b.1 Investments in energy efficiency as a proportion of GDP and the amount of foreign direct investment in financial transfer for infrastructure and technology to sustainable development services</td>
</tr>
<tr>
<td>Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all</td>
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<tr>
<td><strong>8.1 Sustain per capita economic growth in accordance with national circumstances and, in particular, at least 7% gross domestic product growth per annum in the least developed countries</strong></td>
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<tr>
<td>8.1.1 Annual growth rate of real GDP per capita</td>
<td>Tier I</td>
<td></td>
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<tr>
<td><strong>8.2 Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors</strong></td>
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<tr>
<td>8.2.1 Annual growth rate of real GDP per employed person</td>
<td>Tier I</td>
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<tr>
<td><strong>8.3 Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services</strong></td>
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<tr>
<td>8.3.1 Proportion of informal employment in non-agriculture employment, by sex</td>
<td>Tier II</td>
<td></td>
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<tr>
<td><strong>8.4 Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-Year Framework of Programmes on Sustainable Consumption and Production, with developed countries taking the lead</strong></td>
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<tr>
<td>8.4.1 Material footprint, material footprint per capita, and material footprint per GDP</td>
<td>Tier III</td>
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<tr>
<td>8.4.2 Domestic material consumption, domestic material consumption per capita, and domestic material consumption per GDP</td>
<td>Tier II</td>
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<tr>
<td><strong>8.5 By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value</strong></td>
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<tr>
<td>8.5.1 Average hourly earnings of female and male employees, by occupation, age and persons with disabilities</td>
<td>Tier II</td>
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<tr>
<td>8.5.2 Unemployment rate, by sex, age and persons with disabilities</td>
<td>Tier I</td>
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<tr>
<td><strong>8.6 By 2020, substantially reduce the proportion of youth not in employment, education or training</strong></td>
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<tr>
<td>8.6.1 Proportion of youth (aged 15-24 years) not in education, employment or training</td>
<td>Tier I</td>
<td></td>
</tr>
<tr>
<td><strong>8.7 Take immediate and effective measures to eradicate forced labour, end modern slavery and human trafficking and secure the prohibition and elimination of the worst forms of child labour, including recruitment and use of child soldiers, and by 2025 end child labour in all its forms</strong></td>
<td></td>
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<tr>
<td>8.7.1 Proportion and number of children aged 5-17 years engaged in child labour, by sex and age</td>
<td>Tier I</td>
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<tr>
<td><strong>8.8 Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment</strong></td>
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<tr>
<td>8.8.1 Frequency rates of fatal and non-fatal occupational injuries, by sex and migrant status</td>
<td>Tier I</td>
<td></td>
</tr>
<tr>
<td>8.8.2 Level of national compliance of labour rights (freedom of association and collective bargaining) based on International Labour Organization (ILO) textual sources and national legislation, by sex and migrant status</td>
<td>Tier III</td>
<td></td>
</tr>
</tbody>
</table>
8.9 By 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products

| 8.9.1 Tourism direct GDP as a proportion of total GDP and in growth rate | Tier II |
| 8.9.2 Proportion of jobs in sustainable tourism industries out of total tourism jobs | Tier III |

8.10 Strengthen the capacity of domestic financial institutions to encourage and expand access to banking, insurance and financial services for all

| 8.10.1 (a) Number of commercial bank branches per 100,000 adults and (b) number of automated teller machines (ATMs) per 100,000 adults | Tier I |
| 8.10.2 Proportion of adults (15 years and older) with an account at a bank or other financial institution or with a mobile-money-service provider | Tier I |

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

| 8.a.1 Aid for Trade commitments and disbursements | Tier I |

8.b By 2020, develop and operationalize a global strategy for youth employment and implement the Global Jobs Pact of the International Labour Organization

| 8.b.1 Existence of a developed and operationalized national strategy for youth employment, as a distinct strategy or as part of a national employment strategy | Tier III |

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

| 9.1 Develop quality, reliable, sustainable and resilient infrastructure, including regional and trans-border infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all | Tier III |
| 9.1.1 Proportion of the rural population who live within 2 km of an all-season road | Tier III |
| 9.1.2 Passenger and freight volumes, by mode of transport | Tier I |

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

| 9.2.1 Manufacturing value added as a proportion of GDP and per capita | Tier I |
| 9.2.2 Manufacturing employment as a proportion of total employment | Tier I |

9.3 Increase the access of small-scale industrial and other enterprises, in particular in developing countries, to financial services, including affordable credit, and their integration into value chains and markets

| 9.3.1 Proportion of small-scale industries in total industry value added | Tier III |
| 9.3.2 Proportion of small-scale industries with a loan or line of credit | Tier III |

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

| 9.4.1 CO2 emission per unit of value added | Tier I |

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

| 9.5.1 Research and development expenditure as a proportion of GDP | Tier I |
| 9.5.2 Researchers (in full-time equivalent) per million inhabitants | Tier I |
### 9.a Facilitate sustainable and resilient infrastructure development in developing countries through enhanced financial, technological and technical support to African countries, least developed countries, landlocked developing countries and small island developing States

9.a.1 Total official international support (official development assistance plus other official flows) to infrastructure Tier I

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

9.b.1 Proportion of medium and high-tech industry value added in total value added Tier II

### 9.c Significantly increase access to information and communications technology and strive to provide universal and affordable access to the Internet in least developed countries by 2020

9.c.1 Proportion of population covered by a mobile network, by technology Tier I

### Goal 10. Reduce inequality within and among countries

<p>| 10.1 | By 2030, progressively achieve and sustain income growth of the bottom 40 per cent of the population at a rate higher than the national average | 10.1.1 Growth rates of household expenditure or income per capita among the bottom 40 per cent of the population and the total population Tier I |
| 10.2 | By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status | 10.2.1 Proportion of people living below 50 per cent of median income, by sex, age and persons with disabilities Tier III |
| 10.3 | Ensure equal opportunity and reduce inequalities of outcome, including by eliminating discriminatory laws, policies and practices and promoting appropriate legislation, policies and action in this regard | 10.3.1 Proportion of population reporting having personally felt discriminated against or harassed in the previous 12 months on the basis of a ground of discrimination prohibited under international human rights law Tier III |
| 10.4 | Adopt policies, especially fiscal, wage and social protection policies, and progressively achieve greater equality | 10.4.1 Labour share of GDP, comprising wages and social protection transfers Tier I |
| 10.5 | Improve the regulation and monitoring of global financial markets and institutions and strengthen the implementation of such regulations | 10.5.1 Financial Soundness Indicators Tier III |
| 10.6 | Ensure enhanced representation and voice for developing countries in decision-making in global international economic and financial institutions in order to deliver more effective, credible, accountable and legitimate institutions | 10.6.1 Proportion of members and voting rights of developing countries in international organizations Tier I |
| 10.7 | Facilitate orderly, safe, regular and responsible migration and mobility of people, including through the implementation of planned and well-managed migration policies | 10.7.1 Recruitment cost borne by employee as a proportion of yearly income earned in country of destination Tier III |
| 10.7 | | 10.7.2 Number of countries that have implemented well-managed migration policies Tier III |
| 10.a | Implement the principle of special and differential treatment for developing countries, in particular least developed countries, in accordance with World Trade Organization agreements | 10.a.1 Proportion of tariff lines applied to imports from least developed countries and developing countries with zero-tariff Tier I |</p>
<table>
<thead>
<tr>
<th>Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>11.1</strong> By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums</td>
</tr>
<tr>
<td>11.1.1 Proportion of urban population living in slums, informal settlements or inadequate housing</td>
</tr>
<tr>
<td>Tier I</td>
</tr>
<tr>
<td><strong>11.2</strong> By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons</td>
</tr>
<tr>
<td>11.2.1 Proportion of population that has convenient access to public transport, by sex, age and persons with disabilities</td>
</tr>
<tr>
<td>Tier II</td>
</tr>
<tr>
<td><strong>11.3</strong> By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries</td>
</tr>
<tr>
<td>11.3.1 Ratio of land consumption rate to population growth rate</td>
</tr>
<tr>
<td>Tier II</td>
</tr>
<tr>
<td>11.3.2 Proportion of cities with a direct participation structure of civil society in urban planning and management that operate regularly and democratically</td>
</tr>
<tr>
<td>Tier III</td>
</tr>
<tr>
<td><strong>11.4</strong> Strengthen efforts to protect and safeguard the world's cultural and natural heritage</td>
</tr>
<tr>
<td>11.4.1 Total expenditure (public and private) per capita spent on the preservation, protection and conservation of all cultural and natural heritage, by type of heritage (cultural, natural, mixed and World Heritage Centre designation), level of government (national, regional and local/municipal), type of expenditure (operating expenditure/investment) and type of private funding (donations in kind, private non-profit sector and sponsorship)</td>
</tr>
<tr>
<td>Tier III</td>
</tr>
<tr>
<td><strong>11.5</strong> By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations</td>
</tr>
<tr>
<td>11.5.1 Number of deaths, missing persons and directly affected persons attributed to disasters per 100,000 population</td>
</tr>
<tr>
<td>Tier II</td>
</tr>
<tr>
<td>11.5.2 Direct economic loss in relation to global GDP, damage to critical infrastructure and number of disruptions to basic services, attributed to disasters</td>
</tr>
<tr>
<td>Tier II</td>
</tr>
<tr>
<td><strong>11.6</strong> By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management</td>
</tr>
<tr>
<td>11.6.1 Proportion of urban solid waste regularly collected and with adequate final discharge out of total urban solid waste generated, by cities</td>
</tr>
<tr>
<td>Tier II</td>
</tr>
<tr>
<td>11.6.2 Annual mean levels of fine particulate matter (e.g. PM2.5 and PM10) in cities (population weighted)</td>
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<tr>
<td>Tier I</td>
</tr>
<tr>
<td><strong>11.7</strong> By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities</td>
</tr>
<tr>
<td>11.7.1 Average share of the built-up area of cities that is open space for public use for all, by sex, age and persons with disabilities</td>
</tr>
<tr>
<td>Tier III</td>
</tr>
<tr>
<td>11.7.2 Proportion of persons victim of physical or sexual harassment, by sex, age, disability status and place of occurrence, in the previous 12 months</td>
</tr>
<tr>
<td>Tier III</td>
</tr>
<tr>
<td>Handbok on Integrated Regional Indicators Framework of Agenda 2030 and Agenda 2063</td>
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<tr>
<td>---------------------------------------------------------------</td>
</tr>
<tr>
<td>11.a Support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning</td>
</tr>
<tr>
<td>11.a.1 Proportion of population living in cities that implement urban and regional development plans integrating population projections and resource needs, by size of city</td>
</tr>
<tr>
<td>Tier III</td>
</tr>
<tr>
<td>11.b By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels</td>
</tr>
<tr>
<td>11.b.1 Number of countries that adopt and implement national disaster risk reduction strategies in line with the Sendai Framework for Disaster Risk Reduction 2015-2030</td>
</tr>
<tr>
<td>Tier II</td>
</tr>
<tr>
<td>11.b.2 Proportion of local governments that adopt and implement local disaster risk reduction strategies in line with national disaster risk reduction strategies</td>
</tr>
<tr>
<td>Tier III</td>
</tr>
<tr>
<td>11.c Support least developed countries, including through financial and technical assistance, in building sustainable and resilient buildings utilizing local materials</td>
</tr>
<tr>
<td>11.c.1 Proportion of financial support to the least developed countries that is allocated to the construction and retrofitting of sustainable, resilient and resource-efficient buildings utilizing local materials</td>
</tr>
<tr>
<td>Tier III</td>
</tr>
</tbody>
</table>

**Goal 12. Ensure sustainable consumption and production patterns**

<p>| 12.1 Implement the 10-Year Framework of Programmes on Sustainable Consumption and Production Patterns, all countries taking action, with developed countries taking the lead, taking into account the development and capabilities of developing countries |
| 12.1.1 Number of countries with sustainable consumption and production (SCP) national action plans or SCP mainstreamed as a priority or a target into national policies |
| Tier III |
| 12.2 By 2030, achieve the sustainable management and efficient use of natural resources |
| 12.2.1 Material footprint, material footprint per capita, and material footprint per GDP |
| Tier III |
| 12.2.2 Domestic material consumption, domestic material consumption per capita, and domestic material consumption per GDP |
| Tier II |
| 12.3 By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses |
| 12.3.1 Global food loss index |
| Tier III |
| 12.4 By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment |
| 12.4.1 Number of parties to international multilateral environmental agreements on hazardous waste, and other chemicals that meet their commitments and obligations in transmitting information as required by each relevant agreement |
| Tier I |
| 12.4.2 Hazardous waste generated per capita and proportion of hazardous waste treated, by type of treatment |
| Tier III |
| 12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse |
| 12.5.1 National recycling rate, tons of material recycled |
| Tier III |
| 12.6 Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle |
| 12.6.1 Number of companies publishing sustainability reports |
| Tier III |</p>
<table>
<thead>
<tr>
<th>12.7 Promote public procurement practices that are sustainable, in accordance with national policies and priorities</th>
<th>12.7.1 Number of countries implementing sustainable public procurement policies and action plans</th>
<th>Tier III</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.8 By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature</td>
<td>12.8.1 Extent to which (i) global citizenship education and (ii) education for sustainable development (including climate change education) are mainstreamed in (a) national education policies; (b) curricula; (c) teacher education; and (d) student assessment</td>
<td>Tier III</td>
</tr>
<tr>
<td>12.a Support developing countries to strengthen their scientific and technological capacity to move towards more sustainable patterns of consumption and production</td>
<td>12.a.1 Amount of support to developing countries on research and development for sustainable consumption and production and environmentally sound technologies</td>
<td>Tier III</td>
</tr>
<tr>
<td>12.b Develop and implement tools to monitor sustainable development impacts for sustainable tourism that creates jobs and promotes local culture and products</td>
<td>12.b.1 Number of sustainable tourism strategies or policies and implemented action plans with agreed monitoring and evaluation tools</td>
<td>Tier III</td>
</tr>
<tr>
<td>12.c Rationalize inefficient fossil-fuel subsidies that encourage wasteful consumption by removing market distortions, in accordance with national circumstances, including by restructuring taxation and phasing out those harmful subsidies, where they exist, to reflect their environmental impacts, taking fully into account the specific needs and conditions of developing countries and minimizing the possible adverse impacts on their development in a manner that protects the poor and the affected communities</td>
<td>12.c.1 Amount of fossil-fuel subsidies per unit of GDP (production and consumption) and as a proportion of total national expenditure on fossil fuels</td>
<td>Tier III</td>
</tr>
</tbody>
</table>

**Goal 13. Take urgent action to combat climate change and its impacts[a]**

<table>
<thead>
<tr>
<th>13.1 Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries</th>
<th>13.1.1 Number of deaths, missing persons and directly affected persons attributed to disasters per 100,000 population</th>
<th>Tier II</th>
</tr>
</thead>
<tbody>
<tr>
<td>13.1.2 Number of countries that adopt and implement national disaster risk reduction strategies in line with the Sendai Framework for Disaster Risk Reduction 2015-2030</td>
<td>Tier II</td>
<td></td>
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<tr>
<td>13.1.3 Proportion of local governments that adopt and implement local disaster risk reduction strategies in line with national disaster risk reduction strategies</td>
<td>Tier III</td>
<td></td>
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<tr>
<td>13.2 Integrate climate change measures into national policies, strategies and planning</td>
<td>13.2.1 Number of countries that have communicated the establishment or operationalization of an integrated policy/strategy/plan which increases their ability to adapt to the adverse impacts of climate change, and foster climate resilience and low greenhouse gas emissions development in a manner that does not threaten food production (including a national adaptation plan, nationally determined contribution, national communication, biennial update report or other)</td>
<td>Tier III</td>
</tr>
<tr>
<td>13.3 Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning</td>
<td>13.3.1 Number of countries that have integrated mitigation, adaptation, impact reduction and early warning into primary, secondary and tertiary curricula</td>
<td>Tier III</td>
</tr>
<tr>
<td>13.3.2 Number of countries that have communicated the strengthening of institutional, systemic and individual capacity-building to implement adaptation, mitigation and technology transfer, and development actions</td>
<td>Tier III</td>
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<tr>
<td>Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development</td>
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<tr>
<td>13.a Implement the commitment undertaken by developed-country parties to the United Nations Framework Convention on Climate Change to a goal of mobilizing jointly $100 billion annually by 2020 from all sources to address the needs of developing countries in the context of meaningful mitigation actions and transparency on implementation and fully operationalize the Green Climate Fund through its capitalization as soon as possible</td>
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<tr>
<td>13.a.1 Mobilized amount of United States dollars per year between 2020 and 2025 accountable towards the $100 billion commitment</td>
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<tr>
<td>Tier III</td>
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<tr>
<td>13.b Promote mechanisms for raising capacity for effective climate change-related planning and management in least developed countries and small island developing States, including focusing on women, youth and local and marginalized communities</td>
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<tr>
<td>13.b.1 Number of least developed countries and small island developing States that are receiving specialized support, and amount of support, including finance, technology and capacity-building, for mechanisms for raising capacities for effective climate change-related planning and management, including focusing on women, youth and local and marginalized communities</td>
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<tr>
<td>Tier III</td>
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<tr>
<td>Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development</td>
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<tr>
<td>14.1 By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution</td>
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<tr>
<td>14.1.1 Index of coastal eutrophication and floating plastic debris density</td>
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<tr>
<td>Tier III</td>
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<tr>
<td>14.2 By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans</td>
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<tr>
<td>14.2.1 Proportion of national exclusive economic zones managed using ecosystem-based approaches</td>
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<td>Tier III</td>
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<tr>
<td>14.3 Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels</td>
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<tr>
<td>14.3.1 Average marine acidity (pH) measured at agreed suite of representative sampling stations</td>
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<tr>
<td>Tier III</td>
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<tr>
<td>14.4 By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics</td>
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<tr>
<td>14.4.1 Proportion of fish stocks within biologically sustainable levels</td>
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<tr>
<td>Tier I</td>
<td></td>
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<tr>
<td>14.5 By 2020, conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on the best available scientific information</td>
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<tr>
<td>14.5.1 Coverage of protected areas in relation to marine areas</td>
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<tr>
<td>Tier I</td>
<td></td>
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<tr>
<td>14.6 By 2020, prohibit certain forms of fisheries subsidies which contribute to overcapacity and overfishing, eliminate subsidies that contribute to illegal, unreported and unregulated fishing and refrain from introducing new such subsidies, recognizing that appropriate and effective special and differential treatment for developing and least developed countries should be an integral part of the World Trade Organization fisheries subsidies negotiation(b)</td>
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<tr>
<td>14.6.1 Progress by countries in the degree of implementation of international instruments aiming to combat illegal, unreported and unregulated fishing</td>
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<tr>
<td>Tier III</td>
<td></td>
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<tr>
<td>14.7 By 2030, increase the economic benefits to small island developing States and least developed countries from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism</td>
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<tr>
<td>14.7.1 Sustainable fisheries as a proportion of GDP in small island developing States, least developed countries and all countries</td>
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<tr>
<td>Tier III</td>
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<tr>
<td>Goal 14.</td>
<td>Increase scientific knowledge, develop research capacity and transfer marine technology, taking into account the Intergovernmental Oceanographic Commission Criteria and Guidelines on the Transfer of Marine Technology, in order to improve ocean health and to enhance the contribution of marine biodiversity to the development of developing countries, in particular small island developing States and least developed countries</td>
<td></td>
</tr>
<tr>
<td>14.a</td>
<td>Proportion of total research budget allocated to research in the field of marine technology Tier III</td>
<td></td>
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<tr>
<td>14.b</td>
<td>Provide access for small-scale artisanal fishers to marine resources and markets</td>
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<tr>
<td>14.c</td>
<td>Enhance the conservation and sustainable use of oceans and their resources by implementing international law as reflected in the United Nations Convention on the Law of the Sea, which provides the legal framework for the conservation and sustainable use of oceans and their resources, as recalled in paragraph 158 of “The future we want”</td>
<td></td>
</tr>
<tr>
<td>14.a.1</td>
<td>Proportion of total research budget allocated to research in the field of marine technology Tier III</td>
<td></td>
</tr>
<tr>
<td>14.b.1</td>
<td>Progress by countries in the degree of application of a legal/regulatory/policy/institutional framework which recognizes and protects access rights for small-scale fisheries Tier III</td>
<td></td>
</tr>
<tr>
<td>14.c.1</td>
<td>Number of countries making progress in ratifying, accepting and implementing through legal, policy and institutional frameworks, ocean-related instruments that implement international law, as reflected in the United Nation Convention on the Law of the Sea, for the conservation and sustainable use of the oceans and their resources Tier III</td>
<td></td>
</tr>
</tbody>
</table>

**Goal 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss**

<p>| 15.1 | By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements |
| 15.1.1 | Forest area as a proportion of total land area Tier I |
| 15.1.2 | Proportion of important sites for terrestrial and freshwater biodiversity that are covered by protected areas, by ecosystem type Tier I |
| 15.2 | By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally |
| 15.2.1 | Progress towards sustainable forest management Tier II |
| 15.3 | By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world |
| 15.3.1 | Proportion of land that is degraded over total land area Tier III |
| 15.4 | By 2030, ensure the conservation of mountain ecosystems, including their biodiversity, in order to enhance their capacity to provide benefits that are essential for sustainable development |
| 15.4.1 | Coverage by protected areas of important sites for mountain biodiversity Tier II |
| 15.4.2 | Mountain Green Cover Index Tier II |
| 15.5 | Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species |
| 15.5.1 | Red List Index Tier II |
| 15.6 | Promote fair and equitable sharing of the benefits arising from the utilization of genetic resources and promote appropriate access to such resources, as internationally agreed |
| 15.6.1 | Number of countries that have adopted legislative, administrative and policy frameworks to ensure fair and equitable sharing of benefits Tier II |
| 15.7 | Take urgent action to end poaching and trafficking of protected species of flora and fauna and address both demand and supply of illegal wildlife products |
| 15.7.1 | Proportion of traded wildlife that was poached or illicitly trafficked Tier II |</p>
<table>
<thead>
<tr>
<th>15.8 By 2020, introduce measures to prevent the introduction and significantly reduce the impact of invasive alien species on land and water ecosystems and control or eradicate the priority species</th>
<th>15.8.1 Proportion of countries adopting relevant national legislation and adequately resourcing the prevention or control of invasive alien species</th>
<th>Tier III</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.9 By 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts</td>
<td>15.9.1 Progress towards national targets established in accordance with Aichi Biodiversity Target 2 of the Strategic Plan for Biodiversity 2011-2020</td>
<td>Tier III</td>
</tr>
<tr>
<td>15.a Mobilize and significantly increase financial resources from all sources to conserve and sustainably use biodiversity and ecosystems</td>
<td>15.a.1 Official development assistance and public expenditure on conservation and sustainable use of biodiversity and ecosystems</td>
<td>Tier I/III</td>
</tr>
<tr>
<td>15.b Mobilize significant resources from all sources and at all levels to finance sustainable forest management and provide adequate incentives to developing countries to advance such management, including for conservation and reforestation</td>
<td>15.b.1 Official development assistance and public expenditure on conservation and sustainable use of biodiversity and ecosystems</td>
<td>Tier I/III</td>
</tr>
<tr>
<td>15.c Enhance global support for efforts to combat poaching and trafficking of protected species, including by increasing the capacity of local communities to pursue sustainable livelihood opportunities</td>
<td>15.c.1 Proportion of traded wildlife that was poached or illicitly trafficked</td>
<td>Tier II</td>
</tr>
</tbody>
</table>

**Goal 16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels**

<table>
<thead>
<tr>
<th>16.1 Significantly reduce all forms of violence and related death rates everywhere</th>
<th>16.1.1 Number of victims of intentional homicide per 100,000 population, by sex and age</th>
<th>Tier I</th>
</tr>
</thead>
<tbody>
<tr>
<td>16.2 End abuse, exploitation, trafficking and all forms of violence against and torture of children</td>
<td>16.2.1 Proportion of children aged 1-17 years who experienced any physical punishment and/or psychological aggression by caregivers in the past month</td>
<td>Tier II</td>
</tr>
<tr>
<td>16.3 Promote the rule of law at the national and international levels and ensure equal access to justice for all</td>
<td>16.3.1 Proportion of victims of violence in the previous 12 months who reported their victimization to competent authorities or other officially recognized conflict resolution mechanisms</td>
<td>Tier II</td>
</tr>
<tr>
<td>16.4 Proportion of population that feel safe walking alone around the area they live</td>
<td>16.4.1 Proportion of population that feel safe walking alone around the area they live</td>
<td>Tier II</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>16.2.2 Number of victims of human trafficking per 100,000 population, by sex, age and form of exploitation</th>
<th>Tier II</th>
</tr>
</thead>
<tbody>
<tr>
<td>16.2.3 Proportion of young women and men aged 18-29 years who experienced sexual violence by age 18</td>
<td>Tier II</td>
</tr>
<tr>
<td>16.3.2 Unsentenced detainees as a proportion of overall prison population</td>
<td>Tier I</td>
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<tr>
<td>Objective</td>
<td>Description</td>
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<tr>
<td>16.4</td>
<td>By 2030, significantly reduce illicit financial and arms flows, strengthen the recovery and return of stolen assets and combat all forms of organized crime</td>
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<td>16.4</td>
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<tr>
<td>16.5</td>
<td>Substantially reduce corruption and bribery in all their forms</td>
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<td>16.5</td>
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<tr>
<td>16.6</td>
<td>Develop effective, accountable and transparent institutions at all levels</td>
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<td>16.6</td>
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<tr>
<td>16.7</td>
<td>Ensure responsive, inclusive, participatory and representative decision-making at all levels</td>
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<td>16.7</td>
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<tr>
<td>16.8</td>
<td>Broaden and strengthen the participation of developing countries in the institutions of global governance</td>
</tr>
<tr>
<td>16.9</td>
<td>By 2030, provide legal identity for all, including birth registration</td>
</tr>
<tr>
<td>16.10</td>
<td>Ensure public access to information and protect fundamental freedoms, in accordance with national legislation and international agreements</td>
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<td>16.10</td>
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<tr>
<td>16.a</td>
<td>Strengthen relevant national institutions, including through international cooperation, for building capacity at all levels, in particular in developing countries, to prevent violence and combat terrorism and crime</td>
</tr>
<tr>
<td>16.b</td>
<td>Promote and enforce non-discriminatory laws and policies for sustainable development</td>
</tr>
</tbody>
</table>
### Handbooks on Integrated Regional Indicators Framework of Agenda 2030 and Agenda 2063

**Goal 17. Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development**

#### Finance

<table>
<thead>
<tr>
<th>17.1 Strengthen domestic resource mobilization, including through international support to developing countries, to improve domestic capacity for tax and other revenue collection</th>
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<tbody>
<tr>
<td>17.1.1 Total government revenue as a proportion of GDP, by source</td>
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<td>17.1.2 Proportion of domestic budget funded by domestic taxes</td>
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<table>
<thead>
<tr>
<th>17.2 Developed countries to implement fully their official development assistance commitments, including the commitment by many developed countries to achieve the target of 0.7 per cent of gross national income for official development assistance (ODA/GNI) to developing countries and 0.15 to 0.20 per cent of ODA/GNI to least developed countries; ODA providers are encouraged to consider setting a target to provide at least 0.20 per cent of ODA/GNI to least developed countries</th>
</tr>
</thead>
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<tr>
<td>17.2.1 Net official development assistance, total and to least developed countries, as a proportion of the Organization for Economic Cooperation and Development (OECD) Development Assistance Committee donors’ gross national income (GNI)</td>
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<tr>
<th>17.3 Mobilize additional financial resources for developing countries from multiple sources</th>
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<tr>
<td>17.3.1 Foreign direct investments (FDI), official development assistance and South-South Cooperation as a proportion of total domestic budget</td>
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<tr>
<td>17.3.2 Volume of remittances (in United States dollars) as a proportion of total GDP</td>
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<thead>
<tr>
<th>17.4 Assist developing countries in attaining long-term debt sustainability through coordinated policies aimed at fostering debt financing, debt relief and debt restructuring, as appropriate, and address the external debt of highly indebted poor countries to reduce debt distress</th>
</tr>
</thead>
<tbody>
<tr>
<td>17.4.1 Debt service as a proportion of exports of goods and services</td>
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<tr>
<th>17.5 Adopt and implement investment promotion regimes for least developed countries</th>
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<tbody>
<tr>
<td>17.5.1 Number of countries that adopt and implement investment promotion regimes for least developed countries</td>
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#### Technology

<table>
<thead>
<tr>
<th>17.6 Enhance North-South, South-South and triangular regional and international cooperation on and access to science, technology and innovation and enhance knowledge-sharing on mutually agreed terms, including through improved coordination among existing mechanisms, in particular at the United Nations level, and through a global technology facilitation mechanism</th>
</tr>
</thead>
<tbody>
<tr>
<td>17.6.1 Number of science and/or technology cooperation agreements and programmes between countries, by type of cooperation</td>
</tr>
<tr>
<td>17.6.2 Fixed Internet broadband subscriptions per 100 inhabitants, by speed</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>17.7 Promote the development, transfer, dissemination and diffusion of environmentally sound technologies to developing countries on favourable terms, including on concessional and preferential terms, as mutually agreed</th>
</tr>
</thead>
<tbody>
<tr>
<td>17.7.1 Total amount of approved funding for developing countries to promote the development, transfer, dissemination and diffusion of environmentally sound technologies</td>
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<thead>
<tr>
<th>17.8 Fully operationalize the technology bank and science, technology and innovation capacity-building mechanism for least developed countries by 2017 and enhance the use of enabling technology, in particular information and communications technology</th>
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<tbody>
<tr>
<td>17.8.1 Proportion of individuals using the Internet</td>
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### Capacity-building
17.9 Enhance international support for implementing effective and targeted capacity-building in developing countries to support national plans to implement all the Sustainable Development Goals, including through North-South, South-South and triangular cooperation

17.9.1 Dollar value of financial and technical assistance (including through North-South, South-South and triangular cooperation) committed to developing countries

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| 17.11 Significantly increase the exports of developing countries, in particular with a view to doubling the least developed countries’ share of global exports by 2020 |
| 17.11.1 Developing countries’ and least developed countries’ share of global exports |

| 17.12 Realize timely implementation of duty-free and quota-free market access on a lasting basis for all least developed countries, consistent with World Trade Organization decisions, including by ensuring that preferential rules of origin applicable to imports from least developed countries are transparent and simple, and contribute to facilitating market access |
| 17.12.1 Average tariffs faced by developing countries, least developed countries and small island developing States |

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| 17.14 Enhance policy coherence for sustainable development |
| 17.14.1 Number of countries with mechanisms in place to enhance policy coherence of sustainable development |

| 17.15 Respect each country’s policy space and leadership to establish and implement policies for poverty eradication and sustainable development |
| 17.15.1 Extent of use of country-owned results frameworks and planning tools by providers of development cooperation |

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| 17.17 Encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships |
| 17.17.1 Amount of United States dollars committed to public-private and civil society partnerships |

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<td>17.18.2</td>
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<tr>
<td>17.18.3</td>
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<tr>
<th>17.19</th>
<th>By 2030, build on existing initiatives to develop measurements of progress on sustainable development that complement gross domestic product, and support statistical capacity-building in developing countries</th>
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</thead>
<tbody>
<tr>
<td>17.19.1</td>
<td>Dollar value of all resources made available to strengthen statistical capacity in developing countries</td>
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<tr>
<td>Tier I</td>
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<tr>
<td>17.19.2</td>
<td>Proportion of countries that (a) have conducted at least one population and housing census in the last 10 years; and (b) have achieved 100 per cent birth registration and 80 per cent death registration</td>
</tr>
<tr>
<td>Tier I</td>
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</table>

*Indicator codes were developed by UNSD for data transfer, tracking and other statistical purposes.

[a] Acknowledging that the United Nations Framework Convention on Climate Change is the primary international, intergovernmental forum for negotiating the global response to climate change.

[b] Taking into account ongoing World Trade Organization negotiations, the Doha Development Agenda and the Hong Kong ministerial mandate.
## Annex II: Agenda 2063 Aspirations, Goals, Priority Areas and National Targets

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<tr>
<th>Priority Area</th>
<th>National Target</th>
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<tr>
<td><strong>Aspiration 1. A Prosperous Africa Based on Inclusive Growth and Sustainable Development</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Goal 1: A High Standard of Living, Quality of Life and Well Being for All</strong></td>
<td>1. Increase 2013 per capita income by at least 30%</td>
</tr>
<tr>
<td></td>
<td>2. Reduce 2013 unemployment rate by at least 25%</td>
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<tr>
<td></td>
<td>3. Reduce Youth and Women unemployment rate by 2% per annum</td>
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<tr>
<td></td>
<td>4. Reduce 2013 unemployment rate for vulnerable groups by at least 25%</td>
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<tr>
<td></td>
<td>5. Reduce underemployment rate by 50%</td>
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<tr>
<td></td>
<td>6. Reduce 2013 the proportion of employed people earning less than minimum wage by at least 25%</td>
</tr>
<tr>
<td><strong>Priority Area National Target</strong></td>
<td>1. Reduce 2013 levels of poverty by at least 30%.</td>
</tr>
<tr>
<td>1. Incomes, Jobs and decent work</td>
<td>2. Reduce poverty amongst women by at least 50%</td>
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<tr>
<td></td>
<td>3. Reduce (Improve) the 2013 Gini co-efficient by at least 20%. Reduce income inequality by at least 20%</td>
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<td>4. Reduce 2013 levels of proportion of the population who suffer from hunger by at least 80%</td>
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<tr>
<td></td>
<td>5. Reduce stunting in children to 10% and underweight to 5%.</td>
</tr>
<tr>
<td><strong>2. Poverty, Inequality and Hunger</strong></td>
<td>1. At least 30% of vulnerable populations including persons with disabilities, older persons and children provided with social protection.</td>
</tr>
<tr>
<td></td>
<td>2. All persons working in the formal sector are provided with social security.</td>
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<tr>
<td></td>
<td>3. At least 20% of the informal sector and rural labour have access to social security.</td>
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<tr>
<td><strong>3. Social security and protection Including Persons with Disabilities</strong></td>
<td>1. Reduce the 2013 national housing deficit by at least 10%</td>
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<tr>
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<td>2. Reduce urban slums by at least 20%</td>
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<tr>
<td></td>
<td>3. Reduce 2013 level of proportion of the population without access to safe drinking water by 95%.</td>
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<tr>
<td></td>
<td>4. Reduce 2013 level of proportion of the population with poor sanitation facilities by 95% (Change the phrasing of the target).</td>
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<tr>
<td></td>
<td>5. At least 5% of the budget is allocated to water and sanitation by 2016.</td>
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<tr>
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<td>6. Access and use of electricity and internet is increased by at least 50% of 2013 levels.</td>
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<tr>
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<td>7. Increase the efficiency in energy usage by households by at least 30%</td>
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<td>8. At least detail technical and financial feasibility report for rapid transit system for all cities above 2 million people is completed.</td>
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<td></td>
<td>9. At least 50% of urban waste is recycled.</td>
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<tr>
<td></td>
<td>10. At least 70% of the population indicate an increase in access to quality basic services (water, sanitation, electricity, transportation, internet connectivity)</td>
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<tr>
<td></td>
<td>11. All settlements in Small Island States are linked by frequent, efficient and effective, (where appropriate) land, air and sea rapid transit systems by 2020</td>
</tr>
</tbody>
</table>
### Goal 2: Well Educated Citizens and Skills revolution underpinned by Science, Technology and Innovation

1. Education and STI driven Skills Revolution (No explicit target on quality of education and STI)

   1. Enrolment rate for early childhood education is at least 300% of the 2013 rate
   2. Enrolment rate for basic education is 100%
   3. Increase number of qualified teachers by at least 30% with focus on STEM (too packed)
   4. Universal secondary school (including technical high schools) with enrolment rate of 100%
   5. At least 30% of secondary school leavers go into tertiary education with at least 40% being female.
   6. At least 70% of secondary school students not entering the tertiary sector are provided with a range of options for further skills development
   7. At least 70% of the public perceive quality improvements in education at all levels

### Goal 3: Healthy and Well-Nourished Citizens

1. Health and Nutrition (Health system strengthening to be flagged out as a target)

   1. Increase 2013 levels of access to quality basic health care and services by at least 40%
   2. Increase 2013 levels of access to sexual and reproductive health services to women by at least 30%
   3. Reduce 2013 maternal, neo-natal and child mortality rates by at least 50%
   4. Reduce 2013 proportion of deaths attributable to HIV/AIDS, Malaria and TB by at least 50%
   5. Reduce under 5 mortality rate attributable to malaria by at least 80%
   6. Reduce the 2013 incidence of HIV/AIDS, Malaria and TB by at least 80%
   7. Reduce 2013 level of prevalence of malnutrition by at least 50%
   8. Reduce stunting to 10%
   9. Reduce 2013 proportion of deaths attributable to dengue fever and chikungunya by 50% (for Island States)
   10. Access to Anti-Retroviral (ARV) drugs is 100%

### Goal 4: Transformed Economies and Job Creation

1. Sustainable inclusive economic growth

   1. Annual GDP growth rate of at least 7%
   2. At least 30% of total non-extractive sector industrial output is from locally owned firms.
   3. At least locally owned firms generate 20% of the extractive sector industrial output.
   4. 20% of informal sector ventures graduate into Small Formal Enterprise category a year.
   5. At least 50% of informal sector ventures that grow into small formal enterprise category a year will be owned by Women

2. STI driven Manufacturing / Industrialization and Value Addition

   1. Real value of manufacturing in GDP is 50% more than the 2013 level.
   2. Share of labour intensive manufacturing output is 50% more than that of 2013 level
   3. At least 20% of total output of the extractive industry is through value addition by locally owned firms.
   4. At least 5 commodity exchanges are functional
   5. Gross Domestic Expenditures on R&D (GERD) as a percentage of GDP has reached 1% by 2023
### 3. Economic diversification and resilience

1. Improvement in diversification index of 2013 is at least 20%.
2. Reduce 2013 level of food imports by at least 50%.
3. Contribution of the creative arts to GDP in real terms is increased by at least 100%.
4. Level of intra-African trade in agricultural commodities is increased by at least 100% in real terms.
5. Level of intra-African trade in services is increased by at least 100% in real terms.
6. At least 1% of GDP is allocated to science, technology and innovation research and STI driven entrepreneurship development.
7. Establish at least 3 commodity exchanges.

### 4. Hospitality/Tourism

1. Contribution of tourism to GDP in real terms is increased by at least 100%.
2. Eco-friendly coastal tourism increased by 20% by 2020 with at least 10% of the public revenues from it going to finance development programmes of the communities.
3. 2013 Level of intra-African tourism is doubled in real terms.

### Goal 5: Modern Agriculture for increased productivity and production

1. Allocate a minimum of 10% annual public expenditure to agriculture and grow the sector by at least 6% per annum.
2. Double agricultural total factor productivity.
3. Increase youth and women participation in integrated agricultural value chains by at least 30%.
4. Reduce post-harvest losses by 50%.
5. Increase the proportion of farm, pastoral and fisher households are resilient to climate and weather related risks to 30%.
6. At least 10% of Agricultural GDP is produced by commercial farmers.
7. At least 10% of small-scale farmers graduate into small-scale commercial farming and those graduating at least 30% should be women.
8. Triple intra-African Trade of agricultural commodities and services.
9. End Hunger in Africa
10. Elimination of Child under nutrition with a view to bring down stunting to 10% and underweight to 5%.

### Goal 6: Blue/ocean economy for accelerated economic growth

1. At least 50% increase in value addition in the fishery sector in real terms is attained by 2023.
2. Build at least one Giant Aquaculture showpiece.
3. Marine bio-technology contribution to GDP is increased in real terms by at least 50% from the 2013 levels.
4. At least 10% of renewable energy sources is from wave energy.
5. Commission and complete prospection of seabed’s for minerals and hydrocarbon potentials by 2023.
2. Port Operations and Marine Transport

1. Contribution of shipping / port operations services to GDP in real terms is increased by 50%
2. Locally, owned shipping lines carry at least 5% of annual tonnage of cargo
3. Average duration of ship call time is reduced by at least 30% by 2020
4. Average time for clearing of goods from the ports is reduced by at least 50% by 2020

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<td>1. At least 30% of agricultural land is placed under sustainable land management practice</td>
</tr>
<tr>
<td>2. At least 17% of terrestrial and inland water and 10% of coastal and marine areas are preserved</td>
</tr>
<tr>
<td>3. All national parks and protected areas are well managed on the basis of master and national plans</td>
</tr>
<tr>
<td>4. Genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives including other socio-economically as well as cultural valuables species are maintained</td>
</tr>
<tr>
<td><strong>2. Water Security</strong></td>
</tr>
<tr>
<td>1. Increase 2013 levels of water demand satisfaction by 25%</td>
</tr>
<tr>
<td>2. Increase 2013 levels of water productivity from rain-fed agriculture and irrigation by 60%</td>
</tr>
<tr>
<td>3. At least 10% of rain water is harvested for productive use</td>
</tr>
<tr>
<td>4. At least 10% of waste water is recycled for agricultural and industrial use</td>
</tr>
<tr>
<td><strong>3. Climate Resilience and Natural Disasters and preparedness</strong></td>
</tr>
<tr>
<td>1. At least 30% of farmers, pastoralist and fisher folks practice climate resilient production systems</td>
</tr>
<tr>
<td>2. Reduce to 2013 levels emissions arising from agriculture bio-diversity loss, land use, and deforestation</td>
</tr>
<tr>
<td>3. Reduce deaths and property loss from natural and man-made disasters and climate extreme events by at least 30%</td>
</tr>
<tr>
<td>4. Reduce proportion of fossil fuel in total energy production by at least 20%</td>
</tr>
<tr>
<td>5. All Cities meet the WHO’s Ambient Air Quality Standards (AAQS) by 2025</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Goal 8: United Africa (Federal or Confederate)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Framework and Institutions for a United Africa (political and economic integration)</strong></td>
</tr>
<tr>
<td>1. Free movement of persons and goods/services within REC member states is in place</td>
</tr>
<tr>
<td>2. Visa at point of entry for Africans on arrival is allowed</td>
</tr>
<tr>
<td>3. Opportunities offered to REC citizens are extended to other Non REC citizens</td>
</tr>
<tr>
<td>4. Active member of the African Free Trade Area</td>
</tr>
<tr>
<td>5. Volume of intra-African trade is at least three times the 2013 level</td>
</tr>
<tr>
<td>6. Volume of trade with African Island States is increased by at least 10%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Goal 9: Key Continental Financial and Monetary Institutions established and functional</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Financial and Monetary Institutions</strong></td>
</tr>
<tr>
<td>No National targets</td>
</tr>
</tbody>
</table>
### Goal 10: World Class Infrastructure crisscrosses Africa

1. **Communications and Infrastructure Connectivity**
   - 1. At least national readiness for implementation of the trans African Highway Missing link is achieved
   - 2. At least national readiness for in country connectivity to the African High Speed Rail Network is achieved by 2019
   - 3. Skies fully opened to African airlines
   - 4. Increase electricity generation and distribution by at least 50% by 2020
   - 5. Double ICT penetration and contribution to GDP
   - 6. Realize at least 70% increase in broadband accessibility by 2020
   - 7. Digital broadcasting is achieved as the norm by 2016
   - 8. Attain 100% mobile penetration by 2020

---

### Aspiration 3. An Africa of Good Governance, Democracy, Respect for Human Rights, Justice and the Rule of Law

**Goal 11: Democratic values, practices, universal principles of human rights, justice and the rule of law entrenched**

1. **Democratic Values and Practices are the Norm**
   - 1. At least 70% of the people believe that they are empowered and are holding their leaders accountable
   - 2. At least 70% of the people perceive that the press/information is free and freedom of expression pertains
   - 3. At least 70% of the public perceive elections are free, fair and transparent
   - 4. Accredited Electoral Observers certifies elections to be free and fair
   - 5. A functional national focal point responsible for implementation of AU shared values is in place by 2017
   - 6. All reporting obligations with respect to compliance of AU Shared instruments are met by 2017
   - 7. Zero tolerance for unconstitutional changes in government is the norm
   - 8. African Charter on Democracy is signed, ratified and domesticated by 2020

2. **Human Rights, Justice and the Rule of Law**
   - 1. At least 70% of the people perceive the judiciary to be independent and deliver justice on fair and timely basis.
   - 2. At least 70% of the people perceive they have free access to justice
   - 3. At least 70% of the people perceive the entrenchment of the culture of respect for human rights, the rule of law and due process.

---

### Goal 12: Capable institutions and transformed leadership in place at all levels

1. **Institutions and Leadership**
   - 1. At least 70% of the public acknowledge the public service to be professional, efficient, responsive, accountable, impartial and corruption free
   - 2. At least 70% of the public acknowledge the relevance and good functioning of the legislature as a key component of democracy

2. **Participatory Development and Local Governance**
   - 1. All local governments have full administrative and institutional capacities and appropriate fiscal powers
   - 2. Local communities have a fair share of the exploitation of natural resources and are using them for the benefit of all.
   - 3. Reduce local conflicts to zero by 2020
   - 4. Culture, values and norms of local communities are respected and protected
### Aspiration 4. A Peaceful and Secure Africa

#### Goal 13: Peace, Security and Stability are Preserved

1. **Maintenance and Restoration of Peace and Security**
   - 1. Level of conflict emanating from ethnicity, all forms of exclusion, religious and political differences is at most 50% of 2013 levels.
   - 2. Entrenched culture of peace

#### Goal 14: A Stable and Peaceful Africa

1. **Institutional Structure for AU Instruments on Peace and Security**
   - 1. Silence All Guns by 2020
   - 2. Complete civilian control of security services within democratic practices, rule of law and due processes by 2025

2. **Defence, Security and Peace**
   - 1. Sufficiently capable security services by 2020
   - 2. Respect to rules of engagement and human rights in conflict situations is entrenched in the security forces

#### Goal 15: A Fully Functional and Operational African Peace and Security Architecture

1. **Operationalization of APSA Pillars**
   - 1. National standby contingent of the ASF ready in all operational aspects
   - 2. National Peace Council is established by 2016
   - 3. Full compliance to funding Africa’s peace and security institutions obligations

### Aspiration 5. Africa with a Strong Cultural Identity, Common Heritage, Values and Ethics

#### Goal 16: African Cultural Renaissance is pre-eminent

1. **Values and Ideals of Pan Africanism**
   - 1. At least 60% of content in educational curriculum is on indigenous African culture, values and language targeting primary and secondary schools
   - 2. An Agency for Diaspora Affairs/ Relations is in place and will be facilitating the Diaspora contributions to development
   - 3. Dual Citizenship granted to the Diaspora

2. **Cultural Values and African Renaissance**
   - 1. At least 20% of the citizenry participate in culture and appreciate the creative arts
   - 2. National languages used as part of the administrative processes of the country.

3. **Cultural Heritage, Creative Arts and Businesses**
   - 1. At least 60% increase in local content in all print and electronic productions and media
   - 2. National Agency / focal point for the promotion of creative art businesses is in place by 2017
   - 3. At least 20% of technical and vocational institutions have programmes on the creation/generation of cultural artifacts, skills development for the generation/preservation of cultural assets and the creation and management of micro-cultural enterprises.
   - 4. Mechanism in place for inter-generational cultural dialogue
   - 5. At least 30% of all national cultural treasures that are identified are retrieved, protected, archived and valued

### Aspiration 6. An Africa Whose Development is people driven, relying on the potential of the African People, particularly its Women and Youth and well cared for children.

#### Goal 17: Full Gender Equality in All Spheres of Life
### 1. Women Empowerment

1. Equal economic rights for women, including the rights to own and inherit property, sign a contract, save, register and manage a business and own and operate a bank account by 2026

2. At least 20% of women in rural areas have access to and control productive assets, including land and grants, credit, inputs, financial service and information

3. At least 30% of all elected officials at local, regional and national levels are Women as well as in judicial institutions

4. At least 25% of annual public procurement at national and sub-national levels are awarded to Women

5. Increase gender parity in decision making positions at all levels to at least 50-50 between Women and Men

6. Solemn Declaration Index (SDI) developed by GIMAG and ECA on Gender is computed bi-annually and used in making policy / resource allocation decisions.

### 2. Violence & Discrimination against Women and Girls

1. Reduce 2013 levels of violence against women and Girls by at least 20%

2. Reduce by 50% all harmful social norms and customary practices against women and girls and those that promote violence and discrimination against women and girls

3. Eliminate all barriers to quality education, health and social services for Women and Girls by 2020

4. End all forms of political, legal or administrative discrimination against Women and Girls by 2023

### Goal 18: Engaged and Empowered Youth and Children

#### 1. Youth Empowerment and Children’s Rights

1. Reduce 2013 rate of youth unemployment by at least 25%; in particular female youth

2. Youth business startups including female youth in all business startups is at least 15%

3. At least 50% of youth who cannot go on to have tertiary education are provided with TVET

4. At least 50% of Youth and Children are engaged in talent based development programmes, leisure and recreation

5. End all forms of violence, child labour exploitation, child marriage and human trafficking

6. Recruitment of Child soldiers is ended

7. At least 20% of Youth and Children are engaged in sports activities

8. Full implementation of the provision of African Charter on the Rights of the Youth is attained

9. End all forms of child marriages

10. Full implementation of the provision of African Charter on the Rights and welfare of the Child is attained

### Aspiration 7. Africa as a strong and influential global partner

### Goal 19: Africa as a major partner in global affairs and peaceful co-existence
## 1. Africa’s place in global affairs

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>National infrastructure for African networked space research and exploration in place</td>
</tr>
<tr>
<td>2.</td>
<td>National systems / infrastructure for research and development is fully functional</td>
</tr>
<tr>
<td>3.</td>
<td>Increase 2013 level of exports by 20% in real terms</td>
</tr>
<tr>
<td>4.</td>
<td>National statistical system fully functional</td>
</tr>
</tbody>
</table>

### Goal 20: Africa takes full responsibility for financing her development

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<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>1. Capital Markets</td>
<td>1. National capital market finances at least 10% of development expenditure</td>
</tr>
<tr>
<td>2. Fiscal system and Public Sector Revenues</td>
<td>1. Tax and non-tax revenue of all levels of government should cover at least 75% of current and development expenditure</td>
</tr>
<tr>
<td>3. Development Assistance</td>
<td>1. Proportion of aid in the national budget is at most 25% of 2013 level</td>
</tr>
<tr>
<td></td>
<td>2. Additional financial resources mobilized from multiple sources</td>
</tr>
<tr>
<td></td>
<td>3. Effective public, public-private and civil society partnerships encouraged and promoted</td>
</tr>
</tbody>
</table>
Annex III. Agenda 2063 Core and Complementary Indicators
(5 - 8 March 2017 Nairobi Meeting)

A. Agenda 2063 Core indicators

<table>
<thead>
<tr>
<th>Priority Area</th>
<th>Agenda 2063 Target</th>
<th>Agenda 2063 indicator code and description</th>
<th>Corresponding SDG Indicator code</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Incomes, Jobs and decent work</td>
<td>1. Increase 2013 per capita income by at least 30%</td>
<td>A1G1P1T1I1 - GNI per capita</td>
<td>No</td>
</tr>
<tr>
<td>2. Poverty, Inequality and Hunger</td>
<td>3. Reduce (improve) the 2013 Gini coefficient by at least 20%. Reduce income inequality by at least 20%.</td>
<td>A1G1P2T3I1 - Gini coefficient</td>
<td>10.2.1</td>
</tr>
<tr>
<td></td>
<td>5. Reduce stunting in children to 10% and underweight to 5%.</td>
<td>A1G1P2T5I2 - Prevalence of underweight among children under 5</td>
<td>2.2.1</td>
</tr>
<tr>
<td>4. Modern and Liveable Habitats and Basic Quality Services</td>
<td>3. Reduce 2013 level of proportion of the population without access to safe drinking water by 95%.</td>
<td>A1G1P4T3I1 - Percentage of population with access to safe drinking water</td>
<td>6.1.1</td>
</tr>
<tr>
<td></td>
<td>6. Access and use of electricity and internet is increased by at least 50% of 2013 levels</td>
<td>A1G1P4T6I1 - Percentage of population with access to electricity</td>
<td>7.1.1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A1G1P4T6I2 - Percentage of population with access to internet</td>
<td>17.8.1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A1G1P4T6I1 - Percentage of households using electricity</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A1G1P4T6I2 - Percentage of population using internet</td>
<td>No</td>
</tr>
</tbody>
</table>

Goal 2: Well Educated Citizens and Skills revolution underpinned by Science, Technology and Innovation

<table>
<thead>
<tr>
<th>Priority Area</th>
<th>Agenda 2063 Target</th>
<th>Agenda 2063 indicator code and description</th>
<th>Corresponding SDG Indicator code</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Education and STI driven Skills Revolution</td>
<td>1. Enrolment rate for early childhood education is at least 300% of the 2013 rate</td>
<td>A1G2P1T1I1 - Percentage of children in pre-school age attending pre school</td>
<td>No</td>
</tr>
<tr>
<td>4. Universal secondary school (including technical high schools) with enrolment rate of 100%</td>
<td></td>
<td>A1G2P1T4I1 - Secondary school net enrolment rate</td>
<td>No</td>
</tr>
</tbody>
</table>

Goal 3: Healthy and Well-Nourished Citizens

<table>
<thead>
<tr>
<th>Priority Area</th>
<th>Agenda 2063 Target</th>
<th>Agenda 2063 indicator code and description</th>
<th>Corresponding SDG Indicator code</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Health and Nutrition</td>
<td>1. Increase 2013 levels of access to sexual and reproductive health services to women by at least 30%</td>
<td>A1G3P1T2I1 - Percentage of women in the reproductive age 15-49 who have access to sexual and reproductive health service</td>
<td>3.7.1</td>
</tr>
<tr>
<td></td>
<td>3. Reduce 2013 maternal, neo-natal and child mortality rates by at least 50%</td>
<td>A1G3P1T3I1 - Maternal mortality ratio</td>
<td>3.1.1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A1G3P1T3I2 - Neo-natal mortality rate</td>
<td>3.2.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A1G3P1T3I3 - Under five mortality rate</td>
<td>3.2.1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A1G3P1T3I4 - Percentage of deliveries attended by skilled health personnel.</td>
<td>3.1.2</td>
</tr>
<tr>
<td></td>
<td>6. Reduce the 2013 incidence of HIV/ AIDS, Malaria and TB by at least 80%</td>
<td>A1G3P1T6I1 - Number of new HIV infections per 1000 population</td>
<td>3.3.1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A1G3P1T6I2 - TB incidence per 1000 persons per year</td>
<td>3.3.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A1G3P1T6I3 - Malaria incidence per 1000 persons per year</td>
<td>3.3.3</td>
</tr>
<tr>
<td></td>
<td>10. Access to Anti-Retroviral (ARV) drugs is 100%</td>
<td>A1G3P1T11I1 - Percentage of eligible population with HIV having access to ARV treatment</td>
<td>No</td>
</tr>
</tbody>
</table>
## Goal 4: Transformed Economies and Job Creation

<table>
<thead>
<tr>
<th>Subgoal</th>
<th>Indicator</th>
<th>Target</th>
<th>Code</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Sustainable inclusive economic growth</td>
<td>Annual GDP growth rate of at least 7%</td>
<td>A1G4P1T1I1 - Real GDP Growth Rate</td>
<td>8.1.1</td>
<td></td>
</tr>
<tr>
<td>2. STI driven Manufacturing / Industrialization and Value Addition</td>
<td>Real value of manufacturing in GDP is 50% more than the 2013 level.</td>
<td>A1G4P2T1I1 - Manufacturing value added as % of GDP</td>
<td>9.2.1</td>
<td></td>
</tr>
<tr>
<td>3. Economic diversification and resilience</td>
<td>At least 1% of GDP is allocated to science, technology and innovation research and STI driven entrepreneurship development.</td>
<td>A1G4P3T6I1 - Research and development expenditure as a proportion of GDP</td>
<td>9.5.1</td>
<td></td>
</tr>
<tr>
<td>4. Hospitality / Tourism</td>
<td>Contribution of tourism to GDP in real terms is increased by at least 100%.</td>
<td>A1G4P4T1I1 - Tourism value added as a proportion of GDP</td>
<td>8.9.1</td>
<td></td>
</tr>
</tbody>
</table>

## Goal 5: Modern Agriculture for increased productivity and production

<table>
<thead>
<tr>
<th>Subgoal</th>
<th>Indicator</th>
<th>Target</th>
<th>Code</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Agricultural productivity and production</td>
<td>Double agricultural total factor productivity</td>
<td>A1G5P1T2I1 - Total factor productivity</td>
<td>2.3.1</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>At least 10% of small-scale farmers graduate into small-scale commercial farming and those graduating at least 30% should be women</td>
<td>A1G5P1T7I1 - Percentage of small-scale farmers graduating into small-scale commercial farming</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>At least 10% of small-scale farmers graduate into small-scale commercial farming and those graduating at least 30% should be women</td>
<td>A1G5P1T7I2 - Percentage of small-scale farmers graduating into small-scale commercial farming</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>End Hunger in Africa</td>
<td>A1G5P1T9I1 - Prevalence of moderate or severe food insecurity in the population based on the Food Insecurity Experience Scale (FIES)</td>
<td>2.1.2</td>
<td></td>
</tr>
</tbody>
</table>

## Goal 6: Blue / ocean economy for accelerated economic growth

<table>
<thead>
<tr>
<th>Subgoal</th>
<th>Indicator</th>
<th>Target</th>
<th>Code</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Marine resources and Energy</td>
<td>At least 50% increase in value addition in the fishery sector in real term is attained by 2023</td>
<td>A1G6P1T1I1 - Fishery Sector value added (as share of GDP)</td>
<td>14.7.1</td>
<td></td>
</tr>
<tr>
<td>2. Marine bio-technology contribution to GDP is increased in real terms by at least 50% from the 2013 levels</td>
<td>A1G6P1T3I1 - Marine biotechnology value added as a percentage of GDP</td>
<td>No</td>
<td></td>
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</tbody>
</table>

## Goal 7: Environmentally sustainable climate resilient economies and communities

<table>
<thead>
<tr>
<th>Subgoal</th>
<th>Indicator</th>
<th>Target</th>
<th>Code</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>At least 30% of agricultural land is placed under sustainable land management practice</td>
<td>A1G7P1T1I1 - Percentage of agricultural land placed under sustainable land management practice.</td>
<td>2.4.1</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>At least 17% of terrestrial and inland water and 10% of coastal and marine areas are preserved</td>
<td>A1G7P1T2I1 - % of terrestrial and inland water areas preserved.</td>
<td>15.1.2</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>At least 17% of terrestrial and inland water and 10% of coastal and marine areas are preserved</td>
<td>A1G7P1T2I2 - % of coastal and marine areas preserved</td>
<td>14.5.1</td>
<td></td>
</tr>
</tbody>
</table>

## Goal 8: United Africa (Federal or Confederate)

<table>
<thead>
<tr>
<th>Subgoal</th>
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<th>Target</th>
<th>Code</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Political and economic integration</td>
<td>Active member of the African Free Trade Area</td>
<td>A2G8P1T4I2 - Number of Non-tariff barriers (NTBs) reported and eliminated</td>
<td>No (A.S.)</td>
<td></td>
</tr>
<tr>
<td>3. Volume of intra-African trade is at least three times the 2013 level</td>
<td>A2G8P1T5I1 - Percentage change in volume of intra-African Trade</td>
<td>No (A.S.)</td>
<td></td>
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</tr>
</tbody>
</table>

## Goal 9: Continental Financial and Monetary Institutions are Established and Functional
### Goal 10: World Class Infrastructure criss-crosses Africa

<table>
<thead>
<tr>
<th>1. Communications and Infrastructure Connectivity</th>
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</thead>
<tbody>
<tr>
<td>1. At least national readiness for implementation of the trans African Highway Missing link is achieved</td>
<td>A2G10P1T1I1 - Percentage of the progress made on the implementation of Trans-African Highway Missing link</td>
<td>No (A.S.)</td>
</tr>
<tr>
<td>2. At least national readiness for in country connectivity to the African High Speed Rail Network is achieved by 2019</td>
<td>A2G10P1T2I1 - Percentage of the progress made on the implementation the African High Speed Rail Network</td>
<td>No (A.S.)</td>
</tr>
<tr>
<td>3. Skies fully opened to African airlines</td>
<td>A2G10P1T3I1 - No. of protocols on African open skies implemented</td>
<td>No (A.S.)</td>
</tr>
<tr>
<td>4. Increase electricity generation and distribution by at least 50% by 2020</td>
<td>A2G10P1T4I1 - Number of Mega Watts added into the national grid</td>
<td>7.1.1 related</td>
</tr>
<tr>
<td>5. Double ICT penetration and contribution to GDP</td>
<td>A2G10P1T5I3 - ICT sector value addition as a percentage share of GDP No</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>A2G10P1T5I2 - Proportion of population using mobile phones</td>
<td>5.b.1</td>
</tr>
</tbody>
</table>

### Goal 11: Democratic values, practices, universal principles of human rights, justice and the rule of law entrenched

<table>
<thead>
<tr>
<th>1. Democratic Values and Practices are the Norm</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>1. At least 70% of the people believe that they are empowered and are holding their leaders accountable</td>
<td>A3G11P1T1I1 - Percentage of people who believe that there are effective mechanisms and oversight institutions to hold their leaders accountable</td>
<td>16.7.2</td>
</tr>
<tr>
<td>2. At least 70% of the people perceive that the press / information is free and freedom of expression pertains</td>
<td>A3G11P1T2I1 - Percentage of people who perceive that there is freedom of the press.</td>
<td>16.10.1</td>
</tr>
<tr>
<td>3. At least 70% of the public perceive elections are free, fair and transparent</td>
<td>A3G11P1T3I1 - Percentage of people who believe that the elections are free, fair and transparent.</td>
<td>No</td>
</tr>
<tr>
<td>8. African Charter on Democracy is signed, ratified and domesticated by 2020</td>
<td>A3G11P1T8I1 - Charter signed No (A.S.)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A3G11P1T8I2 - Charter ratified No (A.S.)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A3G11P1T8I3 - Integrated the African Charter on democracy No (A.S.)</td>
<td></td>
</tr>
</tbody>
</table>

### Goal 12: Capable institutions and transformed leadership in place at all levels

<table>
<thead>
<tr>
<th>1. Institutions and Leadership</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. At least 70% of the public acknowledge the public service to be professional, efficient, responsive, accountable, impartial and corruption free</td>
<td>A3G12P1T1I1 - Proportion of persons who had at least one contact with a public official and who paid a bribe to a public official or were asked for a bribe by these public officials during the previous twelve months</td>
<td>16.5.1</td>
</tr>
</tbody>
</table>

### Goal 13: Peace, Security and Stability are preserved

<table>
<thead>
<tr>
<th>1. Maintenance and Restoration of Peace and Security</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Level of conflict emanating from ethnicity, all forms of exclusion, religious and political differences is at most 50% of 2013 levels.</td>
<td>A4G13P1T1I1 - Conflict related deaths per 100,000 population</td>
<td>16.1.2</td>
</tr>
</tbody>
</table>

### Goal 14: A Stable and Peaceful Africa

<table>
<thead>
<tr>
<th>1. Institutional Structure for AU Instruments on Peace and Security</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Silence All Guns by 2020</td>
<td>A4G14P1T1I1 - Number of armed conflicts</td>
<td>No (A.S.)</td>
</tr>
</tbody>
</table>

### Goal 15: A Fully Functional and Operational African Peace and Security Architecture

<table>
<thead>
<tr>
<th>1. Operationalization of APSA Pillars</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2. National Peace Council is established by 2016</td>
<td>A4G15P1T2I1 - Existence of a national peace council</td>
<td>No (A.S.)</td>
</tr>
<tr>
<td>Goal 16: African Cultural Renaissance is pre-eminent</td>
<td>1. Values and Ideals of Pan Africanism</td>
<td>At least 60% of content in educational curriculum is on indigenous African culture, values and language targeting primary and secondary schools</td>
</tr>
<tr>
<td>---</td>
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<td>---</td>
</tr>
<tr>
<td>Goal 17: Full Gender Equality in All Spheres of Life</td>
<td>1. Women Empowerment</td>
<td>Equal economic rights for women, including the rights to own and inherit property, sign a contract, save, register and manage a business and own and operate a bank account by 2026</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A6G17P1T2I2 - Share of women among owners or rights bearers of agricultural land by type of tenure.</td>
</tr>
<tr>
<td></td>
<td>3. At least 30% of all elected officials at local, regional and national levels are Women as well as in judicial institutions</td>
<td>A6G17P1T3I2 - Proportion of seats held by women in national parliaments, regional and local bodies</td>
</tr>
<tr>
<td></td>
<td>1. Reduce 2013 levels of violence against women and Girls by at least 20%</td>
<td>A6G17P2T1I1 - Proportion of women and girls subjected to sexual and physical violence</td>
</tr>
<tr>
<td></td>
<td>2. Reduce by 50% all harmful social norms and customary practices against women and girls and those that promote violence and discrimination against women and girls</td>
<td>A6G17P2T2I1 - Proportion of girls and women aged 15 - 49 years who have undergone female genital mutilation/cutting by age</td>
</tr>
<tr>
<td></td>
<td>3. Eliminate all barriers to quality education, health and social services for Women and Girls by 2020</td>
<td>A6G17P2T3I3 - Proportion of children whose births are registered in the first year</td>
</tr>
<tr>
<td>Goal 18: Engaged and Empowered Youth and Children</td>
<td>1. Youth Empowerment and Children’s Rights</td>
<td>Reduce 2013 rate of youth unemployment by at least 25%; in particular female youth</td>
</tr>
<tr>
<td></td>
<td>5. End all forms of violence, child labour exploitation, child marriage and human trafficking</td>
<td>A6G18P1T5I1 - Percentage of children engaged in child labour</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A6G18P1T5I2 - Percentage of children engaged in child marriage</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A6G18P1T5I3 - Percentage of children who are victims of human trafficking</td>
</tr>
<tr>
<td></td>
<td>8. Full implementation of the provision of African Charter on the Rights of the Youth is attained</td>
<td>A6G18P1T8I1 - Level of implementation of the provisions of the African Charter on the Rights of the Youth by Member States</td>
</tr>
<tr>
<td>Goal 19: Africa as a major partner in global affairs and peaceful co-existence</td>
<td>1. Africa’s place in global affairs</td>
<td>National statistical system fully functional</td>
</tr>
<tr>
<td></td>
<td>4. National statistical system fully functional</td>
<td>A7G19P1T4I1 - Availability of statistical legislation that complies with fundamental principles of official statistics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A7G19P1T4I2 - Proportion of funding allocated for the implementation of functional statistical system</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A7G19P1T4I3 - Existence of formal institutional arrangements for the coordination of the compilation of official statistics</td>
</tr>
</tbody>
</table>
### Goal 20: Africa takes full responsibility for financing her development

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Description</th>
<th>Reference Code</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>A7G20P1T1I1</td>
<td>Proportion of development expenditure contributed by national capital markets</td>
<td>No (A.S.)</td>
<td></td>
</tr>
<tr>
<td>A7G20P2T1I1</td>
<td>Total tax revenue as a % GDP</td>
<td>17.1.2</td>
<td></td>
</tr>
<tr>
<td>A7G20P3T1I1</td>
<td>Total ODA as a percentage of the national budget</td>
<td>17.3.1</td>
<td></td>
</tr>
<tr>
<td>A7G20P3T1I2</td>
<td>Resources raised through innovative financing mechanisms as a % of national budget</td>
<td>No (A.S.)</td>
<td></td>
</tr>
</tbody>
</table>

Note: Indicators 5.a.1, 7.1.1, and 8.5.2 are repeated.

A.S.: Indicator is Africa Specific

### B. Complementary indicators from the SDGs global list

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Description</th>
<th>Reference Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1.1</td>
<td>Proportion of population below the international poverty line, by sex, age, employment status and geographical location (urban/rural)</td>
<td></td>
</tr>
<tr>
<td>1.2.1</td>
<td>Proportion of population living below the national poverty line, by sex and age</td>
<td></td>
</tr>
<tr>
<td>1.2.2</td>
<td>Proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions</td>
<td></td>
</tr>
<tr>
<td>1.3.1</td>
<td>Proportion of population covered by social protection floors/systems, by sex, distinguishing children, unemployed persons, older persons, persons with disabilities, pregnant women, newborns, work-injury victims and the poor and the vulnerable</td>
<td></td>
</tr>
<tr>
<td>1.a.1</td>
<td>Proportion of resources allocated by the government directly to poverty reduction programmes</td>
<td></td>
</tr>
<tr>
<td>2.2.2</td>
<td>Prevalence of malnutrition (weight for height &gt;+2 or &lt;-2 standard deviation from the median of the WHO Child Growth Standards) among children under 5 years of age, by type (wasting and overweight)</td>
<td></td>
</tr>
<tr>
<td>2.a.1</td>
<td>The agriculture orientation index for government expenditures</td>
<td></td>
</tr>
<tr>
<td>2.a.2</td>
<td>Total official flows (official development assistance plus other official flows) to the agriculture sector</td>
<td></td>
</tr>
<tr>
<td>2.b.1</td>
<td>Producer support estimate</td>
<td></td>
</tr>
<tr>
<td>3.3.4</td>
<td>Hepatitis B incidence per 100,000 population</td>
<td></td>
</tr>
<tr>
<td>3.3.5</td>
<td>Number of people requiring interventions against neglected tropical diseases</td>
<td></td>
</tr>
<tr>
<td>3.4.1</td>
<td>Mortality rate attributed to cardiovascular disease, cancer, diabetes or chronic respiratory disease</td>
<td></td>
</tr>
<tr>
<td>3.6.1</td>
<td>Death rate due to road traffic injuries</td>
<td></td>
</tr>
<tr>
<td>3.7.2</td>
<td>Adolescent birth rate (aged 10-14 years; aged 15-19 years) per 1,000 women in that age group</td>
<td></td>
</tr>
<tr>
<td>3.9.1</td>
<td>Mortality rate attributed to household and ambient air pollution</td>
<td></td>
</tr>
<tr>
<td>3.9.2</td>
<td>Mortality rate attributed to unsafe water, unsafe sanitation and lack of hygiene (exposure to unsafe Water, Sanitation and Hygiene for All (WASH) services)</td>
<td></td>
</tr>
<tr>
<td>3.b.1</td>
<td>Proportion of the population with access to affordable medicines and vaccines on a sustainable basis</td>
<td></td>
</tr>
<tr>
<td>3.c.1</td>
<td>Health worker density and distribution (only density)</td>
<td></td>
</tr>
<tr>
<td>4.2.2</td>
<td>Participation rate in organized learning (one year before the official primary entry age), by sex</td>
<td></td>
</tr>
<tr>
<td>4.4.1</td>
<td>Proportion of youth and adults with information and communications technology (ICT) skills, by type of skill</td>
<td></td>
</tr>
<tr>
<td>4.c.1</td>
<td>Proportion of teachers in: (a) pre-primary; (b) primary; (c) lower secondary; and (d) upper secondary education who have received at least the minimum organized teacher training (e.g. pedagogical training) pre-service or in-service required for teaching at the relevant level in a given country</td>
<td></td>
</tr>
<tr>
<td>6.2.1</td>
<td>Proportion of population using safely managed sanitation services, including a hand-washing facility with soap and water</td>
<td></td>
</tr>
<tr>
<td>6.4.2</td>
<td>Level of water stress: freshwater withdrawal as a proportion of available freshwater resources</td>
<td></td>
</tr>
<tr>
<td>6.5.1</td>
<td>Degree of integrated water resources management implementation (0-100)</td>
<td></td>
</tr>
<tr>
<td>Section</td>
<td>Indicator</td>
<td></td>
</tr>
<tr>
<td>---------</td>
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<td></td>
</tr>
<tr>
<td>7.1.2</td>
<td>Proportion of population with primary reliance on clean fuels and technology</td>
<td></td>
</tr>
<tr>
<td>7.2.1</td>
<td>Renewable energy share in the total final energy consumption</td>
<td></td>
</tr>
<tr>
<td>7.3.1</td>
<td>Energy intensity measured in terms of primary energy and GDP</td>
<td></td>
</tr>
<tr>
<td>8.2.1</td>
<td>Annual growth rate of real GDP per employed person</td>
<td></td>
</tr>
<tr>
<td>8.3.1</td>
<td>Proportion of informal employment in non-agriculture employment, by sex</td>
<td></td>
</tr>
<tr>
<td>8.4.1</td>
<td>Material footprint, material footprint per capita, and material footprint per GDP</td>
<td></td>
</tr>
<tr>
<td>8.4.2</td>
<td>Domestic material consumption, domestic material consumption per capita, and domestic material consumption per GDP</td>
<td></td>
</tr>
<tr>
<td>8.5.1</td>
<td>Average hourly earnings of female and male employees, by occupation, age and persons with disabilities</td>
<td></td>
</tr>
<tr>
<td>8.6.1</td>
<td>Proportion of youth (aged 15-24 years) not in education, employment or training</td>
<td></td>
</tr>
<tr>
<td>8.8.2</td>
<td>Increase in national compliance of labour rights (freedom of association and collective bargaining) based on International Labour Organization (ILO) textual sources and national legislation, by sex and migrant status</td>
<td></td>
</tr>
<tr>
<td>8.9.2</td>
<td>Number of jobs in tourism industries as a proportion of total jobs and growth rate of jobs, by sex</td>
<td></td>
</tr>
<tr>
<td>8.10.2</td>
<td>Proportion of adults (15 years and older) with an account at a bank or other financial institution or with a mobile-money-service provider</td>
<td></td>
</tr>
<tr>
<td>8.b.1</td>
<td>Total government spending in social protection and employment programmes as a proportion of the national budgets and GDP</td>
<td></td>
</tr>
<tr>
<td>9.1.1</td>
<td>Proportion of the rural population who live within 2 km of an all-season road</td>
<td></td>
</tr>
<tr>
<td>9.2.2</td>
<td>Manufacturing employment as a proportion of total employment</td>
<td></td>
</tr>
<tr>
<td>9.4.1</td>
<td>CO2 emission per unit of value added</td>
<td></td>
</tr>
<tr>
<td>10.1.1</td>
<td>Growth rates of household expenditure or income per capita among the bottom 40 per cent of the population and the total population</td>
<td></td>
</tr>
<tr>
<td>10.4.1</td>
<td>Labour share of GDP, comprising wages and social protection transfers</td>
<td></td>
</tr>
<tr>
<td>10.c.1</td>
<td>Remittance costs as a proportion of the amount remitted</td>
<td></td>
</tr>
<tr>
<td>11.1.1</td>
<td>Proportion of urban population living in slums, informal settlements or inadequate housing</td>
<td></td>
</tr>
<tr>
<td>11.2.1</td>
<td>Proportion of population that has convenient access to public transport, by sex, age and persons with disabilities</td>
<td></td>
</tr>
<tr>
<td>11.3.1</td>
<td>Ratio of land consumption rate to population growth rate</td>
<td></td>
</tr>
<tr>
<td>11.5.1</td>
<td>Number of deaths, missing persons and persons affected by disaster per 100,000 people</td>
<td></td>
</tr>
<tr>
<td>11.5.2</td>
<td>Direct disaster economic loss in relation to global GDP, including disaster damage to critical infrastructure and disruption of basic services</td>
<td></td>
</tr>
<tr>
<td>11.6.1</td>
<td>Proportion of urban solid waste regularly collected and with adequate final discharge out of total urban solid waste generated, by cities</td>
<td></td>
</tr>
<tr>
<td>11.6.2</td>
<td>Annual mean levels of fine particulate matter (e.g. PM2.5 and PM10) in cities (population weighted)</td>
<td></td>
</tr>
<tr>
<td>11.7.1</td>
<td>Average share of the built-up area of cities that is open space for public use for all, by sex, age and persons with disabilities</td>
<td></td>
</tr>
<tr>
<td>12.1.1</td>
<td>Number of countries with sustainable consumption and production (SCP) national action plans or SCP mainstreamed as a priority or a target into national policies</td>
<td></td>
</tr>
<tr>
<td>12.2.1</td>
<td>Material footprint, material footprint per capita, and material footprint per GDP</td>
<td></td>
</tr>
<tr>
<td>12.2.2</td>
<td>Domestic material consumption, domestic material consumption per capita, and domestic material consumption per GDP</td>
<td></td>
</tr>
<tr>
<td>12.4.2</td>
<td>Hazardous waste generated per capita and proportion of hazardous waste treated, by type of treatment</td>
<td></td>
</tr>
<tr>
<td>13.1.2</td>
<td>Number of deaths, missing persons and persons affected by disaster per 100,000 people</td>
<td></td>
</tr>
<tr>
<td>14.4.1</td>
<td>Proportion of fish stocks within biologically sustainable levels</td>
<td></td>
</tr>
<tr>
<td>15.1.1</td>
<td>Forest area as a proportion of total land area</td>
<td></td>
</tr>
<tr>
<td>15.4.1</td>
<td>Coverage by protected areas of important sites for mountain biodiversity</td>
<td></td>
</tr>
<tr>
<td>15.7.1</td>
<td>Proportion of traded wildlife that was poached or illicitly trafficked</td>
<td></td>
</tr>
</tbody>
</table>
Data Source:

Legislative reports

Reports of ministries responsible for the Youth

Budget allocations

Expenditure reports

Frequency and Timing of Data Collection, Analysis and Reporting:

Periodic where necessary

Known Data Limitations and Significance (if any):

According to the definition the country can score 100 percent by signing and ratifying without implementation.

Actions Taken or Planned to Address Data Limitations:
Indicator A7G19P1T4I3: Existence of formal institutional arrangements for the coordination of the compilation of official statistics

Goal A7G19: Africa as a major partner in global affairs and peaceful co-existence

Target A7G19P1T4: National statistical system fully functional

Definition:

Existence of formal institutional arrangements for the coordination of the compilation of official statistics is defined as the formal institutional arrangement for the management of official national statistics and is comprised of Statistical legislation, the Oversight Board and an Executing Agency.

Computation:

Each of the three components, namely Statistical legislation, the Oversight Board and an Executing Agency, is assigned a percentage of 33.33. Counting the number that is in place multiplied by 33.33% will give the "level" of existence.

Unit of measurement:

Not applicable

Disaggregated by:

Not applicable

Data Collection method:

Observation

Review of reports

Data Source:

Reports of the National Statistical Office

Frequency and Timing of Data Collection, Analysis and Reporting:

Periodic

Known Data Limitations and Significance (if any):

Actions Taken or Planned to Address Data Limitations:
Indicator A7G20P1T1I1: Proportion of development expenditure contributed by national capital markets

Goal A7G20: Africa takes full responsibility for financing her development

Target A7G20P1T1: National capital market finances at least 10% of development expenditure

Definition:

This is defined as the total sources of funding obtained from domestic markets for long term debts relative to the size of the national development budget.

Long term debts have maturity periods of above 12 months (1 year).

Long term capital markets comprise the equity (stock) and bond (debt) markets.

For development funding, the debt market is the one with focus on.

The national development budget is the total national budget less recurrent component of the budget.

Rationale

Africa must finance her own development – that is one of the catch phrases of Agenda 2063. Every effort should be made by member states to grow the domestic capital market to finance national development. This indicator tracks such efforts.

Computational Methodology:

\[
\frac{\text{Total funds raised from the domestic capital market}}{\text{Total public sector budget}} \times 100
\]

Unit of measurement:

Percentage

Disaggregated by:

Source

Data Collection method:
Review of capital market reports

**Data Source:**
Capital Market reports
Central Bank Reports
Ministry of Finance Reports

**Frequency and Timing of Data Collection, Analysis:**
Annual (on-going)

**Frequency of Reporting:**
National: Annual
Continental/Regional: Biennial

**Known Data Limitations and Significance (if any):**

**Actions Taken or Planned to Address Data Limitations:**
Indicator A7G20P3T1I2: Resources raised through innovative financing mechanisms as a percentage of national budget

Goal A7G20: Africa takes full responsibility for financing her development

Target A7G20P3T1: Proportion of aid in the national budget is at most 25% of 2013 level

Definition:

This is defined as resources raised through innovative financing (as clarified below) out of the total resources required to finance the budget.

According to the World Bank, innovative financing refers to a range of non-traditional mechanisms to raise additional funds for development through innovative projects, micro-contributions, taxes, Public Private Partnerships (PPPs) and market based financial transactions.

Rationale

Member states are being urged to reduce their dependency on ODA for financing development- to minimise aid dependency. Innovative sources of financing as defined above provide the flexibility for member states to match their priorities to other potential sources of funding. The indicator is expected to help member states track the progress at which they are making on innovative financing

Computation Formula

\[
\text{Percentage} = \left( \frac{\text{Total of all sources of innovative financing as defined above}}{\text{Total of all sources of funds required to execute the budget}} \right) \times 100
\]

Unit of measurement:

Percentage

Disaggregated by:

NA

Data Collection method:

Review of Ministry of Finance reports

Review of World Bank Reports

Review of Legislative Reports (Committee on Financing)
Data Source:

Ministry of Finance reports

World Bank Reports

Legislative Reports (Committee on Financing)

Frequency and Timing of Data Collection, Analysis:

Annual

Frequency of Reporting:

National: Annual

Continental/Regional: Biennial

Known Data Limitations and Significance (if any):

The scope of what is innovative financing is vague which will affect the quality of data collection

Actions Taken or Planned to Address Data Limitations:
REFERENCES


African Union Commission (2017a), First Ten Year Implementation Plan (2013-2023) of Agenda 2063: Core indicators Profile Handbook for Member States


United Nations (2014), The Road to Dignity by 2030: Ending Poverty, Transforming All Lives and Protecting the Planet


United Nations Economic Commission for Africa (2017), Africa Addendum Revision 1 to the Principles and Recommendations of Population and Housing Censuses, Revision 3 (forthcoming)

United Nations General Assembly (2010), Sixty-fifth session "Keeping the promise: united to achieve the Millennium Development Goals"

United Nations General Assembly (2013), Sixty-seventh session "Open Working Group of the General Assembly on Sustainable Development Goals"

United Nations General Assembly (2015), Transforming our world: the 2030 Agenda for Sustainable Development


