Data Flows from National to Regional/Global Level – Case Studies

9 November 2017

Prepared as requested by the Inter-agency and Expert Group on Sustainable Development Goal Indicators (IAEG-SDGs) based on inputs provided by custodian agencies

Introduction

The Statistical Commission, at its 48th session, requested the IAEG-SDGs to develop guidelines on how custodian agencies and countries can work together to contribute to global SDG data reporting. At the 5th meeting of the IAEG-SDGs, held in March 2017, the IAEG-SDGs decided to carry out a series of case studies on data flows and data reporting to highlight the different ways in which data for SDG indicators flow from the national to the regional and international level.

These case or example studies as requested by the IAEG-SDGs have been prepared by the international agencies/custodian agencies in consultation with countries on 7 representative global SDG indicators. This document contains the compiled case studies prepared by these custodian agencies. The studies explain how data flow from a specific country's national statistical system to the regional and international level. The study also includes information on how an indicator is adjusted, estimated or modelled, and validated by the national statistical system for global reporting.

Each case study examines a specific data flow - reporting on one specific indicator from one country to one international agency. Each custodian agency prepared 4-5 such case studies per indicator and sought to include countries that represented different regions and that had different reporting systems in place. The case studies cover various types of data sources - administrative, household survey, and other data sources – and also different types of national statistical systems – more and less centralized.

This compilation is an input for the IAEG-SDG for drafting of the Guidelines and Best Practices on SDG Data reporting, a draft of which will be presented at the 6th IAEG-SDG meeting in Manama, Bahrain in November 2017.

All information included in these case studies was included as submitted by the custodian agencies and no editing, nor synthesis of the information has taken place.

Contents

Indicator 1.1.1 Proportion of population below the international poverty line, by sex, age, employment status and geographical location (urban/rural)

Data flow from Egypt to the World Bank

Part I: Data collection for indicator calculation

All national data series and their national data source (administrative, survey, etc. and the name of the specific data source) for the production of this indicator:

National data series 1:

Household Income, Expenditure, and Consumption Survey (HIECS)

National data sources for series 1:*

Central Agency For Public Mobilization & Statistics

Source of data collected by international/custodian agency:

The data was collected from the Central Agency For Public Mobilization & Statistics.

Frequency of international and national data collection

The data was collected about every 2 years.

Part II: Transmission of data from national to regional and international level

Method by which custodian agency collects data from the country

The World Bank collects the data from the country national statistical office through World Bank's country engagement.
The data is requested with a form to the NSO, and MOUs are signed on the data access and usage

Involvement of regional organizations/mechanisms

No, there is no regional entity involved in the process.

Part III: Calculation of the global SDG indicator

Process by which national data is converted to SDG indicator

The household survey data was harmonized and prepared by the regional statistics team. Once the data is finalized and validated, the data is shared with Povcalnet for internaltional poverty calculation via an internal system.

Describe any adjustments, estimations, modelled data that in some way modifies the national data

For international comparability, the welfare aggregates as well as its components are harmonized across countries. Spatial adjustment is also applied to ensure comparable across space/regions.

Part IV: Validation of SDG indicator by National Statistical Office

Is this indicator validated by the national statistical system of the country?

No

Validation process:

N/A

General Comments:

The international poverty rate at $1.9 was computed by the custodian agency (the World Bank), therefore the country does not compute this indicator.

Data flow from Tanzania to the World Bank

Part I: Data collection for indicator calculation

All national data series and their national data source (administrative, survey, etc. and the name of the specific data source) for the production of this indicator:

National data series 1:

National Household Budget Survey (HBS)

National data sources for series 1:*

National Bureau of Statistics

Source of data collected by international/custodian agency:

The data was collected from the NATIONAL BUREAU OF STATISTICS.

Frequency of international and national data collection

The data was collected three times over the period 2000-2010.

Part II: Transmission of data from national to regional and international level

Method by which custodian agency collects data from the country

The World Bank collects the data from the country national statistical office through World Bank's country engagement.
The data is requested with a form to the NSO, and MOUs are signed on the data access and usage

Involvement of regional organizations/mechanisms

No, there is no regional entity involved in the process.

Part III: Calculation of the global SDG indicator

Process by which national data is converted to SDG indicator

The household survey data was harmonized and prepared by the regional statistics team. Once the data is finalized and validated, the data is shared with Povcalnet for internaltional poverty calculation via an internal system.

Describe any adjustments, estimations, modelled data that in some way modifies the national data

For international comparability, the welfare aggregates as well as its components are harmonized across countries. Spatial adjustment is also applied to ensure comparable across space/regions.

Part IV: Validation of SDG indicator by National Statistical Office

Is this indicator validated by the national statistical system of the country?

No

Validation process:

N/A

General Comments:

The international poverty rate at $1.9 was computed by the custodian agency (the World Bank), therefore the country does not compute this indicator.

Data flow from the Philippines to the World Bank

Part I: Data collection for indicator calculation

All national data series and their national data source (administrative, survey, etc. and the name of the specific data source) for the production of this indicator:

National data series 1:

Family Income and Expenditure Survey (FIES)

National data sources for series 1:*

National Statistics Office

Source of data collected by international/custodian agency:

The data was collected from the National Statistics Office.

Frequency of international and national data collection

The data was collected every three years.

Part II: Transmission of data from national to regional and international level

Method by which custodian agency collects data from the country

The World Bank collects the data from the country national statistical office through World Bank's country engagement.
The data is requested with a form to the NSO, and MOUs are signed on the data access and usage

Involvement of regional organizations/mechanisms

No, there is no regional entity involved in the process.

Part III: Calculation of the global SDG indicator

Process by which national data is converted to SDG indicator

The household survey data was harmonized and prepared by the regional statistics team. Once the data is finalized and validated, the data is shared with Povcalnet for internaltional poverty calculation via an internal system.

Describe any adjustments, estimations, modelled data that in some way modifies the national data

For international comparability, the welfare aggregates as well as its components are harmonized across countries. Spatial adjustment is also applied to ensure comparable across space/regions.

Part IV: Validation of SDG indicator by National Statistical Office

Is this indicator validated by the national statistical system of the country?

No

Validation process:

N/A

General Comments:

The international poverty rate at $1.9 was computed by the custodian agency (the World Bank), therefore the country does not compute this indicator.

Data flow from the India to the World Bank

Part I: Data collection for indicator calculation

All national data series and their national data source (administrative, survey, etc. and the name of the specific data source) for the production of this indicator:

National data series 1:

National Sample Survey - Schedule Type 1- NSS

National data sources for series 1:*

National Sample Survey Organization

Source of data collected by international/custodian agency:

The data was collected from the National Sample Survey Organization, Government of India

Frequency of international and national data collection

The data was collected every five years.

Part II: Transmission of data from national to regional and international level

Method by which custodian agency collects data from the country

The World Bank collects the data from the country national statistical office through World Bank's country engagement.
The data is requested with a form to the NSO, and MOUs are signed on the data access and usage

Involvement of regional organizations/mechanisms

No, there is no regional entity involved in the process.

Part III: Calculation of the global SDG indicator

Process by which national data is converted to SDG indicator

The household survey data was harmonized and prepared by the regional statistics team. Once the data is finalized and validated, the data is shared with Povcalnet for internaltional poverty calculation via an internal system.

Describe any adjustments, estimations, modelled data that in some way modifies the national data

For international comparability, the welfare aggregates as well as its components are harmonized across countries. Spatial adjustment is also applied to ensure comparable across space/regions.

Part IV: Validation of SDG indicator by National Statistical Office

Is this indicator validated by the national statistical system of the country?

No

Validation process:

N/A

General Comments:

The international poverty rate at $1.9 was computed by the custodian agency (the World Bank), therefore the country does not compute this indicator.

Data flow from Brazil to the World Bank

Part I: Data collection for indicator calculation

All national data series and their national data source (administrative, survey, etc. and the name of the specific data source) for the production of this indicator:

National data series 1:

National Household Sample Survey – PNAD

National data sources for series 1:*

National Statistics Office

Source of data collected by international/custodian agency:

The data was collected from the National Statistics Office.

Frequency of international and national data collection

The data was collected annually.

Part II: Transmission of data from national to regional and international level

Method by which custodian agency collects data from the country

The World Bank collects the data from the country national statistical office through World Bank's country engagement.
The data is requested with a form to the NSO, and MOUs are signed on the data access and usage

Involvement of regional organizations/mechanisms

No, there is no regional entity involved in the process.

Part III: Calculation of the global SDG indicator

Process by which national data is converted to SDG indicator

The household survey data was harmonized and prepared by the regional statistics team. Once the data is finalized and validated, the data is shared with Povcalnet for internaltional poverty calculation via an internal system.

Describe any adjustments, estimations, modelled data that in some way modifies the national data

For international comparability, the welfare aggregates as well as its components are harmonized across countries. Spatial adjustment is also applied to ensure comparable across space/regions.

Part IV: Validation of SDG indicator by National Statistical Office

Is this indicator validated by the national statistical system of the country?

No

Validation process:

N/A

General Comments:

The international poverty rate at $1.9 was computed by the custodian agency (the World Bank), therefore the country does not compute this indicator.

Indicator 2.1.2 Prevalence of moderate and severe food insecurity

Data flow from Brazil to the Food and Agriculture Organization (FAO)

Part I: Data collection for indicator calculation

All national data series and their national data source (administrative, survey, etc. and the name of the specific data source) for the production of this indicator:

National data series 1:

Escala Brasileira de Inseguranca Alimentar

National data sources for series 1:*

Pesquisa Nacional por Amostra de Domicilios 2004

National data series 2:

Escala Brasileira de Inseguranca Alimentar

National data sources for series 2:

Pesquisa Nacional por Amostra de Domicilios 2009

National data series 3:

Escala Brasileira de Inseguranca Alimentar

National data sources for series 3:

Pesquisa Nacional por Amostra de Domicilios 2014

Source of data collected by international/custodian agency:

Istituto Brasileiro de Geografia y Estadistica (IBGE)

Frequency of international and national data collection

Every five years

Part II: Transmission of data from national to regional and international level

Method by which custodian agency collects data from the country

Informal request sent to the NSO and data collected through the NSO website

Involvement of regional organizations/mechanisms

No regional entity is involved.

Part III: Calculation of the global SDG indicator

Process by which national data is converted to SDG indicator

Microdata collected with the EBIA questionnaire are analysed for consistency with the Rasch measurement Model requirements, a probability to belong to the class of moderate and severe food insecurity as defined by the International FIES standard is associated with each respondent, and the indicator is compiled as the weighted average of the probability in the population

Describe any adjustments, estimations, modelled data that in some way modifies the national data

No change to the national data is made. Only a calibration of the threshold used for classification is needed, as the threshold used for national reporting is different from the threshold to be used for global reporting. In using the international threshold, we use probabilistic assignment of cases to food insecurity classes, a more precise method than the discrete assignment based on raw score used by IBGE in producing the indicator for national reporting.

Part IV: Validation of SDG indicator by National Statistical Office

Is this indicator validated by the national statistical system of the country?

No

Validation process:

N/A

General Comments:

Whether or not the national agency is required to publish also the internationally comparable value is still unclear, both to the custodian agency and the national agency. This is an area where the IAEG-SDG should make clarity.

Data flow from Botswana to the Food and Agriculture Organization (FAO)

Part I: Data collection for indicator calculation

All national data series and their national data source (administrative, survey, etc. and the name of the specific data source) for the production of this indicator:

National data series 1:

Food Insecurity Experience Scale

National data sources for series 1:*

Gallup World Poll 2014

National data series 2:

Food Insecurity Experience Scale

National data sources for series 2:

Gallup World Poll 2015

National data series 3:

Food Insecurity Experience Scale

National data sources for series 3:

Gallup World Poll 2016

Source of data collected by international/custodian agency:

Gallup collects the data.
According to the legislation of the country no authorization is required for such a survey to be conducted.

Frequency of international and national data collection

Every year

Part II: Transmission of data from national to regional and international level

Method by which custodian agency collects data from the country

Data is collected through a private company, Gallup, which also provide additional information such as metadata and sampling frame.

Involvement of regional organizations/mechanisms

No regional entity is involved.

Part III: Calculation of the global SDG indicator

Process by which national data is converted to SDG indicator

Microdata collected with the FIES questionnaire are analysed for consistency with the Rasch measurement Model requirements, a probability to belong to the class of moderate and severe food insecurity as defined by the International FIES standard is associated with each respondent, and the indicator is compiled as the weighted average of the probability in the population

Describe any adjustments, estimations, modelled data that in some way modifies the national data

No change to the national data is made. Only a calibration of the threshold used for classification is needed, as the threshold used for national reporting is different from the threshold to be used for global reporting. In using the international threshold, we use probabilistic assignment of cases to food insecurity classes, a more precise method than the discrete assignment based on raw score used by IBGE in producing the indicator for national reporting.

Part IV: Validation of SDG indicator by National Statistical Office

Is this indicator validated by the national statistical system of the country?

Yes

Validation process:

The validation process involved sending an official letter to the "Central Statistics Office" the 23rd of May 2017, providing information on the indicator and the survey, the national three-year average estimate of indicator 2.1.2, and the corresponding estimate for the World and the region. The contacted Institution was asked to validate the national estimate.
The Central Statistics Office replied that Botswana has been collecting national food security data in 2009/2010 (BCWIS) using a different scale than FIES. FAO replied proposing that since the estimate based on Gallup data is more recent, the country could accept it as provisional, and stating its availability for collaboration with Statistics Botswana to look at the comparability between the FIES and the scale used in the BCWIS.
The Central Statistics Office accepted the FAO estimate to be published as provisional baseline for Botswana.

General Comments:

When updated national FIES (or another food insecurity experience-based scale) data will be collected by the NSO, and data quality and global comparability will be tested, the estimate based on Gallup World Poll will be substituted by the national survey result.

Data flow from France to the Food and Agriculture Organization (FAO)

Part I: Data collection for indicator calculation

All national data series and their national data source (administrative, survey, etc. and the name of the specific data source) for the production of this indicator:

National data series 1:

Food Insecurity Experience Scale

National data sources for series 1:*

Gallup World Poll 2014

National data series 2:

Food Insecurity Experience Scale

National data sources for series 2:

Gallup World Poll 2015

National data series 3:

Food Insecurity Experience Scale

National data sources for series 3:

Gallup World Poll 2016

Source of data collected by international/custodian agency:

Gallup collects the data.
According to the legislation of the country no authorization is required for such a survey to be conducted.

Frequency of international and national data collection

Every year

Part II: Transmission of data from national to regional and international level

Method by which custodian agency collects data from the country

Data is collected through a private company, Gallup, which also provide additional information such as metadata and sampling frame.

Involvement of regional organizations/mechanisms

No regional entity is involved.

Part III: Calculation of the global SDG indicator

Process by which national data is converted to SDG indicator

Microdata collected with the FIES questionnaire are analysed for consistency with the Rasch measurement Model requirements, a probability to belong to the class of moderate and severe food insecurity as defined by the International FIES standard is associated with each respondent, and the indicator is compiled as the weighted average of the probability in the population

Describe any adjustments, estimations, modelled data that in some way modifies the national data

No change to the national data is made. Only a calibration of the threshold used for classification is needed, as the threshold used for national reporting is different from the threshold to be used for global reporting. In using the international threshold, we use probabilistic assignment of cases to food insecurity classes, a more precise method than the discrete assignment based on raw score used by IBGE in producing the indicator for national reporting.

Part IV: Validation of SDG indicator by National Statistical Office

Is this indicator validated by the national statistical system of the country?

Yes

Validation process:

The validation process involved sending an official communication to the "Institut National de la Statistique et des Etudes Economiques" the 23rd of May 2017, providing information on the indicator and the survey, the national three-year average estimate of indicator 2.1.2, and the corresponding estimate for the World and the region. The contacted Institution was asked to validate the national estimate.
The NSO replied on the 12nd of June confirming that the provided estimate can be used as provisional baseline to inform the indicator 2.1.2.

General Comments:

When/if national FIES data will be collected by the NSO, the estimate based on Gallup World Poll will be substituted by the national survey result.

Data flow from the Philippines to the Food and Agriculture Organization (FAO)

Part I: Data collection for indicator calculation

All national data series and their national data source (administrative, survey, etc. and the name of the specific data source) for the production of this indicator:

National data series 1:

Food Insecurity Experience Scale

National data sources for series 1:*

Gallup World Poll 2014

National data series 2:

Food Insecurity Experience Scale

National data sources for series 2:

Gallup World Poll 2015

National data series 3:

Food Insecurity Experience Scale

National data sources for series 3:

Gallup World Poll 2016

Source of data collected by international/custodian agency:

Gallup collects the data.
According to the legislation of the country no authorization is required for such a survey to be conducted.

Frequency of international and national data collection

Every year

Part II: Transmission of data from national to regional and international level

Method by which custodian agency collects data from the country

Data is collected through a private company, Gallup, which also provide additional information such as metadata and sampling frame.

Involvement of regional organizations/mechanisms

No regional entity is involved.

Part III: Calculation of the global SDG indicator

Process by which national data is converted to SDG indicator

Microdata collected with the FIES questionnaire are analysed for consistency with the Rasch measurement Model requirements, a probability to belong to the class of moderate and severe food insecurity as defined by the International FIES standard is associated with each respondent, and the indicator is compiled as the weighted average of the probability in the population

Describe any adjustments, estimations, modelled data that in some way modifies the national data

No change to the national data is made. Only a calibration of the threshold used for classification is needed, as the threshold used for national reporting is different from the threshold to be used for global reporting. In using the international threshold, we use probabilistic assignment of cases to food insecurity classes, a more precise method than the discrete assignment based on raw score used by IBGE in producing the indicator for national reporting.

Part IV: Validation of SDG indicator by National Statistical Office

Is this indicator validated by the national statistical system of the country?

Yes

Validation process:

The validation process involved sending an official communication to the "Philippine Statistics Authority (PSA)" on May 23rd 2017, providing information on the indicator and the survey, the national three-year average estimate of indicator 2.1.2, and the corresponding estimate for the World and the region. The contacted Institution was asked to validate the national estimate.
The PSA replied mentioning the results of the National Nutrition Survey 2013 when the Household food insecurity Access Scale (HFIAS) was applied. The response from PSA also showed food insecurity results obtained through the application of the HFIAS in 2013.
FAO clarified that the cut-offs used in the HFIAS may not be the same as the ones used by FAO to define indicator 2.1.2. Since no reply to this e-mail was received, FAO considered its estimate as not validated.

General Comments:

Communication between food security statistics team in FAO and PSA may be needed to jointly analyse the HFIAS data and make sure that the estimate of indicator 2.1.2 is produced according to the international set thresholds.

Data flow from the Russian Federation to the Food and Agriculture Organization (FAO)

Part I: Data collection for indicator calculation

All national data series and their national data source (administrative, survey, etc. and the name of the specific data source) for the production of this indicator:

National data series 1:

Food Insecurity Experience Scale

National data sources for series 1:*

Gallup World Poll 2014

National data series 2:

Food Insecurity Experience Scale

National data sources for series 2:

Gallup World Poll 2015

National data series 3:

Food Insecurity Experience Scale

National data sources for series 3:

Gallup World Poll 2016

Source of data collected by international/custodian agency:

Gallup collects the data.
According to the legislation of the country no authorization is required for such a survey to be conducted.

Frequency of international and national data collection

Every year

Part II: Transmission of data from national to regional and international level

Method by which custodian agency collects data from the country

Data is collected through a private company, Gallup, which also provide additional information such as metadata and sampling frame.

Involvement of regional organizations/mechanisms

No regional entity is involved.

Part III: Calculation of the global SDG indicator

Process by which national data is converted to SDG indicator

Microdata collected with the FIES questionnaire are analysed for consistency with the Rasch measurement Model requirements, a probability to belong to the class of moderate and severe food insecurity as defined by the International FIES standard is associated with each respondent, and the indicator is compiled as the weighted average of the probability in the population

Describe any adjustments, estimations, modelled data that in some way modifies the national data

No change to the national data is made. Only a calibration of the threshold used for classification is needed, as the threshold used for national reporting is different from the threshold to be used for global reporting. In using the international threshold, we use probabilistic assignment of cases to food insecurity classes, a more precise method than the discrete assignment based on raw score used by IBGE in producing the indicator for national reporting.

Part IV: Validation of SDG indicator by National Statistical Office

Is this indicator validated by the national statistical system of the country?

No

Validation process:

The validation process involved sending an official communication to the "Federal State Statistics Service (Rosstat)" on May 29th, 2017, providing information on the indicator and the survey, the national three-year average estimate of indicator 2.1.2, and the corresponding estimate for the World and the region. The contacted Institution was asked to validate the national estimate.
Rosstat replied by strongly recommending the use of national data (not yet collected). After an exchange of information between Rosstat and FAO, on the 11st of July 2017 an email was sent by Rosstat informing FAO that the FAO estimate was not accepted as national estimate, and that the plan for the country was to include the FIES in a national survey.

General Comments:

3.3.2 - Tuberculosis incidence per 100,000 population

Data flow from all countries to the World Health Organization (WHO)

Part I: Data collection for indicator calculation

All national data series and their national data source (administrative, survey, etc. and the name of the specific data source) for the production of this indicator:

National data series 1:

Case notification rates (primary source)

National data sources for series 1:*

Ministry of Health (MoH), National TB programme (NTP)

National data series 2:

Distribution of causes of death (data used to ensure internal consistency of incidence and mortality estimates)

National data sources for series 2:

MoH

National data series 3:

National disease prevalence survey data (where relevant). Prevalence is converted into incidence using modelling.

National data sources for series 3:

MoH/NTP

Source of data collected by international/custodian agency:

All MoH/NTP report to WHO online. Nearly all countries report that way

Reporting coverage each year exceeds 99% of the estimated number of TB cases globally.

Frequency of international and national data collection

Annually

Part II: Transmission of data from national to regional and international level

Method by which custodian agency collects data from the country

Estimates of the burden of disease caused by TB and measured in terms of incidence (SDG indicator 3.3.2, expressed per 100,000 population per year) and mortality are produced annually by the World Health Organization (WHO), using case notification and death registration information gathered from every country through surveillance systems, special studies (including surveys of the prevalence of disease), mortality surveys, surveys of under-reporting of detected TB, in-depth analysis of surveillance and other data, expert opinion and consultation with countries. In June 2006, the WHO Task Force on TB Impact Measurement was established2, with the aim of ensuring that WHO's assessment of whether 2015 targets were achieved should be as rigorous, robust and consensus-based as possible. The Task Force reviewed methods and provided recommendations in 2008, 2009 and most recently in March 2015 and April 2016.

Global TB surveillance has been modernized and standardized in the mid 1990s, based on WHO recommendations for national TB case notification systems, last revised in 20141. The ultimate goal of TB surveillance is to directly measure TB incidence from national case notifications in all countries (it is not practically possible to implement population-based surveys to directly measure the incidence of TB due to the very large sample size and logistical requirements). This requires a combination of strengthened surveillance, better quantification of under-reporting (i.e. the number of newly diagnosed cases that are missed by surveillance systems) and universal access to health care (to minimize under-diagnosis of cases).

National TB surveillance is based on the notification to public health authorities of all detected TB cases according to standard case definitions, as well as the reporting of the outcomes of treatment. Many countries still use standard paper-based registers and quarterly reporting forms recommended by WHO, in which case registers are maintained at the health facility level, data are aggregated every quarter and compiled at successively higher levels, up to the national level. Countries using electronic reporting of TB cases have their systems designed to collect information on exactly the same indicators, but on a case-basis and real-time rather than aggregated and quarterly. Electronic case-based reporting is recommended wherever possible.

While there is a lot of variance in computer solutions that are implemented, TB indicators have remained standard. Strengthening the performance of national TB surveillance has remained the WHO Global TB programme's priority over the past two decades. Routine global monitoring has been complemented with detailed country assessments of the performance of TB surveillance - about 80 countries routinely covered with very detailed information on the efficiency and performance of TB surveillance and also on the trends and distribution of case reports at the subpopulation and subnational level3.

Nearly all countries report their national TB data to WHO every year, in exactly the same manner, through the WHO online reporting system described below. The data are then made available on WHO web pages as country profiles, downloadable CSV files, interactive visualisations and data tables.

Global data collection occurs annually from April to June through WHO's web-based TB data acquisition system, a portal to the global TB database. A dialogue with all countries from June to August promotes systematic reviews and communications about the reported case notification data and about WHO's updated estimates of TB burden. Country-reported data

and WHO-generated burden estimates are published by WHO in a new global TB report, typically launched every year around the end of the month of October. Communications with national public health authorities occur routinely through the WHO data collection system, complemented with extensive personalized messages.

The 2017 report (in press) will provide richer information on subnational data as well as ecological correlation analyzes with other SDGs.

References
1   WHO. Definitions and reporting framework for TB, 2014 Revision. WHO, 2014 http://apps.who.int/iris/bitstream/10665/79199/1/9789241505345_eng.pdf.
2   Dye C, Bassili A, Bierrenbach AL, et al. Measuring tuberculosis burden, trends, and the impact of control programmes. Lancet Infect Dis 2008; 8: 233–43.
3   World Health Organization. Global Tuberculosis Report 2016. WHO, 2016 http://apps.who.int/iris/bitstream/10665/250441/1/9789241565394-eng.pdf?ua=1.

Involvement of regional organizations/mechanisms

MoH/NTP report the TB data to WHO

Part III: Calculation of the global SDG indicator

Process by which national data is converted to SDG indicator

The methods used to estimate TB incidence in every country are complex and described in detail in the following publicly available document, updated every year:

http://www.who.int/tb/publications/global_report/gtbr2016_online_technical_appendix_global _disease_burden_estimation.pdf?ua=1

Describe any adjustments, estimations, modelled data that in some way modifies the national data

The methods used to estimate TB incidence in every country are complex and described in detail in the following publicly available document, updated every year:

http://www.who.int/tb/publications/global_report/gtbr2016_online_technical_appendix_global _disease_burden_estimation.pdf?ua=1

Part IV: Validation of SDG indicator by National Statistical Office

Is this indicator validated by the national statistical system of the country?

Yes

Validation process:

Global data collection occurs annually from April to June through WHO's web-based TB data acquisition system, a portal to the global TB database. A dialogue with all countries from June to August promotes systematic reviews and communications about the reported case notification data and about WHO's updated estimates of TB burden. Country-reported data and WHO-generated burden estimates are published by WHO in a new global TB report, typically launched every year around the end of the month of October. Communications with

national public health authorities occur routinely through the WHO data collection system, complemented with extensive personalized messages.

The dialogue with countries about estimates of TB incidence is very effective. Consensus workshops and numerous meetings are organized with national counterparts and partners to ensure that the most suitable data and methods to estimate incidence are used. Entire time-series of incidence estimates are revised annually (currently covering the period 2000-2016), reviewed by countries through country profiles generated automatically through the WHO data collection system, and then formally published in global TB reports.

General Comments:

The data flow is exactly the same for every country and territory reporting to WHO.

4.2.1 Proportion of children under 5 years of age who are developmentally on track in health, learning and psychosocial wellbeing, by sex

Data flow from Cameroon to the United Nations Children's Fund (UNICEF)

Part I: Data collection for indicator calculation

All national data series and their national data source (administrative, survey, etc. and the name of the specific data source) for the production of this indicator:

National data series 1:

2011

National data sources for series 1:*

Demographic and Health Survey (DHS)

National data series 2:

2014

National data sources for series 2:

Multiple Indicator Cluster Survey (MICS)

Source of data collected by international/custodian agency:

International household surveys like DHS and MICS are typically implemented with the involvement of national statistical offices and the findings published in survey reports that are made publicly available along with the underlying dataset.

Frequency of international and national data collection

UNICEF undertakes an annual process to update its global databases in consultation with its country offices. 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.
The frequency with which the country typically collects data at national level is every 3 to 5 years.

Part II: Transmission of data from national to regional and international level

Method by which custodian agency collects data from the country

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. Country offices are encouraged to validate any updated or new data with national counterparts as relevant. 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.

Involvement of regional organizations/mechanisms

UNICEF regional offices are notified of the results of CRING.

Part III: Calculation of the global SDG indicator

Process by which national data is converted to SDG indicator

Nationally produced data are already calculated in accordance with the global SDG indicator and therefore, no adjustments or recalculations are necessary (note that currently a proxy indicator is being used for 4.2.1: percentage of children aged 36-59 months who are developmentally on track in at least three of the following domains: literacy-numeracy, physical development, social-emotional development and learning).

Global aggregates are calculated as population-weighted averages of all the sub-regions that make up the world. Regional aggregates are population-weighted averages of all the countries within the region.

Describe any adjustments, estimations, modelled data that in some way modifies the national data

N/A

Part IV: Validation of SDG indicator by National Statistical Office

Is this indicator validated by the national statistical system of the country?

Yes

Validation process:

UNICEF country offices are notified of all decisions made in CRING and are responsible for informing relevant national counterparts.

General Comments:

Data flow from Algeria to the United Nations Children's Fund (UNICEF)

Part I: Data collection for indicator calculation

All national data series and their national data source (administrative, survey, etc. and the name of the specific data source) for the production of this indicator:

National data series 1:

2012-2013

National data sources for series 1:*

Multiple Indicator Cluster Survey (MICS)

Source of data collected by international/custodian agency:

International household surveys like DHS and MICS are typically implemented with the involvement of national statistical offices and the findings published in survey reports that are made publicly available along with the underlying dataset.

Frequency of international and national data collection

UNICEF undertakes an annual process to update its global databases in consultation with its country offices. 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.
The frequency with which the country typically collects data at national level is every 3 to 5 years.

Part II: Transmission of data from national to regional and international level

Method by which custodian agency collects data from the country

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. Country offices are encouraged to validate any updated or new data with national counterparts as relevant. 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.

Involvement of regional organizations/mechanisms

UNICEF regional offices are notified of the results of CRING.

Part III: Calculation of the global SDG indicator

Process by which national data is converted to SDG indicator

Nationally produced data are already calculated in accordance with the global SDG indicator and therefore, no adjustments or recalculations are necessary (note that currently a proxy indicator is being used for 4.2.1: percentage of children aged 36-59 months who are developmentally on track in at least three of the following domains: literacy-numeracy, physical development, social-emotional development and learning).
Global aggregates are calculated as population-weighted averages of all the sub-regions that make up the world. Regional aggregates are population-weighted averages of all the countries within the region.

Describe any adjustments, estimations, modelled data that in some way modifies the national data

N/A

Part IV: Validation of SDG indicator by National Statistical Office

Is this indicator validated by the national statistical system of the country?

Yes

Validation process:

UNICEF country offices are notified of all decisions made in CRING and are responsible for informing relevant national counterparts.

General Comments:

Data flow from Mexico to the United Nations Children's Fund (UNICEF)

Part I: Data collection for indicator calculation

All national data series and their national data source (administrative, survey, etc. and the name of the specific data source) for the production of this indicator:

National data series 1:

2015

National data sources for series 1:*

Multiple Indicator Cluster Survey (MICS)

Source of data collected by international/custodian agency:

International household surveys like DHS and MICS are typically implemented with the involvement of national statistical offices and the findings published in survey reports that are made publicly available along with the underlying dataset.

Frequency of international and national data collection

UNICEF undertakes an annual process to update its global databases in consultation with its country offices. 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.
The frequency with which the country typically collects data at national level is every 3 to 5 years.

Part II: Transmission of data from national to regional and international level

Method by which custodian agency collects data from the country

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. Country offices are encouraged to validate any updated or new data with national counterparts as relevant. 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.

Involvement of regional organizations/mechanisms

UNICEF regional offices are notified of the results of CRING.

Part III: Calculation of the global SDG indicator

Process by which national data is converted to SDG indicator

Nationally produced data are already calculated in accordance with the global SDG indicator and therefore, no adjustments or recalculations are necessary (note that currently a proxy indicator is being used for 4.2.1: percentage of children aged 36-59 months who are developmentally on track in at least three of the following domains: literacy-numeracy, physical development, social-emotional development and learning).
Global aggregates are calculated as population-weighted averages of all the sub-regions that make up the world. Regional aggregates are population-weighted averages of all the countries within the region.

Describe any adjustments, estimations, modelled data that in some way modifies the national data

N/A

Part IV: Validation of SDG indicator by National Statistical Office

Is this indicator validated by the national statistical system of the country?

Yes

Validation process:

UNICEF country offices are notified of all decisions made in CRING and are responsible for informing relevant national counterparts.

General Comments:

Data flow from Belarus to the United Nations Children's Fund (UNICEF)

Part I: Data collection for indicator calculation

All national data series and their national data source (administrative, survey, etc. and the name of the specific data source) for the production of this indicator:

National data series 1:

2012

National data sources for series 1:*

Multiple Indicator Cluster Survey (MICS)

Source of data collected by international/custodian agency:

International household surveys like DHS and MICS are typically implemented with the involvement of national statistical offices and the findings published in survey reports that are made publicly available along with the underlying dataset.

Frequency of international and national data collection

UNICEF undertakes an annual process to update its global databases in consultation with its country offices. 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.
The frequency with which the country typically collects data at national level is every 3 to 5 years.

Part II: Transmission of data from national to regional and international level

Method by which custodian agency collects data from the country

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. Country offices are encouraged to validate any updated or new data with national counterparts as relevant. 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.

Involvement of regional organizations/mechanisms

UNICEF regional offices are notified of the results of CRING.

Part III: Calculation of the global SDG indicator

Process by which national data is converted to SDG indicator

Nationally produced data are already calculated in accordance with the global SDG indicator and therefore, no adjustments or recalculations are necessary (note that currently a proxy indicator is being used for 4.2.1: percentage of children aged 36-59 months who are developmentally on track in at least three of the following domains: literacy-numeracy, physical development, social-emotional development and learning).
Global aggregates are calculated as population-weighted averages of all the sub-regions that make up the world. Regional aggregates are population-weighted averages of all the countries within the region.

Describe any adjustments, estimations, modelled data that in some way modifies the national data

N/A

Part IV: Validation of SDG indicator by National Statistical Office

Is this indicator validated by the national statistical system of the country?

Yes

Validation process:

UNICEF country offices are notified of all decisions made in CRING and are responsible for informing relevant national counterparts.

General Comments:

Data flow from Ghana to the United Nations Children's Fund (UNICEF)

Part I: Data collection for indicator calculation

All national data series and their national data source (administrative, survey, etc. and the name of the specific data source) for the production of this indicator:

National data series 1:

2011

National data sources for series 1:*

Multiple Indicator Cluster Survey (MICS)

Source of data collected by international/custodian agency:

International household surveys like DHS and MICS are typically implemented with the involvement of national statistical offices and the findings published in survey reports that are made publicly available along with the underlying dataset.

Frequency of international and national data collection

UNICEF undertakes an annual process to update its global databases in consultation with its country offices. 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.
The frequency with which the country typically collects data at national level is every 3 to 5 years.

Part II: Transmission of data from national to regional and international level

Method by which custodian agency collects data from the country

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. Country offices are encouraged to validate any updated or new data with national counterparts as relevant. 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.

Involvement of regional organizations/mechanisms

UNICEF regional offices are notified of the results of CRING.

Part III: Calculation of the global SDG indicator

Process by which national data is converted to SDG indicator

Nationally produced data are already calculated in accordance with the global SDG indicator and therefore, no adjustments or recalculations are necessary (note that currently a proxy indicator is being used for 4.2.1: percentage of children aged 36-59 months who are developmentally on track in at least three of the following domains: literacy-numeracy, physical development, social-emotional development and learning).
Global aggregates are calculated as population-weighted averages of all the sub-regions that make up the world. Regional aggregates are population-weighted averages of all the countries within the region.

Describe any adjustments, estimations, modelled data that in some way modifies the national data

N/A

Part IV: Validation of SDG indicator by National Statistical Office

Is this indicator validated by the national statistical system of the country?

Yes

Validation process:

UNICEF country offices are notified of all decisions made in CRING and are responsible for informing relevant national counterparts.

General Comments:

Data flow from Viet Nam to the United Nations Children's Fund (UNICEF)

Part I: Data collection for indicator calculation

All national data series and their national data source (administrative, survey, etc. and the name of the specific data source) for the production of this indicator:

National data series 1:

2010

National data sources for series 1:

Multiple Indicator Cluster Survey (MICS)

National data series 2:

2014

National data sources for series 2:

Multiple Indicator Cluster Survey (MICS)

Source of data collected by international/custodian agency:

International household surveys like DHS and MICS are typically implemented with the involvement of national statistical offices and the findings published in survey reports that are made publicly available along with the underlying dataset.

Frequency of international and national data collection

UNICEF undertakes an annual process to update its global databases in consultation with its country offices. 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.
The frequency with which the country typically collects data at national level is every 3 to 5 years.

Part II: Transmission of data from national to regional and international level

Method by which custodian agency collects data from the country

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. Country offices are encouraged to validate any updated or new data with national counterparts as relevant. 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.

Involvement of regional organizations/mechanisms

UNICEF regional offices are notified of the results of CRING.

Part III: Calculation of the global SDG indicator

Process by which national data is converted to SDG indicator

Nationally produced data are already calculated in accordance with the global SDG indicator and therefore, no adjustments or recalculations are necessary (note that currently a proxy indicator is being used for 4.2.1: percentage of children aged 36-59 months who are developmentally on track in at least three of the following domains: literacy-numeracy, physical development, social-emotional development and learning).
Global aggregates are calculated as population-weighted averages of all the sub-regions that make up the world. Regional aggregates are population-weighted averages of all the countries within the region.

Describe any adjustments, estimations, modelled data that in some way modifies the national data

N/A

Part IV: Validation of SDG indicator by National Statistical Office

Is this indicator validated by the national statistical system of the country?

Yes

Validation process:

UNICEF country offices are notified of all decisions made in CRING and are responsible for informing relevant national counterparts.

General Comments:

Indicator 11.3.1 : Ratio of land consumption rate to population growth rate

Data flow from Colombia to the United Nations Human Settlements Programme (UN-Habitat)

Part I: Data collection for indicator calculation

All national data series and their national data source (administrative, survey, etc. and the name of the specific data source) for the production of this indicator:

National data series 1:

Satellite Imagery Data

National data sources for series 1:*

Landsat images selected as a source of information to obtain the urban extent growth rate, due to the spatial and temporal coverage and the resolution of the images.

National data series 2:

Population Data

National data sources for series 2:

Projections by DANE from National Censuses of 1985, 1993 and 2005

Source of data collected by international/custodian agency:

The National Administrative Department of Statistics - DANE

Frequency of international and national data collection

- Data population projections for cities are calculated annually by DANE, based on the last three censuses (1985,1993 and 2005), birth and death registers and migration records.
- Satellite imagery: Landsat satellite images taken in 2003 (closest year to the last census in which there were good quality images) and 2015.
- Urban extent growth rate: In 2017 DANE calculated the urban growth rate between 2003 and 2015. As the process for calculating this indicator is new, a calculation frequency has not been determined yet.

Part II: Transmission of data from national to regional and international level

Method by which custodian agency collects data from the country

For the collection of this indicator, a template form is sent to the NSO who populate it with the data which is then sent back to the custodian agency. We collect data on urban extents and population data for corresponding years and for the corresponding urban areas/cities.

Involvement of regional organizations/mechanisms

The National Administrative Department of Statistics – DANE, as coordinator of the National Statistical System in Colombia, is responsible for data transmission from the national levels to international levels. Data for this indicator has not been transmitted officially to international levels. No Intermediary regional body is expected to be involved in the transmission of the data from national to the international level.

Part III: Calculation of the global SDG indicator

Process by which national data is converted to SDG indicator

Data received from the country level is reviewed for correctness and accuracy at the international/custodian agency level. Matching of data for urban areas/urban extents with the urban populations for the respective years is verified. For countries with many cities, the custodian agency has put in place a mechanism for applying the national sample of cities. Consequently, all results received for the sampled cities are received and appropriate weights applied before working out the national level estimate for each country.

Describe any adjustments, estimations, modelled data that in some way modifies the national data

No direct country adjustments will be made for city level or urban area data received for this indicator, but appropriate weights will be applied to check for correctness of the estimated national figure. Where discrepancies arise, joint correction will be undertaken between the NSO and custodian agency.

Part IV: Validation of SDG indicator by National Statistical Office

Is this indicator validated by the national statistical system of the country?

Yes

Validation process:

Countries are given a chance to review the estimated/final figures for correction /updating on both database sides i.e. at the national and custodian level. If any discrepancies are identified in the data for this indicator, communication will be sent to the NSOs to work on these anomalies. The validation process is applied both on the GIS layers that define the urban extents or growths and the populations living in these areas. Also an additional verification at the level of the national sample of cities is a joint undertaking between NSOs and custodian agency.
General Comments:

No official publication has been made yet. Dane is calculating indicator 11.3.1 for 128 cities. Currently there are 97 cities finished and DANE is working in the other 31 cities. There are a set of additional cities which images in the period of the study have high cloudy for that reason DANE will explore new sources of information and techniques to obtain the information. Because the values for this indicator will be aggregated at the national levels from a sample of cities, missing values will be less likely observed at national and global levels. We do not expect existence of a lot of discrepancies

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, it is possible that data would not always coincide to administrative levels, boundaries and built-up areas. Efforts to use the area of reference at the level of the built-up area of the urban agglomeration should be taken into consideration.

In the absence of GIS layers, this indicator may not be computed as defined. The Global Human Settlement Layer (GHSL) technology open framework is proposed for global open spatial baseline data production (built up and population grids). The global open data is available and will be updated by EU support plus international partnership, the tools will be opened to national authorities by a new platform and capacity building program that will be soon available with the support of the EU and Habitat. Every country will soon be able to build their own set of built-up and population grids or use the globally available ones.

Data flow from Botswana to the United Nations Human Settlements Programme (UN-Habitat)

Part I: Data collection for indicator calculation

All national data series and their national data source (administrative, survey, etc. and the name of the specific data source) for the production of this indicator:

National data series 1:

Population Data

National data sources for series 1:*

Population projections based on Census Data

National data series 2:

Urban Growth Rate

National data sources for series 2:

Source Not Yet

Source of data collected by international/custodian agency:

The data is collected through the Statistics Botswana. At the country level, the population data is collected by Statistics Botswana. Data regarding urban extent is sought from the Department of Town and Regional Planning and the Department of Surveys and Mapping in the Ministry of Land Water and Sanitation Management in Botswana.

Frequency of international and national data collection

- Data on national population projections for cities are calculated annually by Statistics Botswana, based projections from previous census. The last census was conducted in 2011.
- No Data on urban extend has been collected so far, therefore the frequency of collection is yet to be determined.

Part II: Transmission of data from national to regional and international level

Method by which custodian agency collects data from the country

For the collection of this indicator, a template form is sent to the NSO who populate it with the data which is then sent back to the custodian agency. We collect data on urban extents and population data for corresponding years and for the corresponding urban areas/cities.

Involvement of regional organizations/mechanisms

Transmission of the census data is entirely by Statistics Botswana to UNFPA and other international Agencies. Data on urban extent would be transmitted from the city/municipal of council levels to the Department of Town and Regional planning (DTRP) through its existing

channels who will then transmit the data to all the necessary entities requesting data both ad hoc or upon request. However, for the international reporting the data will be first transmitted to Statistics Botswana prior to its transmission to the international level. However, since data for this indicator is not yet available, there is no precedent that has been set on the formal guideline and approach of the transmission process.

Part III: Calculation of the global SDG indicator

Process by which national data is converted to SDG indicator

Data received from the country level is reviewed for correctness and accuracy at the international/custodian agency level. Matching of data for urban areas/urban extents with the urban populations for the respective years is verified. For countries with many cities, the custodian agency has put in place a mechanism for applying the national sample of cities. Consequently, all results received for the sampled cities are received and appropriate weights applied before working out the national level estimate for each country.

Describe any adjustments, estimations, modelled data that in some way modifies the national data

No direct country adjustments will be made for city level or urban area data received for this indicator, but appropriate weights will be applied to check for correctness of the estimated national figure. Where discrepancies arise, joint correction will be undertaken between the NSO and custodian agency.

Part IV: Validation of SDG indicator by National Statistical Office

Is this indicator validated by the national statistical system of the country?

Yes

Validation process:

Countries are given a chance to review the estimated/final figures for correction /updating on both database sides i.e. at the national and custodian level.If any discrepancies are identified in the data for this indicator, communication will be sent to the NSOs to work on these anomalies. The validation process is applied both on the GIS layers that define the urban extents or growths and the populations living in these areas. Also an additional verification at the level of the national sample of cities is a joint undertaking between NSOs and custodian agency.

General Comments:

No official publication has been made yet. Statistics Botswana is still working on the modalities to collect this indicator.

Additional Comments :

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, it is possible that data would not always coincide to administrative levels, boundaries and built-up areas.

Efforts to use the area of reference at the level of the built-up area of the urban agglomeration should be taken into consideration.

In the absence of GIS layers, this indicator may not be computed as defined. The Global Human Settlement Layer (GHSL) technology open framework is proposed for global open spatial baseline data production (built up and population grids). The global open data is available and will be updated by EU support plus international partnership, the tools will be opened to national Authorities by a new platform and capacity building program that will be soon available with the support of the EU and Habitat. Every country will soon be able to build their own set of built-up and population grids or use the globally available ones.

Data flow from India to the United Nations Human Settlements Programme (UN-Habitat)

Part I: Data collection for indicator calculation

All national data series and their national data source (administrative, survey, etc. and the name of the specific data source) for the production of this indicator:

National data series 1:

Population Data

National data sources for series 1:*

Decadal Census

National data series 2:

Urban Growth Extent

National data sources for series 2:

Decadal Census

National data series 3:

Population Growth Rate

National data sources for series 3:

Decadal Census

Source of data collected by international/custodian agency:

The Office of the Registrar General and Census Commissioner, India

Frequency of international and national data collection

- Data population is collected every 10 years by the office of the Registrar General and Census Commissioner.
- Urban extent growth is also collected by the Registrar General and Census Commissioner also in a period of every 10 years

Part II: Transmission of data from national to regional and international level

Method by which custodian agency collects data from the country

For the collection of this indicator, a template form is sent to the NSO who populate it with the data which is then sent back to the custodian agency. We collect data on urban extents and population data for corresponding years and for the corresponding urban areas/cities.

Involvement of regional organizations/mechanisms

The Office of the Registrar General and Census Commissioner, India will be the data contact point for the information at national level. In addition, the Ministry of Housing and Urban Affairs will be also a source agency for providing city-wise data. No intermediary regional body is expected to be involved in the transmission of the data from national to the international level.

Part III: Calculation of the global SDG indicator

Process by which national data is converted to SDG indicator

Data received from the country level is reviewed for correctness and accuracy at the international/custodian agency level. Matching of data for urban areas/urban extents with the urban populations for the respective years is verified. For countries with many cities, the custodian agency has put in place a mechanism for applying the national sample of cities. Consequently, all results received for the sampled cities are received and appropriate weights applied before working out the national level estimate for each country.

Describe any adjustments, estimations, modelled data that in some way modifies the national data

No direct country adjustments will be made for city level or urban area data received for this indicator, but appropriate weights will be applied to check for correctness of the estimated national figure. Where discrepancies arise, joint correction will be undertaken between the NSO and custodian agency.

Part IV: Validation of SDG indicator by National Statistical Office

Is this indicator validated by the national statistical system of the country?

Yes

Validation process:

Countries are given a chance to review the estimated/final figures for correction /updating on both database sides i.e. at the national and custodian level.If any discrepancies are identified in the data for this indicator, communication will be sent to the NSOs to work on these anomalies. The validation process is applied both on the GIS layers that define the urban extents or growths and the populations living in these areas. Also an additional verification at the level of the national sample of cities is a joint undertaking between NSOs and custodian agency.

General Comments:

No official publication has been made yet. The data on the indicator 11.3.1 is not compiled yet and can be compiled based on the available information collected by the office of the Registrar General and Census Commissioner, India.

Additionally, 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, it is

possible that data would not always coincide to administrative levels, boundaries and built-up areas. Efforts to use the area of reference at the level of the built-up area of the urban agglomeration should be taken into consideration.

In the absence of GIS layers, this indicator may not be computed as defined. The Global Human Settlement Layer (GHSL) technology open framework is proposed for global open spatial baseline data production (built up and population grids). The global open data is available and will be updated by EU support plus international partnership, the tools will be opened to national Authorities by a new platform and capacity building program that will be soon available with the support of the EU and Habitat. Every country will soon be able to build their own set of built-up and population grids or use the globally available ones.

Indicator 15.5.1 Red List Index

Data flow from Brazil to the International Union for Conservation of Nature (IUCN)

Part I: Data collection for indicator calculation

All national data series and their national data source (administrative, survey, etc. and the name of the specific data source) for the production of this indicator:

National data series 1:

Lista Nacional Oficial de Espécies da Flora Ameaçadas de Extinção (MMA Ordinance No. 443, December 17, 2014; http://cncflora.jbrj.gov.br/portal/static/pdf/portaria_mma_443_2014.pdf).

National data sources for series 1:*

Jardim Botânico do Rio de Janeiro (http://en.jbrj.gov.br/) through the Centro Nacional de Conservação da Flora (CNCFlora; http://cncflora.jbrj.gov.br/portal/pt-br/listavermelha).

National data series 2:

Lista Nacional Oficial de Espécies da Fauna Ameaçadas de Extinção: espécies terrestres e mamíferos aquáticos (MMA Ordinance No. 444, December 17, 2014; http://www.icmbio.gov.br/portal/images/stories/biodiversidade/fauna-brasileira/avaliacao-do-risco/PORTARIA_N%C2%BA_444_DE_17_DE_DEZEMBRO_DE_2014.pdf).

National data sources for series 2:

Instituto Chico Mendes de Conservação da Biodiversidade (ICMBio; http://www.icmbio.gov.br/portal/especies-ameacadas-destaque) of the Ministério do Meio Ambiente (http://www.mma.gov.br/). Data also available through Avaliação do Risco de Extinção da Fauna Brasileira (http://www.icmbio.gov.br/portal/faunabrasileira/avaliacao-do-risco-de-extincao).

National data series 3:

Lista Nacional Oficial de Espécies da Fauna Ameaçadas de Extinção: peixes e invertebrados aquáticos (MMA Ordinance No. 445, December 17, 2014; http://www.icmbio.gov.br/portal/images/stories/biodiversidade/fauna-brasileira/avaliacao-do-risco/PORTARIA_N%C2%BA_445_DE_17_DE_DEZEMBRO_DE_2014.pdf).

National data sources for series 3:

Instituto Chico Mendes de Conservação da Biodiversidade (ICMBio; http://www.icmbio.gov.br/portal/especies-ameacadas-destaque) of the Ministério do Meio Ambiente (http://www.mma.gov.br/). Data also available through Avaliação do Risco de Extinção da Fauna Brasileira (http://www.icmbio.gov.br/portal/faunabrasileira/avaliacao-do-risco-de-extincao).

Source of data collected by international/custodian agency:

The distribution of the world's species does not follow political boundaries, and so the Red List Index is necessarily compiled based on global assessments of extinction risk (https://unstats.un.org/sdgs/metadata/files/Metadata-15-05-01.pdf). IUCN's government and civil society Members have mandated this approach through a Resolution on "The IUCN Red List Index for monitoring extinction risk" (WCC-2016-Res-016; https://portals.iucn.org/library/node/46433). However, given that very many species are "national endemics" (that is, only live in one country), a flourishing process has been developed to support data exchange between national and global levels, through the National Red List Working Group of the IUCN Species Survival Commission's Red List Committee (https://www.iucn.org/theme/species/about/species-survival-commission/ssc-leadership-and-steering-committee/sub-committees/iucn-red-list-committee).

The process for collection of Brasilian national data for SDG indicator 15.5.1 by the international/custodian agency (IUCN) at the national level is direct collaboration with the relevant Brasilian agencies leading national red list processes. For plants, this is the Jardim Botânico do Rio de Janeiro (http://en.jbrj.gov.br/) through the Centro Nacional de Conservação da Flora (CNCFlora; http://cncflora.jbrj.gov.br/portal/pt-br/listavermelha). For animals, it is the Instituto Chico Mendes de Conservação da Biodiversidade (ICMBio; http://www.icmbio.gov.br/portal/especies-ameacadas-destaque) of the Ministério do Meio Ambiente (http://www.mma.gov.br/). IUCN has provided five Red List training workshops involving 105 participants, and 43 Brasilian specialists have enrolled on the online IUCN Red List Training Course (https://www.conservationtraining.org/course/index.php?categoryid=40). IUCN's government and civil society Members have also adopted a Resolution on "Supporting the Brazilian Red-Listing process and the conservation of threatened species" (WCC-2016-Res-024; https://portals.iucn.org/library/node/46441).

To date, the Brasilian national statistical office has not been involved in this data exchange, but all parties are open to exploration of ways to strengthen these collaborations. In particular, it would be highly valuable to engage the Brasilian national statistical office, in addition to the relevant Brasilian agencies leading national red list processes and Convention on Biological Diversity national focal points, in review of the indicator in advance of submission from IUCN to UNSD (see Q13 below).

Frequency of international and national data collection

The previous edition of the "Livro Vermelho da Fauna Brasileira Ameaçada de Extinção" dates from 2008 (http://www.icmbio.gov.br/portal/publicacoes?id=742:livro-vermelho), a six year period between publication of national red lists of Brasilian fauna. The 2014 "Lista Nacional Oficial de Espécies da Flora Ameaçadas de Extinção" (http://cncflora.jbrj.gov.br/portal) represents the first national red list of Brasilian flora. Data flow between the Brasilian national red list and the global IUCN Red List is an ongoing process. This data flow is anticipated to accelerate with the adoption of the mechanisms for submission and publication of assessments in multiple languages, and for automated upload from national red lists to the global level through SIS Connect (see Q8 below).

At the global level, the IUCN Red List of Threatened Species (http://www.iucnredlist.org/) is updated three times each year. Red List Indices for any sets of species that have been comprehensively reassessed in that year are usually released alongside the update of the IUCN Red List. Data are stored and managed in the Species Information Service database, and are made freely available for non-commercial use through the IUCN Red List website. Re-assessments of extinction risk are required for every species assessed on The IUCN Red List of Threatened Species once every ten years, and ideally undertaken once every

four years. A Red List Strategic Plan details a calendar of upcoming re-assessments for each taxonomic group. New data typically become available for the Red List Index every year. For example, the first Red List Index for cycads was released in 2015, updates to the Red List Index for birds were released in 2016, and updates for conifers, mammals, and sharks are anticipated in 2018.

Part II: Transmission of data from national to regional and international level

Method by which custodian agency collects data from the country

Where Brasilian national red lists follow the IUCN (2012) "Guidelines for Application of IUCN Red List Criteria at Regional and National Levels: Version 4.0" (https://portals.iucn.org/library/node/10336), including minimum documentation standards (http://cmsdocs.s3.amazonaws.com/keydocuments/RL_Standards_Consistency.pdf), national assessments will be the same as global ones, for endemic species. Given the high proportion of endemic species in the Brasilian biota, this means that a relatively high proportion of Brasilian national red list assessments and global IUCN Red List assessments are identical (especially regarding category of extinction risk).

In 2016, a mechanism was introduced into the global IUCN Red List process to allow submission and publication of assessments in the relevant language of the country/countries where a given endemic species occurs. This mechanism was piloted for Brasil, with 20 assessments of Brasilian plant species the first non-English assessments of >86,313 IUCN Red List assessments to date (see https://www.iucn.org/news/secretariat/201612/new-bird-species-and-giraffe-under-threat-%E2%80%93-iucn-red-list). Moreover, in 2016, building from extensive piloting in Brasil and South Africa, the "SIS Connect" tool was introduced to allow automated upload of endemic species assessments from national red lists to the global IUCN Red List. It is anticipated that these two mechanisms will greatly accelerate the flow of national to global Red List data over coming years.

Other mechanisms for supporting data flows from national levels to the global IUCN Red List include: direct extraction of data from national red lists and their integration into global assessments by IUCN Red List assessment teams; sending draft assessments to national experts to solicit review; and using open-access discussion fora to solicit feedback and inputs from national experts on proposed changes to species' IUCN Red List categories.

Involvement of regional organizations/mechanisms

No regional entity is involved.

Part III: Calculation of the global SDG indicator

Process by which national data is converted to SDG indicator

The Red List Index measures change in aggregate extinction risk across groups of species. It is based on genuine changes in the number of species in each category of extinction risk on the IUCN Red List of Threatened Species, expressed as changes in an index ranging from 0 (all species are categorized as 'Extinct') to 1 (all species are categorized as 'Least Concern'). Thus, the Red List Index allows comparisons between sets of species in both their overall level of extinction risk, and in the rate at which this risk changes over time. An upward Red List Index trend indicates that the SDG Target 15.5 of reducing the degradation of natural habitats and protecting threatened species is on track.

The Red List Index is calculated at a given point in time by first multiplying the number of species in each Red List Category by a weight and summing these values. This is then divided by a maximum threat score which is the total number of species multiplied by the weight assigned to the 'Extinct' category. This final value is subtracted from 1 to give the Red List Index value. Mathematically this calculation is expressed as:

$$RLI_t = 1 - [(S_s W_c(t,s) / (WEX * N)]$$

where $W_c(t,s)$ is the weight for category (c) at time (t) for species (s) (the weight for 'Critically Endangered' = 4, 'Endangered' = 3, 'Vulnerable' = 2, 'Near Threatened' = 1, 'Least Concern' = 0. 'Critically Endangered' species tagged as 'Possibly Extinct' or 'Possibly Extinct in the Wild' are assigned a weight of 5); WEX = 5, the weight assigned to 'Extinct' or 'Extinct in the Wild' species; and N is the total number of assessed species, excluding those assessed as Data Deficient in the current time period, and those assessed as 'Extinct' in the year the set of species was first assessed.

Red List Indices for each taxonomic group are interpolated linearly for years between data points and extrapolated linearly (with a slope equal to that between the two closest assessed points, except for corals) back to the earliest time point and forwards to the present for years for which estimates are not available. The start year of the aggregated index is set as ten years before the first assessment year for the taxonomic group with the latest starting point. Corals are not extrapolated linearly because declines are known to have been much steeper subsequent to 1996 (owing to extreme bleaching events) than before. Therefore the rate of decline prior to 1996 is set as the average of the rates for the other taxonomic groups. The methods and scientific basis for the Red List Index were described by Butchart et al. (2007 PLoS ONE; http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0000140).

Describe any adjustments, estimations, modelled data that in some way modifies the national data

The Red List Index is calculated globally based on assessments of extinction risk of each species included, because many species have distributions which span many countries. Thus, while the Brasilian national red list and the global IUCN Red List are identical for Brasilian national endemic species, for species that occur in countries in addition to Brasil, global assessments of the extinction risk of these species need to be used because (a) global extinction risk can differ from national extinction risk for species occurring in multiple countries and (b) the overall Red List Index needs to take into account the national responsibility for each species, which is much higher for those species that occur nowhere outside the country (i.e. national endemics) and lower for those species with large ranges that occur in many other countries.

The global Red List Index is downscaled to yield national Red List Indices, weighted by the fraction of each species' distribution occurring within the country or region, building on the method published by Rodrigues et al. (2014 PLoS ONE; http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0113934. These show an index of aggregate survival probability (the inverse of extinction risk) for all birds, mammals, amphibians, corals and cycads occurring within the country or region. The index is calculated as:

$$RLI(t,u) = 1 - [(S_s(W(t,s) * (r_{su}/R_s)) / (WEX * S_s (r_{su}/R_s))]$$

where t is the year of comprehensive reassessment, u is the spatial unit (i.e. country), $W_{((t,s))}$ is the weight of the global Red List category for species s at time t (the weight for 'Critically Endangered' = 4, 'Endangered' = 3, 'Vulnerable' = 2, 'Near Threatened' = 1, 'Least Concern' = 0. 'Critically Endangered' species tagged as 'Possibly Extinct' or 'Possibly Extinct

in the Wild' are assigned a weight of 5); WEX = 5, the weight assigned to 'Extinct' or 'Extinct in the Wild' species; r_{su} is the fraction of the total range of species s in unit u; and R_s is the total range size of species s.

The index varies from 1 if the country has contributed the minimum it can to the global RLI (i.e. if the numerator is 0 because all species in the country are LC) to 0 if the country has contributed the maximum it can to the global RLI (i.e. if the numerator equals the denominator because all species in the country are Extinct or Possibly Extinct). The taxonomic groups included are those in which all species have been assessed for the IUCN Red List more than once. Red List categories for years in which comprehensive assessments (i.e. those in which all species in the taxonomic group have been assessed) were carried out are determined following the approach of Butchart et al. (2007 PLoS ONE; http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0000140), i.e. they match the current categories except for those taxa that have undergone genuine improvement or deterioration in extinction risk of sufficient magnitude to qualify for a higher or lower Red List category.

Part IV: Validation of SDG indicator by National Statistical Office

Is this indicator validated by the national statistical system of the country?

Yes

Validation process:

The validation process used in 2016 was dissemination of the draft indicator 15.5.1, along with drafts of the other indicators for which IUCN contributes as a custodian agency, as the Country Profile for Brasil, through the Integrated Biodiversity Assessment Tool (IBAT; https://www.ibat-alliance.org/ibat-conservation/) to Convention on Biological Diversity National Focal Points (https://www.cbd.int/information/nfp.shtml). For Brasil, this draft was sent on 2 December 2016, to:
- Head, Environment Division, Ministry of Foreign Affairs
- Ambassador, Permanent Delegation of Brazil to the International Organizations located in Montreal

For 2017 onwards, annual drafts will also be send to the relevant Brasilian agencies leading national red list processes (CNCFlora and ICMBio), and, potentially, also the Brasilian national statistical office.

General Comments:

This case study has been shared for review with:

Brasilian National Statistical Office (Instituto Brasileiro de Geografia e Estatística):
Mr Roberto Luis Olinto Ramos: Roberto.olinto@ibge.gov.br
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Brasilian Convention on Biological Diversity National Focal Points:
H.E. Ms Mitzi Gurgel Valente da Costa, Ambassador, Permanent Delegation of Brazil to the International Organizations located in Montreal brasicao@icao.int; micosta@icao.int
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Brasilian agencies relevant to national red list process:
Dr Gustavo Martinelli, General Coordinator, CNCFlora gmartine@cncflora.net
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Data flow from Fiji to the International Union for Conservation of Nature (IUCN)

Part I: Data collection for indicator calculation

All national data series and their national data source (administrative, survey, etc. and the name of the specific data source) for the production of this indicator:

National data series 1:*

Endangered Species of Fiji (https://naturefiji.org/endangered-species-of-fiji/).

National data sources for series 1:*

NatureFiji-MareqetiFiji (https://naturefiji.org/).

Source of data collected by international/custodian agency:

The distribution of the world's species does not follow political boundaries, and so the Red List Index is necessarily compiled based on global assessments of extinction risk (https://unstats.un.org/sdgs/metadata/files/Metadata-15-05-01.pdf). IUCN's government and civil society Members have mandated this approach through a Resolution on "The IUCN Red List Index for monitoring extinction risk" (WCC-2016-Res-016; https://portals.iucn.org/library/node/46433). However, given that very many species are "national endemics" (that is, only live in one country), a flourishing process has been developed to support data exchange between national and global levels, through the National Red List Working Group of the IUCN Species Survival Commission's Red List Committee (https://www.iucn.org/theme/species/about/species-survival-commission/ssc-leadership-and-steering-committee/sub-committees/iucn-red-list-committee).

The process for collection of Fijian national data for SDG indicator 15.5.1 by the international/custodian agency (IUCN) at the national level is direct collaboration with the relevant Fijian agency leading processes analogous to national red listing: NatureFiji-MareqetiFiji (https://naturefiji.org/) through the Endangered Species of Fiji (https://naturefiji.org/endangered-species-of-fiji/). IUCN has provided two Red List training workshops in Fiji involving 29 participants, and four Fijian specialists have enrolled in the online IUCN Red List Training Course (https://www.conservationtraining.org/course/index.php?categoryid=40).

To date, the Fijian national statistical office has not been involved in this data exchange, but all parties are open to exploration of ways to strengthen these collaborations. In particular, it would be highly valuable to engage the Fijian national statistical office, in addition to the relevant Fijian agencies leading national red list-like processes and Convention on Biological Diversity national focal points, in review of the indicator in advance of submission from IUCN to UNSD (see Q13 below).

Frequency of national and international data collection

The 2007 "Endangered Species of Fiji" (https://naturefiji.org/endangered-species-of-fiji/) represents an equivalent of a national red list of the Fijian biota. Data flow between this and the global IUCN Red List is an ongoing process. This data flow is anticipated to accelerate with the adoption of the mechanism for automated upload from national red lists to the global level through SIS Connect (see Q8 below).

At the global level, the IUCN Red List of Threatened Species (http://www.iucnredlist.org/) is updated three times each year. Red List Indices for any sets of species that have been comprehensively reassessed in that year are usually released alongside the update of the IUCN Red List. Data are stored and managed in the Species Information Service database, and are made freely available for non-commercial use through the IUCN Red List website. Re-assessments of extinction risk are required for every species assessed on The IUCN Red List of Threatened Species once every ten years, and ideally undertaken once every four years. A Red List Strategic Plan details a calendar of upcoming re-assessments for each taxonomic group. New data typically become available for the Red List Index every year. For example, the first Red List Index for cycads was released in 2015, updates to the Red List Index for birds were released in 2016, and updates for conifers, mammals, and sharks are anticipated in 2018.

Part II: Transmission of data from national to regional and international level

Method by which custodian agency collects data from the country

Where the Endangered Species of Fiji process follows the IUCN (2012) "Guidelines for Application of IUCN Red List Criteria at Regional and National Levels: Version 4.0" (https://portals.iucn.org/library/node/10336), including minimum documentation standards (http://cmsdocs.s3.amazonaws.com/keydocuments/RL_Standards_Consistency.pdf), national assessments will be the same as global ones for endemic species. Given the high proportion of endemic species in the Fijian biota, this means that a relatively high proportion of Fijian national red list assessments and global IUCN Red List assessments are identical (especially regarding category of extinction risk). In 2016, building from extensive piloting, the "SIS Connect" tool was introduced to allow automated upload of endemic species assessments from national red lists to the global IUCN Red List. It is anticipated that this mechanism will greatly accelerate the flow of national to global Red List data over coming years.

Other mechanisms for supporting data flows from national levels to the global IUCN Red List include: direct extraction of data from national red lists and their integration into global assessments by IUCN Red List assessment teams; sending draft assessments to national experts to solicit review; and using open-access discussion fora to solicit feedback and inputs from national experts on proposed changes to species' IUCN Red List categories.

Involvement of regional organizations/mechanisms

No regional entity is involved.

Part III: Calculation of the global SDG indicator

Process by which national data is converted to SDG indicator

The Red List Index measures change in aggregate extinction risk across groups of species. It is based on genuine changes in the number of species in each category of extinction risk on the IUCN Red List of Threatened Species, expressed as changes in an index ranging from 0 (all species are categorized as 'Extinct') to 1 (all species are categorized as 'Least Concern'). Thus, the Red List Index allows comparisons between sets of species in both their overall level of extinction risk, and in the rate at which this risk changes over time. An upward Red List Index trend indicates that the SDG Target 15.5 of reducing the degradation of natural habitats and protecting threatened species is on track.

The Red List Index is calculated at a given point in time by first multiplying the number of species in each Red List Category by a weight and summing these values. This is then divided by a maximum threat score which is the total number of species multiplied by the weight assigned to the 'Extinct' category. This final value is subtracted from 1 to give the Red List Index value. Mathematically this calculation is expressed as:

$$RLI_t = 1 - [(S_s W_c(t,s) / (W_{EX} * N)]$$

where $W_c(t,s)$ is the weight for category (c) at time (t) for species (s) (the weight for 'Critically Endangered' = 4, 'Endangered' = 3, 'Vulnerable' = 2, 'Near Threatened' = 1, 'Least Concern' = 0. 'Critically Endangered' species tagged as 'Possibly Extinct' or 'Possibly Extinct in the Wild' are assigned a weight of 5); W_{EX} = 5, the weight assigned to 'Extinct' or 'Extinct in the Wild' species; and N is the total number of assessed species, excluding those assessed as Data Deficient in the current time period, and those assessed as 'Extinct' in the year the set of species was first assessed.

Red List Indices for each taxonomic group are interpolated linearly for years between data points and extrapolated linearly (with a slope equal to that between the two closest assessed points, except for corals) back to the earliest time point and forwards to the present for years for which estimates are not available. The start year of the aggregated index is set as ten years before the first assessment year for the taxonomic group with the latest starting point. Corals are not extrapolated linearly because declines are known to have been much steeper subsequent to 1996 (owing to extreme bleaching events) than before. Therefore the rate of decline prior to 1996 is set as the average of the rates for the other taxonomic groups. The methods and scientific basis for the Red List Index were described by Butchart et al. (2007 PLoS ONE; http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0000140).

Describe any adjustments, estimations, modelled data that in some way modifies the national data

The Red List Index is calculated globally based on assessments of extinction risk of each species included, because many species have distributions which span many countries. Thus, while the Fijian national red list and the global IUCN Red List are identical for Fijian national endemic species, for species that occur in countries in addition to Fiji, global assessments of the extinction risk of these species need to be used because (a) global extinction risk can differ from national extinction risk for species occurring in multiple countries and (b) the overall Red List Index needs to take into account the national responsibility for each species, which is much higher for those species that occur nowhere outside the country (i.e. national endemics) and lower for those species with large ranges that occur in many other countries.

The global Red List Index is downscaled to yield national Red List Indices, weighted by the fraction of each species' distribution occurring within the country or region, building on the method published by Rodrigues et al. (2014 PLoS ONE; http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0113934. These show an index of aggregate survival probability (the inverse of extinction risk) for all birds, mammals, amphibians, corals and cycads occurring within the country or region. The index is calculated as:

$$RLI(t,u) = 1 - [(S_s(W(t,s) * (r_{su}/R_s)) / (W_{EX} * S_s (r_{su}/R_s))$$

where t is the year of comprehensive reassessment, u is the spatial unit (i.e. country), $W_{((t,s))}$ is the weight of the global Red List category for species s at time t (the weight for 'Critically Endangered' = 4, 'Endangered' = 3, 'Vulnerable' = 2, 'Near Threatened' = 1, 'Least Concern' = 0. 'Critically Endangered' species tagged as 'Possibly Extinct' or 'Possibly Extinct

in the Wild' are assigned a weight of 5); WEX = 5, the weight assigned to 'Extinct' or 'Extinct in the Wild' species; r_{su} is the fraction of the total range of species s in unit u; and R_s is the total range size of species s.

The index varies from 1 if the country has contributed the minimum it can to the global RLI (i.e. if the numerator is 0 because all species in the country are LC) to 0 if the country has contributed the maximum it can to the global RLI (i.e. if the numerator equals the denominator because all species in the country are Extinct or Possibly Extinct). The taxonomic groups included are those in which all species have been assessed for the IUCN Red List more than once. Red List categories for years in which comprehensive assessments (i.e. those in which all species in the taxonomic group have been assessed) were carried out are determined following the approach of Butchart et al. (2007 PLoS ONE; http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0000140), i.e. they match the current categories except for those taxa that have undergone genuine improvement or deterioration in extinction risk of sufficient magnitude to qualify for a higher or lower Red List category.

Part IV: Validation of SDG indicator by National Statistical Office

Is this indicator validated by the national statistical system of the country?

Yes

Validation Process:

The validation process used in 2016 was dissemination of the draft indicator 15.5.1, along with drafts of the other indicators for which IUCN contributes as a custodian agency, as the Country Profile for Fiji, through the Integrated Biodiversity Assessment Tool (IBAT; https://www.ibat-alliance.org/ibat-conservation/) to Convention on Biological Diversity National Focal Points (https://www.cbd.int/information/nfp.shtml). For Fiji, this draft was sent on 2 December 2016, to:
- Permanent Secretary - Ministry of Local Government, Urban Development, Housing and the Environment

For 2017 onwards, annual drafts will also be send to the relevant Fijian agencies leading national red list processes (NatureFiji-MareqetiFiji), and, potentially, also the Fijian national statistical office.

General Comments:

This case study has been shared for review with:

Fijian National Statistical Office (Fiji Bureau of Statistics):
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Fijian agencies relevant to national red list process:
Dr Nunia Thomas, Director, NatureFiji-MareqetiFiji nuniat@naturefiji.org

Data flow from France to the International Union for Conservation of Nature (IUCN)

Part I: Data collection for indicator calculation

All national data series and their national data source (administrative, survey, etc. and the name of the specific data source) for the production of this indicator:

National data series 1:*

La Liste Rouge des Espèces Menacées en France (http://uicn.fr/wp-content/uploads/2017/08/resultats-synthetiques-liste-rouge-france.pdf), also documented in the Inventaire National du Patrimoine Naturel (https://inpn.mnhn.fr/).

National data sources for series 1:*

Comité français de l'UICN (http://uicn.fr/liste-rouge-france/) and Muséum national d'Histoire naturelle (https://www.mnhn.fr/).

Source of data collected by international/custodian agency:

The distribution of the world's species does not follow political boundaries, and so the Red List Index is necessarily compiled based on global assessments of extinction risk (https://unstats.un.org/sdgs/metadata/files/Metadata-15-05-01.pdf). IUCN's government and civil society Members have mandated this approach through a Resolution on "The IUCN Red List Index for monitoring extinction risk" (WCC-2016-Res-016; https://portals.iucn.org/library/node/46433). However, given that very many species are "national endemics" (that is, only live in one country), a flourishing process has been developed to support data exchange between national and global levels, through the National Red List Working Group of the IUCN Species Survival Commission's Red List Committee (https://www.iucn.org/theme/species/about/species-survival-commission/ssc-leadership-and-steering-committee/sub-committees/iucn-red-list-committee).

The process for collection of French national data for SDG indicator 15.5.1 by the international/custodian agency (IUCN) at the national level is direct collaboration with the relevant French agencies leading national red list processes: the Comité français de l'UICN (http://uicn.fr/liste-rouge-france/) and the Muséum national d'Histoire naturelle (https://www.mnhn.fr/). These two institutions in turn collaborate with numerous specialised national organisations. IUCN has provided two training workshops involving 58 participants, as well as direct training of coordinators of the national red list processes and online coaching, and 19 French specialists have enrolled in the online IUCN Red List Training Course (https://www.conservationtraining.org/course/index.php?categoryid=40). Moreover, at least 10 French experts recognized in their fields have been trained in application of IUCN Red List Categories and Criteria during the Mediterranean regional red list assessment process (http://www.iucnredlist.org/initiatives/mediterranean/publications).

In France, the Environment Ministry and Ministry of Foreign Affairs coordinate the implementation of the SDGs. In addition to this political leadership, the National Institute for Statistics and Economic Studies (Institut national de la statistique et des études économiques) is responsible for coordinating work on the indicators, principally with the statistical departments of the different ministries including the Ministry for Ecological and Inclusive Transition. The statistical department (service de la donnée et des études statistiques) of the Ministry for Ecological and Inclusive Transition (Ministère de la Transition écologique et solidaire) is officially in charge of most of the indicators for SDG15 (the

Agricultural Ministerial Statistical Department is responsible of 15.1.1 and the Foreign Ministry for 15.a.1).

To date, neither the French national statistical office (Institut national de la statistique et des études économiques) nor the statistical department (service de la donnée et des études statistiques) of the Ministry for Ecological and Inclusive Transition (Ministère de la Transition écologique et solidaire) have been involved in this exchange of red list data between national and global levels. It would therefore be valuable to engage the French national statistical office (Institut national de la statistique et des études économiques) and the statistical department (service de la donnée et des études statistiques) of the Ministry for Ecological and Inclusive Transition (Ministère de la Transition écologique et solidaire), in addition to the relevant French agencies leading national red list processes, the Agence française pour la biodiversité, and the Convention on Biological Diversity national focal points, in review of the indicator in advance of submission from IUCN to UNSD (see Q13 below).

Frequency of national and international data collection

The French national red list process is an ongoing one, with current red lists dating from between 2017 and 2009.The full catalogue of French national red lists (http://uicn.fr/liste-rouge-france/), ordered by date, is as follows:
Faune vertébrée de Guyane (2017); http://uicn.fr/liste-rouge-vertebres-guyane/
Oiseaux de métropole (2016); http://uicn.fr/liste-rouge-oiseaux/
Libellules de métropole (2016); http://uicn.fr/liste-rouge-libellules/
Oiseaux de Polynésie française (2015); http://uicn.fr/liste-rouge-polynesie-francaise/
Flore vasculaire endémique de Polynésie française (2015); http://uicn.fr/liste-rouge-polynesie-francaise/
Reptiles et amphibiens de métropole (2015); http://uicn.fr/liste-rouge-reptiles-amphibiens/
Faune vertébrée des TAAF (2015); http://uicn.fr/liste-rouge-vertebres-taaf/
Flore vasculaire de Mayotte (2014); http://uicn.fr/liste-rouge-flore-mayotte/
Oiseaux de Mayotte (2014); http://uicn.fr/liste-rouge-oiseaux-mayotte/
Reptiles et amphibiens de Mayotte (2014); http://uicn.fr/liste-rouge-reptiles-amphibiens-mayotte/
Requins, raies et chimères de métropole (2013); http://uicn.fr/liste-rouge-requins-raies-chimeres/
Flore vasculaire de Guadeloupe (2013); http://uicn.fr/liste-rouge-flore-guadeloupe/
Flore vasculaire de Martinique (2013); http://uicn.fr/liste-rouge-flore-martinique/
Flore vasculaire pour 1000 plantes de métropole (2012); http://uicn.fr/liste-rouge-flore/
Crustacés d'eau douce de métropole (2012); http://uicn.fr/liste-rouge-crustaces-d-eau-douce/
Papillons de jour de métropole (2012); http://uicn.fr/liste-rouge-papillons-de-jour/
Oiseaux de Guadeloupe (2012); http://uicn.fr/liste-rouge-oiseaux-guadeloupe/
Flore vasculaire de La Réunion (2010); http://uicn.fr/liste-rouge-flore-reunion/
Faune de La Réunion (2010); http://uicn.fr/liste-rouge-faune-reunion/
Poissons d'eau douce de métropole (2009); http://uicn.fr/liste-rouge-poissons-d-eau-douce/
Orchidées de métropole (2009); http://uicn.fr/liste-rouge-orchidees/
Mammifères de métropole (2009); http://uicn.fr/liste-rouge-mammiferes/

Data flow between the French national red list and the global IUCN Red List is similarly ongoing. This data flow is anticipated to accelerate with the adoption of the mechanisms for submission and publication of assessments in multiple languages, and for automated upload from national red lists to the global level through SIS Connect (see Q8 below). This will be particularly important for the French Overseas Territories, given that they hold large numbers of species found nowhere else (endemics).

At the global level, the IUCN Red List of Threatened Species (http://www.iucnredlist.org/) is updated three times each year. Red List Indices for any sets of species that have been comprehensively reassessed in that year are usually released alongside the update of the IUCN Red List. Data are stored and managed in the Species Information Service database, and are made freely available for non-commercial use through the IUCN Red List website. Re-assessments of extinction risk are required for every species assessed on The IUCN Red List of Threatened Species once every ten years, and ideally undertaken once every four years. A Red List Strategic Plan details a calendar of upcoming re-assessments for each taxonomic group. New data typically become available for the Red List Index every year. For example, the first Red List Index for cycads was released in 2015, updates to the Red List Index for birds were released in 2016, and updates for conifers, mammals, and sharks are anticipated in 2018.

Part II: Transmission of data from national to regional and international level

Method by which custodian agency collects data from the country

Where French national red lists follow the IUCN (2012) "Guidelines for Application of IUCN Red List Criteria at Regional and National Levels: Version 4.0" (https://portals.iucn.org/library/node/10336), including minimum documentation standards (http://cmsdocs.s3.amazonaws.com/keydocuments/RL_Standards_Consistency.pdf), national assessments will be the same as global ones for endemic species. Given the high proportion of endemic species in the French (Outre-Mer) biota, this means that relatively a high proportion of French national red list assessments and global IUCN Red List assessments are identical (especially regarding category of extinction risk).

In 2016, a mechanism was introduced into the global IUCN Red List process to allow submission and publication of assessments in the relevant language of the country/countries where a given endemic species occurs. Also in 2016, building from extensive piloting, the "SIS Connect" tool was introduced to allow automated upload of endemic species assessments from national red lists to the global IUCN Red List. It is anticipated that these mechanisms will greatly accelerate the flow of national to global Red List data over coming years.

Other mechanisms for supporting data flows from national levels to the global IUCN Red List include: direct extraction of data from national red lists and their integration into global assessments by IUCN Red List assessment teams; sending draft assessments to national experts to solicit review; and using open-access discussion fora to solicit feedback and inputs from national experts on proposed changes to species' IUCN Red List categories.

Involvement of regional organizations/mechanisms

The European Commission's European Red List serves as a review of the status of European species according to IUCN Regional Red Listing guidelines; it identifies those species that are threatened with extinction at the European level (http://ec.europa.eu/environment/nature/conservation/species/redlist/). It does not currently play a role in the data flow for SDG indicator 15.5.1, is a clear candidate as a potential regional facilitator in the process. French (and other national) endemic species assessed in the European Red List do feed directly into the IUCN Red List, but not as yet into the French national red list.

In addition, the IUCN Centre for Mediterranean Cooperation (https://www.iucn.org/regions/mediterranean) has published regional IUCN Red List

assessments (http://www.iucnredlist.org/initiatives/mediterranean/publications) for marine fishes, mammals, marine mammals and sea turtles, marine anthozoa, sharks, rays and chimaeras, endemic freshwater fish, amphibians and reptiles, butterflies, dragonflies and damselflies, and island and aquatic plants. Again, French (and other national) endemic species assessed in the Mediterranean Red List feed directly into the IUCN Red List, but not as yet into the French national red list.

Part III: Calculation of the global SDG indicator

Process by which national data is converted to SDG indicator

The Red List Index measures change in aggregate extinction risk across groups of species. It is based on genuine changes in the number of species in each category of extinction risk on the IUCN Red List of Threatened Species, expressed as changes in an index ranging from 0 (all species are categorized as 'Extinct') to 1 (all species are categorized as 'Least Concern'). Thus, the Red List Index allows comparisons between sets of species in both their overall level of extinction risk, and in the rate at which this risk changes over time. An upward Red List Index trend indicates that the SDG Target 15.5 of reducing the degradation of natural habitats and protecting threatened species is on track.

The Red List Index is calculated at a given point in time by first multiplying the number of species in each Red List Category by a weight and summing these values. This is then divided by a maximum threat score which is the total number of species multiplied by the weight assigned to the 'Extinct' category. This final value is subtracted from 1 to give the Red List Index value. Mathematically this calculation is expressed as:

$$RLI_t = 1 - [(\Sigma_s W_{c(t,s)} / (W_{EX} * N)]$$

where $W_{c(t,s)}$ is the weight for category (c) at time (t) for species (s) (the weight for 'Critically Endangered' = 4, 'Endangered' = 3, 'Vulnerable' = 2, 'Near Threatened' = 1, 'Least Concern' = 0. 'Critically Endangered' species tagged as 'Possibly Extinct' or 'Possibly Extinct in the Wild' are assigned a weight of 5); W_{EX} = 5, the weight assigned to 'Extinct' or 'Extinct in the Wild' species; and N is the total number of assessed species, excluding those assessed as Data Deficient in the current time period, and those assessed as 'Extinct' in the year the set of species was first assessed.

Red List Indices for each taxonomic group are interpolated linearly for years between data points and extrapolated linearly (with a slope equal to that between the two closest assessed points, except for corals) back to the earliest time point and forwards to the present for years for which estimates are not available. The start year of the aggregated index is set as ten years before the first assessment year for the taxonomic group with the latest starting point. Corals are not extrapolated linearly because declines are known to have been much steeper subsequent to 1996 (owing to extreme bleaching events) than before. Therefore the rate of decline prior to 1996 is set as the average of the rates for the other taxonomic groups. The methods and scientific basis for the Red List Index were described by Butchart et al. (2007 PLoS ONE; http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0000140).

Describe any adjustments, estimations, modelled data that in some way modifies the national data

The Red List Index is calculated globally based on assessments of extinction risk of each species included, because many species have distributions which span many countries. Thus, while the French national red list and the global IUCN Red List are identical for French national endemic species, for species that occur in countries in addition to France, global

assessments of the extinction risk of these species need to be used because (a) global extinction risk can differ from national extinction risk for species occurring in multiple countries and (b) the overall Red List Index needs to take into account the national responsibility for each species, which is much higher for those species that occur nowhere outside the country (i.e. national endemics) and lower for those species with large ranges that occur in many other countries.

The global Red List Index is downscaled to yield national Red List Indices, weighted by the fraction of each species' distribution occurring within the country or region, building on the method published by Rodrigues et al. (2014 PLoS ONE; http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0113934. These show an index of aggregate survival probability (the inverse of extinction risk) for all birds, mammals, amphibians, corals and cycads occurring within the country or region. The index is calculated as:

$$RLI(t,u) = 1 - [(Ss(W(t,s) * (rsu/Rs)) / (WEX * Ss (rsu/Rs))]$$

where t is the year of comprehensive reassessment, u is the spatial unit (i.e. country), $W_{(t,s)}$ is the weight of the global Red List category for species s at time t (the weight for 'Critically Endangered' = 4, 'Endangered' = 3, 'Vulnerable' = 2, 'Near Threatened' = 1, 'Least Concern' = 0. 'Critically Endangered' species tagged as 'Possibly Extinct' or 'Possibly Extinct in the Wild' are assigned a weight of 5); WEX = 5, the weight assigned to 'Extinct' or 'Extinct in the Wild' species; r_{su} is the fraction of the total range of species s in unit u; and R_s is the total range size of species s.

The index varies from 1 if the country has contributed the minimum it can to the global RLI (i.e. if the numerator is 0 because all species in the country are LC) to 0 if the country has contributed the maximum it can to the global RLI (i.e. if the numerator equals the denominator because all species in the country are Extinct or Possibly Extinct). The taxonomic groups included are those in which all species have been assessed for the IUCN Red List more than once. Red List categories for years in which comprehensive assessments (i.e. those in which all species in the taxonomic group have been assessed) were carried out are determined following the approach of Butchart et al. (2007 PLoS ONE; http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0000140), i.e. they match the current categories except for those taxa that have undergone genuine improvement or deterioration in extinction risk of sufficient magnitude to qualify for a higher or lower Red List category.

Part IV: Validation of SDG indicator by National Statistical Office

Is this indicator validated by the national statistical system of the country?

Yes

Validation Process:

The validation process used in 2016 was dissemination of the draft indicator 15.5.1, along with drafts of the other indicators for which IUCN contributes as a custodian agency, as the Country Profile for France, through the Integrated Biodiversity Assessment Tool (IBAT; https://www.ibat-alliance.org/ibat-conservation/) to Convention on Biological Diversity National Focal Points (https://www.cbd.int/information/nfp.shtml). For France, this draft was sent on 2 December 2016, to:
- Adjoint au Chef du bureau biodiversité et milieux, Direction des affaires européennes et internationales, Ministère de la Transition écologique et solidaire

- Pôle biodiversité-forêts-océans, Sous-direction de l'environnement et du climat, Direction du développement durable, Direction générale de la mondialisation, de la culture, de l'enseignement et du développement international, Ministère de l'Europe et des Affaires étrangères
- Directeur des relations européennes et internationales, Muséum national d'Histoire naturelle

In review of this document, the French national statistical office (Institut national de la statistique et des études économiques) has commented that it is preferable that agencies have a single focal point per country, responsible of good data transmission and validation, with the coordinates of the national focal point provided by INSEE (coordination-statistique@insee.fr). The designated focal point would be an interlocutor from the Official Statistical System; for SDG indicator 15.5.1 it would be a representative of the Environmental Ministerial Statistical Department. For the initialization of data flows, a dialogue will be necessary with this focal point, in particular to confirm from a practical point of view the organization of transmissions and validations. This dialogue can also make it possible to specify the precise content of the data transmitted by the country and the adjustments proposed by the agency. A reflection allowing more automatic exchanges can be conducted based on current experiences. A single process of data transmission for all kind of indicators will probably not be convenient.

A specific schedule of requests for sending and validating data has not yet been finalised, but is likely to fall within January–February each year.

If the national and global values differed, did the agency publish both values on their website and explain the reasons for the discrepancies?

Yes

General Comments:

This case study has been shared for review with:

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Data flow from the Philippines to the International Union for Conservation of Nature (IUCN)

Part I: Data collection for indicator calculation

All national data series and their national data source (administrative, survey, etc. and the name of the specific data source) for the production of this indicator:

National data series 1:*

Updated National List of Threatened Philippine Plants and their Categories (DENR Administrative Order 2017-11; http://www.bmb.gov.ph/elibrary/mainmenu-policies-52359/dao/denr-administrative-orders-2017?download=319:denr-administrative-order-2016-29).

National data sources for series 1:*

Philippines Biodiversity Management Bureau (http://www.bmb.gov.ph/) within Department of Environment and Natural Resources (https://www.denr.gov.ph/). Data are also served through the Philippine Clearing House Mechanism for Biodiversity (http://www.chm.ph/).

National data series 2:

List of Terrestrial Threatened Species and their Categories (DENR Administrative Order 2004-15; http://www.bmb.gov.ph/elibrary/mainmenu-policies-52359/dao/denr-administrative-orders-1997-2006?download=99:dao2004-15).

National data sources for series 2:

Philippines Biodiversity Management Bureau (http://www.bmb.gov.ph/) within Department of Environment and Natural Resources (https://www.denr.gov.ph/). Data are also served through the Philippine Clearing House Mechanism for Biodiversity (http://www.chm.ph/).

Source of data collected by international/custodian agency:

The distribution of the world's species does not follow political boundaries, and so the Red List Index is necessarily compiled based on global assessments of extinction risk (https://unstats.un.org/sdgs/metadata/files/Metadata-15-05-01.pdf). IUCN's government and civil society Members have mandated this approach through a Resolution on "The IUCN Red List Index for monitoring extinction risk" (WCC-2016-Res-016; https://portals.iucn.org/library/node/46433). However, given that very many species are "national endemics" (that is, only live in one country), a flourishing process has been developed to support data exchange between national and global levels, through the National Red List Working Group of the IUCN Species Survival Commission's Red List Committee (https://www.iucn.org/theme/species/about/species-survival-commission/ssc-leadership-and-steering-committee/sub-committees/iucn-red-list-committee).

The process for collection of Philippine national data for SDG indicator 15.5.1 by the international/custodian agency (IUCN) at the national level is direct collaboration with the relevant Philippine agency leading national red list processes: the Biodiversity Management Bureau (http://www.bmb.gov.ph/) within Department of Environment and Natural Resources (https://www.denr.gov.ph/). IUCN has provided three training workshops involving 72

participants, and 21 Philippine specialists have enrolled in the online IUCN Red List Training Course (https://www.conservationtraining.org/course/index.php?categoryid=40).

To date, the Philippine national statistical office has not been involved in this data exchange, but all parties are open to exploration of ways to strengthen these collaborations. In particular, it would be highly valuable to engage the Philippine national statistical office, in addition to the relevant Philippine agencies leading national red list processes and Convention on Biological Diversity national focal points, in review of the indicator in advance of submission from IUCN to UNSD (see Q13 below).

Frequency of national and international data collection

The frequency of Philippine red list re-assessment is about once per ten years. Specifically, the previous "National List of Threatened Philippine Plants and their Categories" (DENR Administrative Order 2007-01; http://www.bmb.gov.ph/elibrary/mainmenu-policies-52359/dao/denr-administrative-orders-2007-2016?download=69:dao-2007-01) dates from 2007; thus there was a ten year period between publication of national red lists of Philippine flora. The previous edition of the "Philippine Red Data Book: Red List of Threatened Animals" dates from 1997, published by the Wildlife Conservation Society of the Philippines; thus there was a seven year period between publication of national red lists of Philippine fauna, and a 13 year period has elapsed subsequently. Data flow between the Philippine national red list and the global IUCN Red List is an ongoing process. This data flow is anticipated to accelerate with the adoption of the mechanism for automated upload from national red lists to the global level through SIS Connect (see Q8 below).

At the global level, the IUCN Red List of Threatened Species (http://www.iucnredlist.org/) is updated three times each year. Red List Indices for any sets of species that have been comprehensively reassessed in that year are usually released alongside the update of the IUCN Red List. Data are stored and managed in the Species Information Service database, and are made freely available for non-commercial use through the IUCN Red List website. Re-assessments of extinction risk are required for every species assessed on The IUCN Red List of Threatened Species once every ten years, and ideally undertaken once every four years. A Red List Strategic Plan details a calendar of upcoming re-assessments for each taxonomic group. New data typically become available for the Red List Index every year. For example, the first Red List Index for cycads was released in 2015, updates to the Red List Index for birds were released in 2016, and updates for conifers, mammals, and sharks are anticipated in 2018.

Part II: Transmission of data from national to regional and international level

Method by which custodian agency collects data from the country

Where the Philippine national red lists follow the IUCN (2012) "Guidelines for Application of IUCN Red List Criteria at Regional and National Levels: Version 4.0" (https://portals.iucn.org/library/node/10336), including minimum documentation standards (http://cmsdocs.s3.amazonaws.com/keydocuments/RL_Standards_Consistency.pdf), national assessments will be the same as global ones for endemic species. Given the high proportion of endemic species in the Philippine biota, this means that a relatively high proportion of Philippine national red list assessments and global IUCN Red List assessments are identical (especially regarding category of extinction risk). In 2016, building from extensive piloting, the "SIS Connect" tool was introduced to allow automated upload of endemic species assessments from national red lists to the global IUCN Red List. It is

anticipated that this mechanism will greatly accelerate the flow of national to global Red List data over coming years.

Other mechanisms for supporting data flows from national levels to the global IUCN Red List include: direct extraction of data from national red lists and their integration into global assessments by IUCN Red List assessment teams; sending draft assessments to national experts to solicit review; and using open-access discussion fora to solicit feedback and inputs from national experts on proposed changes to species' IUCN Red List categories.

Involvement of regional organizations/mechanisms

The ASEAN Centre for Biodiversity (https://aseanbiodiversity.org/) is an intergovernmental organization that facilitates cooperation and coordination among the ten ASEAN Member States and with regional and international organizations on the conservation and sustainable use of biological diversity. It does not currently play a role in the data flow for SDG indicator 15.5.1, but is a clear candidate as a potential regional facilitator in the process; it serves taxonomic (including threatened species) data as well as information on national policies for ASEAN countries through the Biodiversity Information Sharing Service (http://chm.aseanbiodiversity.org/). The ASEAN Centre for Biodiversity and IUCN collaborate under a Memorandum of Understanding, October 2016–October 2019.

Part III: Calculation of the global SDG indicator

Process by which national data is converted to SDG indicator

The Red List Index measures change in aggregate extinction risk across groups of species. It is based on genuine changes in the number of species in each category of extinction risk on the IUCN Red List of Threatened Species, expressed as changes in an index ranging from 0 (all species are categorized as 'Extinct') to 1 (all species are categorized as 'Least Concern'). Thus, the Red List Index allows comparisons between sets of species in both their overall level of extinction risk, and in the rate at which this risk changes over time. An upward Red List Index trend indicates that the SDG Target 15.5 of reducing the degradation of natural habitats and protecting threatened species is on track.

The Red List Index is calculated at a given point in time by first multiplying the number of species in each Red List Category by a weight and summing these values. This is then divided by a maximum threat score which is the total number of species multiplied by the weight assigned to the 'Extinct' category. This final value is subtracted from 1 to give the Red List Index value. Mathematically this calculation is expressed as:

$$RLI_t = 1 - [(S_s W_{c(t,s)}) / (W_{EX} * N)]$$

where $W_{c(t,s)}$ is the weight for category (c) at time (t) for species (s) (the weight for 'Critically Endangered' = 4, 'Endangered' = 3, 'Vulnerable' = 2, 'Near Threatened' = 1, 'Least Concern' = 0. 'Critically Endangered' species tagged as 'Possibly Extinct' or 'Possibly Extinct in the Wild' are assigned a weight of 5); W_{EX} = 5, the weight assigned to 'Extinct' or 'Extinct in the Wild' species; and N is the total number of assessed species, excluding those assessed as Data Deficient in the current time period, and those assessed as 'Extinct' in the year the set of species was first assessed.

Red List Indices for each taxonomic group are interpolated linearly for years between data points and extrapolated linearly (with a slope equal to that between the two closest assessed points, except for corals) back to the earliest time point and forwards to the present for years for which estimates are not available. The start year of the aggregated index is set as ten

years before the first assessment year for the taxonomic group with the latest starting point. Corals are not extrapolated linearly because declines are known to have been much steeper subsequent to 1996 (owing to extreme bleaching events) than before. Therefore the rate of decline prior to 1996 is set as the average of the rates for the other taxonomic groups. The methods and scientific basis for the Red List Index were described by Butchart et al. (2007 PLoS ONE; http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0000140).

Describe any adjustments, estimations, modelled data that in some way modifies the national data

The Red List Index is calculated globally based on assessments of extinction risk of each species included, because many species have distributions which span many countries. Thus, while the Philippine national red list and the global IUCN Red List are identical for Philippine national endemic species, for species that occur in countries in addition to the Philippines, global assessments of the extinction risk of these species need to be used because (a) global extinction risk can differ from national extinction risk for species occurring in multiple countries and (b) the overall Red List Index needs to take into account the national responsibility for each species, which is much higher for those species that occur nowhere outside the country (i.e. national endemics) and lower for those species with large ranges that occur in many other countries.

The global Red List Index is downscaled to yield national Red List Indices, weighted by the fraction of each species' distribution occurring within the country or region, building on the method published by Rodrigues et al. (2014 PLoS ONE; http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0113934. These show an index of aggregate survival probability (the inverse of extinction risk) for all birds, mammals, amphibians, corals and cycads occurring within the country or region. The index is calculated as:

$$RLI(t,u) = 1 - [(Ss(W(t,s) * (r_{su}/R_s)) / (WEX * Ss (r_{su}/R_s))]$$

where t is the year of comprehensive reassessment, u is the spatial unit (i.e. country), $W_{(t,s)}$ is the weight of the global Red List category for species s at time t (the weight for 'Critically Endangered' = 4, 'Endangered' = 3, 'Vulnerable' = 2, 'Near Threatened' = 1, 'Least Concern' = 0. 'Critically Endangered' species tagged as 'Possibly Extinct' or 'Possibly Extinct in the Wild' are assigned a weight of 5); WEX = 5, the weight assigned to 'Extinct' or 'Extinct in the Wild' species; r_{su} is the fraction of the total range of species s in unit u; and R_s is the total range size of species s.

The index varies from 1 if the country has contributed the minimum it can to the global RLI (i.e. if the numerator is 0 because all species in the country are LC) to 0 if the country has contributed the maximum it can to the global RLI (i.e. if the numerator equals the denominator because all species in the country are Extinct or Possibly Extinct). The taxonomic groups included are those in which all species have been assessed for the IUCN Red List more than once. Red List categories for years in which comprehensive assessments (i.e. those in which all species in the taxonomic group have been assessed) were carried out are determined following the approach of Butchart et al. (2007 PLoS ONE; http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0000140), i.e. they match the current categories except for those taxa that have undergone genuine improvement or deterioration in extinction risk of sufficient magnitude to qualify for a higher or lower Red List category.

Part IV: Validation of SDG indicator by National Statistical Office

Is this indicator validated by the national statistical system of the country?

Yes

Validation Process:

The validation process used in 2016 was dissemination of the draft indicator 15.5.1, along with drafts of the other indicators for which IUCN contributes as a custodian agency, as the Country Profile for the Philippines, through the Integrated Biodiversity Assessment Tool (IBAT; https://www.ibat-alliance.org/ibat-conservation/) to Convention on Biological Diversity National Focal Points (https://www.cbd.int/information/nfp.shtml). For the Philippines, this draft was sent on 3 December 2016, to:
- Assistant Secretary, Office of United Nations and Other International Organizations, Department of Foreign Affairs
- Ambassador, Embassy of the Republic of the Philippines, Canada

For 2017 onwards, annual drafts will also be send to the relevant Philippine agencies leading national red list processes (Biodiversity Management Bureau), and, potentially, also the Philippine national statistical office.

General Comments:

This case study has been shared for review with:

Philippine National Statistical Office (Philippine Statistics Authority):
Lisa Grace Bersales lsbersales@gmail.com
Estela de Guzman e.deguzman@psa.gov.ph

Philippine Convention on Biological Diversity National Focal Points:
Mr Bayani S. Mercado, Assistant Secretary, Office of United Nations and International Organizations, Department of Foreign Affairs unio.div2@gmail.com
H.E. Ms Petronila P. Garcia, Ambassador, Embassy of the Republic of the Philippines, Canada embassyofphilippines@rogers.com

Philippine agencies relevant to national red list process:
Dr Theresa Mundita S. Lim, Director, Biodiversity Management Bureau, Department of Environment and Natural Resources pawbdir@yahoo.com, bmb@bmb.gov.ph, munditalim@yahoo.com

16.3.2 - Unsentenced detainees as a proportion of overall prison population

Data flow from Colombia to the United Nations Office on Drugs and Crime (UNODC)

Part I: Data collection for indicator calculation

All national data series and their national data source (administrative, survey, etc. and the name of the specific data source) for the production of this indicator:

National data series 1:

Total Prison Population

National data sources for series 1:*

United Nations Survey of Crime Trends and Operations of Criminal Justice Systems - Instituto Nacional Penitenciario Y Carcelario (INPEC)

National data series 2:

Unsentenced Prisoners

National data sources for series 2:

United Nations Survey of Crime Trends and Operations of Criminal Justice Systems - Instituto Nacional Penitenciario Y Carcelario (INPEC)

Source of data collected by international/custodian agency:

Data are collected through the United Nations Survey of Crime Trends and Operations of Criminal Justice Systems (UN-CTS). At national level data are collected by a national Focal Point.

Frequency of international and national data collection

UNODC collects data once a year. Frequency of data collection/production at country level is unknown.

Part II: Transmission of data from national to regional and international level

Method by which custodian agency collects data from the country

The United Nations Surveys on Crime Trends and the Operations of Criminal Justice Systems
collects data on the incidence of crime and the operations of criminal justice systems.
The UN-CTS questionnaire is sent to the national Focal Point (NCRB) which gathers the data
from national data producers. The UN-CTS has been revised in 2017 following a consultative

process with the network of national Focal Points. Besides data, a comprehensive set of metadata is collected through the UN-CTS.

Involvement of regional organizations/mechanisms

The Organisation of American States (OAS) supports UNODC in the collection of data for the UN-CTS in its region. This means that the OAS follows up with non-responding countries and provides methodological guidance in filling in the questionnaire.

Part III: Calculation of the global SDG indicator

Process by which national data is converted to SDG indicator

We validate the data collected by checking its relevance and consistency. We then integrate it
to our database. We collect data on number of prisoners and on unsentenced persons held. We then extract that data from our databases to compile it into the SDG indicator.

Describe any adjustments, estimations, modelled data that in some way modifies the national data

No Answer

Part IV: Validation of SDG indicator by National Statistical Office

Is this indicator validated by the national statistical system of the country?

Yes

Validation process:

Before publication, data are shared with all UN member countries through their Permanent Missions to the UN, as well as to the network of Focal Points for their technical review. Responses received by the deadline are evaluated and integrated in the data revisions before publication.

General Comments:

Data flow from India to the United Nations Office on Drugs and Crime (UNODC)

Part I: Data collection for indicator calculation

All national data series and their national data source (administrative, survey, etc. and the name of the specific data source) for the production of this indicator:

National data series 1:

Total Prison Population

National data sources for series 1:*

United Nations Survey of Crime Trends and Operations of Criminal Justice Systems
National data series 2:

Unsentenced Prisoners

National data sources for series 2:

United Nations Survey of Crime Trends and Operations of Criminal Justice Systems

Source of data collected by international/custodian agency:

Data are collected through the United Nations Survey of Crime Trends and Operations of Criminal Justice Systems (UN-CTS). At national level data are collected by a national Focal Point (in the case of India, the National Crime Records Bureau). For 2015 data, data have been collected from World Prison Brief - Institute of Criminal Policy Research as data were not provided by the national Focal Point.

Frequency of international and national data collection

UNODC collects data once a year. Frequency of data collection/production at country level is unknown.

Part II: Transmission of data from national to regional and international level

Method by which custodian agency collects data from the country

The United Nations Surveys on Crime Trends and the Operations of Criminal Justice Systems collects data on the incidence of crime and the operations of criminal justice systems. The UN-CTS questionnaire is sent to the national Focal Point (NCRB) which gathers the data from national data producers. The UN-CTS has been revised in 2017 following a consultative process with the network of national Focal Points. Besides data, a comprehensive set of metadata is collected through the UN-CTS.

Involvement of regional organizations/mechanisms

No.

Part III: Calculation of the global SDG indicator

Process by which national data is converted to SDG indicator

We validate the data collected by checking its relevance and consistency. We then integrate it to our database. We collect data on number of prisoners and on unsentenced persons held. We then extract that data from our databases to compile it into the SDG indicator.

Describe any adjustments, estimations, modelled data that in some way modifies the national data

No Answer

Part IV: Validation of SDG indicator by National Statistical Office

Is this indicator validated by the national statistical system of the country?

Yes

Validation process:

Before publication, data are shared with all UN member countries through their Permanent Missions to the UN, as well as to the network of Focal Points for their technical review. Responses received by the deadline are evaluated and integrated in the data revisions before publication.

General Comments:

Data flow from Russian Federation to the United Nations Office on Drugs and Crime (UNODC)

Part I: Data collection for indicator calculation

All national data series and their national data source (administrative, survey, etc. and the name of the specific data source) for the production of this indicator:

National data series 1:

Total Prison Population

National data sources for series 1:*

United Nations Survey of Crime Trends and Operations of Criminal Justice Systems - Federal Penitentiary Service of Russia

National data series 2:

Unsentenced Prisoners

National data sources for series 2:

United Nations Survey of Crime Trends and Operations of Criminal Justice Systems - Federal Penitentiary Service of Russia

Source of data collected by international/custodian agency:

Data are collected through the United Nations Survey of Crime Trends and Operations of Criminal Justice Systems (UN-CTS). At national level data are collected by a national Focal Point (Ministry of Justice).

Frequency of international and national data collection

UNODC collects data once a year. Frequency of data collection/production at country level is unknown.

Part II: Transmission of data from national to regional and international level

Method by which custodian agency collects data from the country

The United Nations Surveys on Crime Trends and the Operations of Criminal Justice Systems collects data on the incidence of crime and the operations of criminal justice systems. The UN-CTS questionnaire is sent to the national Focal Point (NCRB) which gathers the data from national data producers. The UN-CTS has been revised in 2017 following a consultative process with the network of national Focal Points. Besides data, a comprehensive set of metadata is collected through the UN-CTS.

Involvement of regional organizations/mechanisms

No.

Part III: Calculation of the global SDG indicator

Process by which national data is converted to SDG indicator

We validate the data collected by checking its relevance and consistency. We then integrate it to our database. We collect data on number of prisoners and on unsentenced persons held. We then extract that data from our databases to compile it into the SDG indicator.

Describe any adjustments, estimations, modelled data that in some way modifies the national data

Yes, the data on unsentenced prisoners and on total prisoners used for the calculation of SDG indicators are compiled in a so-called "pre-pub" table and sent to all UN member countries through their Permanent Missions to the UN, as well as to the network of Focal Points for validation.

Part IV: Validation of SDG indicator by National Statistical Office

Is this indicator validated by the national statistical system of the country?

Yes

Validation process:

Before publication, data are shared with all UN member countries through their Permanent Missions to the UN, as well as to the network of Focal Points for their technical review. Responses received by the deadline are evaluated and integrated in the data revisions before publication.

General Comments:

Data flow from France to the United Nations Office on Drugs and Crime (UNODC)

Part I: Data collection for indicator calculation

All national data series and their national data source (administrative, survey, etc. and the name of the specific data source) for the production of this indicator:

National data series 1:

Total Prison Population

National data sources for series 1:*

United Nations Survey of Crime Trends and Operations of Criminal Justice Systems
National data series 2:

Unsentenced Prisoners

National data sources for series 2:

United Nations Survey of Crime Trends and Operations of Criminal Justice Systems

Source of data collected by international/custodian agency:

For European Union countries, UNODC carries out a joint data collection with the European Statistical Office - Eurostat. This questionnaire is the UN-CTS integrated by a set of questions developed Eurostat. The data collection is operationally managed by Eurostat which ensures communication with national Focal Points.

Frequency of international and national data collection

UNODC collects data once a year. Frequency of data collection/production at country level is unknown.

Part II: Transmission of data from national to regional and international level

Method by which custodian agency collects data from the country

The United Nations Surveys on Crime Trends and the Operations of Criminal Justice Systems collects data on the incidence of crime and the operations of criminal justice systems. The UN-CTS questionnaire is sent to the national Focal Point (NCRB) which gathers the data from national data producers. The UN-CTS has been revised in 2017 following a consultative process with the network of national Focal Points. Besides data, a comprehensive set of metadata is collected through the UN-CTS.

Involvement of regional organizations/mechanisms

Yes, Eurostat, the European Statistical Office for European Union countries manages the data collection from countries. Data are processed independently by Eurostat and UNODC, data are shared before publication to address possible discrepancies.

Part III: Calculation of the global SDG indicator

Process by which national data is converted to SDG indicator

We validate the data collected by checking its relevance and consistency. We then integrate it to our database. We collect data on number of prisoners and on unsentenced persons held. We then extract that data from our databases to compile it into the SDG indicator.

Describe any adjustments, estimations, modelled data that in some way modifies the national data

No Answer

Part IV: Validation of SDG indicator by National Statistical Office

Is this indicator validated by the national statistical system of the country?

Yes

Validation process:

Before publication, data are shared with all UN member countries through their Permanent Missions to the UN, as well as to the network of Focal Points for their technical review. Responses received by the deadline are evaluated and integrated in the data revisions before publication.

General Comments:

Data flow from United Republic of Tanzania to the United Nations Office on Drugs and Crime (UNODC)

Part I: Data collection for indicator calculation

All national data series and their national data source (administrative, survey, etc. and the name of the specific data source) for the production of this indicator:

National data series 1:

Total Prison Population

National data sources for series 1:*

World Prison Brief - Institute for Criminal Policy Research from via U.S. State Department human rights report

National data series 2:

Unsentenced Prisoners

National data sources for series 2:

World Prison Brief - Institute for Criminal Policy Research from via U.S. State Department human rights report

Source of data collected by international/custodian agency:

Data are not been provided by the country in the United Nations Survey of Crime Trends and Operations of Criminal Justice Systems (UN-CTS).
We collected data from World Prison Brief - Institute of Criminal Policy Research because data were not provided by the country.

Frequency of international and national data collection

UNODC collects data once a year. Frequency of data collection/production at country level is unknown.

Part II: Transmission of data from national to regional and international level

Method by which custodian agency collects data from the country

The United Nations Surveys on Crime Trends and the Operations of Criminal Justice Systems collects data on the incidence of crime and the operations of criminal justice systems.
The UN-CTS questionnaire is sent to the national Focal Point (NCRB) which gathers the data from national data producers. The UN-CTS has been revised in 2017 following a consultative process with the network of national Focal Points. Besides data, a comprehensive set of metadata is collected through the UN-CTS.

Involvement of regional organizations/mechanisms

No

Part III: Calculation of the global SDG indicator

Process by which national data is converted to SDG indicator

We validate the data collected by checking its relevance and consistency. We then integrate it to our database. We collect data on number of prisoners and on unsentenced persons held. We then extract that data from our databases to compile it into the SDG indicator.

Describe any adjustments, estimations, modelled data that in some way modifies the national data

No Answer

Part IV: Validation of SDG indicator by National Statistical Office

Is this indicator validated by the national statistical system of the country?

Yes

Validation process:

Before publication, data are shared with all UN member countries through their Permanent Missions to the UN, as well as to the network of Focal Points for their technical review. Responses received by the deadline are evaluated and integrated in the data revisions before publication.

General Comments:

Data Flows from National to Regional/Global Level – Case Studies

Introduction

The Statistical Commission at its 48th session requested the IAEG-SDGs to develop guidelines on how custodian agencies and countries can work together to contribute to global SDG data reporting. At the 5th meeting of the IAEG-SDGs, it was decided to carry out a series of case studies on data flows and data reporting to highlight the different ways in which data for SDG indicators flows from the national to the regional and international level.

These case or example studies commissioned by the IAEG will be prepared by the international agencies/custodian agencies in consultation with countries on a few selected, representative global SDG indicators and the output will be a document detailing the way data flows from a specific country's national statistical system to the regional and international level. The study will include information on how an indicator is adjusted, estimated or modeled, and validated by the national statistical system for global reporting.

Each case study will examine a specific data flow - reporting on one specific indicator from one country to one international agency. Each custodian agency is requested to prepare 4-5 such case studies on a particular indicator. This will require completing this form 4-5 times. The case studies will attempt to cover various types of data sources - administrative, household survey, and other data sources – and also different types of national statistical systems – more and less centralized.

Your agency should have received an email asking you to prepare case studies for a specific indicator with some country suggestions. If you have not received such an email, please contact Benjamin Rae (raeb@un.org) for more information.

These case studies will help the IAEG to draft its Guidelines and Best Practices on SDG Data reporting that was discussed at the 5th IAEG-SDG meeting in Ottawa, Canada.

Please complete the following form and if you need additional space, please use the last entry box to expand on any previous answers.

Part I: General information on indicator and possible custodian agency

1. Contact Person: *

2. Email address: *

3.1. Name of international/custodian agency in case study *

3.2. Name of country in case study *

4. Name of global SDG indicator *

Part II: Information on national data sources and collection mechanism

5. List all national data series and their national data source (administrative, survey, etc. and the name of the specific data source) for the production of this indicator:

National data series 1: *

National data sources for series 1: *

National data series 2:

National data sources for series 2:

National data series 3:

National data sources for series 3:

National data series 4:

National data sources for series 4:

National data series 5:

National data sources for series 5:
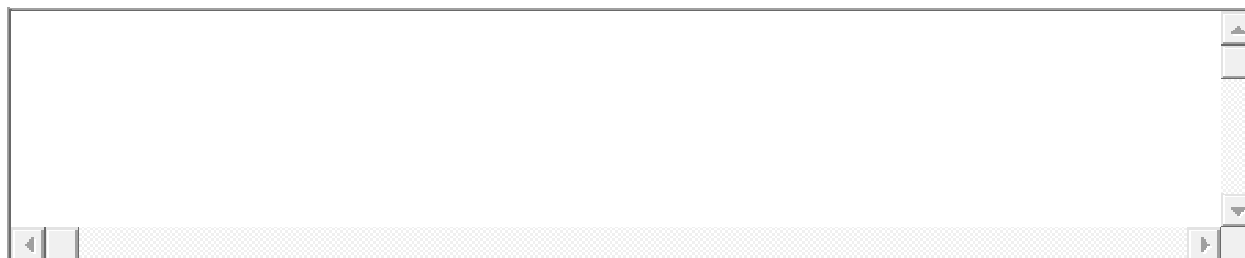
6. From where does the international/custodian agency collect data at national level (national statistical office, line ministry other)? If data are not collected from the national statistical office, is the national statistical office notified of the data request? *

7. What is the frequency with which data are collected from the country and what is the frequency with which the country collects the data at national level? *

Part III: Transmission of data from national to regional and international level

8. Please describe the method by which the custodian agency collects the data from the country (is a request or form sent to the NSO, is data pulled

from an online database, obtained in another way?) and describe any other information collected by the custodian agency in addition to the data series (metadata, etc.). *
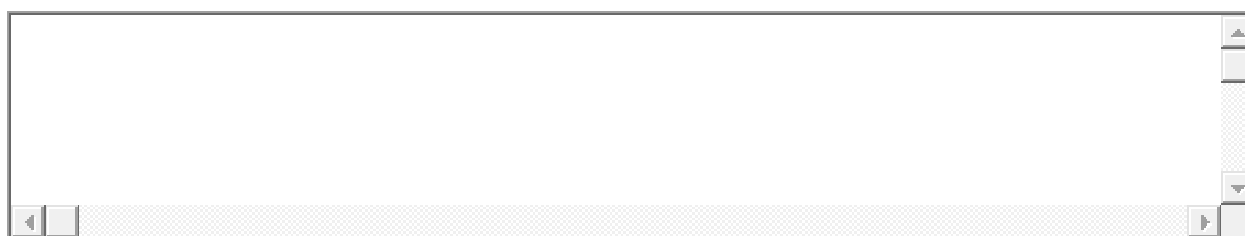
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9. Is a regional entity involved in the transmission of the data from national to global level? If so, what regional entity is involved and what is their role in the data transmission process? *

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Part IV: Calculation of the global SDG indicator

10. After receiving the data from the country, what is the process by which these data are compiled into the global SDG indicator? *

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11. If any country adjustments, estimations, modelling or other changes to the nationally produced data are made, please describe these changes and the reasons for them. *

Part V: Validation of global indicator by national statistical systems

12. After the internationally comparable indicator is calculated by the international/custodian agency, is this indicator validated by the national statistical system of the country? *

Yes ☐

No ☐

13. If so, please describe the process of this validation including who is contacted, what takes place, and what the resolution of the validation process was?

[text box]

14. If the national and global values differed, did the agency publish both values on their website and explain the reasons for the discrepancies?

Yes   ☐

No   ☐

15. General Comments: If there is any additional information you would like to provide on the data flow for this indicator between your agency and the selected country, please do so below.

[text box]