



World Bank ECASTAT Trust Fund  
SDG Metadata Translation Project:  
Innovations through Strategic Collaborations

## **SDG Metadata Concepts, Transmission Pilot, and the SDGs Data Lab**

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27 April 2021



## **SDG Reference Metadata**

- Based on concepts approved by the Interagency and Expert Group on SDG Indicators (IAEG-SDGs)
- Has been exchanged and published in MS Word since 2016
  - Manual process
- Updates to metadata are proposed by custodian agencies, then reviewed and approved by the IAEG-SDGs



## Global Metadata Structure Definition (MSD)

- Draft MSD for the SDG indicators was approved by the SDMX Working Group and released at the beginning of 2020.
- Based on metadata concepts used for the reporting of metadata for the global SDG indicators, **harmonized with internationally used metadata concepts. - Only the presentation, but not the content, was updated!**
- Allows standardized metadata exchanges and machine- readable metadata.
- Throughout 2020 the draft MSD underwent extensive testing and a successful pilot metadata exchange exercise with countries and agencies was conducted!



## Harmonization of metadata concepts

- Raised by country members of the SDMX-SDGs Working Group, many of whom had mapped their metadata to “Single Integrated Metadata Structure” (SIMS)
- The Working Group invested substantial effort to align concepts from original metadata template with global standards, particularly SDMX Glossary and Global Metadata Concept Scheme (both derived from SIMS)
- Harmonization involved mapping original template to harmonized concepts. In some cases, this led to splitting or merging the metadata concepts after careful consideration.



## **SDG Reference Metadata Exchange pilot**

- Establish automated, standards-based reference metadata exchange for SDG indicators with countries and custodian agencies
- Make SDG metadata available in a standard, machine-readable format



## Challenges

- Very little experience in the community in automated reference metadata exchange
- Very few tools in support of reference metadata exchange
  - Stark contrast with data exchange, for which a multitude of tools are available
- Complexity of SDG metadata concepts
- Complexity linking reference metadata with data
- Complexity converting rich text to a machine-readable format



## Solution

- Use SDMX to structure SDG reference metadata and link to data
- Use a structured MS Word-based template to provide reference metadata
- Use a web-based reference metadata authoring tool to extract metadata from the template and convert to SDMX
  - The template can be skipped if the reporter is able to provide metadata directly in SDMX
- Develop an API to disseminate metadata in a machine-readable format
- UNSD and WB joined forces to exploit synergies between the two projects



# SDG Metadata Template

AutoSave  Off

SDG... - Last Modified: 23/...

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File Home Insert Design Layout References Mailings Review View Help

## Metadata Attributes

Reporting type  
Global (G)

SDG series  
1.1.1 Proportion of population

Add Series

Reference area  
World (1)

Metadata language  
en

Please use a 2-letter language code

1.d. Contact person function	[ ]
1.e. Contact phone	[ ]
1.f. Contact mail	[ ]
1.g. Contact email	[ ]

## 2. Definition, concepts, and classifications

Concept name	<i>Insert text, lists, tables, and images.</i>
2. Definition, concepts, and classifications	[ ]
2.a. Definition and concepts	[ ]
2.b. Unit of measure	[ ]
2.c. Classifications	[ ]

## 3. Data source type and data collection method

Page 1 of 10 2408 words

Page 2 of 10 2407 words English (United States)

Page 3 of 10 2407 words English (United States)

Focus

100%

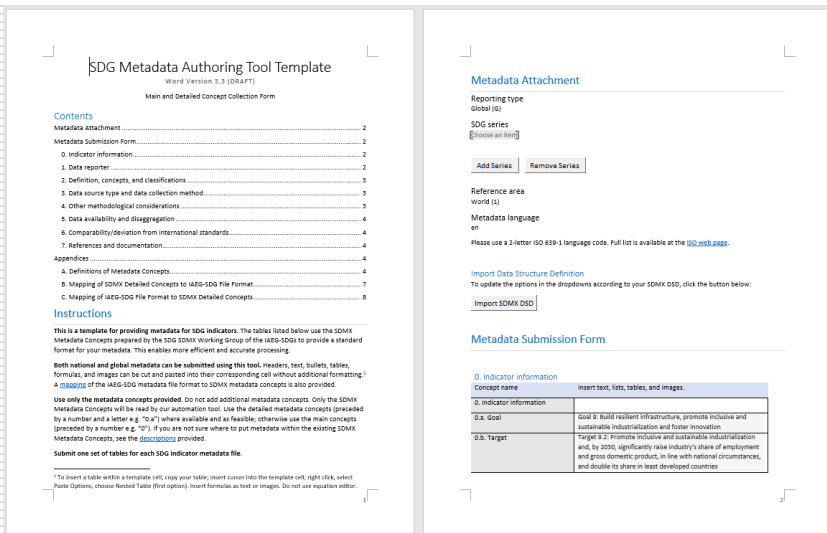
**Complete template**





# Pilot process

## Complete MS Word-based SDG Metadata Exchange Template



## Submit to SDMX Metadata Authoring Tool and get xml file or comparison report

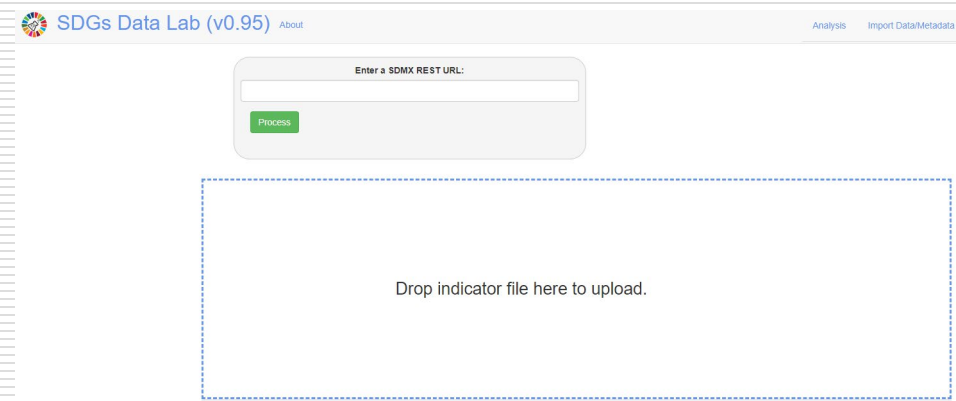
## SDG Metadata SDMX Converter

SDMX converter [Comparison report](#)

Use this tool to convert your metadata into SDMX and PDF files.

DROP YOUR METADATA FILE (DOCX/DOCM/XML) HERE, OR CLICK TO BROWSE.

## Submit to SDGs Data Lab





## Pilot results

Pilot participants that exchanged metadata:

<b>Agencies</b>	<b>Number of series with metadata</b>
UNEP	31
World Bank	5

<b>Countries</b>	<b>Number of series with metadata</b>
Colombia	4
France	2
Kyrgyzstan	1
Myanmar	3



# What is UNSD doing?

- In Dec 2020, UNSD aligned all SDG indicators metadata to MSD concepts in a new metadata template

**Old metadata template (pre-Dec 2020)**

Target 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture  
Target 2.1: By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round  
Indicator 2.1.1: Prevalence of moderate or severe food insecurity in the population, based on the Food Insecurity Experience Scale (FIES)

**Institutional information**

**Organizational:**  
Food and Agriculture Organization of the United Nations (FAO)

**Concepts and definitions**

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

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

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

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

**Formula:**  
$$P_{ij}(I = 1) = \frac{e^{-\theta_{ij} - \beta_1}}{1 + e^{-\theta_{ij} - \beta_1}}$$

**Concepts:**  
Extensive research over more than 25 years has demonstrated that the inability to access food results in a series of experiences and conditions that are fairly common across cultures and socio-economic contexts and that range from being concerned about the ability to obtain enough food, to the need to compromise on the quality or the diversity of food consumed, to being forced to reduce the intake of food by cutting portion sizes or skipping meals, up to the extreme condition of feeling hungry and not having means to access and afford a whole day's typical conditions for **Global Reference Scale** the basis of an experience based food insecurity measurement scale when analyzed through sound statistical methods rooted in Item Response Theory, data collected through such scales provide the basis to compute measurement consistent, cross country comparable measures of the prevalence of food insecurity. The severity of the food insecurity condition as measured by this indicator thus directly reflects the extent of household or individual's inability to regularly access the food they need.

## New metadata template (with new concepts)

**SDG indicator metadata**  
(development metadata template - latest version 1.0)

**0. Indicator information**

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

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

**0.c. Indicator**  
Indicator 2.1.1: Prevalence of moderate or severe food insecurity in the population, based on the Food Insecurity Experience Scale (FIES)

**0.d. Series**  
(Only where applicable)

**0.e. Metadata update**  
None

**0.f. Related indicators**  
**Indicators with the same data and format:**  
E.g. International organizations responsible for global monitoring  
Food and Agriculture Organization of the United Nations (FAO)

**1. Data reporter**

**1.a. Organisation**  
**Organisation and information of the contact points for the data or metadata:**

**1.b. Contact person(s)**  
**Names of the contact points for the data or metadata:**

**1.c. Contact organisation unit**  
**Organisation and information of the contact points for the data or metadata:**

**1.d. Contact person function**  
**Positions titles of the contact points for the data or metadata:**

**1.e. Contact phone**  
**Phone numbers of the contact points for the data or metadata:**

**1.f. Contact mail**  
**Working addresses of the contact points for the data or metadata:**

**1.g. Contact emails**  
**E-mail addresses of the contact points for the data or metadata:**

**2. Definition, concepts, and classifications**

**2.a. Definitions and concepts**  
**Definition:**  
The indicator measures the percentage of individuals in the population who have experienced food insecurity at moderate or severe levels during the reference period. The severity of food insecurity, defined as a latent trait, is measured on the food insecurity experience scale global reference scale, a measurement standard established by FAO through the application of the food insecurity experience scale in more than 140 countries worldwide, starting in 2014.

**Concepts:**  
Extensive research over more than 25 years has demonstrated that the inability to access food results in a series of experiences and conditions that are fairly common across cultures and socio-economic contexts and that range from being concerned about the ability to obtain enough food, to the need to compromise on the quality or the diversity of food consumed, to being forced to reduce the intake of food by cutting portion sizes or skipping meals, up to the extreme condition of feeling hungry and not having means to access any food for a whole day. Typical conditions for **Global Reference Scale** the basis of an experience based food insecurity measurement scale when analyzed through sound statistical methods rooted in Item Response Theory, data collected through such scales provide the basis to compute measurement consistent, cross country comparable measures of the prevalence of food insecurity. The severity of the food insecurity condition as measured by this indicator thus directly reflects the extent of household or individual's inability to regularly access the food they need.

**2.b. Unit of measure**  
**Measurement unit of the measurement concept: Data, number of people, %**

**2.c. Classifications**  
**Classification scheme (with nature and measurement method and classification being information to be provided where applicable):**

**3. Data source type and data collection method**

**3.a. Data sources:**  
Description of source and collection process:

- Agencies:**
- received metadata in new template;
  - were asked to:
    - review metadata to ensure that all contents were transferred correctly; and
    - provide revisions/updates

UNSD transferred all metadata to new template



# Mapping of IAEG-SDG File Format to SDMX Detailed Concepts (1/2)

IAEG-SDG Headers and Subheaders	Detailed Metadata Concept Name	IAEG-SDG Headers and Subheaders	Detailed Metadata Concept Name
Last updated: [DATE]	0.e. Metadata update	Rationale	4.a. Rationale
Goal	0.a. Goal	Comments and limitations	4.b. Comment and limitations
Target	0.b. Target	Methodology	4.c. Method of computation
Indicator	0.c. Indicator	Computation method	
	0.d. Series		4.d. Validation
Institutional information	0.g. International		4.e. Adjustments
Organization(s)	organisations(s) responsible for global monitoring	Treatment of missing values	4.f. Treatment of missing values (i) at country level and (ii) at regional level.
	1.a. Organisation	* At country level:	
	1.b. Contact person(s)	* At regional or global levels:	
	1.c. Contact organisation unit	Regional aggregates	4.g. Regional aggregations
	1.d. Contact person function	Sources of discrepancies	6. Comparability / Deviation from international standards
	1.e. Contact phone		
	1.f. Contact mail	Methods and guidance available to countries for the compilation of the data at the national level	4.h. Methods and guidance available to countries for the compilation of the data at the national level
Concepts and definitions	2.a. Definition and concepts		4.i. Quality management
Definition			4.j. Quality assurance
Concepts	2.b. Unit of measure	Quality assurance	4.k. Quality assessment
	2.c. Classifications		



## Mapping of IAEG-SDG File Format to SDMX Detailed Concepts (2/2)

IAEG-SDG Headers and Subheaders	Detailed Metadata Concept Name
Data sources	3.a. Data sources
Description	
Collection process	3.b. Data collection method
Data availability	5. Data availability and disaggregation
Disaggregation	
Calendar	3.c. Data collection calendar
Data collection	
Data release	3.d. Data release calendar
Data providers	3.e. Data providers
Data compilers	3.f. Data compilers
	3.g. Institutional mandate
References	7. References and Documentation
URL	
References	
Related indicators	0.f. Related indicators



## What is UNSD doing with the new templates?

There are 257 metadata files in the repository

Confirmed metadata  
(~120 files)

Obtain xml file



Load xml files in  
SDGs Data Lab

Revised metadata  
(~107 files out  
of the 120  
confirmed  
files)

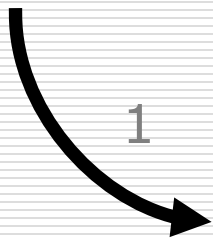
Obtain xml file

2



Load xml files in  
SDGs Data Lab

1



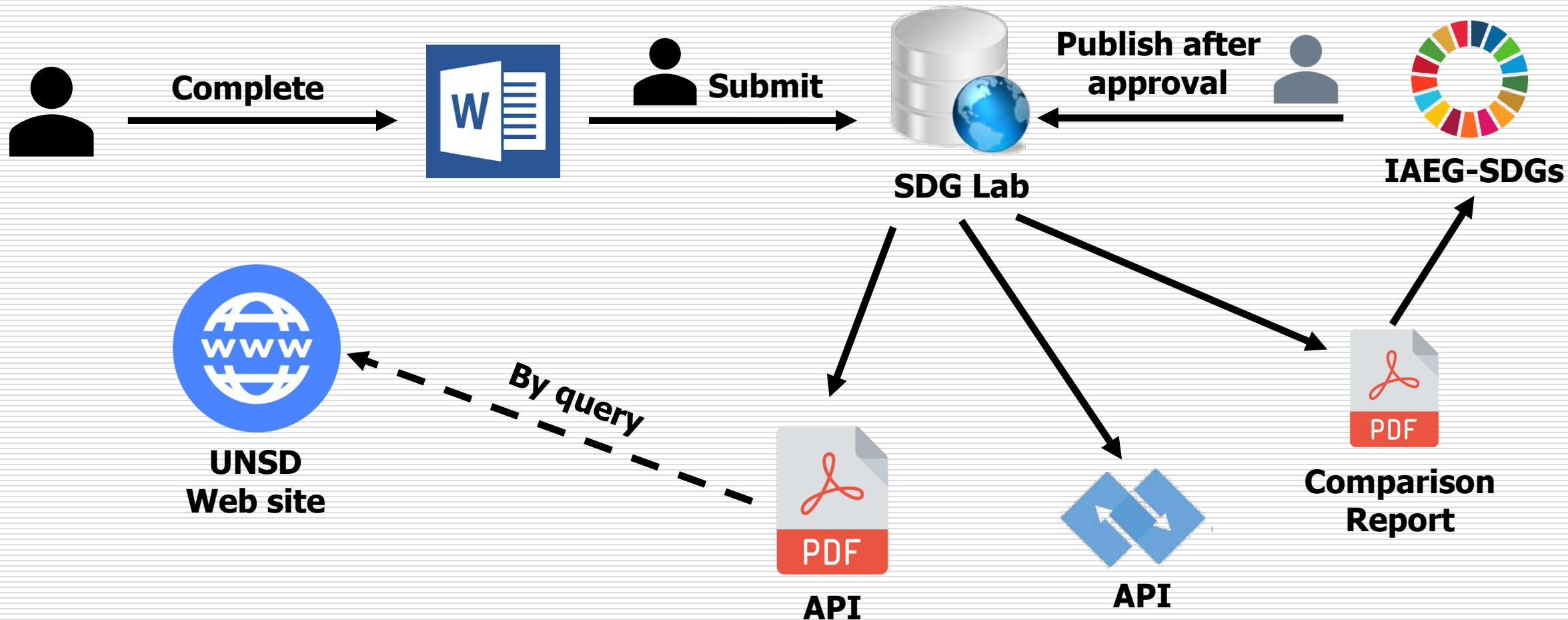
Obtain  
comparison  
report

During 2021

**Metadata will be  
available through  
SDMX API**



## Metadata exchange: Moving into production





## Challenges and next steps

- Not in production yet
  - Improve metadata template and SDMX authoring tool and platform based on pilot exchange experience
  - **Integrate template for agencies and SDMX authoring tool for production metadata exchange**
- Create user access beyond API (interface)
- Improve support for multi-lingual and versioning functionality
- Continue collaboration with translation project
- Limited resources





**Thank you!**