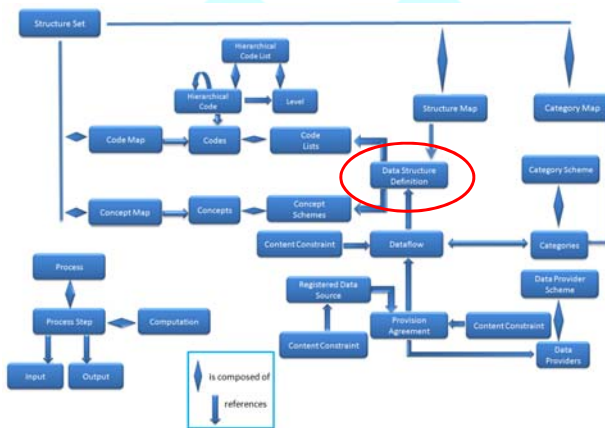



Workshop on Reporting and Communicating SDG Statistics

What are DSDs? An Overview of DSD for SDGs


SDMX Information Model

Statistical Data and Metadata eXchange





«DOING» SDMX vs. «USING» SDMX



MITH: ***SDMX is too complex!***

SDMX looks complex and intimidating if you try to understand all its detailed documentation, but...


Have you ever read the IEEE 802.11 documentation?
and so...

Do you have difficulties to use WiFi?
Have you ever “modified” the Ethernet wireless
adapter code in your device?


*You don't need to develop an SDMX interface to use SDMX as you are not
supposed to build your own wireless Ethernet adapter to use WiFi*

*It is up to the developers and not the users to know how to do with SDMX
and hide its complexity behind easy to use, intuitive interfaces*

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The SDMX Information Model




- What is an Information Model? Examples:


Information Model	Objects/Entities	Used by
Excel	Sheets, Cells, Rows	Formulae, VBA
Relational database	Database, Table, Column	SQL, Interface
OECD metadata	42 categories	OECD.Stat, Metastore

- SDMX IM designed for statistical data and metadata exchange using automated processes
- SDMX IM focused on aggregated data, but can be used for microdata

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Basic SDMX Artefacts




- **DSD: Data Structure Definition**
 - Defines the structure of an organised collection of data (Data Set) by means of concepts with specific roles, and their representation.
 - States dimensions, their measures, and attributes
 - Understand difference between a dimension and attribute
- **Concept**
 - Either a dimension or attribute, e.g.
 - Dimensions: Age, Location, Sector, Time
 - Attributes: Observation status, Unit multiplier
- **Code List**
 - Dimension or attribute enumeration
 - Each code list item has a code (id), a name and a description
- **Concept Scheme**
 - List of all concepts for domain before splitting them into DSDs

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Other SDMX Artefacts




- **Data flows**
 - Use of a DSD for a certain transmission
 - e.g. BOP/Trade in Services
- **Constraints**
 - Limit data flow to a set of codes.
 - e.g. don't allow some subjects/countries/measures.
"Remove" dimensions by single-fixing to Not Applicable
- **Category**
 - Classifies Data Flows by an "out-of-dimensions" criteria.
 - e.g. a theme in OECD.Stat
- **Category Scheme**
 - Groups Category artefacts.
 - E.g. the whole theme list in OECD.Stat
- **Provision agreement**
 - Used to make data transmission agreements formal

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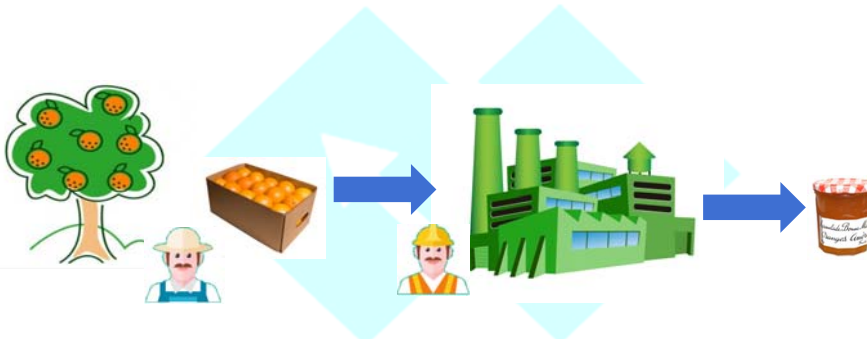


sdmx
Statistical Data and Metadata eXchange

Data exchange with SDMX



GOALS




The diagram illustrates a production process. On the left, a farmer (producer) stands next to an orange tree. A box of oranges is shown with an arrow pointing to a factory (plant) with a worker. Another arrow points from the factory to a jar of jam (product).

- Data exchange is not much different from any other products exchange...


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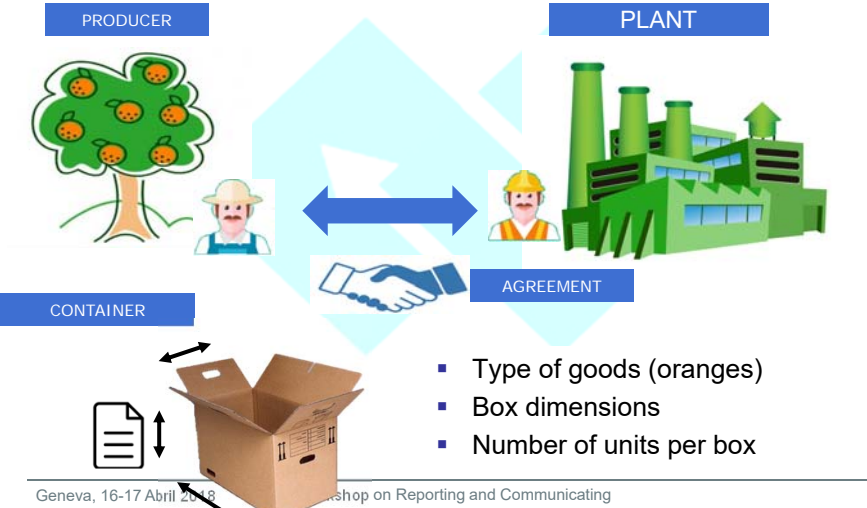


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Data exchange with SDMX



GOALS

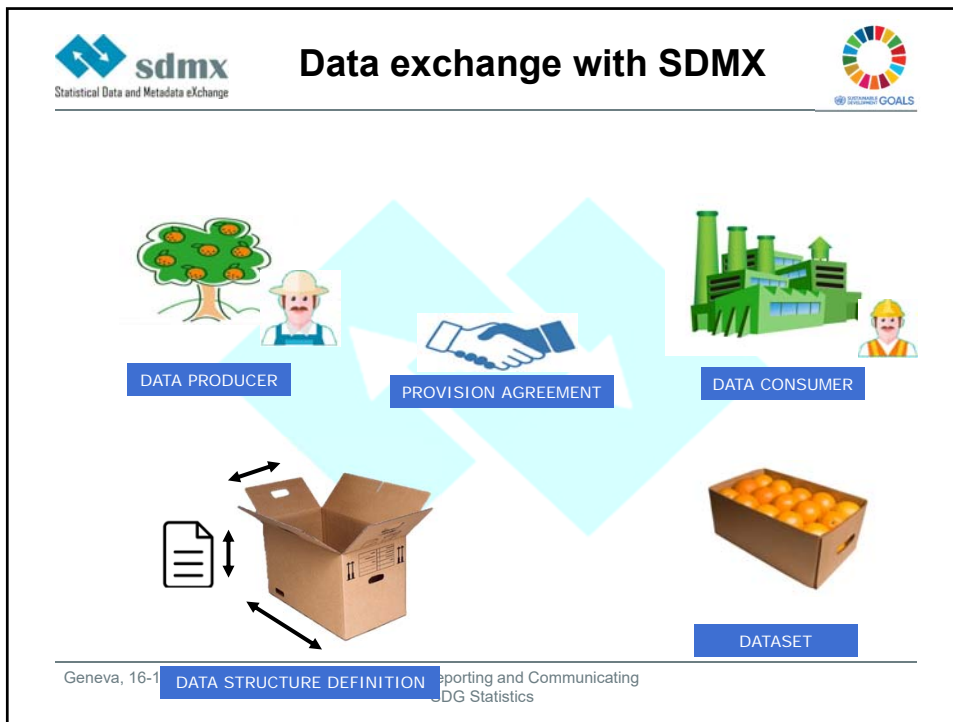


The diagram shows a 'PRODUCER' (farmer) and a 'PLANT' (factory) connected by a double-headed arrow. Below this, a 'CONTAINER' (box) is shown with a document icon, and an 'AGREEMENT' (handshake) is depicted between the producer and plant.

- Type of goods (oranges)
- Box dimensions
- Number of units per box

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sdmx Data exchange formats


Time stamp: 15/02/2017
 Data provider: ILO
 Target Name: 8.5 By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value
 Indicator Name: R.5.2 Unemployment rate, by sex, age and persons with disabilities
 Series Name: Unemployment rate by sex and main age group
 Not available disaggregated by disability status. Unemployment defined as persons not in employment, available and seeking, unless otherwise stated in the footnotes. Unemployment rate corresponds to the unemployed as a percentage of the labour force.

Country code (M49)	Country name	Year	Sex	Age group	Observation value	Footnotes about age coverage	Footnotes	Footnotes about source	Unit	Nature of data	Data source
4	Afghanistan	2005	Total	15+	8.5			Data referenc	Percentage	C	ILOSTAT - Labour Force Survey
4	Afghanistan	2005	Male	15+	7.6			Data referenc	Percentage	C	ILOSTAT - Labour Force Survey
4	Afghanistan	2005	Female	15+	9.5			Data referenc	Percentage	C	ILOSTAT - Labour Force Survey
8	Albania	2007	Total	25+	10.7	Nonstandard age	Break in series	Data referenc	Percentage	C	ILOSTAT - Labour Force Survey
8	Albania	2007	Total	15+	19.5	Nonstandard age	Break in series	Data referenc	Percentage	C	ILOSTAT - Labour Force Survey
8	Albania	2007	Female	25+	10.6	Nonstandard age	Break in series	Data referenc	Percentage	C	ILOSTAT - Labour Force Survey
8	Albania	2007	Female	15+	12.2	Nonstandard age	Break in series	Data referenc	Percentage	C	ILOSTAT - Labour Force Survey
8	Albania	2007	Female	15-24	15.8	Nonstandard age	Break in series	Data referenc	Percentage	C	ILOSTAT - Labour Force Survey
8	Albania	2008	Total	25+	10.0	Nonstandard age	Break in series	Data referenc	Percentage	C	ILOSTAT - Labour Force Survey
8	Albania	2008	Total	15+	13.0	Nonstandard age	Break in series	Data referenc	Percentage	C	ILOSTAT - Labour Force Survey
8	Albania	2008	Total	15-24	24.7	Nonstandard age	Break in series	Data referenc	Percentage	C	ILOSTAT - Labour Force Survey
8	Albania	2008	Male	25+	9.1	Nonstandard age	Break in series	Data referenc	Percentage	C	ILOSTAT - Labour Force Survey
8	Albania	2008	Male	15+	12.5	Nonstandard age	Break in series	Data referenc	Percentage	C	ILOSTAT - Labour Force Survey
8	Albania	2008	Male	15-24	25.5	Nonstandard age	Break in series	Data referenc	Percentage	C	ILOSTAT - Labour Force Survey
8	Albania	2008	Female	25+	11.2	Nonstandard age	Break in series	Data referenc	Percentage	C	ILOSTAT - Labour Force Survey
8	Albania	2008	Female	15+	13.5	Nonstandard age	Break in series	Data referenc	Percentage	C	ILOSTAT - Labour Force Survey
8	Albania	2008	Female	15-24	23.8	Nonstandard age	Break in series	Data referenc	Percentage	C	ILOSTAT - Labour Force Survey

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Data exchange formats




Series Code	Series Name	Indicator Reference	Reference Area Name	Time Period	Observation Value	Unit of Measure	Sex	Age group	Classification notes	Source Details	Time Detail	Footnotes
SL_TU_ALB	Unemployment rate, total and by sex and age (%)	8.5.2	Al	2005	8.47	%	C	Total 15-24		ILOSTAT - Labour Force Survey		Date reference period: Annual
SL_TU_ALB	Unemployment rate, total and by sex and age (%)	8.5.2	Al	2005	7.98	%	C	Female 15-24		ILOSTAT - Labour Force Survey		Date reference period: Annual
SL_TU_ALB	Unemployment rate, total and by sex and age (%)	8.5.2	Al	2005	8.45	%	C	Male 15-24		ILOSTAT - Labour Force Survey		Date reference period: Annual
SL_TU_ALB	Unemployment rate, total and by sex and age (%)	8.5.2	Al	2007	13.1	%	C	Total 15-24	Nonstandard age group: Excluded ILOSTAT - LFS	ILOSTAT - Labour Force Survey		Date reference period: Non-Annual
SL_TU_ALB	Unemployment rate, total and by sex and age (%)	8.5.2	Al	2007	14.4	%	C	Female 15-24	Nonstandard age group: Excluded ILOSTAT - LFS	ILOSTAT - Labour Force Survey		Date reference period: Non-Annual
SL_TU_ALB	Unemployment rate, total and by sex and age (%)	8.5.2	Al	2007	11.2	%	C	Male 15-24	Nonstandard age group: Excluded ILOSTAT - LFS	ILOSTAT - Labour Force Survey		Date reference period: Non-Annual
SL_TU_ALB	Unemployment rate, total and by sex and age (%)	8.5.2	Al	2008	13.05	%	C	Total 15-24	Nonstandard age group: Excluded ILOSTAT - LFS	ILOSTAT - Labour Force Survey		Date reference period: Non-Annual
SL_TU_ALB	Unemployment rate, total and by sex and age (%)	8.5.2	Al	2008	12.48	%	C	Female 15-24	Nonstandard age group: Excluded ILOSTAT - LFS	ILOSTAT - Labour Force Survey		Date reference period: Non-Annual
SL_TU_ALB	Unemployment rate, total and by sex and age (%)	8.5.2	Al	2008	13.76	%	C	Male 15-24	Nonstandard age group: Excluded ILOSTAT - LFS	ILOSTAT - Labour Force Survey		Date reference period: Non-Annual
SL_TU_ALB	Unemployment rate, total and by sex and age (%)	8.5.2	Al	2009	27.17	%	C	Total 15-24		ILOSTAT - LFS - Labour Force Survey		Date reference period: Non-Annual
SL_TU_ALB	Unemployment rate, total and by sex and age (%)	8.5.2	Al	2009	22.22	%	C	Female 15-24		ILOSTAT - LFS - Labour Force Survey		Date reference period: Non-Annual
SL_TU_ALB	Unemployment rate, total and by sex and age (%)	8.5.2	Al	2009	22.22	%	C	Male 15-24		ILOSTAT - LFS - Labour Force Survey		Date reference period: Non-Annual
SL_TU_ALB	Unemployment rate, total and by sex and age (%)	8.5.2	Al	2009	28.25	%	C	Total 15-24		ILOSTAT - LFS - Labour Force Survey		Date reference period: Non-Annual
SL_TU_ALB	Unemployment rate, total and by sex and age (%)	8.5.2	Al	2009	9.98	%	C	Female 25+		ILOSTAT - LFS - Labour Force Survey		Date reference period: Non-Annual
SL_TU_ALB	Unemployment rate, total and by sex and age (%)	8.5.2	Al	2009	13.82	%	C	Female 15-24		ILOSTAT - LFS - Labour Force Survey		Date reference period: Non-Annual
SL_TU_ALB	Unemployment rate, total and by sex and age (%)	8.5.2	Al	2009	18.62	%	C	Female 15-24		ILOSTAT - LFS - Labour Force Survey		Date reference period: Non-Annual
SL_TU_ALB	Unemployment rate, total and by sex and age (%)	8.5.2	Al	2009	13.83	%	C	Female 25+		ILOSTAT - LFS - Labour Force Survey		Date reference period: Non-Annual
SL_TU_ALB	Unemployment rate, total and by sex and age (%)	8.5.2	Al	2009	18.62	%	C	Female 15-24		ILOSTAT - LFS - Labour Force Survey		Date reference period: Non-Annual
SL_TU_ALB	Unemployment rate, total and by sex and age (%)	8.5.2	Al	2010	14.2	%	C	Total 15-24	Nonstandard age group: Excluded ILOSTAT - LFS	ILOSTAT - LFS - Labour Force Survey		Date reference period: Non-Annual
SL_TU_ALB	Unemployment rate, total and by sex and age (%)	8.5.2	Al	2010	12.8	%	C	Female 15-24	Nonstandard age group: Excluded ILOSTAT - LFS	ILOSTAT - LFS - Labour Force Survey		Date reference period: Non-Annual
SL_TU_ALB	Unemployment rate, total and by sex and age (%)	8.5.2	Al	2010	15.6	%	C	Female 25+	Nonstandard age group: Excluded ILOSTAT - LFS	ILOSTAT - LFS - Labour Force Survey		Date reference period: Non-Annual
SL_TU_ALB	Unemployment rate, total and by sex and age (%)	8.5.2	Al	2010	18.98	%	C	Total 15-24	Nonstandard age group: Excluded ILOSTAT - LFS	ILOSTAT - LFS - Labour Force Survey		Date reference period: Non-Annual
SL_TU_ALB	Unemployment rate, total and by sex and age (%)	8.5.2	Al	2010	14.44	%	C	Female 15-24	Nonstandard age group: Excluded ILOSTAT - LFS	ILOSTAT - LFS - Labour Force Survey		Date reference period: Non-Annual
SL_TU_ALB	Unemployment rate, total and by sex and age (%)	8.5.2	Al	2010	14.43	%	C	Female 25+	Nonstandard age group: Excluded ILOSTAT - LFS	ILOSTAT - LFS - Labour Force Survey		Date reference period: Non-Annual
SL_TU_ALB	Unemployment rate, total and by sex and age (%)	8.5.2	Al	2010	14.44	%	C	Total 15-24	Nonstandard age group: Excluded ILOSTAT - LFS	ILOSTAT - LFS - Labour Force Survey		Date reference period: Non-Annual
SL_TU_ALB	Unemployment rate, total and by sex and age (%)	8.5.2	Al	2010	12.07	%	C	Female 15-24	Nonstandard age group: Excluded ILOSTAT - LFS	ILOSTAT - LFS - Labour Force Survey		Date reference period: Non-Annual
SL_TU_ALB	Unemployment rate, total and by sex and age (%)	8.5.2	Al	2010	13.94	%	C	Total 15-24	Nonstandard age group: Excluded ILOSTAT - LFS	ILOSTAT - LFS - Labour Force Survey		Date reference period: Annual
SL_TU_ALB	Unemployment rate, total and by sex and age (%)	8.5.2	Al	2010	13.93	%	C	Female 15-24	Nonstandard age group: Excluded ILOSTAT - LFS	ILOSTAT - LFS - Labour Force Survey		Date reference period: Annual
SL_TU_ALB	Unemployment rate, total and by sex and age (%)	8.5.2	Al	2010	17.93	%	C	Female 25+	Nonstandard age group: Excluded ILOSTAT - LFS	ILOSTAT - LFS - Labour Force Survey		Date reference period: Annual
SL_TU_ALB	Unemployment rate, total and by sex and age (%)	8.5.2	Al	2010	13.94	%	C	Male 15-24	Nonstandard age group: Excluded ILOSTAT - LFS	ILOSTAT - LFS - Labour Force Survey		Date reference period: Annual
SL_TU_ALB	Unemployment rate, total and by sex and age (%)	8.5.2	Al	2010	13.13	%	C	Female 15-24	Nonstandard age group: Excluded ILOSTAT - LFS	ILOSTAT - LFS - Labour Force Survey		Date reference period: Annual
SL_TU_ALB	Unemployment rate, total and by sex and age (%)	8.5.2	Al	2010	11.76	%	C	Female 25+	Nonstandard age group: Excluded ILOSTAT - LFS	ILOSTAT - LFS - Labour Force Survey		Date reference period: Annual
SL_TU_ALB	Unemployment rate, total and by sex and age (%)	8.5.2	Al	2010	17.05	%	C	Total 15-24	Nonstandard age group: Excluded ILOSTAT - LFS	ILOSTAT - LFS - Labour Force Survey		Date reference period: Annual
SL_TU_ALB	Unemployment rate, total and by sex and age (%)	8.5.2	Al	2010	16.71	%	C	Female 15-24	Nonstandard age group: Excluded ILOSTAT - LFS	ILOSTAT - LFS - Labour Force Survey		Date reference period: Annual
SL_TU_ALB	Unemployment rate, total and by sex and age (%)	8.5.2	Al	2010	18.24	%	C	Female 25+	Nonstandard age group: Excluded ILOSTAT - LFS	ILOSTAT - LFS - Labour Force Survey		Date reference period: Annual
SL_TU_ALB	Unemployment rate, total and by sex and age (%)	8.5.2	Al	2010	13.13	%	C	Female 15-24	Nonstandard age group: Excluded ILOSTAT - LFS	ILOSTAT - LFS - Labour Force Survey		Date reference period: Annual
SL_TU_ALB	Unemployment rate, total and by sex and age (%)	8.5.2	Al	2010	13.13	%	C	Female 25+	Nonstandard age group: Excluded ILOSTAT - LFS	ILOSTAT - LFS - Labour Force Survey		Date reference period: Annual
SL_TU_ALB	Unemployment rate, total and by sex and age (%)	8.5.2	Al	2010	17.08	%	C	Total 15-24	Nonstandard age group: Excluded ILOSTAT - LFS	ILOSTAT - LFS - Labour Force Survey		Date reference period: Annual
SL_TU_ALB	Unemployment rate, total and by sex and age (%)	8.5.2	Al	2010	18.8	%	C	Total 15-24	Nonstandard age group: Excluded ILOSTAT - LFS	ILOSTAT - LFS - Labour Force Survey		Date reference period: Annual

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Deriving a Data Structure from a table



Time stamp: ILO
 Data provider: Target Name: 8.5 by 2030
 Variable: Have full and productive employment and equal opportunities for work of equal value
 Age: 15-24
 Unit of Measure: Percent


Concept Name	Role	Identifier	Code list
COUNTRY	Dimension		
VARIABLE	Dimension	REPRESENTED_VARIABLE	CL_REPRESENTED_VARIABLE
SEX	Dimension	SEX	CL_SEX
AGE	Dimension	AGE	CL_AGE
TIME	Dimension	TIME_PERIOD	
OBS_VALUE	Measure		
UNIT OF MEASURE	Attribute	UNIT_MEAS	CL_UNIT_MEASURE
AGE_COVERAGE	Attribute	AGE_COV	CL_AGE_COV
FOOTNOTES	Attribute	FOOTNOTES	
NATURE_OF_DATA	Attribute	NATURE	CL_NATURE
SOURCE	Attribute	SOURCE	

DIMENSIONS

ATTRIBUTES


MEASURE

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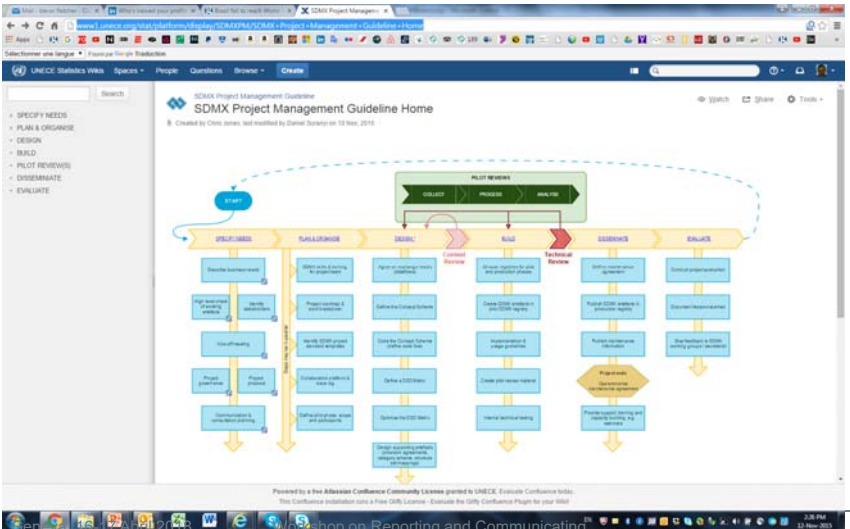


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Creating a global DSD



SDG GOALS




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SDG DSD Matrix



SDG GOALS

Concept Name	Role	Type	Code List	Lead Member	Comment
FREQ	Dimension	String	CL_FREQ	UNSD	Cross Domain; value set to A (annual)
DATASET_TYPE	Dimension	String	CL_DATASET_TYPE	UNSD	
SERIES	Dimension	String	CL_SDG_SERIES	UNSD	SDG Indicator or Series. Uses the CETS convention for encoding
REF_AREA	Dimension	String	CL_AREA	UNSD	Country or region code (M49 or ISO-3166)
SEX	Dimension	String	CL_SEX	UNSD	Cross Domain
AGE	Dimension	String	CL_AGE	UNSD	Cross Domain
URBANISATION	Dimension	String	CL_URBANISATION	UNSD	Degree of urbanisation (urban/rural)
INCOME_WEALTH_QUANTILE	Dimension	String	CL_QUANTILE	WB, UNICEF	Income or wealth quantile
EDUCATION_LEV	Dimension	String	CL_EDUCATION_LEV	DANE, UNICEF, ILO	Education level
OCCUPATION	Dimension	String	CL_OCCUPATION	ILO	Cross Domain; ISCO
CUST_BREAKDOWN	Dimension	String	CL_SDG_CUST_BREAKDOWN	UNSD	Custom breakdown
COMPOSITE_BREAKDOWN	Dimension	String	CL_SDG_COMP_BREAKDOWN	UNSD	Composite breakdown (for rarely used disaggregation)
DISABILITY_STATUS	Dimension	String	CL_DISABILITY_STATUS	UNSD	Disability status (reserved for future use)
TIME_PERIOD	Dimension	Date/Time			Time period (must refer to a year)
OBS_VALUE	Measure	Float?			Observation value
UNIT_MULT	Attribute (mandatory, obs)	Integer	CL_UNIT_MULT	UNSD	Cross Domain; unit multiplier
UNIT_MEASURE	Attribute (mandatory, obs)	String	CL_UNIT_MEASURE	UNSD	Unit of measure
OBS_STATUS	Attribute (mandatory, obs)	String	CL_OBS_STATUS	UNSD	Cross domain; observation status
NATURE	Attribute (optional, obs)	String	CL_NATURE	UNSD	
TIME_DETAIL	Attribute (optional, obs)	String			Further detail on time period (free text)
COMMENT_OBS	Attribute (optional, obs)	String			Observation-level footnotes (free text)
TIME_COVERAGE	Attribute (optional, obs)	Date/Time			ISO8601 representation of the actual time interval of the observation
UPPER_BOUND	Attribute (optional, obs)	Float			Upper bound, when applicable
LOWER_BOUND	Attribute (optional, obs)	Float			Lower bound, when applicable
BASE_PER	Attribute (optional, obs)	Date/Time			Base period (for constant price data)



SDG_DSD(0.3).xml

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Thank you !

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