

Technical Helpdesk for National LCA Databases

Training on Advanced Dataset Development, Documentation, and Exchange – Part 1

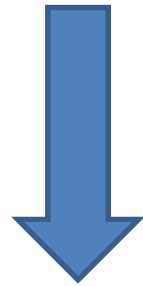
Content from: Reynaldo Felix and Juan Pablo Chargoy, CADIS

Disclaimer

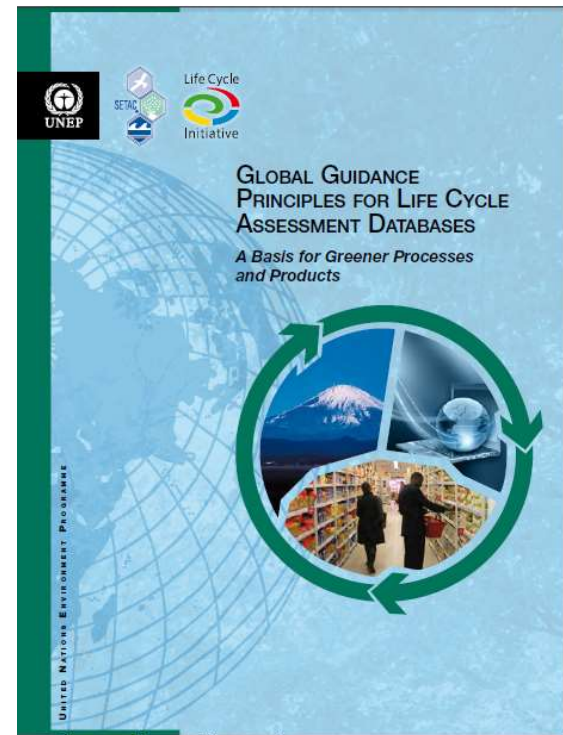
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Dataset Documentation

What information is needed to document a dataset?



Global Guidance Principles
for Life Cycle Assessment
Databases



Dataset Documentation

- In a perfect dataset, all of the information or metadata needed to describe the quality and usability of a dataset for a given purpose would be included.
- Generally this level of detail is impractical because of considerations of cost or time.

Aspects recommended for dataset documentation

General Documentation Considerations

- Name and Classification
- Scope of the Dataset
- Functional Unit or Reference Flows
- Allocation
- Data Quality
- Hints on Interpretation

Sonnemann and Vigon, 2011. Global Guidance Principles for Life Cycle Assessment Databases: ***A Basis for Greener Processes and Products***. Shonan Guidance Principles.

Aspects recommended for dataset documentation

Specific Requirements for Documentation of Unit Process Datasets

- Data Sources
- References and Boundaries
- Calculation Models and Other Conventions
- Validation results

Sonnemann and Vigon, 2011. Global Guidance Principles for Life Cycle Assessment Databases: ***A Basis for Greener Processes and Products***. Shonan Guidance Principles.

Typical structure for dataset documentation

- General Information
- Administrative Information
- Modeling and Validation
- Parameters
- Flows Exchanges
- Actors
- Sources

Examples of metadata elements in different data formats

Metadata elements	ILCD	Ecospol V.01	Mexicanuih
Name	Name	Name (reference Function)	Activity name
Base name	Treatment, standards, routes Mix and location types	Type	Type Mix And Location Types
Quantitative product or process properties	Quantitative product or process properties	-	Quantitative Properties of the Product or Process
Category	Classification Top category and Subcategory	Classification Top category and Subcategory	Two types of classification
Version	Data set version		Dataset version
Description Quantitative Reference	Quantitative product or process properties	General comments	Type of Quantitative Reference
Description (Time)	Reference year Data set valid until: Time representativeness description	Start date End date text (Time period)	Start date End date Data valid per entire period? Time representativeness description
Description (Geography)	Geographical representativeness description	text (Geography) short name	text (Geography) short name Geographic sublocalization

More examples of metadata elements in different data formats

Metadata elements	ILCD	Ecospold V.01	Mexicanuih
Description (technology)	Technology description including background system	Text (technology)	Technical description
Intended application	Intended applications	In general, comment (reference function)	Advice for users
Data generator (actor data set)	Data set generator / modeler (contact for data set)	Person (data generator and publication)	Data generator and publications
Data set owner (actor data set)	Owner of data set (contact for data set)	Person (data generator and publication)	Data generator and publications
Data documenter (actor data set)	Data set documenter (contact for data set)	Person (Data generator and publication - Data entry by)	Data entered by
Publication (source data set)	Unchanged republication of (source data set)	Source text (source)	Principles of selection and consistency of data sources
Creation date	Timestamp (last saved)	Timestamp	-

Still more examples of metadata elements in different data formats

Metadata elements	ILCD	Ecospold V.01	Mexicanuih
Copyright (Y/N)	Copyright?	Copyright?	Copyright?
LCI Method	LCI method and allocation	Allocation comment (flow dataset)	Type of assignment
Process type	Type of data set	Type (dataset information)	Type model ICV method principle
Data completeness	Data cut-off and completeness principles	General comment (flow dataset)	Name and value of quality
Data treatment	Data treatment and extrapolations principles	General comment (flow dataset)	Extrapolation comment on type of modeling and extrapolation
Sampling procedure	Sampling procedure	Sampling procedure	Sampling procedure
Reviewer	Reviewer name and institution	Reviewer	-
Sources	Data sources used for this data set (source data set)	Source	Principles of selection and consistency of data sources
Flow (flow dataset)	Flows - input/output	Exchanges - input/output group	Flows
Uncertainty	Uncertainty distribution type	Uncertainty type	Uncertainty type

A note about GLAD

- GLAD is an acronym that stands for Global LCA Data Access network. It is part of an intergovernmental effort established in 2014 to address LCA and data quality for policymaking. The Global LCA Data Access network aims towards **“a global network comprised of independently-operated and interoperable LCA databases, connecting multiple data sources to support life cycle assessment”**
- Reference: <https://www.unep.org/resourceefficiency/what-we-do/assessment/life-cycle-thinking/global-lcadata-access-network>)

GLAD services

GLAD will be set up as a website which provides users an interface to find and access life cycle inventory datasets from different dataset providers.

GLAD delivers two main services:

1. Find datasets (through a search component, including globally agreed metadata descriptors);
2. Use datasets (by allowing their conversion and download into the user's software, in the desired format). Essentially, GLAD will allow users to convert a dataset from its native format in the source database (node) into another format convenient for the user.

GLAD functionality

- The functionality of the interface is based on key metadata descriptors that will be required from datasets to be connected to GLAD in order to allow for interoperability between them, as well as a global mapping of flows nomenclature.
- The platform will consist of a central portal and connected datasets (nodes) representing data providers who wish to share databases and datasets through the network with users around the globe.
- Nodes will be required to meet certain requirements for interoperability in order to be connected to GLAD.
- It is expected to launch the data network by the end of the first quarter 2018.

Metadescription considered for GLAD

Note that only the top two groups of descriptors are being considered candidates as minimum required for interoperability

Source: Andreas Ciroth, Peter Arbuckle, Edivan Cherubini, Cassia Ugaya, and Ashley Edelen, "Core meta-data descriptors and guidance on populating descriptors". Release version 1.0 (internal version 11.3), June 2017. (A work product of the GLAD Initiative, WG3)

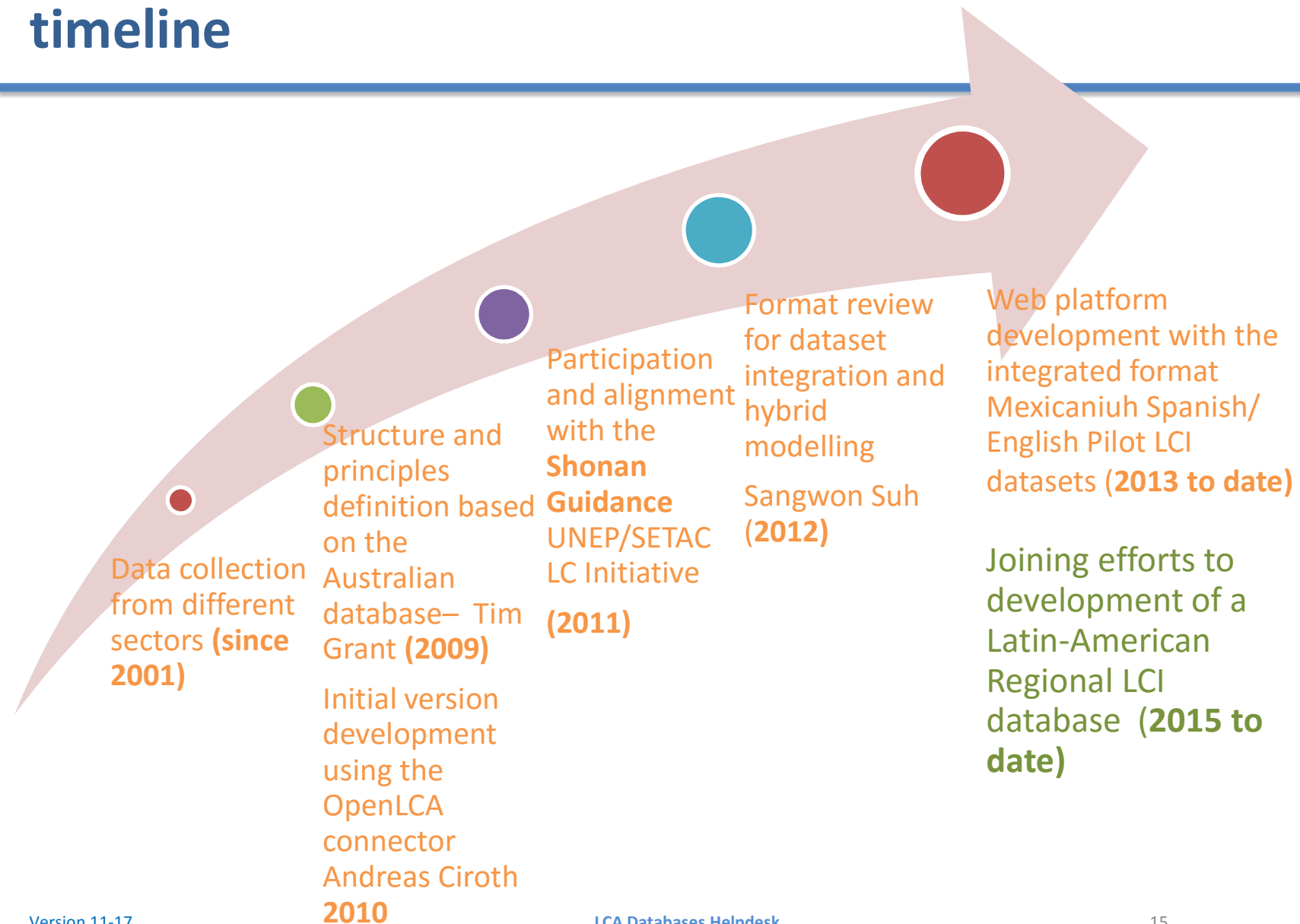
		Goal	Value & representation	Conformance
ID	Process name		Oa	
	Process type		Ob	
gvc Descriptors	Time	Ia	IVa	IIa
	Geography	Ib	IVb	IIb
	Technology	Ic	IVc	IIc
	Model completeness	Id	IVf	IId
	Sample representativeness	Ie	IVg	IIe
	LCA nomenclature systems		IVd	
	LCIA methods	Ig	IVe	
Modeling	LCI modeling type		IVh	
	System boundaries		IVi	
	Multifunctional processes		IVj	
	Biogenic carbon		IVk	
	Land use		IVl	
	Wastes and end-of-life		IVm	
	Water		IVn	
	Infrastructure/capital goods		IVo	
	Long-term emissions		IVp	
	Temporary carbon storage		IVq	
	Sample approach	If		
Sampling	Reliability of the sources used		IIIa	
Calculation	Aggregation type if any		Vla	
	Data set review performed		Va	
	Type of data set review		Vb	
	Quality assurance performed		Vc	
QA	Reviewing person(s)		Vd	
	Copyright protected data set?		VIIa	
	Copyright holder		VIIb	
	Free data set or for purchase?		VIIc	
	Data set license		VIIId	
	Data set contact		VIIe	

Examples of metadata for dataset documentation

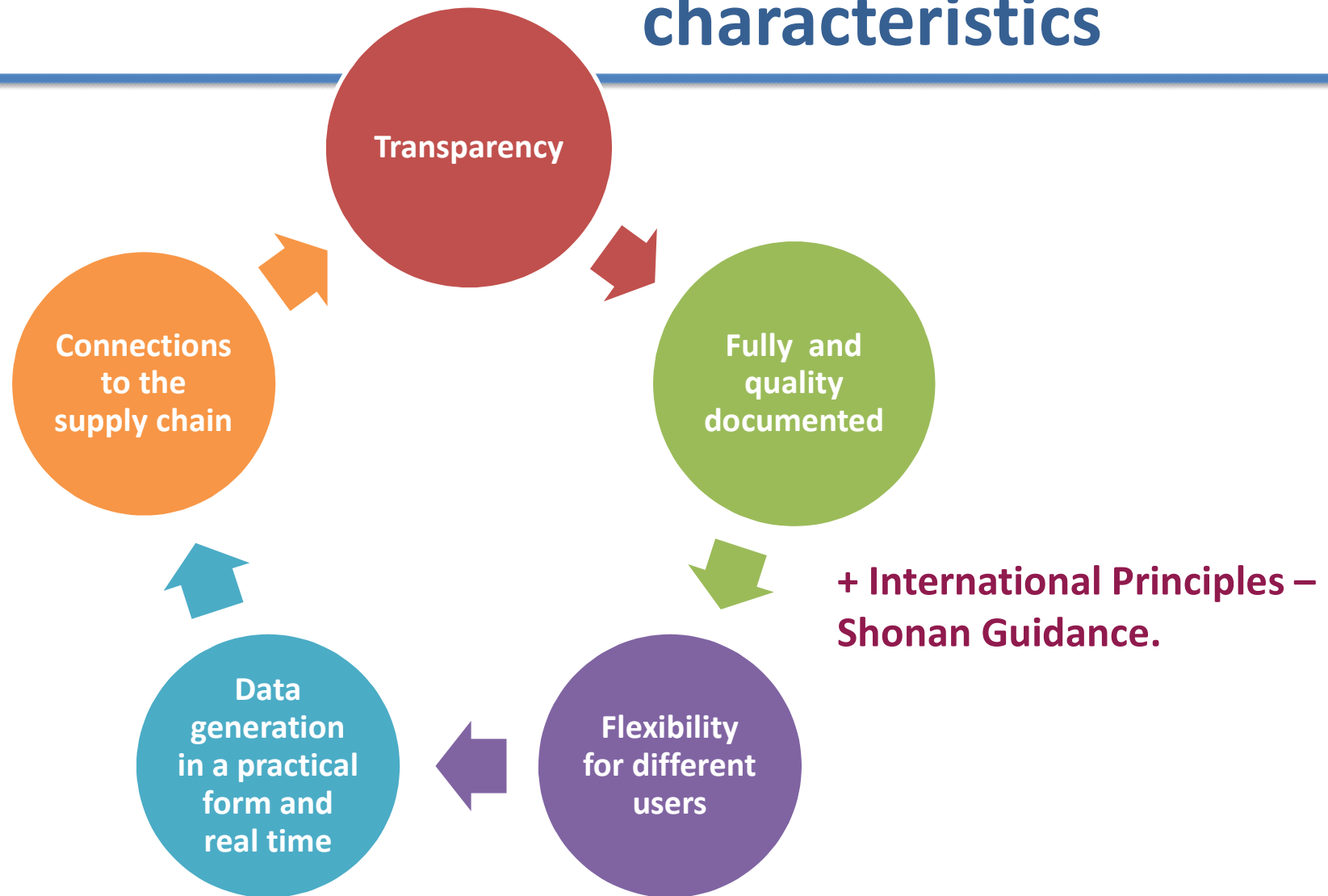
Using the Mexicaniuh platform –
example of dataset documentation

mexicaniuh[®]

Mexican LCI platform development timeline



LCI database characteristics



Dataset documentation

The dataset documentation is carried out through the following modules:

- Activity description
- Modeling and administrative



Activity description

Module includes:

- Activity
- Classification
- Geography
- Technology
- Time period
- Scenario Macroeconomic
- Message

Activity

Contains the identifying information of an activity dataset including name and classification. It includes:

- Activity Name
- Type
- Type of dataset
- Technical description
- Quantitative Properties of the Product or Process
- Type of Quantitative Reference
- Functional Unit or Other
- Activity Type

Dataset type

- Data are always entered at the unit process level. The database-generated, linked, single-output datasets are available both at the **unit process level** and as **aggregated (terminated) system datasets**
- **Unit process level** : The unit process (UPR) is the smallest element considered in the life cycle inventory analysis for which input and output data are quantified. The database contains data on a unit process level that are in general neither vertically nor horizontally aggregated.
- **Aggregated (terminated) system**: The product systems include all upstream activity datasets, as linked by the intermediate exchanges, and therefore system datasets do not themselves have any intermediate exchanges, only environmental exchanges crossing the system boundaries.

Quantitative properties of the product or process

- Additional quantitative specifying information on the good, service or process in technical term(s): qualifying constituent(s)-content and / or energy-content per unit, etc. as appropriate. Separated by commas.
- Note: non-qualifying flow properties, CAS No., synonyms, chemical formulas, etc. are documented exclusively in the "Flow data set".

Type of quantitative reference

Reference to “Flow” data set. Reference to which the magnitude of the inputs and outputs in the process relates.

This can be:

- Reference flow(s)
- Functional unit
- Other parameter
- Product period

The name of the quantitative reference flow must be identical to the name of the unit process it is referencing.

Functional unit or other

- The **functional unit of a product system** is a quantified description of the performance requirements that the product system fulfils.
- In a **comparative study, the functional unit has to be the same for all the compared product systems.**
- After identifying the relevant market segment and the obligatory product properties, the **functional unit can be defined and quantified in terms of the obligatory product properties required** in the market segment.

Activity Types

The special activity types are:

- ordinary transforming activity (default)
- market activity,
- I/O activity,
- residual activity,
- production mix,
- import activity,
- supply mix,
- export activity,
- re-export activity, or
- correction activity.

Activity Type: ordinary transforming activities

- All activities that are not of these special types are **ordinary transforming activities**. Transforming activities are human activities that transform inputs, so that the output of the activity is different from the inputs, e.g. a hard coal mine that transforms hard coal in the ground to the marketable product hard coal.
- Transforming activities are **here understood in the widest possible sense**, including extraction, production, transport, consumption and waste treatment activities, i.e. **any human activity where the intermediate output is different from the intermediate input**.
- The concept 'transforming activities' is introduced here simply to distinguish the further modelling and linking of activities these 'ordinary' activities from the market activities, production and supply mixes, import and export activities, and correction datasets.

Activity type: market activities

- In contrast, market activities do not transform their inputs, but **simply transfer the intermediate output** from a transforming activity to the transforming activities that consume this intermediate output as an input, e.g. transmission of electricity.
- Market activities typically **mix similar intermediate outputs** from different transforming activities. Market activities therefore supply consumption mixes of the intermediate outputs.

Classification^(a)

Contains classification pairs to specify the activity.

Two types of classification should be introduced to achieve compatibility with the ILCD and Ecospol formats

- The class that the activity belongs to within the specified classification system.
- Two levels of first and second classification are used.
- For ecospol, all activities are classified according to the International Standard Industrial Classification (ISIC), a classification system provided by the United Nations, with some additional subdivisions. This **classification is used to identify the responsibleecoinvent editor**. New, optional classification systems can be added on request to the ecoinvent database administrator

^(a) Note that classification, as used here in data management, differs from the use of the term in LCIA.

Classification: Ecospold

ecoinvent codes description

19a	Liquid and gaseous fuels from biomass
2011a	Manufacture of nuclear fuels and 2420a Smelting and refining
2710a	Manufacture of electric motors, generators, for liquid fuels
2811a	Manufacture of engines and turbines for liquid fuels, except
2815a	Manufacture of furnaces and boilers for liquid fuels
2815b	Manufacture of permanent mount non-electric household heating
3011a	Construction of drilling platforms
3510a	Electric power generation based on liquid fuels,
3510b	Electric power generation, photovoltaic,
3510c	Electric power generation, wind
3530a	Steam and air conditioning supply based on liquid fuels,
3530b	Solar collectors operation
4100a	Construction of factory buildings for the metal industry,
4220a	Construction of utility projects for electricity production,
4220b	Construction of utility projects for electricity production,
4290a	Construction of infrastructure for petroleum refining and di
4322a	Installation of solar collector systems

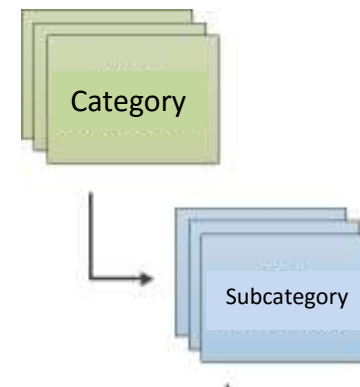
Source: <http://www.ecoinvent.org/support/faqs/data-providers-and-ecoeditor/what-is-the-isic-classification-field-for-to-which-isic-classification-code-does-my-dataset-belong.html>

Classification: ILCD

Uses category and subcategory designations

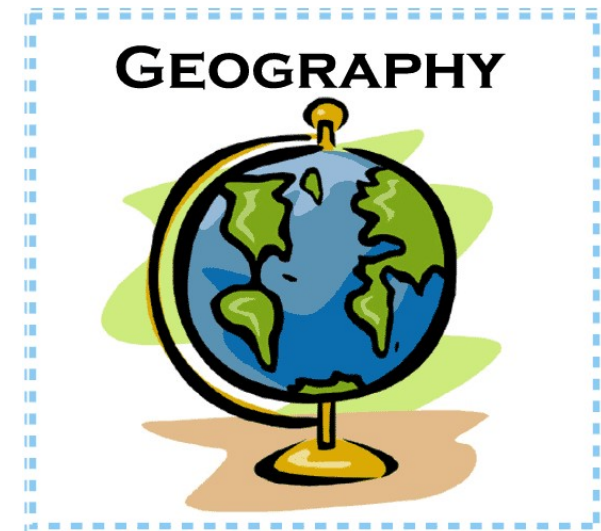
Example:

- Category: Energy carriers and technology
- Subcategory: Energetic raw materials, Electricity, Heat and steam, Mechanical energy, etc.



Geography

- The geographical location indicated is the location for which the dataset is intended to be valid.
- For markets (consumption mixes) containing several located activities, the geography describes the market boundaries, across which imports and exports are limited.



Technology

- The technology of the described activity.



Technology level



The technology level of a transforming activity is classified into one of these five classes:

- “New” for a technology assumed to be on some aspects technically superior to modern technology, but not yet the most commonly installed when investment is based on purely economic considerations.
- “Modern” for a technology currently used when installing new capacity, when investment is based on purely economic considerations (most competitive technology).
- “Current” for a technology in between modern and old.
- “Old” for a technology that is currently taken out of use, when decommissioning is based on purely economic considerations (least competitive technology).
- “Outdated” for a technology no longer in use.

Time parameters

Time period

The time period is the time period for which the dataset is intended to be valid.

Start of Period

- Start date for the time period that the data represent.

End of Period

- End date for the time period that the data represent.

Modeling and administrative indicators

Includes:

- Representativeness
- Review
- Data entered by
- Data generator and publications

Representativeness

- **Includes...**

- Activity Name
- Classification
- Type of Modeling
- LCI Method Principle
- Deviation of the modeling
- Sampling rate
- Sampling Procedure
- Extrapolation

- Comment on type of modeling and extrapolation
- Type of assignment
- Deviations from LCI type of assignment / explanations:
- Constants used in the modeling and deviation of the constants used
- Criteria count and cutting deviation criteria
- Principles of selection and consistency of data sources
- Deviation from data selection and combination principles explanations
- Advice for users
- Data integrity

Modeling conditions

- The system model describes how activity datasets are linked to form product systems.
- Unlinked unit processes, as supplied by data providers, always have an undefined system model.
- A specific system model, e.g. allocation by true value, with corrections for carbon, average current suppliers', is added by the database service layer, when applying the specific linking rules for this system model.

- Undefined
- Allocation by true value, with corrections for carbon, average current suppliers
- Allocation by carbon, average current suppliers
- Attributional, average current suppliers, individual allocation
- Allocation by dry mass, average current suppliers
- Allocation by revenue, average current suppliers
- Substitution, constrained markets and technologies
- Substitution, constrained supplies of by-products
- Manually linked



LCI method principle

- LCI method principle followed in the product system modelling, i.e.
 - regarding using average data (→ attributional = non-marginal) or
 - modelling effects in a change-oriented way (→ consequential = marginal)
 - Attributional
 - Consequential
 - Consequential with attributional components
 - Not applicable
 - Others

Type of assignment

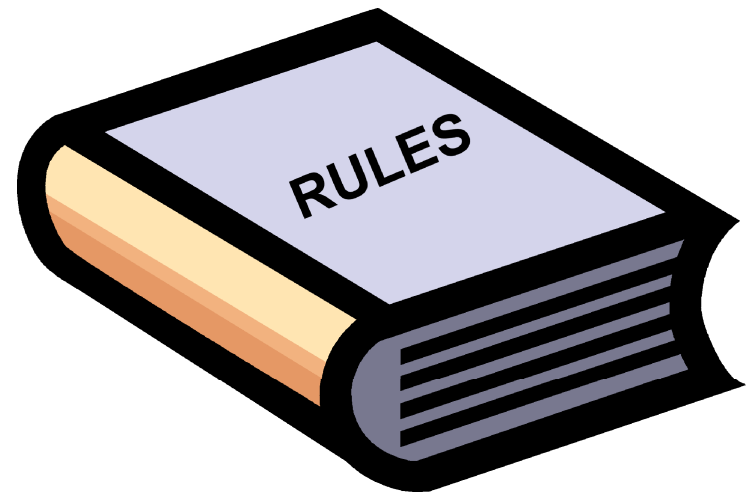
- Partitioning the input or output flows of a process or a product system between the product system under study and one or more other product systems.
- An allocation property is a property used for calculating allocation factors. The master allocation property is applied for all exchanges of the dataset except when a specific allocation property is available/specified for the exchange.
- For all the current system models using allocation, the allocation properties are added centrally by the database service layer during their calculation, overriding any entry in this field.

Type of allocation

- Allocation - 100% to main function
- Allocation - physical causality
- Allocation - market value
- Allocation - gross calorific value
- Allocation - net calorific value
- Allocation - exergetic content
- Allocation – mass
- Allocation - equal distribution
- others

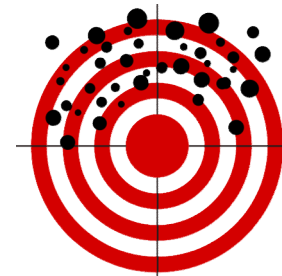
Criteria count

- Principles applied in data collection regarding completeness of (also intermediate) product flows , waste flows, and elementary flows.
- Examples are: cut-off rules; systematic exclusion of infrastructure, services or auxiliaries, etc.; systematic exclusion of air in incineration processes, cooling water, etc.

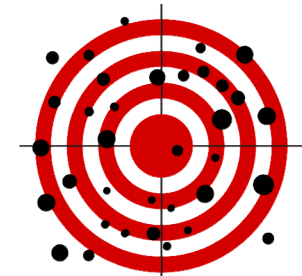


Principles of data selection and sources consistency

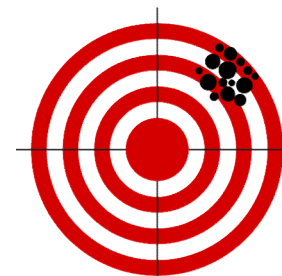
- Principles applied in data selection and in combination of data from different sources.
- Includes brief discussion of consistency of data sources regarding the data values, modelling, and appropriateness.
- In case of averaging: principles and data selection applied in horizontal and/or vertical averaging.



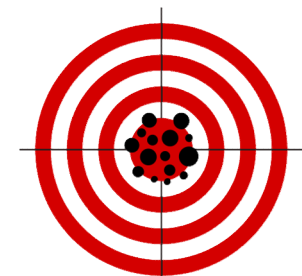
Unreliable & Invalid



Unreliable, But Valid



Reliable, Not Valid



Both Reliable & Valid

Dataset integrity

- Completeness of coverage of relevant product, waste and elementary flows.
- For LCI results and partly terminated systems, this means throughout the underlying product system model.
- "Relevant" refers to the overall environmental relevance, i.e. for unit processes including the upstream and downstream burdens of product and waste flows.

Can be edited in the following ways:

- all relevant flows quantified
- relevant flows missing
- topic not relevant
- no statement

- ...the ...



Last revision – date and type

Date on which the dataset was last reviewed

Type of Revision

- Dependent internal review
- Independent internal review
- Independent external review
- Accredited third party review
- Independent review panel
- Not reviewed

Data quality indicators

- **Data quality indicators** serve to provide the reviewed key information on the dataset in a defined, computer-readable (and hence searchable) form. This serves to support LCA practitioners to **identify/select the highest quality and most appropriate data sets**.
- **Indicator Names**: completeness, geographical representativeness, methodological appropriateness and consistency, overall quality, precision, technological representativeness, time representativeness
- **Allowable Values**: Very good, Good, Fair, Poor, Very poor, Not evaluated/unknown, Not applicable

Nomenclature, methodology, review/verification, documentation/reporting and quality compliance

Compliance of this dataset with the respective requirements set by the "compliance system" referred to.

The following designations can be used:

- fully compliant
- not compliant
- not defined



Data entered by

Includes:

Contact data: "Contact data set" of the commissioner / financing party of the data collection / compilation and of the dataset modelling. For groups of commissioners, each single organisation should be named. For data set updates and for direct use of data from formerly commissioned studies, also the original commissioner should be named.

Intended Applications: Documentation of the intended application(s) of data collection and data set modelling. This indicates / includes information on the level of detail, the specificity, and the quality ambition in the effort.

Data generator and publications

- Contains information about who collected, compiled or published the original data.
- May or may not be the same person as under 'DataEntryBy'.
- Furthermore, contains information about kind of publication underlying the dataset and the accessibility of the dataset.

Includes--

- Contact data
- Dataset version
- Permanent data set URL
- Copyright protected
- Registration number
- License type
- Access and use restriction

Copyright protection and others

- Indicates whether or not a **copyright exists**. Should be ticked “Yes” by default, except for sponsored datasets.
- **Registration number**: registration number assigned to the dataset
- **Access and use restriction**: possible access restrictions for the dataset.
- **License type**: indicates the type of license



Exchanges

- When you are going to introduce the exchanges to conform the dataset, you must first consider clearly establishing the relationship between the different activities, establishing an order for the introduction of the data.
- This means that if you are going to enter a dataset that contains other activities, you must first edit these (aggregation).



Third	Second	First
Electricity Mix, Peru	Electricity, by diesel	Waste treatment Construction of facility
	Electricity, combined cycle by gas	Waste treatment Construction of facility
	Electricity, conventional gas	Construction of facility
	Electricity, hydro	Construction of facility
	Electricity, wind	Construction of facility

Exchanges

- Flow Type
- Name
- Amount
- Unit
- Database
- Compartment

Flow Type

- **Flow Type:** intermediate or elementary
- **Input:** from environment for elementary flows or From Technosphere (unspecified) for intermediate flows
- **Output:** Reference Product or By-product for intermediate flows
- **Output:** to environment for elementary flows



Elementary Flows

- Elementary Flows: exchanges from and to the environment
- Exchanges from the environment are resources extracted and chemical reactants from the air (e.g. CO₂, O₂, N₂), water or soil that enter into a human activity or into biomass harvested in the wild.
- Also, land transformation, land occupation, and working hours are recorded as exchanges from (services provided by) the natural, social or economic environment.
- Exchanges to the environment are emissions to the different environmental compartments (e.g., air, water).

Database

- Create a new exchange or use one of the databases contained in the software

Databases:

- Ecoinvent
- ELCD
- Needs
- Bioenergiedat
- USDA_crop_data_1_1
- Undefined
- Mexicaniuh

Create intermediate flow

- **Name:** Name of the intermediate flow. Names of intermediate exchanges are spelled with lower case starting letter, i.e. 'lime', not 'Lime'.
- **Variable Name (exchange):** The variable name is a short name for this exchange, used when referring to this exchange in mathematical relations (formulas). This variable name will be used as a default variable name for all instances of the exchange.
 - Variables may contain characters, numbers and underscores (_). Variable names must start with a character (a-z).
 - Variable names are not case sensitive (calorific_value equals Calorific_Value).
- **CAS-Number:** Indicates the number according to the Chemical Abstract Service (CAS). The Format of the CAS-number is 000000-00-0 where the first string of digits needs not to be complete (i.e. less than six digits are admitted).

Create intermediate flow

- **Unit:** As far as practical, SI-units are applied, with the SI-prefixes (h, k, M, G, T, P).
Exceptions are:
 - The traditional measure “ton”, with the specification metric ton (= 1000 kg = 1 Mg), when used in the combination metric ton*km.
 - The traditional area measure ar (a), as in hectare (ha), which should not be confused with the SI-prefix atto- or the popular, Latin abbreviation for year.
 - Popular units for time (year, month, week, day, hour), written out fully, since multiples of the SI-unit seconds (s) appears awkward.Units are always in English.
- **Comment (exchange):** A general comment can be made about each individual exchange. This will appear as a default entry in the comment field of every instance of the exchange.
- **Classification:** Optional classification of the intermediate exchange.

Amounts and Mathematical Relationships

- The current value of the parameter. If the value can be calculated from a mathematical relation, this is indicated by a small fx in front of the value. The mathematical relation is shown and can be edited in a separate field.
- Mathematical relations (formula) can include references to values of flows, parameters or properties by variable names or the REF function. The mathematical relation is documented in the adjoining comment field.

Uncertainty

- Uncertainty information includes probability distribution functions and their parameters, and Pedigree Matrix data. The specific parameters depend on the probability distribution function.
- The choice of distribution has limited influence on the overall uncertainty of a product system, since the addition of a high number of independent variables, each with their distribution, will approach a result with a normal distribution.
- Additional uncertainty, based on data quality indicators, can be added automatically, but currently only when the normal and lognormal distribution functions have been selected.

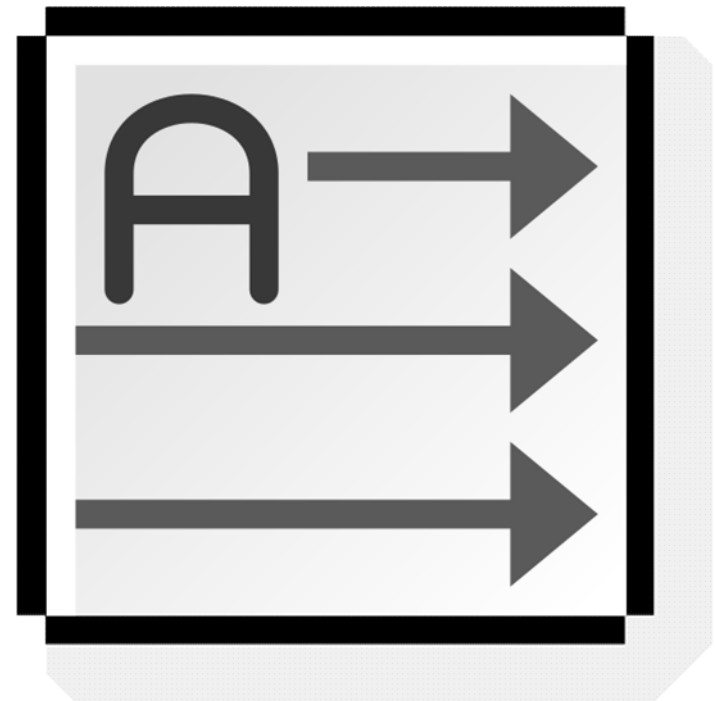
Pedigree Matrix

- Data quality indicators provides a qualitative assessment of data quality. This can be converted to a quantitative additional uncertainty, which can be added to the basic uncertainty.
- The pedigree matrix can be edited in Mexicaniiuh.
- Source: Andreas Ciroth. Refining the pedigree matrix approach in ecoinvent: Towards empirical uncertainty factors. GreenDelta, 2013

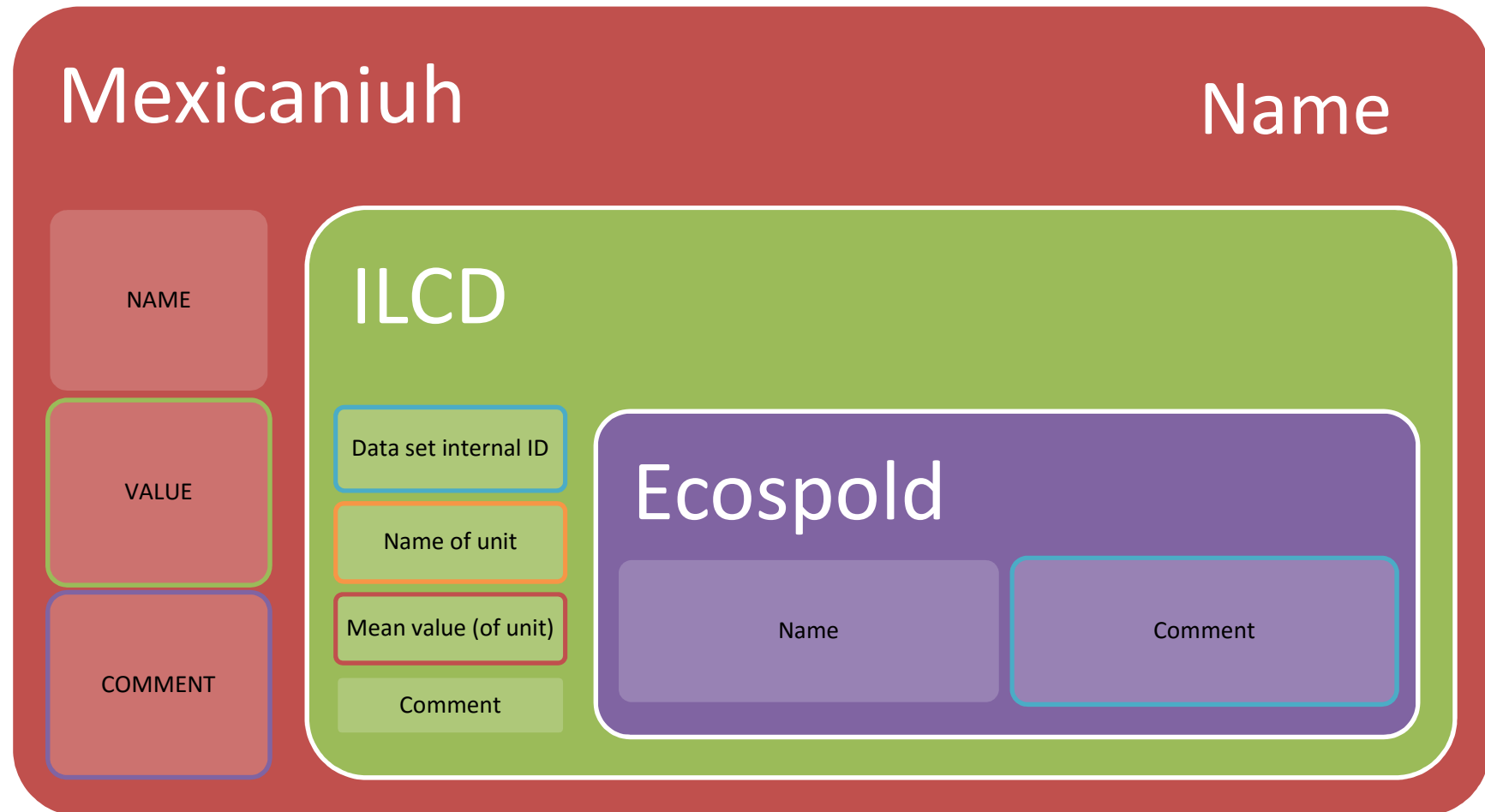
Indicator score	1	2	3	4	5 (default)
Reliability	Verified ³ data based on measurements ⁴	Verified data partly based on assumptions or non-verified data based on measurements	Non-verified data partly based on qualified estimates	Qualified estimate (e.g. by industrial expert)	Non-qualified estimate
Completeness	Representative data from all sites relevant for the market considered, over an adequate period to even out normal fluctuations	Representative data from >50% of the sites relevant for the market considered, over an adequate period to even out normal fluctuations	Representative data from only some sites (<<50%) relevant for the market considered or >50% of sites but from shorter periods	Representative data from only one site relevant for the market considered or some sites but from shorter periods	Representativeness unknown or data from a small number of sites and from shorter periods
Temporal correlation	Less than 3 years of difference to the time period of the dataset	Less than 6 years of difference to the time period of the dataset	Less than 10 years of difference to the time period of the dataset	Less than 15 years of difference to the time period of the dataset	Age of data unknown or more than 15 years of difference to the time period of the dataset
Geographical correlation	Data from area under study	Average data from larger area in which the area under study is included	Data from area with similar production conditions	Data from area with slightly similar production conditions	Data from unknown or distinctly different area (North America instead of Middle East, OECD-Europe instead of Russia)
Further technological correlation	Data from enterprises, processes and materials under study	Data from processes and materials under study (i.e. identical technology) but from different enterprises	Data from processes and materials under study but from different technology	Data on related processes or materials	Data on related processes on laboratory scale or from different technology

Format compatibility options

- 🔑 **Equivalent fields**
- 🔑 **Grouping**
- 🔑 **Both formats definition**



Equivalent fields



Grouping

Mexicanianuh

Geography

Latitude
Longitude

Description,
Municipality,
Hydric stress
index

ILCD

Sub-Location
2 fields lat-
long

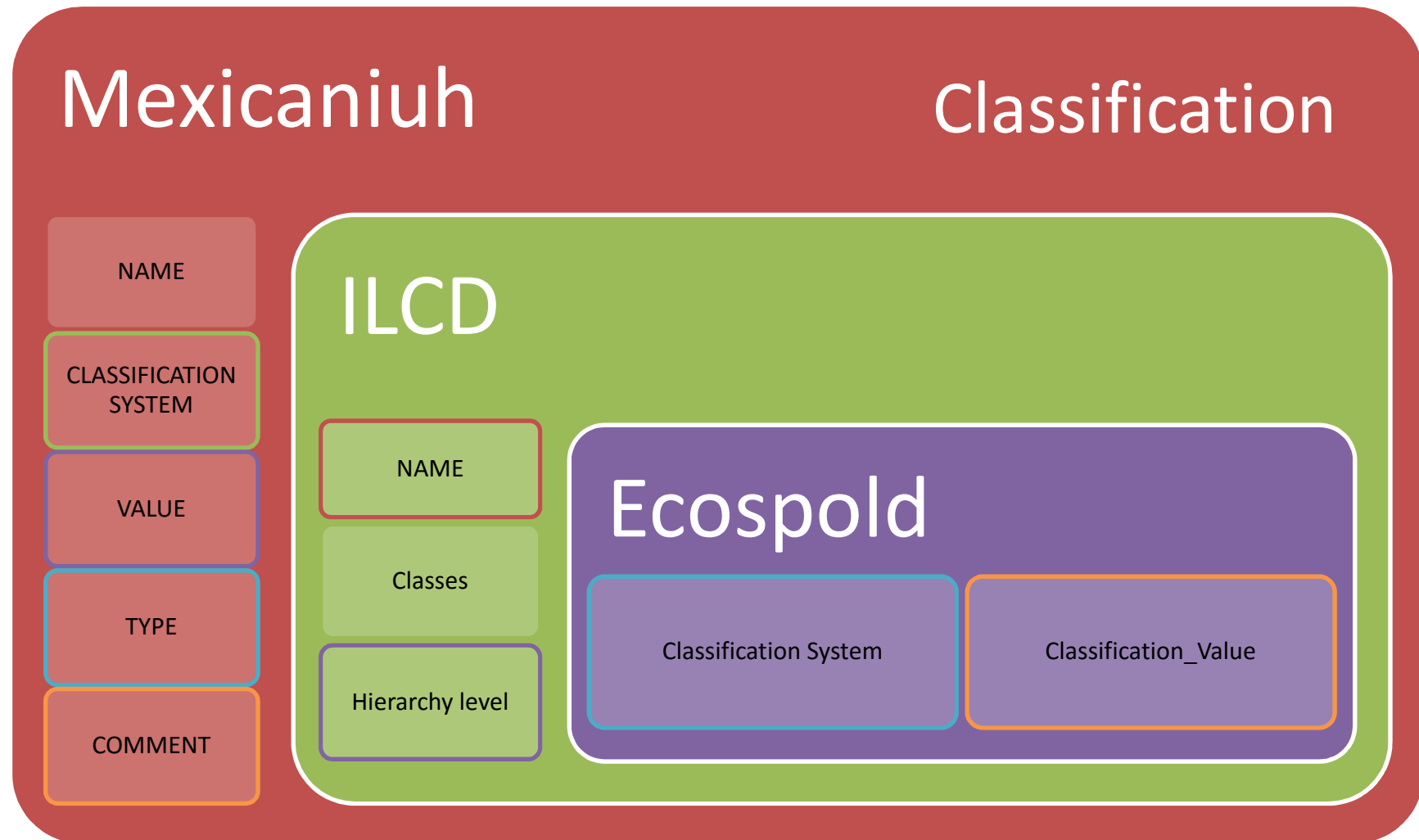
Impact
location

Ecospold

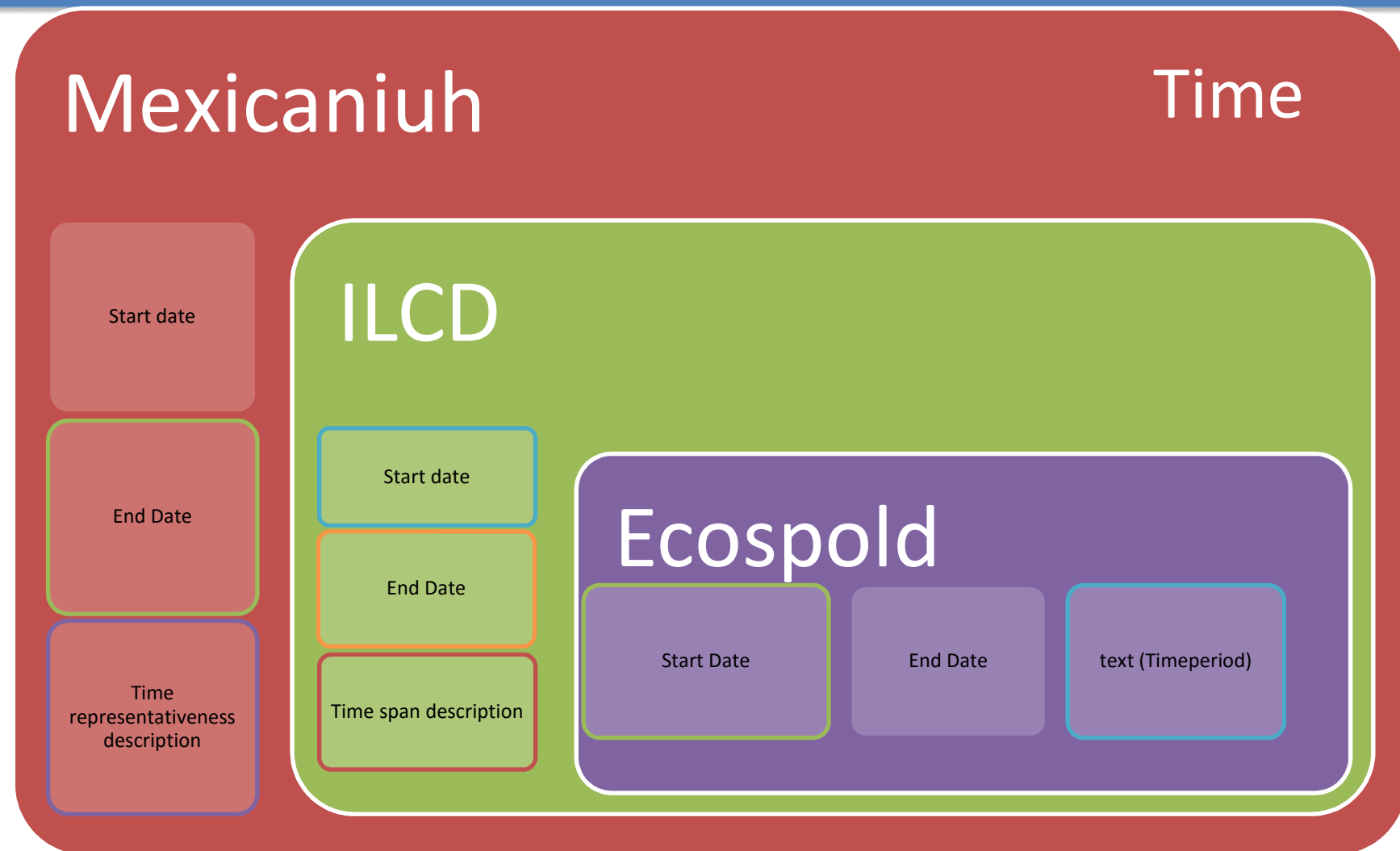
Shortname
1 field lat-long

Name

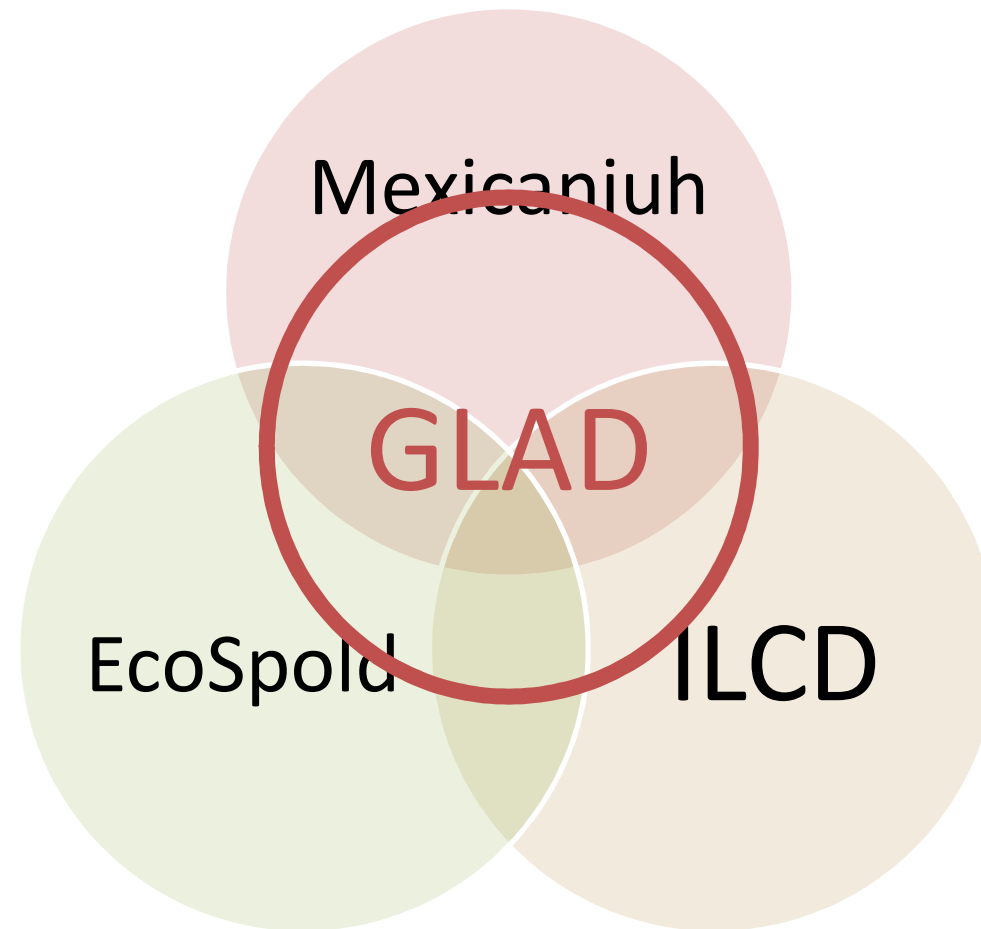
Both format definitions



Both format definitions



Database fields intersection



Format

- The platform allows to import / export through XML files to Ecospold and ILCD formats
- The Web application facilitates collaboration in the capture, revision and validation processes
- System security is managed through user profiles and password protection
- Compatible with most of the descriptors used in GLAD (In revision)

ILCD & EcoSpold

ILCD



Exercise

- Concrete blocks – data and documentation
- Filename: 2_Exercise_concrete block LCI_DB

Content development

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For helpdesk assistance –

- Become a Helpdesk member:
 - To access the Helpdesk exchange space (or any other Clearinghouse area), you will need to create an account in the Clearinghouse (www.scpclearinghouse.org):
 - Toward the bottom of the homepage you will see a button labeled 'Join the Community now'. Click on this link and open a form to allow you to create a login and profile.
 - Once logged in, you can modify or update your profile or explore the various SCP topic areas.
 - Go to 'About' and then to 'Exchange Spaces' where you will see Lifecycle Approaches in the drop down menu and one menu level below that is the Technical Helpdesk.
 - The Technical Helpdesk space will be available to any visitor, logged in or not. Without being logged in and joining the helpdesk space, any visitor can look at the various sections of the helpdesk space, but cannot contribute any content.
 - In order to become a member of the helpdesk space, on the homepage under the summary, is "Request space membership". Click here, you will automatically be given rights of a members to contribute content, since it is a public group.
 - For your next login, you go directly to <http://spaces.scpclearinghouse.org/> and then choose the Technical Helpdesk space in the dropdown list.
- Helpdesk Manager - Bruce Vigon, Consultant to SETAC,
- Helpdesk Coordinator – Kristina Bowers, UN Environment, Economy Division