Life Cycle Initiative

A joint organisation
of UNEP & SETAC

UNEP

SETAC

UNEP Shonan Guidance Principles put into practice

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UNEP Shonan Guidance Principles put into practice

The goal of finding, evaluating and generating consistent LCA Datasets

1. Motivation, the Shonan Guidance Workshop
2. UNEP/SETAC project: Shonan Database Conformance
3. An overview over Shonan Guidance Principles Conformance Criteria
4. What has been achieved? What‘s next?

The Shonan Guidance Workshop

The Shonan Guidance Workshop

About 50 recognised LCA experts came together in Shonan, Japan, for about one week in early 2011 in a SETAC “Pellston” workshop, to seek agreement on how to build and maintain LCA databases.
Results are summarised in a 160 page document.

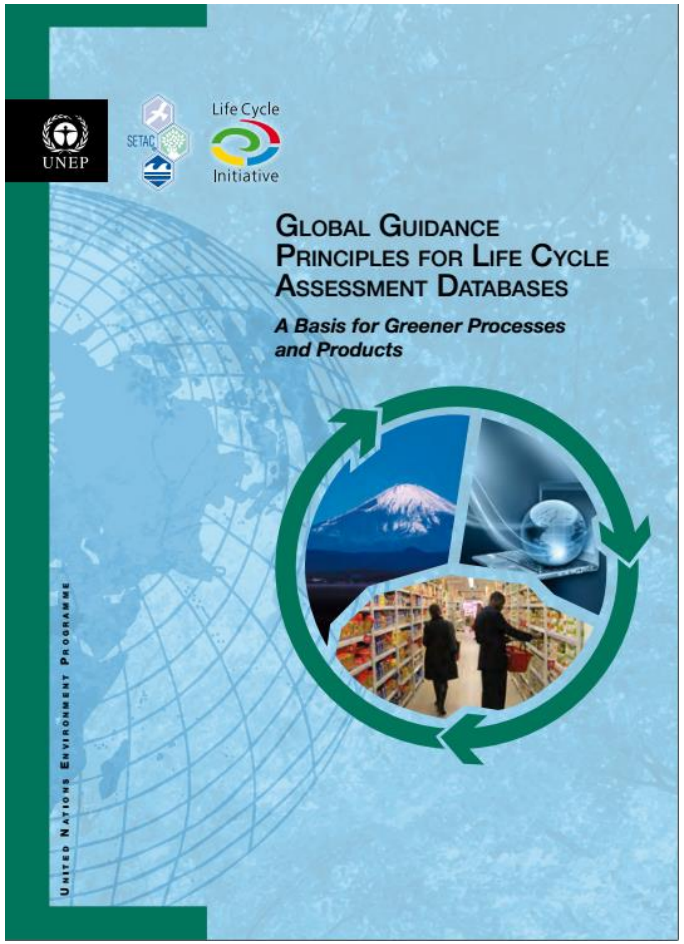
Content: Database management, Unit Process, Aggregated Process, Data Documentation and Management, Review, Cooperation, …

The Shonan Guidance Workshop, Motivation

Many different LCA databases exist, more are emerging; Databases are created and maintained with different concepts, following different principles

- → Datasets in databases “do not fit together”; this is not optimal and should be changed
- → Is there a common bases on how to create, maintain LCA databases; is there an identifiable good practice?

The Shonan Guidance Workshop, Report



http://www.unep.org/pdf/Global-Guidance-Principles-for-LCA.pdf

Shonan Database Conformance Project

→ Part of Life Cycle Initiative project flagship 2a

→ Several tasks; including:

- Creating an interactive map to visualise databases worldwide, with properties
- Development of conformance criteria
- Applying the criteria to existing databases

→ Other parts:

- Extending and strengthening a network of existing databases

Shonan Database Conformance Project, interactive map

http://www.lifecycleinitiative.org/networks/lca-databases-map/

Shonan Database Conformance Project, development of conformance criteria

Main aspect:

"extract" and coordinate criteria from the Shonan Guidance Principles document that can be applied for databases and possibly also for datasets in databases;

→ Condense the information; apply the criteria; make the information visible (e.g., for datasets available in a country, on a map)

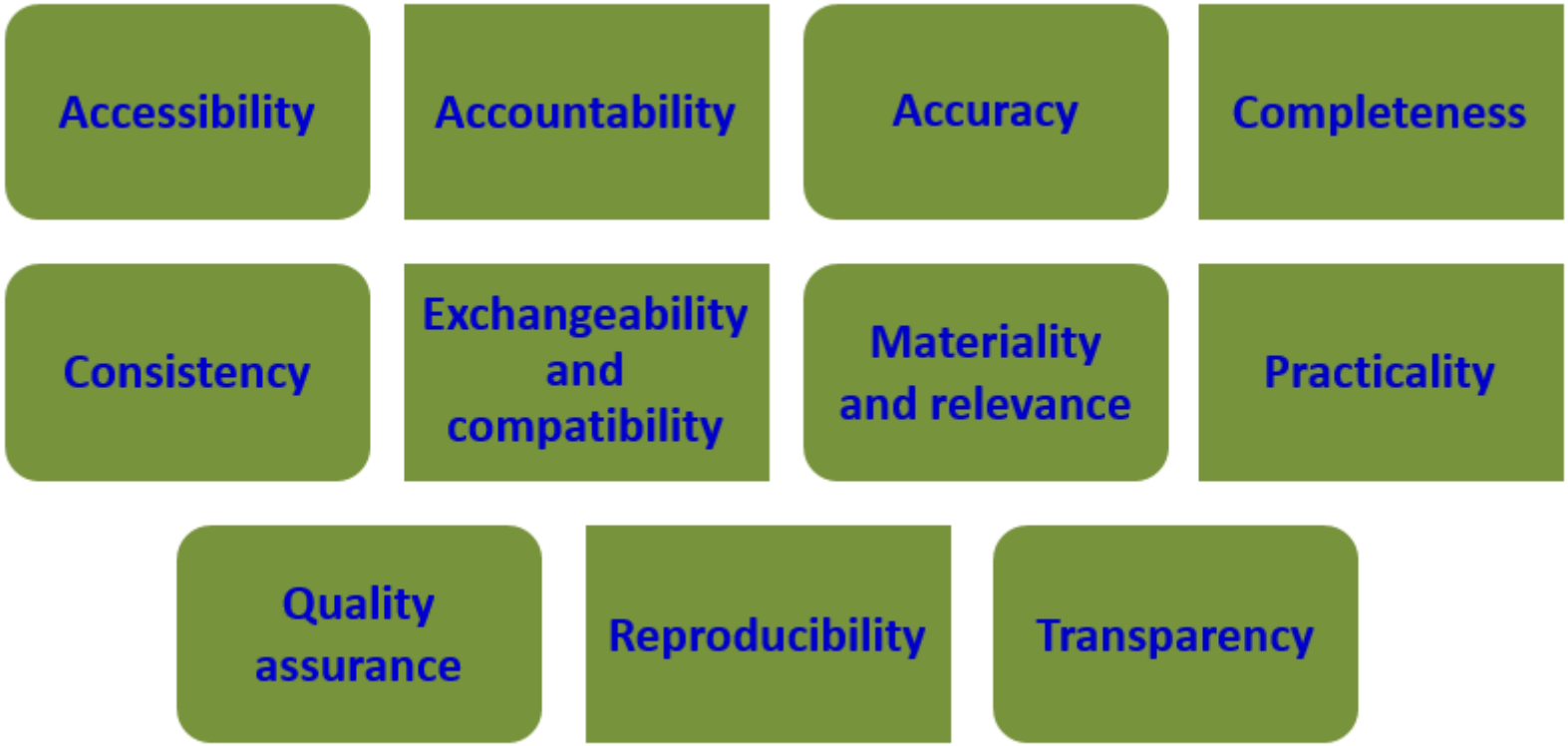
Shonan Database Conformance Project, development of conformance criteria

→ Condense the information; apply the criteria; make the information visible (e.g., for datasets available in a country, on a map)

This is obviously very useful but proposing criteria for assessing data sets which are able to discern data sets requires care.

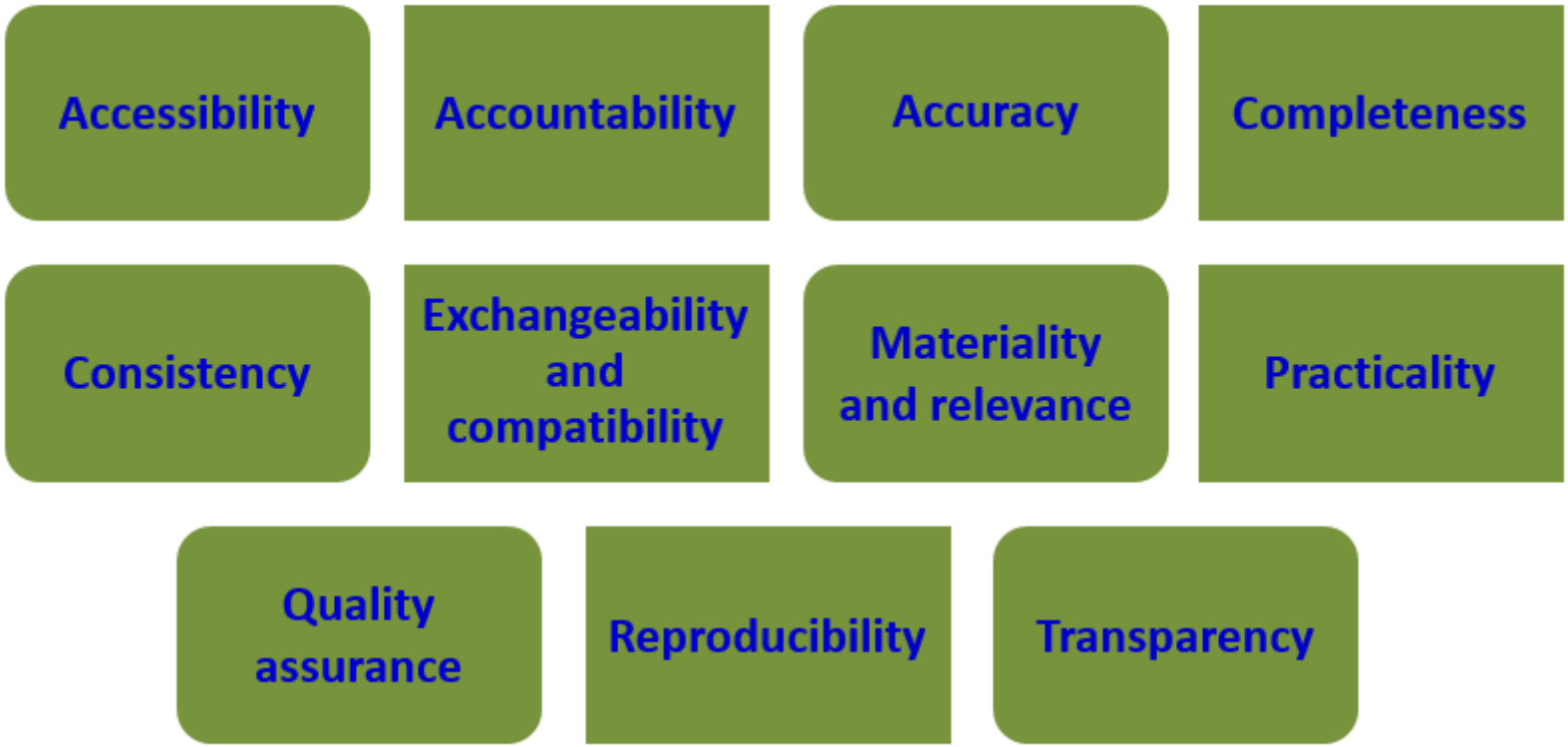
Shonan Database Criteria

Criteria / desirable features mentioned in the Shonan Report



Shonan Database Criteria

Criteria / desirable features mentioned in the Shonan Report



Scope not clear (database / dataset); only mentioned in the introduction; no distinction between nice to have / must criteria

Shonan Database Criteria
Principal structure

Criteria topic \ scope	A Database	B Unit Process Dataset	C Aggregated Process Dataset
1 Interoperability and Access	A1	B1	C1
2 Content & Content Quality	A2	B2	C2
3 Management	A3	B3	C3

Shonan Database Criteria
Criteria scores

Possible criteria values / scores:

- Yes/no
- Ordinal (i.e.: low, middle, high or similar, evaluated in points from 1..5, 1 very bad, 3 medium 5 very good)

Shonan Database Criteria
Criteria scores

Criteria values / scores relevance

- Most criteria are “evaluative”: a database needs to score above a threshold to be SGP conform
- Some criteria are “informative”: the score does not influence the SGP conformance; they do not have a threshold

Criteria overview

scope	criterion	Shonan conformance threshold	unit
data set, unit process	UP_1 data set goal and scope description available	yes	yes/no
	UP_2 suffiencient data set documentation	2	1...5
	UP_3 dataset quality assurance/validation performed	3	1...5
	UP_4 data set structure	yes	yes/no
	UP_5 uncertainties described		1...5
	UP_6 geographic context available		1...5
	UP_7 temporal context available		yes/no
	UP_8 product production volumes available		yes/no
	UP_9 technology level available		yes/no
aggregated data set	AP_1 data set goal and scope description available	yes	yes/no
	AP_2 sufficient data set documentation	2	1...5
	AP_3 dataset quality assurance/validation performed	3	1...5
	AP_4 data set structure	yes	yes/no
	AP_5 uncertainties described		1...5
	AP_6 geographic context available		1...5
	AP_7 temporal context available		yes/no
	AP_8 product production volumes available		yes/no
	AP_9 technology level available		yes/no
database	DB_1 harmonized lists	2	1..5
	DB_2 database protocol available	yes	yes/no
	DB_3 aggregated data sets clearly distinguished	yes	yes/no
	DB_4 supported ISO 14048 compliant data formats		yes/no

UP_2, Sufficient data set documentation

Unit values	1 sufficient documentation easily available for the data set (either within the dataset or in a separate document) for modelling procedure, including allocation, sources, system boundary setting, limitations, treatment of missing values; for sources also on the flow level; for allocated data sets, also the unallocated data sets are available 2 one of the aspects modelling procedure, allocation, sources, system boundary setting, limitations, treatment of missing values insufficiently described or not easily available for the data set, for sources also on the flow level 3 two of the aspects modelling procedure, allocation, sources, limitations, treatment of missing values insufficiently described or not easily available for the data set 4 insufficient documentation (three or more of the aspects modelling procedure, allocation, sources, limitations, treatment of missing values lacking; or all not easily available for the data set) 5: no documentation available
Shonan conformance threshold	2

AP_2, Sufficient data set documentation

Unit values	1 sufficient documentation easily available for the data set for modelling procedure, including allocation, sources, **aggregation procedure, aggregated processes,** system boundary setting, limitations, treatment of missing values; for sources also on the flow level; for allocated data sets, also the unallocated data sets are available 2 one of the aspects modelling procedure, allocation, sources, **aggregation procedure, aggregated processes,** system boundary setting, limitations, treatment of missing values insufficiently described or not easily available for the data set, for sources also on the flow level 3 two of the aspects modelling procedure, allocation, sources, **aggregation procedure, aggregated processes,** system boundary setting, limitations, treatment of missing values insufficiently described or not easily available for the data set 4 insufficient documentation (at least three of the aspects modelling procedure, allocation, sources, **aggregation procedure, aggregated processes,** system boundary setting, limitations, treatment of missing values lacking; or all not easily available for the data set) 5: no documentation available
Shonan conformance threshold	2

AP_2, Sufficient data set documentation

Unit values	1 sufficient documentation easily available for the data set for modelling procedure, including allocation, sources, **aggregation procedure, aggregated processes,** system boundary setting, limitations, treatment of missing values; for sources also on the flow level; for allocated data sets, also the unallocated data sets are available 2 one of the aspects modelling procedure, allocation, sources, **aggregation procedure, aggregated processes,** system boundary setting, limitations, treatment of missing values insufficiently described or not easily available for the data set, for sources also on the flow level 3 two of the aspects modelling procedure, allocation, sources, **aggregation procedure, aggregated processes,** system boundary setting, limitations, treatment of missing values insufficiently described or not easily available for the data set 4 insufficient documentation (at least three of the aspects modelling procedure, allocation, sources, **aggregation procedure, aggregated processes,** system boundary setting, limitations, treatment of missing values lacking; or all not easily available for the data set) 5: no documentation available
Shonan conformance threshold	2

DB_2, Harmonized lists

Description and motivation	Using different data sets from one database that do not contain the same set of elementary flows will rarely lead to a consistent life cycle model. Ideally, different databases use the same reference list. Also other database elements should be consistent (units, contact names, asf.). For the calculation result, harmonization of flows is most relevant. Finally, also the category system a database uses should be harmonized and consistent.
SGP reference	[1, p. 89]: "We recommend the use of a globally harmonized reference list of elementary flow names as the primary condition for interoperability of datasets and databases"
Unit	ordinal, 1-5

DB_2, Harmonized lists

Unit values	1 Harmonized lists for flows, units, contact names, process names, using either globally harmonized lists or lists where international accepted mapping files exist 2 Harmonized lists for flows, units, contact names, process names, database-wide 3 Harmonized lists for flows, database-wide 4 Harmonized lists for impact-assessment-relevant elementary flows, database-wide 5 No harmonized lists
Shonan conformance threshold:	2

Shonan Guidance Principles Criteria - What has been achieved and what‘s next

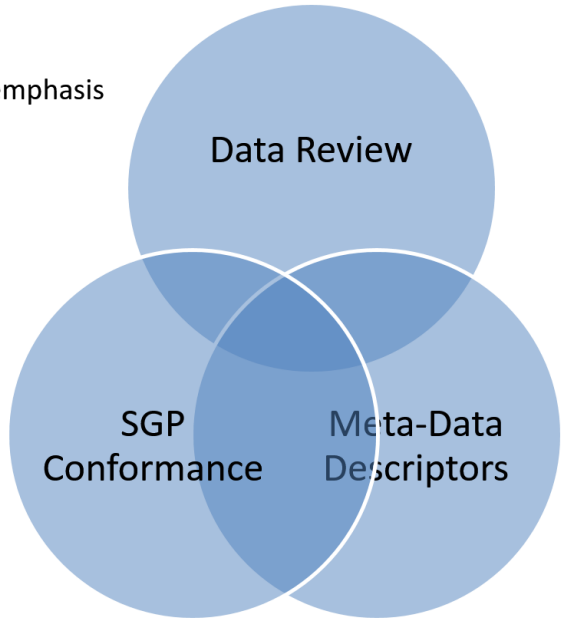
- First presentation, New Delhi, September 2014
- Second presentation including practical application, Barcelona May 2015
- Invited workshop after LCM 2015, September 2015, to discuss and refine the criteria with relevant experts and stakeholders
- Good consensus achieved for many criteria (esp. mandatory ones), discussion about some of the indicative criteria

Shonan Guidance Principles Criteria - What has been achieved and what‘s next

Hopefully upcoming: integration of the work in other activities of the intergovernmental forum on database interoperability

Documentation --

More overlap = greater emphasis



Shonan Guidance Principles Criteria - What has been achieved and what‘s next

Envisaged:

- Road-testing by different stakeholders (database providers +)
- Finalising the criteria, and
- Applying them, e.g. as a filter in data search engines

Shonan Guidance Principles Criteria – What's next-next

Possibly and hopefully, further increased interoperability of LCA databases.