Use of Generic Data in LCA-Studies

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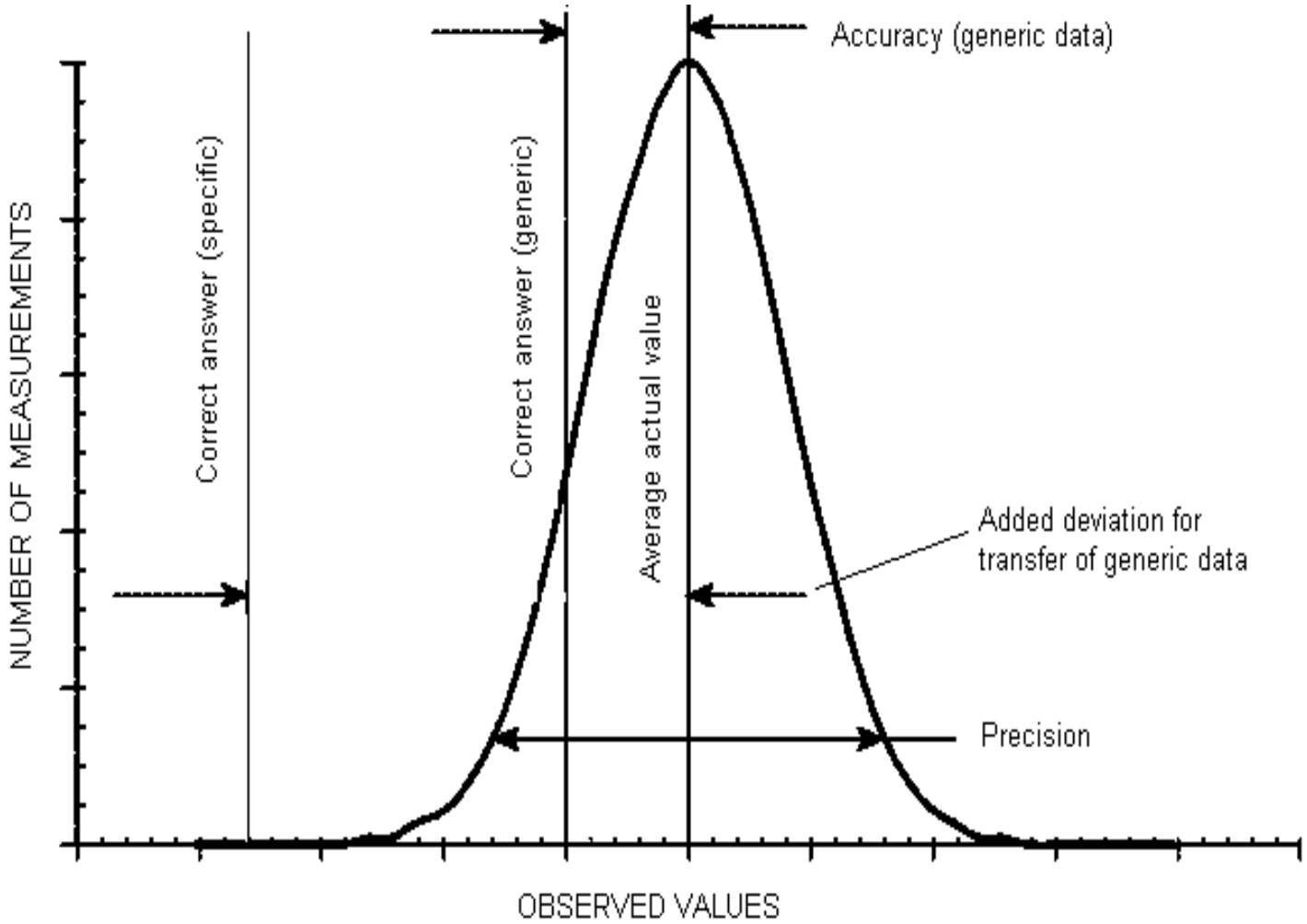
Use of Generic Data in LCA-Studies

- ➔ Motivation,
- ➔ Methodological Background,
- ➔ Approaches to use generic data from a practitioner‘s point of view,
- ➔ Conclusions: Preferable Attributes of Generic Data.

Motivation: A reason to use highly accurate and precise data

- ➔ Recent Amendment of the German packaging ordinance (of 2003) explicitly strives to favor “environmentally beneficial” beverage packages by levying compulsory deposits on specified packages
- ➔ The decision which package is supposed to be “environmentally beneficial” is based on the results of an LCA
- ➔ Decision will lead to investment costs of about 1 Billion Euro (rough estimate by Federal Ministries for Environment and Economics)

Accuracy and Precision of data



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Generic Data in General:

- ➔ Used to fill data gaps,
- ➔ based on average values,
- ➔ Representativeness depending on the goal of the study,
- ➔ Common for energy production, transportation and so on….

Data Quality in General (1/2):

- ➔ characteristic of data that bears on their ability to satisfy stated requirements (ISO 14040),

Data Quality in General (2/2):

➔ For understanding the reliability of study results,

➔ Correlation between data used and data needed: quality indicator,

➔ Lack of precision of data: Stochastic Modeling.

Data quality refers especially to the attributes of values used in the LCI, in addition there are:

Modeling Requirements in General:

➔ System as a whole has to be modeled correctly,

➔ Symmetry of used data

In order to prevent methodological errors.

Approaches to use Generic data from a practitioner's point of view

Data appropriateness in the context of the respective goal and scope of the study

Example 1: Analyzing complex products

➔ Generic data for unspecific processes:

Average values for material extraction processes, because they vary due to market.

➔ Generic data to model average scenarios in a specific area.

Approaches to use Generic data from a practitioner's point of view

Example 2: Establishing a background system for an industrial production process

➔ Moderate changes in an industrial process trigger changes in the entire life-cycle

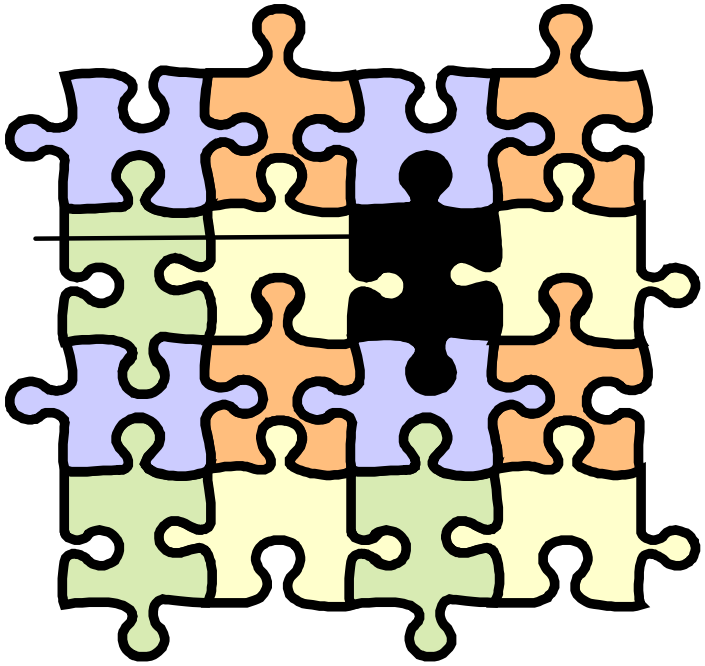
Average datasets for processes in the supply chain and for disposal processes.

➔ As the changes tend to be small, the demands on the average datasets are high

Approaches to use Generic data from a practitioner's point of view: Shortcomings

- ➔ Auxiliary processes for average conditions may be included, leading to limited adaptability
- ➔ In combination with poor documentation errors may occur because double-counting becomes unrecognizable
- ➔ Aggregation level also hampers a review process
- ➔ Necessary expertise prevents a widespread use

Preferable Attributes of Generic Data: Approaches to bridge a data gap

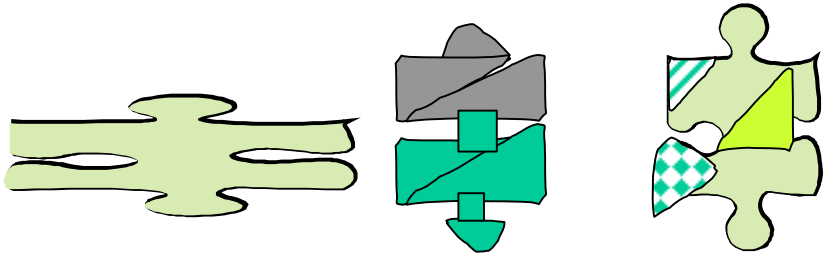


(a) Unfitting generic data

(b) Combination of segmented data sets

(c) Customized data set

Exchangeable Modules of Generic Data



Preferable Attributes of Generic Data: Summary

- ➔ Transparency is a prerequisite
- ➔ Documentation should enable the user to estimate the usability for their task
- ➔ Different datasets for a variety of temporal, geographical and further technological conditions necessary – may lead to rather extensive data bases where particular data sets are stored for a one-time application
- ➔ Alternative approaches: high degree of segmentation or customizable data sets

Thank You for Your Attention!

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