Dataset Documentation for ecoinvent database version 3

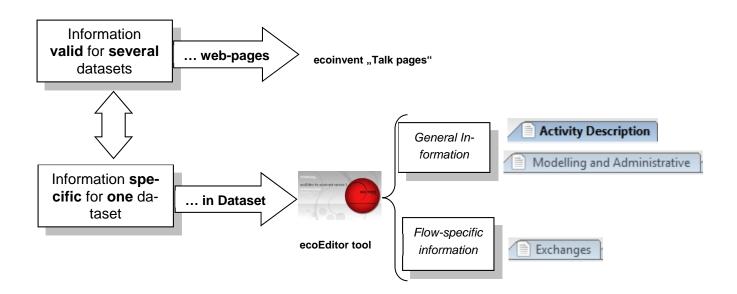[Version v1.0 / February 1, 2012]

One of the most important attributes of ecoinvent is its **TRANSPARENCY** – and one element of this transparency is the detailed and sound documentation of each dataset. For version 1 and 2 of ecoinvent, this documentation was in the form of large reports; available on the website of the database.

For version 3, these report structure is abandoned; instead, the reporting is done partly in the datasets, partly on web-pages with the same structure as the ISIC activity classification used newly in ecoinvent.

This chapter describes how the documentation shall be distributed among the various comment fields in the ecoEditor and the superordinate web-pages – the ecoinvent "Talk pages".

Basic principle:

1.2 Documentation in the dataset itself (via ecoEditor tool)

1.2.1 Activity Description Sheet

Information that concerns the construction of the inventory (details about the Functional Unit, background, etc.) shall be entered in the *General Comment* field. Actually, this field can be compared to the abstract of a scientific article – i.e. the field should offer to the user a first, rough overview of the dataset.

Please **start** the text **always with** "This dataset represents [the production]/ [the service of] ...."

A detailed description of the system boundaries (of the unit process) shall be included into the fields *Included Activities Start* and *Included Activities End*. A default wording for these two fields is suggested in the help texts for these two fields (see help file in the ecoEditor), resp. in the following examples.

Included Activities Start:

general: Similar to the help text in the ecoEditor - i.e. "From reception of [raw materials], at the factory gate."

➔ *Example*: From reception of ethanol and acetic acid at the factory gate.

service activity (e.g. injection moulding, packing, sheet rolling, etc.): Describing the initial state of the material transformed by the activity - i.e. "[Service activity] process starting from [material concerned], ev. [initial state]".

➔ *Example*: Packing process starting from clay, unpacked.

agricultural datasets: Describing what is the starting point of the "plant/animal" that the dataset deals with - i.e. "From [initial state], and/or [starting activity]".

➔ *Example*: From sowing of wheat seeds.

Included Activities End:

3 elements shall be taken into account: (i) what is the last activity covered resp. what is the point of delivery of this dataset? / (ii) what activities are included (and not obvious from the name of the activity) / (iii) what activities are intentionally excluded from this activity (Among other things, if the activity is a service like e.g. spinning of bast fibres, that does not include the product used in the process (i.e. the bast fibres), this information will be included here).

Please USE THE FOLLOWING ORDER for adding this information - by using the here suggested starting words for each part:

(i)   "This activity ends with/at ...." for the last activity covered;

(ii) "The dataset includes ..." for the included activities / production steps;

(iii) "The dataset doesn't include ..." for the intentionally excluded elements!

Synonyms given to the reference product have a special field, and they can be very useful in terms of dataset searching.

Description of the production technology modelled in the inventory as well as information regarding reserves and resources shall be included in the *Comment* field of the *Technology* part. Corresponding

references shall be added also in this **Comment** field, using the available function "Add Text", first to enter the title "References", then again to enter the actual list of references cited in the text.

Time validity of the inventory shall be documented in the the **Time period** part. (*Caution:* the fields "start of period"/"end of period" are filled at the moment of the creation of a dataset; these fields can't be changed afterwards!) Additional information regarding this temporal validity (i.e. restricted or different time validity of some flows) could be documented in the **Comment** field of this part.

Outlook: the fields **General Comment**, **Dataset Icon**, **Comment** (**Geography**) and **Comment** (**Technology**), can also stock images.

1.2.2   Modelling and Administrative Sheet

Extrapolations that concern the whole inventory (i.e. geographical or temporal extrapolations: the data used for the creation of an US dataset are RER data), shall be entered in the **Extrapolation** field, under **Representativeness**.

(*Caution*: extrapolations concerning individual exchanges only shall be documented in the comment field of the respective flow).

If the inventory has been published, the publication details shall be included in the **Published source field**. Such a publication has to refer to the complete inventory, not just to some flows. In the latter case, the documentation is done in the respective flow (see chapter 1.3 below).

> If a publication is not listed, it can be easily created and added to the list of publications by creating a respective Source Master Data entry. Please always be careful and pay attention when entering Master Data. Only do it when you have thoroughly checked that the information you want to include does not appear on the provided list!

1.2.3   Exchange Sheet

On this page **specific information** concerning each single input and output flow (reference product, by-product and waste, intermediate exchanges and exchanges to/from environment) shall be entered. Each single flow has for this a **Comment** and a **Source** field.

For the *reference product(s)*, the **Comment** field shall contain a description of the reference product, general information about it and/or information regarding its use(s). For all *other input and output flows*, this **Comment** field shall contain information describing where the reported amount is coming from (e.g. estimations done, approximations, calculations, assumptions used, etc.). Start the description with one of the following key words:

- *Measured Value*: use this term when the value has been measured;
- *Stoichiometric calculation*: use this term when the value has been calculated, based on the stoichiometric flows that take place;
- *Calculated Value*: use this term for all other types of calculations (e.g. calculation of an emission, based on the input amount of some key inputs);
- *Literature Value*: use this term, when the value is taken 1:1 from a literature source without any further indication concerning the origin of the value;
- *Estimation*: use this term when the value has been estimated - based on literature, but also based on personal communication etc.;
- *Proxy*: use this term when a different process is used instead of the actual (input) flow;

In the *Source* field, the corresponding bibliographical source can be selected from a list. If more than one bibliographical source have been used for the same flow, you shall list all further sources under the heading "Further references" at the end of the entry in the *Comment* field [-> please use "Ctrl+Enter" to add line breaks for formatting]. If the source you want to cite is not in the Master Data list, you can create it, as has already been mentioned (see above).

The *production volumes* of intermediate outputs have a special field. Similar to all input and output flows, there is also a *Comment* field for the production volume. This field shall contain information describing where the reported production volume value is coming from (e.g. estimations done, approximations, calculations, assumptions used, etc.). Start the description with the appropriate key word from above list !

> Caution: *Formula*, *CAS-number* and corresponding *synonyms* of all the *other input and output flows* (Synonyms of the *reference product(s)* are treated in the Activity Description sheet – see above !) are displayed in special fields in this sheet. However, these fields can only be accessed when the Master Data for the flow is created; and no changes can be done later in the ecoEditor tool.

1.2.4 Exchange Properties Sheet

Fixed properties (like e.g. chemical or physical properties as the molecular weight, the boiling point, or the melting point) shall be added as properties directly *when creating the Master Data entry*. Like this, they are included automatically each time the exchange is used (*Caution*: these fields can only be accessed when the Master Data is created, and no changes can be done later in the ecoEditor tool).

Properties that are **only valid in one activity** can be defined or changed in the Exchange Properties sheet. If a property type is not available in the existing list, it can be added (creating property type Master Data). In the same way, new units can be defined for the new properties, and added to the list of existing units. If new properties or units are added, they should be explained in the provided Comment field. Please always be careful and pay attention when entering Master Data, and do it only when you have thoroughly checked that the information you want to include does not appear on the provided list.

1.3 Documentation on the ecoinvent "Talk pages"

What shall be put on the "Talk pages"? Background information concerning several datasets and not directly required to judge the appropriateness of the dataset for a specific application, or extensive descriptions of flow calculations can be sent in an independent document to the editor.

What happens with this information? It will be stored by the (for your datasets) responsible activity editor in the dedicated part of the ecoinvent "Talk pages" as a **pdf file**. There are no specific formatting requirements from the ecoinvent Centre for such documents – apart from the fact that all documents shall be written in English.

Please give this document a clear name – as the document name shall be used for referencing in individual fields of a dataset (see below); and make sure that the appropriate fields in the ecoEditor tool are referring correctly to this external document:

Modelled, based on "[name of document]" – pdf-document on the dedicated talk page of ecoinvent (www.ecoinvent.org/documentation).