

Editors & Reviewer's Manual for LCADB.sudoe®



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Intellectual property:

Sostenipra - Sostenibilitat i prevenció ambiental Research group.
(www.sostenipra.cat)

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Table of contents

Introduction.....	1
1) Registering as new user	3
2) Assigning Process to Review - editor task	4
3) Reviewing a Process - reviewer task	4
Validation - Editor task.....	5
4) Processes Folder	7
Process Status	7
5) Manage Subtypes.....	8
6) References.....	8
Appendices	9
Appendix A: List of Editors & Reviewers.....	10
Appendix B: Collaborators.....	13
Appendix C: Checklist.....	15
Step 1: Information of the process - checklist	15
Step 3: Administrative information - checklist	18
Step 4: Data Sheet - checklist.....	20
Step 5: Process Status.....	21

Abbreviations

LCI	Life Cycle Inventory
LCA	Life Cycle Assessment
ELCD	European Reference Life Cycle Data System

Introduction

This manual is a guideline for uploading a Life Cycle Inventory (LCI) analysis using the Life Cycle Assessment Data Base tool, which can be found in the following site: <http://lcadb.sudoe.ecotech.cat/>

LCADB.sudoe®

An LCI can be best described as a model of one or more product or process systems¹. A LCI involves creating an inventory of flows from and to nature for a product system and it is the first step when carrying out a Life Cycle Assessment (LCA). Inventory flows

include inputs of water, energy, and raw materials, and releases to air, land, and water, as well as other environmental exchanges at every relevant stage (phase) in a product's life cycle.

The database format presented in this document was developed by Sostenipra Research Group (<http://www.sostenipra.cat>) in partnership with the Universidad de Aveiro, Ecole des Mines d'Alès, Montpellier SupAgro, INRA, UdG, IRSTEA and CATAR Agro Resources. The expected result of this project is to create an online and free LCA database with all inputs, outputs and flows from different unit processes for its usage in other projects and to have a compatible database with other tools such as the European Reference Life Cycle Data System (ELCD) and ECOINVENT. The main objective of this project is to develop a common database for LCI in the SUDOE region (Spain, Portugal and France) useful for projects and collaboration between the participant institutions. There are 9 topics covered in the database:

- Agriculture
- Construction
- Energy Production
- Manufacture process
- Services
- Transport
- Use and Consumption
- Waste treatment
- Water
- Forest and Forestry products

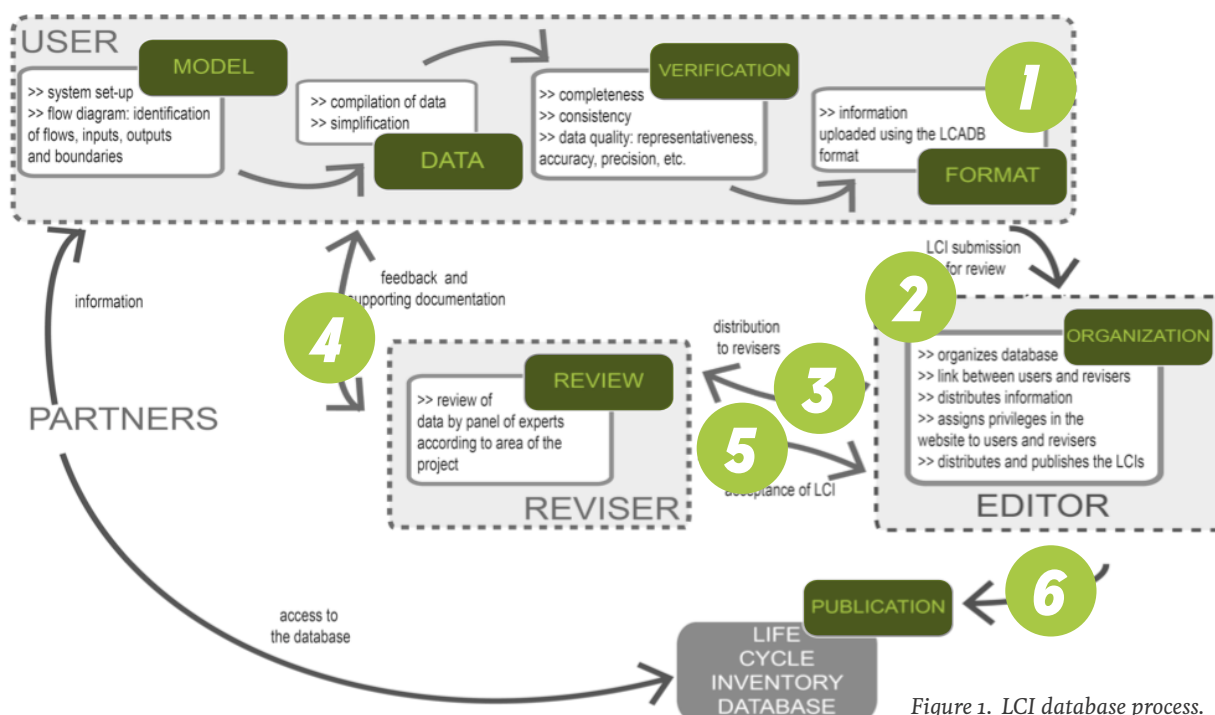


Figure 1. LCI database process.

1 First the user creates an inventory model:

- **MODEL:** A flow model of the technical system is made using data on inputs and outputs. The flow model is usually illustrated with a flow chart that includes the activities that are going to be assessed in the relevant supply chain and gives a clear picture of the technical system boundaries.
- **DATA:** The next step is to collect the input and output data needed for the construction of the model for all activities within the system boundary (including supply chain activities), the data should be relevant for the study and simplified when possible.
- **VERIFICATION:** When the LCI is completed, meaning all the data is compiled, it should be verified in terms of its consistency with the methodology and with the goal/scope of the overall project. Data quality should meet basic statistical requirements such as representativeness, accuracy, precision / uncertainty and completeness of the inventory².
- **FORMAT:** The data is uploaded in the online format through the website <http://lcadb.sudoe.ecotech.cat/>

It is important to notice that the choices and assumptions made during system modeling and the chosen data for the LCI, including the system boundaries and processes within these boundaries, are often decisive for the result of a LCA study. This is the reason why databases providing high-quality (e.g., transparent and consistent) data of frequently used commodities for LCI are helpful and required, particularly if one wants to apply LCA on a routine basis and to attain characteristics on the LCA such as reproducibility, information and data availability, precision and robustness, practicality, communicability, cost-effectiveness, coherence with other instruments.

2 The database is uploaded into the system and sent to the editor of the topic with the aim to be reviewed. The editors of the project organize the different LCIs, as they are the link between the reviewers and users. A list of the editors per topic and the reviewers can be found at the end of this document in the APPENDIX A.

3 The reviewer receives the information and evaluates the content of the inventory; the points to be assessed are: complete submission of the data in each step (i.e. all required fields completed), nomenclature according the elemental flows from the International Reference Life Cycle Data System (ILCD - [2]), and the correct and sufficient information for the LCI.

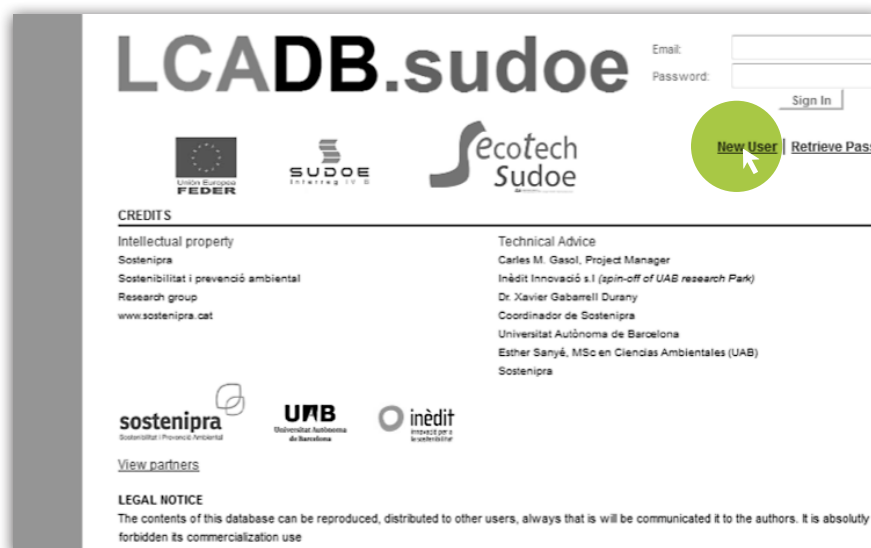
4 The reviewer should contact the database author, using the contact data provided in the format, in order to give feedback or in the case that further documentation and complementary information is required.

5 The reviewer sets the status of the process: *accepted*, *need to be improved*, *denegated*. In any case the reviewer notifies the editor about this decision.

6 The editor makes the inventory accessible to the partners and other users of the Life Cycle Assessment Data Base tool. It takes into consideration the user's request regarding the publication of the database (public, public for partners, private, etc.)

1) Registering as new user

Go to the website: <http://lcadb.sudoe.ecotech.cat> and click on “New User”.



Then, register the user’s data in each field and click on the sign up button.

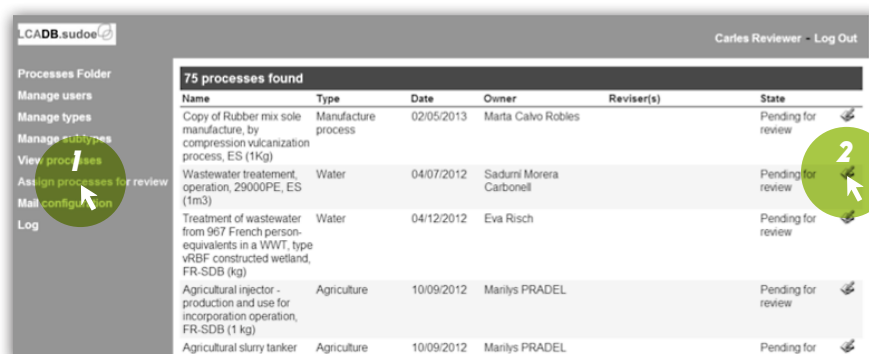
Once the account is created a confirmation email will be sent to the address registered in order to activate the account.

Use the email and password registered to log in into the system. The webmaster of the system will assign privileges to the user as editors, reviewers or collaborators in order to access to all the processes of the expert’s area.

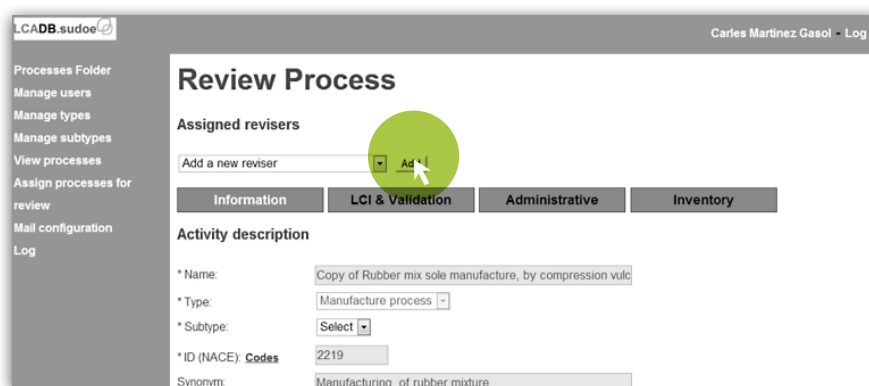
2) Assigning Process to Review - editor task

Once logged in on the LCADB.sudoe® website, a list of the datasets to be reviewed can be assigned to reviewers by clicking on the “assign process for review”.

In assign process for review, the editors can observe all the datasets pending for review in each area of knowledge (type).

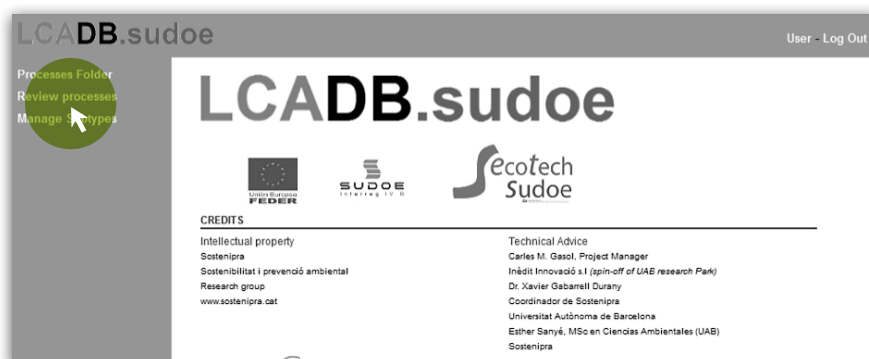


Click on the edit icon in order to access the process to be reviewed. The editor can decide which of the reviewers should review the datasets.



3) Reviewing a Process - reviewer task

Once logged in on the LCADB.sudoe® website, a list of datasets to be reviewed can be observed by clicking on the “review processes”.



Click on the edit icon in order to access the process to be reviewed.

Each Inventory has 4 sections:



- 1. INFORMATION:** includes all the relevant information of the project such as name, type, ID (NACE code), system boundaries (included and excluded activities), this will be an overall reference for the process.
- 2. LCI & VALIDATION:** includes information about the methodology and approach used in the database
- 3. ADMINISTRATIVE:** includes the contact details of the author for the purpose of giving feedback, asking for supporting documentation or complementary information.
- 4. INVENTORY:** includes all the flows and components of the process

By clicking on the tabs it is possible to access the information uploaded by the user. The reviewer will be able to access the data provided by the user but will not be able to modify it. All the improvement notes and questions must be done in the Check list document.

Finally the Checklist document has to be sent to the editor for his validation.

A checklist of all the parameters per section can be found in the *Checklist* section. This will be helpful when assessing each parameter, making notes and sending feedback to the user (in case it is necessary).

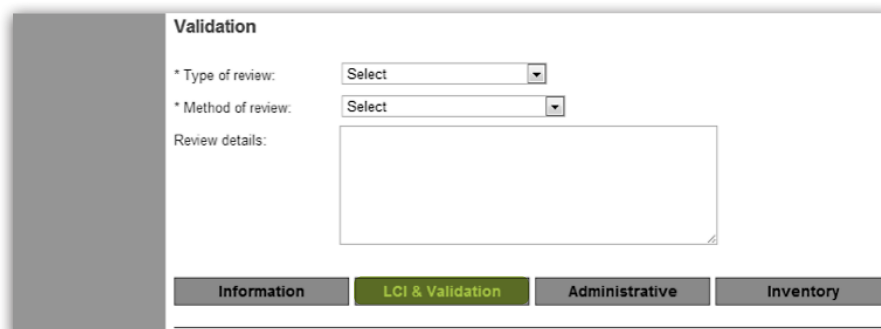
The LCI should be assessed in the following parameters:

- Completeness of all required fields
- Validity of data
- Nomenclature according the elemental flows from the International Reference Life Cycle Data System (ILCD - [1])
- Clear and sufficient data for each step

Validation - Editor task

After completing the assessment of the LCI, the EDITOR should upgrade the validation status of the process.

This can be done in the LCI & VALIDATION tab.



Field	Description	Required/ Optional
Type of Review	Select the type of review conducted to validate the data: <ul style="list-style-type: none"> - Dependent internal review - Independent internal review - Independent external review - Accredited third party review - Independent review panel - Not reviewed 	*Required
Method of Review	Select the method of review conducted to validate the data: <ul style="list-style-type: none"> - Validation of data sources - Sample test on calculations - Energy balance - Elemental Balance - Cross-check with other source - Cross-check with other dataset - Expert judgment 	*Required
Review Details	Detailed description of data or procedures to review for the validation of the data sheet	Optional

PAY ATTENTION EDITOR! +

In this section, definitions that can help to decide which type of review it has, are attached

Dependent internal reviewer: A Reviewer recognized by the system operator, who is involved in the study to be reviewed, or quantitatively relevant parts (e.g. background data) .

Independent external reviewer: This is the reviewer, recognized by the system operator. They are not involved in the definition or development of the reviewed case and are therefore independent. This includes both the reviewer as a person and their employer as an organization. They are external, and are not part of or have had relevant relation for at least one year to any organization that performed, commissioned, financed or otherwise had relevant influence on the study to be reviewed (i.e. is external). The phrase relevant relations includes financial, legal or similar ties that would result in a conflict of interest such as subsidies, joint-venture partners, development partners, sales partners, or any other strategic cooperation partners.

Independent internal reviewer: A Reviewer recognized by the system operator, who is not involved in the study to be reviewed, or quantitatively relevant parts (e.g. background data) but can be part of the organization that performed or commissioned the LCA work.

Independent review panel: A panel of independent external reviewers with at least two members in addition to the panel chair. Each of them has to guarantee an independent review of the study.

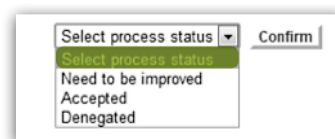
Third party: A person or body that is recognized as being independent of the parties involved, as concerns the issues in question [ISO 14025:2006]. For example an interested party, other than the commissioner or the practitioner of the study. [ISO 14044:2006].

Process Status

After the review is made for each of the steps in the LCI, the reviewer should either contact the user for feedback, correction purposes or asking for further information and complementary documentation.

After the process review is completed the reviewer should set the process status outcome by using the menu located at the bottom of the website. The options are:

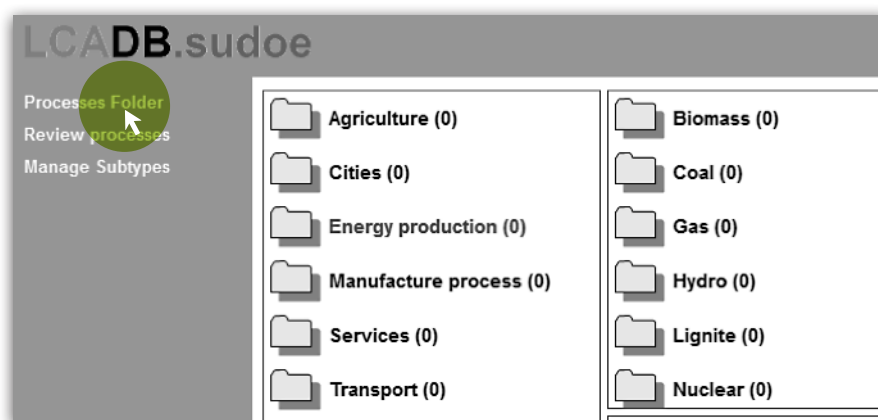
1. **Need to be improved**
2. **Accepted**
3. **Denegated**



After choosing the status, click on the Confirm button. In any case the reviewer notifies the editor about this decision and the user. The editor is in charge of publishing the database to other users and partners and in this way the LCI database will be consolidated. The editor takes into consideration the user's request regarding the publication of the database (public, public for partners, private, etc.)

4) Processes Folder

In this tab the processes are classified according to its type: Agriculture, Cities, Energy Production, etc. and then subcategorized in different types.



5) Manage Subtypes

The user can save different processes and they can be found under the “My Processes” tab.

8 subtypes		New type
Biomass	Energy production	
Coal	Energy production	
Gas	Energy production	
Hydro	Energy production	
Lignite	Energy production	
Nuclear	Energy production	
Car	Transport	
Fuel consumption in Tractor	Agriculture	

In this section, name of the processes, type, date and state information is listed. There are three options:

1. **New Type** - to add a new subtype under one of the 9 categories (Ar
2. **Edit the Subtype** - to continue updating the information and completing the form before it is submitted for review
3. **Delete the Process**

6) References

[1] *European Commission - Joint Research Centre - Institute for Environment and Sustainability: International Reference Life Cycle Data System (ILCD) Handbook - General guide for Life Cycle Assessment - Detailed guidance. First edition March 2010. EUR 24708 EN. Luxembourg. Publications Office of the European Union; 2010.*

Appendices

To optimize the communication between the different interested parties of the SUDOE a webmail has been established which will be linked to the [LCADB.sudoe®](http://lcadb.sudoe.org).

Webmail: <http://toaster-vh.es.clara.net/src/login.php>

Each knowledge area has been appointed with a generic email in order to keep the publication process impersonal. Whenever a LCI is submitted for review, a notification will be send to the email direction of the designated knowledge area.

Knowledge Area	Email Direction
Agriculture	agricultura.lcadb.sudoe@sostenipra.cat
Fishing	fishing.lcadb.sudoe@sostenipra.cat
Construction	construction.lcadb.sudoe@sostenipra.cat
Energy production	energyproduction.lcadb.sudoe@sostenipra.cat
Bioenergy	bioenergy.lcadb.sudoe@sostenipra.cat
Manufacture process	manufacture.lcadb.sudoe@sostenipra.cat
Services	services.lcadb.sudoe@sostenipra.cat
Packaging	packaging.lcadb.sudoe@sostenipra.cat
Use & Consumption	use.lcadb.sudoe@sostenipra.cat
Waste Treatment	waste.lcadb.sudoe@sostenipra.cat
Water	water.lcadb.sudoe@sostenipra.cat
Forest and Forestry Products	forest.lcadb.sudoe@sostenipra.cat

Appendix A: List of Editors & Reviewers

Dr. Assumpció Antón – Editor Agriculture



Dra. Assumpció Antón is an Agricultural Technical Engineer (ETSEAB, 1981) and a graduate in Geography (UB, 1988). She has a PhD in Environmental Engineering from the Catalunya Politechnical University (2004). In 1982 she became officer of the agricultural department of Generalitat of Catalunya. She works as a researcher at the Food and Agricultural Research Institute, IRTA. And from 2008 she is associate professor in Chemical Engineering Department at University Rovira Virgili. Her area of expertise is the development and application of LCA methodology in agriculture. She is also co-editor of crop production Ecoinvent database and member of the steering committee of PAS 2050.1 Supplementary requirements for the application of PAS 2050 to horticultural products.

Dr. Sindo Feijoo – Editor Fishing



Dr. G. Feijoo attained his doctoral degree in 1994 when he became Associate Professor and since 2008 he is a Professor at the Chemical Engineering Department of the University of Santiago de Compostela. The main research areas of his work are the design of bioreactors for enzymatic degradation of pharmaceuticals and personal care products (PPCPs), and the application of life cycle analysis to develop sustainable processes. He has participated in 8 EU projects, 3 collaboration projects with Germany and Israel, 11 R&D projects financed by the Spanish Ministry of Science and Technology and 8 projects financed by Galicia State Government. He has also signed 25 research contracts with several companies. These research activities have produced 10 Doctoral theses, 3 books as Editor, 3 patents, 19 book chapters, 143 research papers in international and national journals, and 194 congress presentations (53 oral) in international and national congresses.

Dr. Alejandro Josa – Editor Construction

In construction

Dr. Arnaud Hélias – Editor Energy production



Arnaud Hélias is an agronomist (Master's degree, 2000) and a PhD (2003) in process engineering from Montpellier SupAgro. After a research engineer position INRA (2004-2007) in food processing, he is associate professor at Montpellier SupAgro since 2008. His teachings are dedicated to ecotechnology, with a focus on environmental assessment, which are mainly carried out by life cycle assessment approaches. His research activities are performed in the Laboratory of Environmental Biotechnology.

Dr. Yolanda Lechón – Editor Bioenergy



Dr. Yolanda Lechón is an Agriculture Engineer PhD at the Universidad Politécnica (Madrid). She is a Senior Researcher of CIEMAT which she joined in 1998. Since then, she has worked in the ASE Unit developing. Her research activities are the areas; Life Cycle Assessment of energy technologies, Input Output Life Cycle Assessment (LCA-IO), the evaluation externalities of energy, and energy system modelling. To date she has participated in more than 35 European and national research projects. She has published 32 articles in research journals and 29 book chapters and has participated in 42 conferences. She has conducted 2 doctoral theses on energy modelling issues and LCA-IO. She also participates as an evaluator on research projects of the European Union and the Spanish R+D+I program.

Dr. Joan Rieradevall - Editor Services



Dr. Joan Rieradevall is a professor of the Department Chemical Engineering, a researcher at the Institut de Ciència i Tecnologia Ambientals (ICTA) as well as the Coordinator of Environmental Science Studies. He is an Environmental technology researcher at the Universitat Autònoma de Barcelona (UAB) in the areas of life cycle assessment, eco-innovation, eco-design and green procurement, prevention and recycling of waste, energy use of biomass and in industrial ecology of services, agricultural, industrial and urban systems. He worked on more than 75 articles in indexed journal, over 100 articles in scientific and technical publications, 20 books and book chapters in the environmental area. He received several awards under which the Environment Awards Prize of 2006 and the Design Award for recycling of 2001 by the Generalitat de Catalunya. He was awarded for the sustainable project Agenda 21 (2004) and received the Environmental Technology prize (1991), both by the City of Barcelona.

Dr. Ana Claudia Dias – Editor Use & Consumption



Ana Cláudia Dias is a post-doctoral fellow worker at the University of Aveiro (Portugal). She has a degree in Environmental Engineering and a PhD in Environmental Applied Sciences from the University of Aveiro. Her current research interests include life cycle thinking tools, such as life cycle assessment, carbon footprint, water footprint and greenhouse gas balances in the forest sector.

Dr. Xavier Gabarrell – Editor Waste treatment



Dr. Xavier Gabarrell works at the Chemical Engineering Department of the Universitat Autònoma de Barcelona (UAB) and also in the Institut de Ciència i Tecnologia Ambientals (ICTA, UAB). He has been focusing on the field of Environmental Engineering and Biochemical Environmental Engineering during the last 20 years. Dr. Gabarrell, former director of the ICTA (2003-2006), has been the UAB coordinator of the Erasmus Mundus Joint European Master programme in Environmental Studies (JEMES) from 2007 till 2010. He is an expert in Life Cycle Assessment, Material Flow Assessment, Industrial Ecology and Waste Management. He is involved in International and National Research Projects, often with the role of coordinator. He is currently working in 5 European projects and coordinating the research group Sostenipra. The research work of Dr Gabarrell is proved by more than 80 papers published in international journals (SCI and SocSI) during the last 6 years.

Dr. Philippe Roux - Editor Water



Philippe Roux, born in 1960, is a mechanical engineer and has a postgraduate degree in engineering processes. He works as a research engineer in the French National Research Institute of Science and Technology for Environment and Agriculture (Irstea), and at the ITAP unit he is a designer and former head of the Mechatronics laboratory in Cemagref, Montpellier. During the last years, he has focused on Life Cycle Assessment and eco-design activities. He has a great experience on industry R&D and is therefore the technological and eco-design specialist of the ELSA team. He participates in the scientific leadership of the European network PEER (Partnership for European Environmental Research) on everything concerning eco-technologies. Dr. Philippe Roux has been involved in applications such as forestry, biomass-bioenergy and phytosanitary treatments, and in issues related to water usages, wastewater management and territories approaches.

Dr. Luis Arroja – Editor of Forest and Forestry

In construction

Appendix B: Collaborators



Company	Description	Country	Website
Aidico	Institute of Construction Technology	Spain	www.aidico.es/
CIEMAT	Research Center for Energy, Environment and Technology	Spain	www.ciemat.es/
UA	University of Aveiro	Portugal	www.ua.pt/
ITENE	Technological Institute of Packaging, Transport and Logistics	Spain	www.itene.com/
USC	University of Santiago de Compostela	Spain	www.usc.es/
l'École des Mines	The Ecole des Mines d'Ales (Institute for Engineering and Applied Science)	France	www.mines-ales.fr/
CTCR	The Footwear Technology Centre of La Rioja	Spain	www.ctcr.es/
CTME	Centro Tecnológico de Miranda de Ebro	Spain	www.ctme.es/
SupAgro	Montpellier SupAgro International Centre for Higher Education in Agricultural Sciences	France	www.supagro.fr/
Tecnalia	Research, Development and Innovation (R+D+i) Group	Spain	www.tecnalia.com/
IRTA	Agri-food research & technology	Spain	www.irta.cat/
INRA	National Institute of Agronomic Research	France	www.inra.fr/
UPC	Universitat Politècnica de Catalunya; Higher education in engineering, architecture and science	Spain	www.upc.edu/
CIRCE	Research Centre of Energy Resources and Consumption	Spain	www.fcirce.es/
Irstea	National Research Institute of Science and Technology for Environment and Agriculture	France	www.irstea.fr/
Junta de Andalucía	Institutional servant of the government of the Autonomous Community	Spain	www.juntadeandalucia.es/
USP	University of São Paulo	Brazil	www5.usp.br/
Catar	Le CATAR - CRITT Agroresources	France	www.critt.net/
UdG	University of Girona	Spain	www.udg.edu/
Marcel Gómez	Environmental Consulting	Spain	www.marcelgomez.com/
SosteniPra	Sustainability and Environmental Protection	Spain	www.sostenipra.cat/
UPV	Universitat Politècnica de València	Spain	www.upv.es/
UAB	Universitat Autònoma de Barcelona	Spain	www.uab.es/
FEDER EU	European Regional Development	European Union	
Interreg - Sudoe	Territorial Cooperation Programme	European Union	www.interreg-sudoe.eu/
ICTA	Institute of Environmental Science and Technology	Spain	www.icta.uab.cat
Inèdit	Innovation for the Sustainability	Spain	www.ineditinnova.com/

Appendix C: Checklist

Step 1: Information of the process - checklist

Activity description

Field	Description	Required/ Optional	Submitted?
Name	<p>General and descriptive name of the process, product and/or service, following the nomenclature showed in the examples:</p> <p>“product + action (+specifications), XX (FU)”</p> <p><i>Tomato production in multitunnel greenhouse, ES (1 ha)</i></p> <p>The functional unit must be included if different types of functional units can be used.</p> <p>Moreover, the geographical scope should be included in the activity name with 2 or 3 letters (For example, ES for Spain, or FR for France).</p> <p>Further examples:</p> <p><i>Tomato production in multitunnel greenhouse, ES (1 kg)</i></p> <p><i>Tomato distribution and retail, ES (1 kg)</i></p> <p><i>Single house construction, ES (1 u)</i></p>	*required	
Type	Select the activity typology from the list	*required	
ID	<p>Code of the activity of 7 digits: XX.YYYY.ZZZ</p> <p>[Fields for XX and ZZZ are automatically generated]</p> <p>(see Appendix A)</p>	*required	
Synonym	Indicate synonymous of the activity	optional	
Local name	Indicate local names attributed to the activity	optional	
Life cycle stages included	Multiselection cell to indicate the different life cycle stages included on the data sheet	*required	
System boundaries	Select from the list the classification data sheet according to the system boundaries considered	*required	

Detailed description of the system boundaries considered. This description is divided in three sections: (see Appendix B, for examples and writing formulas)

System boundaries description	Starting and ending activities	-The activity starts... (<i>first activity</i>)... and ends...(last activity)	*required
	Included activities	- The system includes (<i>list of the activities and/or production stages considered</i>)	
	Excluded activities	- The system does not include (<i>list of the exclusions of the system</i>)	

Notes on activity description:

Functional Unit

Field	Description	required/ optional	Submitted?
Functional unit	Functional unit must be referred to 1, avoid other reference units (like 50 products or 10 kg). Moreover, units must be given in the international system (SI), such as kg for mass or dm ³ for volume.	*required	
Comment	Basic description of the functional unit and relationship to other properties: This field must indicate estimates or extrapolations made to obtain the functional unit from product or material properties (density, calorific value, mass, energy, ...)	optional	

Notes on functional unit:

Data coverage

Field	Description	required/ optional	Submitted?
Data origin	<p>Indicate the origin type of the data:</p> <ul style="list-style-type: none"> - Real data: real data for an enterprise. You must complete the following fields. - Average data: if you are working with national average data, you don't need to complete the other fields regarding this section. - Prototype: when data comes from a prototype and a market for it has not been developed yet, the other fields doesn't need to be completed. 	*required	
National production volume	This cell contains the Spanish annual production of the activity considered in the data sheet. You must indicate quantity, unit and the product concerned. For example, <i>1,200,000 tons of paper</i> .	*required	
Considered production volume	This cell contains the total production that has been considered in the inventory; real data from companies or estimated. If company data, indicate the year of the data considered. For example, <i>300,000 tons of paper</i> (production for 2010).	*required	
Percentage supply or production covered	Percentage covers the production considered for the inventory of total Spanish production. For example, 25%.	*required	
Comment	Other details about the coverage of the data considered.	optional	

Notes on data coverage:

Validation

Field	Description	required/ optional	Chosen Option
Type of review	Select the type of review conducted to validate the data.	*required	
Method of review	Select the method of review conducted to validate the data.	*required	
Review details	Detailed description of data or procedures to review for the validation of the data sheet.	optional	

Notes on validation:

Step 3: Administrative information - checklist

Author & Data Entry

Field	Description	required/ optional	Submitted?
Name	The different fields indicate the name, workplace and contact details of the author, who has entered the dataset and the reviewer. It also indicates the date of conduction of various tasks.	*required	
Centre		*required	
Contact details		*required	
Date		*required	

Notes on author & data entry:

Data Sheet Status

Field	Description	required/ optional	Submitted?
Data sheet status	<p>Select the data sheet status from the list.</p> <p>You must indicate the data sheet status in relation to the publication in the database.</p> <p>For instance, the data sheet can be still unfinished (Draft version), or can be done but without revision (Final draft for review) or already reviewed and published (Reviewed dataset, published in the database).</p> <p>This is a field to have a control of the data sheet status.</p>	*required	
Access	Indicate the type of access of the dataset.	*required	
Copyright	Indicate whether the dataset as data protection.	*required	

Notes on data sheet status:

Extra information required? (Supporting documentation)

Inventory Publication

Field	Description	required/ optional	Submitted?
Inventory publication	Indicate if the inventory has already been published or not in a scientific journal or in another type of publication. NOTE: <i>The publication must show the inventory not results based on it.</i>	*required	
Published source	Indicate the reference to the inventory publication	optional	

Complementary information and publication material should be asked to the user using the contact information provided by the user.

Notes on inventory publication:

Extra information required? (Supporting documentation)

Step 4: Data Sheet - checklist

Exchanges

Field	Description	required/ optional	Submitted?
Type	Select the type of flow from the list	*required	
Name	Indicate the name of the inventory flow, following the nomenclature and ILCD and Ecoinvent. For elementary flows and Excel file is attached with the nomenclature and CAS number	*required	
Unit	Give the unit of measure of flow according to the International System of Units	*required	
Compartment	Select the compartment and subcompartment of flows (see Appendix D)	optional	
Subcompartment		optional	
Formula	Indicate the formula, for chemical compounds	optional	
CAS number	Indicate the CAS number of elementary flows (see Excel attached)	optional	

Inventory

Field	Description	required/ optional
Activity name	Indicate the activity in the inventory referred	*required
Amount	Indicate the amount of the corresponding flow	*required
Comment	Each flow must include a characterization of the type of data and a description of methods and assumptions made for their quantification (see Appendix E). IMPORTANT: For flows with more than one input (for example, diesel consumption by different machines), a breakdown of these inputs in different lines is required with the aim of not losing information by aggregating data. In the comment fields you can include the percentage that represents from the total.	*required
Source(s)	The references considered for obtaining inventory values should be included in this field, including author, publication name, year and place of publication and journal name if necessary.	optional
Distribution	For own statistical values, select the type of distribution. By default, this field is "Lognormal".	optional
Min	For own statistical values, complete the statistical parameters that you have already calculated or are necessary for the distribution type chosen.	optional
Max		
Mode		
Range		
Medium		
SD ²	For own statistical values, indicate the standard deviation value. By default, this field is automatically filled with the formula written (see Appendix F).	*required

Notes on inventory:

Step 5: Process Status

1. Need to be improved
2. Accepted
3. Denegated

General comments:



Authors:



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