Report of changes
AGRIBALYSE 1.2 ➔ AGRIBALYSE 1.3

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Partnership:

The report and documents have been revised with the support of all the partners involved in the AGRIBALYSE 2 program (2014-2018), both the steering committee and technical committee.

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Steering committee:
Acknowledgments:

AGRIBALYSE partners thank all the users who took time to send us their questions and feedbacks, contributing to improve the quality of this database. The technical support of PreConsultant has been highly appreciated in order to help us with the conversion procedure.
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Part A – Foreword

The AGRIBALYSE LCI database and associated methodology report were published at the beginning of 2014. The database, which can be accessed on request to the ADEME, has been downloaded by more than a hundred organizations in many different fields: research institutes, universities, design offices, companies in the food industry, etc. The data is used for a wide range of applications such as the improvement of farming practices, issues related to biofuels, dietary studies and the effects of wastage.

The main aim of this update was to switch from Ecoinvent (EI) v2.2 to Ecoinvent v3.1 database for background processes. This conversion was necessary so that AGRIBALYSE data could benefit from the huge updating work carried out by Ecoinvent, as well as to ensure easy use of AGRIBALYSE data in the future, old versions of Ecoinvent disappearing slowly from the LCA softwares. Beside this update, we took the opportunity to correct minor mistakes that were identified by users. No heavy recalculation of direct emission was implemented for this update, therefore some mistakes are remaining and should be corrected in further versions. These mistakes are expected to have very limited effect on the results.

This update was coordinated by ADEME, calculation work ensured by Koch Consulting. PreConsultant contributed by a technical support highly valuable.

This document is meant to continue with the transparency approach supported by AGRIBALYSE partners, describing the step implemented for the new update. It describes:

- The conversion steps implemented for the switch to Ecoinvent (EI) v3.1;
- Mistakes corrected;
- Mistakes remaining.

AGRIBALYSE methodological report (Koch and Salou 2016) has been updated to reflect the latest version of the database. For more information on Ecoinvent v3 database, users should also refer to Ecoinvent website (Ecoinvent 2015).

Part B – Evolution to Ecoinvent v3.1

B.1 Mapping Ecoinvent V2.2 and Ecoinvent v3.1 LCIs

SimaPro developed with Ecoinvent an automatic mapping tool, called “Linked Manager”. It enables us to replace automatically most Elv2 LCIs with their counterpart in Elv3. However for some LCIs manual adjustments were required for 85 LCIs, as no direct counterparts were available. The “correspondence file” is available on request.

The list of the manual adjustment is provided in Appendix 1.
**B.2 New organization in Ecoinvent database: market or transformation processes? Change in transport modeling structure.**

Here we provide the basic information for understanding Agribalysev1.3 update. For more information on Ecoinvent structure, refers to Ecoinvent website and documentation (Ecoinvent 2015).

In EIv3, processes are split between market and transformation. Market processes represent products at “retailer gate”, representing the consumption mix for a given national/Global market. They include an average transport and a combination of different production sources. So far, the global market is often an extrapolation of Swiss or European market. Except for electricity, no “French market” process is available at the moment, so either European or global market processes must be used. The representativeness of “Market process” at French/European scale is expected to improve in the future along with the evolution of the Ecoinvent database, and its increasing number of processes included.

Transformation processes are gate-to-gate approach, representing a specific production/transformation process or technology. It does not include transportation. It the basis to work on ecodesign and build accurate market processes.

Market processes are used in priority for AGRIBALYSE, except for fertilizers where detailed data about the French market situation have been exploited. Thus, for fertilizers, transformation processes are used jointly with specific transport processes.

This means that for most inputs, default assumptions from EIv2 have been replaced by default assumption from EIv3, including transportation. Simplification has been implemented for few specific products where specific transport data used to be defined: Liquid CO2; Rock wool; Peat, Coconut fiber substrate; Tomato seed. These products are now modeled in a similar way to the rest of inputs, with global market processes.

For on farm transportation, calculated aside, and feeds for which transport is included in the system process, there is no change between AGRIBALYSE v1.2 and AGRIBALYSE v1.3 version.

**B.3 End of Life : Ecoinvent v3, cut off version**

EIv3 offers several versions of its database, representing different modeling options for end of life, and different allocation of impacts in the case of recycling. We chose to stick to the cut off (also called Recycle content) version, more consistent with AGRIBALYSE approach for foreground processes. In this version, recycled material is allocated no upstream impact. This means that recycling mainly benefits to the producer of good based on recycled material, rather that the provider of raw recycled material.
B.4 Update substances’ names

Substance names evolve with characterization methods. We updated substance names so that they can be used by the latest versions of characterization methods available in SimaPro.

B.5 Organization and libraries in SimaPro

AGRIBALYSE database will now be included by default in SimaPro software. Therefore classification had to evolve to converge with other agricultural LCI database structure to ease user operability. The level of detail remains the same, with clear identification of phase/classes, which are not final product but can be used for detailed analysis. To avoid confusion all AGRIBALYSE datasets will remain in category “Agriculture”, and labelled as “Transformation” inventories” as the scope is “farm gate”. “Food category” will be restricted to product at retailer/kitchen gate, meaning that it includes transformation and transportation processes.

In SimaPro, the Agribalyse database will not need to be imported as a project anymore, but will be available as a library, allowing its use in any project. Libraries need to be “autonomous”; therefore it will include a copy of Ecoinvent v3 background processes used in AGRIBALYSE. These processes will be identified specifically (“Copied from Ecoinvent”) Ecoinvent updates will continue to be linked to Agribalyse.

For non SimaPro users, we will keep on providing an ecospold file, only including AGRIBALYSE database with link to EIv3. We wish to also provide an ILCD format as soon as converter will be ready.
B.6 Remaining Ecoinvent v2

For few LCIs used in background, we could not access unit processes. Therefore they remain with Ecoinvent v2 processes. The list is provided in the table below.

<table>
<thead>
<tr>
<th>Name</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barge/FR S</td>
<td>p</td>
</tr>
<tr>
<td>Barley, organic, Ile-de-France, at feed plant/FR S</td>
<td>kg</td>
</tr>
<tr>
<td>Blood meal Vat Dry, from Hungary, at feed plant/FR S</td>
<td>kg</td>
</tr>
<tr>
<td>Calcium carbonate (&lt;63µm), processing/RER S</td>
<td>kg</td>
</tr>
<tr>
<td>Calcium carbonate (&gt;63µm), processing/RER S</td>
<td>kg</td>
</tr>
<tr>
<td>Dehydrated citrus pulp, at feed plant/FR S</td>
<td>kg</td>
</tr>
<tr>
<td>Egg trout production/GLO S</td>
<td>p</td>
</tr>
<tr>
<td>Fish hydrolyzate (CPSP) from whole fishes, from Chile, at feed plant/FR S</td>
<td>kg</td>
</tr>
</tbody>
</table>
Part C – **Integration of Ecoalim data for feeds**

It was decided to replace INRA background LCIs used previously for feeds in AGRIBALYSE, by new data developed in Ecoalim project. This Ecoalim project aimed at improving feed LCIs, collecting new and more accurate data for feeds used in France. It explored how feed rations could be modified to reduce the impact of animal production, following an ecodesign approach. It was a collaborative program, coordinated by French Pork Institute IFIP ([http://www6.inra.fr/ecoalim](http://www6.inra.fr/ecoalim)). Ecoalim followed AGRIBALYSE methodology, with slight variations such as nitrate and phosphorous emission accounting over the rotation, or update of the ammoniac emission model (EMEP 2013). All details will be available in the future in Ecoalim methodology report.

Including Ecoalim data improves the quality of final AGRIBALYSE LCIs, by replacing some outdated or heterogeneous INRA datasets by more harmonized and more transparent data for feeds and crops. Full merging of Ecoalim data in AGRIBALYSE, as unit process and in a fully harmonized manner for all crops and feeds will be done progressively (see figures below).
AGRIBALYSE®: Summary of changes AGRIBALYSE V1.2 ➔ AGRIBALYSE V1.3

AGRIBALYSE v1.3 situation

AGRIBALYSE/ECOALIM full mergin (expected in the future)
Part D – Corrections done

Beside switch from EIv2 to EIv3, we took the opportunity to correct some minor mistakes that we collect from user feedbacks. Only the mistakes that did not require major calculation (especially recalculation of direct emissions through the Data collection module) were implemented. For those changes requiring heavy calculations, they will be implemented in the following updates (AGRIBALYSE v2.0) expected by the end of 2016 or spring 2017, when the new calculation tool of AGRIBALYSE, called Means-InOut and developed by INRA will be available.

D.1 Nitrate leaching for soilless production (Tomato)
It was missing in AGRIBALYSE v1.2 and has been added.

D.2 Correction of energy consumption
Diesel consumption has been corrected for two agricultural operations: Pushing wood, with small tractor (for cider production); Plant protection, spraying, with self-propelled atomizer (used for roses production). Energy for irrigation in Aquitaine maize (INRA LCI) was also corrected.

D.3 French sheds
Ecoinvent Swiss shed LCIs for storing agricultural machines have been adapted to French situation (mainly adapting the electricity mixt).

D.4 Greenhouse Tomato
Previously machinery for settling up greenhouses were the ones from Ecoinvent (Swiss machinery). They have now been switch to specific French machinery, as defined in AGRIBALYSE for other crops.

D.5 Land transformation
In AGRIBALYSE v1.2, the land transformation change data used to be based on TerUti-Lucas data combined with CORINE landcover. This data was not meant to be used for Land Use change analysis, and our previous approach resulted in biased results, including overestimation of land use change from urban to pasture, providing incoherent outcomes. In addition to AGRIBALYSE uncertainties, it seems that the characterization method in ILCD for land use does not provide accurate enough categories to properly differentiate built/semi/natural habitats.

Consequently, it was decided to set land transformation flows to 0. More accurate calculation method should be implemented in the future.
Part E – AGRIBALYSE v1.3 compare to v1.2; main cause of changes

Detail analysis of changes has been done for different levels of processes: buildings, machinery, feeds and final animal and crop LCIs.

The changes results mainly from two sources: the new background Ecoinvent LCIs and the update of feeds. Changes affect in particular Ozone depletion, Freshwater ecotoxicity and eutrophisation, Mineral, fossil & ren resource depletion. Changes in “Land use” result from the manual set to 0 of land transformation. The changes affecting significantly final animal and crop LCIs mainly comes from a limited number of background LCIs. These changes result from the updating of Ecoinvent, with more accurate data for those processes. The impact of modelling corrections on the final animal/crop LCIs is low.

Concerning vegetal productions, the change in Sulfur and Electricity background LCIs are the major sources of variations. For ozone depletion, variations are 774.5% and 1717.9% respectively for example. Changes in fertilizers are also very significant (Nitrogen fertiliser, as N {RER}] ; Phosphate fertiliser, as P2O5 {RER}] ; Potassium sulfate, as K2O {RER}]). Surprisingly, the Waste glass sheet {CH}] treatment process has been identified as a strong contributor of change for water depletion impact of some products (ex : soft wheat). At last some dramatic changes have also been identified on metals and building material: steel, concrete, zinc.

Concerning animal productions, the changes in Electricity and Tap water explains most changes for Freshwater ecotoxicity, Ozone depletion and resource depletion. Other changes mainly results from changes in feed modeling, through the Ecoalim update (update of both activity data and methodology).
Changes AGRIBALYSE v1.3/AGRIBALYSE v1.2 for main plant productions

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</tr>
</thead>
<tbody>
<tr>
<td>Alfalfa, conventional, national average</td>
<td></td>
<td></td>
<td>100%</td>
<td>132%</td>
<td>100%</td>
<td>100%</td>
<td>99%</td>
<td>51%</td>
<td>101%</td>
<td>134%</td>
<td>-41%</td>
<td>28%</td>
<td>425%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apple, production mix, national average, at orchard</td>
<td></td>
<td></td>
<td>106%</td>
<td>131%</td>
<td>75%</td>
<td>103%</td>
<td>104%</td>
<td>68%</td>
<td>101%</td>
<td>104%</td>
<td>-34%</td>
<td>99%</td>
<td>749%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Barley, conventional, malting quality, national average</td>
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<td></td>
<td>104%</td>
<td>138%</td>
<td>85%</td>
<td>103%</td>
<td>104%</td>
<td>67%</td>
<td>100%</td>
<td>133%</td>
<td>-7%</td>
<td>106%</td>
<td>506%</td>
<td></td>
<td></td>
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<tr>
<td>Carrot, conventional, national average</td>
<td></td>
<td></td>
<td>106%</td>
<td>170%</td>
<td>68%</td>
<td>102%</td>
<td>102%</td>
<td>56%</td>
<td>101%</td>
<td>105%</td>
<td>-6%</td>
<td>97%</td>
<td>2097%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cider apple, conventional, national average, at orchard</td>
<td></td>
<td></td>
<td>119%</td>
<td>125%</td>
<td>113%</td>
<td>116%</td>
<td>99%</td>
<td>102%</td>
<td>114%</td>
<td>-513%</td>
<td>17%</td>
<td>723%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clementine, export quality, Souss, at orchard</td>
<td></td>
<td></td>
<td>118%</td>
<td>131%</td>
<td>36%</td>
<td>114%</td>
<td>117%</td>
<td>65%</td>
<td>108%</td>
<td>101%</td>
<td>101%</td>
<td>98%</td>
<td>533%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coffee bean (Robusta), depulped, Brazil</td>
<td></td>
<td></td>
<td>104%</td>
<td>117%</td>
<td>92%</td>
<td>100%</td>
<td>103%</td>
<td>48%</td>
<td>100%</td>
<td>102%</td>
<td>102%</td>
<td>99%</td>
<td>525%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Durum wheat grain, conventional, national average</td>
<td></td>
<td></td>
<td>106%</td>
<td>153%</td>
<td>86%</td>
<td>107%</td>
<td>71%</td>
<td>100%</td>
<td>169%</td>
<td>-7%</td>
<td>102%</td>
<td>479%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Faba beans, conventional, national average</td>
<td></td>
<td></td>
<td>102%</td>
<td>141%</td>
<td>102%</td>
<td>105%</td>
<td>95%</td>
<td>57%</td>
<td>100%</td>
<td>102%</td>
<td>-7%</td>
<td>45%</td>
<td>532%</td>
<td></td>
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<tr>
<td>Grain maize, conventional, 28% moisture, national average</td>
<td></td>
<td></td>
<td>106%</td>
<td>159%</td>
<td>75%</td>
<td>104%</td>
<td>103%</td>
<td>66%</td>
<td>100%</td>
<td>136%</td>
<td>-8%</td>
<td>101%</td>
<td>457%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grape, integrated, variety mix, Languedoc-Roussillon, at vineyard</td>
<td></td>
<td></td>
<td>108%</td>
<td>135%</td>
<td>77%</td>
<td>115%</td>
<td>109%</td>
<td>106%</td>
<td>103%</td>
<td>108%</td>
<td>396%</td>
<td>54%</td>
<td>1711%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jasmine rice, national average</td>
<td></td>
<td></td>
<td>103%</td>
<td>151%</td>
<td>128%</td>
<td>106%</td>
<td>103%</td>
<td>96%</td>
<td>100%</td>
<td>176%</td>
<td>102%</td>
<td>104%</td>
<td>575%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peach, production mix, national average, at orchard</td>
<td></td>
<td></td>
<td>105%</td>
<td>182%</td>
<td>71%</td>
<td>102%</td>
<td>102%</td>
<td>63%</td>
<td>100%</td>
<td>117%</td>
<td>-117%</td>
<td>100%</td>
<td>531%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rapeseed, conventional, 9% moisture, national average</td>
<td></td>
<td></td>
<td>105%</td>
<td>128%</td>
<td>117%</td>
<td>104%</td>
<td>105%</td>
<td>70%</td>
<td>100%</td>
<td>128%</td>
<td>-7%</td>
<td>127%</td>
<td>487%</td>
<td></td>
<td></td>
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<tr>
<td>Silage maize, conventional, national average</td>
<td></td>
<td></td>
<td>103%</td>
<td>133%</td>
<td>90%</td>
<td>102%</td>
<td>101%</td>
<td>75%</td>
<td>100%</td>
<td>117%</td>
<td>-8%</td>
<td>95%</td>
<td>423%</td>
<td></td>
<td></td>
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<tr>
<td>Soft wheat grain, conventional, national average</td>
<td></td>
<td></td>
<td>105%</td>
<td>138%</td>
<td>114%</td>
<td>104%</td>
<td>105%</td>
<td>65%</td>
<td>100%</td>
<td>133%</td>
<td>-7%</td>
<td>116%</td>
<td>518%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spring faba beans, conventional, reduced protection</td>
<td></td>
<td></td>
<td>102%</td>
<td>142%</td>
<td>102%</td>
<td>100%</td>
<td>95%</td>
<td>57%</td>
<td>100%</td>
<td>102%</td>
<td>-7%</td>
<td>46%</td>
<td>537%</td>
<td></td>
<td></td>
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<tr>
<td>Starch potato, conventional, national average</td>
<td></td>
<td></td>
<td>103%</td>
<td>136%</td>
<td>91%</td>
<td>100%</td>
<td>103%</td>
<td>84%</td>
<td>99%</td>
<td>115%</td>
<td>-9%</td>
<td>83%</td>
<td>825%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sugar beet roots, conventional, national average</td>
<td></td>
<td></td>
<td>104%</td>
<td>146%</td>
<td>86%</td>
<td>103%</td>
<td>103%</td>
<td>80%</td>
<td>100%</td>
<td>173%</td>
<td>-9%</td>
<td>95%</td>
<td>491%</td>
<td></td>
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<tr>
<td>Sunflower, conventional, 9% moisture, national average</td>
<td></td>
<td></td>
<td>104%</td>
<td>144%</td>
<td>97%</td>
<td>102%</td>
<td>103%</td>
<td>80%</td>
<td>100%</td>
<td>112%</td>
<td>-8%</td>
<td>93%</td>
<td>483%</td>
<td></td>
<td></td>
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<tr>
<td>Tomato, production mix, greenhouse production, national average</td>
<td></td>
<td></td>
<td>107%</td>
<td>131%</td>
<td>83%</td>
<td>110%</td>
<td>133%</td>
<td>102%</td>
<td>299%</td>
<td>321%</td>
<td>103%</td>
<td>73%</td>
<td>1347%</td>
<td></td>
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<tr>
<td>Triticale grain, conventional, national average</td>
<td></td>
<td></td>
<td>105%</td>
<td>134%</td>
<td>120%</td>
<td>104%</td>
<td>106%</td>
<td>76%</td>
<td>100%</td>
<td>145%</td>
<td>-7%</td>
<td>93%</td>
<td>484%</td>
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<tr>
<td>Ware potato, conventional, for fresh market, firm flesh varieties</td>
<td></td>
<td></td>
<td>103%</td>
<td>154%</td>
<td>74%</td>
<td>99%</td>
<td>102%</td>
<td>81%</td>
<td>99%</td>
<td>123%</td>
<td>-8%</td>
<td>98%</td>
<td>797%</td>
<td></td>
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<tr>
<td>Winter pea, conventional, 15% moisture</td>
<td></td>
<td></td>
<td>102%</td>
<td>125%</td>
<td>83%</td>
<td>101%</td>
<td>98%</td>
<td>79%</td>
<td>100%</td>
<td>102%</td>
<td>-7%</td>
<td>91%</td>
<td>449%</td>
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## Changes AGRIBALYSE v1.3/AGRIBALYSE v1.2 for main animal productions

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<tbody>
<tr>
<td>Beef cattle, national average,</td>
<td>100%</td>
<td>89%</td>
<td>120%</td>
<td>75%</td>
<td>97%</td>
<td>130%</td>
<td>85%</td>
<td>133%</td>
<td>141%</td>
<td>-28%</td>
<td>108%</td>
<td>500%</td>
<td></td>
</tr>
<tr>
<td>Broiler, national average,</td>
<td>100%</td>
<td>120%</td>
<td>75%</td>
<td>97%</td>
<td>130%</td>
<td>85%</td>
<td>133%</td>
<td>141%</td>
<td>-28%</td>
<td>108%</td>
<td>500%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cow milk, national average,</td>
<td>99%</td>
<td>143%</td>
<td>72%</td>
<td>98%</td>
<td>103%</td>
<td>67%</td>
<td>98%</td>
<td>131%</td>
<td>-20%</td>
<td>132%</td>
<td>593%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Duck for roasting, conventional,</td>
<td>98%</td>
<td>119%</td>
<td>74%</td>
<td>96%</td>
<td>107%</td>
<td>79%</td>
<td>107%</td>
<td>167%</td>
<td>-14%</td>
<td>130%</td>
<td>639%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Egg, national average,</td>
<td>97%</td>
<td>141%</td>
<td>73%</td>
<td>94%</td>
<td>107%</td>
<td>69%</td>
<td>101%</td>
<td>175%</td>
<td>-17%</td>
<td>143%</td>
<td>625%</td>
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<td></td>
</tr>
<tr>
<td>Lamb, conventional, Roquefort system,</td>
<td>100%</td>
<td>174%</td>
<td>71%</td>
<td>97%</td>
<td>100%</td>
<td>62%</td>
<td>102%</td>
<td>160%</td>
<td>-25%</td>
<td>89%</td>
<td>366%</td>
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<td></td>
</tr>
<tr>
<td>Large trout, 2-4kg, conventional,</td>
<td>120%</td>
<td>163%</td>
<td>74%</td>
<td>124%</td>
<td>141%</td>
<td>145%</td>
<td>180%</td>
<td>284%</td>
<td>-15%</td>
<td>101%</td>
<td>451%</td>
<td></td>
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<tr>
<td>Pig, conventional, national average,</td>
<td>100%</td>
<td>157%</td>
<td>73%</td>
<td>97%</td>
<td>108%</td>
<td>142%</td>
<td>133%</td>
<td>182%</td>
<td>-9%</td>
<td>214%</td>
<td>444%</td>
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<td></td>
</tr>
<tr>
<td>Rabbit, conventional, in cage,</td>
<td>89%</td>
<td>132%</td>
<td>72%</td>
<td>97%</td>
<td>105%</td>
<td>63%</td>
<td>74%</td>
<td>135%</td>
<td>-11%</td>
<td>70%</td>
<td>367%</td>
<td></td>
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</tr>
<tr>
<td>Sea bass or sea bream, 200-500g, conventional, in cage,</td>
<td>99%</td>
<td>101%</td>
<td>91%</td>
<td>98%</td>
<td>101%</td>
<td>100%</td>
<td>100%</td>
<td>112%</td>
<td>-24%</td>
<td>99%</td>
<td>330%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sheep milk, conventional, Roquefort system,</td>
<td>100%</td>
<td>167%</td>
<td>71%</td>
<td>97%</td>
<td>101%</td>
<td>62%</td>
<td>103%</td>
<td>152%</td>
<td>-23%</td>
<td>93%</td>
<td>388%</td>
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</tr>
<tr>
<td>Turkey, national average,</td>
<td>98%</td>
<td>114%</td>
<td>73%</td>
<td>95%</td>
<td>106%</td>
<td>85%</td>
<td>111%</td>
<td>162%</td>
<td>-22%</td>
<td>245%</td>
<td>742%</td>
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</tr>
</tbody>
</table>
Part F – Warning points

We received questions regarding these points. Some correspond to methodological limitations, whereas others are small mistakes in data collection. These points will be addressed in AGRIBALYSE v2.0, but for transparency and understanding we have decided to share them already.

F.1 Alfalfa

The processing (mainly drying) of alfalfa is based on obsolete data, and will be corrected on the future version.

F.2 Transportation

These modifications will have a very limited impact on results (expected less than 5%).

For organic fertilizers, allocation over the crop rotation is performed. However the transportation is calculated based on the raw quantity of organic fertilizers instead of the reallocated one.

Inappropriate machinery used of organic fertilizer transportation (Fertilizing, slurry, with tanker/FR U).

Transportation of nitrogen solution is missing (for the other types of fertilizers it is accounted for).

F.3 Erosion: Rusle equation

Calculation of erosion is miscalculated due to unit confusion in the equation, between ton (US) and tonne (Europe). Correction factor is 1 US ton = 0.91 tonne. This will mainly affect phosphorus emissions.

F.4 Seeds

It was identified that the extrapolation method only based on yield to create seeds LCIs from grain result in some incoherent results. This approach has been improved for feeds, but not yet for plant production LCIs. In any case, seeds do not represent a large share of impacts in plant productions.
Part G – Conclusion

This new update is part of the continuous effort of partners to improve AGRIBALYSE database in a transparent way. The deep and structural changes in Ecoinvent have been quite challenging for us and show the importance of having good quality background databases. We believe that this connection of AGRIBALYSE v1.3 to Ecoinvent v3 is bringing important added value to the users. Integration of Ecoalm data is also an important step, at the same time enlarging our databases and improving its quality and consistency.

AGRIBALYSE program is still ongoing, with several projects that will contribute to better understand environmental impact of food products in coming years (soil carbon, pesticides, water depletion; sea food products, ecodesign of fruit and vegetable systems, etc.). We believe that by this collaboration and providing transparent and public data we can contribute significantly to improve the sustainability of our food system. We hope that these data will strongly contribute to support ecolabeling schemes, and ecodesing initiatives. User feedbacks are a key element for high quality data, and we will continue to provide the best support possible, considering our time and resources. Finally, we are always interested in potential collaborations on these topics and we look forward to your feedbacks on this new release.

Part H – Bibliography


ADEME

The Agence de l’Environnement et de la Maîtrise de l’Énergie (ADEME) is a government organization agency under the Ministry of Ecology, Sustainable Development, Transport and Housing, the Ministry of Higher Education and Research and the Ministry of the Economy, Finance and Industry. It is involved in the implementation of government policies for the environment, energy and sustainable development.

ADEME provides environmental consultancy services to help businesses, local authorities, government authorities and the general public. It also provides funding for projects, from research to implementation, for waste management, soil conservation, energy efficiency and renewable energy, air quality and noise abatement.