

Role of LCA in the agri-food sector in the definition and implementation of the ecological transition policy

13ème plateforme d'Agroscope sur les analyses de cycle de vie

Ökobilanz-Plattform

20 June 2023

A few years back... (1/2)

Environmental laws that are landmarks in France



Early 2000s in France and Europe:

significant increase in the concerns of populations and decision-makers regarding environmental degradation

2007 : Grenelle of the environment:

debates organized in France that have led to the **Grenelle 1 and 2 laws**, adopted respectively in 2009 and 2010

> 40% reduction in GHG emissions by 2030 and a reduction by four of these emissions in 2050

A few years back... (2/2)

Environmental laws that are landmarks in France

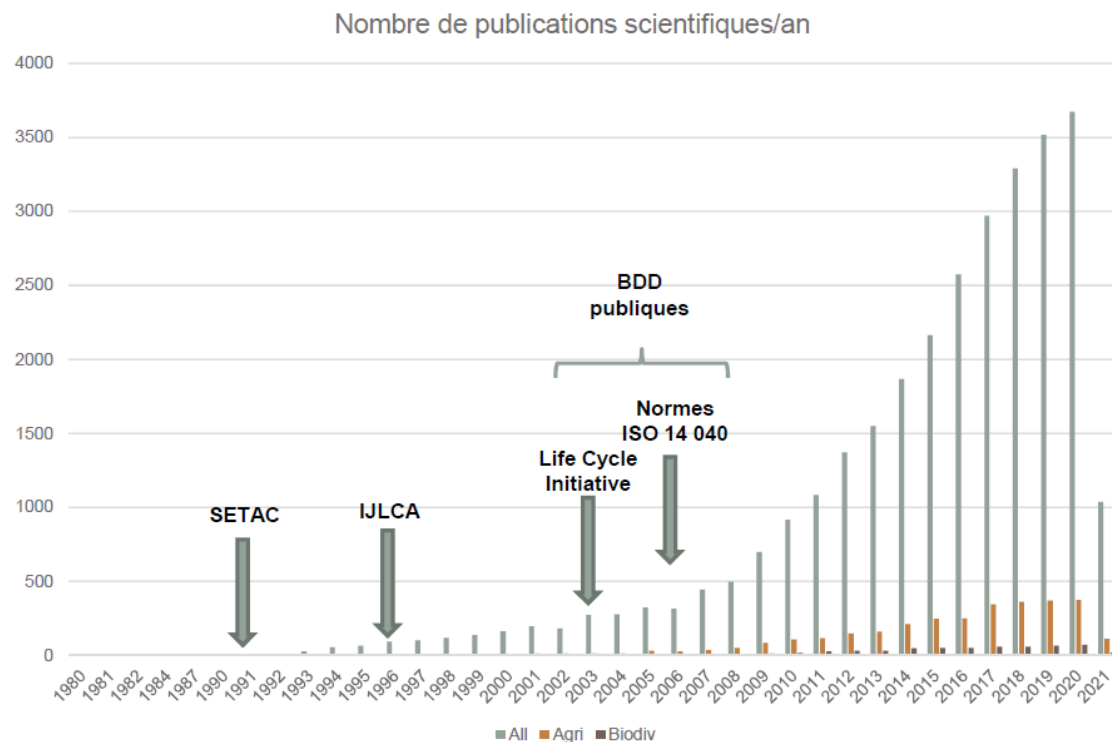
2015 - Law on Energy Transition and Green Growth :

- **Birth of ecolabelling** – justification of the environmental claims of products => fight against "green washing"
- **Introduction into the law of the concept of “life cycle”** for the environmental assessment of products.
- **Growing importance of the climate issue**, which has contributed to anchor LCA as a reference tool (Paris agreement).



LCA and public policies (1/2)

Standardization and institutionalization of LCAs



Source : Benjamin Raimbault, LISIS

2000s: public programs for collection and development of LCA databases

- Ecoinvent (Suisse, 2003)
- Life Cycle Initiative – data networking (2002-03)

In France, the ecological transition agency (ADEME) publishes several key studies based on LCA

- Transport – Building - Industry...
- Base IMPACTS ® ADEME

LCA and public policies (2/2)

Standardization and institutionalization of LCAs in France

- **LCA, a very appropriate tool within ADEME in late 2000s**

- The most complete metric for environmental assessment, that could be used whatever the sector of activity to prioritise actions, and avoiding the transfer of impacts
- **A method put forward by ADEME to shed light on scientific controversies** (example of biofuels - LCA study of biofuels consumed in France (published in 2010 by ADEME))
- But a method that disrupts the agricultural world, more comfortable with agronomic, territorial approaches
- Observation of **a lack of data/knowledge on the agricultural sector**

Birth of Agribalyse, the french LCA database on agriculture

2009 – 2013 :

ADEME carried out prefiguration work for the development of an LCA public database for agricultural sector

- Not a political order, neither from the agricultural sector
- **Driven by the fact that ADEME is a multi-sector organization**
- With support of Agroscope, from the start, and with partnership with ecoinvent

Main goals = Provide accessible, reliable, transparent LCA data, aligned with international standards to support ecological transition

2 main uses :

- **Eco design** : For the improvement of practices and eco-design
- **Eco labelling** : For consumer information and changes in consumption patterns

Agribalyse, already a long history

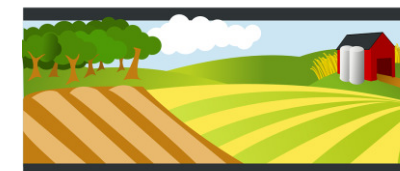


2009 : French political agenda :
Sustainable production and ecodesign
Public « eco-labelling scheme »
=> Need for a LCI database for agricultural product

2013 : AGB v1.0-v1.1 (average farm data)

2015 : AGB v1.2 (+ feed data)

2018 : AGB v1.3 (ecodesign + new products)



2020 : **Agribalyse 3.0** : New data + « Cradle to fork » + New design and organization

2022 : **Agribalyse 3.1**



5

Agribalyse 3 – from Agriculture to food products

Alignment with French nutritional database (CIQUAL 2017) :

To facilitate cross-analysis

2516 food products

+ 739 french agricultural products (including versions of technical itineraries)

+ 64 imported agricultural products

Methodological guidelines :

- Focus on « hotspots » : agriculture, recipes
- Full scope but simplification (consumption mix, logistic, processing operations etc.)
- Transparent and well-structured database, allowing for evolutions, continuous improvement

| | |
|-----------------------------|-----|
| Cereal products | 376 |
| Fats and oils | 56 |
| Fruits, vegetables and nuts | 426 |
| Meat, eggs, fish | 644 |
| Dairy products | 223 |
| Various | 160 |
| Prepared dishes | 292 |
| Sweet desserts | 73 |
| Baby food | 33 |
| Beverage | 228 |

- *Numbers of LCIs : 18 551*
- *Numbers of LCIs from ecoinvent : 2055 (including 145 adapted) (11%)*
- *Numbers of LCIs from WFLDB : 784 (4%)*

Governance & LCA database (1/2)

Agribalyse, a collective adventure

About a hundred experts and scientists from the agricultural, food and environmental sectors have contributed

- A collective adventure : technical institutes, research organizations, design offices, associations, start-ups, companies, NGOs
- Strongly involving INRAE and agricultural technical institutes
- **With the support of Agroscope, from the start**

Bet on a partnership with the agricultural world (unlike other sectors)

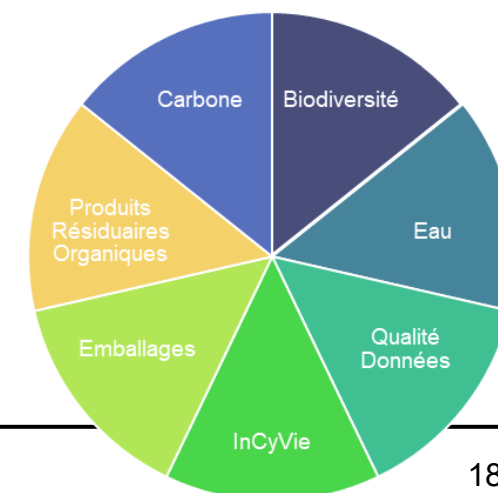


Governance & LCA database (2/2)

Agribalyse, a collective adventure

Renewed governance with the establishment of a scientific interest group since 2021 = GIS REVALIM

- GIS REVALIM = a research & development partnership for better evaluation
- **A roadmap with shared vision of priorities**
- Involvement of the OFB (french biodiversity office) and ANSES (national nutrition and health security agency)



LCA for improving farming system and food industry (1/2)

Ecodesign projects

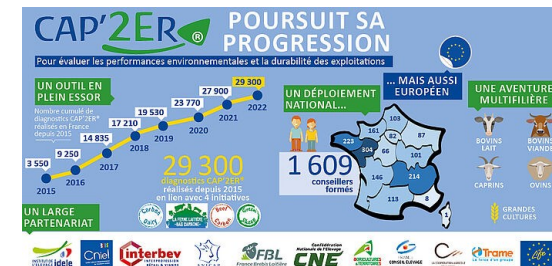
- ADEME Green Go calls for projects on eco-design in the food industry : since 2018, ADEME has supported 44 eco-design projects in the food industry
- Involving various stakeholders : regional brand holders, label holders, distributors, SMEs/ETIs (companies, cooperatives, producer groups, etc.)
- Priority on projects with a collective dimension and/or carried by a "network head" actor (interprofession, structure carrying a sector approach, defense and management body, cooperative structure, etc.)



LCA for improving farming system and food industry (2/2)

Ecodesign tools, based on Agribalyse

- Use of Agribalyse for the development of operational sectoral tools (up to the players closest to the field to grasp the data, and to provide tools adapted to their context of use and decision for eco-design)
- Tools for agrifood industries
- Tools to improve farm sustainability > Partnership with the agricultural world which facilitated the appropriation of data and the development of tools for eco-design



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Gestion Environnementale des Élevages Porcins

LCA for consumer information & ecolabelling (1/4)

Environmental labelling experiments from the Grenelle of the environment

- Based on PEF
- Difficult for businesses to set up

Boost of uses with the release of Agribalyse 3.0 and the handling of data by digital actors (2020) :

- A « state start-up » working on speeding up the use of ADEME data
- Working sessions organized with digital food app creators (Yuka, Marmiton, FrigoMagique,..) > development of an “eco-score” based on Agribalyse



LCA for consumer information & ecolabelling (2/4)

Government takeover regarding ecolabelling

- Laws anti-waste and circular economy law (2020) : experimentation phase which will determine the methods most likely to be used to deploy an environmental labelling
- Confirmed by Climate resilience law (2021)



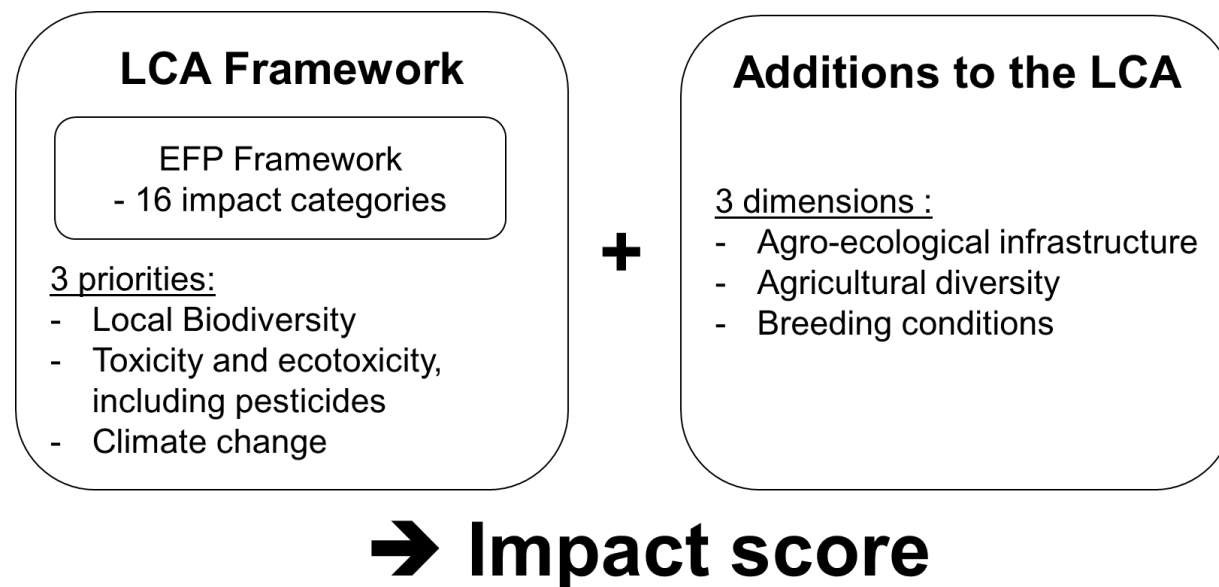
"We need a carbon labelling instrument, and ideally we should have it at European level"

"In the French-speaking world, we will start on textiles and food [from next year]"

LCA for consumer information & ecolabelling (3/4)

Methodology :

- « **Improvement of LCA/PEF** »: Local biodiversity, Toxicity/ecotoxicity
- « **Bonus approach** » to complete the main « missing points »



=> Finalization method and format scheme by end of 2023. Regulation implementation in 2024.

LCA for consumer information & ecolabelling (4/4)

Ecobalyse

Accueil Textile Alimentaire Exemples Explorateur API Documentation Communauté

Attention : l'outil est aujourd'hui en phase de construction. Les calculs qui sont proposés ne constituent pas un référentiel validé.

Carrot Cake Créer une nouvelle recette

Ingrédients 71,60 µPts

| | | | | |
|--|------------|---------------------------|------------------------------|------------|
| 120 g | Oeuf | Par défaut (Europe et Ma) | <input type="checkbox"/> bio | 48,22 µPts |
| ▶ Bonus écologiques | | | | |
| 3 160 km + 4,80 µPts | | | | |
| 140 g | Blé tendre | Par défaut (France) | <input type="checkbox"/> bio | 9,96 µPts |
| ▶ Bonus écologiques | | | | |
| 160 km + 0,28 µPts | | | | |
| 60 g | Lait | Par défaut (Europe et Ma) | <input type="checkbox"/> bio | 6,19 µPts |
| ▶ Bonus écologiques | | | | |
| 3 160 km + 3,76 µPts | | | | |
| 225 g | Carotte | Par défaut (Hors Europe) | <input type="checkbox"/> bio | 8,70 µPts |
| ▶ Bonus écologiques | | | | |
| 18 000 km 660 km 2 500 km + 22,12 µPts | | | | |

+ Ajouter un ingrédient

Masse : 0,545 kg

Score d'impacts

199 µPts/kg

Soit pour 0,686 kg : 137 µPts
dont 1,46 µPts de bonus inclus

Détail des postes

| | |
|----------------|---------|
| Ingrédients | 52,41 % |
| Transformation | 8,84 % |
| Emballage | 6,70 % |
| Transports | 29,54 % |
| Distribution | 1,57 % |
| Consommation | 0,95 % |

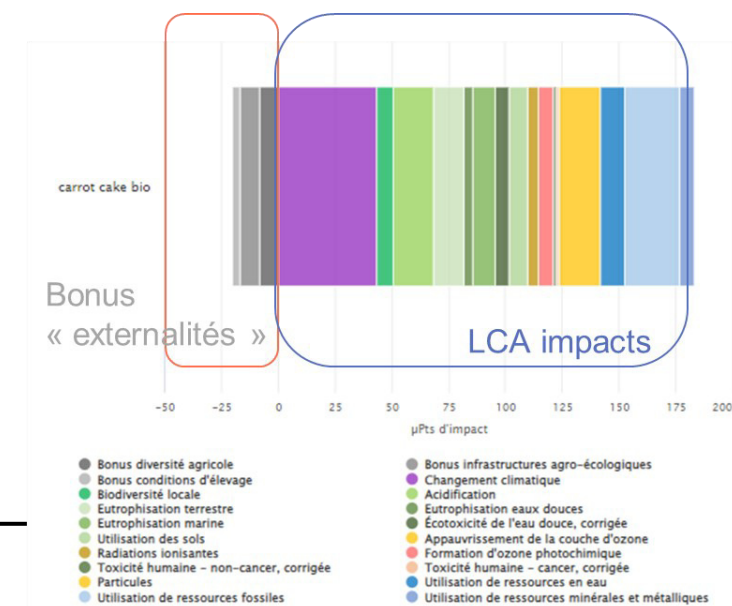
Sauvegarder Partager

Nom de la simulation +

Donnez un nom à cette simulation pour la retrouver

<https://ecobalyse.beta.gouv.fr/#/food/build>

- A tool developed by government in open access with Agribalyse data in background.
- Work in progress – Full method description available (documentation)



European project on ecolabelling ECO FOOD CHOICE – LIFE PROJECT



Commission européenne

Objective 1

Collaborate to create the principles for **harmonized databases** on food environmental impacts

- Focus on principles
- Aiming at a constellation of databases

Objective 2

Develop a **methodology** for an « **eco-score** »

- Calculation + visual
- PEF-wise
- National yet harmonized

Objective 3

Test the labelling in real life

- with conventional or organic retailers, through apps
- Measure the impact

- **4 years duration: 2023-2027**
- **Project to start in November 23**
- **9 partners from 4 countries:** Wageningen University and Research – WUR (environmental expertise), Blonk (LCA expertise), Universität of Göttinge, Corsus, Institute of AgriFood Research and Technology – IRTA, University of VIC – UVIC, French Agency for ecological transition (Ademe), National Research Institute for Agriculture, Food and Environment (INRAE)
- **ADEME coordinator**



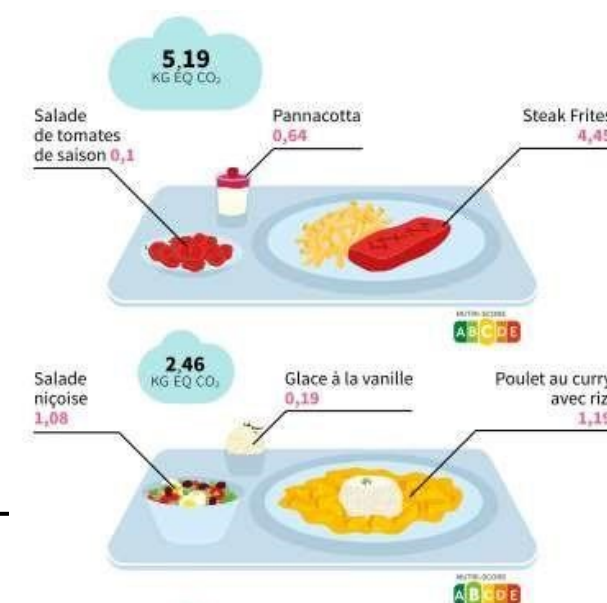
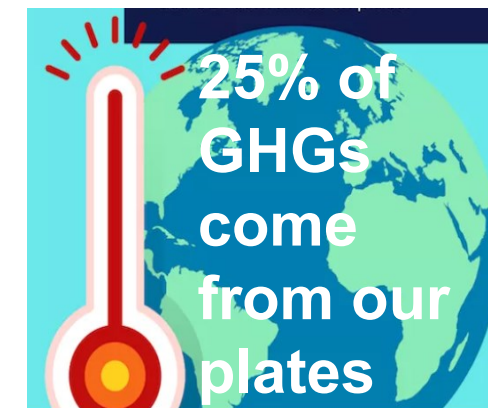
LCA for diets shift

LCA has helped to structure the works around sustainable diets.

AGRIBALYSE® database broadly used in France for collective catering players.

> Various tools developed for improvement of menus, on nutritional and environmental aspects.

And work in progress for it to be used by commercial catering players.



LCA, a tool for prospective analysis & territorial policies

More recent uses / challenges :

Combine LCAs and territorial approaches

- Tool for assessing territorial policies and projects such as territorial food projects, through territorial LCA
- Developing interrelationships with agronomy and ecology (conflicting impact approaches versus ecosystem service approaches)

Use LCAs in prospective analyses

- ADEME forward-looking exercise Transitions 2050

**TRANSITION(S)
2050**
CHOISIR MAINTENANT
AGIR POUR LE CLIMAT

**4 SCÉNARIOS
POUR ATTEINDRE
LA NEUTRALITÉ
CARBONE**



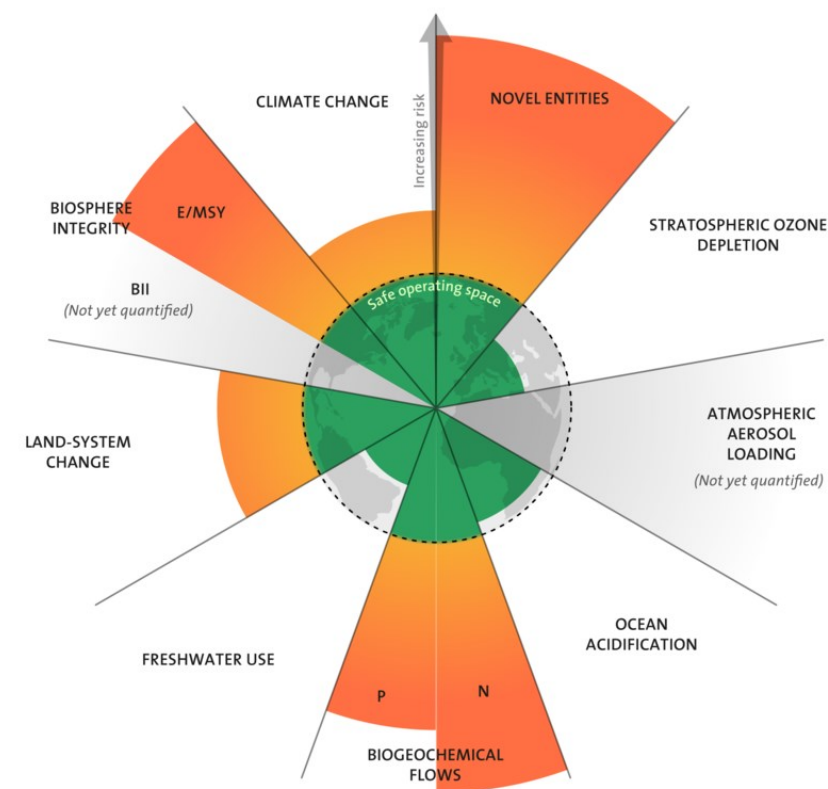
LCA, a tool to inform decisions, but still expected improvements

The most complete metric for environmental
assessment, to prioritise actions, highly recognise by public
authorities

But still important limitations which are affecting acceptability

Toxicity indicators, effect of field practices on biodiversity, fish stock
The « academic time » is slower than policy and citizen
environmental concern.

-> Trend to use « hybrid LCA/non LCA » indicators to get a
broader view on environmental sustainability for food systems





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