



... with our history, principles and values,  
... we change for a sustainable growth

Stakeholder conference  
Bologna 2013/06/04

# Barilla Experience

**Luca F. Ruini**

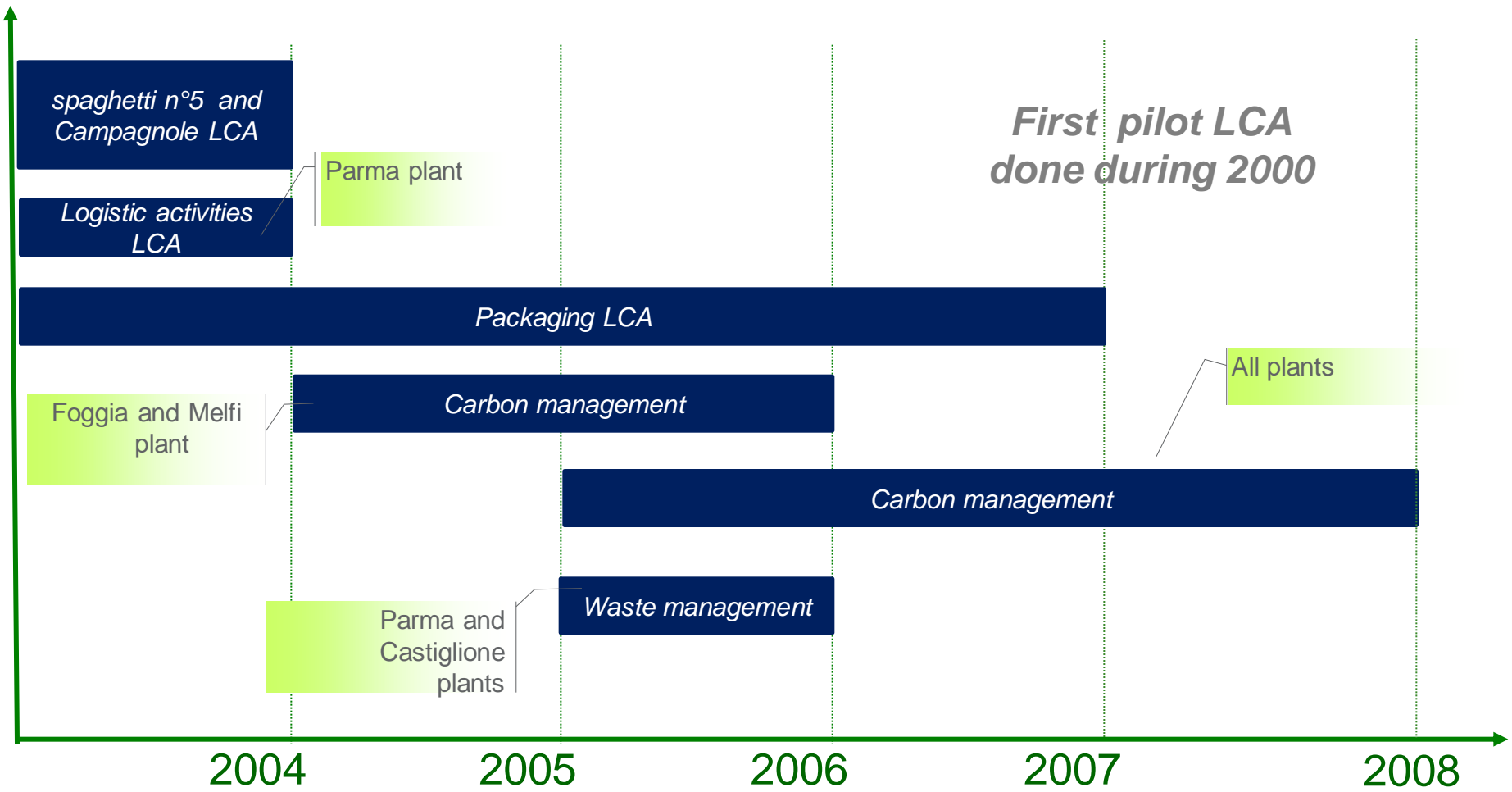
*Global HSE & E Director & BCFN Expert*



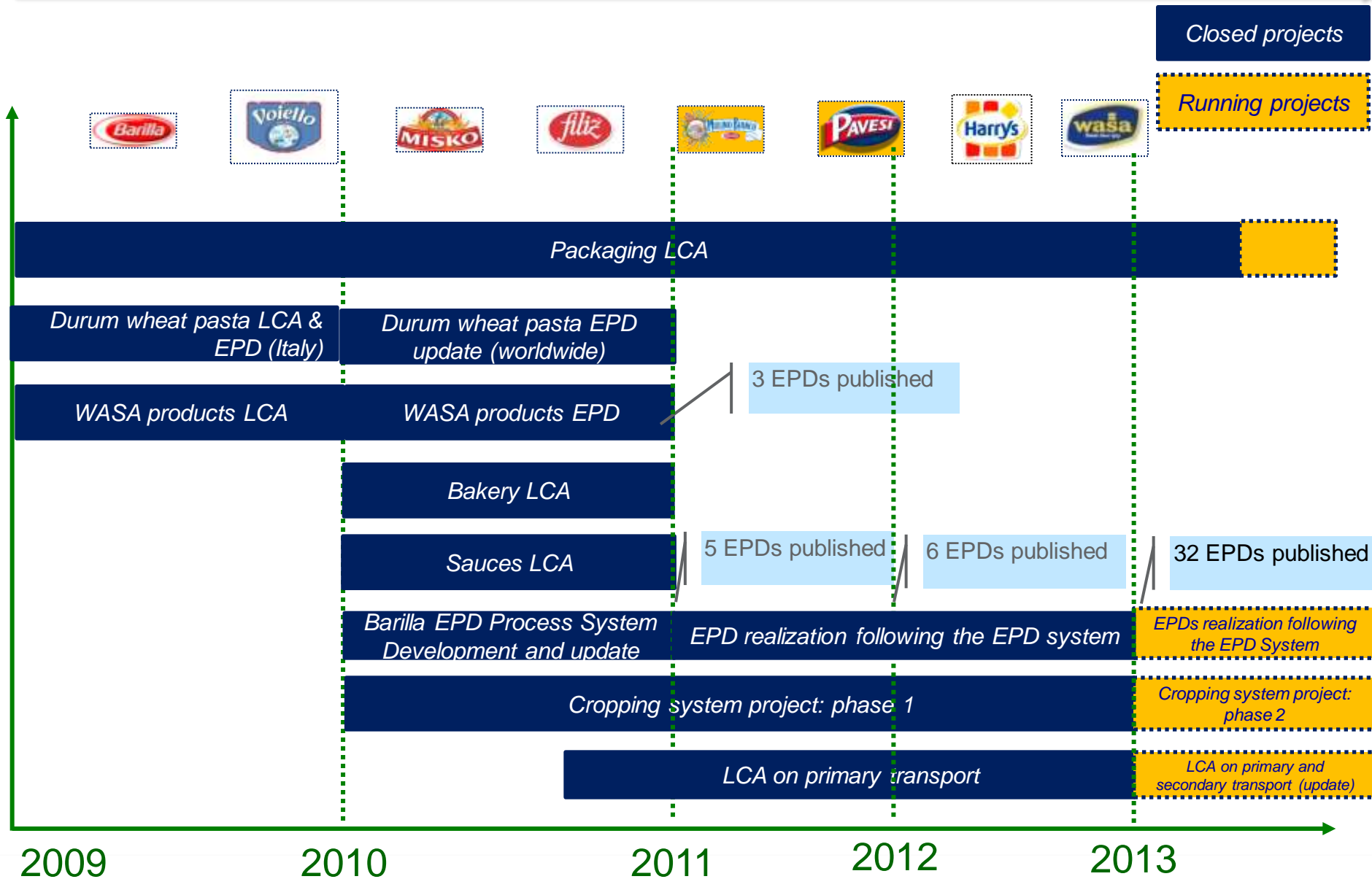
# *EPD, Sustainability & Competitiveness*

1. **Why Barilla decided move to EPD Process?**
2. **Is it an useful tool to develop projects?**
3. **What is changing around this topics?**

# LCA during 2004-2008



# LCA, EPD & EPD System up to now



# Life Cycle Assessment



# Footprints



Carbon Footprint  
*gCO<sub>2</sub>-eq per kg or Litre of food*



Water Footprint  
*Litre per kg or Litre of food*



Ecological Footprint  
*Global m<sup>2</sup> per kg or Litre of food*



1. Quick, Simple e reliable
2. Env Results verified & certified
3. Product comparisons possible
4. Public consultation process



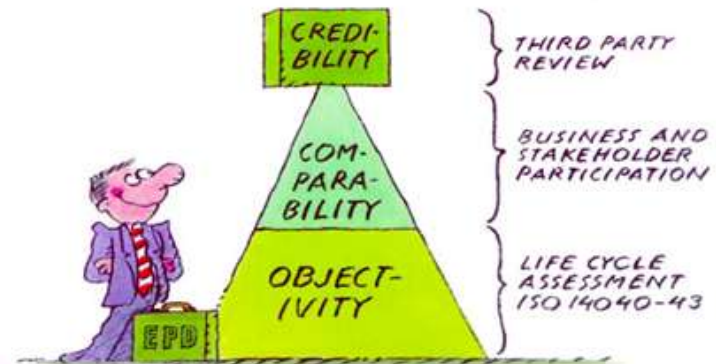
- PCR reliability assured by an **open consultation**
- **Comparability** among the same **product group**
- Possibility to **develop** an **EPD Process system**



Vattenfall has had its EPD process certified.

VATTENFALL AND BARILLA PIONEERING EPD  
PROCESS CERTIFICATION

EPD®



*EPD Certified & Published at April 2013*

33



## A “FUNNEL” PROCESS

The system works as a “funnel process”: data from the **database** and from **product specific** information are processed by the **product system tool** in order to have the specific **LCA data sheet**.

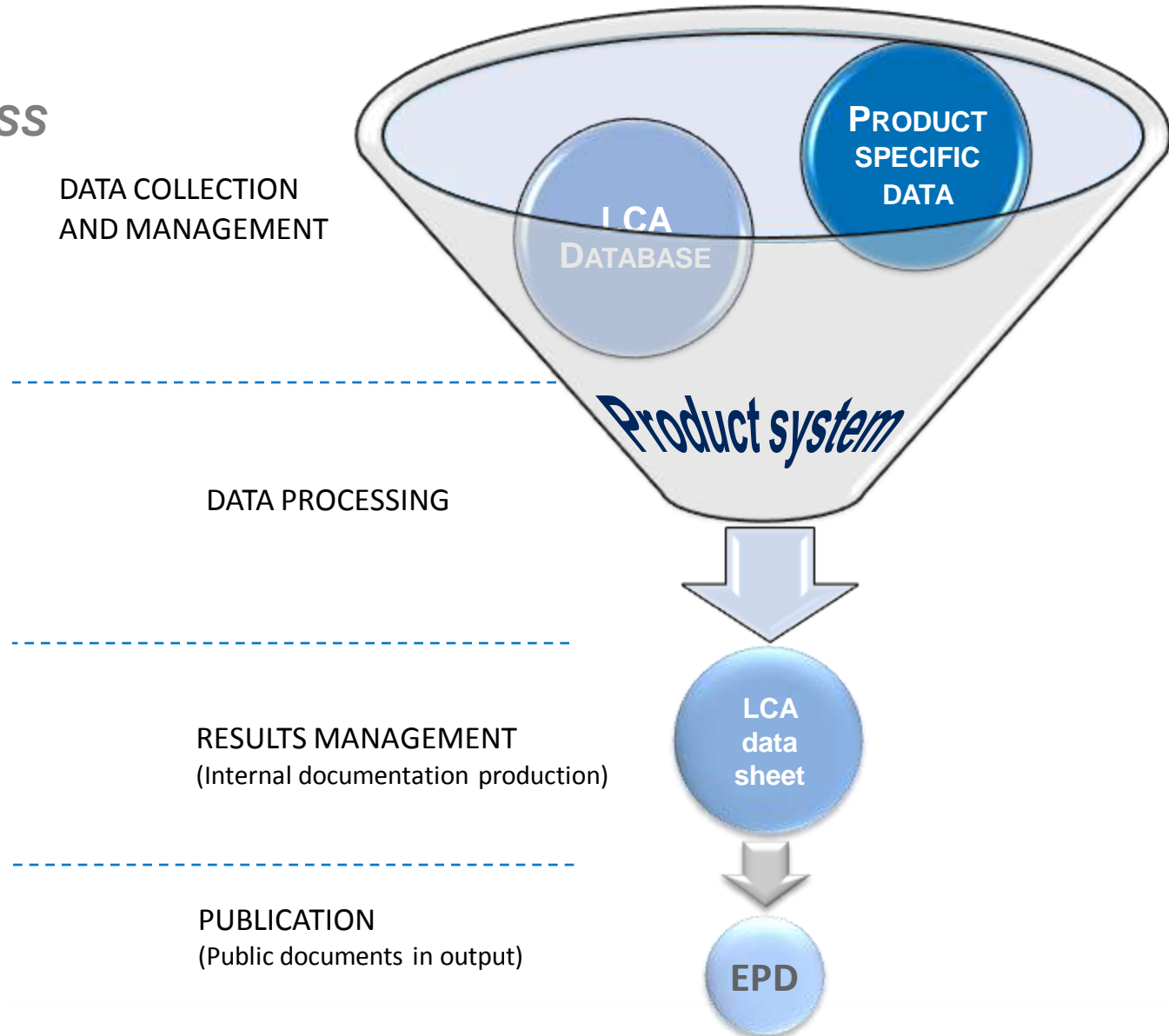
This document is then used for the preparation of the **EPD**.

DATA COLLECTION  
AND MANAGEMENT

DATA PROCESSING

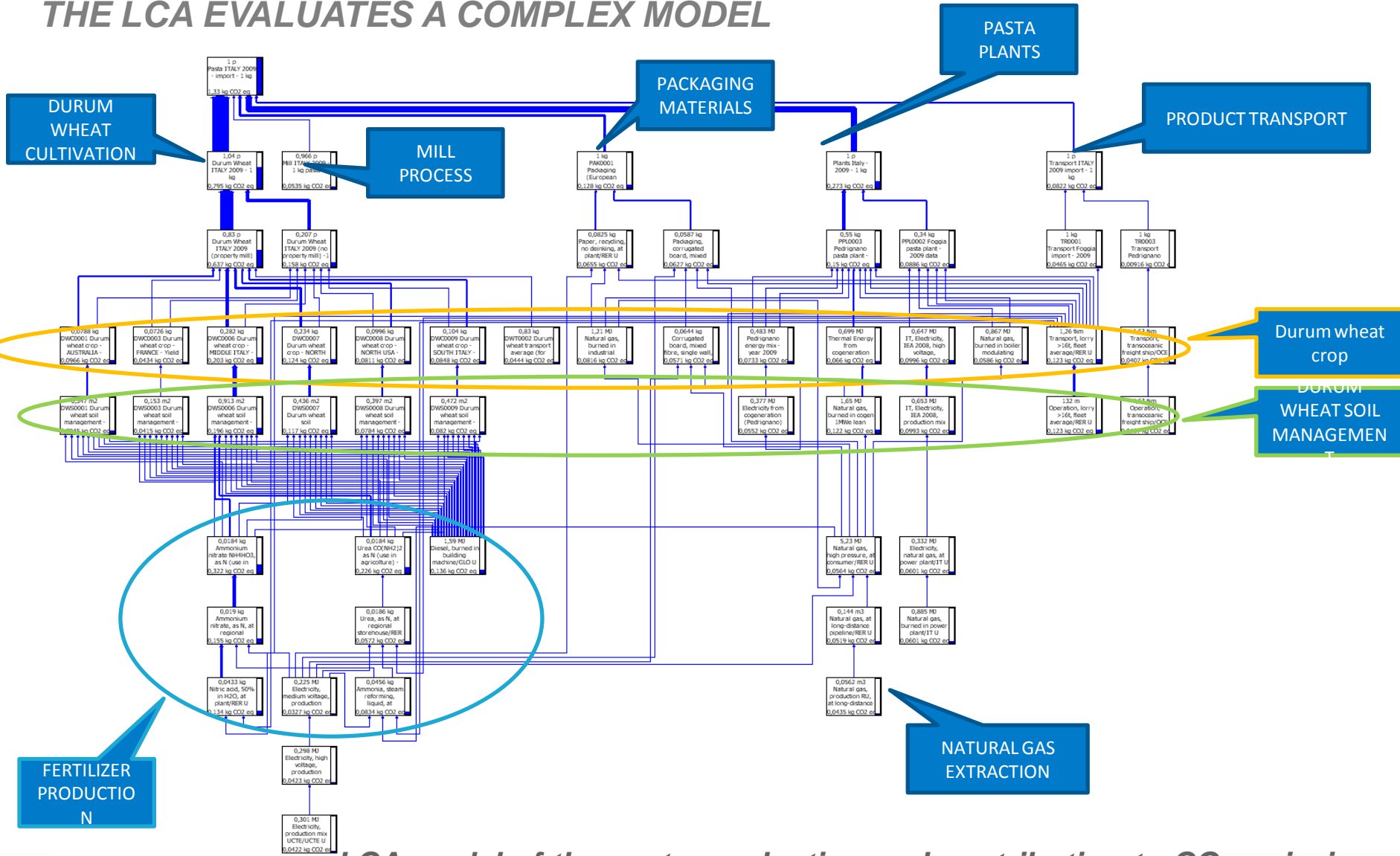
RESULTS MANAGEMENT  
(Internal documentation production)

PUBLICATION  
(Public documents in output)



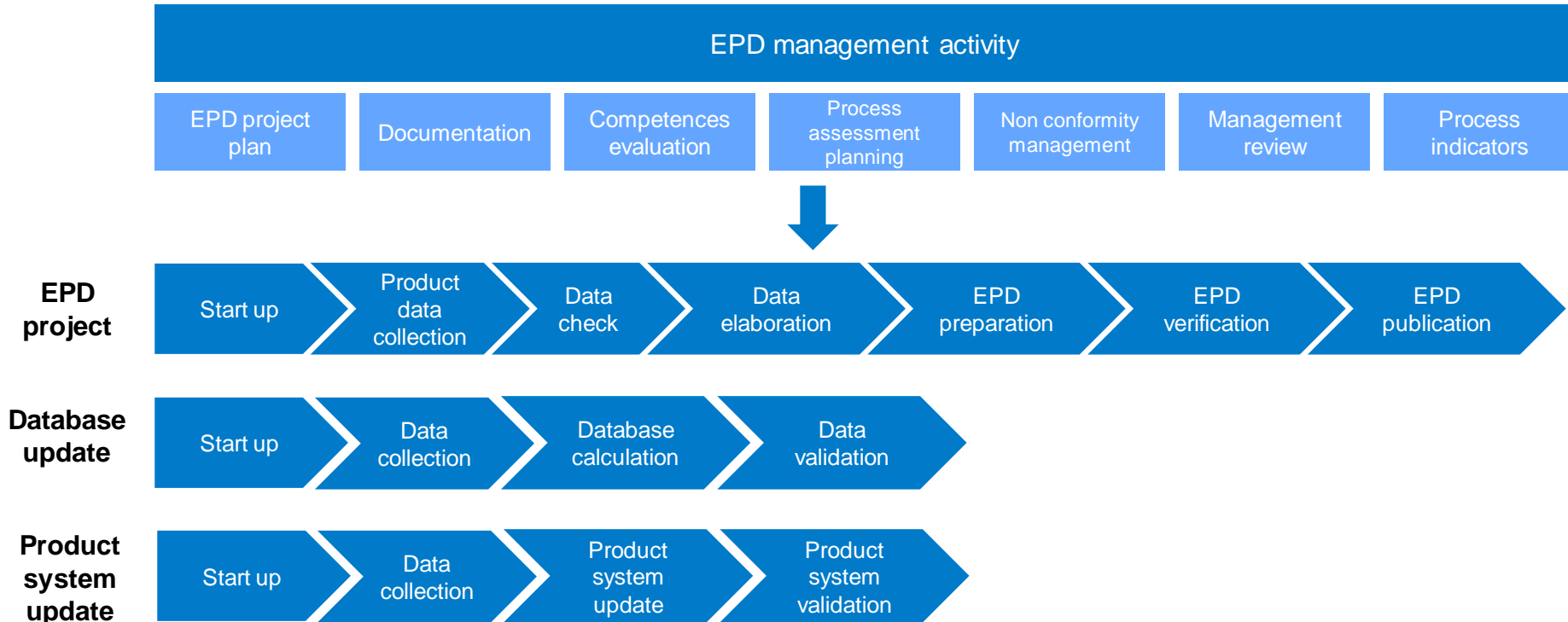


## THE LCA EVALUATES A COMPLEX MODEL



LCA model of the pasta production and contribution to CO<sub>2</sub> emissions

## HOW DOES THE SYSTEM WORK?



## PROCESS INDICATORS

The **EPD process performances** are evaluated by mean of specific indicators that are recorded in the EPD process register.

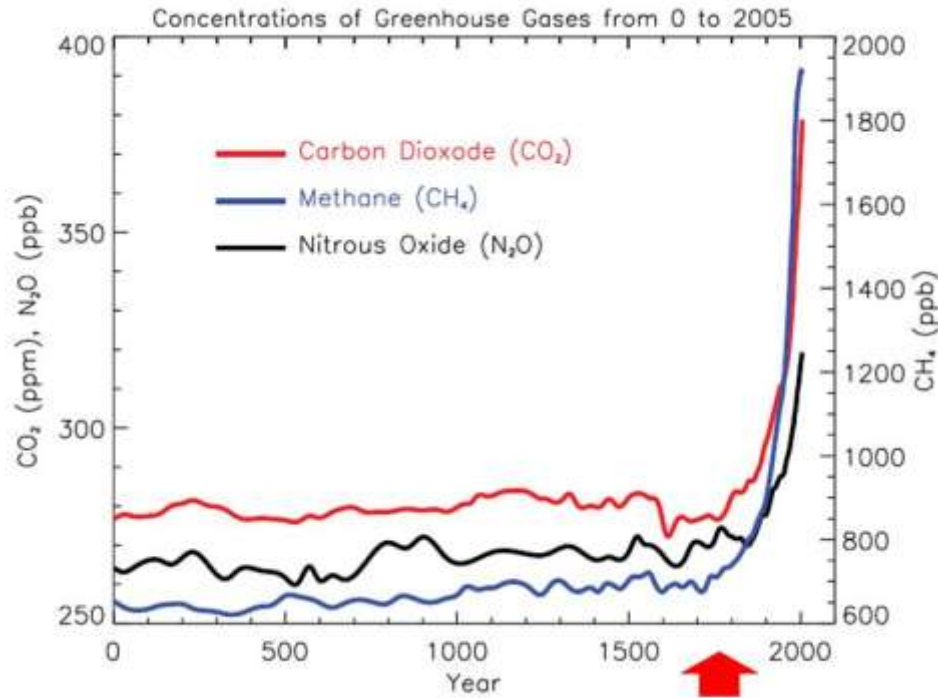
| INDICATORS     | Situation at<br>30/04/2012 | DESCRIPTION   |
|----------------|----------------------------|---|
| PUBLISHED EPD  | <b>33</b>                  | Number of published EPDs available  |
| EPD IN PROCESS | <b>16</b>                  | Number of the product that will be covered by an available EPD when the running project will be completed   |
| TOTAL MODULE   | <b>about 1000</b>          | Total amount of the data modules that are needed for completing the EPD activities included in the running project.   |
| AVAILABLE DATA | <b>90%</b>                 | Percentage of the total data module available for EPD realization. It represents how much the data collection performance is completed.   |
| VALIDATED DATA | <b>83%</b>                 | Percentage of the total data module that are validated and ready for the EPD calculation. In represents the measure on how much the database is completed with validated information. |

## Barilla EPD Process System

### *DATAMODULE REALIZED*

| Part of the Product System | LCA stages             | Datamodule (number) |
|----------------------------|------------------------|---------------------|
| LCA Database               | Product raw material   | 296                 |
|                            | Plant                  | 77                  |
|                            | Mill                   | 28                  |
|                            | Packaging raw Material | 60                  |
|                            | Energy mix             | 160                 |
| Product Specific Data      | Product recipe         | 159                 |
|                            | Packaging list of bill | 94                  |
|                            | Specific consumption   | 126                 |
|                            | Transport              | 114                 |
| <b>TOTAL DATAMODULE</b>    |                        | <b>1114</b>         |



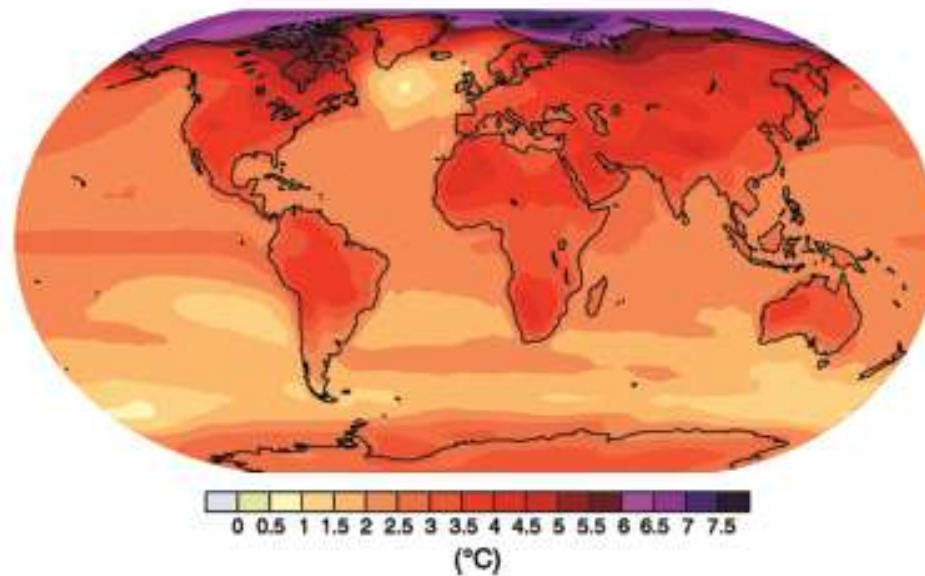


| Global Top 10 Warm Years (Jan-Dec) | Anomaly °C  |
|------------------------------------|-------------|
| <b>2005</b>                        | <b>0.61</b> |
| <b>1998</b>                        | <b>0.58</b> |
| <b>2002</b>                        | <b>0.56</b> |
| <b>2003</b>                        | <b>0.56</b> |
| <b>2006</b>                        | <b>0.55</b> |
| <b>2007</b>                        | <b>0.55</b> |
| <b>2004</b>                        | <b>0.53</b> |
| <b>2001</b>                        | <b>0.49</b> |
| <b>2008</b>                        | <b>0.49</b> |
| <b>1997</b>                        | <b>0.46</b> |

*Note: recorded anomalies in average temperature 10 from the period 1901-2000*

# THE 2°C CHALLENGE COMMUNIQUÉ

A CALL FROM BUSINESS FOR NATIONAL AND  
GLOBAL ACTION ON CLIMATE CHANGE



**CLM** CORPORATE  
LEADERS NETWORK  
FOR CLIMATE ACTION

  
THE PRINCE OF WALES  
CORPORATE LEADERS GROUP FOR CLIMATE CHANGE  
UNIVERSITY OF CAMBRIDGE PROGRAM FOR SUSTAINABILITY LEADERSHIP

 UNIVERSITY OF  
CAMBRIDGE  
PROGRAMME FOR  
SUSTAINABILITY LEADERSHIP

# Barilla Environmental Product Declaration (EPD)



**Barilla**  
The Italian Food Company Since 1877

**EPD\***  
ENVIRONMENTAL PRODUCT DECLARATION

**Environmental  
Product  
Declaration**  
of durum wheat  
semolina dried  
Pasta in paperboard  
box (brand Barilla)



**CPC code**  
2371 — Uncooked  
pasta, not stuffed or  
otherwise prepared  
PCR 2010: 01 version 1.1  
2010-06-18

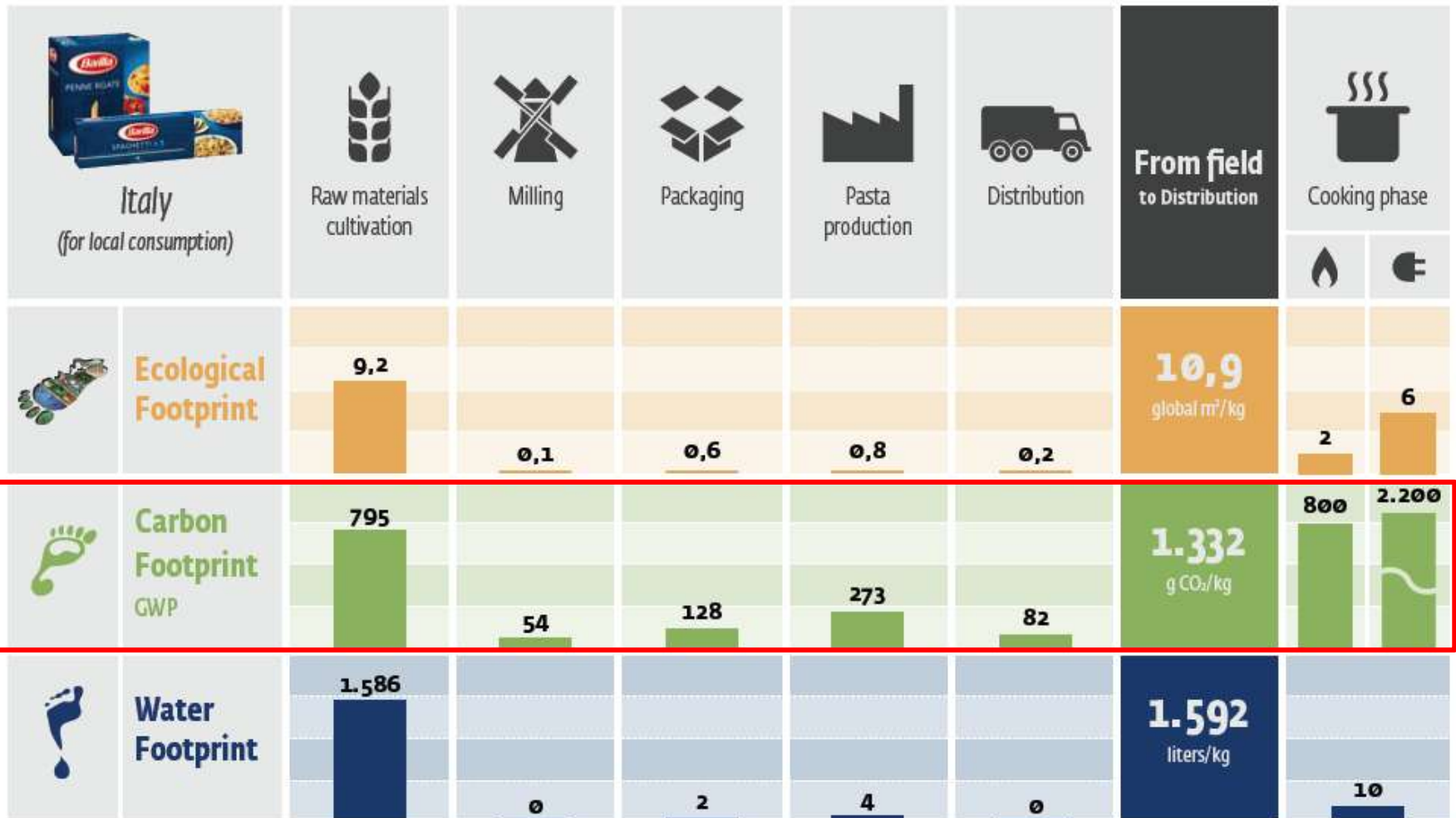
**Approval date**  
10/03/2011  
Valid 3 years

**Revision**  
2

**Registration number**  
S-P-00217

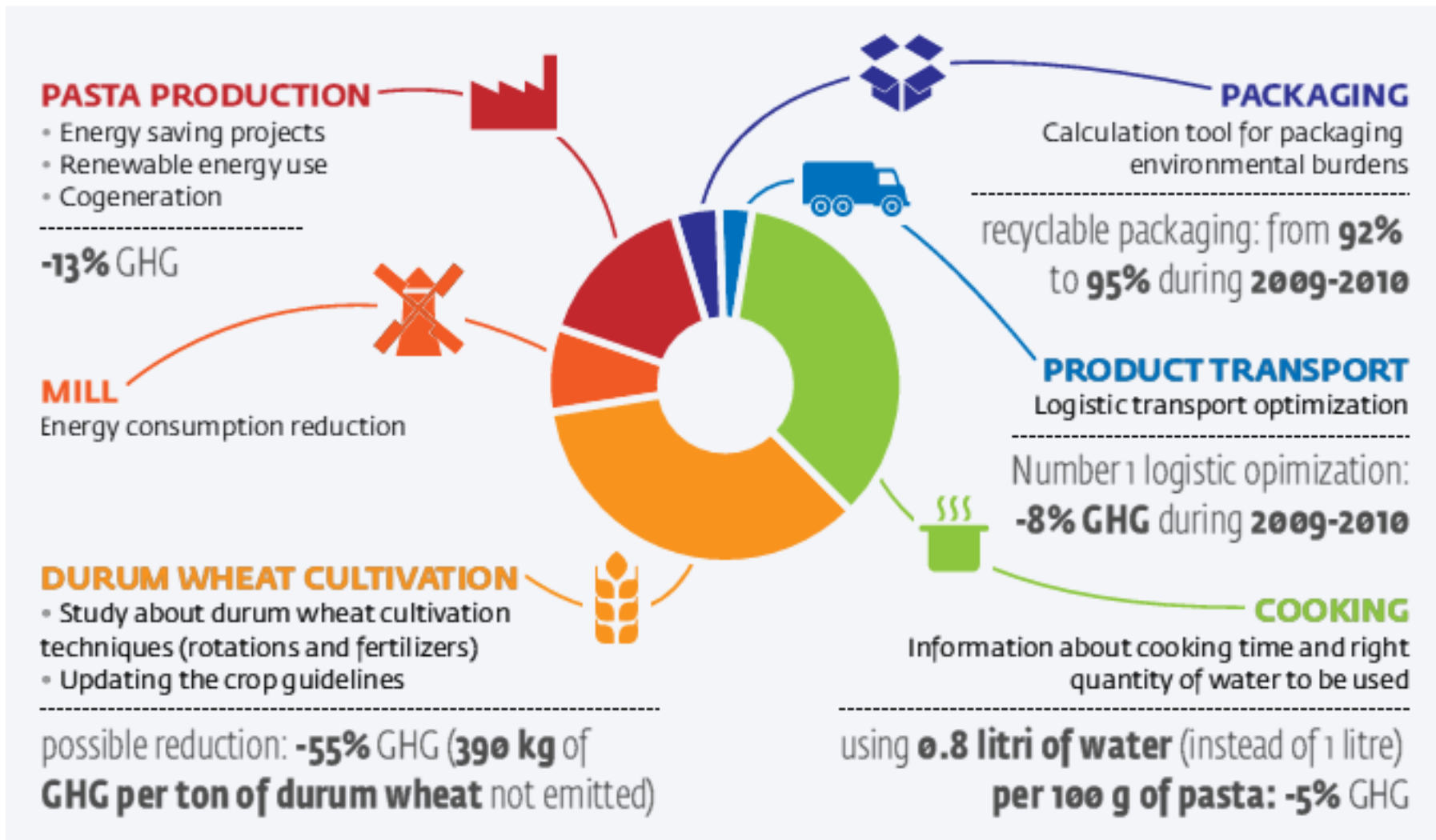
**The first EPD Process  
System certified in  
the food field**

# How to use it?





## From LCA to Environmental Actions





# Plant ... Energy, CO2eq & Water reduction



**NEW**  
Carbon Footprint  
adopted as an  
Barilla Company  
official KPI



Pack recyclability



## HANDBOOK FOR SUSTAINABLE CULTIVATION OF QUALITY DURUM WHEAT

The **Handbook for durum wheat cultivation** comes from the results of the pasta EPD study. The handbook is a list of guiding principles for farmers choices, into the complex challenge of modern agriculture.

### OBJECTIVE APPLICATION 10 RULES

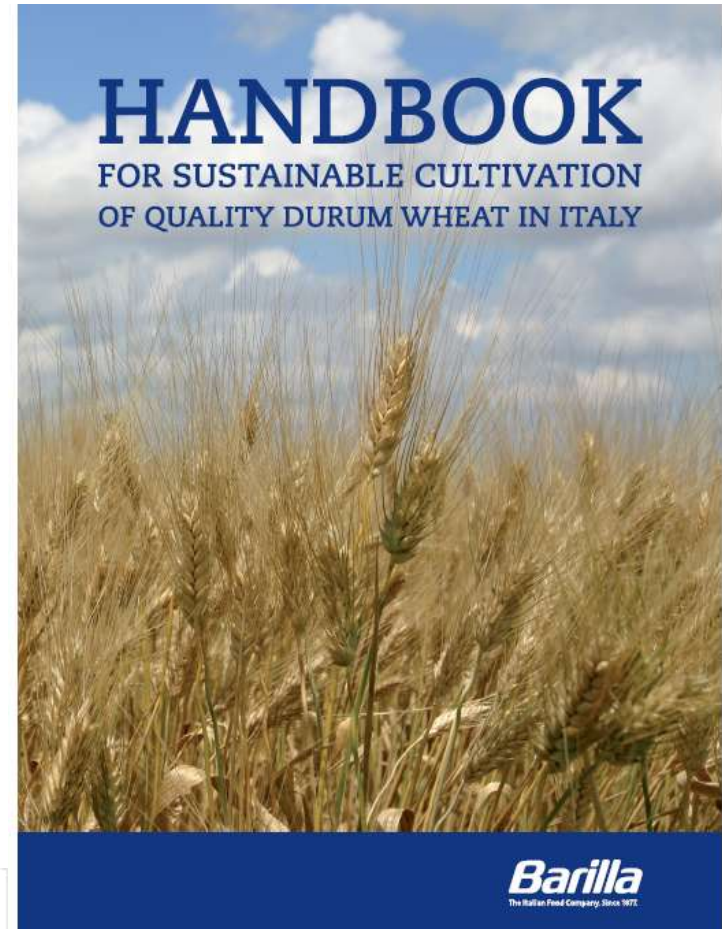
*DON reduction  
(Food Safety)*



*Yield increase  
and quality  
improvement*



*Environmental  
impact  
reduction*





# Barilla Sustainable Grains Project



## Durum Wheat in Italy



granoduro.net



CSR  
Manager Network Italia



|              | 2011 | 2012 | 2013 | 2014 |
|--------------|------|------|------|------|
| Farmers test |      | 15   | 100  | 500  |
| Durum        |      |      | 10kt | 50kt |

Study results confirmed -36% Co2eq - 100 €/ha



## 2012 www projects

| Country | Cereal                  | Technical Partner                                    |
|---------|-------------------------|--|
| Italy   | Durum wheat             | Horta  |
| Germany | Soft wheat              | LFL - Bavarian State Research Center for Agriculture |
| Greece  | Durum wheat             | University of Thessaly                               |
| France  | Soft wheat, durum wheat | Axereal  |
| Turkey  | Durum wheat             | University of Sanliurfa                              |
| Sweden  | Rye                     | Lantmannen   |
| Canada  | Durum wheat             | CWB  |
| USA     | Durum wheat             | Sustainability Consortium (tbc)                      |



The Award for Corporate Sustainability organized by Sodalitas Foundation, which enhances the commitment of companies in sustainability, saw the participation of 244 companies and 192 projects submitted candidates. But only 11 winners were awarded with recognition of the scope, during the event "Young people and work: priorities for the country," in which it was dealt with the issue of youth employment as a priority to overcome the crisis.

Large companies category winner

## Winner: Barilla - Sustainable Agriculture: a multidisciplinary

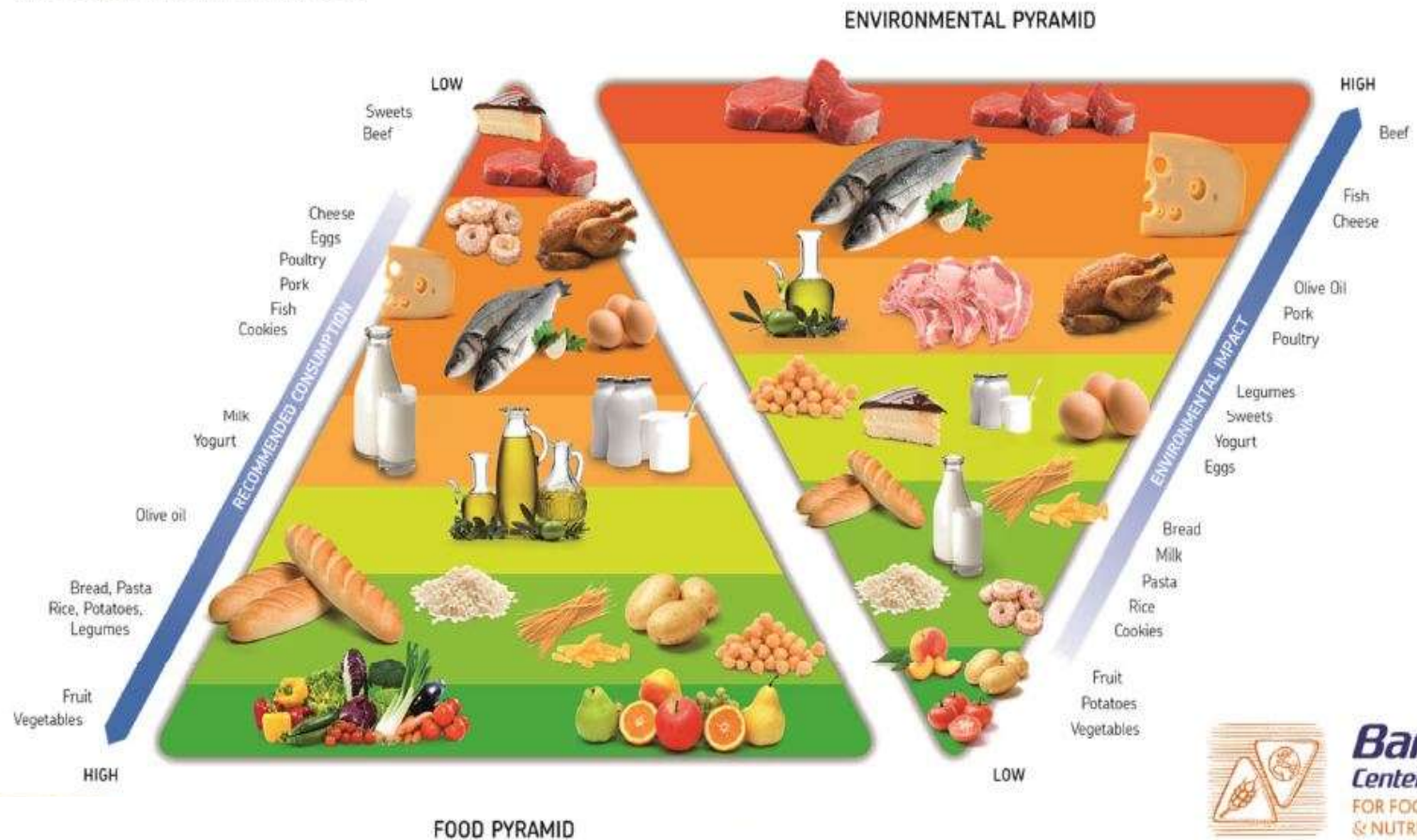


## EU CSR Sodalitas Social Award 2013

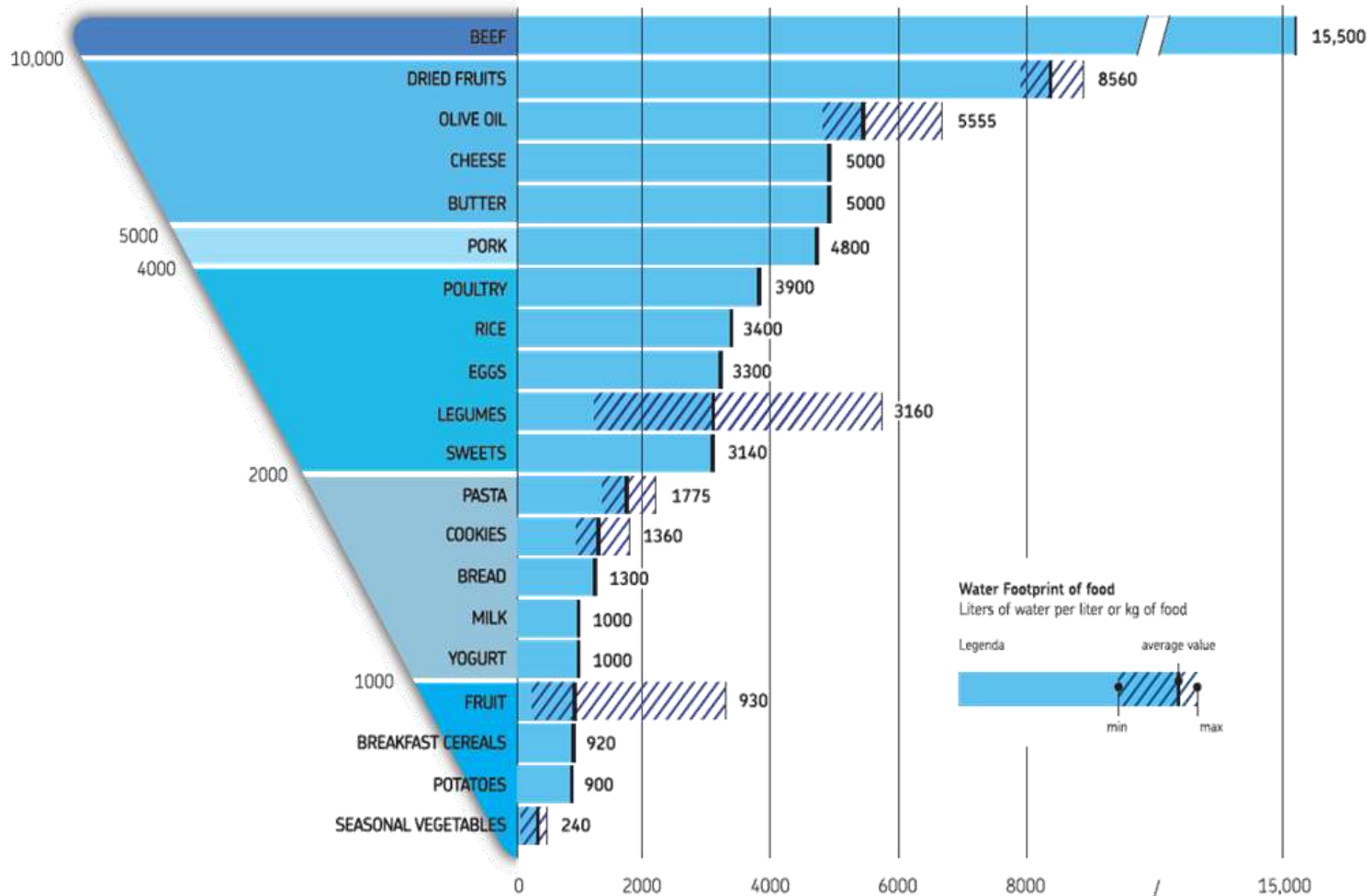
In 2009 Barilla - in collaboration with HORTA from Catholic University of Piacenza and the contribution of Life Cycle Engineering in Turin - has launched a study to assess the possibility of increasing the efficiency of farming systems and the quality of the product, in order to provide to the operating world the tools to improve the overall profitability of farms and the environmental impact of the field production. In this project, the producers of durum wheat have been able to achieve - through the use of the "handbook of cultivation" developed by the company - significant results in terms of reducing the cost of cultivation (10%), reduction of nitrogen inputs (-17%) and reduction of CO<sub>2</sub> emissions (-14%).

# THE BCFN FLAGSHIP CONCEPT: WHAT IS GOOD FOR YOU IS GOOD FOR THE PLANET

THE DOUBLE PYRAMID FOR ADULTS



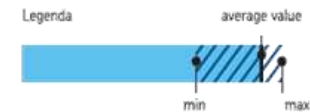
# Water Footprint



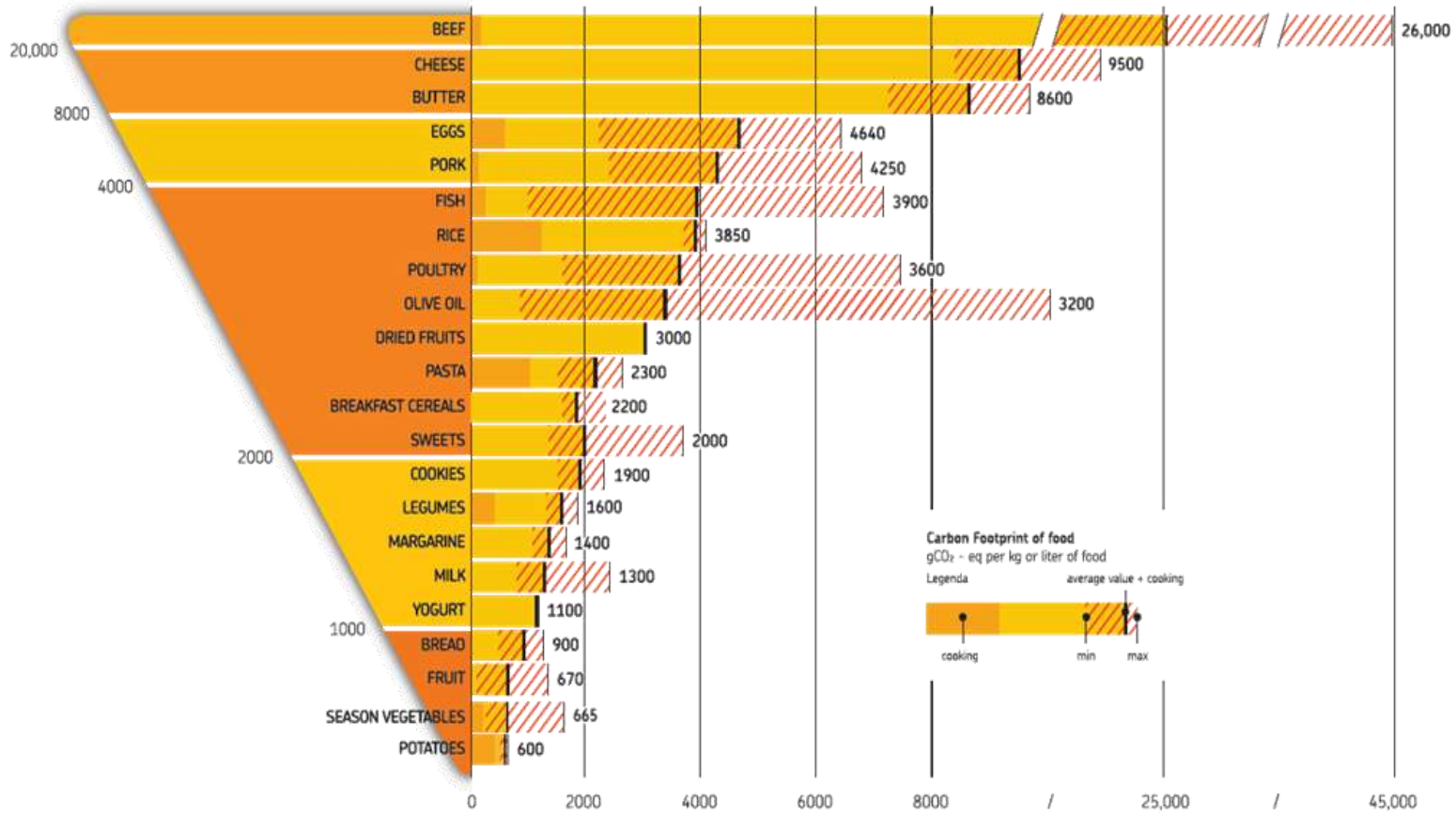
## Water Footprint of food

Liters of water per liter or kg of food

Legenda



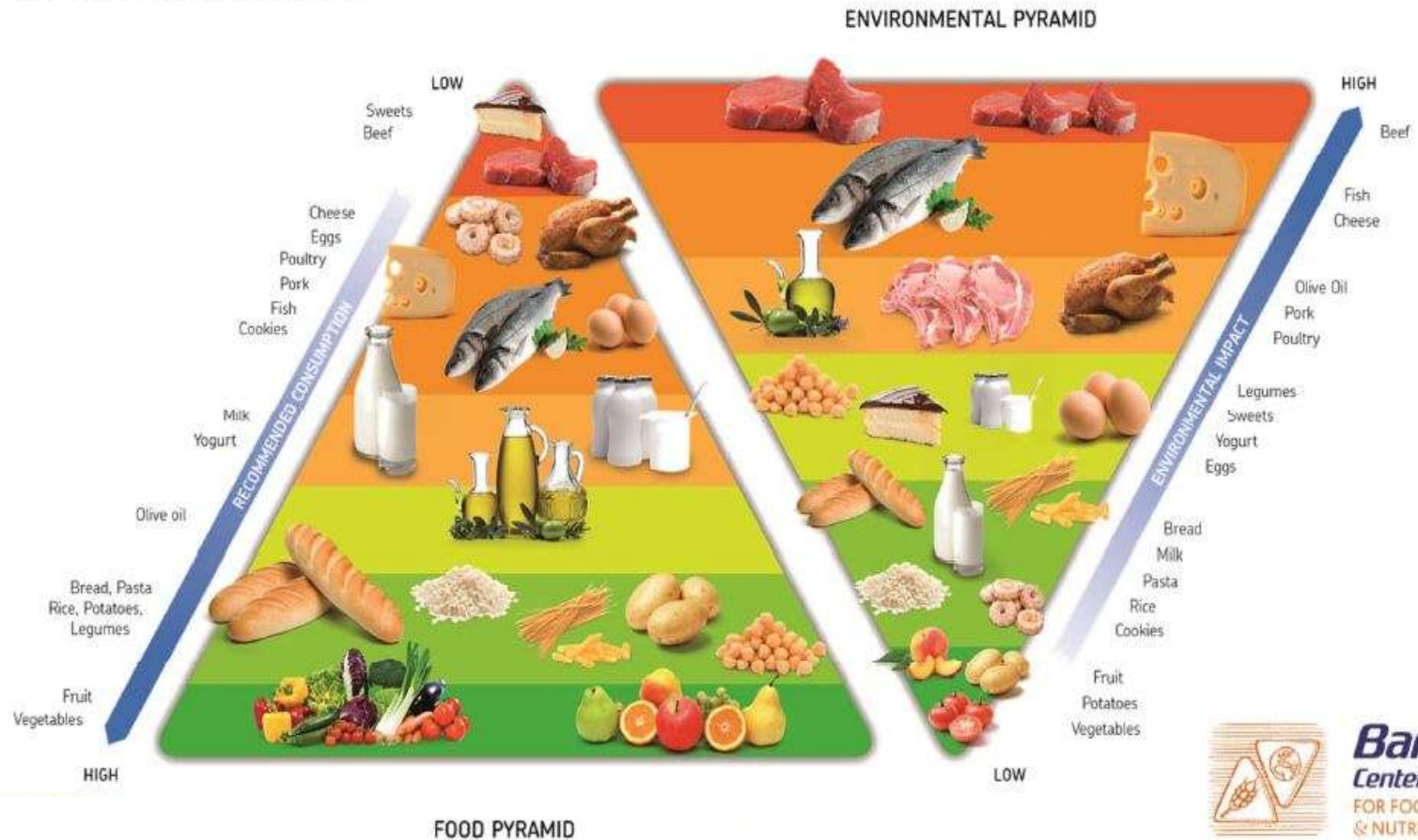
# Carbon Footprint





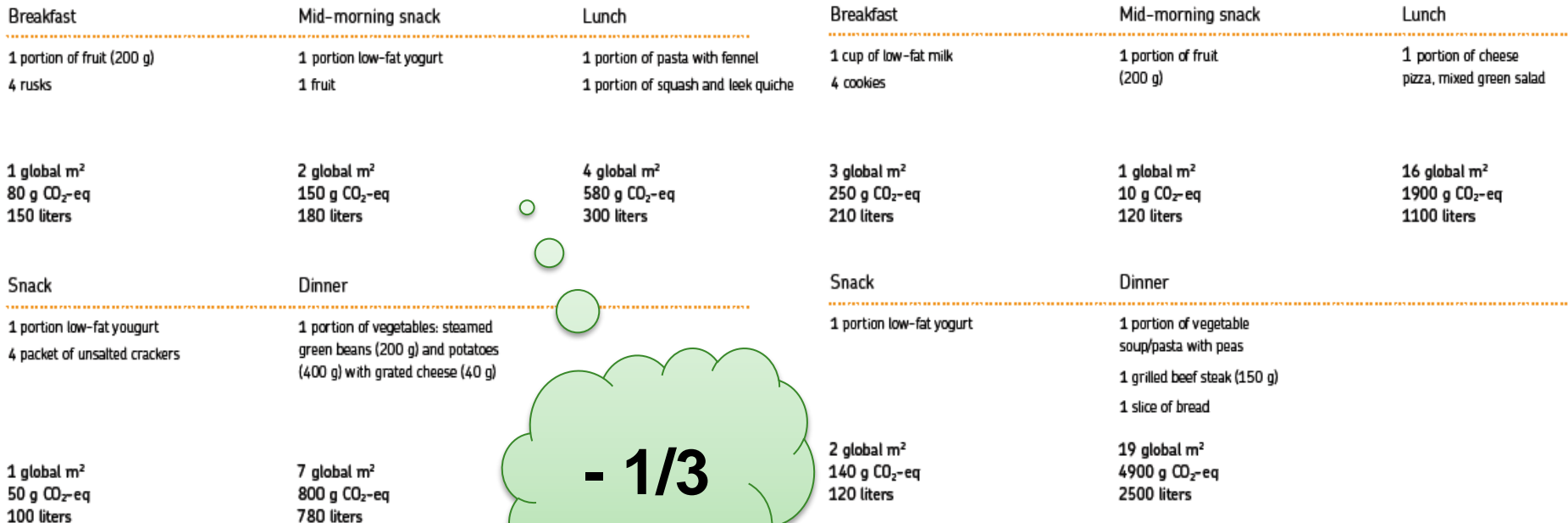
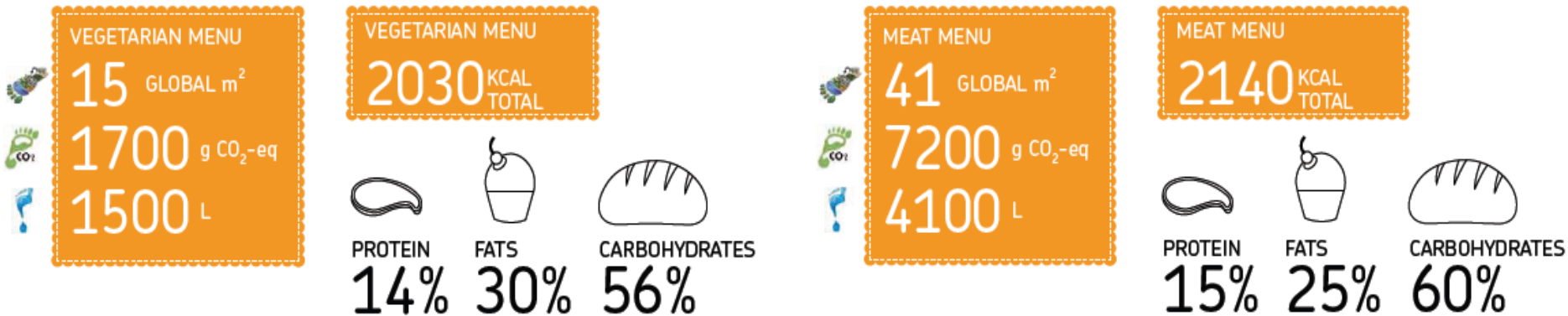
# THE BCFN FLAGSHIP CONCEPT: WHAT IS GOOD FOR YOU IS GOOD FOR THE PLANET

THE DOUBLE PYRAMID FOR ADULTS





# Environmental impact of different dietary habit



- 1/3

# *Sustainability & Business*

In Barilla 2013 is the year of the

## **1. Brand CSR Strategy definition**

*MKTG has been searching their*



## **2. CSR Retailer collaboration**

## **3. Sustainable Durum Wheat & GSC CSR project**



# First Mulino Bianco Sustainability ADV Pills

**Cage free hens**



**Biscuits  
Recyclable Pack**



**Renewable Energy**



**New Pack System**





**Supply Chain CSR Project are  
becoming more & more  
important ...  
...MKTG have been using them**



# Plant ... Energy, CO2eq & Water reduction



**NEW**  
Carbon Footprint  
adopted as an  
Barilla Company  
official KPI



Pack recyclability



## Barilla EPD Environmental Product Declaration



**30**  
**EPD**  
2012  
on website





# ... CSR Project are becoming more important ... also for Retailers

## Retailer Collaboration

IN STORE  
Sales SOLUTIONS



Collaborative  
SUPPLY chain



SUSTAINABILITY  
Energy/Environment



**> L'affichage carbone existe déjà**

**> Sur le ticket de caisse chez Leclerc**

**> Sur le produit chez Casino**

**Dans le yaourt, les émissions de CO2 étape par étape**

|                                    |     |
|------------------------------------|-----|
| Emballage                          | 41  |
| Transport (700 km)                 | 27  |
| Distribution (stockage en magasin) | 104 |
| Étapes agricoles                   | 126 |
| Fabrication                        | 7   |

Quantité en g EQ CO2 pour 100 g de produit

## Environmental information example adopted in French labelling

- 1 - Physical value
- 2 – Relative scale without physical value
- 3 - Single vote in numbers aggregating different impacts (or percentage)
- 4 - Single vote in letters aggregating different impacts
- 5 - Relative scale and physical value
- 6 - Vote for each criterion and global vote

|  |  |
|--|--|
| <p>IMPACT SUR LE CLIMAT<br/>52 g</p> <p>POLLUTION DE L'EAU<br/>6,8 L</p> <p>CONSOMMATION EN EAU<br/>4,9 L</p> <p>EPUISEMENT DES RESSOURCES<br/>6,8 mg eq Sb</p> <p>1</p> | <p>Impact sur le climat</p> <p>Pollution de l'eau</p> <p>Consommation en eau</p> <p>Epuisement des ressources</p> <p>2</p>                               |
| <p>Note environnementale<br/>3/5</p> <p>3</p>  | <p>Note environnementale<br/>B</p> <p>4</p>  |
| <p>Impact sur le climat 52 g</p> <p>Pollution de l'eau 6,8 L</p> <p>Consommation en eau 4,9 L</p> <p>Epuisement des ressources 6,8 mg eq Sb</p> <p>5</p>                 | <p>Impact sur le climat D</p> <p>Pollution de l'eau B</p> <p>Consommation en eau A</p> <p>Epuisement des ressources B</p> <p>Note Globale B</p> <p>6</p> |



# Retailers Collaboration in France



PARCE QU'ON EST TROP SOUVENT PERDU  
PARMI LES OFFRES DE PRODUITS DIT  
«RESPONSABLES»

ECLERC INNOVE ET CRÉE LA DÉMARCHÉ  
CONSO RESPONSABLE

<http://www.conso-responsable.fr/>



Harry's & Barilla have  
been working in order  
to take part of the  
*Conso E.Leclerc*  
Responsible Project &  
be more visible on the  
shelf



COMMENT IDENTIFIER LES PRODUITS EN RAYONS ?

EN SAVOIR PLUS



# Retailers Collaboration



**Il modello della Doppia Piramide Alimentare e Ambientale**

Accostando la Piramide Alimentare a quella Ambientale si ottiene la "Doppia Piramide", dove si nota subito che gli alimenti per i quali è consigliato un consumo maggiore, sono anche quelli che generalmente hanno un impatto ambientale minore. Viceversa, gli alimenti per i quali viene raccomandato un consumo minore sono anche quelli che hanno un maggior impatto sull'ambiente.

In pratica emerge la coerenza, in un unico modello alimentare, di due obiettivi molto rilevanti: il benessere delle persone e la tutela dell'ambiente.

Mangiando secondo le indicazioni della Piramide Alimentare fai bene alla tua salute e a quella di tutto il Pianeta!!!

Per saperne di più: [barilla.com/bcfn4you/!-link](http://barilla.com/bcfn4you/!-link)

www

... una risposta è possibile.



**Buono per me sostenibile per l'ambiente**

Scelgo un'alimentazione sana che fa bene al Pianeta



Lascia il mondo migliore di come l'hai trovato, perché non più di quello che ti è necessario, cerca di non ricreare almeno agli altri i costosi viventi o all'ambiente e, se succede, puoi rivoltare.

Paul Hawken

percorso ideato da:



**La Piramide Alimentare**

La Piramide Alimentare rappresenta una bussola per le nostre scelte alimentari, ci deve orientare sia a tavola ma soprattutto ando facciamo la spesa.

Il alimenti sono suddivisi in strati in base al contenuto dei diversi nutrienti e dei vari composti protettivi.

La Piramide Alimentare ci dice innanzitutto che tutti gli alimenti vanno consumati senza escludere nessuno; quello che è importante è la giusta frequenza. Risalendo la piramide dal basso verso l'alto occorre consumare gli alimenti con maggiore moderazione. Quindi gli alimenti che si trovano alla base della piramide (come frutta, cereali e ortaggi), dovrebbero essere consumati tutti i giorni e in quantità maggiore rispetto agli alimenti che invece si collocano al vertice della stessa (come i dolci e le carni rosse).

**La Piramide Ambientale**

Ha mai riflettuto sul fatto che per produrre gli alimenti che mangiamo consumiamo una parte dell'ambiente in cui viviamo? In sostanza, è come se lasciamo un'impronta sulla Terra. Ogni alimento lascia un'impronta più o meno grande, a seconda di quante risorse sono state utilizzate per produrlo. Per ottenere una bistecca di manzo serviranno risorse (acqua, energia, mangime, trasporti, rifiuti, ecc.) molto superiori a quelle che servono per produrre una pianta di pomodori.

L'impronta ecologica è il valore dell'impatto che l'intero ciclo di produzione, dal campo alla tavola, provoca sull'ambiente.

La piramide ambientale nasce studiando e misurando l'impatto sull'ambiente dei cibi presenti nella piramide alimentare, e disponendoli lungo una piramide capovolta, in cui gli alimenti posizionati più in basso (al vertice del triangolo) hanno il minore impatto ambientale.

L'impronta delle attività umane.

Dalle coltivazioni, ai pascoli, al territorio per abitare e produrre, tutte le nostre attività lasciano un'impronta, il cui valore si può calcolare: l'impronta ecologica è definito dal rapporto per calcolare l'impronta (www.foodprintnetwork.org)



## *Retailers Collaboration*



© 2013 CARBON DISCLOSURE PROJECT



**EU RECs Wasa Project  
is elected by the biggest  
US retailers WallMart  
In order to reduce  
Its footprint: a German  
Green project used in US !!!**



# Food for thought

Hi folks,

My family and I had an opportunity to spend some time with the Barilla family of *Bealla Pasta*. We were particularly impressed with how they take a long term look at the future of food. They think of food in four ways: Food for Health, Food for All, Food for Sustainability, and Food for Culture. To us, this is balance. We thought you might enjoy learning about some of the Barilla family thoughts.

One concept that's very graphic and made quite an impact on us was the double pyramid. One pyramid shows what a recommended diet is. The other shows the environmental impact of foods. We found it fascinating! We applied the Barilla family and hope they continue their good work and excellent products.

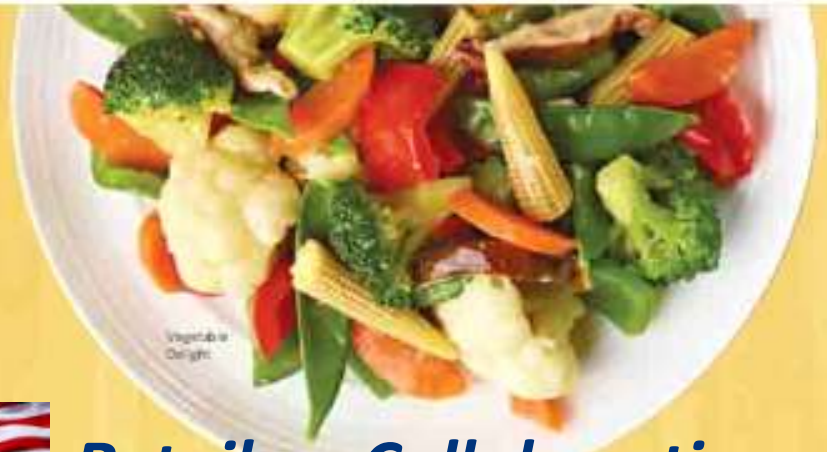
After studying both pyramids, we think you'll agree, "Love Your Veggies!"



Left to right: Denny Wegman, Nicole Wegman, Paolo Barilla, and Colleen Wegman



*Donny*



Vegetable Delight



## Retailers Collaboration




"We're committed to doing everything we can to make great, healthy foods available to you!"

—Denny Wegman

(Food Pyramid based on USDA's CENTER FOR FOOD & NUTRITION)

## The Consumer Goods Forum and The Sustainability Consortium Announce Global Partnership to Harmonize Sustainability Measurement

 *December 11th, 2012*



## The Consumer Goods Forum and The Sustainability Consortium Announce Global Partnership to Harmonize Sustainability Measurement

December 11th, 2012



CGF companies have made significant progress in assessing their greenhouse gas (GHG) impacts of their operations. In June 2011, the Board collectively agreed to measure those emissions of business operations using the World Resource Institute / World Business Council on Sustainable Development GHG Protocol and report through the Carbon Disclosure Project, the recognized global GHG standard and reporting mechanism for companies.

The partnership between TSC and CGF will advance this work by focusing on Product Life Cycle Impacts, which will benefit from a single global framework to share information between companies, regulators, consumers, and CSOs. This framework enables value chain participants to improve sustainability performance by gaining transparency and better understanding into the environmental impacts of individual consumer products and their life cycles. TSC and CGF will accelerate the development and implementation of this global framework in the pursuit of harmonization with other similar initiatives in which CGF are already actively engaged.

Helen Fleming, Climate Change Director, Tesco and Co-Chair of the CGF Sustainability work stream, said "The partnership with TSC is an important step in the CGF's plan to move towards a common global system for measuring and communicating the environmental impact of products, beginning with their carbon impact. It is an exciting development and we all need to work together to bring it to fruition".

The Co-chair of the Sustainability work stream, Gail Klintworth, Chief Sustainability Officer of Unilever, added "successful collaboration between leading global Consumer Goods companies and the TSC is a key driver in helping our members to reduce their carbon emissions and other environmental impacts, and so improve the environmental footprints of the products they sell. The vision is for us to help consumers make more sustainable choices about the products they buy – empowering them to become active agents as we take on the challenge of living and growing within our natural planetary boundaries." Both Tesco and Unilever are members of The Sustainability Consortium.

According to Kara Hurst, CEO of The Sustainability Consortium, "A strong partnership between The Sustainability Consortium and the Consumer Goods Forum will allow us to openly share information, in particular, research on environmental and social impacts. We are honored to have CGF as a partner and look forward to working with them as we move the science of sustainability forward."



**ARIZONA, USA, – December 11th, 2012** – As the consumer goods industry continues to drive sustainability throughout the supply chain, there is an increasing need for a globally harmonized science-based approach to measure and communicate product lifecycles. Today, a partnership between two leading global organizations was announced that will create tremendous progress in achieving this goal. The Sustainability Consortium (TSC), an independent organization of global participants developing science and integrated tools to support informed decision making for product sustainability across the consumer goods industry and The Consumer Goods Forum (CGF), a global industry network with over 400 retailers, manufacturers, service providers and other stakeholders are announcing a strategic alliance.

The Sustainability Consortium (TSC) is an independent organization of diverse global participants with over 90 members representing the world's largest suppliers and retailers, non-profit and government organizations, and leading academic institutions in the area of product sustainability. TSC's goal is to design and implement harmonized, transparent and scalable science-based measurement and reporting systems to measure environmental impact of product sustainability that will be accessible for all producers and users of consumer products.





## Walmart Sustainability



Category Assessment Instructions Product Coverage Category Fact Sheets Frequently Asked Questions

Please review the [Program Overview](#), Instructions, Product Coverage information, and the Frequently Asked Questions before you begin the assessment. Question-specific guidance is available in the Category Fact Sheets and by hovering over the blue question mark that follows most questions. **The deadline is September 14th.** Thank you for participating!

### Questions for Dough and Baked Goods

1. This question (1) is not being used as part of the Walmart assessment at this time: \*

Not Applicable

2. What percent of your grain is provided by suppliers that track fertilizer use and have goals and a program in place to optimize fertilizer use? Please enter valid score: \*

100%

3. What percent of your grain is provided by suppliers that monitor soil fertility and have goals and a program in place to minimize soil degradation and erosion? Please enter a number: \*

100%

4. What percent of your grain is provided by suppliers that track on-farm fuel use and have goals and a program in place to reduce fossil fuel use? Please enter a number: \*

100%

5. What percent of your grain is provided by suppliers that track on-farm irrigation water use and have goals and a program in place to optimize water use? Please enter a number: \*

100% (Rye is



# Luca's final remarks

1. The transition to CO2 **Climate Smart Economy** is a decision taken after Copenhagen (even if is a piece of full CSR picture)
2. CSR is starting to be not only a issue of **15% people**
3. More **innovation** is starting to be environmental driven
4. Company are developing CSR Brand strategy
5. Measure is a **conventional** even if scientific base exercise
6. EPD is a tool to **measure** (full ISO compliance) PCR centered
7. But **other experience** (Granelle Law in FR, EU Commission & Sustainable Consortium) are moving fast
8. Harmonization, mutual recognition of different systems, **PCR & dBase....** the real challenge is **which kind of Governance we hope?**

*Thank you*



*luca.ruini@barilla.com*

## *PROCESS OPERATIONS: THE PILLAR ELEMENTS*

The system framework is organized among the following main elements:

- The **LCA databases**, in which all the most important **raw materials, production plants, packaging materials** and other useful information are studied. The database **consists of a set of Data modules** containing all the information that are **internally verified**. The available information is ready to be used for the EPD purposes;
- The **Product system**, that represents the **product group model calculation tool**. The system includes few product systems based on the **specific PCR** (such as pasta, bakery, sauces). The product systems are internally verified and they are ready to be used for the EPD purposes;
- The **Product specific data**, related to the production of a particular product. They have to be collected for each EPD and include **product recipe, involved production plants, packaging list of bill, transport information**.

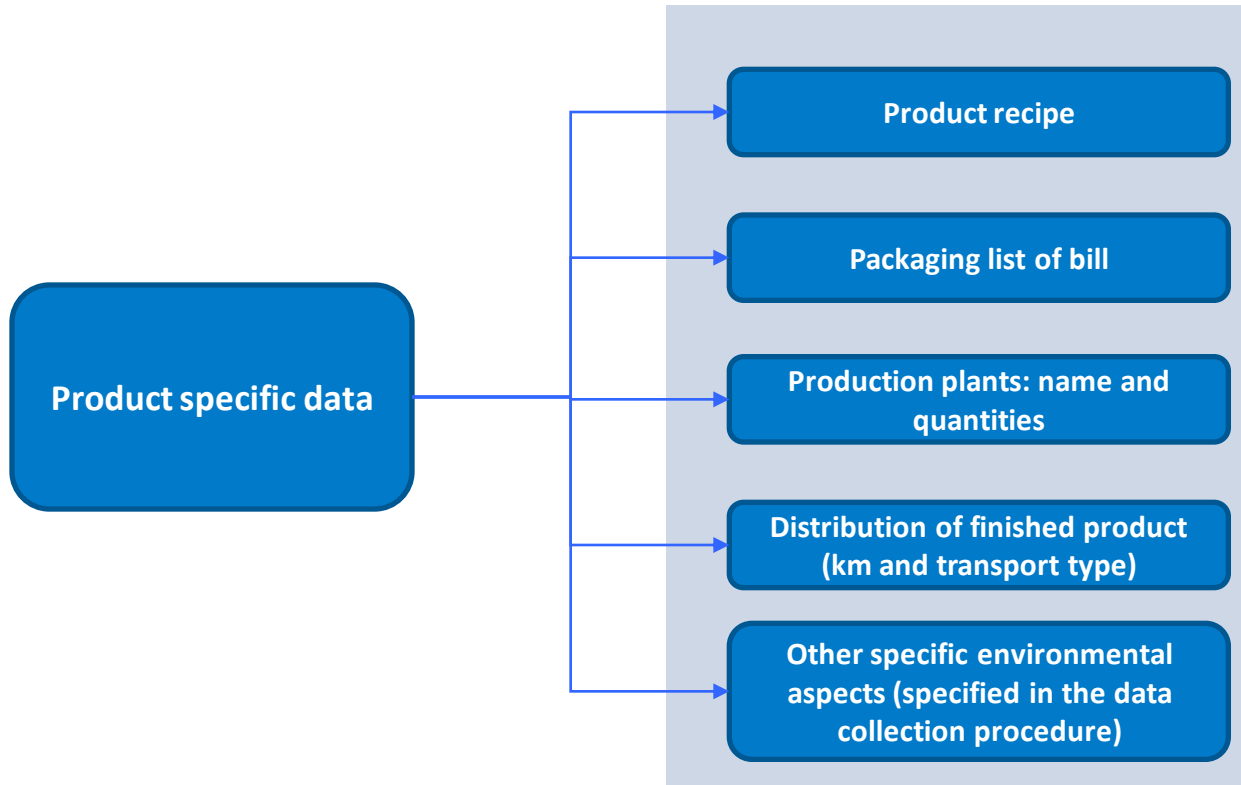
## LCA DATABASE FRAMEWORK

The database is organized among different data module groups.

|                      |  |
|----------------------|--|
| <b>Raw materials</b> | information about the cultivation and the processes operation of the main raw materials used for the Barilla's product preparation. Example of these are durum and soft wheat, tomatoes, rye, sugar, palm oil, eggs, etc. These data are updated as soon as new information is available |
| <b>Plants</b>        | information about the processes that take place in the Barilla's plant. These data are based on the data collection and they are updated every year.   |
| <b>Electricity</b>   | data about the energy mixes used in the countries in which the Barilla's plants are located. This database, that is updated every time new information is available, contains also data about the RECS certified energy  |
| <b>Packaging</b>     | data about materials used for the primary and secondary packaging used for the Barilla's products  |
| <b>Transports</b>    | data about the main way of transports used for the Barilla purposes  |
| <b>Other</b>         | data about other environmental aspects that are analyzed by mean of secondary data.  |



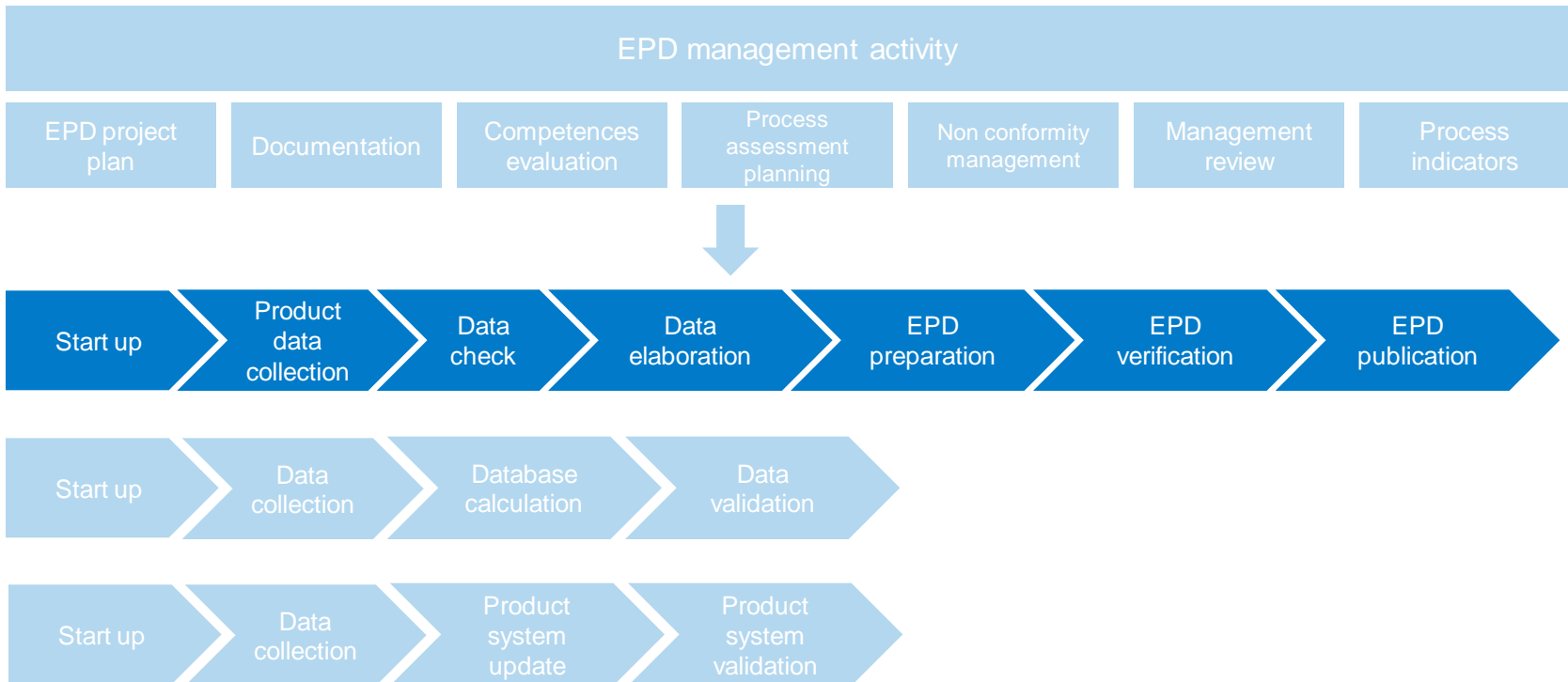
## PRODUCT SPECIFIC DATA



## AN EXAMPLE OF PRODUCT SYSTEM

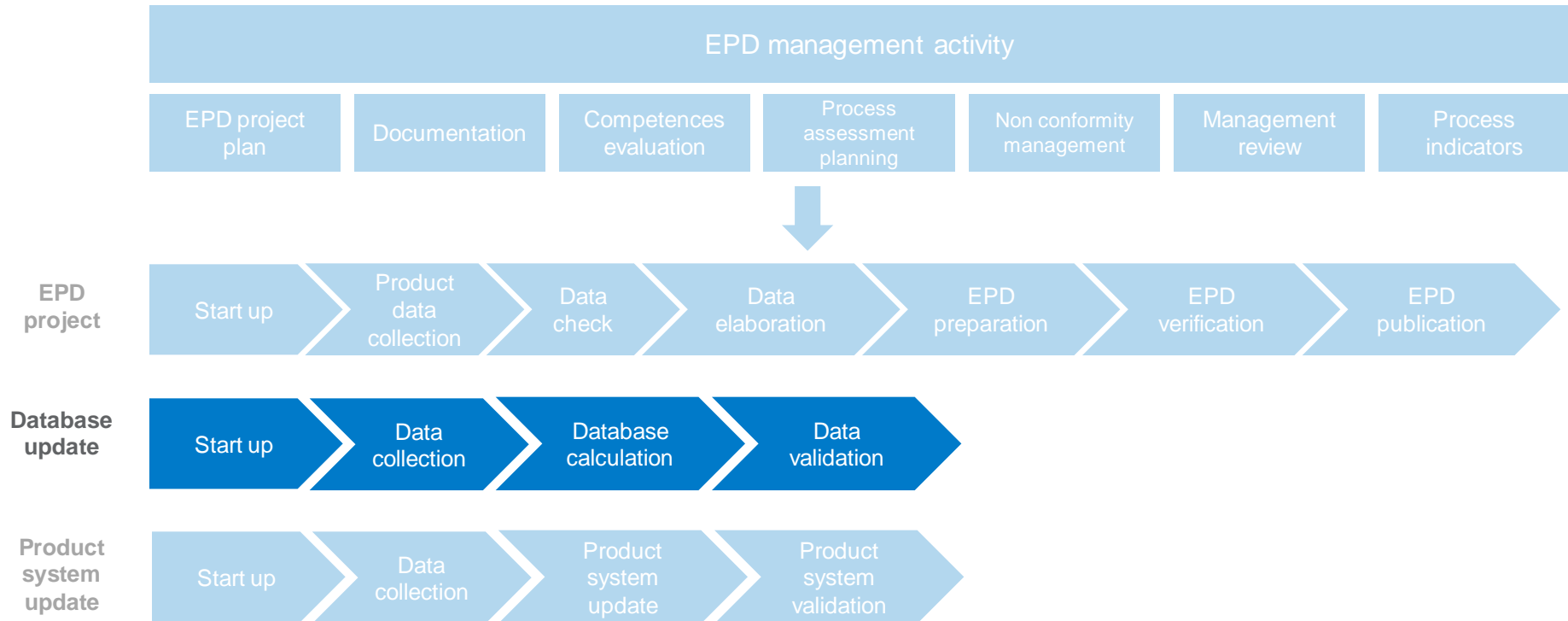
|                                       | Product specific data                              |   | LCA database   |   | Total  |
|---------------------------------------|--|---|--|---|--|
| <b>Recipe</b>                         | Grams of ingredients per kg of product             | X | Impacts per kg of ingredients                          | = | Impacts per kg of products due to the ingredients    |
|                                       |  |   |  |   | +  |
| <b>Plants</b>                         | Plants in which the product is made and quantities | X | Impacts per kg of products made by the specific plants | = | Impacts per kg of products due to the production     |
|                                       |  |   |  |   | +  |
| <b>Specific environmental aspects</b> | Natural gas for bakery                             | X | Impacts per Nm <sup>3</sup> of burned NG               | = | Impacts per kg of products due to the bakery         |
|                                       |  |   |  |   | +  |
| <b>Packaging list of bill</b>         | Grams of materials per kg of product               | X | Impacts per kg of packaging materials                  | = | Impacts per kg of products due to the packaging      |
|                                       |  |   |  |   | +  |
| <b>Transportation</b>                 | Km covered by train, truck and ship                | X | Impacts per km by train, truck and ship                | = | Impacts per kg of products due to the transportation |
|                                       |  |   |  |   | =  |
|                                       |  |   |  |   | <b>LCA results</b>                                   |
|                                       |  |   |  |   | <b>Impacts per kg of product</b>                     |

## EPD PROJECT



**EPD project process** aims at preparing the EPD document, ready for the publication

## DATABASE UPDATE

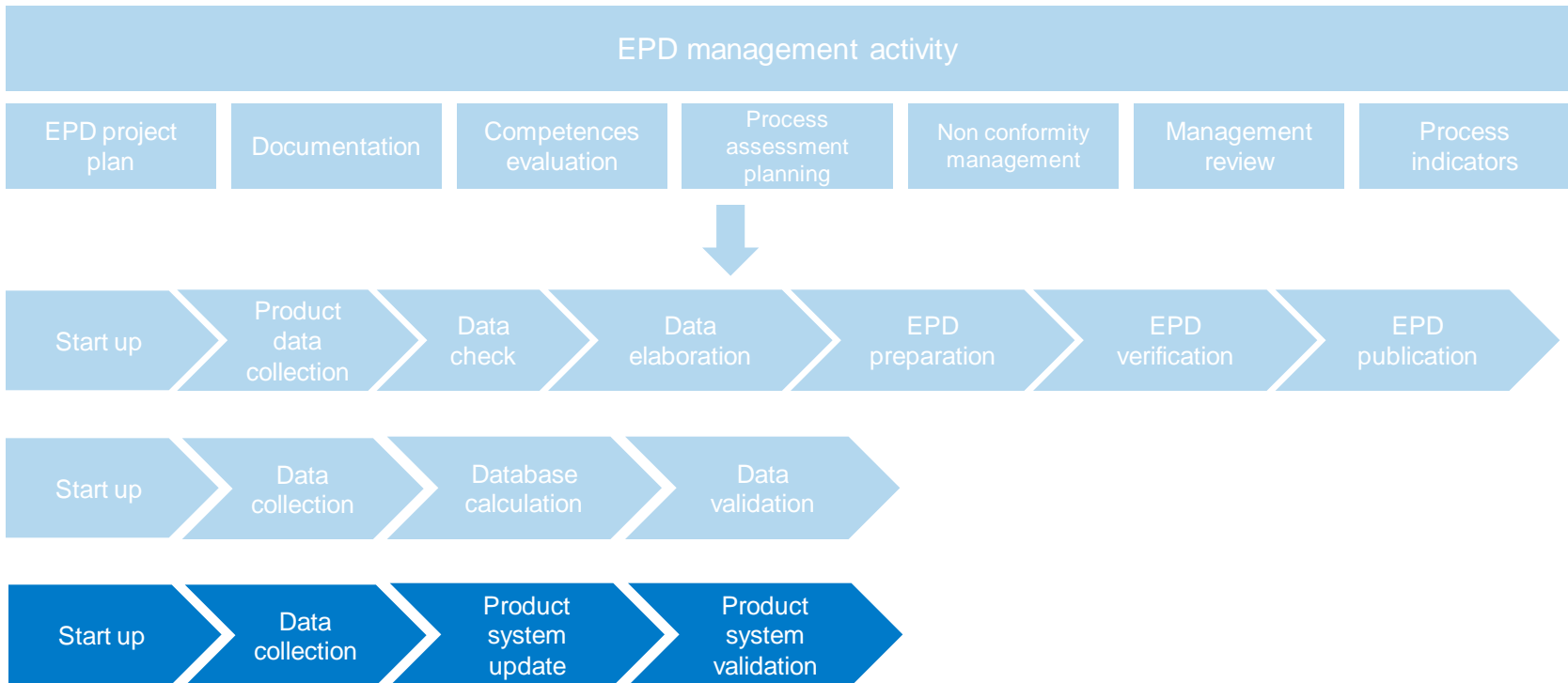


**Database update process** aims at keeping updated the Barilla's database.

It is performed each time the database need to be updated.



## PRODUCT SYSTEM UPDATE

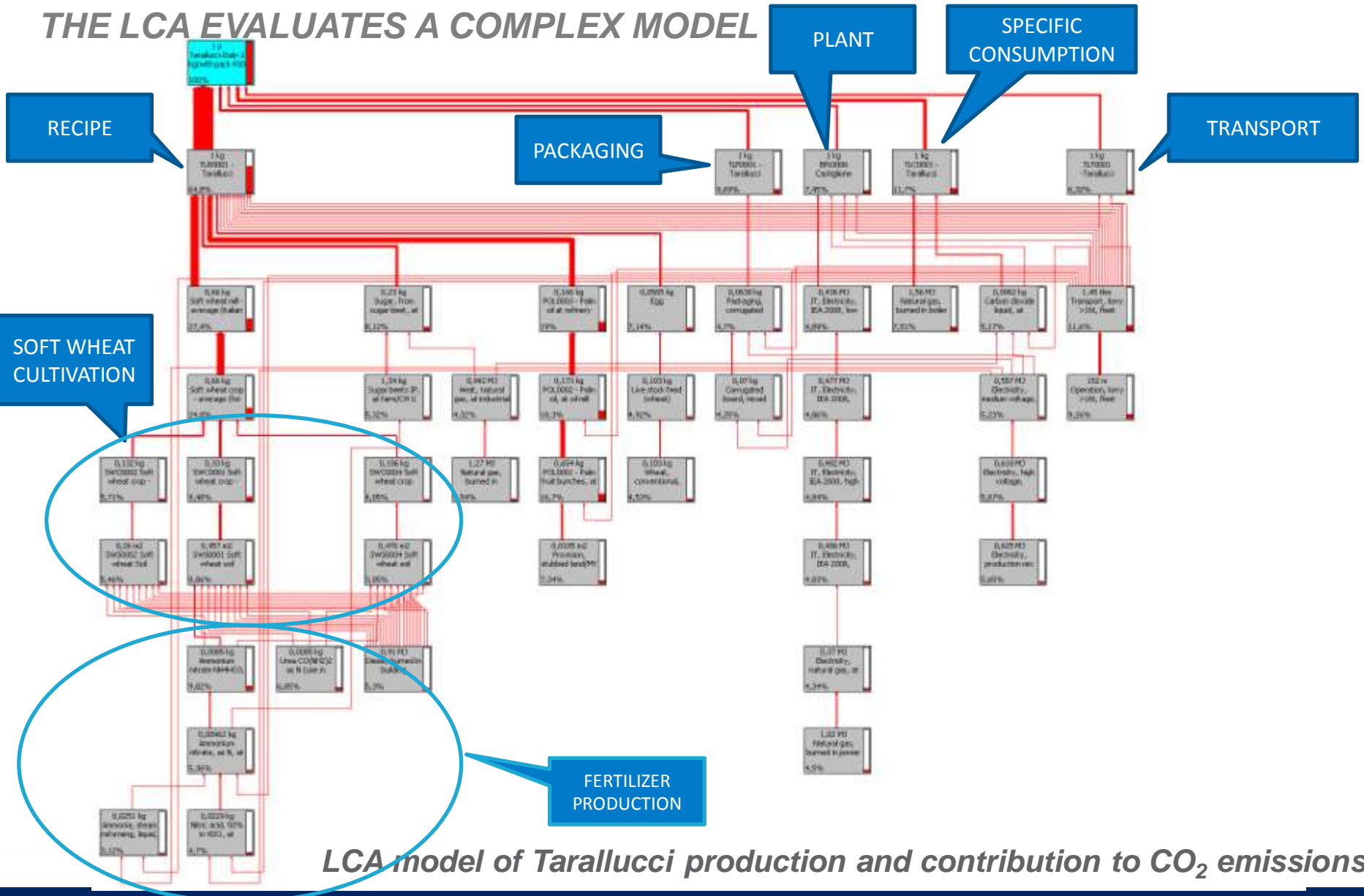


### Product system update process aims at:

- Updating the existing product system each time there are significant changes
- Realizing the product system of a new product

# Barilla EPD Process System

THE LCA EVALUATES A COMPLEX MODEL



LCA model of Tarallucci production and contribution to CO<sub>2</sub> emissions



**Carbon Footprint** represents the total amount of greenhouse gas (GHG) emitted either directly or indirectly by human activity throughout overall life-cycle. It is expressed in equivalent tons of CO<sub>2</sub>



PAS 2050:2008



International  
Organization for  
Standardization

ISO 14064:2006



Volume employed (evaporated) and/or polluted per unit of time throughout overall life-cycle.

GLOBAL FOOTPRINT  
NETWORK



**Ecological Footprint** is a measure of the number of land or maritime plots necessary to regenerate the resources consumed and absorb the waste produced by human settlements or a single human activity, employing measures of dominant resource and technology management.



Global Footprint Network  
Advancing the Science of Sustainability