Barilla & Ecological Footprint
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BARILLA Group

1877: Barilla’s family begin the activities with a little pasta and bread shop in the center of PARMA

2009: BARILLA is one of the biggest Italians food player, the most sold world wide pasta brand, the biggest Italian’s bakery, the third bakery in Europe.
Barilla CSR Project

Percorso verso la sostenibilità

2009

Sfide, impegni, azioni per una crescita sostenibile

STAKEHOLDER ENGAGEMENT & REPORTING

COMMUNITY

PEOPLE

NUTRITION

SUPPLY CHAIN

ENVIRONMENT

Barilla CFN

2009

BARILLA CENTER FOR FOOD & NUTRITION

2009

9 Challenges, Commitments & Goals

First Barilla CSR Report

2008 Data

2014 Goals

Processo di rendicontazione

Rapporto di Sostenibilità
More than one indicator for a complete analysis

The **Carbon footprint** represents the total amount of greenhouse gases (GHG) produced to directly and indirectly support human activities, usually expressed in equivalent tons of CO$_2$.

The carbon footprint calculation have to follow a life cycle assessment approach, analyzing every producing phases to evaluate each impact.

The **Water Footprint** measures the water consumption in terms of water volumes consumed (evaporated) and/or polluted per unit of time. ([www.waterfootprint.org](http://www.waterfootprint.org))

The **Ecological Footprint** is a measure of how much biologically productive land and water an individual, population or activity requires to produce all the resources it consumes and to absorb the waste it generates using prevailing technology and resource management practices.
Barilla CSR Environment Commitments

COMMITMENTS

BARILLA ECOLOGICAL FOOTPRINT REDUCTION

Via two priority commitments:

- Reduce Greenhouse Gases (GHG) emissions in line with the objectives of the Kyoto Protocol

- Minimize other Environmental Impacts along the Supply Chain, with special emphasis particular attention on reducing and recycling packaging materials.

2014 GOALS (vs 2008)

Develop the procedure and calculate the Ecological Footprint for Barilla Products fixing 2014 target (2011 CSR report).

- Reduction of Carbon Footprint for Barilla products by -15%

- Reduction by -30% of the Energy Global Warming Potential (GWP) (direct + indirect)

- Increase the percentage of Recyclable Packaging issued onto the market up to +95% of total Packaging
Life cycle studies in the past

- LCA spaghetti n°5 and Campagnole
- LCA of logistic activities (Parma plant)
- LCA of packaging with ecodesign approach
- Carbon management (Foggia and Melfi plants)
- Carbon management (Parma and Castiglione plants)
- Waste management (All Italian plants)

Timeline:
- 2004
- 2005
- 2006
- 2007
Life cycle studies in the past

- LCA of packaging with ecodesign approach
- LCA and EPD of PASTA
- LCA of WASA products
- LCA of Bakery products
- LCA of cropping system
- LCA and EPD of tomato sauces
- Foodprint tool

Past projects:
- Barilla Italy
- All Italian plants
- Fette Biscotte plant
- Pan Bauletto
- Tarallucci
- Saccottini

Work in progress projects:
- Barilla Worldwide
- LCA and EPD of tomato sauces
- EPD Wasa products
- EPD pasta update
- LCA of tomato products
EPD of durum wheat pasta

**CARBON FOOTPRINT**

- Durum wheat - field: -655 g CO₂-eq/500 g of PASTA
- Durum wheat - sequestration: 455 g CO₂-eq/500 g of PASTA
- Semolina - mill: 67 g CO₂-eq/500 g of PASTA
- Pasta production: 167 g CO₂-eq/500 g of PASTA
- Packaging: 54 g CO₂-eq/500 g of PASTA
- Product transport: 41 g CO₂-eq/500 g of PASTA
- Cooking: (784 g + 500 g) per 500 g of pasta

**WATER FOOTPRINT**

- Green water: 98%
- Blue water: 2%

**ECOLOGICAL FOOTPRINT**

- Crop land: 75%
- Forest land: 1%
- Energy land: 24%

**OTHER**

- 700 litres per 500g of PASTA
- 6.2 global m² per 500g of PASTA
Durum Wheat Cultivation
Ecological and Water Footprint

- **Water Footprint**
  - **Australia**
  - **Mexico**
  - **Canada**
  - **SW USA**
  - **North USA**
  - **Greece**
  - **Turkey**
  - **Spain**
  - **France**
  - **South Italy**
  - **Middle Italy**
  - **North Italy**

- **Ecological Footprint**
  - **Energy Land**
  - **Crop Land**

*Image of wheat field*
From Analysis to Action

**PASTA PRODUCTION**
- Energy saving project
- Use of renewable energy
- Energy Co-generation

**MILL**
Energy consumption reduction

**PACKAGING**
LCA study for resource consumption minimization

**PRODUCT TRANSPORT**
Transport logistic optimization

**COOKING**
Information about cooking time and water use

**DURUM WHEAT CROP**
- Specific study on fertilizers and crop cultivation techniques
- Crop guidelines improvement
The concept of the **Double Pyramid** has, for the first time, been incorporated into the **BCFN Paper** in order to provide a simple means of communicating the fact that foods highly recommended by the **Nutritional Guidelines** in terms of greater consumption (Mediterranean Diet) tend to yield least environmental impact.

June 2009  September 2009
Recommendations and Paper of the Acting Presidency of Sweden

The current Acting Presidency of the European Commission held by Sweden sent a paper to the Member States that describes the relation between climate change and nutrition, in which a greater consumption of cereals and pasta is recommended.
Starting from the Nutrition Pyramid

The starting point is the Nutrition Pyramid, which is divided into six sections that scale downwards to contain each nutritional food group.

The base of the Pyramid contains Vegetable Origin Food, while climbing towards the top reveals food that calls for less frequent consumption.

Source: Minestry for Health of Italy

Source: Oldwavs(www.oldwavspt.org)
Composing the Environmental Pyramid

The Environmental Pyramid was composed by associating each food group with its environmental impact and placing them in a decreasing fashion to generate an upside-down pyramid in comparison to the nutritional pyramid whose top layer contains the food group that yields greatest environmental impact and bottom-most layer is reserved for the food group with least environmental impact.
Association between the two Pyramids

The **Double Pyramid** was put together by associating the nutrition pyramid to the environmental pyramid, and placing the environmental impact of each food group in order.
The Result is the BCFN Double Pyramid

BCFN proposes the **Double Nutrition Pyramid** as a simple means of communicating the fact that foods highly recommended by the **Nutritional Guidelines** in terms of **greater consumption** tend to yield **least environmental impact**.

Studies show that the **Mediterranean diet** yields positive effects on both **health** and the **environment**.
BarillaCFN Double Pyramid

The diagram illustrates a dual pyramid approach to nutrition and environmental impact. The left pyramid focuses on nutritional aspects, with categories such as Fruits, Vegetables, Bread, Pasta, Rice, Potato, Olive Oil, Biscuits, Milk, Yogurt, Legumes, Fish, Egg, and Red Meat at the top, followed by Sweets and White Meat. The right pyramid emphasizes environmental impact, with categories including Fruit, Vegetables, Bread, Pasta, Rice, Potato, Olive Oil, Milk, Yogurt, Legumes, Pasta, Biscuits, Cheese, Fish, White Meat, Sweets, and Red Meat at the top, followed by a comparison with environmental impact levels.
Alimentazione e Ambiente: sano per te, sostenibile per il pianeta

29 giugno 2010

Museo Nazionale della Scienza e della Tecnologia
Via S. Vittore 21, Milano
Composing the Environmental Pyramid

The **Environmental Pyramid** was composed by associating each *food group* with its *environmental impact* and placing them in a decreasing fashion to generate an *upside-down pyramid* in comparison to the *nutritional pyramid* whose *top layer* contains the *food group* that yields greatest *environmental impact* and *bottom-most layer* is reserved for the food group with *least* environmental impact.
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