



# ENVIRONMENTAL SUSTAINABILITY VISION TOWARDS 2030

Achievements, Challenges and Opportunities



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# FOREWORD

Europe's first manufacturing sector, the food and drink industry, puts sustainable growth at the heart of its business model. It does so not only because it makes good business sense but also because of the unique relationship that industry has with the environment, on which it relies for a continuous, adequate supply of safe, high quality raw materials from which to make world-renowned food and drink products. Ensuring green growth, therefore, not only helps safeguard the earth's limited natural resources but also secures the long-term competitiveness and prosperity of Europe's food and drink industry.

It is for these reasons that Europe's food and drink industry is investing in its future and that of Europe's 500 million citizens to promote smart, green growth, through the adoption of a FoodDrinkEurope Environmental Sustainability Vision towards 2030, underpinned by a set of steps needed for its accomplishment. The Vision is the result of a broad collaborative work together with other stakeholders along the supply chain, governments, civil society, research and academia. It goes some way to ensuring that the efforts of Europe's food business operators to meet the tall challenges and expectations of society – regulators, academics and partners along the chain, including consumers – can be met if we are to make headway in securing the sustainable future of both our industry, and of course, of the planet.

Yet, the adoption of this Vision for 2030 is not the beginning of the industry's efforts in this area. Food manufacturers have come a long way already in a relatively short space of time. Since the publication of the last FoodDrinkEurope Environmental Sustainability Report in 2008, an increasing number of companies -large and small- have continued to step up their efforts to implement sustainable practices in their own business operations and via collaborative activities with other stakeholders across the supply chain – from ensuring sustainable sourcing of raw materials to promoting greater resource efficiency and to championing sustainable production and consumption. This is a significant achievement for the industry, not least because of its highly fragmented nature with 99% of the number of companies either small or medium in size.

In this report, you will read an array of best practice examples from food operators in the areas mentioned above. It is the latter, sustainable consumption and production, on which I would like to focus. Food operators are fully committed to playing their part in doing business more sustainably. But, as is the case when food is wasted in the household, the efforts made throughout the supply chain to produce that food sustainably, are also then wasted if consumers are not more aware of the adverse effect that this has on the environment. Hence, the efforts of all actors in society are needed if we want to deliver a greener economy and better world for generations to come.

An excellent example of a successful initiative in this area is the **European Food Sustainable Consumption and Production Round Table**, a ground-breaking multi-stakeholder platform launched in 2009, initiated by FoodDrinkEurope and co-chaired by the European Commission, in conjunction with other actors, gathering together food chain partners, policy-makers and civil society to collaborate on environmental sustainability issues for the first time. The Round Table has made a number of landmark achievements already in its brief existence – from agreeing on a set of guidelines for the environmental impact assessment of food and drink products throughout their entire product life-cycle, to how to communicate this information along the chain, including to the consumer.

As the example above makes clear, increasingly, 'whole of society' efforts are needed to ensure sustainable growth both in Europe and beyond, with each actor playing his respective part. In doing so, together, we can demonstrate that the 'triple win' of sustainability – across the social, environmental and economic pillars which form its basis- is not only achievable but also a legacy that this generation can be proud of.

**Jesús Serafin Pérez**  
*FoodDrinkEurope President*





# A WORD FROM THE COMMISSIONER



Food and drink play a fundamental role in our daily lives - but feeding the growing world in the long term will only be possible if the way we produce and consume food is changed. Production and consumption of food is one of the major users of our planet's resources, and these resources, which we once considered as unlimited, are now clearly under increasing stress. Clean air and water, high quality land and soil, and the biodiversity and climate that support the whole food system, must be properly valued and used as efficiently as possible. It is for this reason that 'food' was highlighted as one of the three priority areas in the Commission's Roadmap to a Resource Efficient Europe alongside mobility and housing.

We are pleased to see that the environmental sustainability vision for 2030 comes to similar conclusions with the strategic priorities of sustainable sourcing, resource efficiency along the food chain and sustainable consumption. One of the key priorities is also to tackle food waste – when food is wasted the resources that were invested into its production are also wasted.

Action by food and drink manufacturers alone is not enough. Food chain partners must work together to address food sustainability and tackle the adverse environmental impacts of food and drink products that occur all along the chain. A chief example is the multi-stakeholder initiative, the European Food Sustainable Consumption and Production Round Table, gathering European food chain partners, policymakers and civil society to collaborate on environmental sustainability for the first time.

The food industry should help in giving greater value to ecosystem services on which its industry itself depends. Maintaining biological diversity should be one of the main priorities as this is essential to sustainable food production.

While it is not a solution in itself, consumer information can play a major role. Consumers need to be aware of the environmental impacts of their choices and their own activities related to food, such as shopping and cooking. However, in order to be credible, consumer information must be scientifically reliable, understandable and not misleading. It is in the direct interest of the food sector so that those that really invest resources in improving their impacts are rewarded for their efforts; that they are not dismissed as "green washing". It is also clear that consumers should be increasingly informed via modern communication channels, such as smart phones applications and social media.

The European Food Sustainable Consumption and Production Round Table has been successful in working towards this objective by delivering a report on the use of communication tools for environmental information and developing the Envifood Protocol that should complement existing international standards. Now this good work has to be taken to the next step, and implemented in real actions on the ground that ensure consumers are given accurate information about the sustainability of the choices they make.

Due to the complexity of the food chain and food production, the social and economic aspects, such as dietary issues and international development, it is essential that all interested parties are involved in delivering holistic solutions. It is a positive aspect of the report that it starts this process, and the Commission will follow the same path when developing its Communication on Sustainable Food that will set out the long-term EU strategy for food.

**Janez Potočnik**  
*European Commissioner for Environment*



# EXECUTIVE SUMMARY

To address the big challenges of securing smart, green growth on the path towards a greener economy both in Europe and globally, further efforts are needed to decouple economic growth from resource use and adverse impacts on the environment. Europe's food industry must ensure, also, that as it addresses these challenges, it does not compromise food safety, quality, nutrition and health, while at the same time, satisfying consumer demand. To meet these objectives, FoodDrinkEurope's Environmental Sustainability Vision for 2030 includes a set of key actions detailing commitments across three core areas:

- 1. Sustainable sourcing;**
- 2. Resource efficiency; and**
- 3. Sustainable consumption and production.**

Enclosed in this report are a host of examples from industry players - large and small - which illustrate how Europe's food and drink industry is addressing environmental sustainability. FoodDrinkEurope members have highlighted key achievements on which the industry can continue to build its efforts, in a number of priority areas. Case studies and examples in each chapter demonstrate how food and drink companies of all sizes and individual sectors are striving to improve their environmental performance regardless of the multitude of different raw materials, products, processes, activities and local economic and environmental conditions that they face.

## SUSTAINABLE SOURCING

Europe's food and drink industry purchases 70% of EU agricultural produce; it is thus crucial for the long-term health and prosperity of the industry that farming systems are sustainable and that biodiversity loss is prevented. Significant steps have been taken to improve the sustainable supply of key commodities with the development of many new initiatives and schemes in recent years, which, increasingly, adopt a more holistic approach to sustainability. Many companies are integrating sustainable sourcing into their overall business strategy, product design and corporate policy too.

## ENERGY & CLIMATE CHANGE

Food and drink manufacturers have made significant investments to improve their energy performance and to reduce greenhouse gas emissions (GHG). Between 1999-2008, the industry cut its GHG emissions by 18% while production value increased by 29%. Increasingly, by-products and waste are used as a source of renewable energy and investments in low carbon technologies, such as Combined Heat and Power (CHP), are contributing to further emission reductions. The sector is also switching to alternative refrigerants as they become technically and economically viable, safe and energy efficient.

## WATER

Europe's food and drink industry accounts for approximately 1.8% of Europe's total water use. In light of the anticipated increase in demand for water worldwide, significant efforts have been made to work with food chain partners to improve water management as well as waste water quality and water recovery and re-use. Food operators are also involved in various multi-stakeholder initiatives to address water use throughout the entire life-cycle of a product, in addition to water disclosure and voluntary water stewardship. Moreover, manufacturers have reduced water use on-site on a voluntary basis by employing tools to measure water use, adopting water management practices and investing in water-efficient technology. As a result, the industry is achieving measurable water reduction and cost savings.

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## WASTE

Addressing waste and, in particular, food waste, is a top priority for the food sector given that when a food is wasted, the resources that were invested in its production are also wasted. At EU level, annual food waste is estimated at a total of 90 million tonnes. Manufacturers are constantly striving to use 100% of the agricultural resources they put into food production and are increasingly finding uses for by-products not only as food, but also as animal feed, fertilisers, cosmetics, lubricants and pharmaceuticals, amongst others. In addition, re-use, recycling and recovery by producing bioenergy from waste, are key methods for the industry to achieve optimal raw material utilisation and waste management. In addition, numerous food and drink companies are making commitments aiming for zero waste to landfill within the coming years.

## PACKAGING

The food industry is increasingly using eco-design tools to optimise the environmental performance of products and packaging and is turning to reusable packaging solutions wherever environmentally beneficial and feasible. At the same time, packaging recycling rates have risen considerably over the past number of years. FoodDrinkEurope members have committed to producer responsibility recycling and recovery schemes in EU Member States where they have been introduced. In 2009, about 32 million tonnes of used packaging were recovered by these schemes in Europe. Manufacturers are working continuously with the packaging industry to develop innovative packaging materials with improved environmental impacts, while maintaining product protection and preservation.

## TRANSPORT & DISTRIBUTION

Transport plays a vital role in the supply and distribution chains for Europe's food manufacturers. As a pillar of the EU economy, the food industry is an important user of different modes of transport, in particular, Heavy Goods Vehicles (HGV). The sector is actively seeking to enhance and reduce the adverse environmental impact of transport through collaboration with transport and distribution providers, to improve efficiencies in product sourcing, modal shifts, distribution networks, route planning and vehicle choice.

## CONSUMERS

Food and drink products are a fundamental part of the daily lives of Europe's 500 million citizens, providing nutrition, health, well-being and enjoyment. As such, consumers are at the heart of how the food industry operates, in responding to ever-evolving consumer demand and lifestyles (pack sizes, smart packaging to preserve food for longer, etc.). Nonetheless, consumers generate significant direct environmental impacts in the way they transport, store, prepare and dispose of food and there is a need for scientifically-reliable and harmonised analyses setting out where improvements in the food chain, including at the household stage, can be made. A key achievement of the European food and drink industry is the development of a harmonised assessment methodology for the environmental impact of food and drink products, the Protocol for the Environmental Assessment of Food and Drink. This Protocol is a key deliverable of the European Food Sustainable Consumption and Production (SCP) Round Table and has been developed in collaboration with the European Commission and food chain partners, NGOs, academia and national experts. The Round Table has also developed recommendations on the use of tools for communicating environmental information, including to the consumer. The Recommendations highlight good practice and key tools that may be used to communicate environmental information, while recognising that to do so effectively, requires the use of a multi-pronged approach. Moreover, many food companies already provide voluntary information to consumers about the environmental performance of their products through various communication channels.

# Challenges, environmental performance and future vision for 2030

## Forecasts for 2030: The Challenges



**50%**

An increase of 50% in food supplies will be needed globally<sup>1</sup>



**50%**

Global demand for energy is expected to increase by 50%<sup>2</sup>



**40%**

Global demand for water is expected to increase by 40%<sup>3</sup>



**40%**

Freight transport levels in the EU are expected to increase by 40% on those of 2005<sup>4</sup>

The European food and drink industry will face significant challenges due to an expected global population of 8 billion by 2030. The figures outlined below highlight these challenges as well as the industry's environmental performance to date. This has enabled FoodDrinkEurope to identify a 2030 vision and actions for how the industry can take the lead to address environmental sustainability into the future.

## The European food and drink industry's environmental performance: State of play



**5.3%**

Food and drink manufacturers account for 5.3% of industrial final energy use globally<sup>5</sup>



**18%**

European food and drink manufacturers have cut their GHG emissions by 18% between 1999 and 2008, while increasing their production value by 29% over the same period<sup>6</sup>



**1.8%**

Food and drink manufacturers account for 1.8% of total water use in the EU<sup>7</sup>



**5%**

The food and drink industry accounts for 5% of overall food waste generated in the EU (Note: excluding agriculture)<sup>8</sup>



**20%-30%**

Food and drink products account for approximately 20-30% of the overall environmental impacts of consumption in the EU 27<sup>9</sup>

# Vision

## Leading the way to 2030

The European food and drink industry is a responsible, constructive leader in addressing the economic, social and environmental pillars of sustainability with a life-cycle approach.

The European food and drink industry is a leader in the global transition towards a green economy through our commitment to use low-carbon and resource efficient solutions as well as to promote sustainable patterns of production and consumption in partnership with stakeholders.

The food industry aims to decouple growth from adverse environmental impacts and resource use without compromising on food safety, quality, nutrition or health, whilst at the same time satisfying consumer demand.

### **In the area of sustainable sourcing, FoodDrinkEurope's members:**

- Embed and promote sustainable sourcing in the supply chain and strive for a common understanding of the term with food chain partners and other stakeholders.
- Make a positive contribution to food security and environmental sustainability both within and beyond Europe.
- Identify and tackle environmental hotspots through continuous interaction and long-term contractual relationships with suppliers.

### **In the area of resource efficiency, FoodDrinkEurope's members:**

- Promote life-cycle thinking in how they do business as food and drink manufacturers, and look beyond operations to improve resource efficiency along the food chain.
- Achieve more sustainable production methods using technological breakthroughs, increased R&D and innovation.
- Reduce waste and use natural resources more efficiently, not only as food producers but also as responsible and innovative managers of inputs for other industries.

### **In the area of sustainable consumption, FoodDrinkEurope's members:**

- Enhance interaction with all stakeholders through new communication technologies, tools and channels. As a result, consumers are more environmentally aware and consider how food fits in with their values (e.g. health, sustainability, budget, lifestyle and social concerns) in a more holistic way.
- Ensure environmental sustainability considerations and life-cycle thinking are embedded in food and drink product designs.

# Actions:

In order to implement the industry's Environmental Sustainability Vision for 2030, the European food and drink sector commits to take the following steps:

- FoodDrinkEurope will continue to actively engage in the European Food Sustainable Consumption and Production Round Table to promote the harmonisation of environmental assessment methodologies for food and drink products, facilitate the communication of environmental performance along the food chain, including to consumers, and identify priority research programmes and opportunities for technical innovation to support continuous environmental improvement along the supply chain.

## Sustainable sourcing

- The industry will work with stakeholders, most notably, food chain partners, to mainstream sustainable sourcing by establishing guiding principles for sustainable sourcing, encouraging harmonisation and extending the coverage of certification schemes, facilitating sustainable sourcing for small and medium-sized enterprises (SMEs), and providing assistance to farmers for the uptake of sustainable sourcing.

## Resource efficiency

- Reconciling agendas, such as the use of food crop-based fuels and other industrial uses of agricultural raw materials, is a key challenge at a time of population growth. The industry will engage with policymakers, food chain partners and other stakeholders to move towards an integrated approach with particular attention on the availability of agricultural raw materials for the production of food and feed.
- The industry will continue to facilitate exchange of **best practices** among operators, particularly among SMEs.
- The industry will promote closed loop supply chains and work with supply chain partners to improve environmental impacts along the chain.
- The industry will encourage a common research and innovation agenda to develop solutions to key environmental hotspots in our operations. Hotspots shall be addressed at the most appropriate level (e.g. European, sectoral, local, sub-sectoral, company level).
- The industry will initiate a food chain approach to address water impacts and support the development of a common water toolkit.
- The industry will work with food chain and other stakeholders, policymakers, retailers and consumer organisations, to reduce and, where possible, avoid food waste along the food chain.

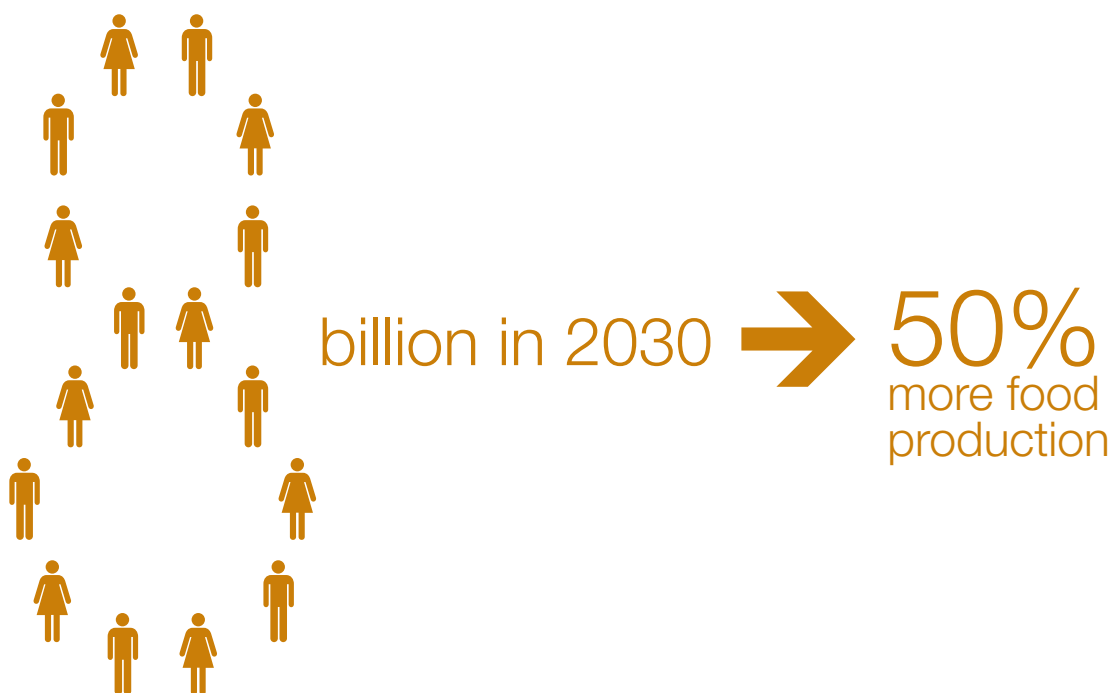
## Sustainable consumption

- The industry will look beyond consumer information and engage with government and stakeholders to facilitate increased awareness and public debate on sustainable consumption.
- The industry will engage with retailers and other stakeholders to inform consumers about the impact of their diet on sustainability and how it relates to their lifestyle.



# SUSTAINABLE SOURCING





The UN predicts that the world population will reach 8 billion in 2030 and will require 50% more food production, thereby putting additional pressure on natural resources. The food and drink industry is vulnerable to the impact of climate change on the availability of agricultural raw materials, both in terms of quality and quantity.

FoodDrinkEurope supports a holistic approach to sustainable practices both in the EU and worldwide and aims to secure safe food supply in terms of both quality and quantity, protect the natural environment and improve the socio-economic conditions of local communities.

We are engaging in many concrete initiatives to support sustainable agricultural practices both in the EU and globally and to develop commodity-specific sustainability schemes.

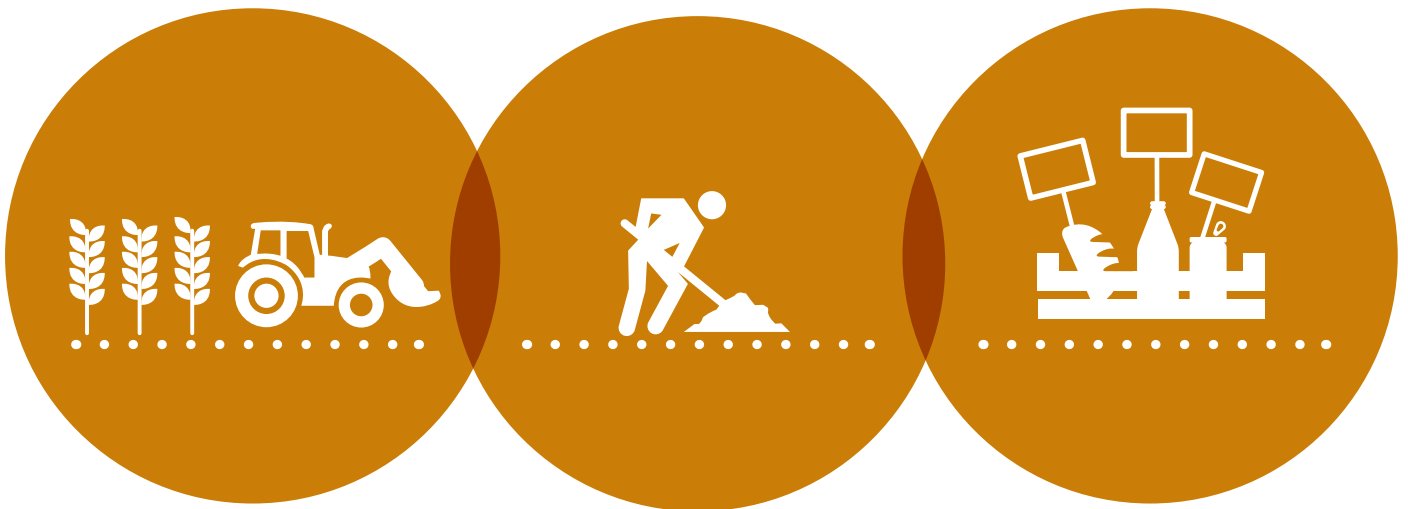
## CHALLENGES

The European food and drink industry is faced with the twin challenge of ensuring access to raw materials at competitive prices and the sustainable supply of nutritious food against the backdrop of global food security. The amount of arable land worldwide per capita halved during 1960 to 2007 from 0.39 to 0.21 hectares, whilst demand for arable land is increasing not only from the food and feed production but also the biofuel, paper and timber industries among others<sup>10</sup>. This increasing demand for food and feedstocks, combined with climate change impacts such as droughts and flooding, has resulted in additional pressure on food availability. To address this challenge, resource use and adverse environmental impacts must be decoupled from economic growth. The ability of food manufacturers to promote decoupling and the level of interaction among members of the supply chain vary considerably depending on numerous factors, such as the structure of the chain and whether the company is a large or small buyer.

## SUSTAINABLE AGRICULTURE

Sustainable agriculture must integrate the three elements of sustainability: environmental, social and economic.

### The three elements of sustainable sourcing



#### Environmental

- Responsible cultivation practices that preserve soil fertility and prevent soil erosion, pollution, salinisation and loss of arable land and biodiversity
- Responsible and limited water use
- Energy efficiency and the reduction of greenhouse gases (GHGs) and other emissions
- Prevention of waste wherever possible and recycling and recovery as much as possible where prevention is not feasible  
Improvement of working and living conditions of farmers,

#### Social

- Farm dependent employees and their families and opportunities to improve their skills over time
- Animal welfare
- Respect for national, EU and international regulations
- Respect for freedom of association

#### Economic

- Sustainable sourcing should also be market driven
- Responsive to consumer demand

If sustainably managed, farming systems can deliver many environmental benefits, such as wildlife and biodiversity protection, contribution to water accumulation, nutrient recycling and fixation, flood control, soil formation, carbon sequestration by trees and soil and the provision of recreational services and aesthetic value. Different farming systems (e.g. conventional, integrated, organic, mixed and crop-specific systems and others) can complement one another as long as measures are taken to promote environmental sustainability.

The expansion of agricultural land into rainforests and its adverse impact on biodiversity, soil degradation and erosion are key concerns for the environmental sustainability of food production. Biodiversity is vital for the long-term success of food and drink companies. The services provided by different managed and unmanaged ecosystems such as formation of soil, the regulation of the water cycle and climate, and the pollination of plants, play a key role for the food and drink industry.

The European food and drink industry is faced with the challenge of biodiversity loss which has accelerated at an unprecedented level, both in Europe and worldwide<sup>11</sup>. Pressure from expanding agriculture has been a major factor leading to recent tropical deforestation, especially in South America (where conversion to soybean and cattle ranching is the greatest pressure) and south-east Asia (owing to palm oil conversion). This has a number of very adverse effects:

- The conversion of tropical forests to agricultural land releases one-off large amounts of GHGs. It also reduces the land's subsequent ability to take up GHGs.
- Tropical deforestation may have direct and damaging effects on local climate and the associated biodiversity which is lost immediately.
- Tropical rainforests are home to many indigenous groups.
- Deforestation is one of the principal drivers of climate change<sup>12</sup>.

Biodiversity is vital for the long-term success of food and drink companies



## Genetically modified organisms (GMOs)

A Genetically Modified Organism (GMO) is an organism in which the genetic material has been altered in a way that does not occur naturally by mating and/or natural recombination (Directive 2001/18/EC). Since 1996 when the first commercial GMOs were harvested, GMOs have been farmed at increasing rates around the world. By 2011, GM crops were cultivated by 16.7 million farmers on almost 1.6 billion hectares in 29 countries<sup>13</sup>. This poses a challenge for the European food and drink industry, which sources globally, as Europe is not self-sufficient in all raw materials.

At the same time, the industry respects consumer choice and responds to European consumers' current preference for products derived from conventional raw materials. Industry has put in place identity preservation systems for conventional crops that strictly control supplies and processes. These systems ensure full traceability back to the farm, and tight tolerance thresholds are set for the presence of traces of GM material.

FoodDrinkEurope supports the co-existence of different farming systems and believes that measures should not limit producer choice of farming methods, industry raw material demands or consumer choice.



## PROGRESS

Since the last reporting period (2008), food and drink manufacturers have continued to demonstrate how governing bodies, corporations and NGOs can work together to improve the environmental sustainability of agricultural raw materials.

The uptake of environmental sustainability schemes for key commodities has made significant progress, and many new commodity initiatives have emerged. A key trend is that sustainable sourcing schemes are adopting a more holistic approach, addressing environmental, social and economic aspects of sustainability.

In addition, some food and drink companies are integrating sustainable sourcing into their overall business strategy, product design and corporate policy.

# MULTI-STAKEHOLDER ACTIONS

There are a range of industry-wide sustainability initiatives to address the aforementioned challenges.

## Multi-stakeholder initiatives with codes and standards:

- Bonsucro (Better Sugarcane Initiative)
- Common Code for the Coffee Community (4C) Association
- Consumer Goods Forum (CGF)
- Marine Stewardship Council (MSC)
- Rainforest Alliance
- Round Table on Responsible Soy (RTRS)
- Roundtable on Sustainable Palm Oil (RSPO)
- Sustainable Rice Platform
- UTZ Certified
- World Cocoa Foundation (WCF)

## Industry learning platforms

- EU Business and Biodiversity Initiative (Business@Biodiversity)
- Sustainable Agriculture Initiative (SAI) Platform

## Business-to-business industry standards

- GLOBALG.A.P



# SUSTAINABLE SOURCING COMPANY POLICIES, CODES AND SCORECARDS

Some companies have integrated environmental considerations that go beyond legal requirements into their sourcing and supplier reporting policies. Such standards are of particular importance where international frameworks are non-existent or in their infancy.

To develop and promote common evaluation methods for determining supply chain performance, a group of 24 industry partners, including 14 leading food and drink producers, set up the global initiative programme for responsible sourcing. PROGRESS members are determining criteria for supplier performance and promoting responsible sourcing practices. Through this platform and in line with supplier agreements, responsible sourcing audit reports are shared among members avoiding duplication of work for suppliers.

## COMPANY SOURCING TARGETS

Companies are continuing to integrate environmental sustainability into their sourcing practices, and some have made public commitments in line with rising consumer demand for products complying with specific criteria.

**Ferrero, General Mills, Mars, Nestlé and Unilever** will all source 100% certified sustainable palm oil by 2015. **Kellogg** increased its purchasing of green palm certificates in 2011 to cover 100% of its global palm oil use. In addition, Kellogg Europe will start using Certified Segregated sustainable palm oil during 2012.

**Mars** will source 100% of its cocoa, fish and seafood from certified sources by 2020. The company will source 100% of its coffee from certified sources by 2013, and 100% of its black tea from certified sources by 2015.

**Ferrero** will source only sustainably certified coffee by 2015 and cocoa by 2020.



**MW Brands (John West)** aims to source 100% of its tuna for the Dutch market using sustainable fishing methods by 2016, in cooperation with the International Seafood Sustainability Foundation.

**Unilever** currently sources 30% of its agricultural raw materials sustainably, and aims to reach 100% by 2020. An even more ambitious 2015 target for 100% sustainable sourcing has been established for palm oil, Lipton tea bags, fruit and vegetables and cocoa for Magnum ice cream. The target date for 100% sustainable soy bean sourcing is 2014.

Companies such as **Barilla, Coca-Cola, General Mills, Kellogg, Kraft, Nestlé, PepsiCo, Sara Lee, and Unilever** have pledged to mobilise their collective resources to help achieve zero net deforestation by 2020.

## MEMBER INITIATIVES

### CAOBISCO supports the development of a European Standard on sustainable and traceable cocoa under the leadership of CEN

CAOBISCO, the Association of the Chocolate, Biscuits and Confectionery Industries of Europe together with notably the Federation of Cocoa Commerce and the European Cocoa Association is participating in the development a CEN standard on sustainable and traceable cocoa. This standard will serve as a strong framework, providing for a clear and measurable definition of sustainable cocoa, a robust and credible tool addressing social, ecological and economic aspects making sustainable cocoa a mainstream concept.

### Belgian Sustainable Palm Oil Charter and Sustainable Soy<sup>1</sup>

The Belgian Food and Drink Federation (FEVIA) has developed a Sustainable Palm Oil Charter and is encouraging its implementation by members. FEVIA is supporting the uptake of certified sustainable palm oil through seminars and providing information to companies on how they can buy RSPO certified palm oil. By 2015, all palm oil in Belgium for Belgian products shall be RSPO certified. FEVIA also supports the Belgian initiative for the feed sector for Sustainable Soy.

### Dutch Task Force on Sustainable Palm Oil<sup>2</sup>

The Task Force aims to stimulate demand for sustainable palm oil among members by providing clear information and advice. The overall ambition is to ensure that all palm oil bought and used in the Dutch market is produced sustainably by 2015. The Task Force secretariat, the Product Board for Margarine, Fats and Oils, is currently working on a monitoring system to measure progress towards the 2015 objective. The Dutch Food Industry Federation (FNLI) is a Task Force member.

### Nestlé encourages farmers to improve farming practices

Productivity is an essential ingredient for economically viable and sustainable coffee farming. Nestlé is working with Rainforest Alliance to develop the Nespresso AAA Sustainable Quality Program. The Program involves paying coffee farmers premiums of around 30-40% above the market price for the highest quality coffee and more sustainable farming practices through certification to the Sustainable Agriculture Network (Rainforest Alliance) standard. Significant progress has already been made, as in 2010 Nespresso sourced 60% of its coffee from roughly 40,000 farmers. By 2013, 80% of Nespresso coffee will come from this Program.

### Butler's Choice committed to sustainable sourcing

Butler's Choice, a small Danish processed fish company with 24 employees in Denmark, Vietnam and India is committed to making an effort to source its fish sustainably. Butler's Choice supports Aquaculture Stewardship Council-certified farmed fish and works with MSC-certified requirements for wild-caught fish. The company aims for 100% traceability for its fish and shellfish and is committed to preventing wastewater discharge and the use of medicine on fish farms of suppliers.

### Cargill's global commitment on sustainable palm oil

Cargill has announced that the palm oil products it supplies to its customers in Europe, United States, Canada, Australia and New Zealand will be certified by RSPO and/or originated from smallholder growers by 2015 (this excludes palm kernel oil products). This commitment will be extended across Cargill's entire oil and trading businesses to cover 100% of its palm oil products and all customers worldwide by 2020.

<sup>1</sup> <http://www.sustainabelpalm.be/>

<sup>2</sup> <http://www.taskforceduurzamepalmolie.nl/>

## OPPORTUNITIES

The food and drink sector will need to work together with stakeholders to address the following opportunities and challenges:

- Designing sustainable supply chains while ensuring that market structures remain efficient, competitive and capable of meeting consumer needs. Mainstreaming sustainable sourcing will not only provide environmental benefits but also strengthen the administrative structures required to define, implement and verify sustainable farming practices worldwide.
- The implementation of sustainable sourcing strategies may result in more vertically integrated supply chains. Where competition law can be a barrier to joint sustainable sourcing initiatives, Guiding Principles or public-private partnerships could be a means to achieving sector-wide sustainable sourcing.
- Higher standards of sustainable sourcing can be reached by extending certification to other commodities, integrating sustainability along the supply chain through hotspot analysis, targeted audits and harmonising certification schemes.
- Long- term contracts, based on performance and close relationships with farmers, that cover all three pillars of sustainability should be established.
- Mobilising public and private investment in agricultural productivity and yield growth while optimising resource efficiency, minimising adverse environmental impacts and ensuring food quality, security and safety. The contribution of new food technologies to these objectives will ultimately depend on consumer acceptance.
- Providing technical assistance to farmers as necessary, especially smallholders, and advice on farming best practices while generating greater yields, higher-quality crops, lower resource use, increased income and reduced rural poverty.

Long-term contracts based on performance and close relationships with farmers that are sustainable in all three pillars should be established.





## THE CASE FOR MORE COLLABORATIVE ACTION

- Policymakers are encouraged to facilitate the development of an environment in which progressive public and private initiatives that achieve results beyond the regulatory framework can thrive. This entails encouraging sustainable farming practices, providing incentives for investment in agriculture while protecting the environment and ensuring basic infrastructure.
- Civil society stakeholders are encouraged to work with industry to promote further roll-out and development of multi-stakeholder initiatives that go beyond regulation. Required actions include providing an external source of credibility and accountability, creating a forum or framework for competitors to tackle environmental challenges together, contributing to training and technical expertise and working with industry to pilot initiatives.
- Certification scheme achievements at field level should be more transparent and better communicated. Standards organisations have proven to be very successful in delivering supply chain transparency but more effort is needed in terms of financial management and programme implementation and, more importantly, in assessing and communicating their real impacts<sup>14</sup>.
- Harmonisation of sustainability standards. A clear pattern of duplication and overlap among many standards has become apparent, leading to a general consensus on the need for all food chain stakeholders to work together towards the harmonization of environmental sustainability standards.



*“The European Food and Drink Industry in 2030 must be an example to the rest of the world on how to provide safe, nutritious and high quality food and drink for the European market in a sustainable and resource-efficient way. The industry must realise that a life-cycle approach to the food supply chain right through to the action of the consumer is the only way to tackle the 40% of food wasted in today’s food supply chains.*”

*While the need to produce enough food for 9 billion people in 2050 is real, this does not mean that the sector should follow a path to high input, intensive production. Incentives for an integrated and sustainable production model must be provided by the industry and sustainability rewarded by the market and the consumer.*

*Within the context of changing climate, rising population and changing global tastes, I welcome FoodDrinkEurope’s 2030 vision in which resource efficiency and the role of consumption is included to ensure that the food and drink industry in Europe leads the way toward more sustainable food systems.”*

**James Lomax,**

*Agri-Food Programme Officer, United Nations Environment Programme*

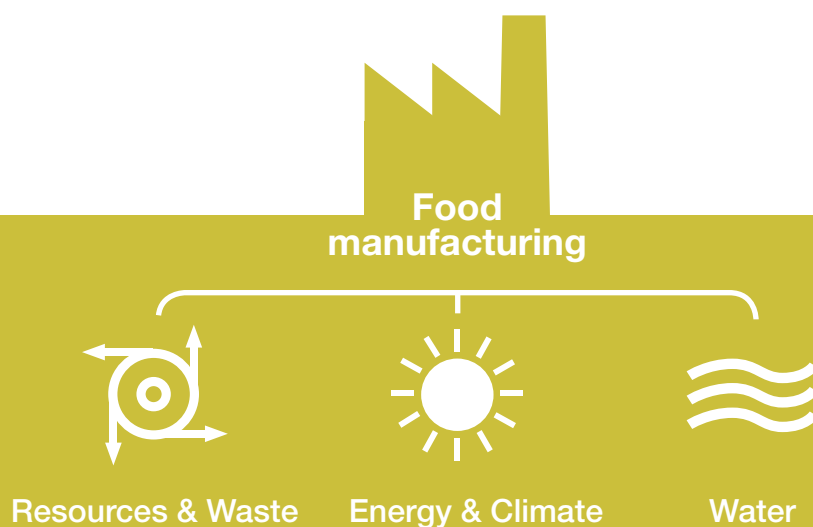


# RESOURCE EFFICIENCY

Rising and more volatile food prices are making investment decisions tougher and access to resources more difficult. Raw materials, water, air, biodiversity and terrestrial, aquatic and marine ecosystems are all under pressure. This pressure will only continue to increase with the global population expected to reach 8 billion by 2030. As a result the environmental repercussions of resource use are also a priority for the food industry.

In line with the European Commission's Resource Efficiency Roadmap,<sup>15</sup> European food and drink manufacturers are committed to making a combined effort with farmers, retailers, consumers and other stakeholders to create a more resource efficient global economy.

The three priority areas for action for FoodDrinkEurope members in their own operations are energy, water and the management of resources and waste.





# ENERGY & CLIMATE CHANGE

European food and drink manufacturers are committed to contributing fully to mitigating the effects of climate change and are investing in a wide range of activities to cut GHG emissions and energy use, as well as considering adaptation measures. FoodDrinkEurope supports the EU roadmap for moving to a competitive, low-carbon economy by 2050 as a means to achieve further emission reductions.

# CHALLENGES

Climate change affects the availability of agricultural raw materials and clean water; thus it directly affects the sustainability of the food and drink industry. In addition, rising fuel and energy costs and policy measures like the EU Emissions Trading Scheme (EU ETS), which attaches an economic cost to GHG emissions, means that reducing fuel and energy use and cutting emissions makes good business sense.

## ENERGY USE

The food and drink industry considers energy efficiency as an important driver for increased industrial competitiveness and improved environmental sustainability. Food and drink manufacturing accounts for approximately 5.3% of final industrial energy use worldwide. Companies are making significant efforts to improve their energy performance. The further promotion of energy efficient technologies, such as Combined Heat and Power (CHP), will help Europe set out on the right path towards a low-carbon society at both European and global level.

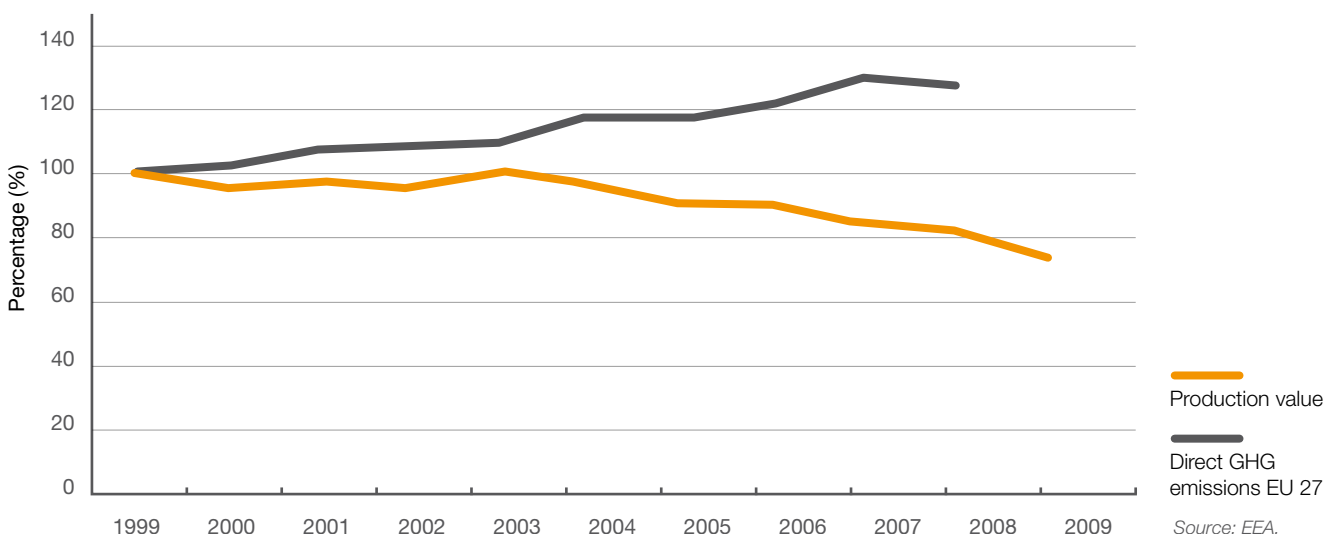
## GHG EMISSIONS

European food and drink manufacturing accounts for approximately 1.5% of total EU GHG emissions<sup>16</sup>. Emissions from energy use occur directly on-site from the burning of liquid, gaseous and solid fuels and from purchased energy generated off-site. However, large differences exist in energy intensities across food and drink sub-sectors.

# PROGRESS

## VOLUNTARY GHG REDUCTION AND ENERGY EFFICIENCY COMMITMENTS

**Figure 1: Evolution of GHG emissions in the EU food and drink manufacturing industry (1999-2008)**  
(EU-25 1999-2005, EU-27 2004-2009)



The EU food and drink manufacturing industry achieved a decoupling of output and direct GHG emissions over the period 1999-2008 by 18% while increasing production value by 29%.

Source: EEA, Eurostat, 2008

The food and drink industry has reduced their GHG emissions by 18% while increasing production value by 29% between 1999 and 2008 (see figure 1). Many European food and drink manufacturers have set out internal goals to reduce their environmental footprints and a large number are certified or in the process of being certified with ISO 14001 (International Standard on environmental management systems) or the EU Eco-Management and Audit Scheme (EMAS). The European food and drink industry currently has the fifth highest number of EMAS registered organisations in any sector<sup>17</sup>. The Carbon Disclosure Project, Global Reporting Initiative, Carbon Trust Standard and GHG Protocol are other tools that food and drink companies frequently use to understand, quantify, manage, report and reduce their GHG emissions.

#### Federation of German Food and Drink Industries establishes Energy Roundtables

The Federation of German Food and Drink Industries established the “Energy efficiency in the German Food and Drink Industry” network with international technology corporation, Siemens, in 2008. Under the guidance of the Siemens energy consulting department, 8-12 food and drink companies participate in nationwide annual “Energy Roundtables” to develop individual energy concepts, i.e. corporate action plans to reduce energy consumption and improve energy efficiency. Since 2008, 200 of the food and drink companies that have participated show that organisational measures can reduce energy costs by up to 20% with minimal effort. This network has demonstrated that the food and drink industry plays an active and responsible role in addressing the challenges of climate change.

#### UK food and drink industry commits to absolute CO<sub>2</sub> reduction of 35% by 2020

The UK Food and Drink Federation (FDF) has committed to working collectively to tackle climate change by making an absolute reduction in CO<sub>2</sub> emissions of 20% by 2010 and 35% by 2020 against a 1990 baseline. By 2010 FDF members reduced their CO<sub>2</sub> emissions by 25% compared to the 1990 baseline. This is an impressive result as it exceeds their 2010 target by 5%.

#### Alpro aims for CO<sub>2</sub> neutral factories by 2020

In order to further improve its environmental footprint, Alpro has started an ambitious CO<sub>2</sub> reduction programme aiming for CO<sub>2</sub> neutral factories in 2020. Since the start of the programme in 2007, Alpro has achieved an energy saving of 34% per finished product. Based on an aggressive further CO<sub>2</sub> reduction programme, Alpro has also become the first European food company under the WWF Climate Savers programme. Alpro's commitment is to keep its factories' emissions in 2013 below 2008 levels, despite forecast growth in volumes. This is equivalent to emitting 42.000 tonnes less of CO<sub>2</sub> than in a business over the 2008-2013 period.

#### Belgian food and drink industry improves energy efficiency of Flemish breweries

FEVIA, the Belgian Food and Drink Federation, measures and benchmarks energy efficiency in the Flemish brewery sector. Poor performance in energy use and beer production is measured and, based on this, energy-specialists audit the least performing breweries to identify possible measures for energy efficiency improvements.

#### Barilla pledges to reduce total energy consumption per finished product by 10% by 2014

Barilla has set targets to reduce total energy consumption per finished product by 10% by 2014 based on a 2008 baseline. Barilla also aims to reduce the carbon produced in its factories by 15% by 2014.

## EU EMISSION TRADING SCHEME (EU ETS)

The EU ETS aims to reduce GHG emissions as much as feasible, at the lowest possible cost to industry. The scheme is mandatory for food and drink companies operating combustion installations above 20 Mega Watts, with approximately 900 food-processing installations in the EU currently covered. Food and drink manufacturers strive continuously to meet increasingly stringent GHG emissions reduction targets, which, under the third Trading Period, require reductions of 21% by 2020 relative to 2005<sup>18</sup>. FoodDrinkEurope welcomes the harmonised transposition of EU ETS benchmarking across all Member States to ensure a level playing field for operators.

## NATIONAL ENERGY EFFICIENCY AGREEMENTS

The food and drink sector has signed Long- Term Agreements (LTAs) on energy efficiency between government and industry in some EU Member States.

### The Netherlands

The first LTA in the Netherlands was signed in 1992 and over 29 sectors participated until 2000, leading to a cumulative energy efficiency improvement across sectors totalling 22%. Under the second LTA, 198 food and drink companies out of a total of 902 companies avoided 5.1 million tonnes of CO<sub>2</sub> between 2000 and 2006. LTA 3 was signed in 2008 for the period 2009-2020 and companies are obliged to implement measures that can be recouped in less than five years. Participants must submit a progress report every year, with results monitored by the Dutch Government Agency, SenterNovem.

### Finland

National Energy Efficiency Agreements (EEA) play a crucial role in Finland's efforts to meet its energy efficiency targets. The agreement system for the period 2008-2016 is co-ordinated by industry associations and the Ministry of Employment and the Economy. Currently the EEA for the food and drink industry covers some 67% of the sector's energy consumption and the industry has committed to improving energy efficiency targets by 9% by 2016. A 2010 evaluation report commissioned by the Finnish Food and Drink Federation and the Finnish Government reveals that the investment costs of these measures were 1.4 million euro while savings on energy costs amounted to 0.5 million euro. Based on the monitoring results, the food and drink industry is the second best sector under the EEA scheme in terms of energy savings and improvement measures in Finland<sup>19</sup>.

The food and drink sector has signed Long Term Agreements (LTAs) on energy efficiency between government and industry in some EU Member States.



## ALTERNATIVE REFRIGERANTS

Some of the refrigerant gases commonly used by food and drink manufacturers, such as hydrofluorocarbons (HFC), contribute to climate change if they escape to the atmosphere. While HFCs account for only 0.2% of the food and drink industry's GHG emissions, the industry is gradually switching to alternative refrigerants as they become technically and economically viable, safe and energy efficient<sup>20</sup>.

Where viable alternatives are not yet available, the industry fully supports the objective of the EU F-gas Regulation, which aims to prevent HFC emissions through an advanced containment regime.

In September 2011, the Commission published a review of this Regulation and identified options for additional cost-effective reductions of fluorinated gases in the EU, with the intention to propose new measures in 2012. FoodDrinkEurope continues to engage with policymakers on this important issue.

## Refrigerants, Naturally!

This multi-stakeholder initiative was launched by The Coca-Cola Company, Unilever and McDonald's and now also includes PepsiCo. It is supported by Greenpeace and the United Nations Environment Programme (UNEP) and it is officially recognised by the UN as a Partnership for Sustainable Development. It aims to promote a shift in point-of-sale cooling technology to alternative HFC-free solutions that protect both the climate and the ozone layer.

## INCREASED USE OF RENEWABLES AND BIO-ENERGY

Due to their biological origin, by-products, further residues, materials and waste from food processing can make a valuable contribution to the EU objective of attaining a 20% share of total EU energy consumption from renewables by 2020<sup>21</sup>. The European food and drink industry has put in place practices aiming to utilise 100% of their agricultural raw materials (see chapter on Waste). Every tonne of food waste sent for biological treatment can deliver between 100-200m<sup>3</sup> of biogas<sup>22</sup>, thereby reducing dependency on fossil fuels and cutting GHG emissions.



### Ferrero aims to develop its own renewable energy by 2020

Ferrero aims to develop its own energy production capacity to cover the needs of all of its manufacturing plants in Europe before 2013. In addition, the company has set a target of 30% own energy production from renewable sources before 2020. This will result in a CO<sub>2</sub> emissions reduction of 40% compared to 2007.

### Mars set to achieve zero fossil fuels and zero GHG emissions by 2040

As part of their Sustainable in a Generation (SiG) programme, Mars has set a target of achieving zero fossil-fuel energy use and zero GHG emissions at operations by 2040 and reducing direct fossil-fuel energy use and GHG emissions by 25% by 2015 based on a 2007 baseline. In 2010, total fossil fuel energy use for all Mars Incorporated operations was 20,973 Terajoules (TJ), a reduction of 6.3% from the 2007 baseline.

Renewable and bio-energy will be vital to achieving these ambitious goals. For example, two Wrigley facilities in Poznan, Poland, and Porici, Czech Republic, have been designed to capture methane from their waste-treatment operations and redirect it to fuel boilers that heat water. This process prevents the methane from being released into the atmosphere and will reduce consumption of fossil-fuel derived natural gas by approximately 3% annually.

### Investment in low-carbon technology: Combined Heat and Power (CHP)

Food manufacturing facilities have a significant demand for heat and cooling. The best way to provide heat is from a CHP plant as this provides maximum primary energy saving opportunities. Manufacturing facilities can be designed to provide fuel flexibility and to use by-products as renewable fuels, thus producing renewable electricity and renewable heat. CHP also relieves congestion on the local electricity grid to the benefit of the region and can provide high power reliability and self-sufficiency-especially as major primary food production facilities are located in rural areas with poor infrastructure.

**Kellogg's** manufacturing plant in Manchester, UK, contains a 4.9 MWe (megawatt electrical) CHP Plant that supplies 85% of the plant's current steam demand and approximately 50% of electricity demand. The use of the CHP plant reduces CO<sub>2</sub> emissions by approximately 12% annually compared to energy received from previous sources.

FoodDrinkEurope welcomed the Commission's Energy Efficiency Directive presented in June 2011 and its proposals to encourage further uptake of CHP and to facilitate further investment in low-carbon technology.

Every tonne of food waste sent for biological treatment can deliver between 100-200 m<sup>3</sup> of biogas, thereby reducing dependency on fossil fuels and GHG emissions.



FoodDrinkEurope members are committed to a number of initiatives that aim to address energy and climate change. These include:

■ **United Nations  
Global Compact**

■ **WWF  
Climate Savers  
Programme**

■ **The Prince of Wales  
Corporate Leaders Group  
on Climate Change**



## OPPORTUNITIES

As the above case studies demonstrate, many of FoodDrinkEurope's members have integrated energy and carbon management into their daily business practices and are achieving impressive results. The challenge lies in helping under-performing companies to catch up, while encouraging front-runners to further improve their achievements.

### Overcoming barriers to investment

Food and drink manufacturers often face a number of investment barriers when implementing sustainable energy and carbon management plans. These include long pay-back periods in a sector used to short investment cycles, the availability of investment funds and limited commercial competitiveness in emerging technologies. Investment uncertainty and energy price volatility are also significant barriers. For example, in the case of CHP, certain barriers remain for its increased uptake. There are higher investment risks compared to sourcing from boilers or power from grids and targeted support is varied across Member States and is generally insufficient for establishing maximum CHP capacity. As such, FoodDrinkEurope believes there is a need to ensure Member State implementation of the Cogeneration Directive without delay and for financial support schemes and incentives, as well as the enhanced spread of best practice across industry, with particular attention to SMEs.

### Long-term energy strategies

In the long-term, food and drink manufacturers look forward to improvements in commercial competitiveness of emerging alternative energy sources. By-products and waste in particular will make a great contribution to reducing long-term GHG emissions in the food and drink sector.

# THE CASE FOR MORE COLLABORATIVE ACTION

## Global cooperation to cut GHG emissions

The European food and drink industry supports the EU's call for limiting global warming by a maximum of 2°C. In order to reach this goal, the EU needs to reduce emissions by 80-95% below 1990 levels by 2050<sup>23</sup>. The food and drink sector backs ambitious strategies to encourage energy efficiency, the right incentives for investment and guarantees for legal certainty for businesses.

## Increased support for renewable and bio-energy

Member States must align their national energy mix with GHG reduction targets. The competitiveness of low-carbon technologies, such as anaerobic digestion (i.e. the process where plant and animal material (biomass) is converted into useful products by micro-organisms in the absence of air<sup>24</sup>) and CHP, should be enhanced by the introduction of well-designed incentive schemes.

## FoodDrinkEurope supports an ambitious global climate change agreement

The Kyoto Protocol to the United Nations Framework Convention on Climate Change (1998) commits 37 industrialised countries and the European community to reduce GHG emissions to an average of 5% against 1990 levels between 2008 and 2012. The UN Climate Change Conference is now negotiating an agreement for endorsement no later than 2015.

FoodDrinkEurope members call for an ambitious agreement to adequately address the dual global challenge of food security and climate change, in order to provide the right incentives for investment and to guarantee legal certainty for businesses as well as providing for a more sustainable planet for the future. Further commitment to a reduction in EU GHG emissions beyond 20% by 2020 should be agreed upon condition that other nations agree to take the same action and if developing countries agree to accept similar measures based on their respective capabilities.



*“The Danish Presidency set a pro-active agenda for green and sustainable growth. The goal is to create growth without increased resource and energy consumption, and this is possible. The EU has in recent years developed an ambitious energy and climate policy, taking the lead globally. We must work to maintain this advantage through new initiatives. In light of the current economic situation, it is vital that this happens in a way that supports economic recovery and supports the consolidation of public finances. The solution must be cost effective and take account of the competitiveness of businesses.*

*We will work for a focused and ambitious seventh Environmental Action Programme (7th EAP) and an ambitious European energy and climate policy by 2050 with improved energy efficiency and increased use of renewable energy. There must be a strong European voice at the Rio +20 Conference with the objective to achieve the adoption of a roadmap for green transformation of the world economy.*

*It is my hope that FoodDrinkEurope and other businesses in Europe will contribute to meet these goals.”*

Jonas Bering Liisberg,  
Deputy Permanent Representative (Denmark)



# WATER

The food and drink industry has shown leadership in its voluntarily actions to reduce water use, as the quality and quantity of water available is critical for the sector's sustainability. A certain amount of water use is unavoidable for the production of food and drink products and to ensure compliance with stringent EU hygiene requirements, as food safety and hygiene are of utmost importance. We are proud nonetheless to report measurable achievements in improving water efficiency, saving both water and money.

## CHALLENGES

In 20 years' time, demand for water will be 40% higher than it is today and a third of the world's population will experience water scarcity which will affect the production of staple foods, whilst freshwater withdrawals are expected to exceed natural renewal by over 60%<sup>25</sup>.

## WATER USE FOR FOOD AND DRINK MANUFACTURING

The European food and drink manufacturing sector accounts for only about 1.8% of water use in the EU, based on data from the UK, Belgium and the Netherlands<sup>26</sup>. The amount of water used by the food processing industry from the public water supply varies widely across sub-sectors and regions and data is not available for the EU 27.

Water is an essential input for the food and drink industry, both as an ingredient and key processing element. Water is also used as a cooling agent in many production processes. Clean water is vital for food safety as it is used to clean and sanitise floors, processing equipment, containers and ingredients, and can account for up to 70% of a company's water use<sup>27</sup>.

## WATER USE FOR AGRICULTURAL PRODUCTION

Agriculture is the dominant user of fresh water worldwide, accounting for 70% of global and 24% of European water consumption. Inefficient irrigation techniques, combined with water loss through evaporation, overuse of groundwater and pollution all threaten the availability of fresh water<sup>28</sup>.

The impact of agriculture on water availability depends to a great extent on local conditions such as water scarcity, climate and water governance. Agricultural production requires water, yet its availability to farmers is increasingly threatened due to overuse, population growth and urbanisation. As such, there is a need to implement good water management practices.

With adequate pricing structures often missing, it is often necessary for food and drink manufacturers to sensitise farmers to the real value of water and promote water stewardship. This is particularly difficult to do in the cases of complex food supply chains where there is often no direct interaction between suppliers and manufacturers.

Clean water is vital for food safety as it is used to clean and sanitise floors, processing equipment, containers and ingredients, and can account for up to 70% of a company's water use.



## PROGRESS

### IMPROVING WATER EFFICIENCY

Due to the complex and highly varied nature of the food and drink manufacturing industry, the possibilities for reducing water consumption at factory level depends on product requirements - e.g. a certain amount of water use is unavoidable for a water-based drinks manufacturer.

Actions to improve water efficiency include, among others, developing and using water consumption monitoring tools, rainwater harvesting for non-production parts of the site, installing water recovery and recirculation systems, modifying cleaning and housekeeping practices, preventing and stopping water leakages, increasing awareness, using sensor-controlled taps or hand-controlled triggers on hoses, using low volume high pressure water jets, redesigning processing techniques to reduce water use and staff training.

#### UK Federation House Commitment

In the UK, a voluntary Federation House Commitment was launched in 2008 by the UK Food and Drink Federation (FDF) and Envirowise to reduce water use in the food and drink sector as part of the FDF's Five-fold Environmental Ambition. Companies have pledged to reduce their on-site water use, excluding water incorporated into products, and contribute to an industry-wide reduction target of 20% by 2020 against a 2007 baseline. Signatories are also required to provide annual updates of their progress, water reductions and cost savings. Over 50 signatory companies (245 sites) reduced their water use by 5.3% in 2010 compared to 2007 - equivalent to almost 1.3 million cubic meters (m<sup>3</sup>) or 520 Olympic swimming pools. Signatories reduced water use (excluding that in the product itself) by 11.9% per tonne of product despite a 7.5% rise in production.

#### Czech beer company, Pilsenský Prazdroj increases beer production with less water

Pilsenský Prazdroj has systematically reduced water consumption in its production process. Water forms approximately 95% of beer content, and on average it takes 5 hectolitres (hl) of water to produce 1 hl of beer. Pilsenský Prazdroj places special emphasis on reducing water consumption in the production process, monitoring water resources and taking into account the region's water needs, applying principles of responsible treatment of water resources and minimising the impact on the environment in water waste management. As a result, Pilsenský Prazdroj's average water consumption is one of the lowest in the Czech Republic and lower than the world average, at 4.1hl per 1hl of beer. From 2010 to 2011, Pilsenský Prazdroj reduced total water consumption by 7.83%.

#### Unilever cuts water use in factories by 65%

Although the water used in Unilever factories amounts to less than 5% of the water consumed in the lifecycle of its products, Unilever has more than halved its water abstraction for manufacturing from 1995 to 2009. Unilever reduced its water use by 18.7 million m<sup>3</sup> of water, or 7,500 Olympic-sized swimming pools, each year from 2006 to 2011.

## Danone saves 6.1 billion litres of water since 2008

Danone manages its water resources focusing on four key areas: protection of resources, reducing water consumption, contributing to the restoration of the global water cycle and facilitating access to water. From 2000 to 2010 Danone has significantly improved the efficiency of water use in its plants and is currently implementing a tool to assess the water use of their products allowing identification of key “hot spots” based on the lifecycle of a product.

## Nestlé engages with farmers to implement improved water management practices

The Sustainable Agriculture Initiative at Nestlé (SAIN) -an initiative to support farmers and promote sustainable development worldwide, celebrated its 10-year anniversary in 2011. SAIN focuses on a broad range of commodities including milk, coffee and cocoa, and enables Nestlé to address some key challenges in water management and irrigation. For example:

- Water use at Nestlé’s coffee demonstration farm in Yunnan Province, China was reduced by 80% in 2010 through the introduction of new post-harvest equipment;
- A partnership with the Swiss College of Agriculture is using the updated RISE 2.0 (Response-Inducing Sustainability Evaluation) tool to improve the sustainability of water use in Mexico’s dairy industry at 13 farms in the Torreon municipality.

## CONTINUOUS IMPROVEMENT OF WASTE WATER QUALITY

Waste water is the most common waste in the food and drink industry. This is because food processing involves a number of operations in which water is an essential requirement, such as washing, boiling, evaporation, extraction, filtration and cleaning. Waste water at many food and drink factories is characterised by organic contamination, and is generally micro-biologically purified before discharge.

European food and drink manufacturers undertake significant efforts and continuous investment to ensure sound waste water treatment, which consists of three main elements: first, to reduce the amount of waste water through efficient processing methods; second, to improve the quality of waste water through state-of-the-art water treatment; and third, to optimise the re-use, recycling and recovery of waste water whenever possible.

For example, the organic components in waste water can be valorised to produce fertilisers and biogas, thereby significantly improving the quality of discharged water while also improving energy efficiency and reducing the discharge of oxygen depleting substances (COD).

## OPTIMISING WATER USE IN MANUFACTURING AND WASTE WATER RE-USE AND RECOVERY

The re-use of water from on-site cleaning stations is regulated by EU Regulation No. 852/2004 on the hygiene of foodstuffs. It stipulates that recycled water used in processing or as an ingredient must be of the same standard as clean drinking water. Where allowed by food hygiene laws, investments have been made in technology to allow water recovery and re-use, such as recuperating water from steam, without compromising on food safety. Such investments constitute the largest share of the food and drink sector's environment-related investments in France, according to the French food and drink federation (ANIA). In addition to this waste water recovery and re-use, some industries, such as beet sugar factories, derive the majority of water they need for processing from the crop.

### Beet sugar factories are net water producers

Sugar beet is 75% water. The water that leaves the beet during the production process is condensed, used for beet transport, washing water, extraction and crystallisation and recycled several times. The EU sugar industry (represented by 'Comité Européen des Fabricants des Sucres' (CEFS)), is therefore able to keep fresh water usage to a minimum. The sugar industry has also developed efficient water treatment systems which reduce the organic matter in water that leaves the factory by 90% before the water is re-used in agriculture or returned to local water courses.

### Kraft UK plant reduces freshwater consumption by 40%

Kraft's factory in Chirk, UK treats wastewater on-site and re-uses it in boilers, cooling towers and other ways that do not bring the water into contact with food. Re-using wastewater has reduced this plant's freshwater consumption by 40%. Globally, Kraft has reduced water consumption in its manufacturing facilities by 30% since 2005. Kraft aims to reduce its water use by an additional 15% by 2015.

Good water management is fundamental to the livelihoods of farmers. Key opportunities for improving water management include increasing productivity in rain-fed agriculture and more efficient irrigation.





## WORKING WITH FARMERS TO MANAGE WATER USE

Good water management is fundamental to the livelihoods of farmers. Key opportunities for improving water management include increasing productivity in rain-fed agriculture; more efficient irrigation; and to a lesser extent, ensuring that world food trade flows embedded “virtual water” – (i.e. water that is evaporated and incorporated by food crops during their growth) – from water-abundant to water-scarce countries.

## ADVANCING THE SCIENCE FOR ASSESSING WATER USE

FoodDrinkEurope supports the idea that the water footprint based on a Life Cycle Analysis could be an efficient tool for every actor of the production chain in order to find out the weakest stages of the process, however, it is not ideal for consumer information. While we support communicating environmental information to consumers in general, it should be based on a full life-cycle approach including all relevant impacts as discussed in the Consumers section. In addition to enhancing water efficiency at factories, food and drink companies are involved in various initiatives to advance the measurement of water use impact of food and drink products. There is currently no globally agreed method for assessing the water impact of products, although a new ISO standard (14046) on water footprint is expected to be completed by 2014 based on a life-cycle approach. Several FoodDrinkEurope companies are participating in the development of this standard.

Other initiatives that FoodDrinkEurope members are engaged in include:

- **Water Footprint Network**
- **World Resources Institute (WRI) Aqueduct Alliance**

## WATER DISCLOSURE

Water disclosure projects have been developed to help investors assess the risks and opportunities companies face in relation to water and to help companies measure and manage water use in their supply chains. FoodDrinkEurope members are committed to a number of initiatives that aim to improve water disclosure. These include:

- **UN CEO Water Mandate**
- **Carbon Disclosure Project (CDP) Water Disclosure**
- **Global Reporting Initiative (GRI)**



## VOLUNTARY WATER STEWARDSHIP

### Alliance for Water Stewardship (AWS)

The AWS is a platform to develop a global water stewardship programme. It identifies and rewards companies for their efforts to measure, manage and engage with others in responsible water stewardship, especially in water-scarce areas of developing countries. AWS is establishing a voluntary certification programme for water managers and users that will allow them to demonstrate compliance with, or support for, water stewardship by adopting new International Water Stewardship Standards (IWSS) on a voluntary basis. These voluntary standards will help companies improve water stewardship practices beyond their own activities, and will complement regulatory efforts to reduce water-related impacts, especially where those regulations are weak or absent.

### Beverage Industry Environmental Roundtable (BIER)

BIER<sup>29</sup> has defined a framework for water stewardship, *World Class Water Stewardship in the Beverage Industry 2010*. To date, BIER's work programme includes qualitative practice benchmarking against six leadership principles, quantitative benchmarking to define best-in-class water use efficiency performance within the beverage industry, best practice sharing on various water management topics and the development of water footprinting sector guidance that provides clarification and consistency in the quantification of a beverage water footprint and introduces a screening methodology to identify and prioritize water impacts from a business perspective..

### The European Federation of Bottled Water (EFBW)

Sustainable use of water resources is a key priority for the bottled water industry. In support of their commitment to water stewardship, EFBW members voluntarily calculated the sector's water use at each facility type, at bottling locations throughout Europe over a five year period (2006-2010). This initiative is a major step forward for the sector. Not only does it provide a quantitative benchmark for water use, encouraging members to engage in a reliable and robust monitoring system, but it helps demonstrate continuous improvements in water resource management. The first set of results were published in March 2012, showing an 18% decrease in water consumption between 2006-2010. Subsequent annual reporting will outline members' best practices and water saving initiatives, with the overall objective of enabling the industry to remain proactive on water stewardship.

## OPPORTUNITIES

Water scarcity is a key concern for the food and drink industry, as disruptions in operations due to water availability, increases in water expenses and other adverse water-related impacts would be detrimental to the industry's competitiveness. As demonstrated in the above case studies, the food and drink industry has made good progress in water use reduction and is committed to voluntarily improving water management practices further.

## THE CASE FOR FUTURE COLLABORATIVE ACTION

- Additional water efficiency gains can be made through further roll-out of national, sector and company guidance on good water management practices in the food and drink sector.
- Improving the water performance of food and drink products from a life-cycle perspective remains a key challenge for the way forward, and will require collaboration with stakeholders, particularly those along the food chain. For example, there is currently a lack of detailed information about water availability and the extent of use of good water management practices. Overcoming data gaps would help the food and drink sector formulate more precise strategies for sustainable water use.
- EU and national policies should support efficient water management and investment in water efficient technologies across all industry sectors. Further water efficiency gains can be achieved through innovation and investment, especially in the recycling of pre-treated waste water, in line with stringent EU hygiene requirements. Stakeholders must engage with governments to demonstrate effectively that water shortages can be overcome at an affordable cost and that public policy should seek to create a favourable climate and incentives for investment in water efficiency, particularly for SMEs.
- Governments are urged to implement respective legislative measures on water for all sectors at the national level without delay to ensure high water quality, sufficient quantity and a level playing field.
- A globally harmonised methodology to assess the impact of water use taking into account local conditions. The food and drink industry will continue to work with stakeholders to fine tune the ISO Standard on water footprinting and to proactively engage in water stewardship.



*“Preserving fresh water systems, whilst ensuring growth of communities and businesses, requires an innovative approach not only based on technological improvements but also, and even more importantly, in management innovation. The European Water Stewardship (EWS) supports the food and drink industry in its effort to innovatively address integrated water management, which goes beyond water efficiency and encompasses considerations outside manufacturing facilities and engaging with local stakeholders. As a main player in water management, you will definitely help to improve the water status of our water bodies and your example will bring others on board.”*

Sabine Von-Wiren-Lehr,  
European Water Stewardship (EWS) Director, European Water Partnership

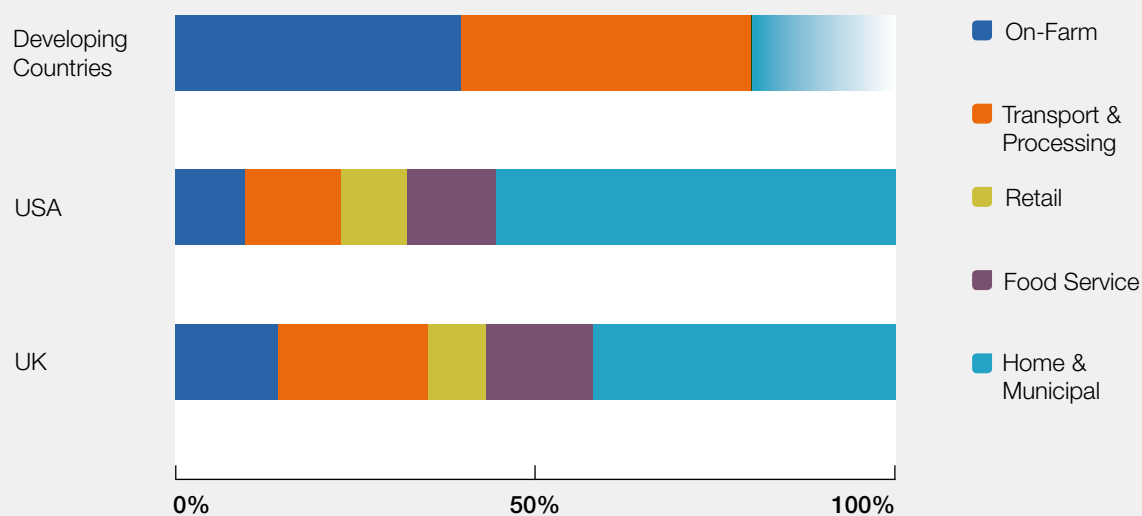


# WASTE

This section addresses the waste streams related to the production of food and current measures to avoid waste. FoodDrinkEurope is looking forward to developing a commonly accepted definition of waste with all stakeholders that may help address this challenge in the future. The overall aim of the European food and drink industry is to optimise resource use at every stage in the food chain without compromising food safety. Food and drink manufacturers are constantly striving to use 100% of agricultural resources wherever possible and find uses for by-products not only as food, but also animal feed, fertilisers, cosmetics, lubricants and pharmaceuticals. The industry is exploring and investing in other innovative outlets such as bio-plastics and biofuels. These actions improve resource efficiency, help reduce agricultural pressures on the environment and generate higher added value from a unit of agricultural raw material making the food and drink industry a key driver in the transition towards a bio-based, low-carbon economy.

**Figure 2: The make-up of total food waste along the food supply chain**

Science (2010), *Food Security: The Challenge of Feeding 9 Billion People* <http://www.sciencemag.org/content/327/5967/812.full#F3>



## CHALLENGES

### WASTED FOOD, WASTED RESOURCES

Estimates of the current level of food waste globally range from 30% to 50% of all food grown worldwide<sup>31</sup>. At EU level, food waste is estimated to total 90 million tonnes annually, representing 179 kg per capita<sup>32</sup> excluding losses in agriculture. The European food and drink sector recognises that when food is wasted, the resources that were invested into producing the food sustainably (the raw materials, water, fertilisers and fuel) are also wasted. Tackling food waste is therefore a priority issue for the industry.

As the findings of the UNEP report on food waste show<sup>33</sup>, where waste occurs depends largely on the economic development of the country (see figure 2). In developing countries most food waste occurs upstream in the food chain, while in developed countries most of it occurs downstream. This is related to differences in the levels of technology, share of household income spent on food and consumers' lifestyle<sup>34</sup>.

### WASTE MANAGEMENT

The European food and drink industry is committed to fully complying with the relevant waste legislation and the waste hierarchy set out within the Revised Waste Framework Directive<sup>35</sup> in tackling the small volumes of unavoidable waste our sector produces. FoodDrinkEurope members are progressively implementing recycling and recovery processes at their operations and divert as much waste away from landfill as possible.

# PROGRESS

## KEY ACTIONS TO TACKLE FOOD WASTE

The food and drink industry makes a significant contribution to industrial symbiosis, which is when a “residue” from one industry can be used as a raw material for another industry. This helps reduce agricultural pressures on the environment and supports the transition to a bio-based, low-carbon economy by facilitating partnerships, generating mutual value and improvements, and by creating cost savings and new revenue. WWF has recognised industrial symbiosis as one of the top 20 business innovations that benefit the environment<sup>36</sup>.

**Figure 3: Overview of the criteria to distinguish between by-products and waste (Article 5, revised Directive on Waste)**

Legal classification	By-product (non-waste)	Waste
Usability	Can be used directly without any further processing other than normal industrial practice.	Not suitable for direct further use. May be used as secondary raw material after recycling or recovery.
Intention of the holder	> Intention to exploit or market the material.	> Intention to discard the material.
Relation to the production process	> Produced as an integral part of the production process	> Not produced as an integral part of the production process
Certainty of use	> Further use is certain	> Discarding takes place
Legislation	> Fulfils all relevant product, environmental and health protection requirements for the specific use and will not lead to overall adverse environmental or human health impacts.	> Waste management (preparation for re-use, recycling, recovery, disposal) in compliance with waste legislation.
Examples from the food and drink industries	By-products from food processing used in: Animal feed Fertilisers Cosmetics Pharmaceuticals Bio-plastics Lubricants Bio-energy protection	The following items if no longer used by food manufacturers: Pallets Crates Plastic Paper Metals Wood

# OPTIMISING RAW MATERIAL USE

## Animal feed

In terms of overall volume, animal feed and pet food accounts for the food and drink industry's most important use of by-products, trimmings and other products that are not fit for human consumption. Approximately 85 million tonnes of by-products such as sugar beet pulp, maize gluten, brewers' grains, oil from soybeans, rapeseeds, sunflower seeds and other oilseeds and whey are used annually for animal feed. The EU compound feed industry uses approximately 60 million tonnes of by-products while the rest is used by farmers.

### European sugar industry uses 100% of its raw materials

The European sugar industry exemplifies how an industry can use 100% of its raw materials, achieved largely through animal feed. The European sugar industry processes approximately 110 million tonnes of beet every year, producing 17 million tonnes of sugar. Beet pulp is also produced and used by farmers as cattle feed (8.5%) whilst the water used (75%) is re-used for beet washing. In total, approximately 8 million tonnes of pressed pulp and 5.5 million tonnes of dried pulp are produced annually in the EU.

### European spirits drinks industry (CEPS) sell by-products as animal feed

The residues from the fermentation and distillation process of the European spirit drinks industry are directly sold on to farmers or processed into other products (such as Distillers Dark Grains and Pot Ale Syrup for the animal feed market).

## Fertilisers

Several by-products can be used as bio-fertilisers, adding nutritional value to soil and providing farmers with a sustainable product that prevents the extraction of limited resources. Food processing residues are often a good source of nitrogen, phosphorous and potassium. For example, digestate sludge from starch plants and sugar factory lime, can be used to improve soil structure and reduce acidity.

## Bio-based products

As a result of increased R&D, agricultural raw materials can be used to make several products including plastics, packaging, lubricants, detergents, ink, cosmetics and pharmaceuticals. Many by-products produced by the food and drink industry are also suitable for direct use as a renewable energy source due to their agricultural origin. Approximately 550,000 tonnes of fatty acids, for example, are produced annually by the European oilseed processing industry. Oilseed processing generates oils and meal as well as fatty acids which are an ideal renewable energy source.

For other by-products, anaerobic digestion and incineration is used to convert these by-products into bio-energy. Their use also helps to reduce existing pressures on agricultural markets.

## WASTE MANAGEMENT

### Recycling and recovery

When waste prevention at source is not feasible, other options for food waste management include re-use, recycling and recovery. There is no single best option for the management of food waste diverted from landfill, and environmental benefits of the different management options depend significantly on local conditions such as population density, infrastructure and climate. However, the following are considered as the most environmentally effective methods by the European food and drink industry.

### Bio-energy

The energy embedded in biodegradable residues can be recovered in a combustion process. The combustion of brewers' grain, for example, offers significant energy potential and cost savings for breweries. Coffee chaff from coffee roasting or spent coffee grounds from soluble coffee manufacturing are other examples that can be burned as renewable fuel to provide steam for other production stages, thereby reducing CO<sub>2</sub> emissions from energy use.

#### Nestlé and Kraft recycle coffee grounds as fuel

Coffee grounds that are left over from the production process are burned to recover energy at Nestlé's coffee plants in Germany, the UK and France, and at Kraft's coffee plants in Hemelingen and Elmshorn, Germany and in Banbury, UK. In Nestlé factories, this renewable energy is used to power a further stage of production. It helps to significantly reduce CO<sub>2</sub> emissions compared to using fossil fuels and contributes 12% of Nestlé's on-site renewable energy resources.

#### Unilever converts food waste into power

Unilever constructed a bio-digester at its Ben and Jerry's ice cream factory in Hellendoorn, the Netherlands in 2011. This will turn excess food product that is wasted during the making of ice cream, into power that will cover 40% of the factory's green energy requirements.

#### UK brewer produces electricity from effluent waste

Sharp's Brewery in the UK installed an anaerobic digestion plant in 2011 to convert its liquid effluent waste into methane, which is used to generate electricity for the national grid. The plant is projected to produce 100,000 litres per annum in diesel equivalent terms. This relates to a significant CO<sub>2</sub> saving from fossil fuels of 410 tonnes per annum.



## Composting

Compost is very important for the manufacture of top soil, land remediation and restoration and loss of organic matter is one of the seven main threats to soil quality in the EU. Composting is frequently applied as a pre-treatment method for bio-degradable residues that are then applied on land to improve soil structure and moisture infiltration, which can reduce energy consumption during ploughing and prevent flooding.

## Recycling

Non-biodegradable waste in the food and drink sector includes products such as pallets, crates, plastic, paper and metals. These are typically collected separately on site for recycling or energy recovery.

# DISPOSAL

## Reducing waste sent to landfill

Due to the irrecoverable loss of resources and land caused by landfill, and the gas and leachate produced by decomposing biodegradable waste in landfill, the European food and drink industry has made the reduction of waste sent to landfill a top priority in line with the 1999 Landfill Directive<sup>37</sup>.

### Food and drink companies aim for zero waste to landfill by 2015

- **UK Food and Drink Federation (FDF)** members have committed to send zero food and packaging waste to landfill by 2015. According to the second FDF waste survey, published in November 2010 in conjunction with the UK Department for Environment, Food and Rural Affairs (Defra), over 90% of waste in 2009 was recovered or recycled with only 9% sent to landfill – a significant improvement on previous years (16.5% was sent to landfill in 2006 and 12.5% in 2008).
- In addition, **Coca-Cola** aims to send zero waste to landfill from their manufacturing sites in the UK and reduce the amount of waste generated by 2014, whilst **Mars** is aiming to achieve zero waste sent to landfill at its UK facilities by 2015.



## OPPORTUNITIES

### Awareness-raising

FoodDrinkEurope will work with other stakeholders, policymakers, retailers and consumer organisations to tackle food waste along the food chain - for example, within the European Food Sustainable Consumption and Production Round Table.

### Full utilisation of raw materials

Opportunities should be identified to centralise by-product utilisation in certain cases, especially where they are produced at too low a scale economically to justify internal utilisation (e.g. centralise biogas production from by-products from food and drink facilities in a given local area).

### R&D investment

Research and development is needed to achieve further breakthroughs in the optimised use of raw materials and alternative methods of food production. It is hoped that the priorities set by the Strategic Research and Innovation Agenda of the European Technology Platform FoodforLife, run under the auspices of FoodDrinkEurope, will lead to future calls for research proposals, such as the Food Knowledge and Innovation Center (KIC) from 2014.

## THE CASE FOR COLLABORATIVE ACTION

### Clearly defined by-products and flexible policy framework

To ensure the full environmental benefits of raw material use, long-term legal certainty is required regarding the important distinction between waste and non-waste (including by-products) under EU legislation and in its implementation by the Member States. This legal certainty is essential in order to justify the significant investment needed to provide by-products for the needs of existing and emerging markets.

In waste management reality, no product or waste stream is identical thus flexibility between the various treatment options is necessary to identify the option that offers the best overall environmental, economic and social results.

FoodDrinkEurope will work with other stakeholders, policymakers, retailers and consumer organisations to tackle food waste along the food chain





*“European food and drink manufacturers find themselves at a crossroads, facing a “perfect storm” of converging social, economic and environmental challenges. Key amongst these is the need to maintain their stewardship of critical resources, from the commodities and ingredients that make-up their products, to the natural resources that make them possible: land, water, biodiversity, soils and essential nutrient cycles. With good stewardship the industry can continue to prosper; and to meet the dietary aspirations of a growing and increasingly affluent population.*

*Tackling food waste is absolutely critical to any resource efficiency and security strategy. Wasted food is an obvious waste of resources (inputs), water, energy and nutrition. Current estimates suggest that around 30% of the food grown globally is wasted, equating to some 1.3 billion tonnes of food a year. Tackling this food waste would make a major contribution to the need to make 70% more food available by 2050, to ensure future food security. In fact, it would reduce the food required by 2050 by an amount approximately equal to 25% of today's global food production.*

*So food and drink manufacturers must continue to “do their bit”. Increasingly this will mean more collaboration, more innovation and more active engagement with farmers, growers, retailers and consumers, in order to create the sort of paradigm shifts required to make the transition to a resilient, low carbon and resource efficient food chain.”*

**Mark Barthel,**  
*Special Adviser and Head of Design, WRAP( Waste & Resources Action Programme), UK*

<sup>3</sup> Global food losses and food waste: Extent, causes and prevention (UN FAO-2011).

<sup>4</sup> The Global Future of Food and Farming (UK Office of Government Science, Foresight Programme - 2011).



# PACKAGING

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Packaging provides many benefits, from protecting and preserving food from the point of production to point of consumption, in the prevention of food waste. The environmental impacts of used packaging vary significantly depending on composition (plastic, paper, glass, etc.) and its required functionality (different products have varying packaging specifications). The European food and drink industry has been working towards optimising packaging use throughout the product life-cycle so as to minimise the adverse impacts on the environment, while ensuring that the positive role in terms of helping to ensure food safety and quality, are not lost.

## CHALLENGES

### USING THE RIGHT AMOUNT AND THE RIGHT KIND OF PACKAGING

Food and drink manufacturers account for approximately two thirds of the total EU used packaging by weight<sup>38</sup> and are committed to minimising the adverse environmental impacts of used packaging. This can be done through optimising the amount of packaging, using recyclable materials and increasing recycled content for packaging where possible to reduce the volume of packaging sent to landfill or combustion without energy recovery.

European lifestyle trends influence packaging types and this is illustrated in the growing number of single-person households in EU Member States. In Germany, for example, 35.4% of people live alone while 32.6% of households are comprised of only two people<sup>39</sup>. While these demographic changes have proven to lead to increased household waste, packaged portioned meal sizes, pack sizes, split packs and ordering tools can play an important role in helping to reduce food waste. Innovative packaging design enables consumers to buy the right amount of food and thus reduce food waste. As such, food and drink manufacturers are challenged with reducing the volume and weight of packaging used while guaranteeing the highest standards of food protection and preservation for retailers and consumers.

## PROGRESS

### OPTIMISING PACKAGING

Optimising the use of packaging is seen as the most advanced industry initiative by FoodDrinkEurope members.

The weight of a 1.5 litre plastic water bottle, for example, has been reduced by 40% between 1990 and 2011, reaching the average current weight of 25g, while the average thickness of foil used for coffee and chocolate has been reduced by 30% over the past 20 years<sup>40</sup>. Packaging for 33cl cans has been reduced by 55% while lightweight glass technology produces bottles that are up to 60% lighter<sup>41</sup>. Packaging also plays an important environmental role in that it protects and preserves food and provides information and instructions to retailers and consumers. In some cases, increasing the amount of a product's packaging can be more environmentally beneficial overall when it plays an important role in reducing food waste. This is the case for food products where the environmental impact is high relative to packaging (such as cheese) and food products with high losses (such as bread)<sup>42</sup>. Non-packaged fruit and vegetables are twice more likely to be wasted at the retail and household lifecycle stages than those that are packaged - 32% compared to 16%<sup>43</sup>. Cucumbers with just 1.5 grams of wrapping, for example, have been found to maintain their freshness for 11 days longer than those that are unpackaged.

To systematically optimise the environmental performance of products and their packaging, eco-design tools can help to assess the environmental performance by taking into account the entire life cycle of packaging, using a comprehensive set of environmental indicators such as climate change, land use, ecosystem quality and water consumption. Efforts are also being made to reduce the need for secondary and tertiary packaging and to distribute in bulk, where possible.

### Nestlé optimises packaging at design stage

Nestlé uses a packaging multi-criteria eco-design tool, and a Nestlé Waters Global Environmental Footprint (GEF) tool certified against ISO standards on Life Cycle Assessment worldwide to assess and optimise the environmental performance of packaging. The tools are used by 600 packaging specialists around the world as part of their everyday work, allowing a factual comparison of the environmental impact of different packaging choices across a range of environmental indicators. Close to 4000 eco-design analyses have already been completed.

### Zero packaging waste to landfill by 2013 for Young's Seafood

Young's Seafood is committed to sending zero packaging waste to landfill by 2013. Since 2007, 800 tonnes of CO<sub>2</sub> equivalent have been removed from its packaging supply chain.


### Kraft Foods switches to reusable packaging

Kraft Foods no longer packages assortment products into corrugated boxes but has switched to reusable rigid packaging, termed 'polypan', which has allowed it to significantly reduce single use transit packaging. The associated storage efficiencies allow the company to better store unfinished goods on-site, reducing the need to move product by road to off-site storage. The polypan has an operating life of between five to ten years and their suppliers ensure they are recycled at the end of their operating life.

## RE-USE OF PACKAGING

Food and drink manufacturers utilise packaging that is reusable wherever environmentally beneficial and feasible. 20% of non-alcoholic beverage containers are reusable, for example.

However, the environmental benefits of reusable packaging are dependent on a number of factors such as the number of times a package is re-used and the distance reusable packaging is transported. If the transport distance is significant, recyclable packaging is the preferred option as less fuel is used and less GHG emissions are emitted. The internal costs of reusable packaging, particularly deposit management, are often considerably higher than the cost of recyclable packaging so the difference offsets any lower environmental impact of reusable packaging for short trips. This packaging solution is therefore not necessarily preferable to recyclable packaging.



Packaging for 33cl cans has been reduced by 55% while lightweight glass technology produces bottles that are up to 60% lighter

## RECYCLING USED PACKAGING

Over the past ten years the weight and volume of packaging entering the EU market has increased at a far slower rate than GDP and other economic indicators. Packaging has risen gradually (3%) from 78.9m tonnes in 2005 to 81.5m tonnes in 2008<sup>44</sup>, despite a 48% increase in GDP between 1998 and 2008<sup>45</sup> and a demographic trend towards increased single person and two-person households. The considerable increase in recycling and recovery schemes that the food and drink industry has invested in over recent years has likely played a significant role in achieving this decoupling from economic growth.

Recycling rates between packaging materials differ considerably, with paper and cardboard boasting the highest (77% in 2008<sup>46</sup>) and plastics rating lowest<sup>47</sup>.

### Food and drink companies commit to targets for use of recycled materials

**While respecting** regulatory and food safety requirements, Mars aims to increase the level of recycled content in packaging by 10% by 2015.

By 2020, the **Scotch Whisky sector** will ensure that 40% of its product packaging will be made from recycled materials.

**Coca-Cola** plans to more than double its reprocessing of PET plastic in the UK. Currently, its PET bottles are made of on average 14% recycled content. Coca-Cola will distribute 200 million PlantBottles in 2012, a fully recyclable PET bottle made with 25% recycled PET and up to 22.5% plant-based materials, following the launch of the bottle in September 2011.

**Barilla** aims to increase its percentage of recyclable packaging on the market to 95% of its total packaging by 2014.

## RECOVERY OF USED PACKAGING

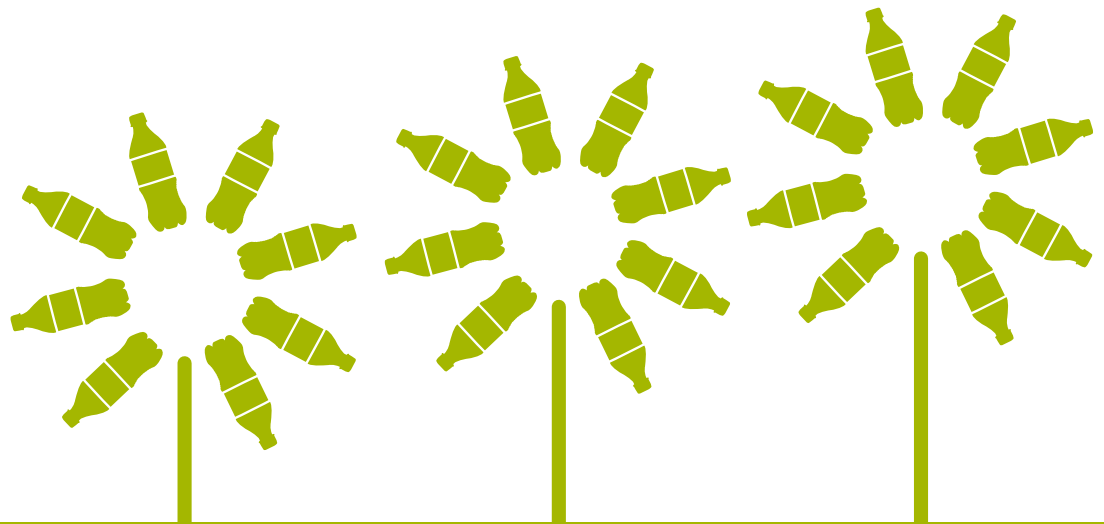
The recovery of packaging waste can refer to recycling, but also extends to incineration with energy recovery and composting<sup>48</sup>. Where it is optimal, incineration's energy recovery potential should be considered over recycling as a waste treatment.

FoodDrinkEurope members have committed to national recycling and recovery schemes in relevant Member States. These schemes have been set up in 26 countries and have proven highly successful in achieving impressive recycling and recovery rates. In 2009, approximately 32 million tonnes of used packaging were recovered by these schemes in Europe<sup>49</sup>.

## BIO-BASED PACKAGING

A number of FoodDrinkEurope members have invested in developing packaging made from bio-based raw materials. Packaging made either partly or entirely from plant materials has a lower reliance on non-renewable resources, compared with traditional packaging materials. This packaging may also be biodegradable, depending on how it is produced and on the availability of relevant infrastructure.





### Development of plant-based bottles

**PepsiCo** has developed the world's first 100% plant-based, renewably sourced PET bottle. This is made from bio-based raw materials, including switch grass, pine bark and corn husks. The new bottle will enter into pilot production in 2012 and the company intends to move directly to full-scale commercialisation following this pilot. PepsiCo has also developed the world's first fully compostable bag for its snack brand **SunChips** and plans to use potato peels for its **Walkers** packets from 2012.

**Coca-Cola** has developed its PlantBottle through an innovative process that turns sugar cane and molasses, a by-product of sugar production, into a key component for PET plastic. A life-cycle analysis conducted by Imperial College London indicates that the PlantBottle, with 30% plant-base material, reduces carbon emissions by up to 25%, compared with petroleum-based PET. Another advantage of the PlantBottle is that it can be processed through existing manufacturing and recycling facilities without contaminating traditional PET. **Heinz** announced in February 2011, that it will use Coca-Cola's PlantBottles for its Ketchup.

### Paulig develops compostable coffee packaging with renewable materials

Finnish coffee company Paulig has developed compostable coffee packaging made with renewable materials instead of traditional triplex plastic packaging. CO<sub>2</sub> emissions reduction as a result of this new material amount to 1 tonne per 3500 m<sup>2</sup> of laminate.

## COMMITMENTS TO THIRD-PARTY INITIATIVES

FoodDrinkEurope members are committed to a number of initiatives that aim to address the adverse environmental impacts of packaging. These include:

- **UK Courtauld Commitment**
- **Global Protocol on Packaging Sustainability (GPPS)**

## OPPORTUNITIES

Continuously improving the environmental performance of packaging will require increased R&D investment and engagement with all stakeholders along the food chain.

### **R&D in support of innovative packaging materials**

In line with FoodDrinkEurope's vision to improve resource efficiency along the food chain by 2030, manufacturers are continuously working with all stakeholders in the packaging industry - suppliers and converters - to develop innovative packaging materials with improved environmental impacts of used packaging, whilst maintaining the positive benefits in terms of product protection and preservation. In order to deliver these solutions, research and innovation needs to continue and additional projects need to be funded in order to overcome current technical barriers to achieving further success in this area. R&D in areas such as light-weight materials, material reduction and optimising recyclability and recoverability will be crucial.

### **Increased cooperation and awareness –raising with the help of our partners**

Food and drink manufacturers depend on the cooperation of retailers, consumer organisations and other stakeholders to raise awareness and understanding and instil a collective sense of responsibility to address the issues around packaging waste prevention, recycling and recovery.

The food and drink industry in particular has a unique potential to help consumers reduce food waste through three key functions of packaging: protection, convenience and information.



# THE CASE FOR COLLABORATIVE ACTIONS

## Government investment in recycling and recovery infrastructure

National recycling and recovery programmes have achieved great success over the past number of years and any efforts to improve the environmental performance of packaging will depend on successful packaging waste management by local and national bodies. Governments are called on to share best practice widely and to diffuse successful practices to all EU Member States in order to reduce the adverse environmental impact of packaging.

Member State investment in recycling and recovery infrastructure is crucial also to assist stakeholders in achieving greater results in reducing the amount of packaging waste sent to landfill.

## Improved data quality from Member States

To achieve long-term reductions of the adverse environmental impact of packaging, there is a need for a broader harmonisation of recycling, recovery categorisation and reporting procedures across all Member States and beyond. Improved data quality can enable food and drink manufacturers to plan long-term strategies for achieving more environmentally sustainable packaging. Eurostat data, for example, can be improved to ensure harmonisation between the calculation methodologies for food and packaging waste.

## Clear policy frameworks and targets

European policymakers need to provide clarity on the future policy frameworks and targets related to packaging to enable long-term investments from industry. Disruptions to the Internal Market should also be avoided.



*“The food and drink industry in particular has a unique potential to help consumers reduce food waste through three key functions: protection, convenience and information. To illustrate its food waste prevention potential, it is estimated that 3-10% of product remains in food packaging when consumers consider it to be empty<sup>50</sup>. Packaging can help consumers reduce food waste by protecting it from damage, by being easy to reseal and easy to empty completely, by providing a range of portion sizes to fit different households, and by displaying easy to understand date labels and optimal storage guidance. BIO supports the food and drink industry in taking up this important resource efficiency and consumer awareness challenge, and in the steps it will take to realise its commendable 2030 vision.*

**Clementine O’Connor,**  
Project Manager, Bio Intelligence Service



# TRANSPORT & DISTRIBUTION

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Transport plays a vital role in the European food and drink sector, facilitating the delivery of raw materials and finished products along the supply chain via a complex network of road, rail, and sea and, to a lesser extent, air connections.

## CHALLENGES

Although vitally important, transport does create significant adverse environmental impacts which the food and drink industry is actively working to mitigate. These impacts are predominantly a result of GHG emissions, air and noise pollution, road congestion, land use and land pollution and damage to infrastructure.

As one of the major economic sectors in Europe, the food and drink industry is an important user of transport of Heavy Goods Vehicles (HGV); in France, food transport represents around 28.8% of total industry transport (in tonne-kilometres) whilst in the UK it is estimated to account for 25% of all HGV vehicle kilometres<sup>51</sup>.

## ASSESSING THE SUSTAINABILITY OF FOOD TRANSPORT

While food transport has an undisputed environmental impact, the kilometres that food travels (“food miles”) are not necessarily a valid indicator of environmental sustainability<sup>52</sup>. The links between transport and environmental considerations are complex and involve a number of trade-offs. There is relatively weak evidence demonstrating that local sourcing leads to lower impact as a general rule<sup>53</sup>. The reasons for this are quite varied but include the following:

- **Mode of transport:** The impact of food transport depends on the transport mode used. Air transport has a high global warming impact per tonne carried compared to sea transport, for example.
- **Transport efficiency:** There is a trade-off between transport distance, vehicle size and transport efficiency. The current system of food supply often involves large HGVs travelling long distances between suppliers and retailers via centralised distribution centres. However, this system enables an efficient loading of vehicles, which reduces the impact per tonne of food.
- **Agricultural efficiency:** Some raw materials are grown more efficiently in distant climatic regions than in the locality. For example, apart from the summer months, it can be more sustainable in terms of energy efficiency, to import sun-grown tomatoes from Spain/Southern Europe than to produce them in heated greenhouses in Northern Europe<sup>54</sup>.
- **Processing efficiency:** Food can sometimes be processed with less adverse environmental impacts in more resource-efficient installations that may not be located in a local area, leading to an increased transport distance but less energy and water used and less waste produced<sup>55</sup>.

Food transport sustainability depends strongly on an integrated approach based on life-cycle thinking. For this reason, a transport concept focusing on transport distances alone would undermine key EU economic policy objectives.

# PROGRESS

## PERFORMANCE MONITORING

In most cases it is necessary for the European food and drink industry to collaborate with transport and distribution providers when identifying improvement options in food transport based on Key Performance Indicators (KPIs) and benchmarking. This enables the identification and improvement of efficiencies in product sourcing, modal shifts, distribution networks, route planning and the choice of vehicles. Besides collaboration with suppliers, performance measurements of a company's own distribution activities are encouraged and initiatives are being developed to support companies with this task.

### UK food and drink industry pledges more sustainable food transport

Under its Five-fold Environmental Ambition the UK Food and Drink Federation (FDF) aims to embed environmental standards in transport practices, to achieve fewer and friendlier food transport miles. FDF's 10-Point Checklist for Greener Food Transport includes maximising vehicle loading, use of vehicle tracking technology, collaboration to reduce empty running, driver training, and encouraging innovation and best practice.

The commitment also extends to contributing to IGD's (Institute of Certified Grocers and Food Distribution) Efficient Consumer Response Sustainable Distribution Initiative target which aims to save a cumulative 200 million HGV miles across the food and grocery sector over the period 2007-12. FDF members are encouraged to calculate their savings using a Road Miles Savings Calculator provided by IGD. So far, manufacturers, retailers and wholesalers have saved 163 million miles between 2007 and 2010.

## OPTIMISATION OF TRANSPORT MODE

Sustainable transport requires efficient transfer between different modes of transport such as road, rail, sea, and a very small proportion of air links.

Although intermodal transport represents a small portion of goods transport, this trend is increasing rapidly and European food manufacturers are exploring innovative solutions to reach its full potential.

### Kellogg Europe on-going projects optimising transport modes

**Kellogg Europe** currently has two on-going projects that are testing the use of canals to transport raw materials and finished products. One project takes place in Germany where 40% of rice and corn is now transported in barges. As one barge has the same capacity as 40 trucks, there is huge potential for environmental and financial savings. It is anticipated that this will result in emissions reductions of 73% compared to delivering these raw materials by road.

Kellogg UK has recently developed several strategies to reduce road miles travelled. Instead of transporting finished products from Poland to its UK warehouses by truck, Kellogg now moves them via container by sea, from the port of Gdynia, Poland, to Hull, UK. This amounted to 231 containers to the UK in 2011, reducing road travel by 180,000 miles, and reducing net CO<sub>2</sub> impact by around 113 tonnes.

## OPTIMISING DISTRIBUTION AND ROUTE PLANNING

Food and drink manufacturers are mindful of the need to make use of spare capacity on the return leg of a delivery journey to reduce empty running. This is being addressed by companies either through their relations with third party haulers (the majority of companies contract out their transportation operations) or through their own road transport optimisation schemes. Capacity load optimisation, ensuring full truck or container loads, can also substantially contribute to reduced transport miles. Optimising distribution can maximise the use of efficient modes for long-distance routes, increase load factors and reduce empty running and increased back-loading.

### SME works with logistics company to reduce transport miles

Working in partnership with its logistics company, UK Yorkshire pudding producer Aunt Bessie's (part of the William Jackson Food Group) has successfully reduced travel. Products are packaged and palletised to ensure maximum cube efficiency. Double-decker trailers are used for distribution and the backhaul of the transport is utilised to bring materials back to site. Primary distribution is consolidated at the third party logistics company to ensure maximum lorry load efficiency.

## ENHANCED VEHICLE DESIGN

The use of state-of-the-art technology also plays a key role in food and drink manufacturers' own transport fleets and in the choice of external transport logistics providers. Improved aerodynamic design trailers and retro-fitted aerodynamic modifications can significantly reduce fuel consumption by up to 10%<sup>56</sup> whilst training drivers in optimised safe and efficient driving techniques reduces fuel consumption by approximately 7%-10%<sup>57</sup>.

## ALTERNATIVE FUELS

Renewable energy sources can help address a threefold objective of: improving security of energy supply through the diversification of energy and feed-stock sources; reducing GHG emissions; and enhancing the competitiveness of EU-based companies. The 2009 Renewable Energy and Fuel Quality Directives set targets of a 10% share of renewable energy in the transport sector and a 6% GHG reduction for fuels used in the transport sector in 2020. The first complete assessment of the Directive's implementation will be published in 2012.

Substantial improvements can be achieved over the medium term through the use of hybrid and electric vehicles, especially for smaller vehicles with CO<sub>2</sub> savings of 10 - 15 %. In larger vehicles such as trucks, natural gas and biogas may be used instead of diesel, with CO<sub>2</sub> savings of over 60%<sup>58</sup>.

### Nestlé pilot project on liquefied methane saved 25,400 kilograms of CO<sub>2</sub> equivalents

In the UK, Nestlé works with a logistics and warehousing company to successfully integrate liquefied methane powered trucks into its transport operation. In 2010, Nestlé established a partnership to trial three Volvo trucks (designed and purpose -built as the heavy truck to run on liquefied methane). Achievements:

- 225,000 km travelled, 25,800 tonnes lifted
- 40,275 litres diesel saved, equating to 25,400 kgs of CO<sub>2</sub> equivalent

As a result of the initiative, Nestlé UK and Eddie Stobart won the 2011 Efficient Consumer Response (ECR) Award for Sustainable Distribution at the IGD Food Industry Awards. In Germany, Mercedes-Benz is currently testing 50 hybrid trucks, which can reduce fuel consumption by up to 15%. One of the trucks is being used by Nestlé Schöller for the delivery of freezer cabinets. In 2012, Nestlé will begin testing electric trucks for deliveries to customers.



## The role of biofuels

The EU Renewable Energy Directive 2009/28/EC identified sustainable biofuels as one of the means to meet targets for renewable energy and to reduce GHG emissions in transport. However, this renewable energy policy should not be at the expense of resources needed for food and water security, or in ways which distort markets for agricultural products for human consumption. For FoodDrinkEurope, food must remain the primary outlet for agricultural products.

### Food and feed first

FoodDrinkEurope's main objective in the debate on renewable energy and biofuels is to ensure that particular attention be given to the availability of agricultural raw materials supplies at competitive prices for the production of food and feed. Food, non-food and energy outlets are competing for the same limited resources (water, soil).

### Analysis on a case-by-case basis

It is a known fact that the performance of different biofuels in terms of net GHG savings is widely variable, and highly dependent on the origin and type of feedstock. Furthermore, the impact of current biofuel production on food commodity prices and global food security also needs to be carefully evaluated on a case-by-case basis.

FoodDrinkEurope supports the conclusions of the June 2011 G20 meeting on “the need to further analyse all factors that influence the relationship between biofuels production and (i) food availability, (ii) the response of agriculture to price increase and volatility, (iii) sustainability of agricultural production”.

### FoodDrinkEurope request to policymakers

FoodDrinkEurope supports the associated recommendation of the OECD and other international bodies calling on G20 governments to remove policy provisions which “subsidise (or mandate) biofuels production or consumption” or at a minimum to develop contingency plans to adjust (at least temporarily) policies that stimulate biofuel production or consumption (in particular mandatory obligations) when global markets are under pressure and food supplies are endangered.

In that context, FoodDrinkEurope urges the European Commission and Member States

- to bring forward their planned review of the impact of the implementation of the existing binding renewable transport fuel target on the availability of foodstuffs at affordable prices, and
- to increase investment and support for the availability of second generation biofuels on a commercial scale.

Finally, policymakers have to ensure the coherence of all policies driving supply, including the CAP, energy and environment policies.



## COMMITMENTS TO THIRD PARTY INITIATIVES

FoodDrinkEurope members are committed to a number of initiatives that aim to address the adverse environmental impacts of transport. These include:

- **The Sustainable Distribution Group**
- **Climate TransAct**
- **Marco Polo**

## OPPORTUNITIES

### Increased cooperation

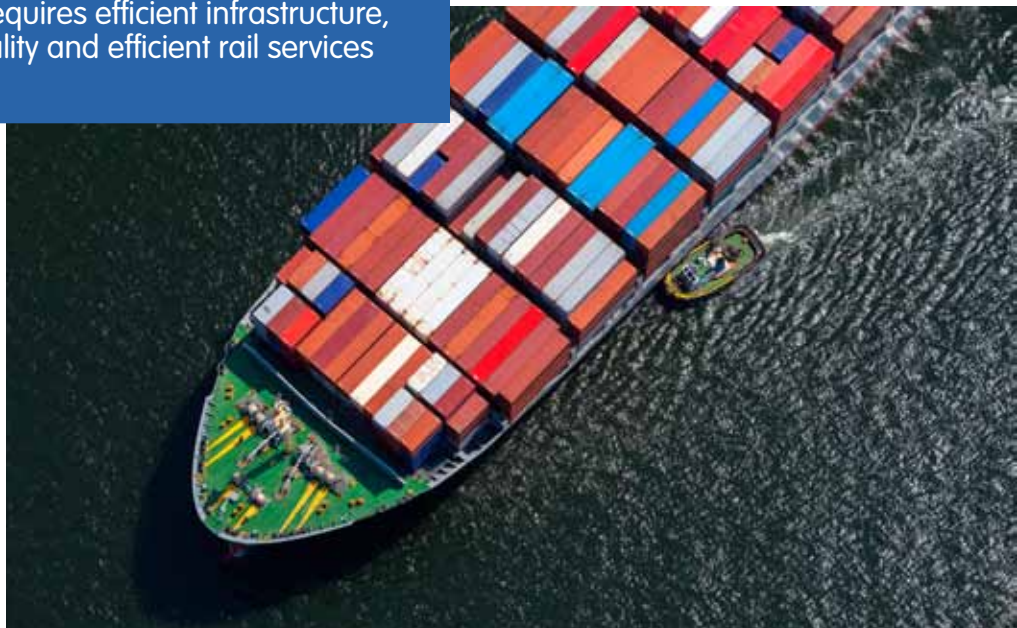
The most important opportunities to reduce adverse environmental impacts related transport to are achieved by increasing cooperation with transport operators. Likewise, increased collaboration within food supply chains can optimise loading rates and increase back-hauling. In cases where direct deliveries are practiced, discussion between manufacturers and retailers to widen delivery windows is of key importance.

### Transport mode efficiency

The food and drink industry takes an integrated approach that balances transport mode and distance against other sustainability criteria in sourcing decisions, before looking at improvement options in logistics and vehicles.

Improved monitoring and reporting and increased efforts to maximise product density through packaging design also provides enhanced performance opportunities for food and drink manufacturers.

Modal shift from road to rail or ship has great potential to reduce the adverse environmental impacts of transport for the food industry. This requires efficient infrastructure, in particular more high-quality and efficient rail services



# THE CASE FOR COLLABORATIVE ACTION

## Investment in infrastructure

FoodDrinkEurope believes that the modal shift from road to rail or ship has great potential to reduce the adverse environmental impacts of transport for the food industry. This requires efficient infrastructure, in particular more high-quality and efficient rail services (in terms of cross-border speed and inter-operability between national railway systems, as well as reliability and punctuality). Plans for smart, upgraded and fully interconnected infrastructures should be developed.

## Intermodal connections

Transport improvements from food and drink manufacturers are also currently hampered by a lack of communication regarding possible synergies, networks, back-loading opportunities and a general lack of flexibility concerning rail freight industry. While the food and drink industry welcomes recent initiatives to improve infrastructures for alternative modes of transport at national level, it calls for more EU-wide efforts to examine the existing barriers to achieving a greater modal shift from road to rail or ship transport, and how these might be overcome.

In terms of waterborne transport, more efficient entry points into European markets are needed, avoiding unnecessary traffic crossing Europe. Freight multimodality needs to become economically attractive for shippers and specially developed freight corridors need to be optimised in order to reduce adverse environmental impacts, but also to enhance reliability, limit congestion and lower the costs of operations and administration.



*“Reducing the environmental burden of transport can be a key factor in contributing to the food and drink industries’ vision for 2030. However, this needs actions from both the industry itself and from external stakeholders. In my opinion the three most important aspects are the following:*

- Internalisation of environmental externalities such as GHG emissions, air pollutants and noise so that the price of transport reflects the real environmental costs. This would immediately drive companies towards a better allocation of resources and lead to environmental improvement.*
- Food manufacturers should give priority to alternative sourcing at local/regional/national levels for products which have a significantly high environmental impact in terms of transportation within their lifecycles.*
- Companies that can have a direct control of the transportation of their goods should include the application of a management system to monitor the environmental impact of transport operations and to apply best practices for improving transport efficiency as indicated in this section.”*

## **Harald Schoenberger,**

*Sustainable Production and Consumption Unit*

*European Commission Joint Research Centre/Institute for Prospective Technological Studies*



# CONSUMERS

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Food and drink products are fundamental to daily life, nutrition, health and well-being, and, as we have seen, they do have an impact on the environment. Moreover, consumers generate significant environmental impacts in the way they transport, store and prepare food, as well as the amount of waste they create and how they dispose of it. Consumers also influence developments upstream in the supply chain through their purchasing decisions. Consumer demand for different food products has changed significantly over the last 30 years, driven by higher per capita incomes, demographic shifts and life-style changes. They are important partners in bringing about more sustainable consumption since their choices and preferences have a profound influence on food supply and production.

However, environmental sustainability is just one of many aspects that consumers consider when shopping for food and drink products. Recognizing this, FoodDrinkEurope's work in the European Food SCP Round Table aims at adopting a holistic approach in how the environmental impacts of food and drink products are assessed and communicated.

## CHALLENGES

### MAKING INFORMED CHOICES

Consumers can only make informed purchasing decisions if the environmental information that is provided to them is scientifically reliable, consistent, understandable and not misleading. Moreover, consumer information campaigns must be accompanied by education and awareness-raising to ensure consumer understanding.

### HOUSEHOLD IMPACTS FROM SHOPPING, STORAGE, PREPARATION AND COOKING

Key elements of household activities that can result in significant environmental impacts include transport to and from the store, storing and cooking food to make it safe for consumption and to maintain good hygiene. The number of kilometres travelled for food shopping has increased due to the rapid growth of large supermarkets, often located outside cities. Research also shows that storage, cooking and dishwashing account for about 38% of the electricity used in the life-cycle of meat and dairy products, compared to 18% for manufacturing<sup>59</sup>. Moreover, consumers use water for food preparation, cooking and washing up. Drivers of household water use include water pricing, socio-demographic variables, attitudes and awareness about water saving techniques.

### HOUSEHOLD FOOD WASTE

Household food waste is a key concern for all members of the food chain because when food is wasted, the natural resources that went into making and delivering the product to the consumer are wasted. Households are responsible for the greatest proportion of food waste along the food chain, nearly 76 kg per capita<sup>60</sup> annually. Causes of household waste include a lack of knowledge about prevention measures, buying too much food that is unwanted or highly perishable, consumer preferences (e.g. discarded bread crusts) and socio-economic factors (e.g. single-person households). Packaging can reduce the total adverse environmental impact of a food or drink product even if there is an adverse impact from the packaging<sup>61</sup> itself because food and drink products are more resource intensive than packaging and are less frequently recycled. Thus, the risk of increasing food losses must be examined when changing packaging design.

## PROGRESS

### VOLUNTARY COMMUNICATION OF ENVIRONMENTAL INFORMATION TO CONSUMERS

#### **European Food Sustainable Consumption and Production (SCP) Round Table**

Assessing the environmental performance of food and drink products is challenging due to their complex supply chains and diversity. Existing methodologies leave much room for interpretation, which has led to a wide variance in results and a proliferation of inconsistent communications about the environmental performance of food and drink products. As a response to this challenge, the food and drink industry initiated the establishment of the European Food SCP Round Table in May 2009 in cooperation with eight other European food chain organisations. The European Commission has also joined the Round Table, co-chairing all working groups and governing bodies. The Round Table was soon joined by additional new members from different parts of the food chain, NGOs, IGOs, national governments and research bodies. The objectives of the Round Table are to develop a scientifically reliable and uniform environmental assessment methodology for food and drink products (the ENVIFOOD Protocol), to identify suitable tools for voluntary communication to consumers and other stakeholders and to promote and report on continuous environmental improvement along the entire food supply chain.



## Key achievements are as follows:

### ■ 10 Guiding Principles on voluntary environmental assessment and communication of environmental information along the food chain, including to consumers

The Guiding Principles aim to promote a coherent way to assess and communicate voluntarily the environmental performance of food and drink products. The Guiding Principles, like the Round Table, emphasise a life-cycle approach. The lead principle states that environmental information communicated along the food chain, including to consumers, shall be scientifically reliable and consistent, understandable and not misleading, so as to support informed choice.

### ■ The Food and Drink Environmental Assessment Protocol (ENVIFOOD Protocol)

The European Food SCP Round Table set out to establish the ENVIFOOD Protocol in response to the need for a harmonised approach to the environmental assessment of food and drink products to facilitate the voluntary communication of environmental information along the food chain including to the consumer. The ENVIFOOD Protocol is undergoing testing and public consultation in 2012 and a final version is expected by the end of 2012.

### ■ Report on communicating environmental performance along the food chain

The Round Table has identified suitable tools and good practices for voluntarily communicating the environmental performance of food and drink products along the food chain. The Round Table assessed the strengths and challenges of available communication methods and tools, including where the information is communicated (e.g. on-pack, on shelf, barcodes). Based on this analysis, the Round Table makes recommendations on the kinds of information tools that should be used to promote food and drink products with an improved environmental performance, such as third-party certification schemes.

### Report on continuous environmental improvement

- This report identifies and prioritises major environmental challenges along the various stages of the food and drink chain, including consumption. It also identifies priority areas for continuous environmental improvement, considering the respective responsibilities of the various players along the food value chain. Finally, it identifies priority areas for targeted sustainability R&D and eco-innovation areas. This report is expected to be published by the end of 2012.

### Report on non-environmental aspects of sustainability

- This report provides a priority list of economic and social aspects of sustainability relevant to the food supply chain that the other working groups should take into consideration during the development of their deliverables.

The Round Table also provides a platform for the food chain and Commission to address food waste at all stages of the food chain.

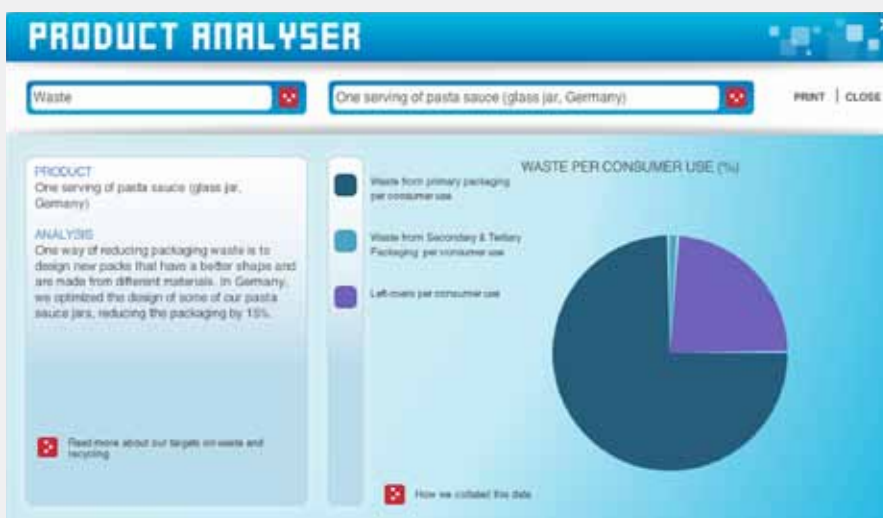
In order to ensure global alignment, the Round Table has been working together with ongoing initiatives outside of Europe, such as The Sustainability Consortium. The Round Table proactively seeks to involve those who are not directly involved in its work by inviting stakeholders to participate in public consultations on its deliverables.

[www.food-scp.eu](http://www.food-scp.eu)



**French food and drink association a key player in government's environmental declaration pilot**

The French food and drink industry association (ANIA) has played a very active role in the French national experimentation on consumer product environmental information. The industry was a key player in the first stage of the project, which was to define a common specification for assessing food and drink products along with the French Environment and Energy Agency (ADEME) and the French standardisation body (AFNOR). The specification was finalised in July 2011. The food and drink industry is also well-represented in the experimentation phase of the project, comprising one-third of the 168 companies that volunteered to participate.



French food and drink association      Unilever's Product Analyser

An example of an environmental declaration from the experimentation 'ProxiProduit' allows consumers to scan the barcode and obtain environmental information such as GHG emissions, biodiversity and water use.

**Unilever's Product Analyser**

Unilever analysed 1,651 products in 14 countries, covering 70% of the company's volumes in 2008. Some of these results can be publicly accessed at <http://www.sustainable-living.unilever.com/our-approach/environmental-impacts/>.

**Voluntary communication on the environmental performance of products**

Capturing consumers' attention in-store can be a challenge, as the average European consumer spends only 35 seconds making a food purchasing decision<sup>62</sup>. To accommodate consumer demand, food and drink companies are providing on a voluntary basis information to consumers regarding the environmental performance of their products using a variety of communication channels, such as smartphone applications (see ProxiProduit above) and websites.



## An EU-harmonised and consistent approach for assessing products and companies

European food and drink manufacturers support the EU's aim to establish a common voluntary methodology based on internationally agreed (e.g. ISO) standards that will facilitate the estimation of the environmental performance of products and organisations. The food and drink industry is working to ensure alignment and consistency between this initiative, the European Food SCP Round Table and existing global standards.

## Trace your Coke

Using an online tool, consumers in the UK (<http://www.coca-cola.co.uk/environment/trace-your-coke.html>), Belgium (<http://www.cocacolabelgium.be/traceyourcoke/>) and the Netherlands ([http://www.traceyourcoke.nl/tyc/index\\_NL.html](http://www.traceyourcoke.nl/tyc/index_NL.html)) can calculate the carbon footprint of a can of Coke over its lifecycle and how the footprint can be reduced by recycling.



*“Resource efficiency is everyone’s business. It is a key issue for the food industry as we face the challenge of meeting global food demand in an era of increasingly scarce resources, be it land, water and other key ingredients in the food supply chain. It makes environmental and economic sense to address these long-term issues while there is still time, so I welcome very much the engagement of the food industry in looking to solve these big challenges with initiatives today.*

*FoodDrinkEurope is engaged in the European Food Sustainable Production and Consumption Round Table. It makes perfect sense that the industry plays a key role in this initiative, which can and must deliver results. Tackling the issue of supply is only one aspect, we must also look at demand issues, including promoting food choices which lead to positive health outcomes for citizens. These are complex questions but again the food industry has a part to play, including helping to tackle the enormous levels of food waste.*

*Establishing long-term relationships with suppliers based on sustainability and fairness criteria is also important.”*

**Mairead McGuinness**

*Member of the European Parliament*

## REDUCING CONSUMER FOOD WASTE

The food and drink industry is proactively helping consumers to:

- **1. Fully utilise the product** - Packaging that allows consumers to fully use the product inside (e.g. non-stick sauce bottles), reducing the amount of food thrown away unused.
- **2. Buy and use the right amount in line with consumer needs** - Portion benchmarks on packs that contain multiple portions help consumers estimate how much they need to cook. The food and drink industry has adjusted portion sizes to meet the needs of the rising number of single-person households, thereby allowing consumers to consume only what they need without wasting surplus. Split packs may allow consumers to keep food fresh for longer and some food and drink companies have also contributed to smartphone applications that help consumers plan and order groceries.
- **3. Keep what they buy at its best** - Packaging is optimised to prevent food waste from spoilage during transportation, distribution and home storage, thereby extending its shelf life. In addition, on-pack messages offer advice on how to store leftovers (e.g. freezing tips).



1



2



3

## WORKING WITH STAKEHOLDERS TO REDUCE FOOD WASTE

### WRAP Courtauld Commitment 2

The WRAP Courtauld Commitment 2 is a voluntary agreement in the UK that aims to improve resource efficiency and reduce their environmental impact of traditional grocery products (both food and non-food) over the entire lifecycle of products. UK food and drink companies and retailers have pledged to reduce household food and drink waste by 4% by the end of 2012 against a 2009 baseline. The 49 signatories have achieved food waste savings of 270,000 tonnes per year as of March 2010 through joint initiatives that help consumers buy the right amount of food and get the most out of what they buy, and awareness-raising campaigns such as 'Love food, hate waste' ([www.lovefoodhatewaste.com](http://www.lovefoodhatewaste.com)). This has resulted in a 3% reduction in the first year, demonstrating strong progress toward the 4% three-year target. Signatories include Coca-Cola, Danone, Ferrero, Heineken, Heinz, Kraft, Mars, Nestlé, P&G and Unilever.

### ForMat-project 2010

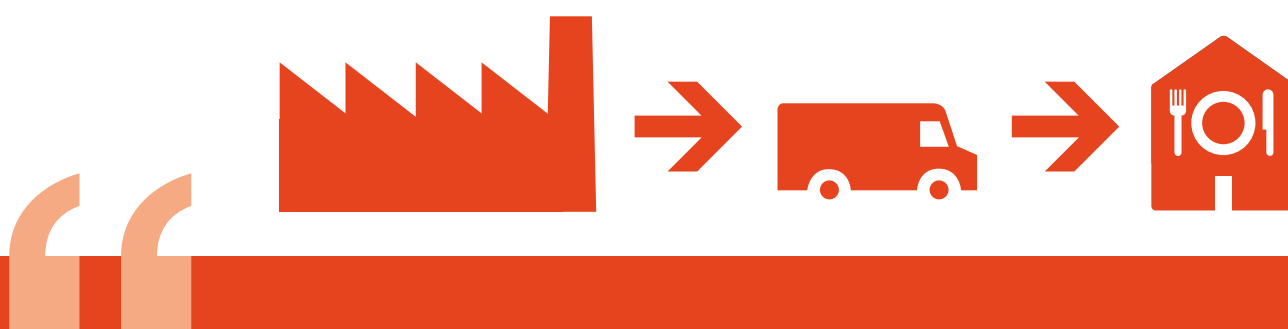
In Norway, a joint initiative between the Norwegian Food & Drink Industries, retailers and retail suppliers was launched in 2010 with the support of the Ministries for Food & Agriculture and for the Environment. It aims to reduce food waste in Norway by 25% by 2015, with an emphasis on fresh bakery products and fresh fruit and vegetables.

## REDISTRIBUTION OF SURPLUS FOOD

Food redistribution schemes, such as those provided by food banks, collect food that would otherwise be discarded by manufacturers and distribute it to a variety of social welfare groups and charities. These programmes serve a positive social purpose and also enable food and drink manufacturers to re-use food in the most environmentally efficient way possible, as well as reduce disposal costs.

### Kellogg tackles food poverty and reduces waste

**Kellogg** helped fund the creation of the Global Food Banking Network (GFN) in 2006. The company now works with food banks in seven European countries and partners with the European Federation of Food Banks. In 2010, Kellogg France provided over one million breakfasts, with donations of over 40 tonnes of food to food banks.



*“Compliments to FoodDrinkEurope for preparing an environmental sustainability vision. Sustainability is becoming more integrated in the core business of the food and drink industry in Europe. Sustainability provides business opportunities. The food industry and retailers take their responsibility to increase consumer awareness on sustainability issues: making the healthy and sustainable products the easiest choice. A strong cooperation with other actors in the chain is useful to motivate the consumer towards more sustainable consumption patterns. A harmonised and transparent approach to sustainability and the provision of accurate information will open up important business opportunities in terms of responding to consumer demands.”*

**Joost de Jong,**

*Strategic Advisor, Ministry of Economic Affairs, Agriculture and Innovation, The Netherlands*

## REDUCING HOUSEHOLDS' FOOD-RELATED ADVERSE IMPACTS

While households' food-related environmental impacts ultimately depend on consumers' choices, food and drink manufacturers are taking steps to help consumers make choices that save them time and money on their utility bills, while also reducing their adverse environmental impacts.

### Mars reduces rice cooking time and consumers' carbon emissions

Mars halved the cooking time of Uncle Ben's rice by half from 20 to 10 minutes. The shorter cooking time reduces the carbon emissions related to cooking within the total life-cycle of this variety of rice by 18%. In addition, Mars gives consumers helpful tips on-pack about how to cook rice in a way that reduces energy use and GHG emissions during preparation. Suggestions include using gas rather than electricity and putting a lid on the pan, which can reduce the carbon emissions from the cooking stage by up to 70%.



### Nestlé helps consumers better understand and improve the environmental impacts of products

Nestlé aims to continuously enhance the environmental information provided to consumers about its products. For example, NESCAFÉ provides information to consumer on how to improve their environmental impact by boiling the exact amount of water at the right temperature and encouraging consumer to re-use the glass jar.

## OPPORTUNITIES

### Avoiding food waste

The industry is demonstrating leadership in its collaboration with policymakers and other stakeholders to avoid food waste. The industry calls on stakeholders, including the European Commission, to continue to address food waste through partnerships. The overall aim is to avoid food waste at every stage of the value chain and in ways that does not compromise food safety. In the spirit of achieving this, FoodDrinkEurope will work with other stakeholders to develop a food waste toolkit.

### Full deployment of redistribution schemes

Food redistribution schemes, such as food banks, have proven to be very effective in preventing food waste in Europe, but remain a small-scale solution. A collaborative approach between food banks, European food and drink manufacturers, logistics operators and retailers is needed to leverage redistribution networks and to engage in the European Commission's renewed Food for the Deprived Scheme<sup>63</sup>.

### Integrating sustainability into product design

FoodDrinkEurope envisages that by 2030 food and drink manufacturers will embed environmental sustainability considerations and lifecycle thinking into their product design taking into consideration the impacts of consumers. Collaboration in multi-stakeholder initiatives to identify and address hotspots along the lifecycle is a step in the right direction. Improving the quality and availability of data and ensuring the accessibility of lifecycle measurement tools to all producers, especially SMEs, provide key opportunities also.

### Multi-faceted approach to communicating with consumers

Changing consumer consumption patterns can be addressed through actions such as joint information campaigns that highlight the environmental, social and economic benefits of avoiding food waste, providing information about the environmental performance of products, education and product design. New media will play an increasingly important role in informing consumers via a number of relevant media such as in-store wifi, for example. FoodDrinkEurope envisages enhanced interaction between all stakeholders through new communication technologies, tools and channels by 2030.

## THE CASE FOR COLLABORATIVE ACTION

### Innovation to avoid food waste

Packaging innovations that rely on new technologies to help consumers reduce food waste require a stable regulatory environment that favours investment in research and development. An example of new innovation that the EU and global regulatory environment can support is sensor technology that can detect spoilage in certain perishable foods being used by a number of retailers in the UK, which facilitate more sophisticated food management than reliance on estimated 'best before' dates. Support schemes should ensure that such technology is affordable and mass-produced. Finally, surplus food should be redistributed through schemes such as food banks.

### Improvements in retail and household infrastructure

To further improve the environmental impacts of households, innovation and technological development is needed in retail infrastructure, consumer transport and cooking equipment, such as coffee machines, electric kettles, ovens, microwaves and hobs.



*“WWF’s Living Planet Report showed that if we maintain our current resource use, globally we will need the equivalent of 2 planets by 2030. It also showed the significant contribution of food to our global ecological overshoot<sup>65</sup>. WWF has teamed up with different partners in the food chain to find solutions and make food consumption and production more environmentally agile. The FoodDrinkEurope Environmental Sustainability Report highlights several of these partnerships, which have so far mainly focussed on sustainable production of key food commodities. Global demand for food is dramatically rising, neutralising the progress on production sustainability and resource efficiency we have achieved until today. Increasing insights into global food- and ecosystems shows that simply increasing sustainable food production will prove insufficient in the very near future. A broader vision of food sustainability is required, including minimisation of food waste and overconsumption of resource intensive food<sup>66</sup>.*

*European dietary patterns are placing a large burden on our natural resources, while also being a key contributor to the burden of ill health. To address this twin challenge, WWF and Friends of Europe launched the LiveWell for Low Impact Food in Europe (LIFE) project. LiveWell for LIFE aims to contribute towards the reduction of greenhouse gas emissions from the EU food supply chain by demonstrating what healthy, low-carbon and tasty diets could look like in different European countries. With the help of a wide range of stakeholders, including the food and drink industry, WWF hopes to develop a better understanding of how dietary choices influence environment and health impacts, what is needed to actually improve both in practice. WWF welcomes FoodDrinkEurope’s envisioned work with consumers, and looks forward to future cooperation in tackling head-on one of the prime sustainability challenges Europe is facing.”*

#### Mark Driscoll

Head of One Planet Food Programme, WWF UK

# Opportunities

A number of key opportunities exist for Europe's food and drink industry across seven main areas, if the industry is to more fully tap into its potential for sustainable growth towards 2030. These are set out in the section below and overleaf.



## Sourcing

- Design sustainable supply chains and ensure that ingredient crops are cultivated responsibly with particular attention to halting deforestation
- Mobilise public and private investment in agricultural productivity and yield growth
- Improve communication and transparency about certification scheme achievements at field level
- Providing technical assistance to farmers, especially smallholders, and advice on farming best practice
- Support ongoing efforts to improve collaboration, synergies and the establishment of common priorities between different biodiversity-related Conventions

## Energy

- Share and encourage the spread of best practice and technology transfer, especially among SMEs
- Enhance focus, R&D, investment and cooperation among all stakeholders
- Improve commercial competitiveness of alternative energy sources, such as from by-products and waste
- Promote energy efficiency by public authorities, and incentives for businesses that apply resource efficiency measures



## Water

- Further roll-out national, sector-wide and company guidance on good water management practices
- Call for economic incentives for water efficient eco-innovation and investment and water prices that reflect real costs in line with the EU Water Framework Directive
- Establish an internationally harmonised standard for assessing water impacts
- Fill data gaps on water availability, where water comes from, and whether good water management practices are used

## Waste

- Call for support for research and innovation for new uses for by-products and food waste
- Launch joint campaigns and a toolkit for tackling food waste along the food chain
- Work with supply chain partners to maximise resource efficiency
- Identify opportunities to centralise by-product utilisation (e.g. centralise biogas production from food and drink facility by-products in a given area)

# Opportunities



## Packaging

- Roll-out R&D and innovation in lightweight materials, biodegradable materials, materials' reduction, recyclability and recoverability, as well as for bio-based materials
- Cooperate with other stakeholders to prevent packaging waste through the promotion of re-use, recycling and recovery
- Share best practice packaging waste management with national recycling and recovery programmes
- Call on policymakers to improve reporting procedures in Member States and data quality
- Ensure sufficient investment by public authorities in recycling and recovery infrastructures

## Transport

- Increase cooperation with transport and logistics operators to optimise loading rates and increase back-hauling
- Improve availability of alternative fuels and rail networks
- Prioritise rail and water-based transport (where feasible) and optimise from a life-cycle perspective
- Widen delivery windows to retailers to avoid peak commuting hours
- Improve vehicle design and the use of technology for optimal route planning





## Consumers

- Work with stakeholders to help avoid food waste at every stage of the value chain, particularly at the household level
- Optimise packaging and ensure commercial viability of technological innovations that could help reduce food waste
- Roll-out joint, multi-faceted consumer communications and campaigns to promote sustainable consumption
- Enhance collaboration between food banks, food and drink manufacturers, logistics operators and retailers to redirect surplus food to the needy



# Conclusion

The food and drink industry, being uniquely dependent on ecosystem services that determine the availability and quality of our raw materials, is committed to decoupling growth from adverse environmental impacts and resource use without compromising food safety, quality, nutrition and health, whilst satisfying consumer demand. To meet this commitment, the strategic priorities the FoodDrinkEurope set out for Environmental Sustainability by 2030 cover the following areas: (i) sustainable sourcing, (ii) resource efficiency along the food chain, and (iii) sustainable consumption and production.

The case studies and examples in this report illustrate how many companies and food industry sectors are striving to improve their overall environmental performance. This publication shows that there is no 'one-size fits all' solution to improving the environmental sustainability of Europe's food and drink industry, given the diversity and complexity of the industry itself, and of the food chain. Yet, it also demonstrates how food and drink companies from all parts of the industry are able to contribute to environmental improvement regardless of the multitude of different raw materials, products, processes, activities and local economic and environmental conditions. In this context, it would be inappropriate to use the practices mentioned in this report as benchmarks for the entire industry or for specific sectors. Nonetheless, we hope that the examples will be a source of inspiration for other food and drink companies and players along the food chain, in their efforts to promote sustainable growth.

Finally, as this report shows, sustainable consumption and production of food and drink products requires a 'whole-of-society' effort; to contribute to this, the European food and drink industry is working on numerous initiatives with different stakeholders, most notably, through the work of the **European Food Sustainable Consumption and Production Round Table**. In this case, and indeed many others, we hope that by collaborating closely with food chain partners and other stakeholders, we can upscale our efforts and ensure the long-term duration of our achievements towards smart, green growth.

As a key player in the food chain helping to improve the food industry's sustainable business practices, we look forward to continuing this work, using a life-cycle approach in order to achieve the 2030 Environmental Sustainability Vision of an industry that is a responsible, constructive leader in addressing the economic, social and environmental pillars of sustainability needed to achieve a global green economy.

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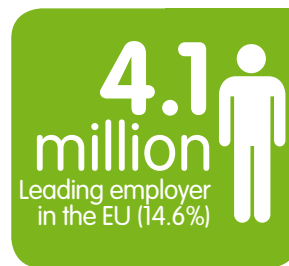
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# About FoodDrinkEurope

Facts and figures about Europe's largest manufacturing industry:

## EU food and drink industry in 2010





## Mission

Representing Europe's food and drink industry, FoodDrinkEurope's mission is to facilitate the development of an environment in which all of Europe's food and drink companies, whatever their size, can meet the needs of consumers and society, while competing effectively for sustainable growth.

FoodDrinkEurope strives to contribute to the development of an appropriate framework in which issues such as competitiveness, affordability of quality food, consumer trust in food safety, informed consumer choice, responsible marketing and the environment are dealt with in a holistic manner, underpinned by sound science, robust data management and effective communication.

In delivering this mission FoodDrinkEurope will, together with its members, operate as an active, committed and responsible stakeholder. Representing the food and drink industry in Europe, FoodDrinkEurope will increase the industry's visibility, enhance and promote its cultural and social values, richness and variety, tradition and culture.

## Members

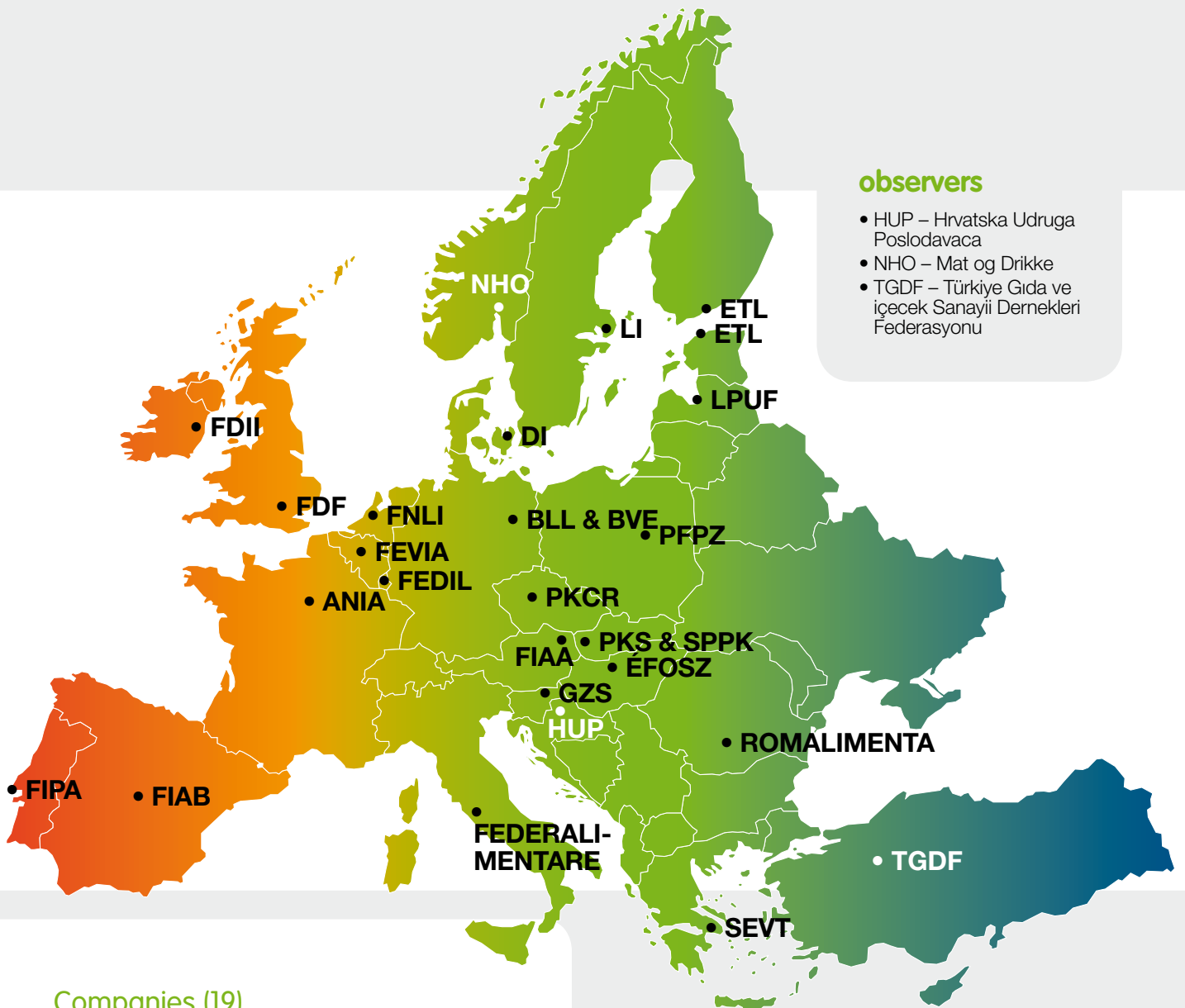
### National Federations (26 including 3 observers)

- ANIA – Association Nationale des Industries Alimentaires
- BLL & BVE – Bund für Lebensmittelrecht und Lebensmittelkunde & Bundesvereinigung der Deutschen Ernährungsindustrie
- DI – DI Fødevarer
- ÉFOSZ – Élelmiszer-feldolgozók Országos Szövetsége
- ETL – Eesti Toiduainetööstuse Liit
- ETL – Elintarviketeollisuusliitto
- FDF – Food and Drink Federation
- FDII – Food and Drink Industry Ireland
- FEDERALIMENTARE – Federazione Italiana dell'Industria Alimentare
- FEDIL – Fédération des Industries Agro-Alimentaires Luxembourgeoises
- FEVIA – Fédération de l'Industrie Alimentaire/Federatie Voedingsindustrie
- FIAA – Fachverband der Nahrungs- und Genussmittelindustrie
- FIAB – Federación Española de Industrias de la Alimentación y Bebidas
- FIPA – Federação das Indústrias Portuguesas Agro-Alimentares
- FNLI – Federatie Nederlandse Levensmiddelen Industrie
- GZS – Gospodarska zbornica Slovenije
- LI – Livsmedelsföretagen
- LPUF – Latvijas Pārtikas Uznēmumu Federācija
- PFPŻ – Polska Federacja Producentów Żywności Związek Pracodawców
- PKČR – Potravinářská komora České Republiky
- PKS & SPPK – Potravinářská Komora Slovenska & Slovenská Pol'nohospodárska a Potravinářská Komora
- ROMALIMENTA – Federația Patronală din Industria Alimentară
- SEVT – Federation of Hellenic Food Industries

### European sectors (26)

- AIBI – International Association of Plant Bakeries
- AIJN – European Fruit Juice Association
- CAOBISCO – Association of Chocolate, Biscuit and Confectionery Industries of the European Union
- CEEREAL – European Breakfast Cereal Association
- CEFS – European Committee of Sugar Manufacturers
- CEPS – European Spirits Organisation
- CLITRAVI – Liaison Centre for the Meat Processing Industry in the European Union
- COFALEC – Confederation of EU Yeast Producers
- CULINARIA EUROPE – Federation of Associations and Enterprises of Industrial Culinary Product Producers in Europe
- ECF – European Coffee Federation
- EDA – European Dairy Association
- EFBW – European Federation of Bottled Waters
- EHIA & ETC – European Herbal Infusions Association & European Tea Committee
- ESA – European Snacks Association
- ESA – European Spice Association
- EUPPA – European Potato Processors' Association
- EUROGLACES – European Ice Cream Association
- FEDIAF – European Pet Food Industry Federation
- FEDIMA – Federation of EU Manufacturers and Suppliers of Ingredients to the Bakery, Confectionary and Patisserie Industries
- FEEDM – European Federation of Honey Packers & Distributors
- IDACE – Association of the Food Industries for Particular Nutritional Uses of the European Union
- IMACE – International Margarine Association of the Countries of Europe
- PROFEL – European Association of Fruit and Vegetable Processors
- The Brewers of Europe
- UNAFPA – Union of Organisations of Manufacturers of Pasta Products of the EU
- UNESDA – Union of European Soft Drinks Associations





### observers

- HUP – Hrvatska Udruga Poslodavaca
- NHO – Mat og Drikke
- TGDF – Türkiye Gıda ve İçecek Sanayii Dernekleri Federasyonu

### Companies (19)

- AGROKOR
- BARILLA
- CARGILL
- COCA-COLA
- DANONE
- FERRERO
- GENERAL MILLS
- HEINEKEN
- HEINZ
- KELLOGG
- KRAFT FOODS
- MARS
- NESTLÉ
- PEPSICO
- PROCTER & GAMBLE FOOD PRODUCTS
- SÜDZUCKER
- TATE & LYLE
- ÜLKER
- UNILEVER



#### **Disclaimer**

The views expressed by external stakeholders in this report do not necessarily reflect those of his or her organisation and should not in any circumstance be regarded as the official positions of those organisations.

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