



THE UNIVERSITY OF
WESTERN AUSTRALIA
Achieving International Excellence

Food Loss and Waste

Professor Michael Blakeney
michael.blakeney@uwa.edu.au

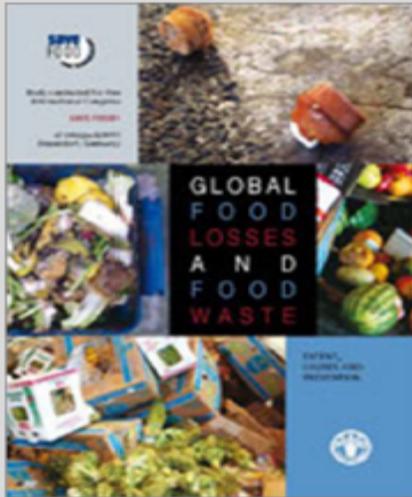
Outline

1. Definitions
2. Metrics
3. Minimising FLW

Definitions



A first definition of *food waste* was given by the UN Food and Agriculture Organization (FAO) and includes any healthy or edible substance that - instead of being allocated for human consumption - is wasted, lost, degraded, or consumed by pests at every stage of the food supply chain.



The Swedish Institute for Food and Biotechnology (SIK), in a recent study commissioned by FAO, proposed a distinction between *food losses* and *food waste*. *Food losses* “take place during agricultural production, post-harvest, and processing stages in the food supply chain,” while *food waste* occurs “at the end of the food chain (distribution, sale and final consumption)” the former is due to logistical and infrastructural limitations, while the latter is because of behavioral factors.

Food Use for Social Innovation by Optimising Waste Prevention Strategies (FUSIONS) project



“Food waste is any **food**, and **inedible parts of food**, removed from the **food supply chain** to be recovered or disposed (including composted, crops ploughed in/not harvested, anaerobic digestion, bio-energy production, co-generation, incineration, disposal to sewer, landfill or discarded to sea).”

A significant share of food intended for human consumption is lost or wasted from the farm to the fork

32% of global food supply by weight

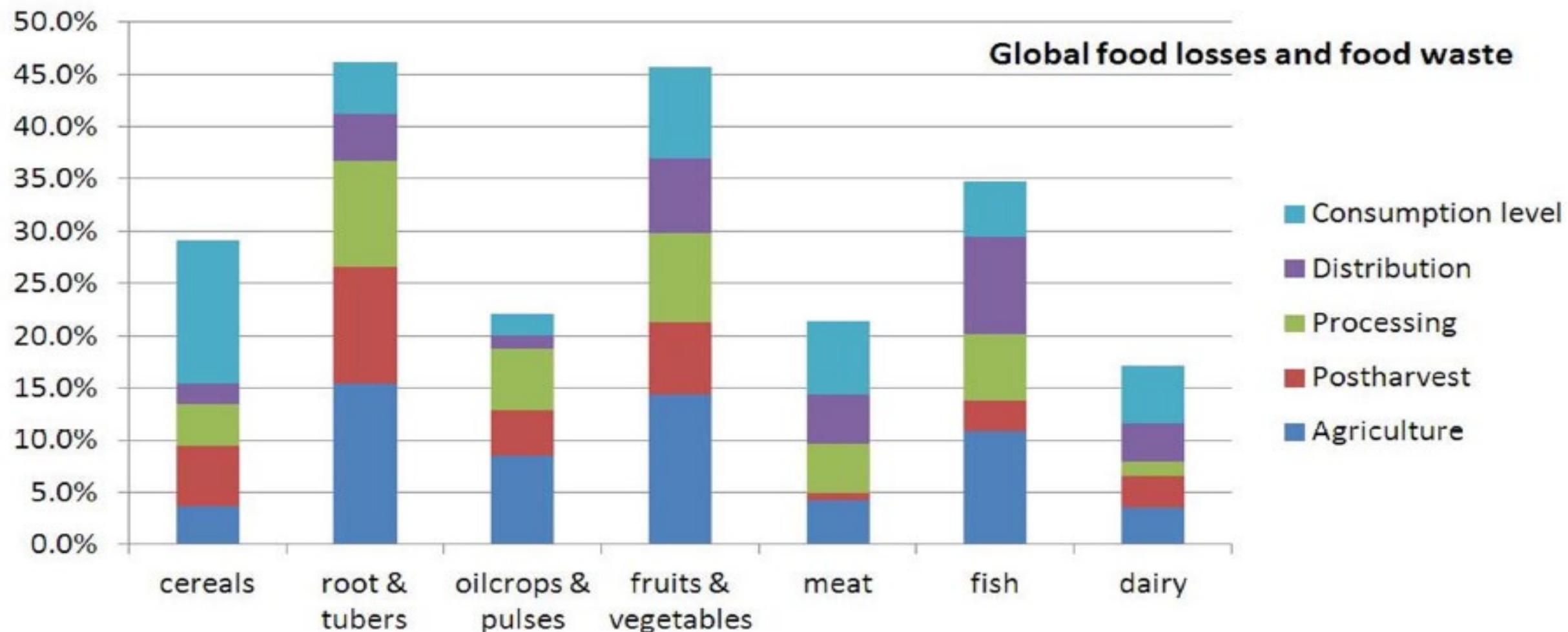
24% of global food supply by energy content (calories)

FLW



Infographic by FAO

GLOBAL FLW BY COMMODITY



Food is lost or wasted along the entire value chain



During or immediately after harvesting on the farm

After leaving the farm for handling, storage, and transport

During industrial or domestic processing and/or packaging

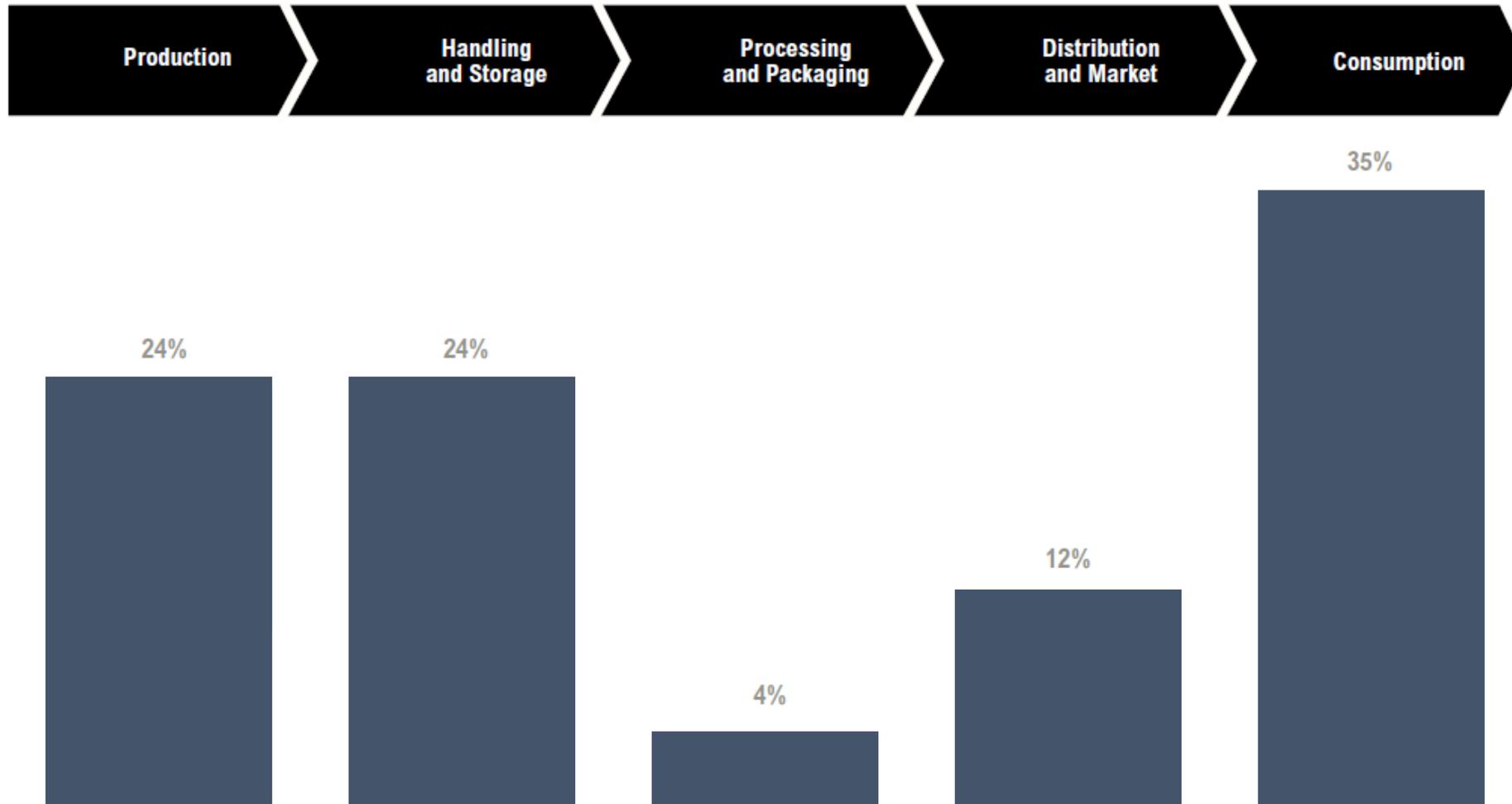
During distribution to markets, including at wholesale and retail markets

In the home or business of the consumer, including restaurants and caterers

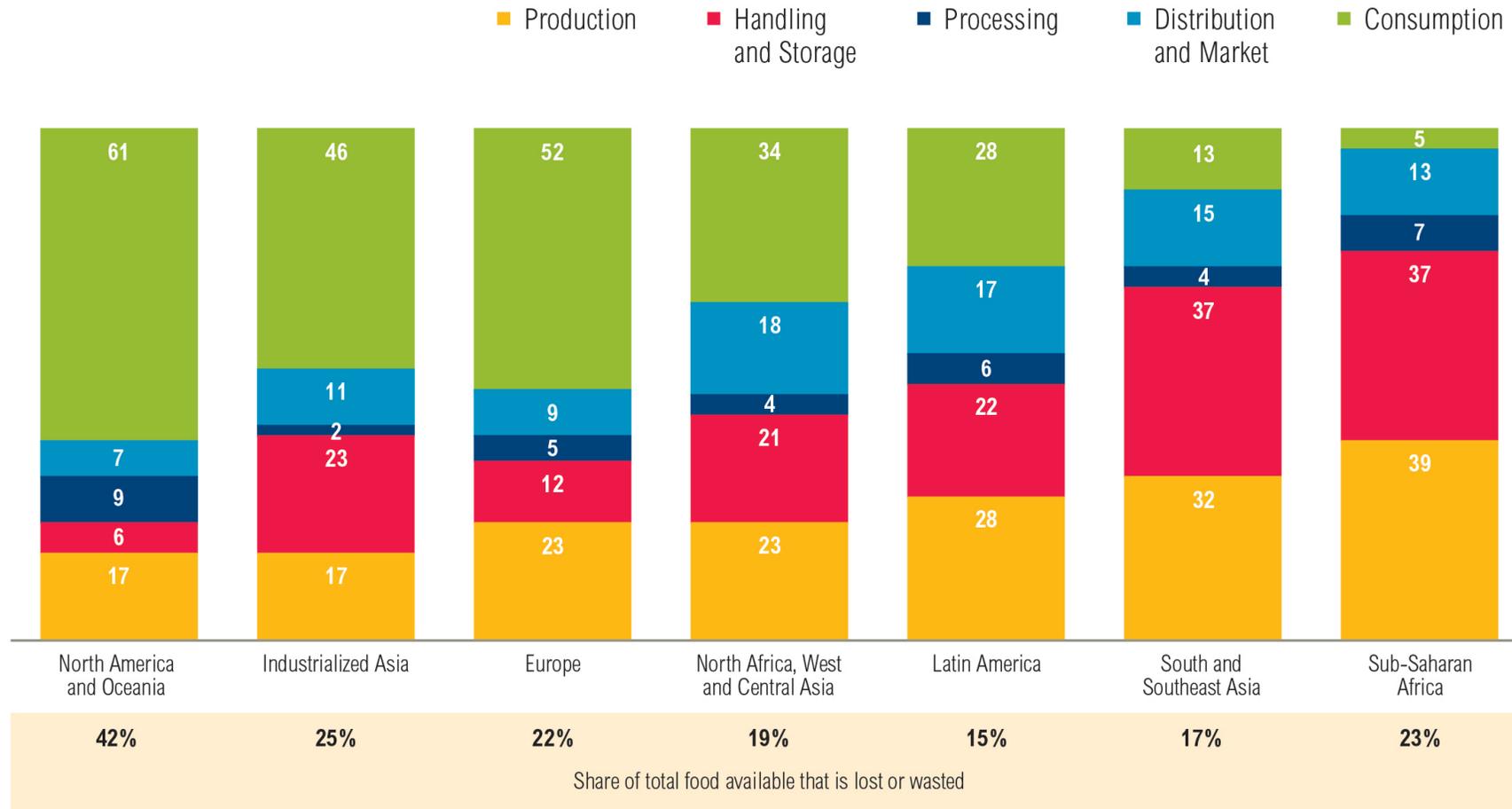


Food loss and waste occurs more 'near the fork' in developed regions and more 'near the farm' in developing regions

100% = 1.5 quadrillion kcal



Losses at production are more prevalent in developing regions while food waste at consumption is more prevalent in developed regions (Percent of kcal lost and wasted)



Note: Number may not sum to 100 due to rounding.

Every year, consumers in high income countries waste almost as much food (222 million tonnes) as the entire net food production of sub-Saharan Africa (230 million tonnes)*



Household's food waste in high income countries.

222
millions
tonns



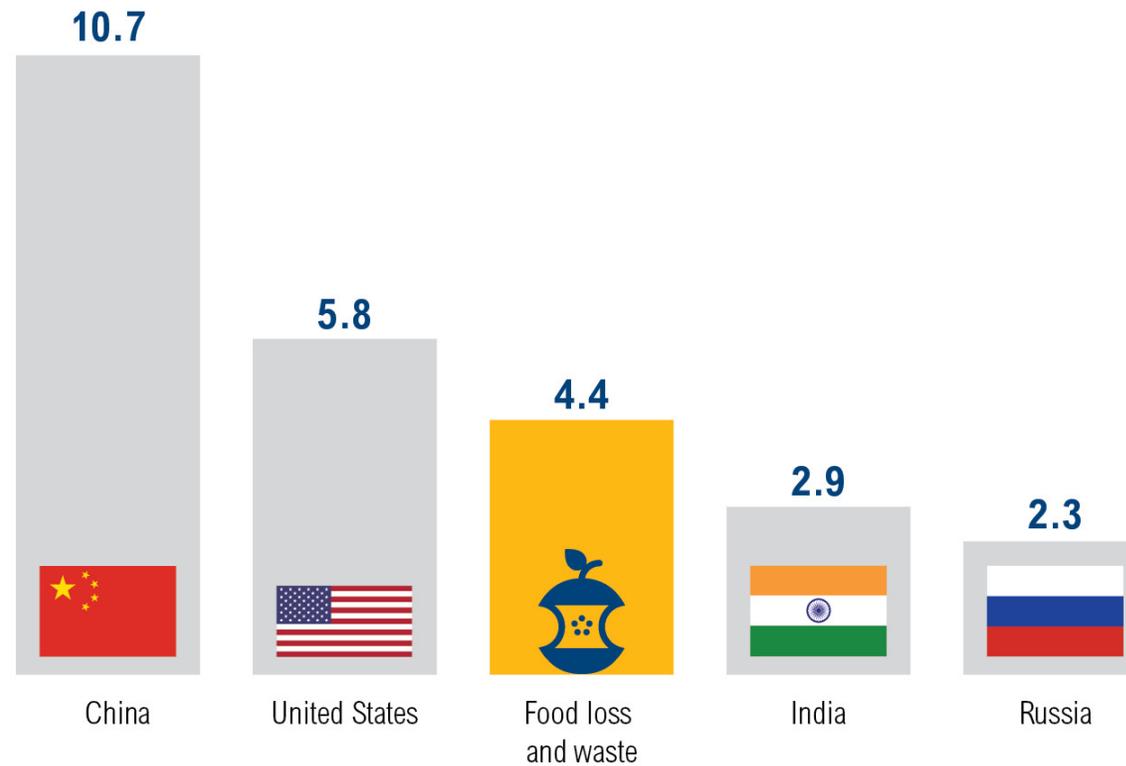
Net food production in sub-Saharan Africa

230
millions
tonns



* Source: FAO (2011),

If Food Loss and Waste Were its own Country, it Would Be the Third-Largest Greenhouse Gas Emitter



GT CO₂E (2011/12)*

* Figures reflect all six anthropogenic greenhouse gas emissions, including those from land use, land-use change, and forestry (LULUCF). Country data is for 2012 while the food loss and waste data is for 2011 (the most recent data available). To avoid double counting, the food loss and waste emissions figure should not be added to the country figures.

Source: CAIT. 2015; FAO. 2015. *Food wastage footprint & climate change*. Rome: FAO.



WORLD
RESOURCES
INSTITUTE



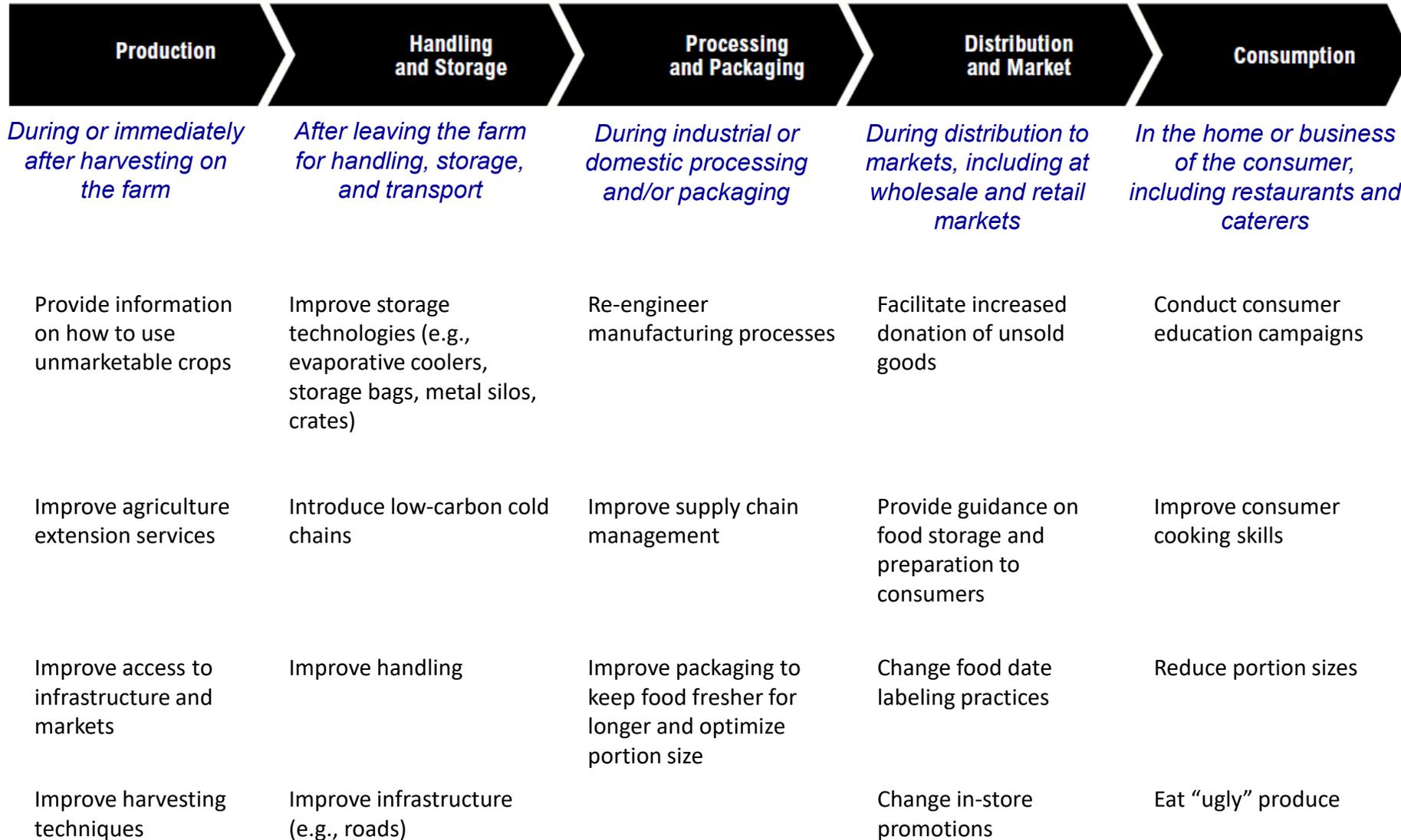
Water loss

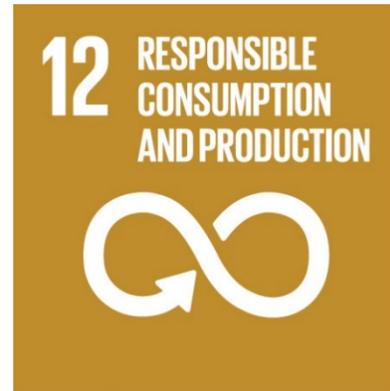
The amount of water required to produce the food we waste every year on a global scale is about 250.000 billion litres. This could supply New York's domestic water needs for the next 120 years, at current rates.

Financial Loss

On a global scale, the economic cost of the overall amount of food wastage is about \$US 750 billion, equivalent to the GDP of Switzerland.

Possible approaches for reducing food loss and waste





TARGET 12.3

By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses

Food waste prevention

- **Overall aim:** Reach Sustainable Development Goal (SDG) to halve food waste by 2030 at **retail and consumer level** and reduce food losses along the food production and supply chain.
- Food waste in the EU*:
 - around 88 million tonnes of food are wasted every year (173 kg/pcc)
 - Estimated cost: 143 billion €
 - 20% of food produced ends up as waste
 - 70% of EU food waste: consumers, retail and food service sectors
 - 30% of EU food waste: processing and production sectors

*based on FUSIONS definitional framework (2012 data)



European Commission (DG ENV)

Directorate C - Industry

**PREPARATORY STUDY ON FOOD
WASTE ACROSS EU 27**

Contract #: 07.0307/2009/540024/SER/G4

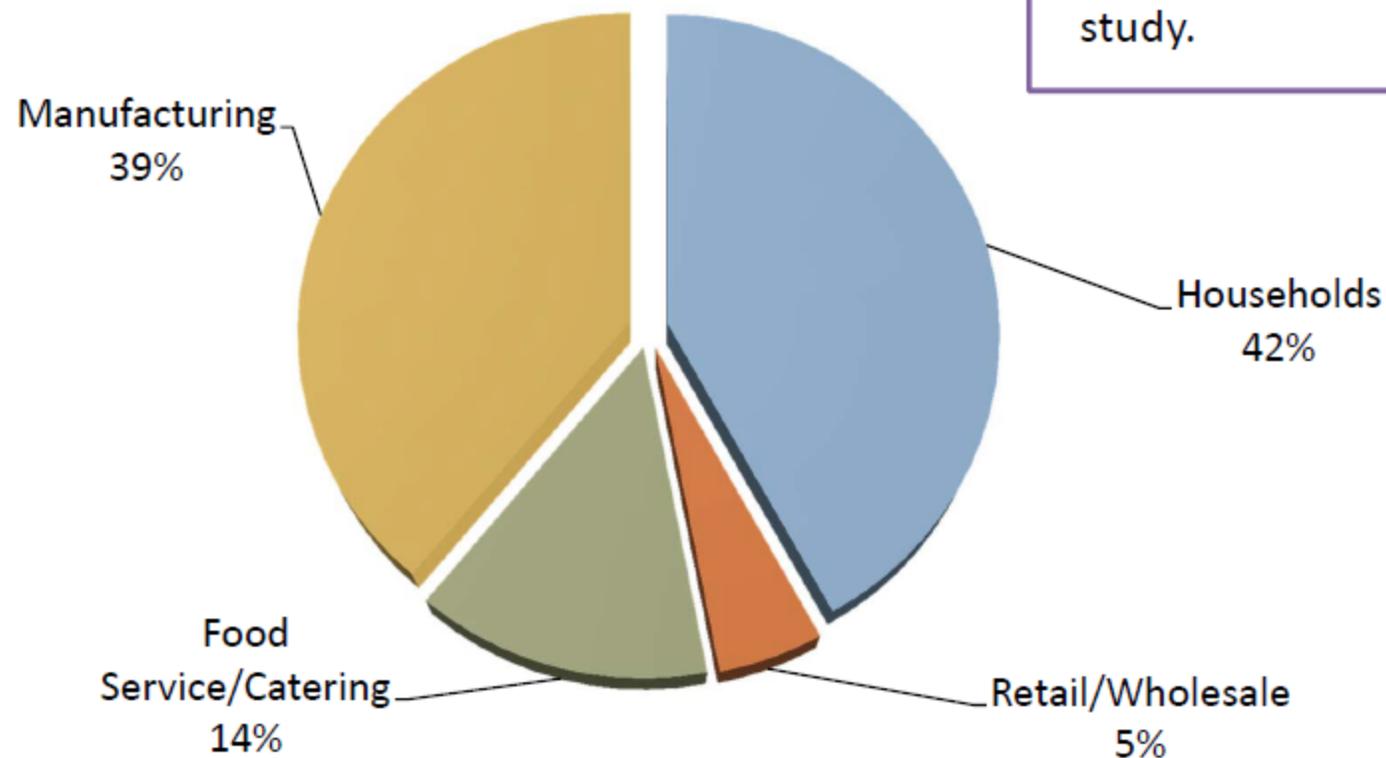
Final Report

October 2010

BREAKDOWN OF EU-27 FOOD WASTE

Households produce the largest fraction of EU food waste among the four sectors considered, at about 42% of the total or about 38Mt, an average of about 76kg per capita. According to WRAP, at least 60% of such a waste could be avoided.

Food wasted in the agricultural sector and fish discards are not considered in this study.



EU Policy approaches

FUSIONS_Food Use for Social Innovation by Optimising Waste Prevention Strategies

The **FUSIONS project** aims at achieving a more resource efficient Europe by significantly reducing food waste. The project runs for 4 years, from August 2012 to July 2016. It has **21 project partners** from 13 countries, bringing together universities, knowledge institutes, consumer organisations and businesses.

The project will contribute to food waste reduction through:

- the harmonisation of food waste monitoring;
- improved understanding of the extent to which social innovation can reduce food waste; and
- the development of guidelines for a common Food Waste policy for EU-27 (EU-28).

Project duration: 48 months (2012 – 2016)

www.eu-fusions.org



**REFRESH -
Resource Efficient Food and dRink for the Entire Supply cHain**

26 partners from 12 European countries and China will work towards the project's goal to contribute towards the objectives of reducing food waste across Europe by 30% by 2025, reducing waste management costs, and maximizing the value from unavoidable food waste and packaging materials. REFRESH will run from July 2015 - June 2019.

11/16/20



Living well, within
the limits of our planet

Proposed for a general Union
Environment Action Programme

The European «vision»

7th Environment Action Programme to 2020

*«In 2050, we live well, within the planet's ecological limits. Our prosperity and healthy environment stem from an innovative, **circular economy** where nothing is wasted and where natural resources are managed sustainably, and biodiversity is protected, valued and restored in ways that enhance our society's resilience. Our low-carbon growth has long been decoupled from resource use, setting the pace for a safe and sustainable global society»*



7TH EAP - Decision No 1386/2013/EU of the European Parliament and of the Council of 20 November 2013 on a General Union Environment Action Programme to 2020 'Living well, within the limits of our planet' Text with EEA relevance



Brussels, 2.12.2015
COM(2015) 614 final

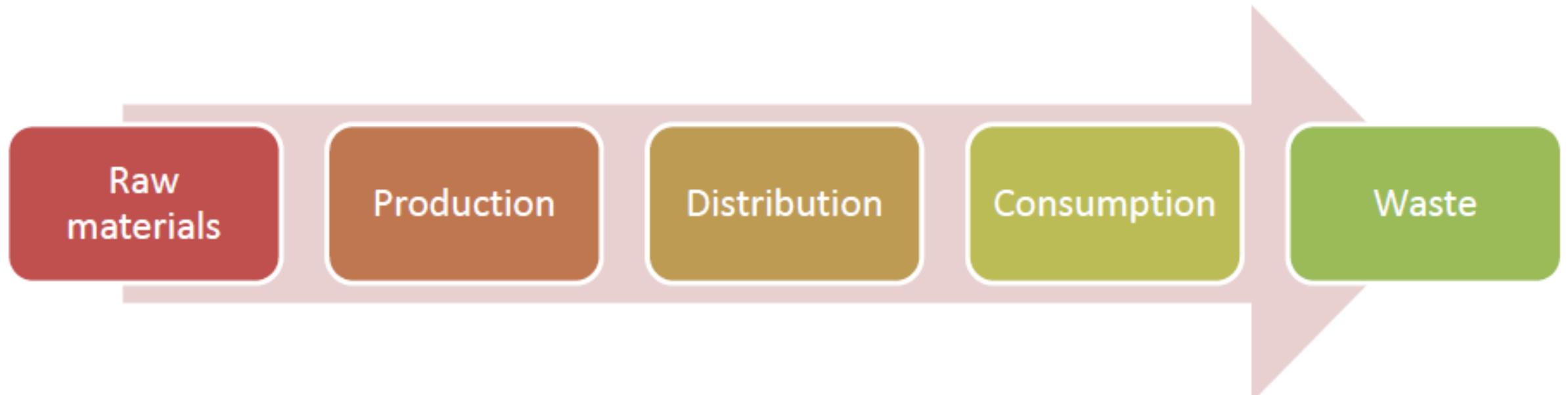
**COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN
PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL
COMMITTEE AND THE COMMITTEE OF THE REGIONS**

Closing the loop - An EU action plan for the Circular Economy

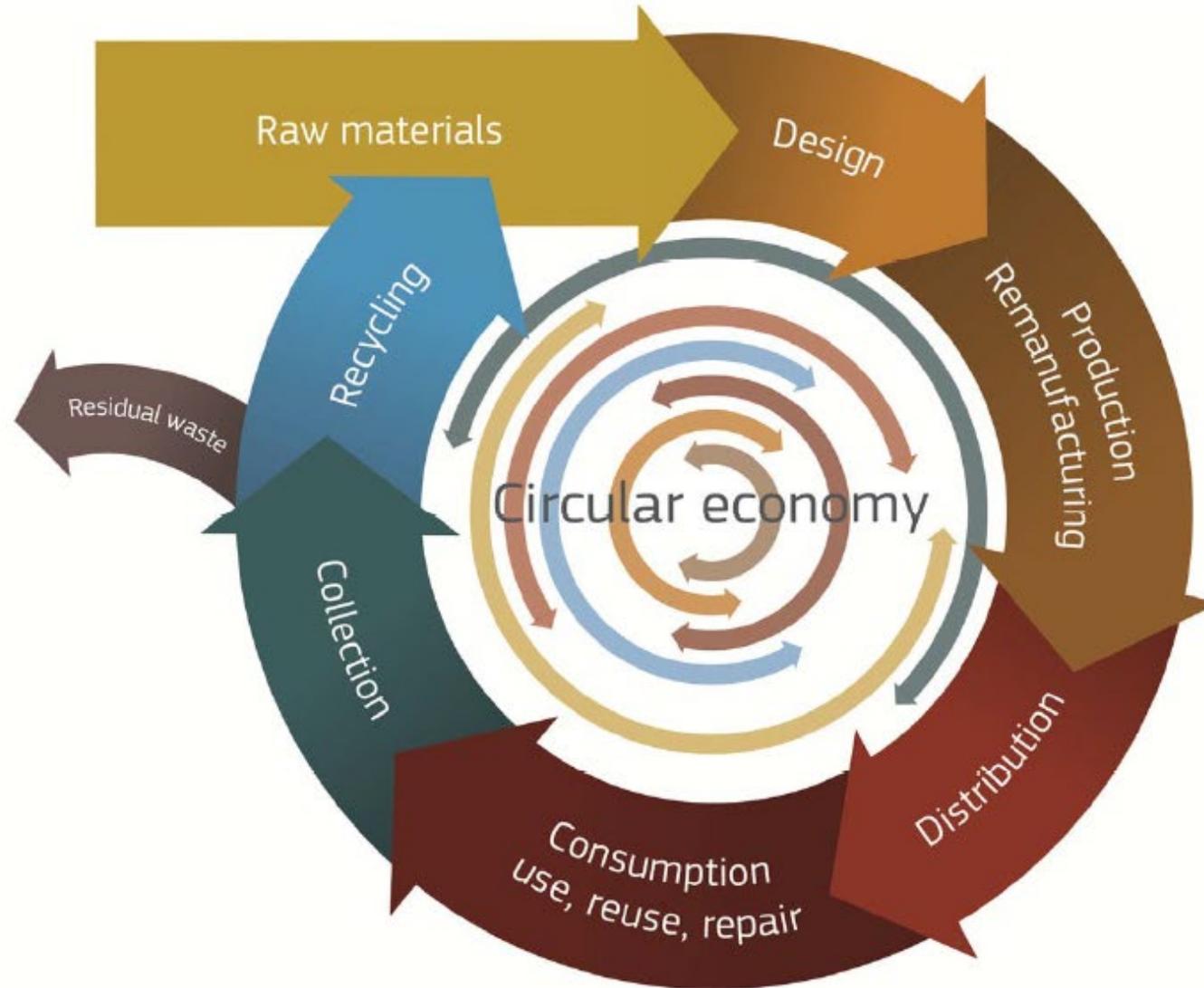
The linear economic model

The current economic model of 'Take-Make-Dispose'

- World as unlimited resource and unlimited carrying capacity;
- 65 billion tonnes of raw materials enter the economic system each year;
- Around 60% of waste ends up in landfill...



The circular economy model



What is a circular economy?



«A circular economy preserves the value added in products for as long as possible and virtually eliminates waste. It retains the resources within the economy when a product has reached the end of its life, so that they remain in productive use and create further value. It may involve:

Increasing the time products deliver their service before coming to the end of their useful life (durability);

Reducing the use of materials that are hazardous or difficult to recycle (substitution);

Creating markets for recycled materials (standards, public procurement);

Designing products that are easier to repair, upgrade, remanufacture or recycle (eco-design);

Incentivising waste reduction and high-quality separation by consumers;

Incentivising separation and collection systems that minimise the costs of recycling and reuse;

Facilitating industrial clusters that exchange by-products to prevent them from becoming wastes (industrial symbiosis);

Encouraging wider consumer choice through renting or leasing instead of owning products (new business models)”

Why the shift toward a Circular Economy is needed

“Over the last 30 years, **global extraction of raw materials has increased by 80%**. The damage caused to ecosystems has already hit unsustainable levels, with climate change, biodiversity loss, desertification and soil erosion all linked to material overuse. With continued growth of the world population combined with stronger emerging economies, **total consumption** is expected to **increase significantly**.

This will lead to increased pressure on resource use with associated environmental and health impacts. As the demand for raw materials in the EU continues to grow, and given the **EU's dependence on the importation of many raw materials**, the role of recycling and resource efficiency will become increasingly important.

Source: http://ec.europa.eu/environment/integration/research/newsalert/pdf/299na1_en.pdf

Why the circular economy is vital for Europe ?

“In Europe, we currently use 16 tonnes of material per person per year, of which 6 tonnes become waste. Although the management of that waste continues to improve in the EU, the European economy currently still loses a significant amount of potential 'secondary raw materials' such as metals, wood, glass, paper, plastics present waste streams.

In 2010, total waste production in the EU amounted **to 2,5 billion tons**. From this total only a limited share (36%) was recycled, with the rest was landfilled or burned, of which some 600 million tons could be recycled or reused.

Just in terms of household waste alone, each person in Europe is currently producing, on average, **half of tonne** of such waste. Only 40 % of it is reused or recycled and in some countries more than 80% still goes to landfill.”

Source: <http://ec.europa.eu/environment/waste/>

The link between “food waste” and “circular economy”

Reducing food waste has enormous potential for reducing the resources we use to produce, manage, transform, distribute, store and cook the food we eat.

In 2011, the Commission's Roadmap to a resource-efficient Europe, identified food as a key sector where resource efficiency should be improved and called for ambitious action to tackle food waste.

It is expected that the new EU's “Circular economy package” (to be adopted by the end of 2015) will introduce specific targets for food waste reduction in the EU and will ask Member States to develop national food waste prevention strategies

5.2. Food waste

Food waste is an increasing concern in Europe. The production, distribution and storage of food use natural resources and generate environmental impacts. Discarding food that is still edible increases these impacts, and causes financial loss for consumers and the economy. Food waste also has an important social angle: donation of food that is still edible but that for logistic or marketing reasons cannot be commercialised should be facilitated. In September 2015, as part of the 2030 Sustainable Development Goals, the United Nations General Assembly adopted a target of halving per capita food waste at the retail and consumer level, and reducing food losses along production and supply chains. **The EU and its Member States are committed to meeting this target.**

In order to support the achievement of the Sustainable Development Goal target on food waste and to maximise the contribution of actors in the food supply chain, the Commission will:

- develop a common EU methodology to measure food waste and define relevant indicators. It will create a platform involving Member States and stakeholders in order to support the achievement of the SDG targets on food waste, through the sharing of best practice and the evaluation of progress made over time.*
- take measures to clarify EU legislation relating to waste, food and feed and facilitate food donation and the use of former foodstuff and by-products from the food chain in feed production without compromising food and feed safety; and*
- examine ways to improve the use of date marking by actors in the food chain and its understanding by consumers, in particular the "best before" label.*

Directive (EU) 2018/851 on waste

(31) Member States should take measures to promote prevention and reduction of food waste in line with the 2030 Agenda for Sustainable Development, adopted by the United Nations (UN) General Assembly on 25 September 2015, and in particular its target of halving per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses, by 2030.

Those measures should aim to prevent and reduce food waste in primary production, in processing and manufacturing, in retail and other distribution of food, in restaurants and food services as well as in households.

Member States should aim to achieve an indicative Union-wide food waste reduction target of 30 % by 2025 and 50 % by 2030.

Article 9 Prevention of waste

5. Member States shall monitor and assess the implementation of their food waste prevention measures by measuring the levels of food waste on the basis of the methodology established by [a delegated act]

6. By 31 December 2023, the Commission shall examine the data on food waste provided by Member States in accordance with Article 37(3) with a view to considering the feasibility of establishing a Union-wide food waste reduction target to be met by 2030 on the basis of the data reported by Member States in accordance with the common methodology established pursuant to paragraph 8 of this Article.

Article 22 Bio-waste

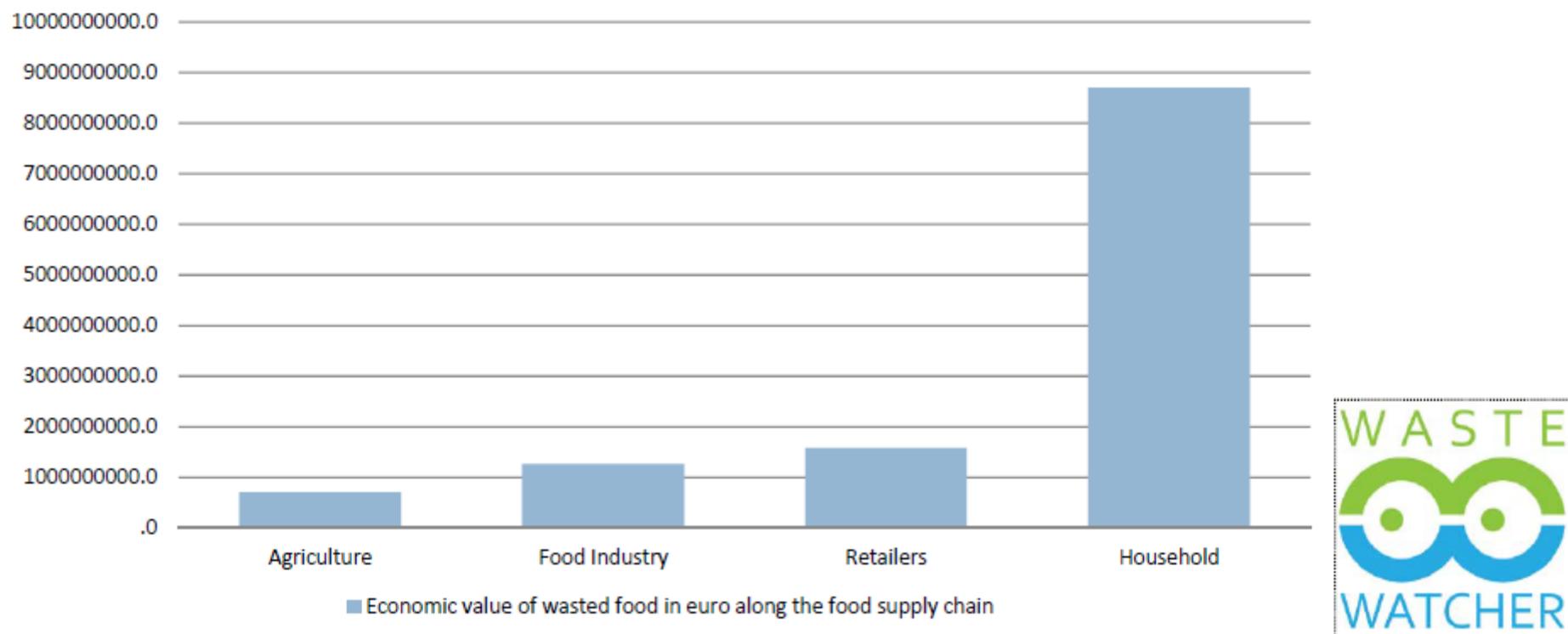
1. Member States shall ensure that, by 31 December 2023 and subject to Article 10(2) and (3), bio-waste is either separated and recycled at source, or is collected separately and is not mixed with other types of waste.

Food Waste - Italy

Title	Italy - Country report on national food waste policy
Authors	Paolo Azzurro (UNIBO), Italy Silvia Gaiani (UNIBO), Italy Matteo Vittuari (UNIBO), Italy
Keywords	Food waste policy, national legislation and initiatives
Clients	European Commission (FP7), Coordination and Support Action - CSA

FOOD WASTE IN ITALY: ECONOMIC VALUE

According to the data elaborated by Last Minute Market in 2013 and by its Observatory «Waste Watcher», food wasted in Italy by households accounts for about 8,7 billions of euro, equal to 0,56% of the Italian GDP. This value is more than double than the total value of food left in field at the agriculture stage + food wasted by the food industry + food wasted by retailers.



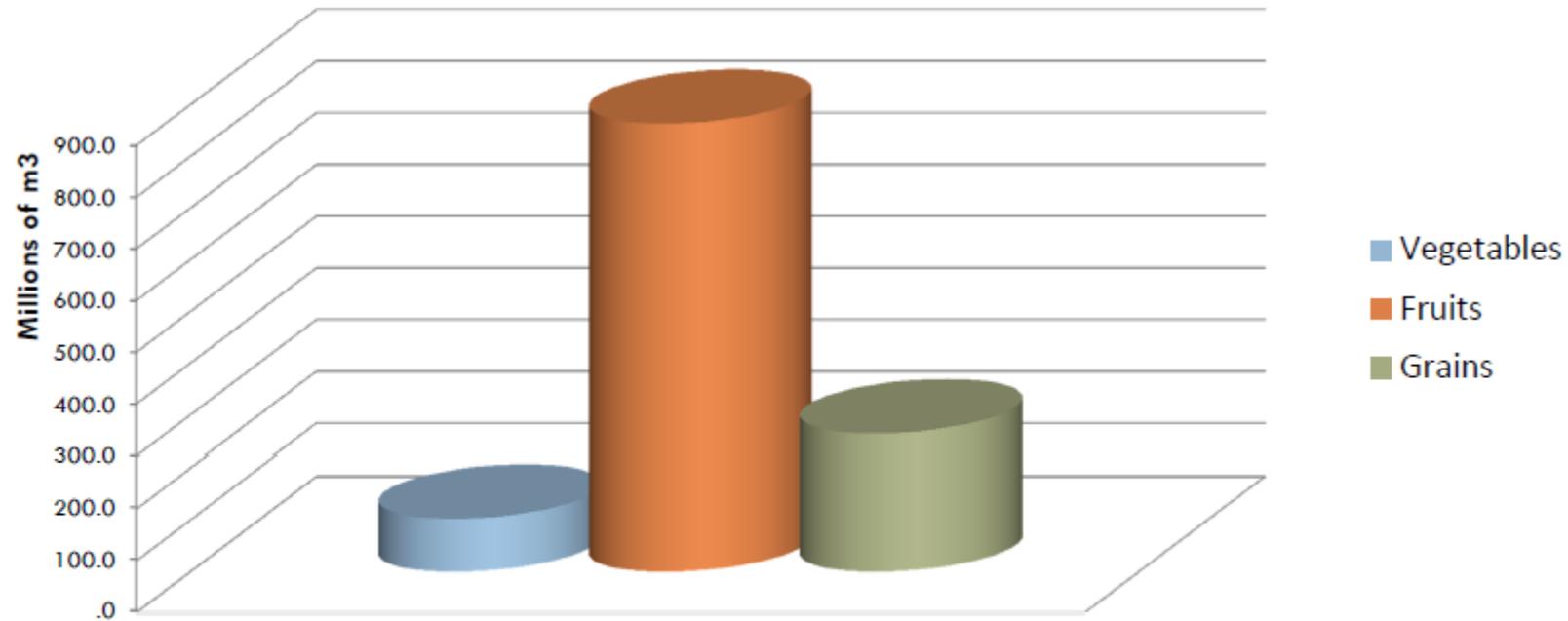
AGRICULTURAL PRODUCTION LEFT IN FIELD - 2012

2012				
	Total prod. (quintals)	Harvested prod. (quintals)	Left in field (quintals)	%
Fruit	52.602.313	51.586.621	1.015.692	1,93
Citrus Fruits	31.071.839	29.251.178	1.820.661	5,86
Olives	33.532.255	31.682.836	1.849.419	5,52
Grapes	70.149.235	68.686.730	1.462.505	2,08
Open field vegetables	113.427.254	109.523.955	3.903.299	3,44
Gtreenhouse vegetable	15.031.364	14.572.064	459.300	3,06
Legumes and potatoes	16.788.396	16.361.041	427.355	2,55
Total fruit	187.355.642	181.207.365	6.148.277	3,28
Total vegetables	145.247.014	140.457.060	4.789.954	3,30
Total fruits and vegetables	332.602.656	321.664.425	10.938.231	3,29
Total grains	171.709.994	170.182.191	1.527.803	0,89
Total	504.312.650	491.846.616	12.466.034	2,47

Source: Last Minute Market 2012 on ISTAT data

FOOD WASTE & VIRTUAL WATER

According to the Book “Libro BLU dello spreco in Italia: l’Acqua - 2012”, the amount of water consumed to grow the food left in the fields in 2010, is about 1,2 billion m³.

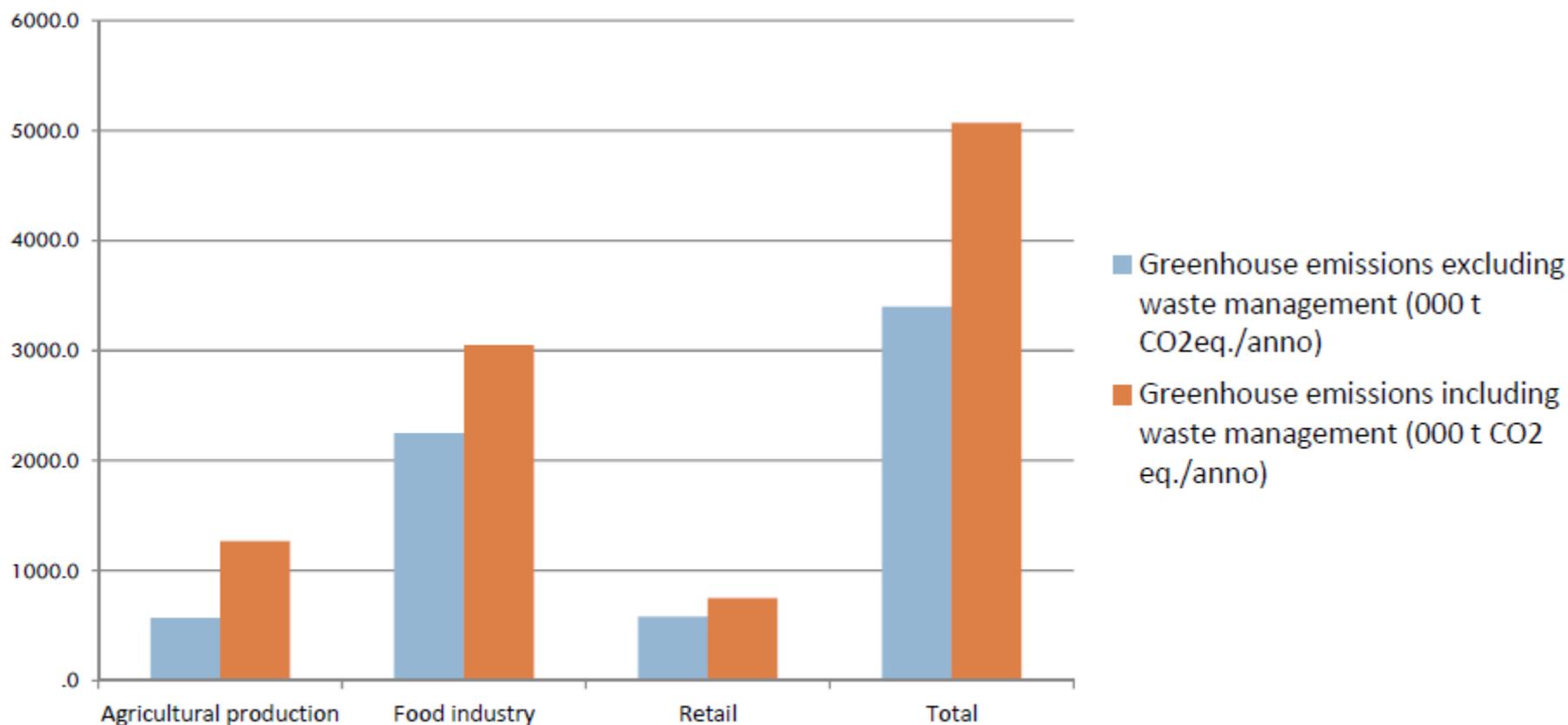


FOOD WASTE & GLOBAL WARMING IN ITALY



Food waste in Italy from field to the retail sector accounts for about 3,6 million tons/years (Source: LMM, 2011) and is responsible for the emission of about 3,4 million tons of CO₂-eq (more than 5 millions taking also into account the «waste management» phase).

Source: Unibo elaboration on LMM, ENEA and ENI data 2011



Italian Campaigns against food waste



«ONE YEAR AGAINST WASTE» CAMPAIGN

A year against Waste is a multi-year project aiming to raise Italian and European public awareness on the causes and consequences of waste, on how to reduce it and how to promote a sound scientific culture and civic principles oriented towards sustainability and solidarity. Each year the overall theme of the waste is focused on a specific topic: **food** (2010), **water** (2011), **energy** (2012), **zero waste** (2013), **green and young** (2014), **feeding the future** (2015). The project links its image to the drawings of Altan, who designed the campaign logo and signed various communication material.



FIRST DO NOT WASTE

LUNCHEAS AND DINNERS AGAINST FOOD WASTE

Within the campaign “A year against food waste” Last Minute Market organises «First do not waste», a «format» made up of lunches and dinners for hundreds of diners, using recovered food that would otherwise have ended up in the trash.



THE CHARTER FOR ZERO WASTE MUNICIPALITIES

The charter for zero waste municipalities was launched in 2012 during «*TRIESTE NEXT - European Innovation and Science Research Forum*» as part of the campaign “*A year against waste*”. In accordance with the European Resolution, Italian regions, provincial administrations and municipalities, commit themselves to perform actions aimed at reducing food wastage. Today it has been signed by roughly 1.000 public administrations.

Signed by
roughly 1000
municipalities

Sprecozero.net: main aims



1. Sharing knowledge & best practices
2. Optimising public resources for the definition, Implementation and monitoring of food waste prevention measures
3. Elaborating common guidelines for food waste prevention
4. Connecting the european and national level to the local one



SPRECOZERO.NET

The Italian network of the local and regional authorities, voluntarily committed to prevent food waste on their territories.

<http://sprecozero.net>



Italian National Day
Against Food Waste

**ITALY AMONG VIRTUOUS NATIONS
AGAINST FOOD WASTE**

VIVERE A SPRECO ZERO: NATIONAL FW PREVENTION AWARD



Within the campaign “A year against food waste” Last Minute Market organises «Vivere a Spreco Zero », a National AWARD addressing best practices in food waste prevention.

1° edition: 2013 | 2° edition: 2014





MINISTERO DELL'AMBIENTE
E DELLA TUTELA DEL TERRITORIO E DEL MARE

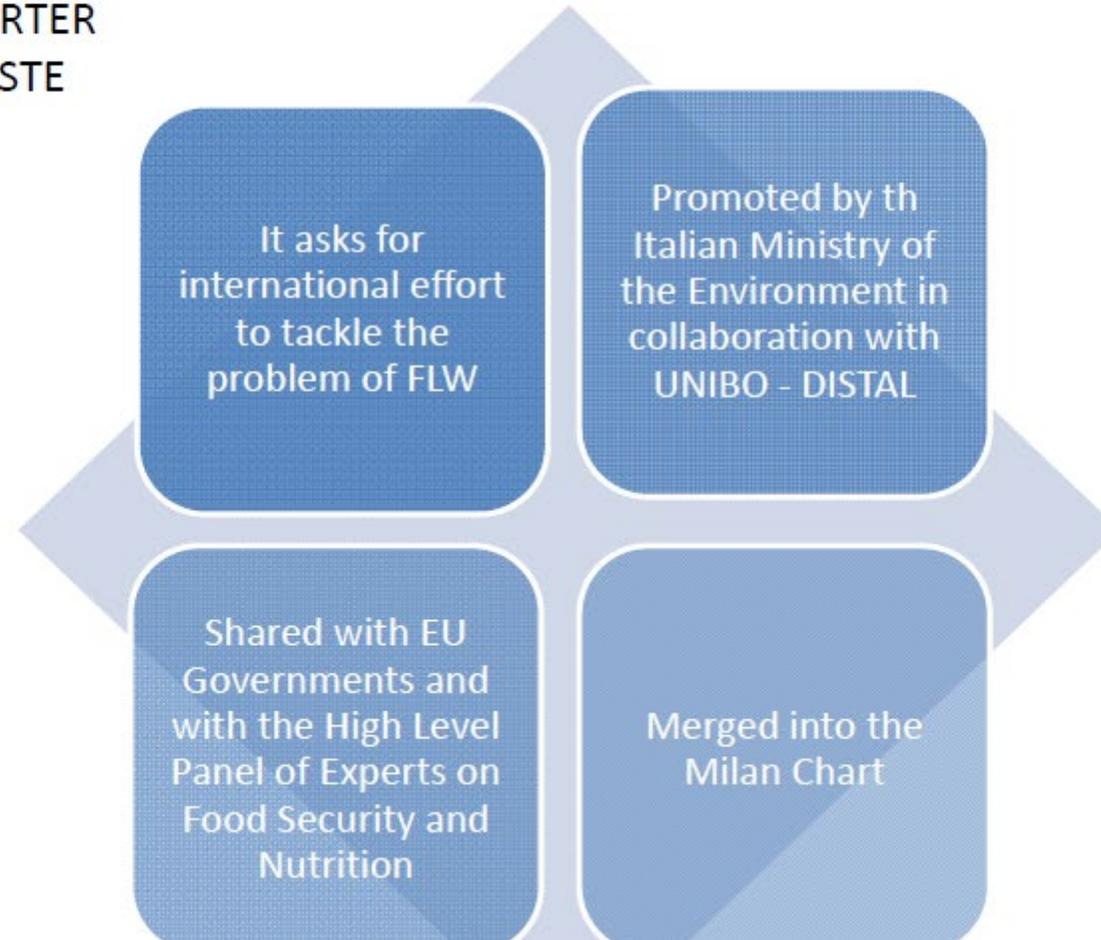


ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA
DIPARTIMENTO DI SCIENZE E TECNOLOGIE
AGRO-ALIMENTARI

Bologna, November 24th 2014
THE BOLOGNA CHARTER AGAINST FOOD WASTE
*Initiative under the European semester of Italian
presidency*

**THE BOLOGNA CHARTER
AGAINST FOOD WASTE**

KEY POINTS



Italian legislation- The Law Against Food Waste Law No. 166/2016

14th September 2016, concerning provisions on the donation and distribution of food to limit food waste.

- Objective “to reduce waste for each of the stages of production, processing, distribution and administration of food, pharmaceuticals and other products” through the implementation of enumerated priorities. These priorities are:
 - Promoting the recovery and donation of food surpluses;
 - Contributing to limit the negative impacts on environment and natural resources, reducing the production of waste and promoting reuse and recycling to extend products’ life cycles;
 - Contributing to achieve of the general objectives set by the “National Food Waste Prevention Plan”, contributing to the “reduction of the amount” of biodegradable waste for landfill sites;
 - Contributing to information, consumer awareness.

- On 2 August 2015, Italy became the second European country (after France) to introduce a supermarket waste law.
- The law made it easier for companies and farmers to donate food to charities and is encouraging greater use of “doggy bags” (renamed as “family bags”) at restaurants. It also allows stores to donate mislabeled food products if the expiration date and allergy information are properly indicated.
- The law arose out of the Italian National Plan for Food Waste Prevention (Piano Nazionale di prevenzione dello spreco alimentare) which the Ministry of Environment began to formulate in 2013, as well as the Zero Waste Charter launched in 2013 by Last Minute Market, a collector and distributor of surplus food) and the Municipality of Sasso Marconi (Bologna).

France- Supermarket Waste Ban Law. Proposition de Loi relative à la lutte contre le gaspillage alimentaire, 9 December 2015.

- This law was formulated as an element of a national food waste policy, released in April 2015.
- This policy had 36 elements, the first of which was to set into law a hierarchy of preferable actions to fight food waste.
- The law envisaged that by 2025, any organization producing waste above a given threshold (400 square metres) will be required to direct those resources to their highest possible use, in the following order: “recovery of edible food for human consumption, animal feed, industrial uses, anaerobic digestion, and composting.”
- Fines were proposed if food fit for human consumption was used for animal feed or composted.
- The balance of the proposals involved public education and the promulgation of best practices and the policy envisaged that the French legislation might become part of a Europe-wide food waste code.

Legislation outside Europe

- **Japan** The Promotion of Utilization of Recyclable Food Waste Act 2001
- **USA** Model Good Samaritan Food Donation Act 1990 (only adopted in California)
- “The Bill Emerson Good Samaritan Food Donation Act” was signed into law by President Clinton on October 1, 1996. (codified at 42 U.S.C. § 1791 (2011)).
- 23 March 2016 Congresswoman Chellie Pingree (Maine) introduced the Food Recovery Act (HR 4184) and the Food Date Labeling Act (HR 4184) into the House of Representatives. Senator Richard Blumenthal (Connecticut) introduced equivalent legislation into the Senate (S.3108, S.2947). None of this legislation has progressed further than the committee stage in Congress.

Legislation outside Europe

- **UK** A Food Waste (Reduction) Bill was presented to House of Commons on 9 September 2015 requiring large supermarkets, manufacturers and distributors to reduce supply-chain food waste by 30 per cent by 2025.
- The Bill also sought to incentivise observance of the EU's Food Waste Reduction Hierarchy, to prioritise redistribution over the sending of edible food to the energy sector for Anaerobic Digestion.
- Bill did not succeed in securing Parliamentary support, the Government's recycling minister, suggested that the "threat of future legislative action" meant that its aims could be achieved through voluntary schemes.

Self Regulation

THE COURTAULD COMMITMENT

WHAT IS IT?

The Courtauld Commitment is a voluntary agreement aimed at improving resource efficiency and reducing waste within the UK grocery sector.

The agreement is funded by Westminster, Scottish, Welsh and Northern Ireland governments and delivered by WRAP.

It supports the UK governments' policy goal of a 'zero waste economy' and climate change objectives to reduce greenhouse gas emissions.

WRAP is responsible for the agreement and works in partnership with leading retailers, brand owners, manufacturers and suppliers who sign up and support the delivery of the targets.

It was launched in 2005 and is now in its third phase.

COURTAULD COMMITMENT 1

COURTAULD COMMITMENT 2

COURTAULD COMMITMENT 3





Arla Foods UK

Reducing 2,600 tonnes of dairy waste per year

In 2013, Arla Foods UK received support from WRAP to reduce waste arising from the manufacturing process at their Stourton Creamery and Dairy.

Waste prevention activity was undertaken, including the development of a 'waste reduction intervention team', and the creation of a mass-energy balance for the factory to understand the financial and environmental inputs and outputs. A hotspot analysis was carried out, looking at where the most waste arose. As a result of this analysis, five focus area projects were implemented, involving: fresh cream, the creamery recovery system, flavoured milk, blender waste in cottage cheese, and despatch retained samples. Regular waste reduction intervention team meetings were also organised, in which trial findings and next steps were discussed.



New packaging film could reduce potato waste by 50%

Following extensive trials, Asda has launched its Extra Special Jersey Royal Potatoes in a revolutionary new gas permeable packaging film from Evap. The packaging responds to and controls the natural gases released during the respiration process in order to increase the shelf life of the product.



The film controls moisture levels and is aided by a series of tiny holes which are very accurately laser perforated into the film. The film also protects the product from UV light which can speed up the degradation of fresh produce.

The benefits include:

- Extending product shelf life from 4 days to 8 days.
- Helping to maintain the nutritional value in the product for longer.
- Reducing waste levels of this product by up to 50% throughout the supply chain and at home.

1. Indian food

Reduced the weight of Patak's glass jars from 225g to 198g. Using less material has:

- Saved 375 tonnes of CO₂ eq. / 500 tonnes of glass per year.
- Further savings can be made as more products now fit on distribution pallets.



2. Syrups

Moved from a glass jar weighing 236g to a recycled plastic PET container weighing 35g.

- Carbon saving of 59% and weight saving of 85%.
- Secondary and transport efficiencies will deliver about 100 tonnes of CO₂ eq. for each million units sold.



Implementing initiatives to cut costs and waste

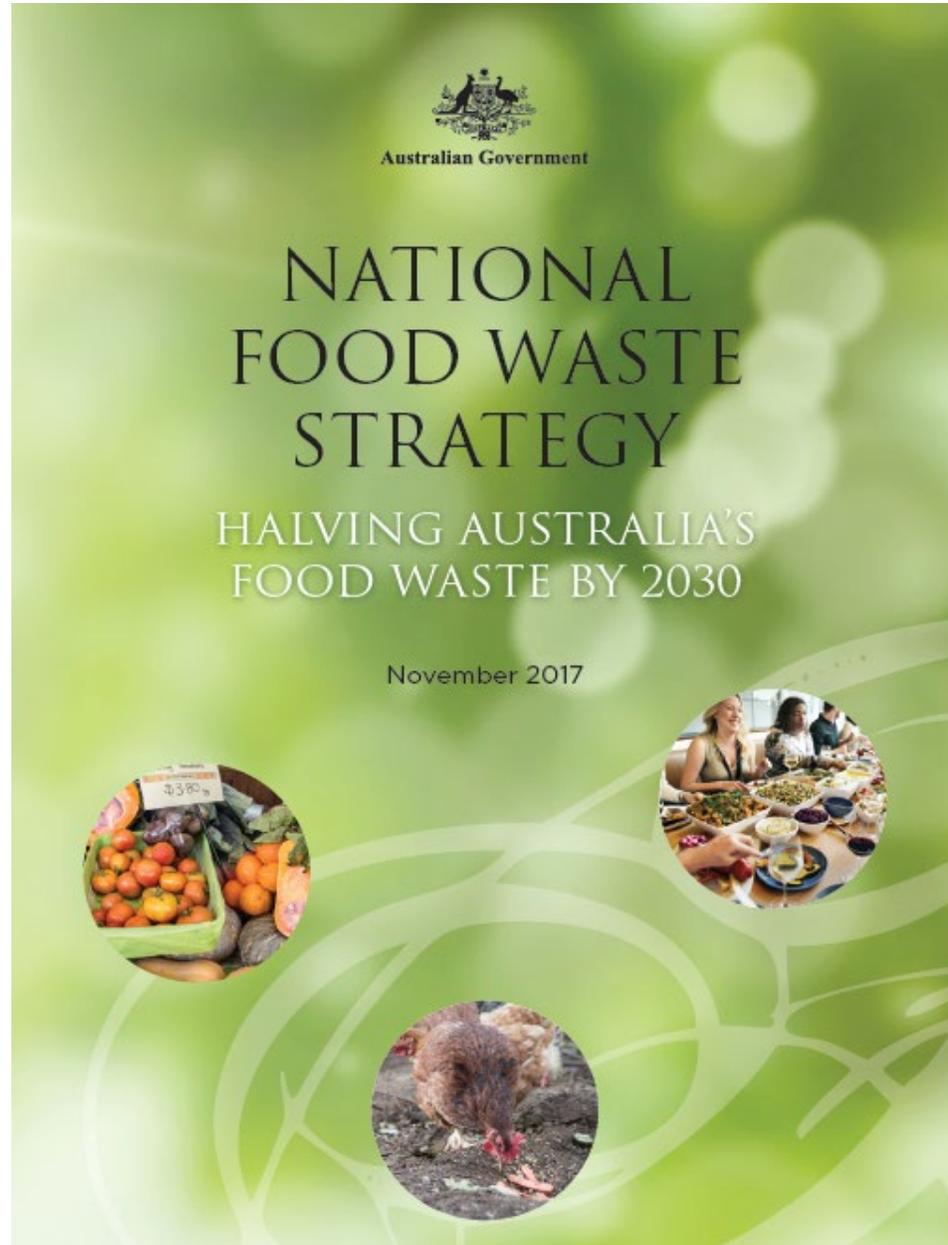
Carlsberg UK is expecting to annually save £206,000 and reduce waste by 263 tonnes as a result of their two waste prevention initiatives discussed below.

1. A ramp was constructed to prevent hop extract residue from being wasted, thereby reducing 3 tonnes of waste and material cost saving £156,000 every year.
2. By modifying their malt process, less malt is now being wasted and reject malt is looking to be sold as animal feed instead of being sent to Energy Recovery. These actions are anticipated to divert 260 tonnes of waste from landfill and save £50,000 per year.



Example of hop extract residue that is now being collected for use instead of being wasted

Australia



- the Australian Government and the states and territories will provide \$1 million funding to support an independent governance body to develop an implementation plan and establish a voluntary commitment program.
- Solving the problem of food waste requires a commitment from all Australians. We need to identify where improvements can be made so that we can change our behaviour, improve technology and make our food system more efficient to achieve the goal of halving our food waste by 2030.
- This strategy adopts a circular economy approach that takes into account the food waste hierarchy and seeks to capture food waste as a resource so it is not sent to landfill.

FRAMEWORK FOR ACTION

Priority	Outcome	Focus
Policy support	Policies are supportive of food waste avoidance, reduction and repurposing	Establishing a National Food Waste Baseline and methodology to measure progress against our goal Identifying areas to target investment Establishing a voluntary commitment to reduce food waste Enabling legislation to better support food waste reduction and repurposing
Business improvements	Improvement and adoption of technologies, processes and actions to avoid and reduce food waste	Identifying areas for improvement Supporting technology adoption Encouraging collaboration Normalising food waste considerations into business practices
Market development	Development of markets to support the repurposing of food waste	Identifying food waste composition and nutritional value to develop new markets Encourage innovation Connecting food waste sources to users
Behaviour change	Practices and attitudes towards avoiding and reducing food waste are adopted and sustained	Changing consumer behaviour Engaging the workforce on food waste

Questions

