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UNIVERSITÀ DI BOLOGNA
DIPARTIMENTO DI SCIENZE E TECNOLOGIE
AGRO-ALIMENTARI

FOOD WASTE AND FOOD SECURITY: A FOCUS ON ITALY

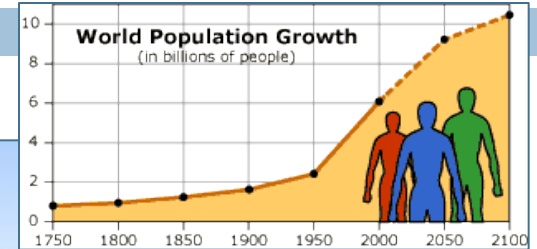
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THE CHALLENGE

“Agriculture in the 21st century faces multiple challenges: it has to produce more food and fibre to feed a growing population with a smaller rural labour force, more feedstocks for a potentially huge bioenergy market, contribute to overall development in the many agriculture-dependent developing countries, adopt more efficient and sustainable production methods and adapt to climate change.”

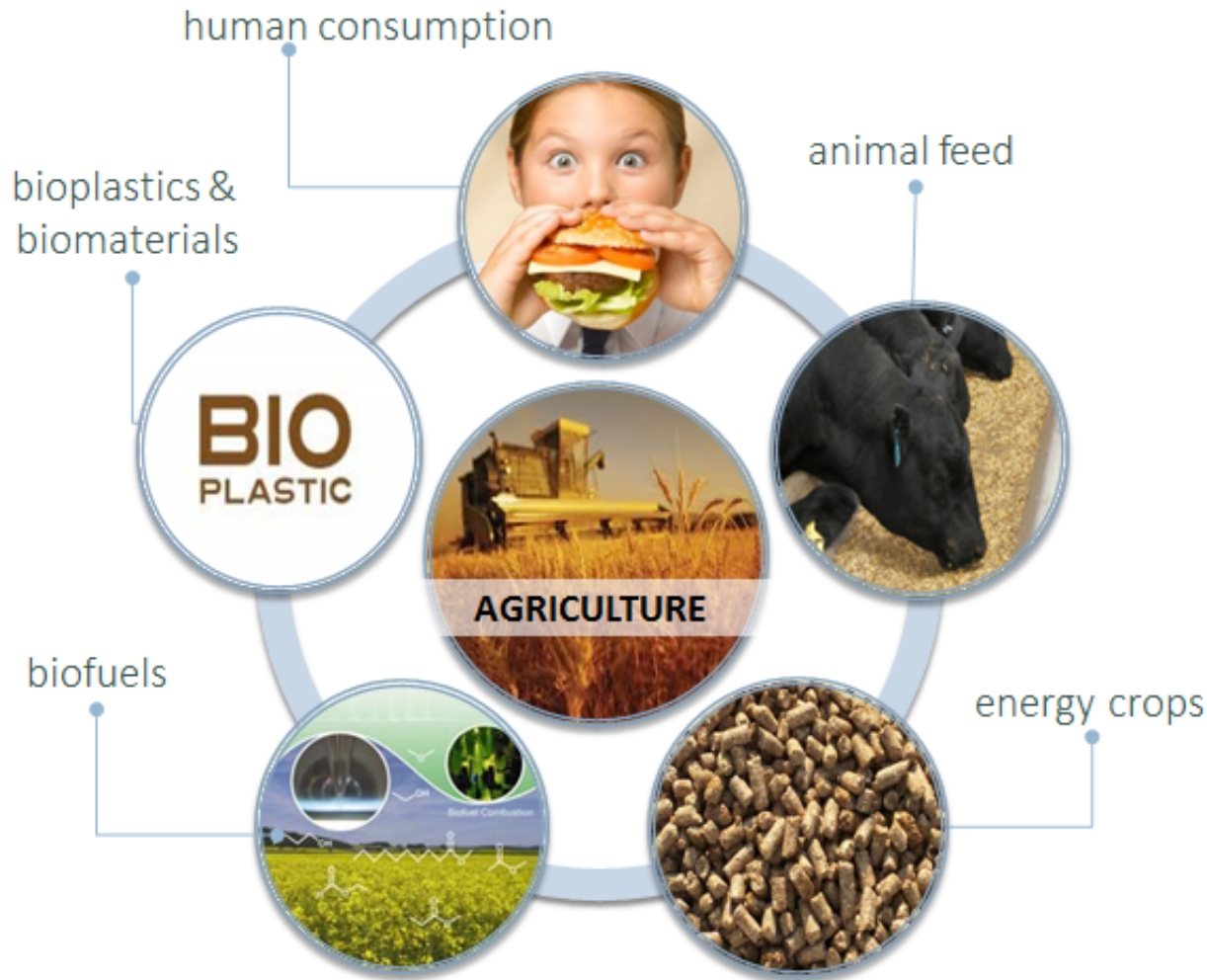


A PARAMOUNT QUESTION

How can the world adequately feed more than 9 billion people by 2050 in a manner that advances social and economic development while reducing pressure on ecosystems, climate, and water resources?



FOOD, FEED, FUELS ?



LAND GRABBING

“The first years of the twenty-first century will be remembered for a global land rush of nearly unprecedented scale. An estimated 500 million acres, an area eight times the size of Britain, was reported bought or leased across the developing world between 2000 and 2011, often at the expense of local food security and land rights”

Source: The Oakland Institute (OI), «Down on the farm» Report 2014

THE FRAMEWORK

sustainability of food production & consumption



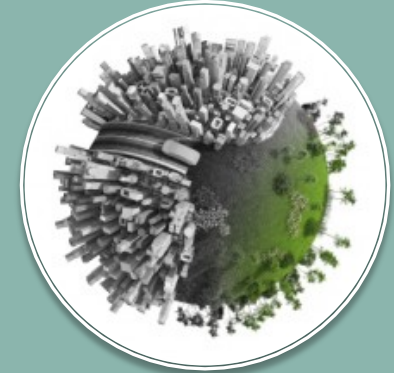
Food scarcity

- Denutrition
- Hunger
- Malnutrition
- Social injustice
- Food in-security



Resource consumption

- Soil consumption & land grabbing
- Water
- Energy



Environmental degradation

- Water pollution
- Global warming
- Soil degradation
- Desertification
- Biodiversity loss

Population growth, land competition, eating habits and behaviors

AN INCREASING FOOD DEMAND...

Rapidly growing *world's* population requires increased *food production* which is the greatest driver of resource consumption and *environmental* degradation throughout the *world*.

The demand for food is expected to increase by over 60% over the next 40 years. as the global population reaches over 9 billion ...



...WITH LIMITED RESOURCES

At the same time, the resource base of the agriculture sector is threatened by environment degradation, climate change, loss of biodiversity and ecosystem services...

Nevertheless, approximately one-third of all food produced for human consumption is lost or wasted at global level



DEFINING “FOOD WASTE”



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



“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).”



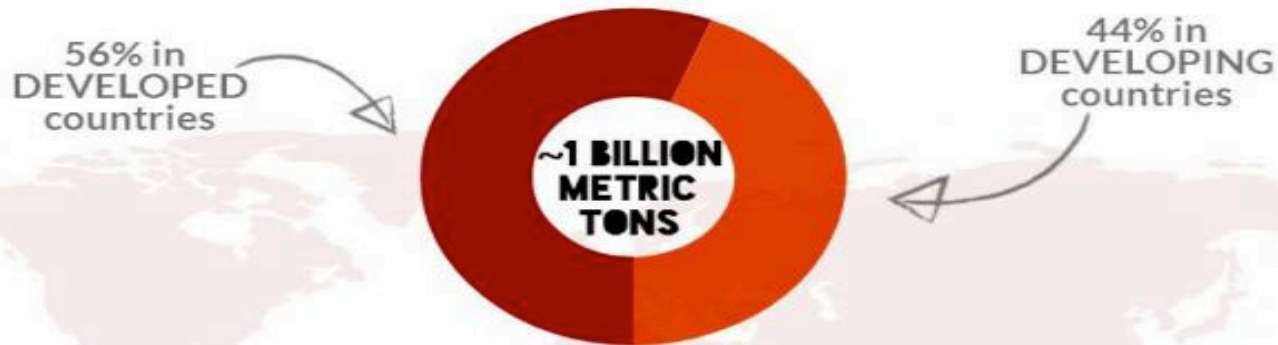
Avoidable: food and drinks that are thrown away despite still being edible;

Possibly Avoidable: food and drinks that some people consume and some do not or food that can be edible, if cooked;

Unavoidable: waste deriving from the preparation of food or drinks that are not, and could not, be edible.

FOOD (AND CALORIES) WASTE

HERE'S THE BREAKDOWN:



THOSE LOST CALORIES COULD FILL HUNGER GAPS IN THE DEVELOPING WORLD



Source : WORLDBANK

FLW IN EUROPE: SOME FIGURES

Over 100 million tons of food are wasted every year in the EU

(Source: 2014, Eurostat - European Union Committee)

EU food waste in % per food supply step



(Source: World Resources Institute)

The Netherlands → 47 kg of food waste per person per year = 150 euro

(Source: Netherlands Nutrition Center 2014)

France → 7.1 million tons of food waste → 67% wasted by households

A French consumer wastes between 20 and 30kg of food per year, of which 7 kg are products still perfectly packed

(Source: French Ministry of Agriculture 2015)

EUROPE'S BIGGEST FOOD WASTERS

EUROPE'S BIGGEST FOOD WASTERS

ALL FIGURES IN MILLIONS OF TONNES - COURTESY OF EUROPEAN COMMISSION



GB

14.391

0.225 per head

1



DE

10.387

0.129 per head

2

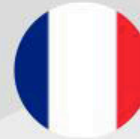


NL

9.456

0.563 per head

3



FR

9.078

0.137 per head

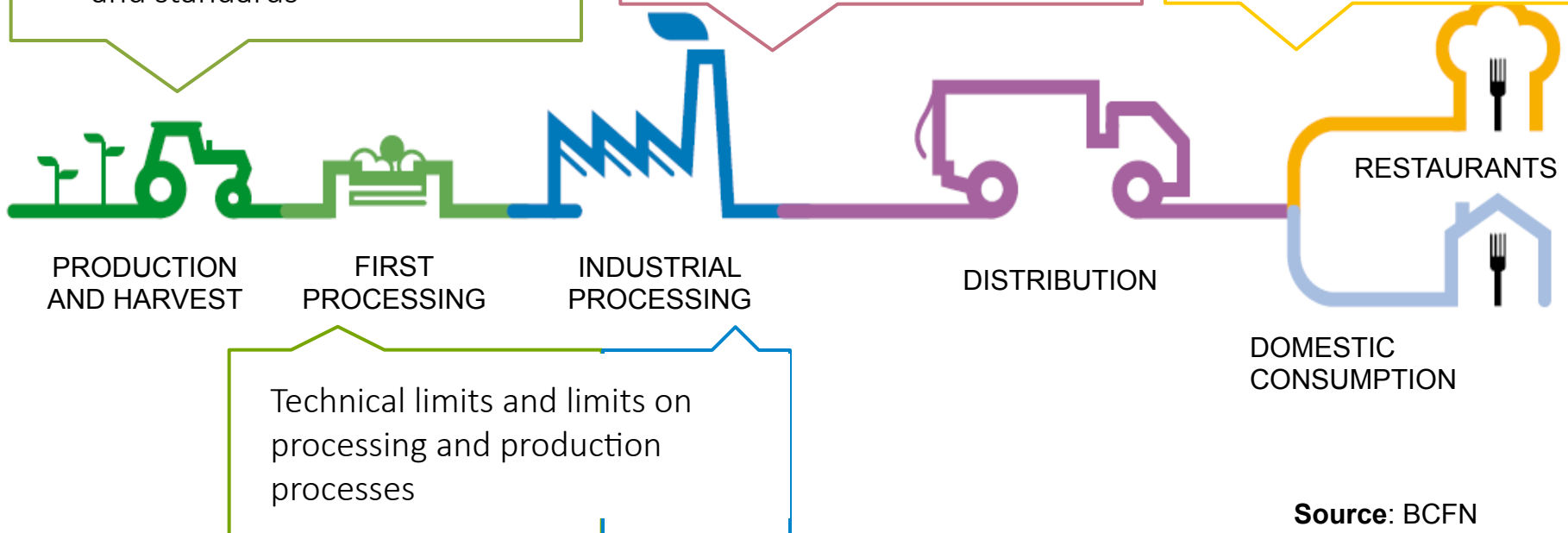
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THE CAUSES OF FOOD WASTE

- Limitations on agricultural techniques and transportation and storage infrastructure
- Climate and environmental factors
- Production surpluses
- Compliance with regulations and standards

- Limits on the distribution system
- Errors in order forecasting and management of reserves
- Deterioration of products and packaging
- Marketing and sales strategies

- Excess purchases
- Excess portions prepared
- Difficulty in correctly understanding the labeling
- Errors in food storage



GLOBAL FLW: THE IMPACTS

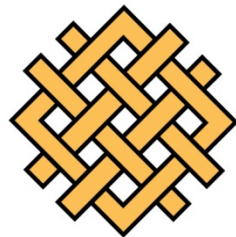
We know that throwing away food also means wasting limited natural resources - **soil, water, energy** - used to produce, process and distribute the products, then to dispose of the waste, thus having a negative impact from an ecological, economic and social point of view



A word cloud of terms related to food waste impacts, including **Waste**, **Soil**, **Water**, **Ecological**, **Energy**, **Economic**, **Limited**, and **Social resources**.

FOOD WASTE RELATED IMPACTS ARE MORE AND MORE BECOMING A GLOBAL CONCERN

Main international organisations (and projects) engaged in food waste prevention and reduction



WORLD
RESOURCES
INSTITUTE



WHAT IS ITALY DOING TO PREVENT/REDUCE FOOD WASTE

other main areas of activities



One year against waste

A Last Minute Market (LMM) European Campaign against food waste

Waste Watcher

The observatory is made by Last Minute Market in collaboration with SWG

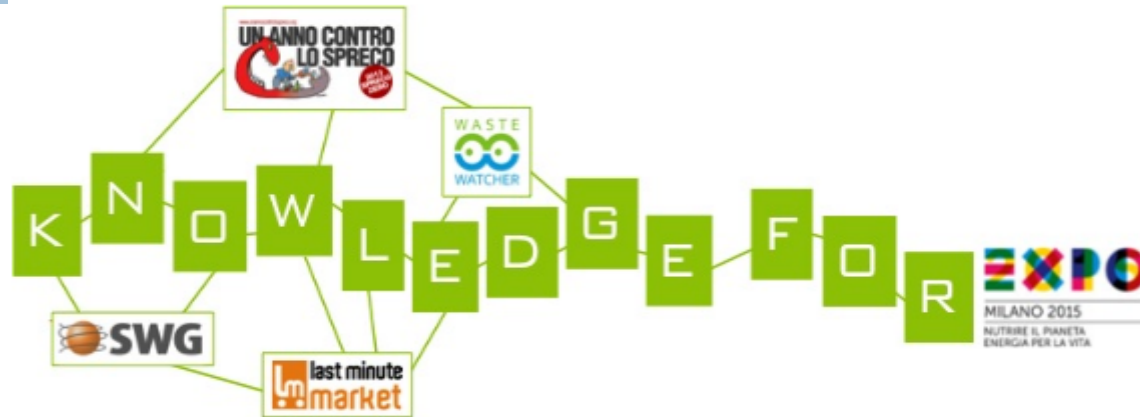
PINPAS

The national (Italian) food waste prevention plan

Sprecozero.net

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

WASTE WATCHER SURVEY - KNOWLEDGE FOR EXPO



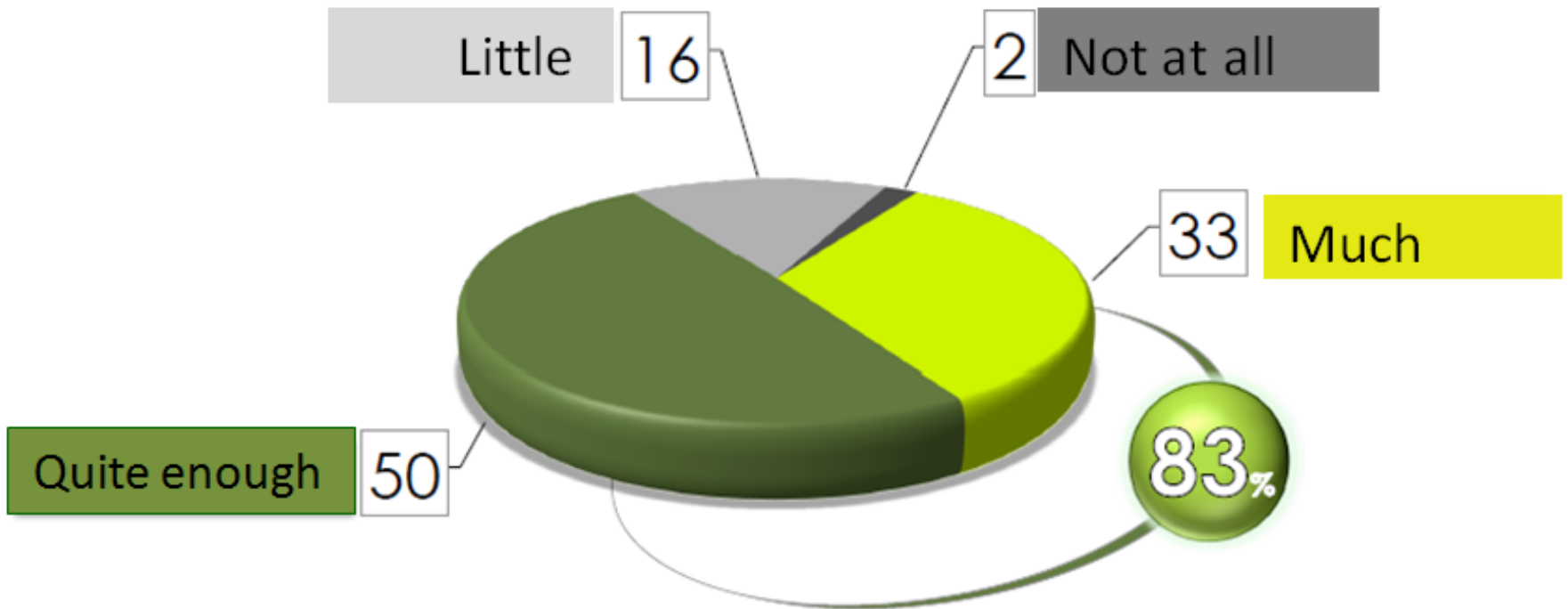
LAST MINUTE MARKET and SWG have started some studies – diachronically published until the end of EXPO2015 - on Italian domestic food waste, its causes and impacts. The aim is to spread knowledge and culture on FW, and to provide an active support to EXPO2015 and its objectives. The last survey has been published on the 6 June 2015 and is based on a sample of 1.500 Italians.

FOOD WASTE IN ITALY (2014)

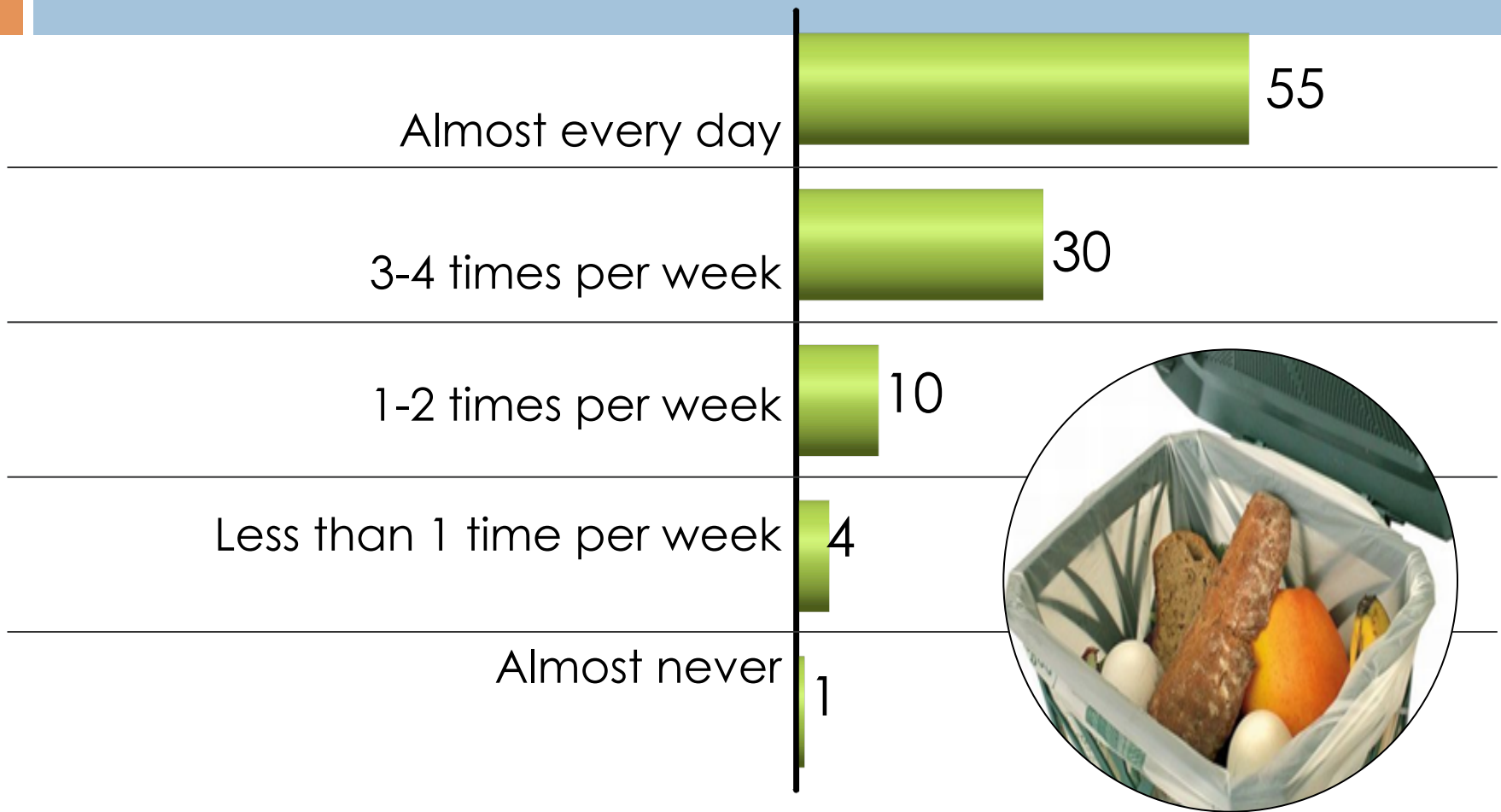
Domestic food waste value in billions euro	8,1
Domestic food waste value per family per week in euro	6,5
Domestic food waste value per family in gramms	630



DOES FOOD WASTE WORRY YOU?



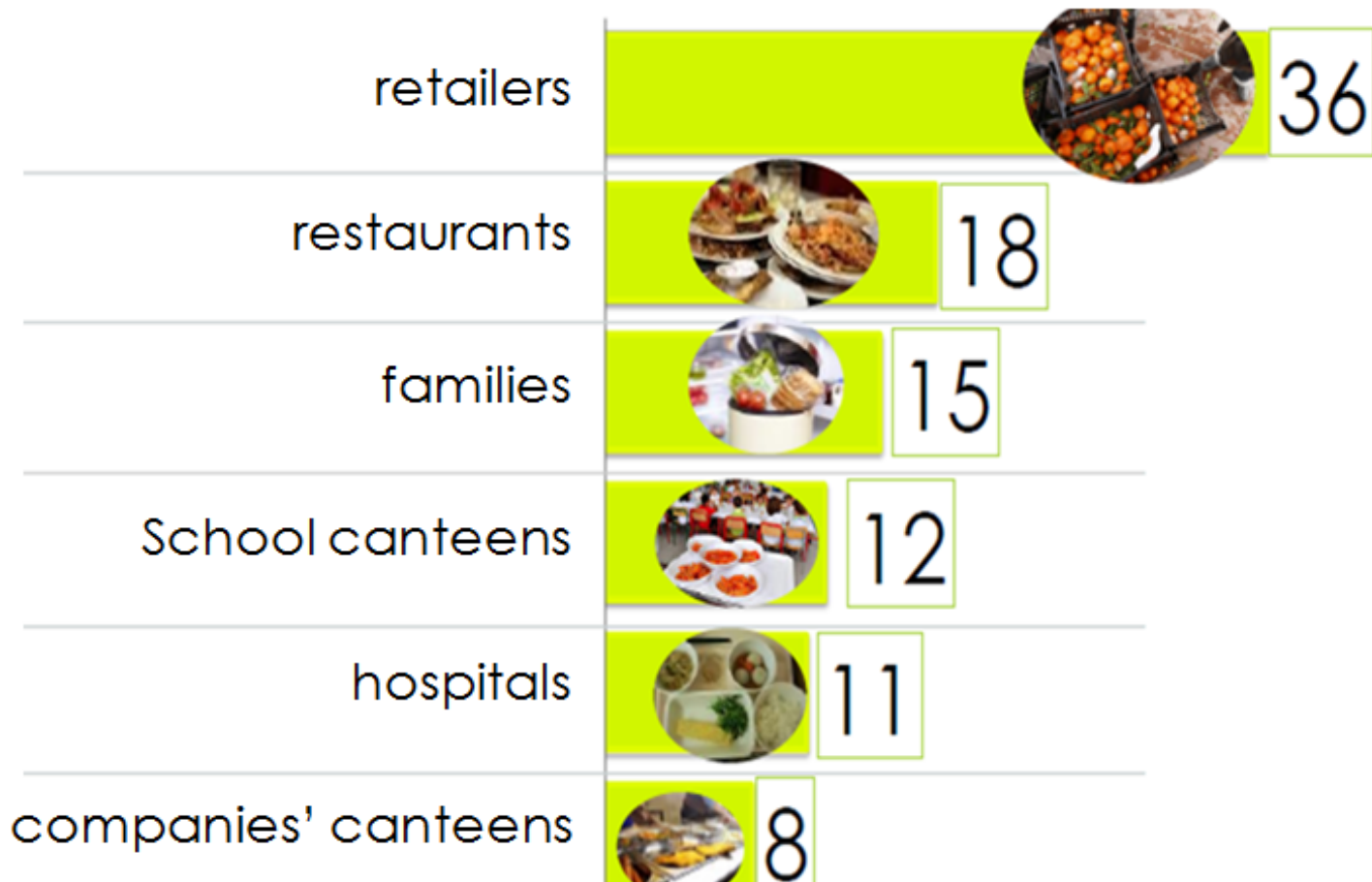
HOW OFTEN DO ITALIAN FAMILIES THROW FOOD AWAY?



Values in %.



WHO WASTES THE MOST IN % IN ITALY



WHY ITALIAN FAMILIES WASTE FOOD



POSSIBLE SOLUTIONS TO FOOD WASTE ?

On a scale from 1 to 10, the Italian families interviewed for the survey have scored the importance of some measures to prevent and reduce food waste

Education in schools 8,3

Clearer labelling 8,2

Raise awareness on the env.
impact of food waste 8,1

Smaller packaging 7,7

Introduce Pay as you Throw
Schemes 7,3

Raise food prices 5,1



TECHNOLOGIES

Which technologies do you think could be useful to reduce food waste?

Smart packagaing chainging colour according to food freshness	76%
Control systems for fridge temperatures	75%
Shopping planning systems	67%
A display on the fridge saying when the food is going to expire	61%
Technologies to extend food life	59%
others	22%

Values %.



CONCLUSIONS

In 2015 the level of concern about the environment, the individual health and the quality and nutritional value of food has increased among the Italian population.

In general terms food waste emerges as one of the major issues when the Italians reflect about Italy 's future.

Fighting food waste has become part of those actions that could ensure the well-being of the community.



THANK YOU FOR YOUR ATTENTION

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