

FOOD ATLAS

OF THE NETHERLANDS



NOORDHOFF ATLAS PRODUCTIONS

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3 Ten statistics on hunger

1 **805 million** people, out of a world population of 7.2 billion, do not have enough food to eat. In 1990, this figure was still over 1 billion.

2 The vast majority (**791 million**) of the world's hungry people live in developing countries, where 14.3% of the population is malnourished.

3 Asia is the continent with the most hungry people: **525 million**. Sub-Saharan Africa is the region with the highest prevalence of hunger: 23.8% of the population.

4 If female farmers had the same access to resources as their male counterparts, the number of hungry people could be reduced by **150 million**.

5 Each year, **3.1 million** children under the age of five die of malnutrition. That is 45% of the total number of deaths among children aged under five.

6 One in six children – roughly **100 million** – in developing countries is underweight.

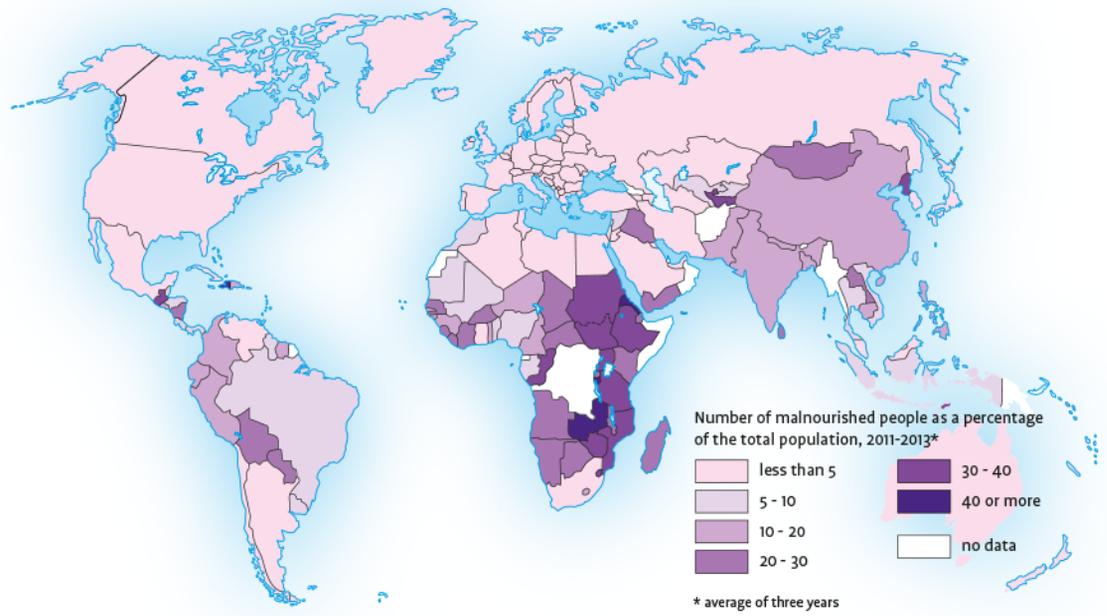
7 In developing countries, approximately **200 million** children (one in three) suffer from stunted growth. Seen globally, one in four children is too small.

8 Of the children suffering from stunted growth, **80%** live in just 20 countries.

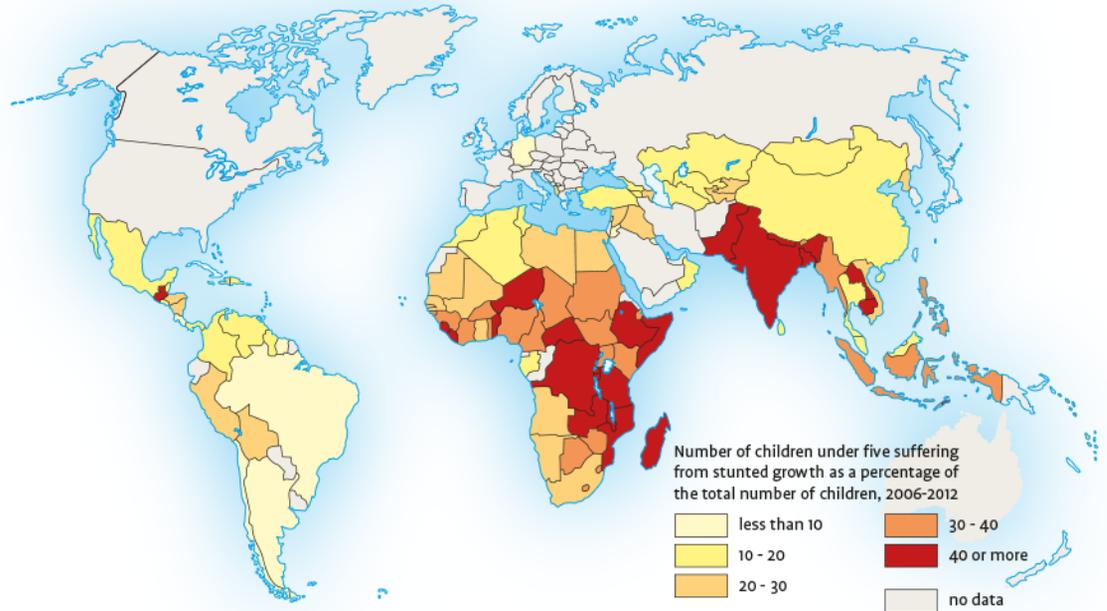
9 **66 million** primary school-aged children attend classes hungry. 23 million of these children live in Africa.

10 The UN World Food Programme calculates that an annual amount of **3.2 billion dollars** is required to ensure that these 66 million children do not attend classes hungry.

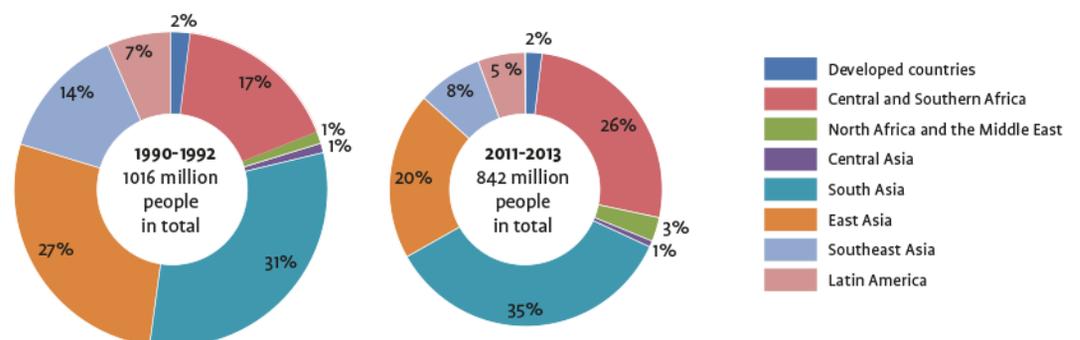
4 Malnutrition in the world



5 Stunted growth in children under the age of 5



6 Malnutrition by region



4 Malnutrition in Asia and Africa

Most people suffering from malnutrition live in Asia, particularly in China and India. However, malnutrition is most common in Africa, where it affects around one in four of the population. The main causes are a lack of effective infrastructure for distributing food, a lack of funds for seeds and manure and inadequate knowledge of how to improve crop yields.

5 Stunted growth

More than a quarter of all children under the age of five suffer from stunted growth. Stunted growth is caused by nutritional deficiencies and practically only occurs in developing countries. While it is a common problem in Africa and Asia, Afghanistan, Burundi and Yemen are the hardest hit, with up to 50% or more of young children being too small for their age.

6 Less hunger due to economic growth

Since 1990, economic growth has helped to reduce the number of people with not enough to eat from more than 1 billion to 842 million. The exceptions are West Asia and Africa where malnutrition has increased due to political instability, increasing food prices and shortages of fertile soil and water. Expensive food imports are required to compensate for shortages.

Plant breeding

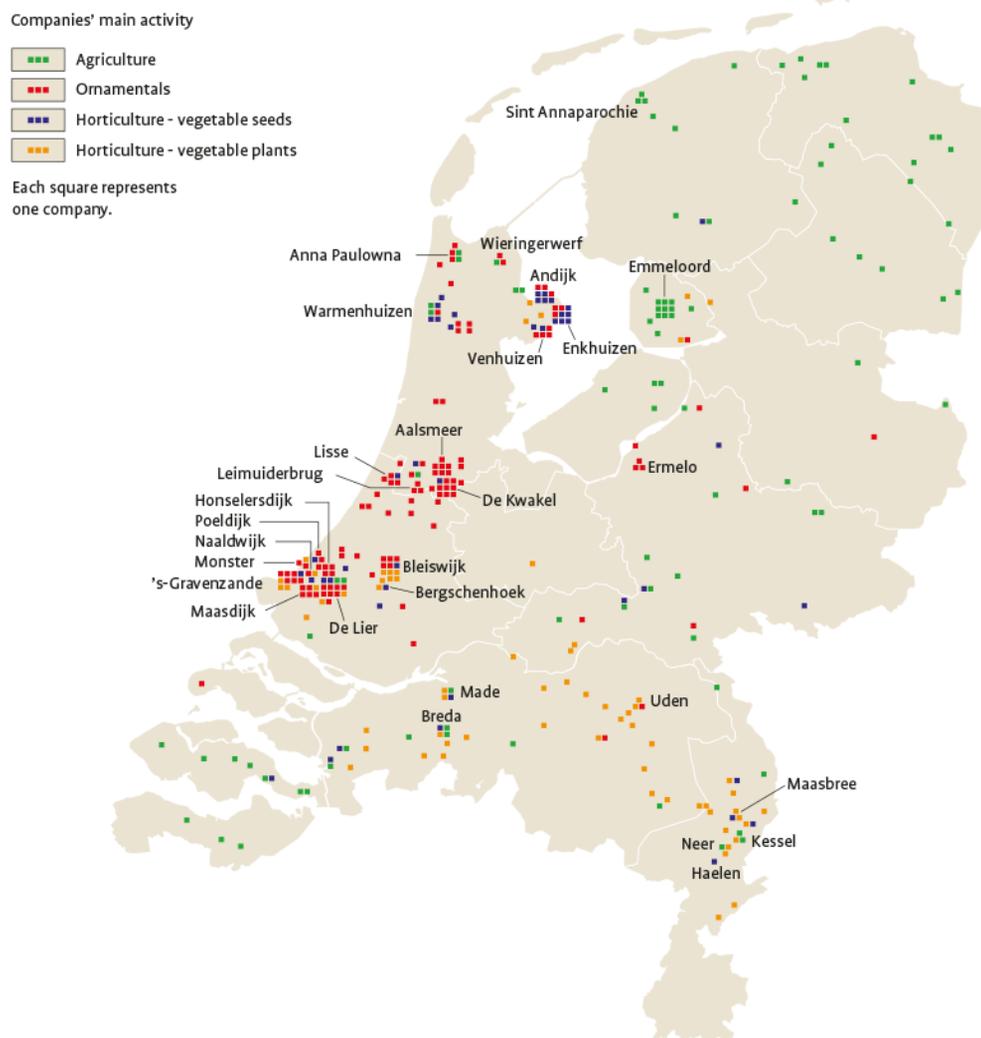
Improving plant reproductive material, such as seeds and propagation material, is crucial in feeding the world. Higher yields can be achieved by creating new plant varieties, which are also more pest-resistant. The Netherlands is responsible for almost 35% of the global horticulture and farming seed trade, a figure that rises to almost 60% for seed potatoes.

Knowledge-intensive

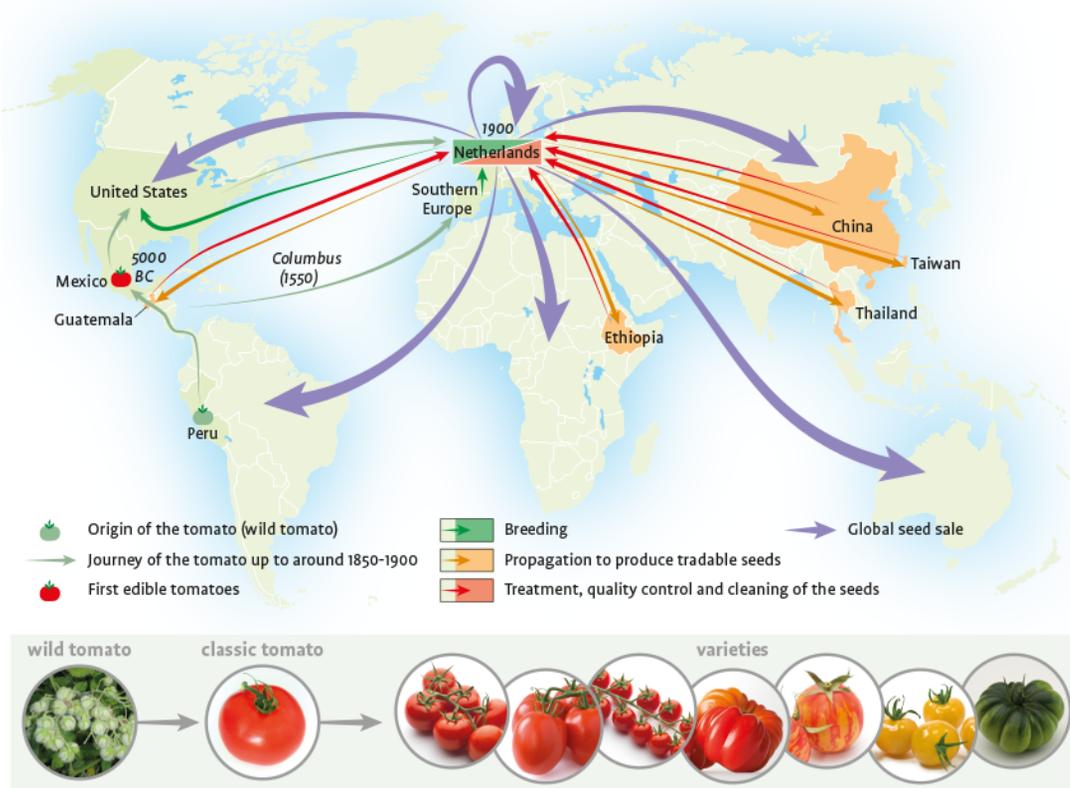
Plant breeding is the art of combining as many desirable traits as possible within one plant variety. Once a new variety has been created, it is propagated and traded. Developing a new variety is very expensive and often takes years. Plant breeders can recover part of their development costs by applying for a breeder's right, the exclusive right to propagate and trade the plant varieties they have developed. The Netherlands submits over 30% of applications for breeders' rights, more than any other country in the world.

The Dutch are global players when it comes to knowledge-intensive plant breeding, and companies in the industry have close ties with knowledge institutions, colleges and universities. Dutch plant breeders have many international business locations, mainly because of the climate conditions and space they offer.

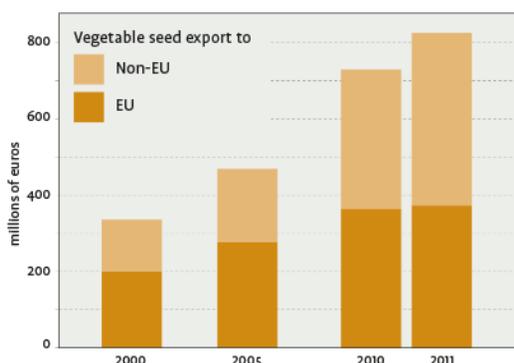
1 Companies in the plant reproductive material sector



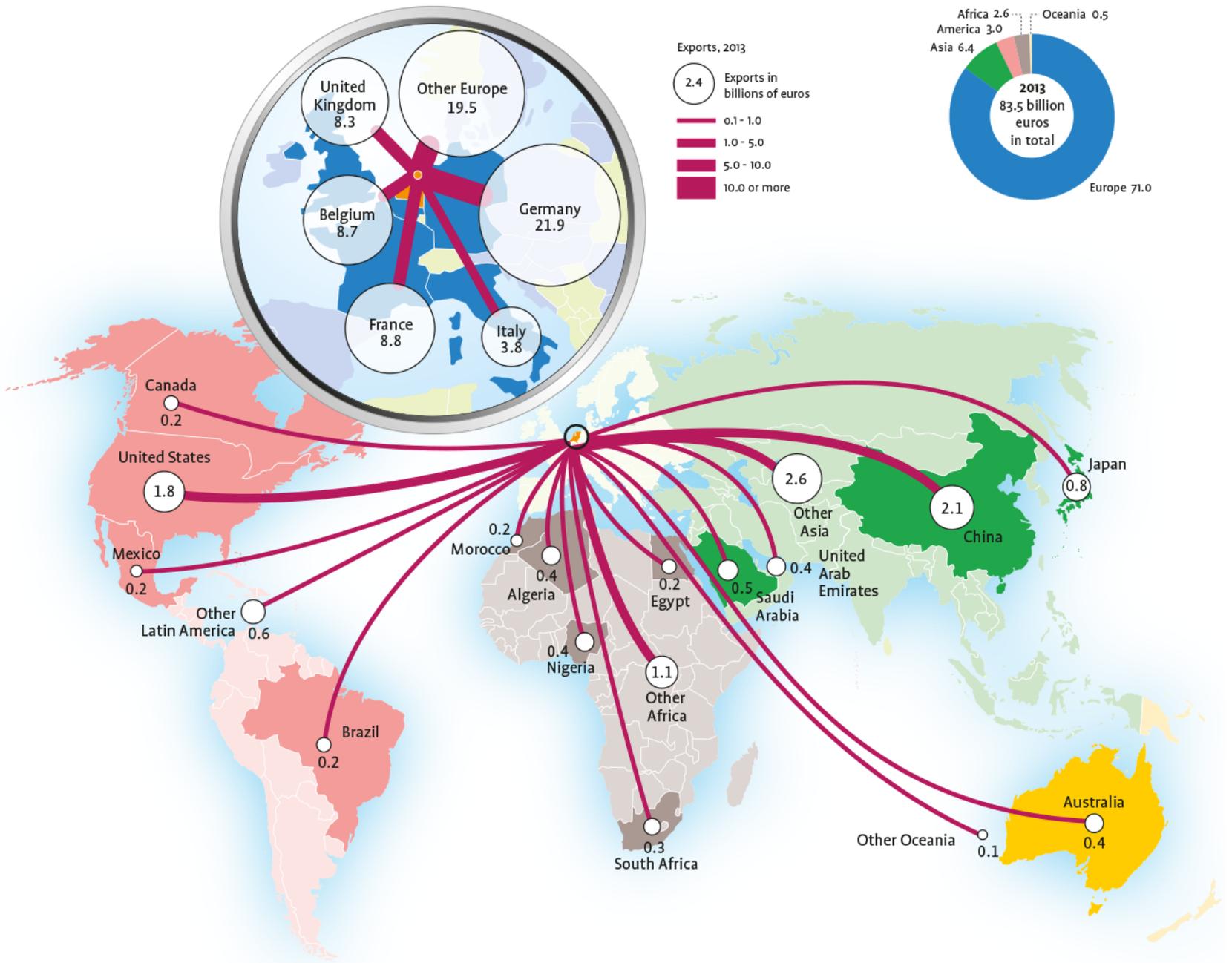
2 Dutch tomato breeding



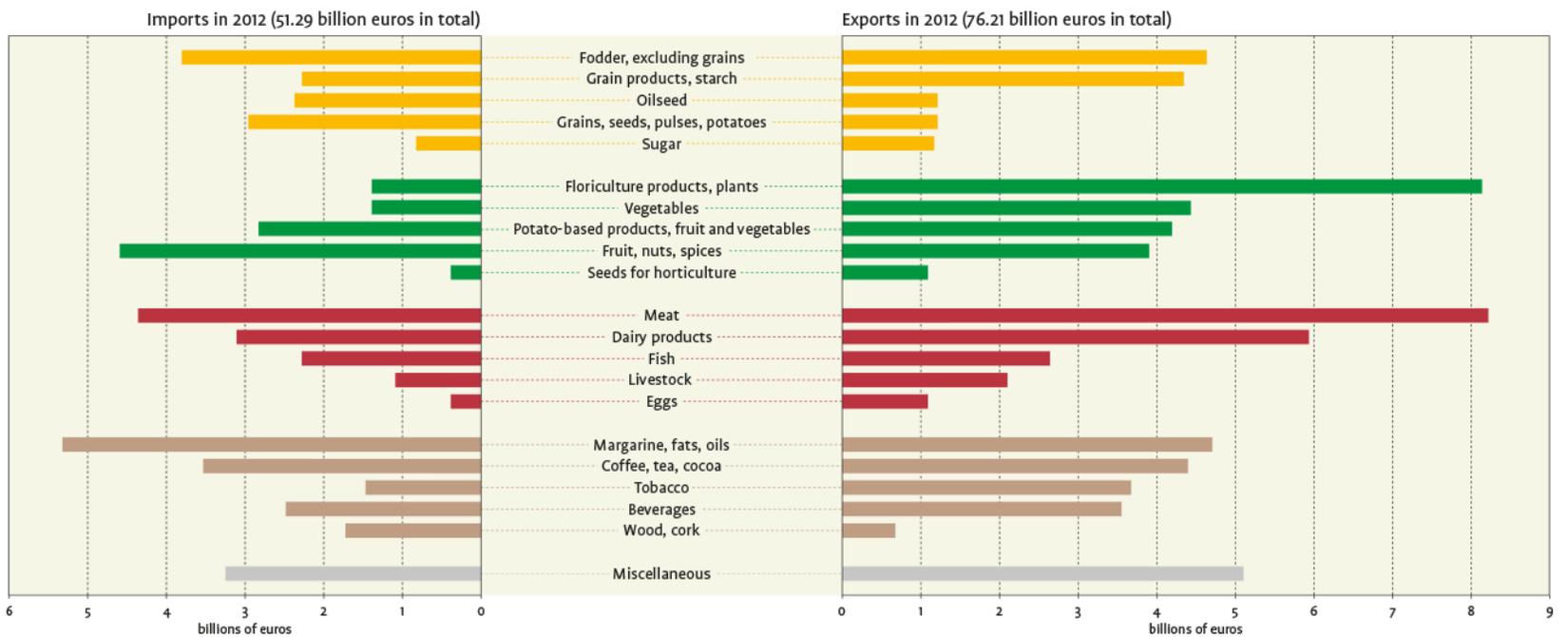
3 Export of vegetable seeds from the Netherlands



3 Dutch food exports



4 Dutch imports and exports of agricultural produce



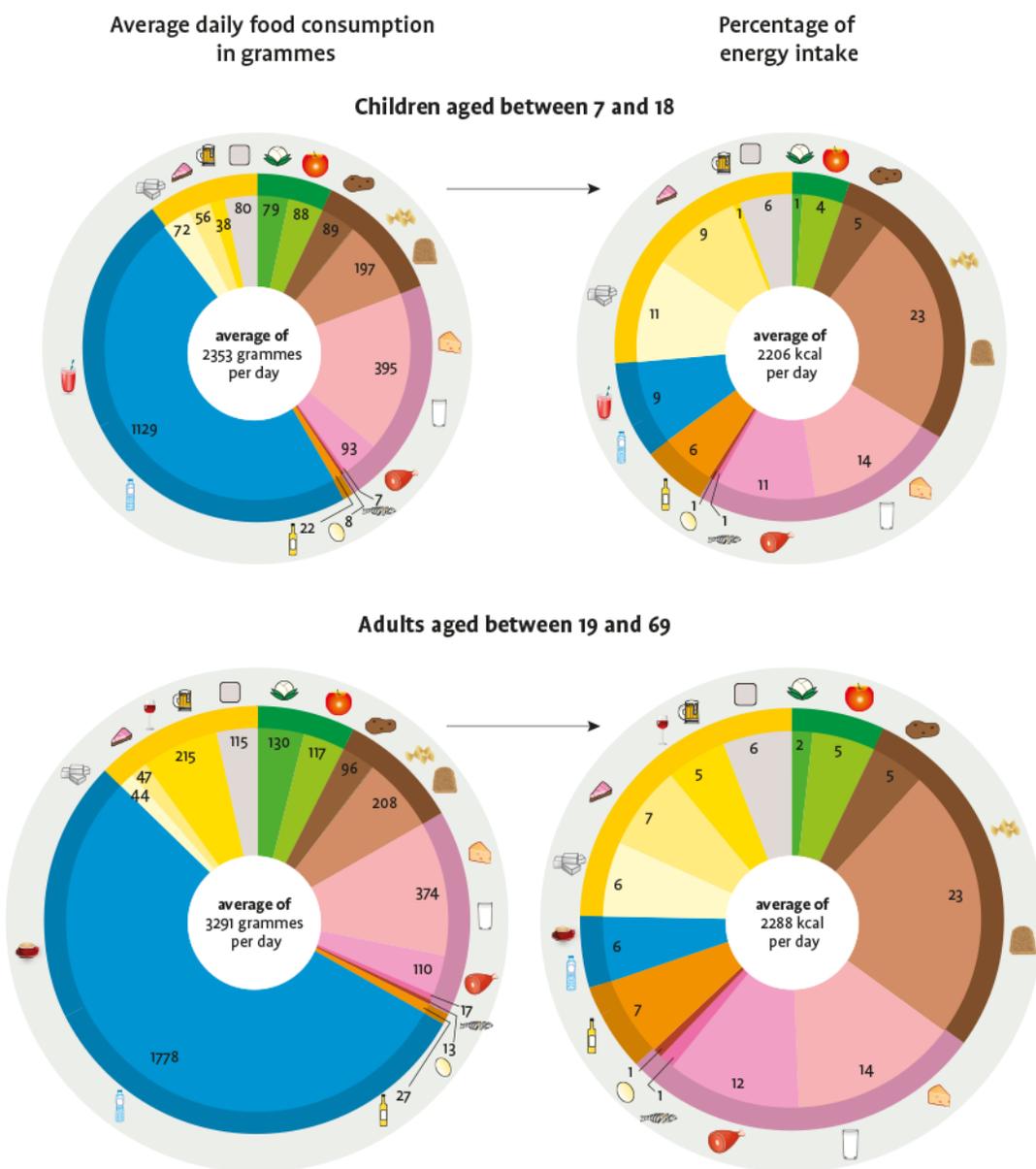
Source: Eurostat, amended by LEI Wageningen UR (3, 4)

Our daily food

Eating is not purely about ensuring we get enough carbohydrates, protein, fats, vitamins, fibre and minerals. Certain foods are simply tasty or match our lifestyle. As a result, we consume more of some nutrients than necessary and our intake of other nutrients is less than ideal. What we eat speaks volumes about who we are. Cosmopolitans, for instance, treat themselves to Thai food, while consumers from the modern mainstream segment eat unlimited spare ribs and convenience-oriented people go for chips or pizza.

Since 1987, nutritionists in the Netherlands have recorded on a national scale what people eat, where, at what time of day and how large the portions are. Regular extensive National Food Consumption Surveys are used to collect this information about the eating behaviour of the population as a whole and of distinct groups, such as children, adults, elderly people living in their own homes, men, women, and both highly and less educated people.

1 Average food consumption by children and adults



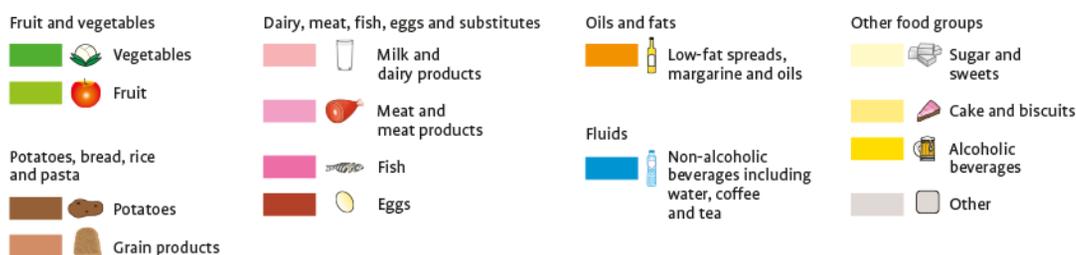
1 - 2 More fish, more fat and more fruit and vegetables

Water, coffee, tea and other non-alcoholic beverages account for approximately half of everything we consume. These beverages deliver relatively little energy: 5.5% of the daily intake for adults and 8.7% for children.

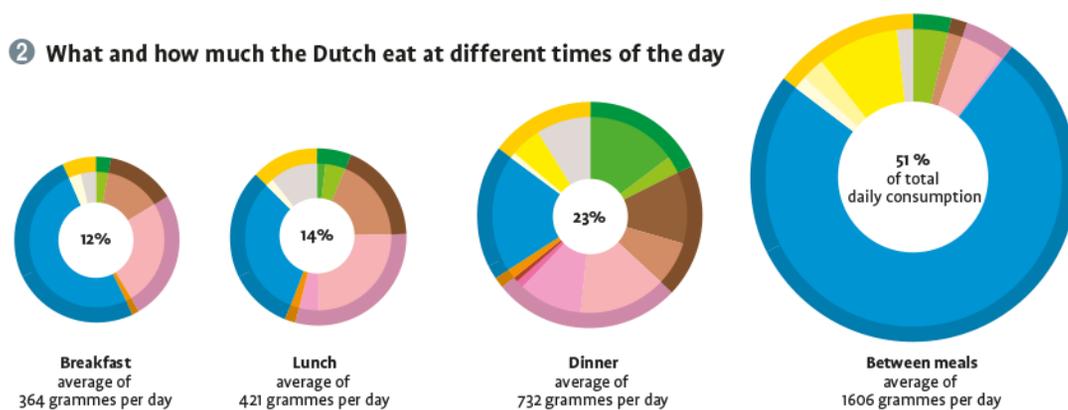
Adults not only eat more than children, they also eat differently: more fish, more fat and more fruit and vegetables. Adults and children eat roughly the same amount of snacks, which deliver up to a quarter of their daily energy requirement. Adults eat fewer sweets than children, but drink alcoholic beverages.

Most Dutch people consume three meals a day and also eat and drink a lot between meals. This delivers 30% of their total calorie intake.

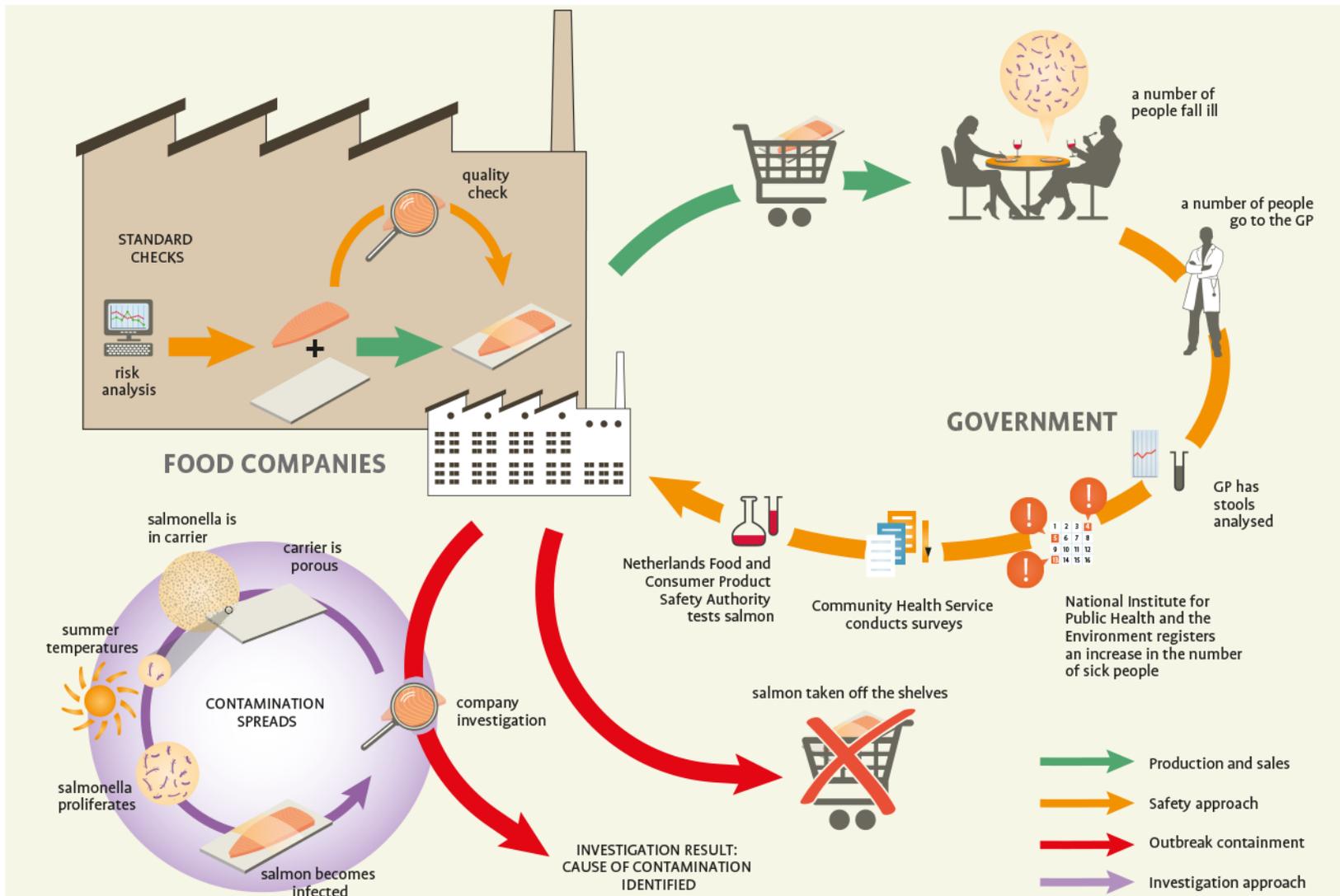
What they eat depends on the occasion and time of day. Potatoes, vegetables, meat and fish are consumed for dinner, fruit and non-alcoholic drinks mainly between meals, and grain and dairy products for breakfast and lunch.



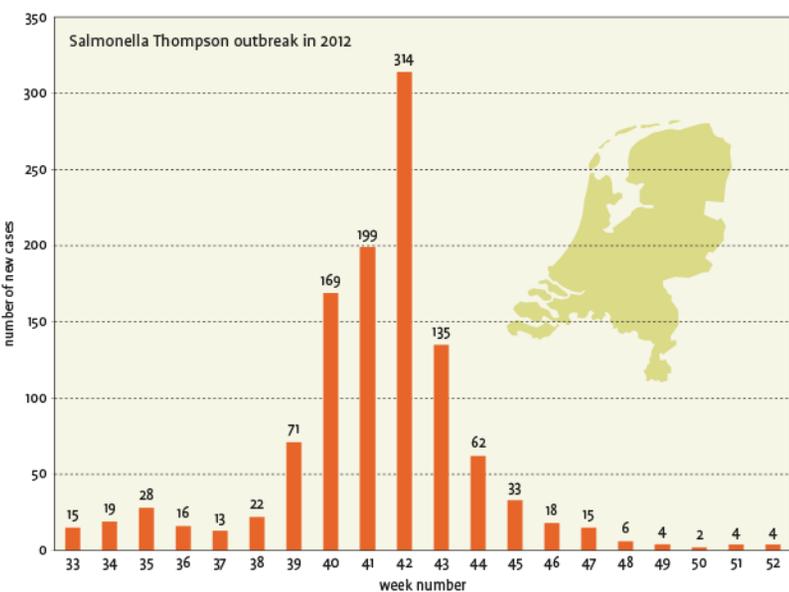
2 What and how much the Dutch eat at different times of the day



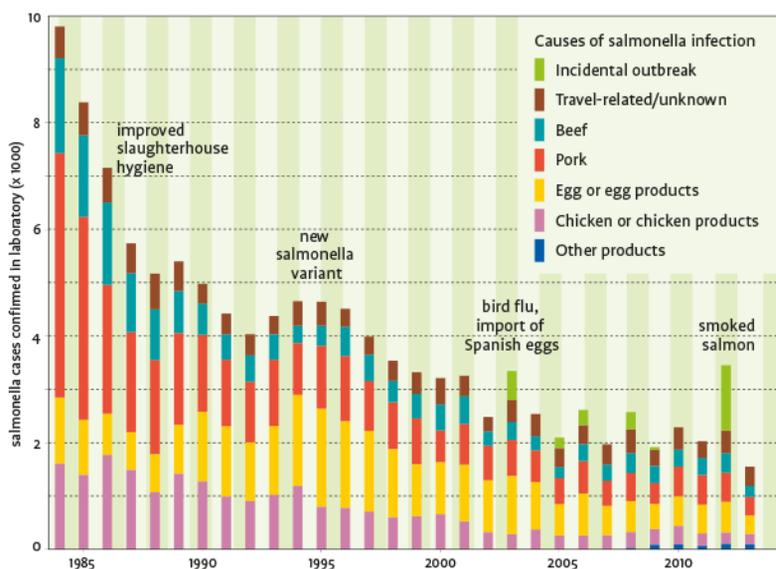
3 Contaminated food: salmonella outbreak of 2012



4 Rise and decline in the number of salmonella cases in the 2012 outbreak



5 Development in the number of salmonella cases



3 Contaminated salmon

In 2012, 20,000 people contracted an intestinal infection after eating smoked salmon that contained salmonella. Four elderly patients died. The salmon was contaminated by salmonella bacteria in the porous plastic layer on transport trays, which were stored in an unrefrigerated facility in Greece during the summer.

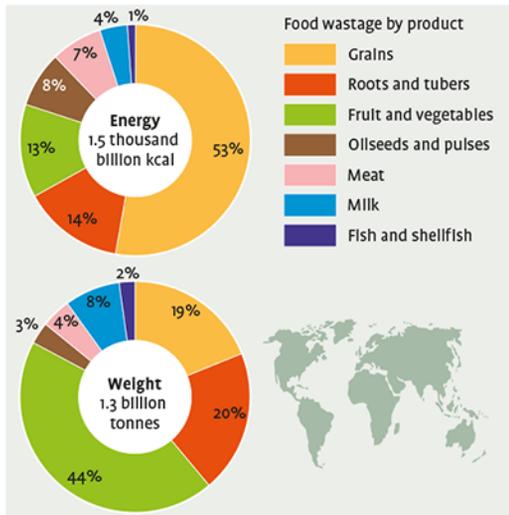
4 Rise and decline during an epidemic

Not everyone who eats contaminated salmon falls ill, and not everyone who falls ill goes to the doctor. As there is no obligation to report the matter, the infection's cause can only be established in some patients (1149 of an estimated 20,000) after laboratory tests. The graph shows the typical rise and decline in the number of infected patients during a salmonella outbreak.

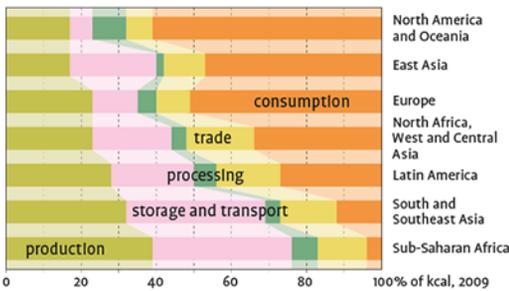
5 Food poisoning cases on the decline

Better hygiene in the food production process has structurally reduced the number of salmonella cases, but there was a temporary increase in the mid-1990s when a new variant of the bacteria was found in eggs. The peaks in 2003 and 2012 can be attributed to increased imports of eggs (a shortage of Dutch eggs due to bird flu) and to the contamination of smoked salmon.

5 Food waste by product



6 Food waste by phase



5 - 6 Before or after purchase

In terms of energy (calories), global food losses mainly consist of grains. When expressed in terms of weight, we mainly waste fruit and vegetables. In developing countries, a lot of food is lost during harvest, storage and transport and never reaches the consumer, but consumers throw away very little of the food bought. In industrialised countries, consumers actually throw away a lot of food after purchase.

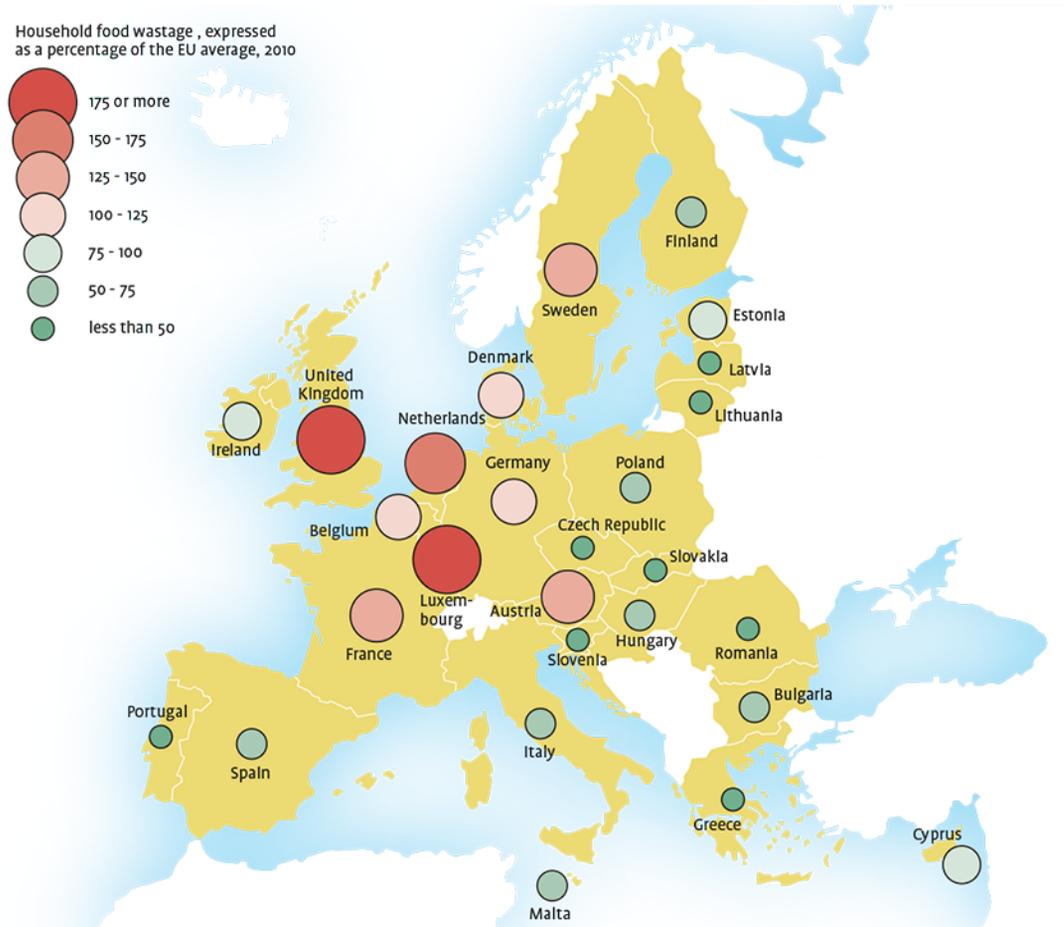
7 Food waste in the EU

Dutch households throw 50% more leftover food away than the average resident of the 27 EU member states. Less food is wasted in the Netherlands than in the UK and Luxembourg, but more than in Germany and France. Food waste seems much lower in Eastern and Southern Europe, but methods used to measure food waste are not the same everywhere and are not always equally accurate.

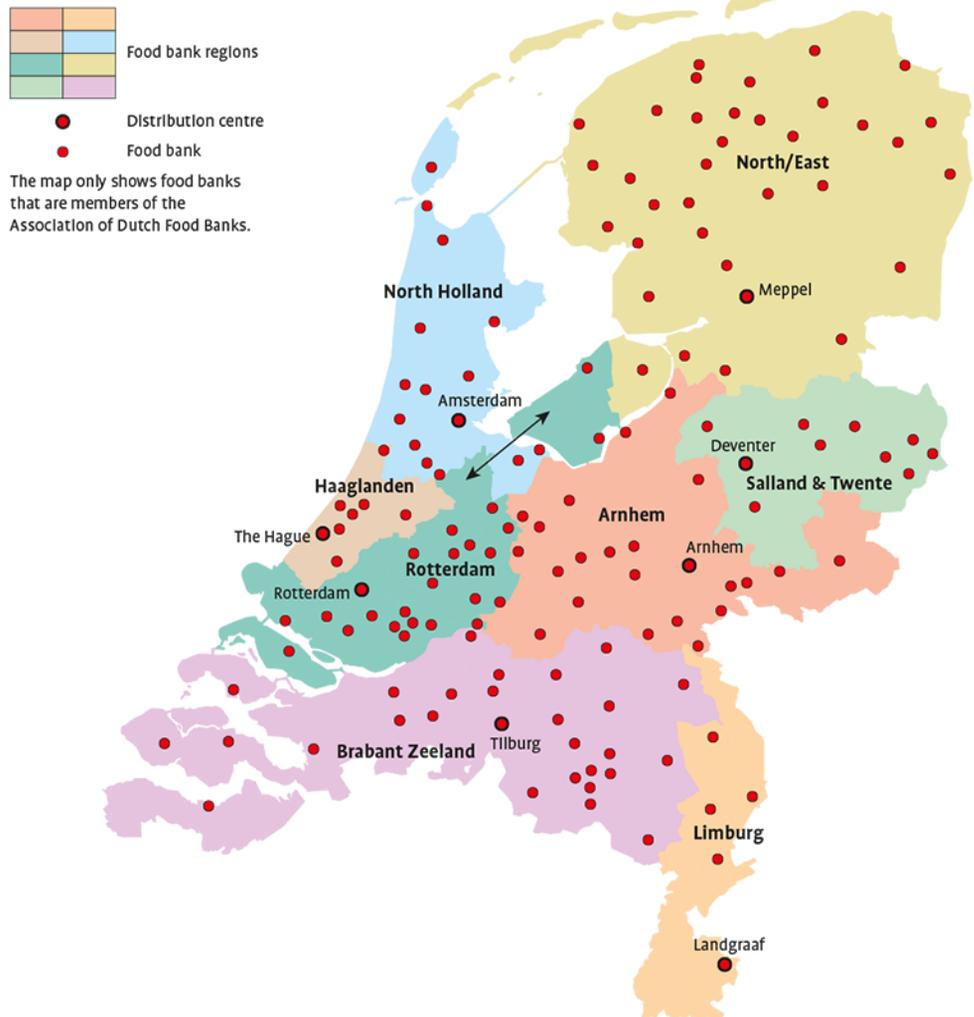
8 Use of unsold food by food banks

There are 148 food banks in the Netherlands and 475 distribution points. People who live below the poverty line receive food parcels here, consisting of food that would otherwise be thrown away. Even though this food is put to good use, food banks do not play a significant role in preventing food waste.

7 Household food waste

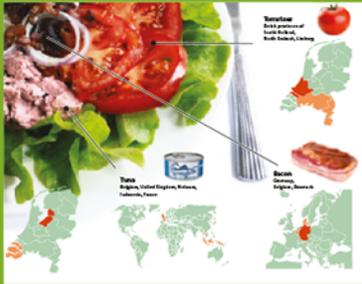


8 Food banks



FOOD ATLAS OF THE NETHERLANDS

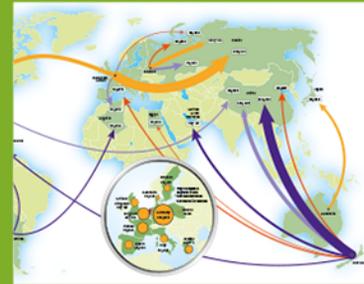
A JOURNEY INTO THE WORLD OF FOOD



Feeding the world



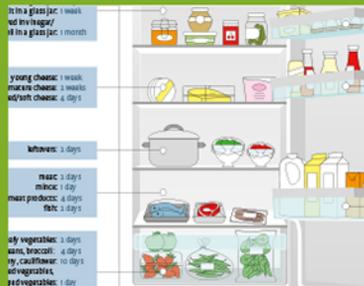
Food production



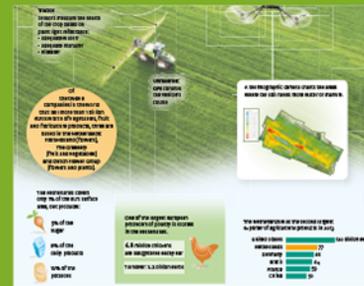
Trade and distribution



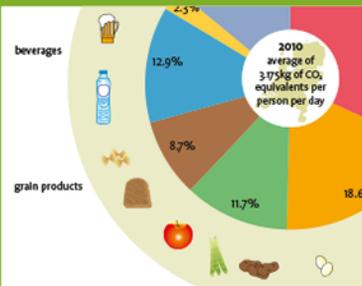
Food consumption



Food and health



Economy and society



Environment and climate



Increasing sustainability



Food in the regions



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ISBN 978-90-01-12250-8



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