



FOOD FOR THOUGHT

KADIR VAN
LOHUIZEN

18

38

42

116

158

204

244

FOOD FOR THOUGHT
KADIR VAN LOHUIZEN

THE TRUTH ABOUT OUR FOOD
IMKE J.M. DE BOER

FROM CHEESE TO KNOW-HOW
THE NETHERLANDS

FARMING IN THE DESERT
SAUDI ARABIA AND THE UNITED
ARAB EMIRATES

BIG, BIGGER, BIGGEST
THE UNITED STATES

EUROPE'S VEGETABLE GARDEN
KENYA

ROBOTS AND MEGA-STABLES
CHINA

SAUDI ARABIA

105 KG

KENYA

99 KG

THE UNITED ARAB EMIRATES

95 KG

CHINA

64 KG

THE NETHERLANDS

50 KG

THE UNITED STATES

59 KG

**Household food waste estimates
per capita per year, 2021**

Contrary to popular belief, these figures show that there is not a large difference between industrialised and developing countries. In developing countries, a greater proportion of food is lost during production, storage and transport.

FROM CHEESE

The Netherlands might be tiny in size, but it has become the world's second-largest exporter of agricultural products by value, behind the United States. This is all the more amazing considering the scarcity of agricultural land and the rainy climate. Factored into the export numbers are transshipments – the Netherlands is a major hub for many products, with the ports of Rotterdam and Amsterdam and Schiphol Airport. Rotterdam is the largest port in Europe and ranks amongst the biggest ports in the world. Amsterdam is the largest soy port in Europe. Soy comes in from Brazil and the United States for the Dutch market and is transshipped to other destinations in Europe, mainly to be processed into animal feed.

TO KNOW- HOW

THE NETHERLANDS

- ◻ CAPITAL CITY
- HUMAN SETTLEMENT
- MAJOR AIRPORT
- ⊙ MAJOR PORT
- × IRRIGATED CROPLANDS
- + RAIN-FED CROPLANDS
- ≡ WATER



CAPITAL
Amsterdam

TOTAL AGRICULTURAL
LAND AREA
18,120 km²

POPULATION
17,700,982

GROSS DOMESTIC PRODUCT
€ 936 billion

TOTAL LAND AREA*
33,670 km²

(= 53.8% of total land area)

POPULATION DENSITY
521 people per km²

AVERAGE ANNUAL INCOME
€ 36,341

* The aggregate of all land within international boundaries and coastlines, excluding water area.

THE NETHERLANDS

When we think of agricultural products, we quickly think of onions or tomatoes, but it is also about flowers, know-how and technology. Thanks to innovative techniques, such as growing crops in greenhouses, state-of-the-art vegetable seed-breeding technology and the intensive use of agricultural land, the Netherlands has the highest food production level per hectare in the world. Cheese, eggs, seeds, tomatoes, onions, cucumbers, peppers, pork, chicken and veal, as well as technology, experience and knowledge, are sent all over the world. The Netherlands exported €122.3 billion worth of agricultural goods in 2022. At the same time, the Netherlands also imports many products for almost the same value, and 75% of the food the Dutch eat comes from abroad.

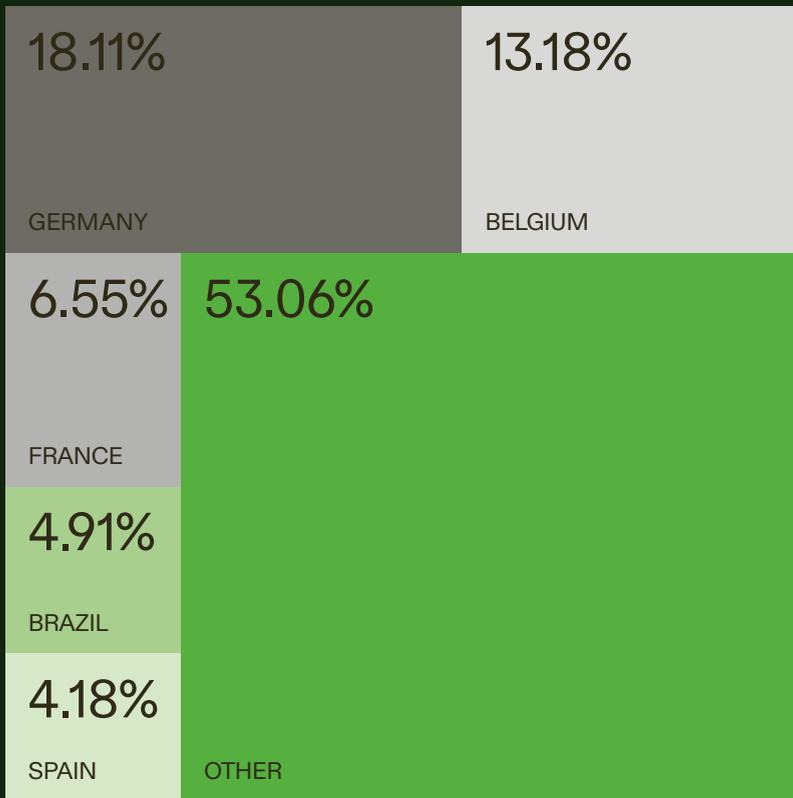
53.8% of the land in the Netherlands is used for agriculture, with over 10,500 hectares¹ of crops growing in greenhouses. Next to almost 18 million human inhabitants, the Netherlands is also home to a large number of livestock – almost 4 million cattle, a little over 11 million pigs² and 100 million chickens.³ Nearly half of all Dutch cattle are dairy cows, and most pigs are bred for meat. The Netherlands accounts for 8% of the pigs being raised in all of the European Union.

The average livestock density in the EU in 2020 was 0.7 livestock units per hectare, with the Netherlands at the top of the EU statistics with 3.4 animals per hectare.⁴ This density offers opportunities with regard to efficiency and scalability, but it also poses a vulnerability concerning highly contagious diseases like African swine fever, bluetongue disease and avian influenza. Next to these challenges, there are major reforms ahead for the intensive Dutch animal agriculture industry as part of a plan to halve the emissions of nitrogen oxides and ammonia by reducing the number of animals. Transportation and industry are the main emitters of nitrogen oxides, and intensive high-density farming practices are the main source of ammonia emissions and methane. Methane is responsible for 20% of the enhanced greenhouse effect warming the earth, according to *Climate Change 2021*, the Sixth Assessment Report of the Intergovernmental Panel on Climate Change. It's released naturally, but an overwhelming percentage is caused by human activity, such as the fossil fuel industry, factory farming and the waste disposal industry.

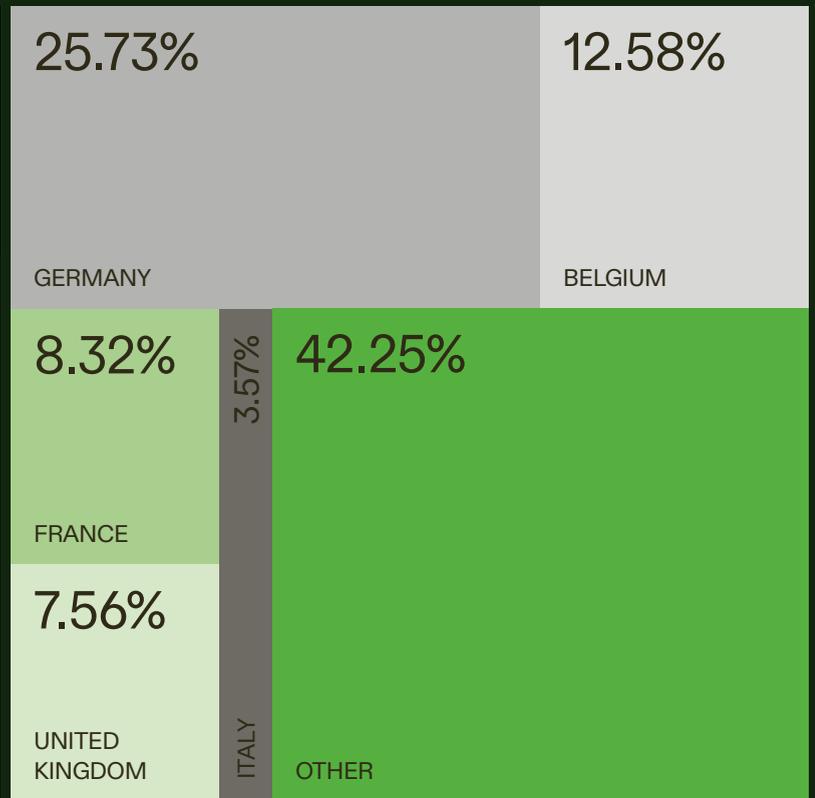
The Netherlands is among the largest exporters of agricultural and food technology. Not only can you find Dutch greenhouses and greenhouse techniques all over the world, but the Dutch have also pioneered seed technology and robotics in milking and harvesting. Wageningen University is the leading agricultural university in the world, and it, along with specialised companies, is spearheading innovations that focus on everything from decreased water usage to reduced carbon and methane emissions as well as strip farming. Dutch growers use only half a gallon of

The Netherlands
exported €122.3 billion
worth of agricultural
goods in 2022.

☑ COUNTRIES FROM WHICH THE NETHERLANDS IMPORTED THE MOST FOOD IN 2021



☑ COUNTRIES TO WHICH THE NETHERLANDS EXPORTED THE MOST FOOD IN 2021



☑ TOTAL VALUE OF EXPORTED AGRICULTURAL GOODS IN THE NETHERLANDS IN 2022

TOTAL
€122.3 BILLION

☑ IN 2020, THE NETHERLANDS CONSUMED, PER CAPITA

■ THE NETHERLANDS
□ WORLD AVERAGE



☑ ENKHUIZEN

Onion seed at one of the leading seed companies in the Netherlands.

☑ ASIA, NAALDWIJK

Asia is a seed company which provides the majority of tomato seeds to Agro Care. This is their seed storage for tomato seeds. Values fluctuate, but one kilo of tomato seeds can be as valuable as a kilo of gold.

☑ SYNGENTA, ENKHUIZEN

Pollination is done by hand or by bees. Syngenta was once a Dutch seed company (Sluis & Groot). It was first acquired by Sandoz, then by Novartis/AstraZeneca, and sold in 2017 to ChemChina for €43 billion.







☑ AL AIN FARMS, ABU DHABI (UAE)
Al Ain Farms has 360,000 chickens, which produce 90 million eggs per year.

☑ AL AIN FARMS, ABU DHABI (UAE)
Next to the egg-laying hens, Al Ain has 7 million broiler chickens, which are raised for their meat.









☑ CUILINGXI VILLAGE, SHOUGUANG

Shouguang, part of the province of Shandong, is known as the hometown of Chinese vegetables. Its products are sold to more than 300 large and medium-sized cities in China and 27 other countries, including the US and Japan.

☑ CUILINGXI VILLAGE, SHOUGUANG

During the night, these traditional greenhouses are covered with large blankets to prevent the greenhouses from cooling down. At the start of the day, the blanket is removed. For this reason, heating or cooling the greenhouses is not necessary.

☑ SHOUGUANG, WEIFANG

From the high-speed train that cuts through Shouguang, you get a great view of the endless rows of greenhouses and the size of the production.







▣ AGRIGARDEN, KUNSHAN

At these highly automated greenhouses, lettuce and tomatoes are being grown. Harvesting is done manually, but there are also harvest robots, which is unique.