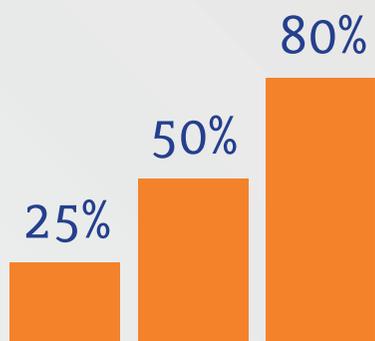


## Flowers and plants in Holland



We produce 50% of all the flowers worldwide, 25% of the plants and shrubs and 80% of the flower bulbs.

## Food production in Holland

# 4.6 billion

We are the world's biggest exporter of fresh vegetables, with 4.6 billion kilograms of vegetables exported every year.

# 2<sup>nd</sup>

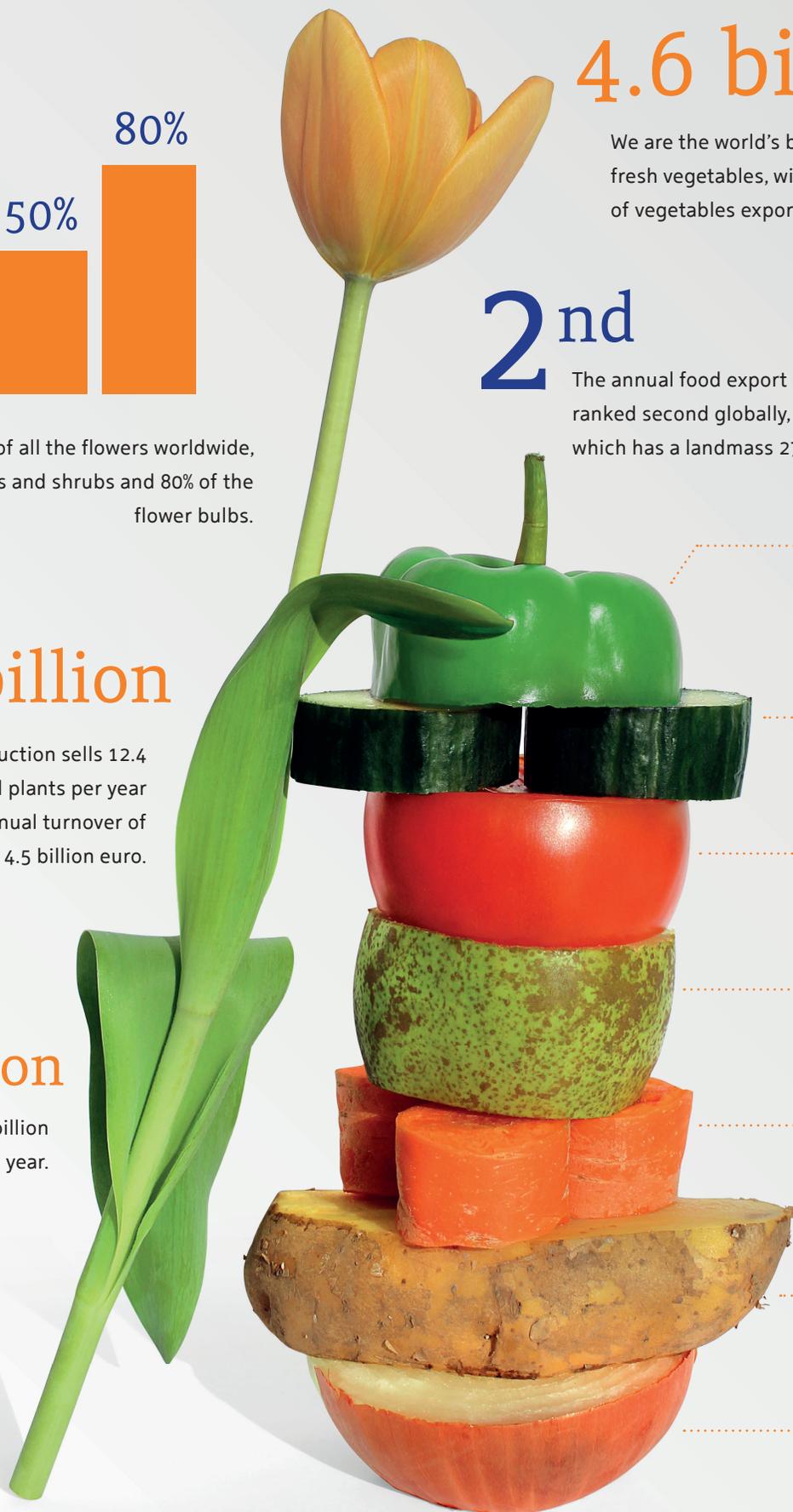
The annual food export measured by value is ranked second globally, below the United States, which has a landmass 270 times as large.

# 12.4 billion

The biggest flower auction sells 12.4 billion flowers and plants per year and has an annual turnover of 4.5 billion euro.

# 4.3 billion

We export 4.3 billion tulip bulbs a year.



**No. 1**   
312\*  
Chillies and green peppers

**No. 1**   
811\*  
Cucumbers

**No. 1**   
557\*  
Tomatoes

**No. 2**  
45\*  
Pears

**No. 5**  
66\*  
Carrots

**No. 5**  
50\*  
Potatoes

**No. 5**  
50\*  
Onions

## Gateway to our Horticulture

In times of global, social and economic challenges, the Dutch find ways of how innovation and entrepreneurship can continue to grow. Horticulture is one of the key sectors ('Topsectors') of the Dutch economy: government, knowledge institutes and companies work together in order to remain a leader in solving global challenges.

Set up by key horticultural companies in the Netherlands, Holland Horti International represents the Dutch horticultural sector on a global scale by stimulating, facilitating and coordinating international business relations. Holland Horti International is business oriented, non-competitive and brings together the strengths, expertise and experience of the participating companies. We build international horticulture connections!



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[www.hollandhortiinternational.nl](http://www.hollandhortiinternational.nl)

## Learn more

**Ministry of Agriculture, Nature and Food Quality**  
[www.government.nl](http://www.government.nl)

**Dutch Horticulture**  
[Dutchhorticulture.nl](http://Dutchhorticulture.nl)

**Wageningen University**  
Research institute in international greenhouse horticulture  
[Wageningenur.nl](http://Wageningenur.nl)

Associations:

**Anthos**  
Nursery stock and flower bulbs  
[Anthos.org](http://Anthos.org)

**AVAG**  
Greenhouse development  
[avag.nl](http://avag.nl)

**Fresh Produce Centre**  
Vegetables and fruits  
[Groentenfruihuis.nl](http://Groentenfruihuis.nl)

**Plantum**  
Breeding, tissue culture, production/ trade of seeds and young plants  
[Plantum.nl](http://Plantum.nl)

**VGB**  
Floriculture  
[VGB.nl](http://VGB.nl)

## Colofon

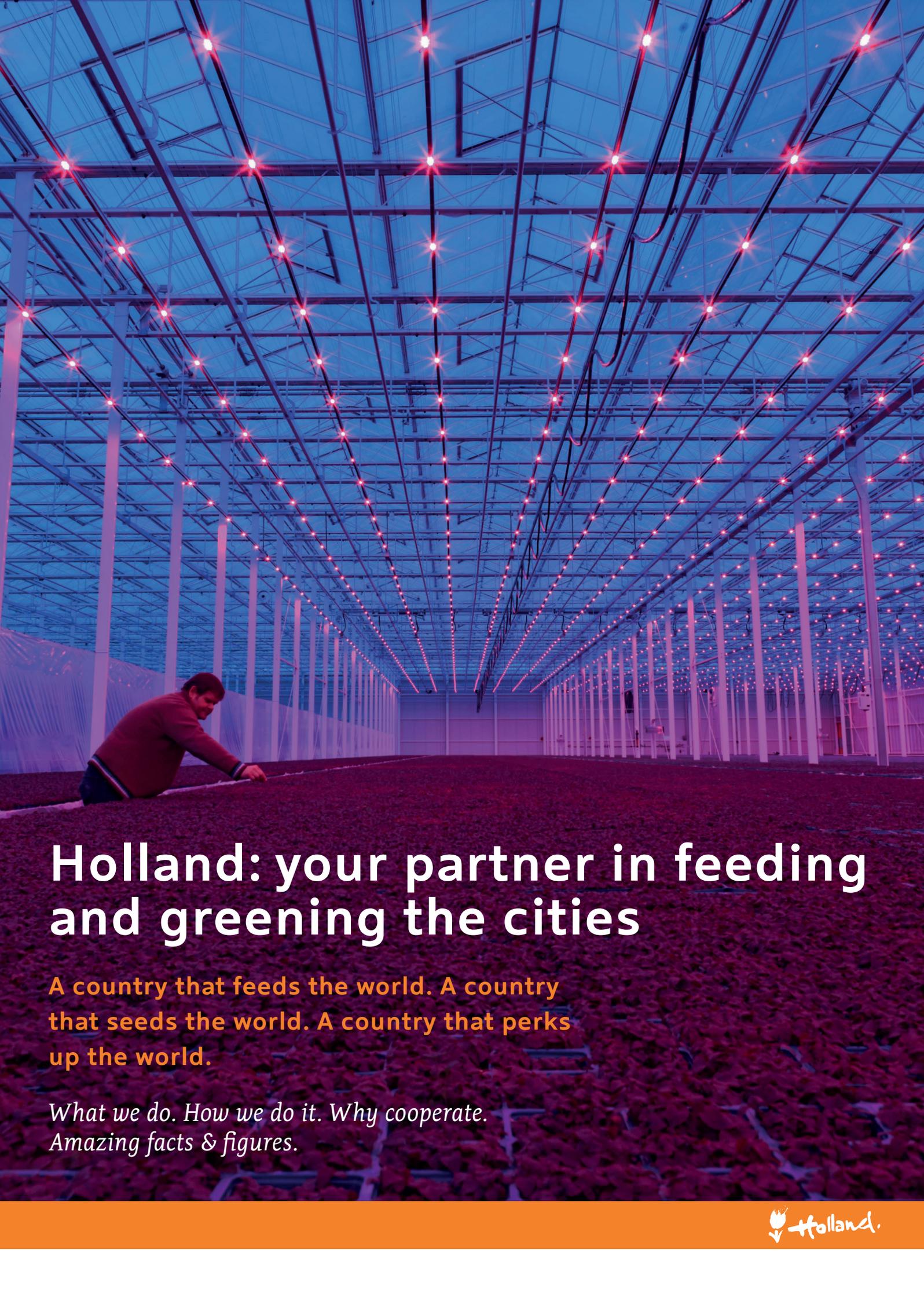
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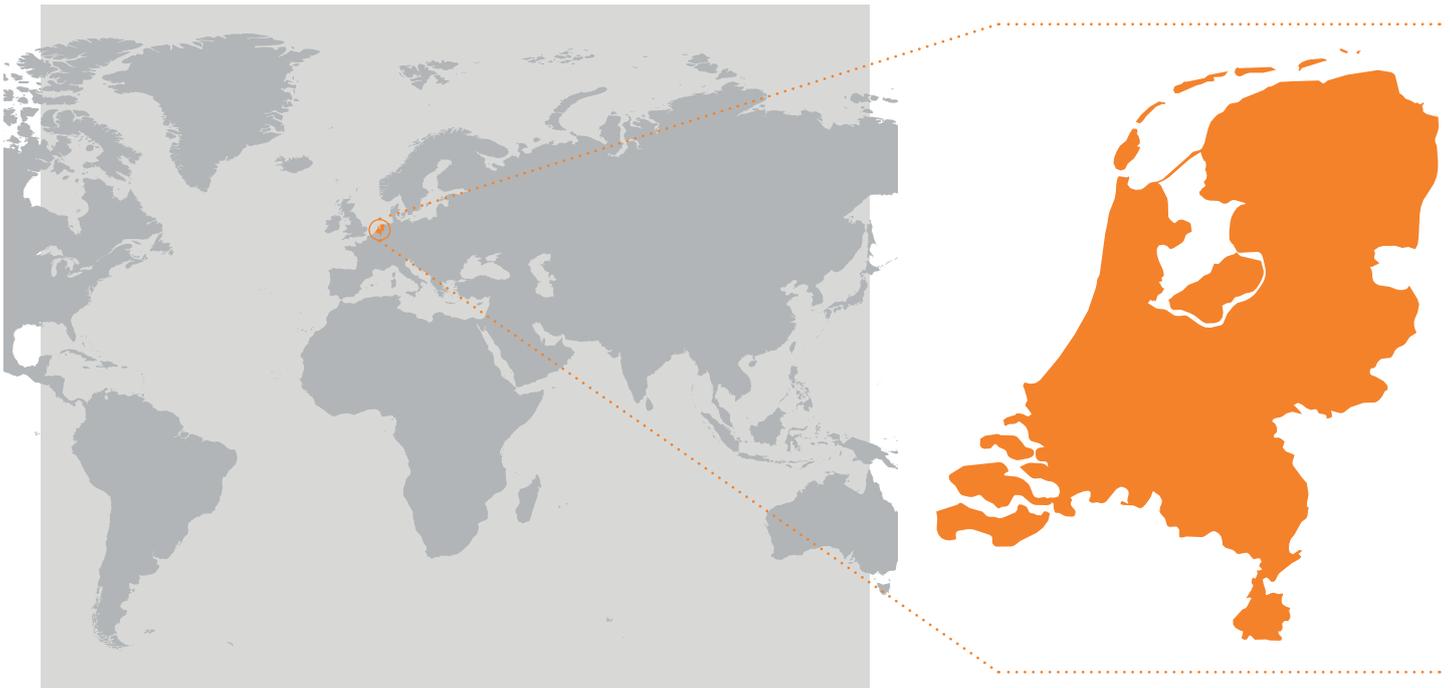
A large indoor greenhouse with rows of plants and a worker in the foreground. The structure is supported by a complex metal framework with numerous vertical and horizontal beams. The ceiling is covered with a grid of lights, and the floor is filled with rows of plants. A worker in a dark jacket is visible in the lower left, tending to the plants. The overall atmosphere is one of a modern, high-tech agricultural facility.

# Holland: your partner in feeding and greening the cities

**A country that feeds the world. A country that seeds the world. A country that perks up the world.**

*What we do. How we do it. Why cooperate. Amazing facts & figures.*

The surface of the Netherlands fits into China 233 times. But this tiny country is the undisputed international market leader in horticulture. The Dutch are collaborating to create sustainable horticultural solutions world-wide, from state-of-the-art greenhouses to new breeds of plants. Let's get introduced in the beating heart of a strong network, kick-starter for innovations and solutions for the future.



### What we do

#### *We feed, seed and perk up*

- We feed the world as the biggest exporter of fresh vegetables, potatoes and onions.
- We seed the world as the biggest producer of seeds.
- We perk up the world with the largest auction of flowers and plants and producer of the most widespread variety of trees and shrubs.

### Such a tiny country... how do we do it?

#### *Greenhouse Horticulture | Seed production | Innovation*

Inventiveness in greenhouse horticulture is the biggest part of the Dutch success. Cultivation starts with seed. Nowhere is the Dutch agricultural technology more cutting-edge than in

the embryonic organism in which most food is literally rooted: seeds. 70% of all vegetable seeds can be traced directly or indirectly back to the Netherlands. We are trendsetters, and aim to provide solutions for healthy nutrition and a sustainable future of our planet. Collaboration between government, academics and entrepreneurs is a key catalyst of Dutch innovation and makes the Netherlands a world leader for the most efficient agricultural technology.

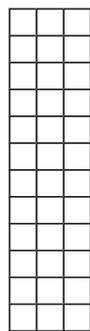
*“The Dutch have become world leaders in agricultural innovation, pioneering new paths to fight hunger.”*

**(National Geographic, September 2017)**



## Greenhouse Horticulture

A large majority of the food and flower cultivation in the Netherlands is done in greenhouses. Imagine an area bigger than Manhattan completely covered by glass roofs. The harvest is cultivated by almost 3500 Dutch companies in the best climate conditions with little influence of the outside weather.



Greenhouses in Netherlands

**9324**  
hectare



Area of Manhattan

**5957**  
hectare

## Seed Production

More than a third of all global trade in vegetable seeds originates in the Netherlands. Dutch firms are among the world leaders in the seed business. We specialize in price efficient food seeds. For example: A single high-tech greenhouse tomato seed, priced below 0,42 euro, has been known to produce a mind-boggling 69 kg of tomatoes.

### In Holland....

- We produce 46% percent of the global export value of base materials, vegetables, ornamentals, potatoes and grasses.
- 70% of the vegetable seeds used worldwide can be directly or indirectly traced to the Netherlands.
- We develop 1170 new plant varieties each year. This is 65% of the European market.
- We account for more than 35% of all applications of community plant variety rights.

North Holland is known as Seed Valley and the main seed cultivation region in The Netherlands. Mainly 28 sites (370 hectare) produce the immersive international seed trade of 1.8 billion euro's.

### In Holland...

- An area of nearly 18.648 football fields (9324 hectare) is roofed by glass.
- 36% of the greenhouse horticulture companies produce vegetables and fruits.
- 75% of the total vegetable production is cultivated beneath glass. The total greenhouse harvest is 1,7 billion kilograms annually.
- We produce 900 million kilograms of tomatoes annually.
- The amount of harvest has increased by 12% over the last 10 years.

Westland is Hortivalley and the main greenhouse horticulture region in The Netherlands; 80% of the region's cultivated land (2385 hectare) is underneath greenhouse glass and its 673 companies produce half of the total food and flower harvest. The total market value exceeds 4.2 billion euro's.

## Innovation

Entrepreneurship, innovation, knowledge and craftsmanship are the aspects associated with the Dutch Horticulture and are what keep this sector at the top of the world. We tackle global challenges, which have impact on people, the planet, and profit. We cradle sustainable and innovative solutions in the sector and spread them worldwide. Cooperation between universities and the sector is strong, and kickstarts innovations like sustainable grow lamps in the greenhouse cultivation, recycling systems for waste and water, floating greenhouses, robot fruit pickers and greenhouses which produce more energy than they consume.

### In Holland...

- Greenhouses produce more energy than they consume and generate 10% of the power demand of Holland.
- Greenhouses process the CO<sub>2</sub> of nearby oil refineries.
- We cultivate vegetables twice as efficient as the rest of Europe, while using less water.
- Seed producers contribute to the Dutch knowledge infrastructure by investing an average of 15% of their turnover into Research and Development (R&D).

- This is more than is spent in many other knowledge-intensive industries, including the pharmaceutical industry.
- Four horticulture companies RijkZwaan, Nunhems, Enza en Keygene are among the top 25 European companies that invested the most in R&D.

*The Dutch Wageningen University & Research centre (WUR) has been a continuous source of innovation for the horticultural and base materials industry for many years.*

### Change from 2003-2014

Vegetable production	+	28%
Energy used*	-	6%
Pesticides	-	9%
Fertilizer	-	29%

*\*Latest available data (2012)*



### Why Cooperate?

#### *More and better with less!*

The world's population continues to grow and age, and the demand for horticultural products is increasing significantly worldwide. To produce enough safe and healthy will be a severe challenge the coming decades. Climate change forces the agricultural sector to use less energy, pesticides, nutrients and water. In the Netherlands we already turned this into reality: more and better with less!

#### **For example:**

*We are the world's most efficient tomato producer: 557 tons per hectare versus China: 58 tons per hectare. 90% more!*

*The water footprint of tomato production decreased in Holland to very low: 9.2 liter per kg, against 283.7 in China. (Global average 213.6).*