Responsible Greenhouse Horticulture: Tomorrow grows today

Innovation is the standard in the Dutch greenhouse horticulture. Greenhouses are on their way to becoming closed production ecosystems: circular greenhouses.

Society profits from innovations which entrepreneurs are developing in the greenhouse horticulture industry. For instance, we are working on alternative fuel sources, which the surrounding area can also use. Families in various municipalities heat their house with warmth from greenhouses or geothermal heat. Furthermore, the circular greenhouse helps municipalities with sustainable solutions to keep their feet dry. We collect rainwater in buffers to prevent flooding in case of heavy rainfall. We also make plants more resilient and close the water cycle, thereby preventing pollution of the surface area. Furthermore, greenhouse horticulture companies create jobs, economic growth, and a technological impulse.

Thanks to its strong innovative ability, the Dutch greenhouse horticulture is capable of feeding the world with healthy and tasty vegetables and to provide it with high-quality flowers and plants, which contribute to a healthy lifestyle and wellbeing.

2,600 professional greenhouse horticulture companies in the Netherlands

Read more about:
- Our ambitions regarding Labor, Energy, Plant Health, and Water & Environment
- Our national and regional approach
Climate-neutral greenhouse

Ambition: in 2040 the Dutch greenhouse horticulture will be climate-neutral.

**Fact 1**  The Dutch greenhouse horticulture is the first and largest user of natural geothermal heat.

Geothermal - hot water from deep earth layers - is a sustainable source which can heat much more than just the greenhouse horticulture industry. Through local heat networks, the water is also transported to factories, swimming pools, and residential districts. We develop such networks together with municipalities and provinces. By using geothermal heat, we save 75 million m³ of natural gas per year. That is 3% of the total heat consumption in the sector. In 2040, our heat consumption will be strongly reduced.

**Fact 2**  The Dutch greenhouse horticulture industry is the only economical sector which has significantly reduced its CO₂ emissions.

The CO₂ emissions of the greenhouse horticulture has been reduced by 18% since 1990. While in the Netherlands the total CO₂ emissions increased by 9%. Furthermore, the greenhouse horticulture industry has started producing 5% of the national demand for electricity by using efficient cogeneration. The reason why greenhouse horticulture companies have reduced their CO₂ emissions is because we apply sustainable energy and energy-saving measures.

The first greenhouse without gas is in Ter Aar, close to Schiphol. On 1.5 hectares, Maurice van der Hoorn grows Phalaenopsis without using natural gas. These orchids thrive most at a temperature between 18 and 28 °C. “We heat and cool using groundwater which we store deep in the earth, which keeps it at the right temperature. For extra heating, we use heat pumps which run on green electricity. That way, we save 40% energy compared to other comparable companies.”
Decent employership

Ambition: The greenhouse horticulture industry is known as an attractive employer. We offer people the opportunity to be versatile.

Fact 3  Horticulture regions provide employment.

Many families live off the greenhouse horticulture and the company life around it. Young people also often find work in the greenhouse or with companies which deliver products to or purchase products from the greenhouse horticulture. Greenhouse horticulture companies offer a lot of production work. But due to scaling, mechanisation, robotisation, and internationalisation, there is a strong-growing demand for employees for positions in sales and marketing, laboratories and research, engineering, logistics, or labor. It is also possible to be promoted to management positions. Horticulture regions also attract associated employers, such as trade companies, research institutions and suppliers.

Fact 4  LTO Glaskracht Nederland and trade unions have established rules for migrant workers who come to the Netherlands to work, in the cao Glastuinbouw (Collective Labour Agreement Greenhouse Horticulture).

For instance, growers are obligated to use an employment agency which has been certified by the Stichting Normering Arbeid (Employment Standardisation Foundation). The payment of wages and taxes are thereby in order. The Collective Labour Agreement also contains provisions regarding proper housing for migrant workers.

Certified housing

We only collaborate with employment agencies which have the housing certified in accordance with the standards of Stichting Normering Flexwoningen (Flexible Housing Foundation). This allows us to completely comply with the provisions in the Collective Labour Agreement Greenhouse Horticulture. Legal requirements and municipal standards form the basis for those standards”, says Herman van der Wulp, staff and organisation manager at Looye Kwekers.
Healthy crops
Ambition: in 2030 we can grow the healthiest vegetables, flowers and plants in an organic ecosystem, almost without any emissions.

Fact 5. Vegetables and flowers from Dutch greenhouses are the cleanest in the world.

The Netherlands is the birthplace of organic crop protection. We annually use over 15 billion insects and mites which eliminate harmful animals and fungi. This organic pest control replaces the majority of the chemicals.

Resilient in advance

In greenhouse horticulture areas, we are working on alert systems. For example, an app warns growers in the event there is a high concentration of pests. This way, we can ensure the damage stays limited, for example by pre-emptively introducing organic pest control in the greenhouse. That way, we can make the greenhouses more resilient, and less pest control will be needed afterwards.

“Since we make plants more resilient, for example by providing a healthier soil life, they much quicker recover from diseases or pests.”
Ruud Batist, Gerbera grower

All growers use organic crop protection. For growers of greenhouse vegetables, natural enemies constitute 80% of their pest control, and for flower and potted plant growers they constitute 50% of their pest control.
Water-efficient greenhouse

Ambition: in 2027, all greenhouse horticulture companies have closed their water cycle.

Fact 6: As of 1 January 2018, the greenhouse horticulture removes pesticides from the residual water.

We greenhouse horticulture companies have our water treated by a certified water purification plant, which removes residual pesticides for at least 95%. As of 2027, we want the water which companies spray to contain next to no waste material.

Pure water

In Zaltbommel, about 80 growers are constructing a shared sewer system. Together, they collect and purify their waste water. The objective is to cease all nutrients and pesticides from ending up in ditches and rivers. This way, growers can achieve that goal collectively. Chrysanthemum grower David van Tuil: “The water board purifies our water. This way, we are certain it is done properly. This allows us to completely comply with the requirements regarding clean water before 2027. And there is sufficient capacity, so that growers from outside this network can also have their water purified in this system.”

Blue storage

When the streets are flooded, and basements take in water during a downpour, governments may consider using the storage capacity of greenhouse horticulture. Around Maasdijk this principle is applied very successfully. The Delfland water board and 15 greenhouse growers prevent flooding in the surrounding residential areas. When heavy rainfall is expected, Delfland drains the basins of the greenhouse horticulture companies down to a level determined by the growers. The basins can then collect the showers without flooding. Thus, the total capacity of the ditches becomes available for water draining in residential areas.
According to current knowledge, a vegetable and fruit consumption increase of 156 grams per person per day saves at least €2.7 billion in healthcare costs in the next 20 years.

Science

The Netherlands, globally number 1 in the export of tomatoes, cucumbers and flowers

Production value horticulture
10,5 miljard euros per year
7,5 miljard euros greenhouse horticulture

8,700 ha of greenhouses