

HOLLAND LIFE SCIENCES & HEALTH



Why invest in Holland?

Because Holland offers...

- ... a strategic location in Europe
- ... a competitive fiscal climate
- ... a superior logistics and technology infrastructure
- ... a conducive innovation environment
- ... an international business environment
- ... a solid workforce
- ... an attractive quality of life

Key figures Life Sciences & Health

- 16.7 million inhabitants
- 8 University Medical Centers
- 82 general hospitals
- 55 specialized hospitals
- 201 private hospitals
- 102 private clinics
- 191,000 jobs (FTE) and 273,000 employees in hospitals (excl. private hospitals)
- 16,000 medical specialists
- 8,000 general practitioners
- 21 insurance companies
- € 60 billion spent on health care = 10% GDP

Introduction

The Netherlands has a vibrant, tightly knit life sciences & health industry. It boasts a high per capita R&D output, and significant expertise in the areas of cancer research, infectious diseases, cardiovascular diseases, medical imaging in preventive healthcare, neurodegenerative diseases, clinical research, medtech and health care systems.

Dutch health care is of high quality and accessible and affordable for all. It is no wonder that many countries point to the Netherlands as an example of how the quality of health care can be guaranteed, while the costs remain reasonable.

The Dutch believe that (interdisciplinary) public-private partnerships in an open innovation climate are the best way to ensure that research results are quickly translated into socially relevant and commercial successful products and services. Innovation and valorization are easy in the country's dense network of world-class research institutes, universities, private sector companies, and clinical research organizations. The open innovation and public private partnership approach, creates business acceleration and an environment for dedicated solutions that tackle global health issues like cancer, pandemic influenza, cardiovascular diseases, diabetes, malaria, tuberculosis, HIV/AIDS, Alzheimer's. Numerous foreign life sciences companies have therefore established offices in the Netherlands, and benefit from working in the Dutch open innovation climate.



Pioneers in international business

Key Facts

- Dutch science is world-class. The robust academic system consists of 8 university medical centers and 11 universities with biomedical research. Dutch researchers have the highest average publication rate in the world, while the leading citation impact proves the quality of their work. National research strengths are increasingly bundled in centers of excellence, such as the House of Regenerative Medicine, Brains Unlimited, the Center for Personalized Cancer Treatment and the European Research Institute on the Biology of Ageing.
- Five of the top-10 biotech deals within the EU in the last 4 years involved Dutch companies.
- Nearly 50 percent of Dutch life sciences companies generate turnover from export, for example of enabling technologies, diagnostic and therapeutic products and ingredients for foodstuffs and cosmetics.
- More than 60 percent of Dutch life sciences companies import what they need for their operations, including enabling technologies (in the form of patents and licenses, or otherwise), raw materials, reagents and other chemicals, and laboratory equipment.
- 67 percent of Dutch life sciences companies work together with foreign companies and knowledge centres
- The Netherlands ranks 8th worldwide in Life Sciences & Health patents according to the World Intellectual Property Organization (WIPO) in 2011
- The Netherlands is the 9th most cited country in scientific papers.
- The Global talent index ranks the Netherlands 2nd in nurturing talent (projection for 2012)
- Within the European Commission's R&D Programme 49 percent of initiatives in the health cluster involve Dutch participants (with a total budget of 2.48 billion euros)
- Dutch healthcare ranks number one compared to the US, Australia, New Zealand, Germany and Canada.



Integrated Regional Clusters

Due to Holland's integrated R&D infrastructure, the sheer volume and quality of biotech research and the condensed geography, the entire country can be viewed as a single life sciences network of converging regional clusters. A closer look reveals several regions with expertise in specific areas:

- **Amsterdam Metropolitan Area**

The Amsterdam cluster of biomedical activity is yielding exciting results. The Netherlands Cancer Institute, one of Europe's top centres of cancer research, has joined forces with a neighbouring hospital to integrate R&D with clinical practice. The institute's cutting-edge oncology research has been repeatedly featured in the renowned magazine, 'Science'. Just down the street is Sanquin, the Red Cross Central Laboratory for Blood Research, which develops blood-related products and diagnostic services.

Focus on: Oncology, neuroscience, neuroimaging, cardiovascular research, infectious diseases.

Important players: AMT, VU, VUMC, UvA, AMC, NIN, NKI, Sanquin.

- **Utrecht, Wageningen, Immuno Valley**

Focus on: Public health, oncology, regenerative medicine, stem cells, veterinary science, vaccines, (functional) food.

Important players: Utrecht Science Park, Hubrecht Institute, Genmab, GSK, Danone, UU, UMC, RIVM, WuR, TNO.

- **Medical Delta: Leiden Bioscience Park, Science Park Holland, Rotterdam**

The Leiden cluster, with 60 pure biotech companies and close ties to the University of Leiden, is the oldest biotechnology cluster in the Netherlands and one of the most comprehensive in Europe.

Focus on: Bio-pharmaceutical sciences, clinical research, imaging and image guided medicine, targeted molecular technology.

Important players: TI Pharma, Crucell, Galapagos, Prosensa, Octopus, J&J /Janssen Biologics, University Leiden, LUMC, TU Delft, Erasmus University Medical Center.

- **Brainport Eindhoven, North Brabant**

Awarded 'the world's smartest region' in 2011. Measured by the number of patents in the Netherlands, Brainport accounts for half of all Dutch inventions. The recently established Life Sciences Park Oss offers a cutting-edge infrastructure for pharmaceutical research and production.

Focus on: medical technology and life sciences, environmental and information technology.

Important players: Philips Healthcare, MSD/Intervet, GE Healthcare, TU Eindhoven, CTMM, Amgen, Life Sciences Park Oss.

- **North Netherlands**

Focus on: Healthy Ageing.

The Healthy Ageing Campus Netherlands in Groningen combines healthcare, research and entrepreneurship, with a focus on Food & Health, Medical Technology and Pharma. This leads to spin-off companies, shared facilities and new knowledge regarding the ageing process and ways to enable individuals to reach their full health potential.

Important players: PRA International, RUG, UMCG, Zernike Science Park, Healthy Ageing Campus.



- **Health Valley and Twente**

The East of the Netherlands is a hotspot in the medical technology field. There are two strong medical clusters present; Health Valley that is grouped around the Radboud University, the University Medical Center and St. Maartens in Nijmegen and Health & Technology, with the University of Twente, the Rehabilitation Centre 't Roessingh and the Medical Spectrum Twente in Enschede.

Focus on: Neuro and cognitive science, Nanotechnology, eHealth, care and cure robotics.

Important players: NXP, Synthon, TNO, Siemens, Twente University, RUN, UMC St. Radboud, Abbott.

- **Southeast Netherlands; Maastricht**

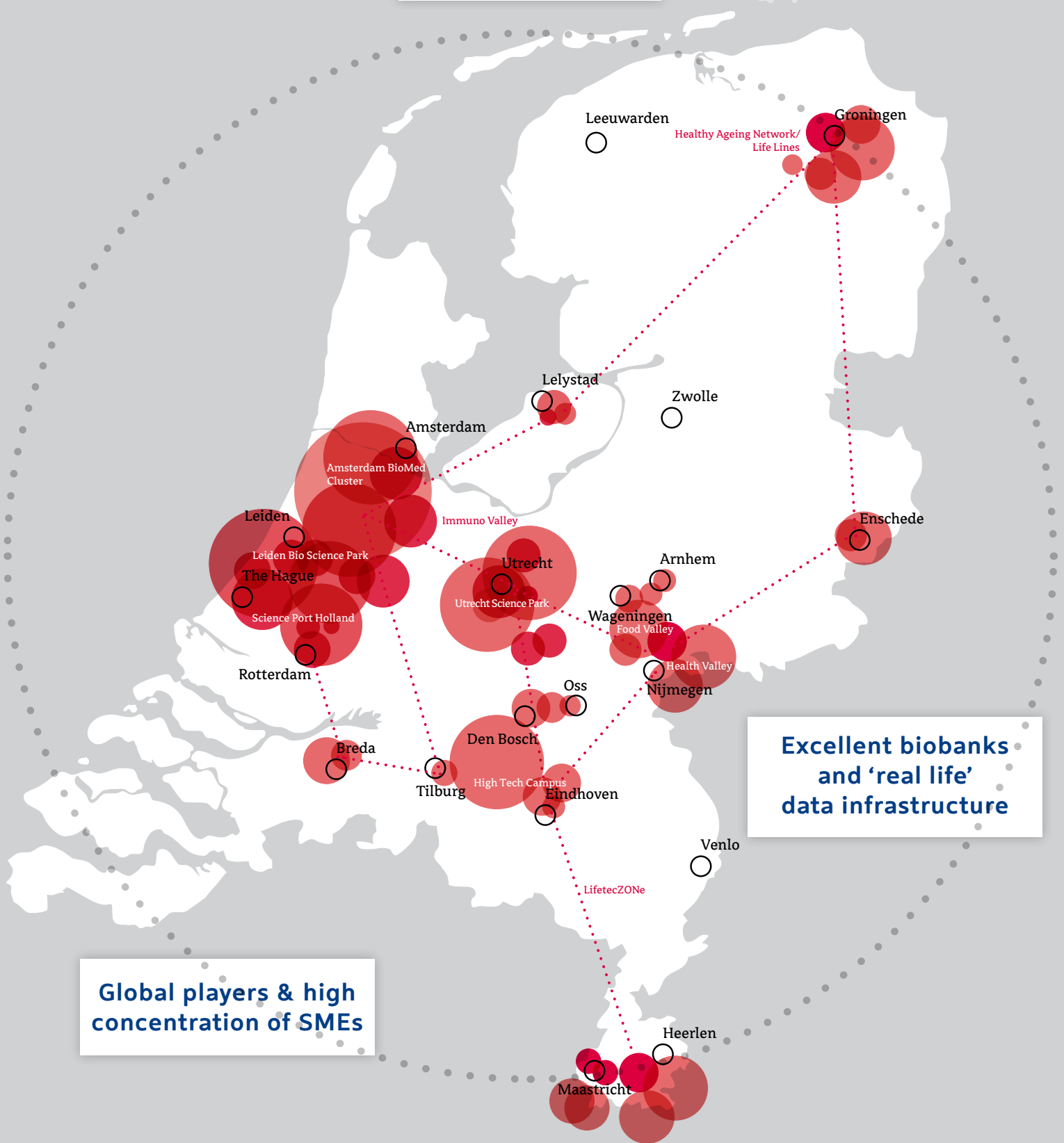
The Maastricht Health Campus and the Chemelot Campus in Sittard-Geleen are set to become specialized valorization campuses, where medical and health sciences research flow directly into commercial activity. This will give rise to 2100 new jobs for knowledge workers and many thousands more in indirect employment.

Focus on: Cardiovascular disease, public health & primary care, neuroscience.

Important players: DSM, Chemelot, UMC Health Campus, BMM.

Holland Life Sciences & Health

120 mile radius



Global players & high concentration of SMEs

Excellent biobanks and 'real life' data infrastructure



Clinical Research Infrastructure

From cradle to grave, the Dutch gather information about the health and genetics of their population. As a result, the Netherlands has one of the best documented populations. Newborns are subjected to a screening program that diagnoses serious diseases, preventing or limiting health damage. Throughout the country, large cohort studies collect clinical and lifestyle information, as well as biomaterials. Together with Holland's integrated R&D infrastructure, volume and quality of research, and condensed geography, this creates a vast translational and clinical research infrastructure.

String of Pearls Initiative: biobanks - Eight academic medical centres work together to set up a nationwide biobank infrastructure to strengthen the Dutch scientific positioning in translational biomedical research. Clinical data as well as data on genes, proteins, metabolites and tissue, will be stored in databases that can be used to establish a 'population laboratory' for further clinical research. This improved infrastructure will be instrumental in validating existing and new therapies, and will help improve the efficiency of the drug development process. All initiatives build on the existing high quality groundwork completed by Dutch scientists in universities and knowledge institutes.

The Lifelines project studies universal risk factors and their modifiers for multi-factorial diseases. This three-generation family design study monitors over 165.000 participants for a period of 30 years, and has tight connections to the Healthy Ageing campus in Groningen.

Another research, The Maastricht Study, will include 10.000 citizens, half of them suffering from Type 2 Diabetes. The study emphasizes biomarker identification and uses state-of-the-art bio-imaging technologies.

Medical Technology

The field of medical imaging is booming. Rapid technological advances, converging technologies and the need for better healthcare at lower cost are spurring the development of new imaging devices. Patients increasingly want to monitor their own health status. Imaging technology also finds its way into scientific and industrial applications.

The Netherlands is a major contributor to the imaging industry and the world's second largest country in terms of medical imaging patents. Global giants like Philips are working closely with specialized Dutch SMEs and research organizations on innovation and valorization. The country's pioneering work is tied to major public-private partnerships in the area of life sciences and materials.

The Netherlands has many advanced players in medical devices, implants en disposables, suppliers of high-tech solutions, devices for mobility and rehabilitation, hospital design, building and management, Health Education for medical staff and E-Health. The Netherlands also has a unique position and a strong track record in offering integrated healthcare solutions in emerging and developing countries. From solutions for communicable and chronic diseases to disaster relief and the transfer of knowledge and expertise in the field of public healthcare and healthcare insurance.

In short, the sector makes an important contribution to economic growth, the image of the Netherlands and is important for exports and international competitiveness. The market opportunities are unlimited.



Holland is open for foreign companies

Holland is open for business, open for innovation, open for cross-disciplinary cooperation and development, which all leads to business acceleration. This makes it a win-win situation: new companies will find an unparalleled environment which supports their new innovative activities, while the Dutch life sciences & health sector will grow stronger through their presence. In fact, the Netherlands offers a unique perspective for foreign life sciences & health companies, including some very attractive location factors.

The Dutch tax system has a number of features that may be very beneficial in international tax planning. These include a corporate income tax rate of 20% on the first €200,000 and 25% for taxable profits exceeding €200,000. In addition, the Dutch ruling practice provides clarity and certainty – in advance – on future tax positions. And with regards to R&D, companies can benefit from the Innovation Box – resulting in an effective corporate tax rate of only 5% – as well as an R&D allowance (WBSO), which takes the form of wage tax and social security contribution deductions.

The Netherlands is proud to have a high standard of living, whilst maintaining an affordable life for its residents. The costs of living, housing, education and cultural activities are lower than in most western European countries. Furthermore, all sorts of cultural and leisure activities are open to both Dutch citizens and visitors alike. Whether it's spending a leisurely afternoon on the beach, enjoying culinary delights or going to one of the cities' acclaimed museums, theatres or opera houses, the new expatriate is soon made to feel that the Netherlands is a most welcoming country.

About the Netherlands Foreign Investment Agency

The NFIA (Netherlands Foreign Investment Agency) is an operational unit of the ministry of Economic Affairs, Agriculture and Innovation. The NFIA helps and advises foreign companies on the establishment, rolling out and/or expansion of their international activities in the Netherlands. The NFIA was established more than 30 years ago, and has since then supported more than 2,800 companies from nearly 50 countries in the establishment or expansion of their international activities in the Netherlands. Besides its headquarters in The Hague, the NFIA has its own offices in the United Kingdom, Turkey, North America, Asia, the Middle East and Brazil. Additionally, the NFIA works together with Dutch embassies, consulates-general, and other organizations representing the Dutch government abroad, as well as with a broad network of domestic partners.

More information: www.nfia.nl