



# International Strategy 2024-2027 Looking forward

Top Sector Life Sciences & Health



# Summary

The Netherlands is Europe's Connected Life Sciences & Health Metropolis, where companies, universities, research institutions, and health providers bring innovation in Life Sciences & Health (LSH) to life. The Dutch entrepreneurial spirit has historically been driven by a commitment to innovation and an open, international approach to trade. Particularly in the field of LSH, the Netherlands has gained a strong reputation. Global challenges around an ageing population, sufficient healthcare workers, overall affordability, and global disrupting health threats, ask for innovative solutions. This is where the Dutch LSH ecosystem has to jump in, not only for the Netherlands, but also to impact health around the world. At the same time, the Netherlands can learn a lot and benefit from innovative solutions and approaches in other countries. The Health-Holland International Strategy 2024 – 2027 focusses on exactly these opportunities, to maximize the impact of the Dutch LSH ecosystem on the global level and improve the Dutch ecosystem with lessons and knowledge from around the world.

The main ambition of this strategy is to foster economic growth through internationalization efforts in the LSH sector, enabling companies of all sizes to thrive in the Netherlands and impact the health of people on the global level. Through this strategy three interconnected activities are brought together: trade, innovation, and investments. Supporting Dutch businesses abroad and fostering international cooperation in the realms of trade and economy is the key ambition related to trade: promoting the economic interests of the Dutch LSH ecosystem through diplomatic and business relations and collaboration with other countries. Related to innovation, a key ambition of this strategy is supporting public-private partnerships (PPPs) in international positioning, research and development cooperation, and translation of innovative solutions into other countries and ecosystems. The final ambition related to investments is to ensure that investments in the Dutch LSH sector flourish, both in terms of capital and people.

This document is created by the LSH International Committee. The Committee is chaired by Top Sector LSH (Health-Holland) and consists of representatives of the Ministry of Economic Affairs and Climate Policy (EZK), the Ministry of Foreign Affairs (BZ), and the Ministry of Health, Welfare and Sport (VWS), Netherlands Enterprise Agency (RVO), Invest in Holland, Trade and Innovate NL network (TINL), hollandbio, Task Force Health Care (TFHC), and relevant parties from the LSH field. The ecosystem of partners to collaborate with is large, including regional partners everywhere in the Netherlands, and Dutch representatives all over the world. In the next years, the networks will be reinforced to tighten collaboration. This involves organizing meetings and networking sessions in the regions, as well as building an LSH Ambassadors Network for representatives abroad. To focus the efforts of the International Committee, thematic narratives will be developed around six strategic themes: digital technology, medical technology, biopharmaceutical technology, high-tech

infrastructure, sustainable health systems, and global health. These strategic themes are highly inclusive; all LSH companies should be able to place themselves in at least one of the themes, while many will work across themes. The strategic themes are linked to 15 target countries, that are expected to be the focus of bilateral collaboration in the period 2024 – 2027.

The Tube-map positions the whole of the Netherlands as Europe's Connected LSH Metropolis and stresses the close ties of collaboration in the Netherlands. This positioning and branding will be continued and elaborated upon in the period 2024 – 2027. Besides, it will be complemented by the thematic narratives around the six strategic themes. Online communication, primarily through LinkedIn, email, and the websites has a vital role in directly reaching the LSH ecosystem. An editorial working group will be appointed within the LSH International Committee to ensure a steady, more structural and pro-active flow of content on the various communication platforms. Conferences offer opportunities to improve the visibility of the Dutch LSH sector, both national and international. The MEDICA, BIO-Europe (Spring) and BIO International Convention have been identified as key strategic conferences, which will remain a high priority in the next years.

To improve informed decision-making processes within the LSH International Committee and Dutch organizations, data will be made available with information on trade, innovation, and investments, including key indicators and market studies for the target countries. This helps companies and public parties in initiating activities abroad and selecting countries that provide the best opportunities. To further align the annual strategies of various government stakeholders, a decision-making calendar will be drafted that enables that input on these strategies is provided at the right time to the various organizations. Using the decision-making calendar, the process to come to an integral programming within the LSH International Committee will be further refined.



**‘If we want to further strengthen the Dutch economy and enabling companies of all sizes to thrive in the Netherlands and impact the health of people on the global level, we must act with an international perspective.’**

**Len de Jong** | Top Team member, Top Sector Life Sciences & Health (Health-Holland)

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# Introduction

Since the formal appointment of Top Sector Life Sciences & Health (LSH) in 2012, as one of the ten Top Sectors in the Netherlands, Top Sector LSH has implemented an International Strategy to maximize the impact of the Dutch LSH efforts abroad related to spurring innovation, attracting investments, and stimulating trade. Besides the economic impact, the societal impact of the LSH sector is immense: technologies and services increase the health of all, with the result that people can live a productive and fulfilling life for more years than ever in history. However, an important challenge is related to equity, enabling everyone to benefit from advances in health and technology. Another important challenge is sustainability, keeping health systems affordable and sufficiently staffed. As health systems globally need to deal with these challenges, they present a key opportunity for the Dutch LSH ecosystem to not only bring innovative solutions to the Netherlands, but also to impact health all around the world. At the same time, the Netherlands can learn a lot and benefit from innovative solutions and approaches in other countries. This strategy focusses on exactly these opportunities, to maximize the impact of the Dutch LSH ecosystem on the global level and improve the Dutch ecosystem with lessons and knowledge from around the world.

## The strong Dutch Life Sciences & Health sector

The Netherlands is Europe's Connected Life Sciences & Health Metropolis, where companies, universities, research institutions, and health providers bring innovation to life. Here, ground-breaking innovation in the LSH sector is so densely located. This allows for easy connections between all partners, both public and private<sup>1</sup>. Working together is a key strength of Dutch culture, making the Netherlands an inclusive place for local and global parties to cooperate to improve health for all. This is reflected in the quadruple helix approach, recognizing the interaction and coordination needed to maximize the impact in the LSH sector between citizens, researchers, entrepreneurs, and the government<sup>1</sup>. Some key figures related to the Dutch LSH ecosystem are displayed in Figure 1<sup>2</sup>.

The Netherlands has traditionally been known as a testbed and springboard for innovation. Available data, gathered on the diverse Dutch population, can easily be contextualized, and thereafter applied globally. Not only can these Dutch LSH products and services be quickly translated to other countries, they also gain recognition by global companies, which benefit from the Netherlands as the gateway to Europe<sup>3</sup>.

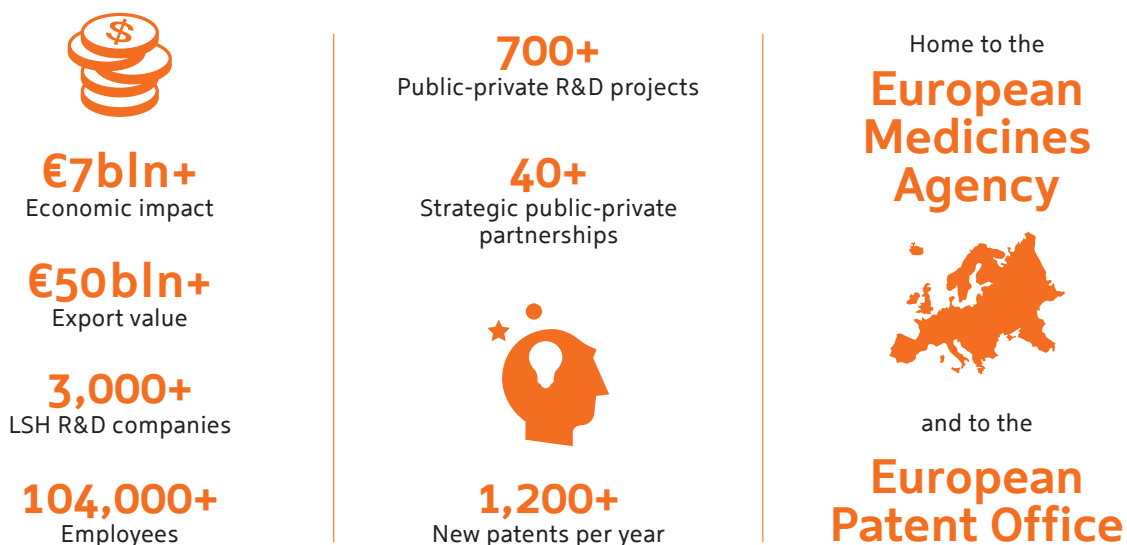


Figure 1 Key figures of the Dutch LSH sector, bidbook 'Welcome to the Netherlands, Europe's Connected Life Sciences & Health Metropolis'.



‘What makes us unique, are the quadruple helix collaborations in which citizens, researchers, government and entrepreneurs are working together to drive innovation in healthcare.’

Carmen van Vilsteren | Chair Top Sector Life Sciences & Health (Health-Holland)

At the same time, there are challenges in the Dutch LSH sector where the Netherlands can learn a lot from other countries and its developments. It can be difficult to find qualified personnel, such as experienced technicians or specialized scientists<sup>3</sup>. Another challenge remains in bringing innovation to patients: although Dutch research institutes perform well in scientific output, more of these innovations should be implemented in society<sup>4</sup>. Finally, the required infrastructure for research, development, and production within the LSH sector needs to be improved, such as the availability of laboratories and updates to the electrical grid to be able to use sustainable energy.

### Five additional years in good health: mission-driven impact

In 2019, a transformation was initiated by the Dutch government with the Mission-driven Top Sectors and Innovation Policy (MTIP) of the Dutch government, aiming to spur innovation to solve the major societal challenges of our time<sup>5</sup>. Due to the immense challenges in health and care, Top Sector LSH was asked to take the lead in the transformation of health and care through technological innovation. In line with the health-related Sustainable Development Goals (SDGs) created by the United Nations<sup>6</sup>, the central mission for health and care

was drafted: by 2040, people in the Netherlands will live at least five years longer in good health, while the health inequalities between the lowest and highest socioeconomic groups will have decreased by 30%<sup>7</sup>. Four specific missions contribute to the central mission:

- i. By 2040, the burden of disease resulting from an unhealthy lifestyle and living environment will have decreased by 30%.
- ii. By 2030, care will be organized 50% more (or more often) in one’s own living environment, by one self and together with the network around people.
- iii. By 2030, the proportion of people with a chronic disease or lifelong disability who can participate in society according to their wishes and capabilities will have increased by 25%.
- iv. By 2030, quality of life of people with dementia will have improved by 25%.

Since 2020, COVID-19 hit the world and our view on health has evolved. The potential impact of pandemics or other emergencies on health and the economy are enormous. This meant that in 2023 a fifth specific mission was added:

- v. By 2035, the population will be better protected against socially disruptive health threats.

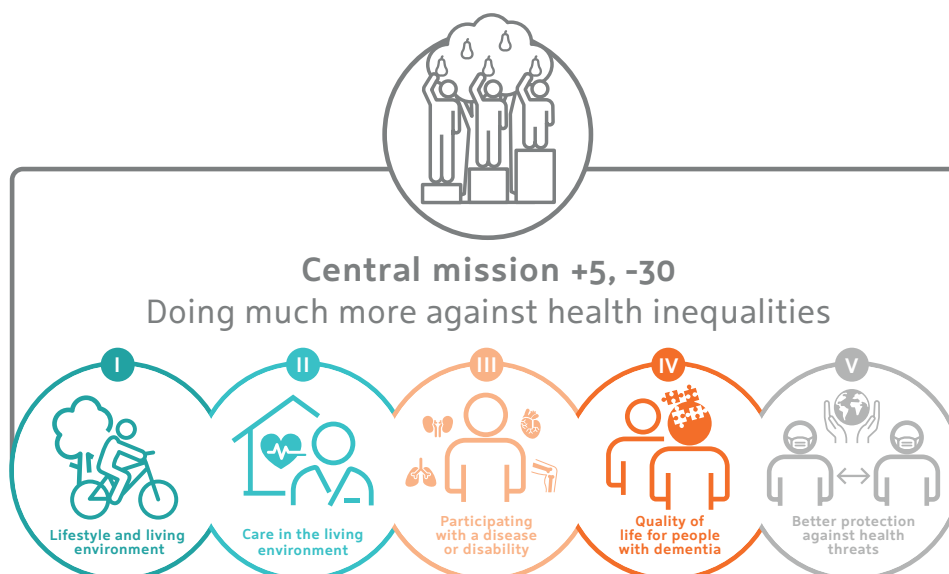


Figure 2 The Health & Care missions formulated by the Ministry of Health, Welfare and Sport for the MTIP.



## Combined technological and social innovation

January 2024, the Ministry of Economic Affairs and Climate Policy (EZK) unveiled the National Technology Strategy<sup>8</sup>. The government prioritizes ten key technologies where it expects significant technological breakthroughs, recognizing opportunities for Dutch businesses and their importance for future economic earning capacity. Multiple of these identified key technologies have applicability in (future) LSH innovations. One of the key LSH-related technologies are biomolecular and cell technologies, including gene editing, stem cell therapy and organoids. The Dutch government aims to strengthen the opportunities to bring these technologies to the market, building on the strong foundation of scientific and technological development in this area. In another recent report, biotechnology, medical technology, and digital transformation have been identified as important growth markets<sup>9</sup>.

Technological innovation can be strengthened by close alignment with social innovation. Key enabling methodologies (KEMs) are unique in the Netherlands, which are used to facilitate societal change in health and care by addressing the root causes of health problems, engaging stakeholders, and fostering collaboration and innovation. An example is the world-renowned Dutch urban design that promotes both safety and healthy modes of transportation<sup>10</sup>.

The combined expertise of Dutch technological, medical, and social innovation is expressed in important international consortia. Dutch organizations are actively

participating in the Horizon 2020 and Horizon Europe programs, with over €8 billion allocated to Dutch organizations and around 25% to private organizations<sup>11</sup>. Within the Eureka Network, close collaborations are set up with European partners accruing to €22 million per year<sup>12</sup>. In the GlobalStars program SMEs or established companies closely work with international partners on research and development. This results in innovations that are transferable to many countries by design and has resulted in almost €40 million in investments with countries like India and Brazil.

These developments emphasize the importance of international positioning, collaborative innovation, and business opportunities for the Dutch LSH sector. The Dutch entrepreneurial spirit has historically been driven by a commitment to innovation and an open, international approach to trade. Particularly in the field of LSH, the Netherlands has gained a strong reputation. The country actively promotes international trade relations, emphasizing the sharing of expertise, technological advancements, and high-quality healthcare products and services. Through public-private collaboration and entrepreneurial spirit, the Dutch LSH ecosystem contributes to an impactful transformation of health and care, economic growth, and the well-being of all.

## Improve health globally

International collaboration is essential to reach the central mission and the five specific missions. Key innovations in LSH are happening across the globe, not



only in the Netherlands. Major investments in public-private collaboration in the Netherlands have attracted a highly skilled workforce in the LSH sector to the Netherlands, leading to an increasing number of collaborations across borders. We need foreign collaboration to advance innovations and reach the missions described in the MTIP. At the same time, concepts, products, and services developed and validated in the Netherlands to get closer to reach the missions can benefit societies all around the world, bringing Dutch innovation to the international stage.

The international positioning of the Dutch LSH ecosystem has been vastly improved through initiatives like the 'The National Action Program: New Opportunities for Top Sector Life Sciences & Health', the bidbook 'Welcome to the Netherlands', and the positioning of the Netherlands as Europe's Connected LSH Metropolis<sup>13,14,15</sup>, which position the Dutch LSH sector as a thriving ecosystem to improve health globally. Closely aligned with mission V of the MTIP, the Dutch Global Health Strategy was launched, in which the Dutch government cohesively aims to improve health through preventing health risks where possible, preparing for and responding to health crises, and strengthening health systems worldwide<sup>16</sup>. This is coordinated by the Dutch Global Health Hub which aims to promote coordination between government, the private sector, knowledge institutions, and civil society<sup>17</sup>. The activities within the Global Health Strategy are strongly linked to the SDGs and a social responsibility to improve equity worldwide. There are opportunities for Dutch companies, bringing their products to a global audience, but also for companies in low- and middle-income countries (LMICs) to bring their products to Europe through the Netherlands as the gateway to Europe. There should be an exchange of ideas, products, and services between the Netherlands and LMICs, advancing the health and welfare of all countries involved in the process.

### The previous Health-Holland International Strategy

The Health-Holland International Strategy has been implemented since a decade, and the most recent strategy was for the period 2020 - 2023. In the past years, this strategy aimed to align with European geopolitical policy.

In the past years, the following key themes have been implemented in the International Strategy:

- Information: the Health-Holland website offers a comprehensive overview of facts, figures, and policy priorities within priority countries which can be explored using an interactive map<sup>18</sup>.
- Collaboration: the LSH International Committee (see also: Strengthening the ecosystem, page 18) closely collaborates, meeting once every two months to discuss progress on all themes related to the Health-Holland International Strategy.
- Branding: the branding of the Dutch LSH sector was vastly improved through the materials developed around Europe's Connected LSH Metropolis, with clear guidelines being available on the Health-Holland website<sup>13</sup>.
- Value chains: eight value chains were determined, offering an overview of the broad topics covered within the Dutch LSH ecosystem.
- Alignment: to bring this all together, a multiannual program was developed together with public and private partners.

### Full steam ahead

Going forward, it is important to build on the joint success of close collaboration within the LSH internationalization ecosystem. The branding and collaboration that are in place today in the fields of trade, innovation, and investments should continue. It is key to broaden the network and further involve foreign entrepreneurs in the Netherlands and vice versa, expand Dutch contacts abroad in the LSH internationalization efforts. This strategy gives a broad overview of the efforts that are planned for the years 2024 - 2027. One of the objectives is to advance the LSH international offers, assisting Dutch entrepreneurs and innovators in promoting their expertise, products, and services beyond Dutch borders to reach clients, end-users, patients, clinicians, and researchers globally. Additionally, the strategy will stimulate reaching the health-related SDGs and the health and care related missions of the Dutch government, through aligning knowledge and innovation from all around the world.



# Ambitions

The main ambition of this strategy is to foster economic growth through internationalization efforts in the LSH sector, enabling companies of all sizes to thrive in the Netherlands and impact the health of people on the global level. Through this strategy three interconnected activities are brought together: trade, innovation, and investments. Below, the most prominent ambitions are formulated related to these three activities. These economy-focused activities are in line with policy ambitions related to fostering international cooperation, the MTIP<sup>19</sup>, Global Health Strategy<sup>20</sup> and geopolitics. At the time of writing, the effects of the 2023 national elections still need to crystallize and the implementation of this strategy may shift to some extent to align with the ongoing formation of a new central government.

## Enabling businesses to bring their products and services to the world stage

Supporting Dutch businesses abroad and fostering international cooperation in the realms of trade and economy is one of the key ambitions of this Health-Holland International Strategy International

Strategy. Promoting the economic interests of the Dutch LSH ecosystem through diplomatic- and business relations and collaboration with other countries. By connecting entrepreneurs to potential partners abroad, they can focus on growing their business instead of searching endlessly for the right entrance into a market. They can always rely on the network of the LSH International Committee and Dutch embassies to support them in their international plans.

At the same time, the members of the International Committee will continuously monitor barriers that exist for entrepreneurs and raise these issues within the related party. The Committee has an important role in representing the interests of LSH businesses within all layers of government. There are many instruments available in the Netherlands that focus on international trade, including specific instruments for LSH. In the next years, the LSH International Committee will continuously update the overview of all these instruments on an ongoing basis that either aid entrepreneurs from the Netherlands to bring their products and services to the global level or stimulate bilateral collaboration between Dutch and foreign partners.



Two major topics that will be discussed in later chapters of this strategy. One is the support of Small and Medium Enterprises (SMEs) to reach a global audience through various trade events (more on page 21). The NL pavilion is organized on various trade shows to lower the barrier to participate in these events. Not only are these trade shows valuable for international connections, the networking opportunities with other present Dutch partners within the pavilion can offer interesting new opportunities. Additionally, by making additional data available on the Health-Holland website, entrepreneurs can make informed decisions to focus on markets that are most likely to yield success through the monitor (more on page 24).



**In the period 2024 - 2027, LSH International Committee will strengthen trade in the LSH sector by:**

- Supporting public and private partners in their internationalization plan.
  - Timing: continuous
  - Responsible: all Committee members
- Aligning the existing instruments that are available in the Netherlands to support international trade, collaboration in innovation, knowledge exchange and talent attraction.
  - Timing: interim report late 2025, finalized 2027
  - Responsible: representatives from RVO and ministries of VWS, EZK and BZ
- Periodically placing potential barriers that SMEs encounter when bringing their products and services to other countries on the agenda.
  - Timing: continuous
  - Responsible: Health-Holland via Top Team and NFIA with input from all Committee members

### Sustainable health through collaborative research and innovation

The Dutch LSH ecosystem offers a fertile ground for highly inclusive research and innovation collaboration with global potential. It is a vibrant ecosystem where innovation is the product of intense public and private collaboration. Collaboration between LSH and other (Top) sectors, start-ups, and established companies; research

organizations, academic centers, and universities of applied sciences, hospitals, and the national, regional, and local governments. Interdisciplinary work leads to innovative solutions to improve the health of tomorrow, such as high-quality biotech products, eHealth solutions and medical technologies.

The second key ambition of this strategy is supporting public-private partnerships (PPPs) in international positioning, research and development cooperation, and translation of innovative solutions into other countries and ecosystems. PPPs are key to creating global impact. Innovative PPPs are actively supported by Top Sector LSH, RVO and EZK, with an average of 60 million a year in PPP Subsidies<sup>21</sup>. Additionally, the Dutch National Growth Fund is one of the most ambitious investment funds in the history of the Netherlands. To push the limits of Dutch innovative strength, the government made over €2.2 billion available for seven LSH-related propositions, with a new round currently in progress<sup>22</sup>, potentially leading to additional significant investments in the Dutch LSH innovation ecosystem. Health-RI is an initiative that was allocated funding from the National Growth Fund and an example of how investing in FAIR data and services can benefit citizens' health in the future. It aims to enable the reuse of health data for various purposes, such as research, policy, and innovation, by providing a unified health data infrastructure<sup>23</sup>. Another example is DUTCH, a consortium of the Dutch academic hospitals, and MedTech companies that aims to revolutionize the training of healthcare professionals through extended reality<sup>24</sup>.

This collaborative mindset extends beyond the borders. The Netherlands is well positioned in European and pan-European R&D collaborations and via RVO and Dutch Research Council (NWO) has good connections with foreign research and innovation agencies. Dutch research organizations and companies actively participate in programs like Horizon Europe, EU Partnerships, EUREKA/Eurostars. The Netherlands performs well above average in these (pan-) European research and innovation programs, and ranks among top innovators in the European Innovation Scoreboard<sup>25</sup>. The Horizon Europe Strategic Plan 2025-2027 provides great opportunities for research institutions and businesses to further develop partnerships that enable innovation<sup>26</sup>.





**In the period 2024 - 2027, the LSH International Committee will strengthen the public-private ecosystem in the LSH sector through international collaboration, by:**

- Supporting PPPs in their efforts to reach a global audience, by actively involving them in LSH international activities, such as missions, matchmaking sessions for international research and innovation calls, and foreign connections.
  - Timing: continuous
  - Responsible: all Committee members
- Involving PPPs in targeted conferences, and where possible, linked to a NL pavilion.
  - Timing: continuous
  - Responsible: RVO, Health-Holland together with the Netherlands Innovation Network (IA-Network)
- Operating as a mediator in involving international partners in ongoing and new PPPs for innovation.
  - Timing: continuous
  - Responsible: RVO and Health-Holland.
- Building on global academic networks to valorize key research together with entrepreneurial expertise, by programming innovation missions together with the IA-Network with the support of RVO and the top team LSH.
  - Timing: continuous
  - Responsible: RVO and Health-Holland with Top Team LSH

## Investments in the Dutch LSH ecosystem

The Dutch ecosystem offers a valuable proposition for foreign companies to invest in. The springboard for innovation is valuable for foreign organizations. In our connected metropolis, they can benefit from highly skilled workers and close ties to University Medical Centers, science parks, and other companies. The third key ambition of this strategy is to ensure that investments in the Dutch LSH sector flourish, both in terms of capital and people.

Key to this is to continue sharing one voice on the national and regional level following the positioning of Europe's Connected Life Science & Health Metropolis. A close connection between regional and national stakeholders ensures that priorities remain aligned so that the Dutch economy can be strengthened. In 2023, the bidbook was published to introduce new companies to the Netherlands<sup>27</sup>. The book is full of success stories from companies that are already thriving in different parts of the country. This has resulted in new companies establishing a branch or even their global or European headquarters in the Netherlands, such as HIMSS<sup>28</sup>, Saluda Medical<sup>29</sup>, Initio Cell<sup>30</sup>, and Shionogi<sup>31</sup>. An important role in attracting investments to the Netherlands lies with the Invest in Holland Network 'a collaborative team made up of the NFIA', regional economic development agencies, several large







municipalities, and the Holland International Distribution Council, supporting foreign entrepreneurs in initiating or expanding activities in the Netherlands. They do this by establishing international contacts and working closely with companies that have a subsidiary in the Netherlands. Furthermore, they welcome and assist foreign companies that are committed to developing and finding sustainable, innovative, and digital solutions to global challenges.

The testbed for innovation is sometimes limited by questions of the overall affordability of the healthcare system. The implementation of novel health technologies into reimbursed care can be improved through collaboration with the Ministry of Health, Welfare and Sport (VWS), health insurers, and patients. A broader use of tools such as health technology assessment (HTA), where the value of innovations is assessed holistically, can help prioritize innovations to be implemented while also considering the limited healthcare budget<sup>32</sup>.

**In the period 2024 - 2027, LSH International Committee will stimulate investments in the Dutch LSH ecosystem by:**

- Continuing the strategy set out in the National Action Program<sup>33</sup> and spreading one message about the Netherlands as formulated in the bidbook, with support of the Tube-map<sup>34</sup>.
  - Timing: continuous
  - Responsible: NFIA and Health-Holland
- Stimulating and strengthening collaboration within the Invest in Holland Network together with the NFIA and the clusters they represent on LSH topics.
  - Timing: continuous
  - Responsible: NFIA
- Identifying hurdles that prevent innovation from reaching patients and frequently determine how the network of the LSH International Committee can contribute to alleviating these challenges by sharing hurdles with policy makers from the relevant ministries and actively discussing next steps with the committee.
  - Timing: continuous
  - Responsible: NFIA and Health-Holland



**‘In many ways we are doing well compared to other countries. But cooperation between the regional clusters can certainly be strengthened. That’s why it’s important to have a national agenda as well.’**

**Clémence Ross-van Dorp** | Ambassador National Action Program ‘New Opportunities for Top Sector Life Sciences & Health

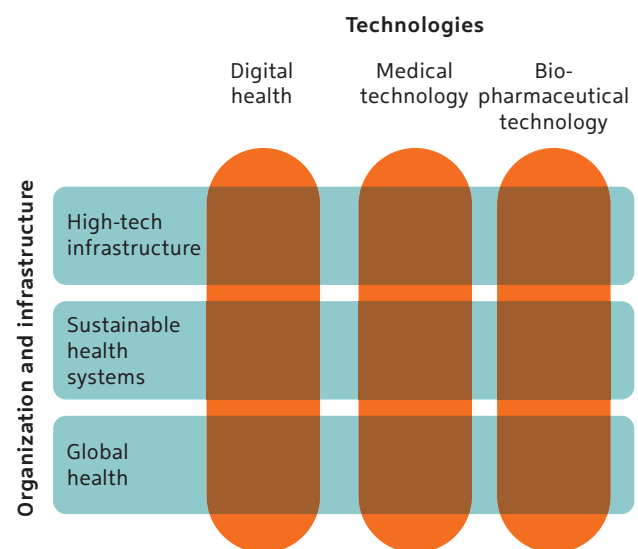
# LSH proposition: Strategic themes

In the previous International Strategy, eight value chains were identified to be coherent narratives that describe the Dutch LSH proposition. These eight value chains have been aggregated to six strategic themes for the next years. The objective is that through these themes the LSH international messaging and efforts can be more focused. They support representatives of the Netherlands in understanding the scope of the Dutch LSH sector. The strategic themes are highly inclusive, all LSH companies should be able to place themselves in at least one of the themes, while many will work across themes. While the themes are constant, building blocks for each of the themes include a wide array of specific topics tailored to major global challenges in LSH. The overall aim is that when an international LSH activity is launched, it corresponds to at least one of the relevant themes.

## Thematic narratives that explain the versatility of the Dutch LSH ecosystem

Starting in 2020, the International Strategy contained eight value chains that aimed to bring a coherent narrative, both to people working within the Dutch network for trade and innovation, as well as potential partners seeking to collaborate with the Dutch ecosystem. Some of the value chains were mapped in more detail. However, as the developments in the LSH sector grow rapid and the included value chains were generic, it was challenging to capture everything. Figure 3 displays the six LSH strategic themes for the next four years. The first three themes are technology focused: digital health, medical technology, and biopharmaceutical technology. The second three themes are focused on health organization and infrastructure: sustainable health systems, high-tech infrastructure, and global health. Overlap exists within these six strategic themes, as the implementation of novel technologies is essential to improving the health system. Narratives will be developed to comprehensively explain the different themes to a broad audience. Below, a brief overview is provided of all the themes, and some initial examples of building blocks are provided in Annex I. The building blocks are tailored to specific topics and are highly specific in nature. They can be linked to topics that are of interest to a specific market, for example, because there is a clear interest in a country and there are

opportunities for close collaborations. The building blocks will additionally provide focus areas for close collaboration between the different Top Sectors linked to the topic. Example building blocks are regenerative medicine, which could be tightly linked to a project as for example RegMed XB, which is funded by the National Growth Fund<sup>35</sup> or specific high-priority topics like Organ-on-a-Chip.



**Figure 3** The six LSH strategic themes – the vertical bars indicate the technology focussed themes and the horizontal bars indicate the organization and infrastructure focussed themes.

## Digital technology

Digital technology can be used broadly to promote health through a range of tools and services that use information and communication technology to improve prevention, diagnosis, treatment, monitoring, and management of health and lifestyle<sup>36</sup>. Data science plays a significant role in digital health, as scientific methods, processes, algorithms, and systems are used to extract knowledge and insights from data. Digital technology can help patients and healthy individuals to better understand their health and disease. It can motivate and support lifestyle changes or disease management by reminding people of their goals, appointments, or medication, and help people monitor progress. The innovations in digital health are often highly scalable and can be used to target populations. Moreover, large quantities of medical data aid in developing cost-effective innovations for the future, enabling the



prioritization of both research and implementation of novel health technologies. Privacy always needs to be at the forefront of any large-scale digital technology.

Digital technology entails a broad spectrum of applications and tools that are used by a broad spectrum of end users. For a well-functioning digital health technology landscape, a solid data-infrastructure needs to be in place and data needs to be stored and shared efficiently, secured, and effective. When these conditions are in place, patients can start using solutions to prevent and control their health. Furthermore, healthcare professionals can communicate, use assistant diagnostic tools, and optimize workflow and researchers can use data to analyze and innovate the solutions of the future.

The Netherlands holds excellent research clusters in ICT and LSH, and has a great international track record, for example in Horizon Europe grants. This has resulted in a thriving ecosystem for the innovation and implementation of digital health in the Netherlands. Important National Growth Fund projects that are pioneering the future of connected care are Health-RI<sup>37</sup>, AINed<sup>38</sup>, and DUTCH<sup>39</sup>.

### Medical technology

Medical technology (MedTech) comprises various devices used throughout the health system and have a fundamental role in patient care by providing innovative healthcare solutions for the diagnosis, prevention,

monitoring, prediction, prognosis, treatment or alleviation of a disease or condition. Medical devices can reduce the demand of care, support the work of healthcare professionals, or increase the independence of elderly, chronically ill patients, and people with a lifelong disability.

Innovative rapid point-of-care diagnostics can inform treatment decisions while a patient is consulting a doctor or visiting a pharmacy, without waiting days for test results from laboratories. Surgical robots enable procedures with next-level precision, so that patient outcomes are improved, and patients recover faster. Some devices can also be directly used by patients, such as prosthetic limbs or pacemakers, enabling chronically ill patients to participate in and contribute to society.

Close ties between technical universities and UMCs allow for technological advances in the Dutch MedTech sector.

The Eindhoven MedTech Innovation Center (e/MTIC) is a large-scale strategic research collaboration between the TU/e, Philips Eindhoven, the Catharina Hospital, Maxima Medical Center, and Kempenhaeghe Epilepsy and Sleep Center in the field of cardiovascular, perinatal and sleep medicine. This ecosystem provides all essentials for outcome-driven research with the aim of creating a growing ecosystem that accelerates the speed of high-tech health innovations while maximizing the added value for patients and reducing cost<sup>40</sup>.



## Biopharmaceutical technology

The biopharmaceutical sector is a growing sector in the Netherlands, attracting more and more companies and investments from abroad. The Netherlands hosts many innovative biotechnology companies, from start-ups to small and medium-sized enterprises to large companies that are active in the field of health, nutrition, or bio-based economy. Within the Netherlands, 420 biopharmaceutical companies employ over 34,000 people. Combined with the world-class universities and UMCs, this results in a dense concentration of biopharma, unrivalled in the world. In 2019 the European Medicines Agency (EMA) moved to the Netherlands to further strengthened the position of the Netherlands as a frontrunner in regulatory innovation in Europe.

While the biopharmaceutical industry has focused on treatments that can be administered to a wide range of patients in the past, more tailored treatments are the focus now. Personalized medicine recognizes the large differences between individuals and can have a tremendous impact on the lives of patients. Whether we are talking about drugs targeting specific mutations on a tumor, regenerative medicine where full organs can be grown that match the patient's DNA, or gene therapy that can cure genetic disorders.

An important example of an initiative to further stimulate the Dutch biopharmaceutical sector is FAST. FAST is an expertise center, commissioned by the Dutch government, and initiated to facilitate faster, smarter, and sustainable development, production, and access of new therapies for patients. The center bundles and unlocks expertise and stimulates connectivity in the ecosystem.

Opportunities and hurdles are identified, prioritized, and subsequently tackled in an integrated manner, for example in use cases, experiments, and pilot studies. FAST connects stakeholders who are actively involved in the process of innovative therapy development, such as researchers, patients, entrepreneurs, science parks and regulatory authorities<sup>41</sup>.

In the biopharmaceutical sector, there are key National Growth Fund projects that have been allocated a budget of over one billion euros of public and private financing: Biotech Booster<sup>42</sup>, Oncode-PACT<sup>43</sup>, and PharmaNL<sup>44</sup>. This financial boost further advances the Dutch Biopharma ecosystem in the years to come.

## High-tech infrastructure

The aforementioned health technologies need to be engineered, validated, manufactured, and distributed. This can be at large scale, such as is the case for vaccines, or at a very small scale in the case of some personalized technologies. In addition to the supply chain infrastructure that is necessary to get a product to the patient, good architecture is required to provide care, such as operating rooms in hospitals or community pharmacies with medication robots.

Organ-on-a-Chip technology may provide the tools to revolutionize the R&D and application of treatments, combining advanced microfluidic systems with complex organoids in a single system that can be used to predict the pharmacokinetics, pharmacodynamics, and effectiveness of new and existing treatments. The Netherlands is a frontrunner in this field with companies like Mimetas<sup>45</sup>, academic networks like hDMT<sup>46</sup>, and accelerated development within the National Growth Fund project NXTGEN Hightech<sup>47</sup>.

Another example is RegMed XB, another National Growth Fund project that is developing a pilot factory for regenerative medicine. The RegMed XB Pilot Factory is a unique infrastructure that consists of facilities covering the entire chain of development and production of stem cells, mini-organs, tissues and smart (bio)materials. Around each pilot line, companies and knowledge institutions work together on the development of clinical applications and increasingly better, cheaper, scalable and exportable production equipment and services<sup>48</sup>.

## Sustainable health systems

There are urgent societal challenges linked to the organization, affordability, and environmental footprint of the healthcare sector. In an ageing population, making sure healthcare remains sustainable is a challenge, as health expenditure continues to rise across high-income countries<sup>49</sup>. All the new technologies bring an important societal challenge: how to pay for it all, while making sure there is a clear incentive for innovation? Care will be less accessible for an increasing number of people, how do we make sure patients are looked after, while keeping our healthcare workforce happy? And how can we ensure the availability of medical products in the future? How can the healthcare sector contribute to the reduction of waste and carbon emissions? The healthcare sector is responsible for 7% of carbon emissions and 13% of resource use<sup>50</sup>. Can we shift the focus from curing disease to preventing disease, for example by investing in public health?

The economic and policy incentives to spur LSH innovation and address the societal challenges must be balanced if healthcare systems are to be sustainable in the long term. The Green Operating Room<sup>51</sup> and the Green Deal Sustainable Healthcare<sup>52</sup> are important initiatives to reduce the climate footprint of the Dutch healthcare sector. Furthermore, the Netherlands is home to world-renowned expertise in the field of Health Technology Assessment (HTA) and the unique quadruple helix approach<sup>53</sup>. This unique approach where knowledge institutions, industry, government, and citizens are involved, has led to essential partnerships to make the healthcare system ready for future generations. The MTIP (described on page 7) has focused on the efforts of the various stakeholders on key societal challenges<sup>54</sup>.

An example of a large PPP, with representatives from the quadruple helix, is the National Plan *Hoofdzaken* (National Brain Plan). This program is aimed at improving brain and psychological health, which is necessary because a significant proportion of the population, approximately one quarter, suffers from brain and/or psychological disorders. The limited options for interventions result in adverse effects on the individuals, their environment, and society<sup>55</sup>.

### Global health

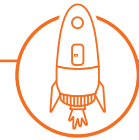
International health systems are intrinsically intertwined: infectious diseases can cross borders easily, think about pandemic viruses or resistant bacteria. Health threats from warmer climates, like malaria, may come to the

Netherlands because of climate change. The results of climate change, such as severe droughts, floods, and disrupted ecosystems have a major impact on human health<sup>56</sup>. Global inequality in health has increased in recent years, especially since the COVID-19 pandemic hit<sup>57</sup>. Inequalities within countries, for example related to the position of women, girls, and minority groups, further complicate reaching the third SDG: to ensure healthy lives and promote well-being for all at all ages<sup>58</sup>. These phenomena can be considered part of global health, or even broader planetary health.

The Dutch Global Health Strategy was launched in 2023<sup>59</sup>, as well as the Dutch Global Health Hub<sup>60</sup>, which aims to bring together various partners nationally and internationally that are active in global health, including non-governmental organizations, companies, and various levels of government. The Netherlands has a strong history in infectious disease management and the area of one health. An example of a Dutch-Indian-Swiss collaboration to stimulate investment, innovation, and implementation in this field is the WAAH! Accelerator<sup>61</sup>. This one health partnership leverages the strengths of the Netherlands, India, and Switzerland to develop new therapeutics, vaccines, and digital health solutions to combat future infectious disease threats. AMR-Global is a PPP that aims to lift barriers to development, evaluation, and implementation of innovations that improve antimicrobial stewardship, diagnostics for infectious disease, and antimicrobial treatment<sup>62</sup>.



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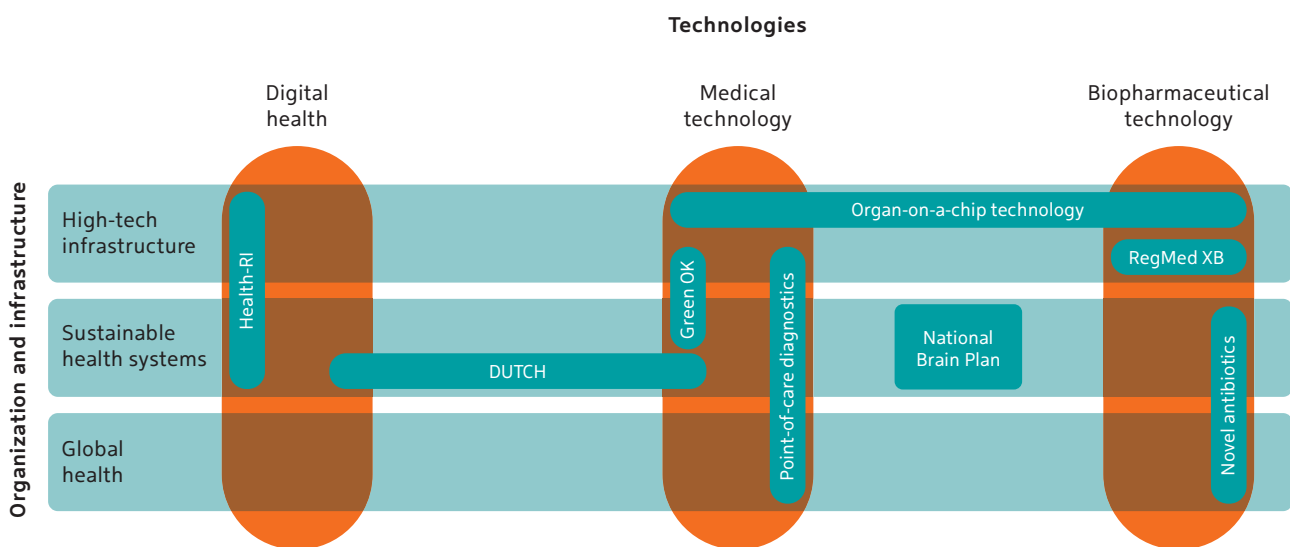
In the new Knowledge and Innovation Agenda 2024 - 2027 Health & Care<sup>63</sup>, a fifth specific mission was added: By 2035 the population will be better protected against socially disruptive health threats. This will lead to technological advances and new PPPs to be developed in the coming years that will have major benefits for global health, including monitoring systems, highly scalable emergency healthcare infrastructure, therapeutics, vaccines, and social innovation for health resilience.

### Focus in the next years

These six overarching strategic themes will be filled in further and linked to the topic-specific building blocks. Gradually, the goal is to expand the toolbox that can be used by the Top Sector and its stakeholders and partners to strengthen existing partnerships and create new ones. This needs to be all easily accessible from the Health-Holland website.

**In the period 2024 - 2027, the LSH International Committee will further develop the strategic themes by:**

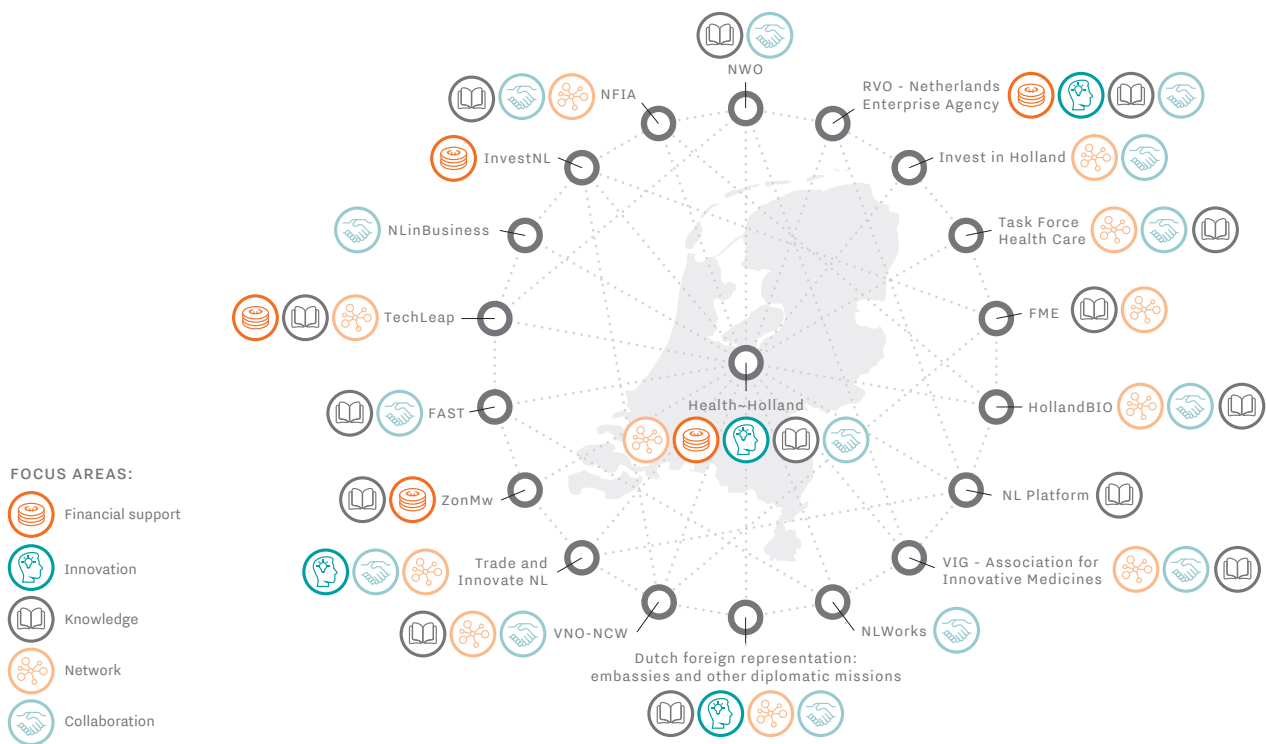
- Creating an overarching broad narrative for each of the strategic themes, that can be used in a Dutch and international context as a starter for conversation.
  - Timing: finalized mid 2025
  - Funding and responsible parties to be determined
- the strategic themes to specific countries, together with the LSH Ambassadors Network (see Embedding the global perspective, page 18).
  - Timing: finalized end of 2026
  - Funding and responsible parties to be determined
- Compiling helpful materials, such as reports or presentations, related to the building blocks.
  - Timing: continuous, based on relevant topics and external requests.
  - Responsible: editorial working group
  - Funding to be determined
- Linking the building blocks to companies, academic institutes, and consortia, as for example National Growth Fund projects and PPPs.
  - Timing: continuous, based on relevant topics and external requests.
  - Funding and responsible parties to be determined



**Figure 4** Example of several building blocks embedded within the six main LSH themes. For more details see annex I.



# Strengthening the ecosystem

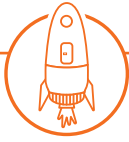


**Figure 5** Collaborating parties within the LSH sector

It is key to closely collaborate with the partners involved in LSH advocacy, see Figure 3 for an overview of the ecosystem. This includes public and private stakeholders working on local level in the Dutch regions, on the national level, and abroad on the global level, for example in embassies. The Top Sector LSH (Health-Holland) International Committee is chaired by Top Sector LSH and consists of representatives of the Ministry of Economic Affairs and Climate Policy (EZK), the Ministry of Foreign Affairs (BZ) and the Ministry of Health, Welfare and Sport (VWS), Netherlands Enterprise Agency (RVO), Invest in Holland, Trade and Innovate NL Network (TINL), hollandbio, Task Force Health Care (TFHC), and relevant parties from the LSH field. Frequent contact between these stakeholders ensures a cohesive strategy and enables a quick relay of outside requests to the right person or organization. It is important to connect the broad ecosystem to the LSH International Committee and other efforts done in the context of the International Strategy.

## Aligning with the regional needs

To have a positive impact on the health-related SDGs, and the footprint and economic development of the Dutch LSH sector, it is essential to make sure all plans made on the central level align with the needs at local level and vice versa. In the end, the national strategy should be in service of companies, research institutes, and other organizations that operate all throughout the Netherlands, whether that is on the Healthy Ageing Campus Groningen, Brainport Eindhoven, or the Utrecht Science Park (see Figure 5 for all LSH campuses in the Netherlands). To improve the alignment with regional organizations, the LSH International Committee will be held in a region twice a year. This will provide opportunities for exchanging ideas, visiting local businesses, and networking with new and existing partners. Additionally, the How-to-Connect sessions have previously been a valuable networking opportunity for the national and local levels and will be continued in the current strategy.



**In the period 2024 - 2027, the LSH International Committee will further align the central level with the local level by:**

- Organizing an LSH International Committee in the region twice a year, which includes topics around 'how to connect'.
  - Timing: twice a year
  - Responsible: rotating members of the committee
- Hosting a networking event twice a year preferably combined with a locally organized event such as Health Valley or Zorg&ICT days.
  - Timing: twice a year
  - Responsible: Health-Holland
- Organizing an annual 'How-To-Connect' networking event during a national LSH event such as Innovation for Health or Health-Holland visitors program, each time co-organized with a different organization within the LSH International Committee.
  - Timing: annually
  - Responsible: Health-Holland and rotating other members

activities and expected opportunities with input from various stakeholders. These countries are Belgium, Brazil, China, France, Germany, India, Indonesia, Japan, Kenya, Singapore, Spain, Sweden, Switzerland, the United Kingdom, and the United States. An overview of the specific efforts (trade, innovation and investments) expected per country is provided in Annex II. These target countries are expected to be the focus of bilateral collaborations in the period 2024 - 2027. The focus and efforts will be determined in 2024, based on data (see also "Strategy implementation", page 24) and will lead to an update of Annex II as it is currently included in this strategy. An important aspect of this update is to link the six overarching strategic themes to the target countries, to be able to further focus the efforts within the bilateral connections.



**In the period 2024 - 2027, the LSH International Committee will bring focus to the bilateral efforts by:**

- Further developing the bilateral strategy through a detailed overview of the target countries based on data on existing collaboration and business, as well as combinations between the countries and strategic themes. This strategy will replace the current Annex II when ready.
  - Timing: finalized end of 2024 and periodically reviewed by international committee
  - Responsible: RVO, EZK, VWS, BZ and Health-Holland
  - Funding and responsible parties to be determined

**Bilateral connections to maximize impact**

To prioritize the efforts of the LSH International Committee, a list of 15 target countries has been drafted based on various characteristics such as current



**'Working together is part of the Dutch DNA. By collaborating with the best, we can identify innovative solutions that matter. Join us in innovating the future of health, for the benefit of patients and society at large.'**

**Hans Schikan** | Top Team member, Top Sector Life Sciences & Health (Health-Holland)



## Embedding the global perspective

To inform the representatives in the different countries of the Dutch LSH message, short presentations are given during the already organized annual return days. To further close the gap between people working in the Netherlands and abroad, an LSH Ambassadors Network will be created. This network consists of a diverse set of representatives, such as VWS attachés, Innovation Attachés, and where relevant Economic attachés and representatives from the Netherlands Business Support Offices. These ambassadors will be the first point-of-contact for the strategic partners. A structural way to bring these ambassadors into contact with each other and the LSH International Committee will be developed in the coming years. To inform (new) people working on both the regional and global levels on how to find each other and to learn about the responsibilities and activities within the LSH International ecosystem, a communication toolkit will be developed.

**In the period 2024 - 2027, the LSH International Committee will further tighten the ecosystem of LSH advocacy through:**

- Annually giving an update on the LSH international efforts during the return days for Dutch representatives abroad (business development coaches, innovation counsellors).
  - Timing: annually
  - Responsible: Corresponding ministries and RVO
- Creating the LSH Ambassadors Network consisting of the people working on advancing the Dutch LSH ecosystem abroad and supporting the International Strategy. This starts with maintaining an overview of all innovation attachés active in LSH.
  - Timing: network-initiated end of 2024
  - Responsible: Health-Holland
- Creating an LSH international info kit by the editorial working group with comprehensive information for all players who have or will have an active role in stimulating the Dutch LSH sector internationally.
  - Timing: ready end of 2024
  - Responsible: Health-Holland





# Communication, storylines and branding

## Being visible on the right platforms

Public and private organizations may not always be fully aware of all the available support the partners within the LSH International Committee have available. Online communication, primarily through LinkedIn, email, and websites of the partners has a vital role in directly reaching these organizations. An editorial working group will be appointed within the LSH International Committee to ensure a steady, more structural and pro-active flow of content on the various communication platforms.

The editorial working group within the LSH International Committee will, as before, be in the lead to develop content on the various platforms. This includes events that are relevant, such as international conferences, incoming delegations, and outgoing missions. All the communication needs to be in the style of the NL and Health-Holland branding and further linked to Europe's Connected LSH Metropolis and LSH strategic themes. A useful way of communicating successes is the use of testimonials; interviews with people during or after events will be used to create stories that can be shared broadly on social media.

Conferences offer opportunities to improve the visibility of the Dutch LSH sector, both national and international. The MEDICA<sup>64</sup>, BIO-Europe (spring)<sup>65</sup> and BIO International Convention<sup>66</sup> have been identified as key strategic conferences, which will remain a high priority in the next years. Tailored to each event, Health-Holland together with the partners in the LSH International Committee will continue to deliver value for Dutch partners in getting the Dutch message across, through for example the existence of a pavilion on a conference or key matchmaking activities. When other conferences are relevant for a subset of Dutch LSH parties, it is always an option to explore specific activities by the parties in the LSH International Committee.



**In the period 2024 - 2027, the LSH International Committee will further develop the communication and marketing of the Dutch LSH network through:**

- Continuing the editorial working group within the LSH International Committee.
  - Timing: continuous
  - Responsible: Invest in Holland, NL branding and Health-Holland.
- Making it standard procedure to come up with a communication plan for all relevant international events, both incoming and outgoing. A framework for this communication plan will be created by the editorial working group which is adjustable to the specific event, but every organizing party or visitor to the international event itself is responsible for the use of this plan.
  - Timing: continuous, framework ready mid 2024
  - Responsible: all communication departments from committee members
- Focusing on narratives to tell success stories on social media.
  - Timing: continuous
  - Responsible: editorial working group
- Continuing the efforts on the various strategic LSH conferences, with a focus on MEDICA and BIO-Europe (spring) and BIO International Convention.
  - Timing: continuous
  - Responsible: Task Force Health Care and hollandbio
- Collecting and sharing events within the LSH International ecosystem through proactive input from all members of the Committee on the Health-Holland website.
  - Timing: continuous
  - Responsible: Health-Holland with input from all committee members



NL Pavilion BIO-Europe 2023

## Taking Europe's Connected Metropolis to the world stage

High-level branding of the Dutch LSH sector has been introduced in the previous period of the Health-Holland International Strategy. Next to the NL and Health-Holland branding, the Tube-map positions the whole of the Netherlands as Europe's Connected LSH Metropolis with a high density of LSH initiatives and excellence. Instead of focusing on competition between the various regions, the Tube-map stresses the close ties of collaboration in the Netherlands. Although initially designed to attract foreign investments for the Dutch LSH ecosystem, the branding works well to explain the Dutch LSH ecosystem to a broad audience. The positioning and branding will be continued and elaborated upon in the period 2024 - 2027.

While the developed positioning and branding works effectively to bring outside investments to the Netherlands and for companies to position themselves within the LSH ecosystem, it does not primarily aid Dutch business to expand trade internationally. While companies always need to develop their own communication strategy, the LSH thematic narratives will provide all LSH companies with a story arch that they can use to sell their products and services. Additionally, the thematic

narratives will aid in directing generic public funds to the LSH sector more effectively. For trade purposes, the six themes will offer a broad narrative that can be applied to a wide range of organizations. To drive Dutch innovation forward abroad, the building blocks will offer highly tailored narratives linked to specific topics.



**In the period 2024 - 2027, the editorial working group of the LSH International Committee will further enhance the visibility of the Dutch LSH network through:**

- Doubling down on the Europe's Connected LSH Metropolis positioning and branding.
  - Timing: continuous
  - Responsible: NFIA
- Creating communication tools aligned with Europe's Connected LSH Metropolis positioning as well as the six main LSH themes and publishing these on the Health-Holland website.
  - Timing: finalized end of 2026
  - Funding and responsible parties to be determined

# Europe's connected Life Sciences & Health metropolis



Figure 6 Europe's Connected LSH Metropolis represented in the Tube-map



# Strategy implementation

In recent years, the Health-Holland International Strategy has enabled important milestones such as the multiannual integral programming to coherently position the Dutch LSH ecosystem abroad. This required a tight collaboration between the various public and private partners involved. Two main challenges arose on the multiannual programming. The first challenge has been the allocation of funds to a program approach covering multiple years. The second challenge has been the alignment of many involved parties in the ecosystem and determining the party in the lead. Due to the collaborators from various departments working from different countries, it is essential that there is one point of access to valuable resources online and there are short lines of communication between people. The key responsibility for the implementation of this strategy and the allocation of instruments lies with those who provide the instruments such as RVO and Health-Holland. The newly appointed international public-private steering

committee provides us with the opportunity to build upon alignment by setting the guidelines and principles of international public-private collaboration.

## Tackling the Achilles' heel: data for an informed strategy

For creating effective policies and making the right decisions, it is important to combine and visualize data from various sources. While in the past, the Statistics Netherlands (CBS) provided detailed information on Top Sector LSH, this report was discontinued in 2018<sup>67</sup>. A wealth of information is already available from various sources of the Dutch government but needs to be combined and tailored to the LSH sector. This includes data on trade, innovation, and investments. Initially, this will be used to further prioritize the countries and create strategic theme – country combinations. Later, it can also



be used to sort organizations based on the six strategic themes and potentially the building blocks. Providing appropriate access to these data will further stimulate collaboration within the LSH International Committee.



**In the period 2024 - 2027, the LSH International Committee will aggregate relevant data to inform the Health-Holland International Strategy by:**

- Arranging access where needed and aggregating the various data sources from the partners in the LSH International Committee particularly the local development agencies.
  - Timing: end of 2024
  - Responsible: RVO and local development agencies
- Making an accessible dashboard or factsheets available on the Health-Holland website to explore the data that can be paired with the country specific information.
  - Timing: end of 2025
  - Funding and responsible parties to be determined
- Appropriately sharing specific data with the partners in the LSH International Committee and other relevant stakeholders, for example on the number of requests from companies related to specific countries.
  - Timing: continuous
  - Responsible: RVO

**The monitor: a comprehensive portal with and for all partners**

Since 2020, the monitor has been published on the Health-Holland website. This country-specific information provides an overview of key indicators, LSH trends and developments, growth potential, and market studies for many important countries. This helps companies and public parties in initiating activities abroad and selecting countries that provide the best opportunities. However, the discoverability of the monitor remains an issue and it requires continued effort to keep the information up to date.

The monitor will be further developed to combine both the target countries as described in Annex II and the LSH strategic themes. The process to update the monitor will be updated in 2024, with simplification and

standardization in mind. To ensure the information stays up to date, the LSH Ambassadors Network will be continuously reminded to keep it updated. Strategic data on a high aggregation level from the LSH International Dashboard will be placed on the monitor so that it can inform the public and private parties.



**In the period 2024 - 2027, the LSH International Committee will further develop the monitor by:**

- Drafting a new process to update the monitor and definite how the monitor will be updated and supported continuously.
  - Timing: end 2024
  - Responsible: Task Force Health Care, RVO, Health-Holland
- Supporting the LSH Ambassadors Network in keeping the country profiles up to date based on monitor.
  - Timing: starting 2025 continuously
  - Responsible: editorial working group
- Making use of the themes and building blocks to focus on strategic topics and support bilateral collaboration through the monitor.
  - Timing: continuously based on value chains from previous strategy
  - Responsible: all committee members

**Integral programming**

Integral programming to which all stakeholders within the LSH International Committee contribute has been successful to some extent in the past years and has resulted in multiannual integral programming. This has provided a long-term outlook for the priorities and activities. However, there is room for improvement, primarily on the alignment of plans on the regional, national, and global level, making sure that these plans complement each other and that resources are made available. Going forward, requests for elaborate roadmaps in the context of multiannual programming will need to be accompanied by the necessary funds. To this end, an annual outreach will be performed about plans and strategies for all relevant levels of decision making. This exercise aims to visualize how and when all relevant stakeholders draft and finalize their plans for the next year or years. This decision-making calendar can then be used to make sure that input is provided at the right time to the various organizations.

Using the decision-making calendar, the process to come to the integral programming can be further refined, potentially altering the covered period and the time at which the plans are finalized. This may result in a change from multiannual plans to annual plans if this is considered to be more appropriate. In any case, the LSH International Committee will brainstorm annually on the priorities for the next year, such as the focus of missions, strategic fairs, bilateral cooperation, and tapping into the European LSH network<sup>16</sup>. The further alignment between the different ministries and their programs is another opportunity that can be linked to the decision-making calendar.



**In the period 2024 - 2027, the LSH International Committee will further align decision-making processes by:**

- Clarifying the decision-making processes relevant to the stakeholders in the LSH international field.
  - Timing: ready early 2025 and updated annually with annual plans related to public-private collaboration and highlighting important foci
  - Responsible: representatives of the ministries EZK, VWS and BZ
- Providing an overview of the decision-making calendar during the International Committee meetings on a regular basis.
  - Timing: starting in 2025 and updated continuously
  - Responsible: representatives of the ministries of EZK, VWS and BZ together with RVO
- Organizing an annual strategic session to identify priorities for the next calendar year between all members of the International Committee.
  - Timing: annually
  - Responsible: Health-Holland

**Continuous improvements through an evaluation cycle**

The focus on data to structurally monitor the success of the LSH International programming is to be explored further in the next few years, as described above. To measure the trends within the LSH internationalization ecosystem, three main indicators have been identified that will be measured within the next years. First, this will be the number of companies that have received support as reported in the Achilles database. This data will be split

to the level of the region in the Netherlands based on the location of the companies and will be split based on the country that the question pertains. This will provide insight into the economic activity within the regions and into the countries that companies are interested in. The second indicator is the number of events such as conferences and missions that are on the agenda, which will provide insight into the overall activities within the LSH International ecosystem. The third is monetary value of LSH export from the Netherlands, which gives an indication on the overall size and international success of the LSH sector. Although these measures are directly related to many of the activities as described in this strategy, there are no strict targets associated with them as there is no baseline measure. The next years will be used to create such a baseline, which may be used to steer policy in the future. The exact mix of indicators may need to be adapted together with the partners within the International Committee, since some may be difficult to quantify.

There will be specific goals set for the main events organized by the partners within the LSH International Committee. This will encourage those involved to set clear priorities and think about when the event can be considered a success. Afterwards, the event will be evaluated, and lessons will be drawn for future activities.



**In the period 2024 - 2027, the LSH International Committee will measure success by:**

- Keeping track of the following indicators:
  - Number of companies that were aided through Achilles (responsible: RVO);
  - Number of events (conferences, missions) that are on the activity agenda (responsible Health-Holland);
  - Value of LSH-related export from the Netherlands (responsible party to be determined).
- Defining clear goals for the main events organized within the LSH International Committee linked to the goals within the International Strategy, and evaluating whether these were reached.
  - Timing: continuously
  - Responsible: main organizing partner together with RVO and Health-Holland



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TRADE AND  
INNOVATE WITH  
THE DUTCH



Ministry of Economic Affairs  
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Ministry of Foreign Affairs



Ministry of Health, Welfare and Sport



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# Annex I: Example building blocks

## Embedding the building blocks in the themes: example

The building blocks are specific themes that can be linked to the main LSH themes. There is likely an overlap, in that a building block can be linked to various strategic themes.

See Figure 5 for an example where several building blocks are embedded within the schematic overview of the main LSH themes. For example, Organ-on-a-Chip technology is a high-tech combination of medtech and biotech. Novel antibiotics are biopharmaceutical innovations necessary for sustainable healthcare systems and global health.

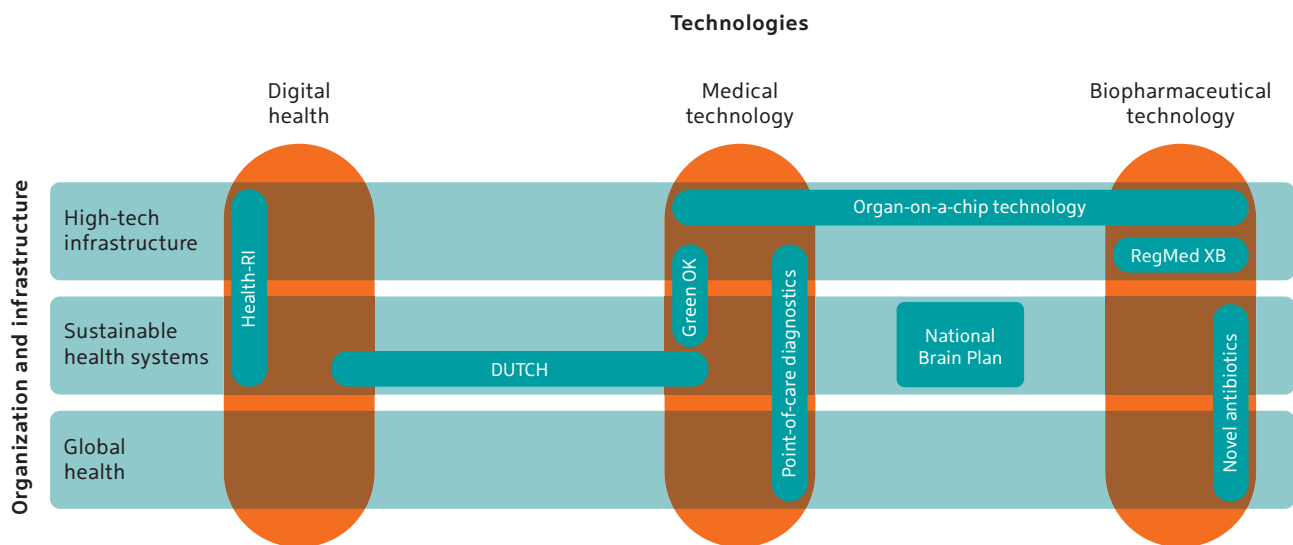


Figure 5 Example of several building blocks embedded within the six main LSH themes

## Example building blocks

Please note that the following list is not comprehensive. It serves as an example of different types of building blocks within each of the themes.

- **Digital health**
  - Artificial intelligence
  - Virtual reality
  - eHealth
  - Telemedicine
- **Medical technology**
  - Point-of-care diagnostics
  - Medical robotics
  - Surgical instruments
  - 3D-printed limbs
- **Biopharmaceutical technology**
  - Personalized medicine
  - Regenerative medicine
  - Gene and stem cell therapy
  - Drug delivery methods
  - mRNA-vaccines
  - Novel antibiotics
- **High-tech infrastructure**
  - Organ-on-a-Chip
  - Scientific research and validation
  - Design and engineering
  - Prototyping and testing
  - Large-scale production
  - Packaging and distribution
  - Products and services in designing, constructing, furnishing, providing equipment for, operating and maintaining hospitals and clinics
  - Smart and sustainable building and operating of care facilities
  - The green OK

- **Sustainable health systems**

- Products and services in the area of prevention, rehabilitation, elderly care, and home care
- Dementia
- Value-based healthcare
- Health Technology Assessment
- Physiotherapy
- Screening/managing infectious and non-infectious diseases

- **Global health**

- Antimicrobial resistance
- Pandemic preparedness
- Strengthening health(care) systems: knowledge, products and services in the areas of education, policy, funding, training, consultancy and advising to realize better and more accessible care systems
- Screening/managing infectious and non-infectious diseases
- Maternity care
- Emergency care and disaster care

# Annex II: Target countries

Table 1 displays the target countries that will be the focus of the various activities described in the Health-Holland International Strategy 2024 – 2027. If a country is not on this list, this does not mean that there will be no activities. However, the main focus within the LSH International Committee to proactively pursue further developments will be on the countries in the table and the selected activities.

Country	Research, development, and innovation	Trade	Invest	Geopolitical	Memorandum of Understanding signed
Belgium	✓	✓			✓
Brazil	✓	✓		✓	
China		✓		✓	✓
France	✓	✓		✓	
Germany	✓	✓		✓	
India	✓	✓			✓
Indonesia	✓	✓		✓	✓
Japan	✓				
Kenya	✓	✓		✓	
Singapore	✓				
Spain	✓	✓			
Sweden	✓		✓		
Switzerland	✓	✓	✓		
United Kingdom	✓	✓	✓		
United States	✓	✓	✓	✓	✓

**Table 1** Target countries for the Health-Holland International Strategy 2024 - 2027, in alphabetical order



