



Ministerie van Economische Zaken

The Triple Helix: Innovation Policy in the Netherlands

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NL Industry/Innovation Policy: 1945-2020

1945-1970: Reindustrialisation, active industry policy

1970-1980: Defensive industry policy

1980-1990: Start of offensive innovation policy

1990-2000: Focus on market liberalisation / EU

2000-2010: strong business–strong government:

Public Private Partnership of Business, Knowledge Institutions and Govt.

2010-2020: PPP-Smart Specialisation: redirection
of public R&D to innovation: Top Sector Policy

2020-2025: Mission Driven Innovation Policy -Societal Challenges
and Key Enabling Technologies; National Growth Fund: +20 Bln
investment in Knowledge & Innovation



The Netherlands' performance

| | |
|---|-----------------------|
| GDP per cap in 2015 (in USD) (The Conference Board, 2016) Ranking including / excluding major oil exporting countries | 49.206 rank:14 / 8 |
| Global Competitiveness Index (WEF, 2020) | rank: 5 (2011: 7) |
| Global Innovation Index WIPO/INSEAD/Cornell July 2020 | rank: 6 (2011: 9) |
| European Innovation Scoreboard (European Commission, 2020) | rank: 5 |
| Labour productivity per hour worked in 2016 (OECD) | 67,1 rank: 7 |
| Global Connectedness Index (Ghemawat/DHL)/ MGI Connectedness Index (McKinsey) | rank 1/2 |
| Science Impact Score (2012-2015) (Rathenau Instituut/CWTS, world average= 1,00) | 1,52 rank: 2 |



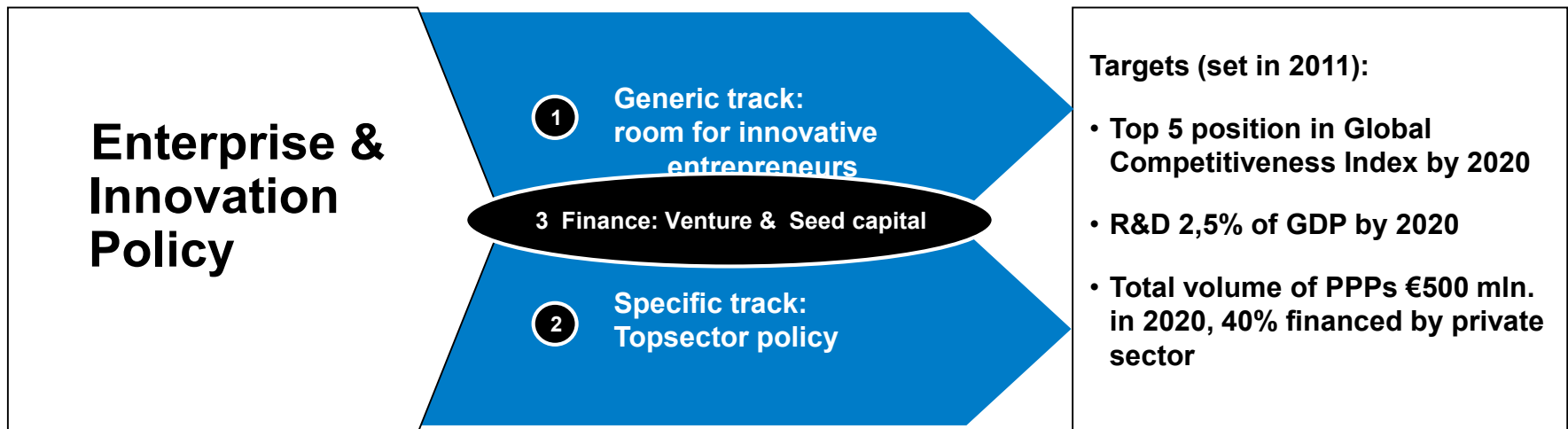
NL Knowledge Economy

| | NL | EU-28 |
|--|------------|------------|
| Private R&D (% of GDP, 2019) | 1.5 | 1.3 |
| Public R&D (% of GDP, 2019) | 0.8 | 0.7 |
| Scientific and technical journal articles (per million population, 2016) | 929 | 506 |
| WIPO patent applications (per million population, 2016) | 250 | 103 |

Sources OECD, Statistics Netherlands, World Bank, WIPO, Eurostat and The Conference Board



Innovation policy structure, goals and targets



Goals:

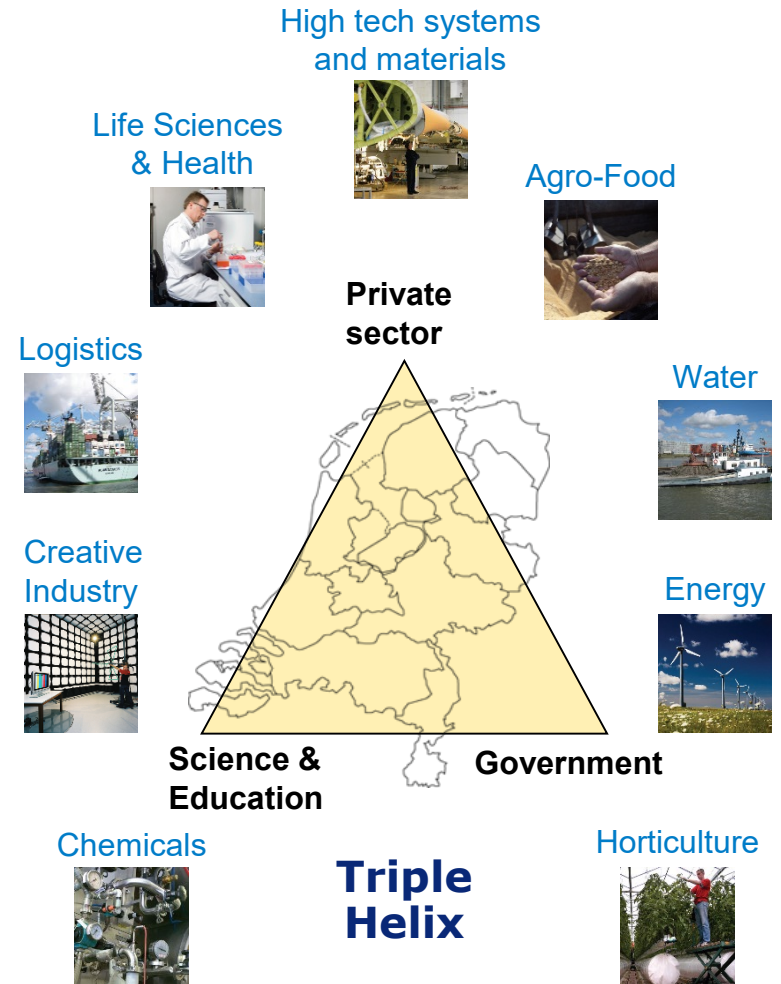
- + Increasing innovative capacity for productivity growth and competitiveness
- + Providing solutions to societal challenges



Triple Helix: Top Sector Policy

Comprehensive PPP Agenda's:

- Joint programming of research
- Human capital agenda's
 - 'Pact for Technicians' to increase supply of S&T-graduates
- Regulation
 - remove specific regulatory barriers
 - introduce incentives
- International
 - trade & innovation missions, acquisition, innovation cooperation
- Regional cooperation
 - MIT SME scheme
 - campuses, knowledge valleys
 - innovative procurement





White Paper on Mission Oriented Innovation Policy July 2018 and National Growth Fund 2020

- Mission oriented approach to societal challenges and economic opportunities: energy transition/sustainability; agriculture/food/water; health/health care; security
- Intensify development of Key Enabling Technologies (ICT & AI, Photonics, Quantum-, Nano- and Biotech, Advanced Materials)
- New agenda Dutch Top Sectors (KETs/societal challenges), including internationalisation
- Formation of new International Strategy Deliberation (ISO NL) to devise comprehensive NL internationalisation strategy (Trade, Innovation, Investment, Talent and Development, integrating Regional and National policies)
- From Horizon 2020 (€ 70 Bln) to Horizon Europe (€ 80 Bln)
- Case for Change: National Growth Fund: 20 BLN Euro 2021-2025





Key (Enabling) or Critical Technologies

- 8 Categories of Key technologies
 - 49 Key technologies (KT)
 - In 13 KT NL is first within EU
 - In 16 KT is second within EU
 - In 12 KT NL is third within EU
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- Source: Quantitative Analysis of Dutch Research and Innovation in Key Technologies, Elsevier Research Intelligence, June 2018



Table 1: Output and FWCI of top 5 Dutch research institutes compared to top institutes of comparator countries, for select key Technologies, for the period 2007-2016. Source: Scopus and ScienceDirect

| Group Category | Tech Name | Top 5 NL Institutes | Publications | FWCI | Top Institutes of Comparator countries | Publications | FWCI |
|--|-----------|------------------------------------|--------------|------|--|--------------|------|
| Engineering & Fabrication Technologies | ImagTech | Utrecht University | 3313 | 2.01 | (USA) Harvard University | 16951 | 2.11 |
| | | Erasmus University Rotterdam | 3082 | 2.23 | (FRA) CNRS | 11654 | 1.56 |
| | | University of Amsterdam | 2949 | 2.04 | (DEU) University of Heidelberg | 4287 | 1.79 |
| | | Philips HealthTech | 2611 | 1.71 | (GBR) University College London | 7027 | 2.07 |
| | | Radboud University Nijmegen | 2542 | 2.24 | (KOR) Seoul National University | 4965 | 1.38 |
| Nano-technologies | NanoManuf | ASML Netherlands BV | 411 | 3.39 | (USA) Massachusetts Institute of Technology | 614 | 2.05 |
| | | University of Twente | 291 | 1.27 | (FRA) CNRS | 1901 | 1.27 |
| | | Delft University of Technology | 254 | 1.56 | (DEU) Karlsruhe Institute of Technology KIT | 484 | 1.70 |
| | | Eindhoven University of Technology | 247 | 1.24 | (GBR) University of Cambridge | 407 | 1.36 |
| | | Philips HealthTech | 106 | 2.77 | (KOR) Korea Advanced Institute of Science and Technology | 529 | 1.44 |
| Digital Technologies | BigData | University of Amsterdam | 1352 | 1.61 | (USA) Harvard University | 4223 | 1.70 |
| | | Utrecht University | 936 | 1.57 | (FRA) CNRS | 5384 | 1.20 |
| | | Delft University of Technology | 877 | 1.42 | (DEU) Technische Universitat Munchen | 1303 | 1.90 |
| | | Eindhoven University of Technology | 864 | 2.45 | (GBR) University College London | 2233 | 1.78 |
| | | Radboud University Nijmegen | 837 | 1.60 | (KOR) Seoul National University | 1498 | 1.12 |



NL Innovation Attaché Network





Policy Dilemmas

- Specific vs generic innovation policy
- Innovation: Small is Beautiful vs Big is Beautiful
- Incumbants vs Challengers
- Knowledge protection vs Use of Knowledge
- Curiosity Driven vs Mission Oriented Research
- Sector approach vs Thematic approach (Societal Missions)
- National vs international approach
- EU Strategic Autonomy vs Open Strategic Autonomy





Zaman kırıntıları

Biz, zaman kırıntıları
Zaman sinekleri,
Tozlu camlarında günlerin sessiz kanat çırpınlar
Ve lüzumsuz görenler artık
Bu aydınlıkta kendi gölgelerini!

Sanki siyah, simsiyah taşlar içinde
Siyah, simsiyah kovuklarda yaşadık biz,
Sanki hiç görmedik birbirimizi,
Sanki hiç tanışmadık!

Dünya bize öyle kapattı kendisini...

Tanpınar (1901-1962)