

# Infrastructure's role in going "beyond GDP"

## What can be learned from international frontrunners?

Henry Bartelet, Vincent de Gooyert, September 2021

### *Key takeaways:*

- Scotland, New Zealand, and Bhutan are the main frontrunners with regards to using their infrastructure to increase people's happiness and wellbeing. There is no convergence towards a single framework to track progress. Each country has developed its own wellbeing framework with different indicators.
- The switch to a focus on wellbeing has substantial implications for infrastructure. These implications revolve around eight key themes: decarbonisation, digitalization, decreasing socio-economic inequalities, strengthening social infrastructure, enabling a circular economy, longer term planning, switching to green infrastructure, and improving housing.
- The Netherlands has developed a monitor for broad welfare that is among the most comprehensive, although other countries have more attention for social capital indicators. The country is still investigating how to integrate the monitor for broad welfare into its policy making process.
- At the end of this report, 12 recommendations are provided for the Netherlands based on learnings, best practices, and reflections from this study of international frontrunners.

In recent years a number of countries have become more politically active in transitioning away from a focus solely on economic welfare (as measured by GDP) to a broader definition of welfare. The Wellbeing Economy Governments partnership (WEGo), including Iceland, Finland, New Zealand, Scotland, and Wales, is the most prominent example. In the Netherlands there is also a debate about moving away from a focus on GDP, amongst others spurred by the publication of the book 'Fantoomgroei' by Sander Heijne and Hendrik Noten<sup>1</sup>, in which they argue that the Netherlands has experienced decades of economic growth, without an accompanying growth of wellbeing. Infrastructure agencies organized themselves and decided to take a next step towards focusing more on wellbeing, through signing the 'Verbond van brede welvaart' (broad welfare coalition)<sup>2</sup>, in which they announce the ambition to shift attention from economic growth to wellbeing. However, a question remains what will change if the Netherlands shifts its focus from GDP to wellbeing. How will infrastructure decisions change as a consequence of that shift? What is the role of infrastructure in shifting towards wellbeing? The aim of this report is to study those countries that have the most experience with governing for wellbeing to find out what the Netherlands can learn from their experiences.

The WEGo frontrunners argue that three major transformations are needed in order to shift attention to wellbeing: to live within planetary boundaries and achieve environmental sustainability; to achieve and maintain an equitable distribution of wealth and opportunity, both within and between generations; and to efficiently allocate resources to provide high levels of human wellbeing<sup>3</sup>. Within the context of these major transformations, there is a need to understand the role of infrastructure. Infrastructure investments often have horizons of over fifty years and represent large sums of taxpayers' money. If the demands of societies shift due to a reorientation from economic growth to a broader definition of welfare, it is important to estimate now what consequences this will have for infrastructure planning.

### Method

This study has been performed through four consecutive steps. First, through document analysis, potential frontrunner countries were identified. After identifying potential frontrunners, we evaluated whether each frontrunners had (ongoing) government commitment, defined wellbeing indicators, legal formality, and inclusion of wellbeing in the government budget. Secondly, through government records, the framework and indicators for broader welfare / wellbeing were identified for each frontrunner. Thirdly, the government budgets of the frontrunners were analysed and any discussed implications for infrastructure were summarized. Finally, we evaluated how the lessons learned from this study apply to broad welfare ambitions in the Netherlands.

Of course, in the past, infrastructure has also always played an important role in creating various forms of broader wealth. This does not alter the fact that there are all kinds of recent developments in the field of measuring, reporting, and steering towards broad welfare. Studying the experiences of international frontrunners helps Dutch infrastructure managers to avoid pitfalls and seize opportunities. Below we summarize our main findings.

### Identification of frontrunners

Table 1 gives an overview of the countries that were found to be potential frontrunners in terms of going beyond GDP and towards a wider definition of welfare. Differences in terminology exist to define a replacement for GDP: happiness (Bhutan), wellbeing (Scotland, New Zealand, Wales, Iceland, Finland and Canada), genuine progress (Maryland and Vermont), and broad welfare (Netherlands).

Country	Government commitment	Indicators	Legal formality	1 <sup>st</sup> Wellbeing budget	Frontrunner?
Bhutan	Yes (1972)	Yes (2010)	Yes (2008)	Yes (2008)	Yes
Scotland	Yes (2007)	Yes (2007)	No	Yes (2019)	Yes
Maryland, US	Yes (2009)	Yes (2010)	No	No	No
Vermont, US	Yes (2011)	Yes (2012)	Yes (2012)	Yes (2014)	No
New Zealand	Yes (2011)	Yes (2018)	Yes (2020)	Yes (2019)	Yes
Wales	Yes (2015)	Yes (2016)	Yes (2015)	Yes (2021)	Yes
Netherlands	Yes (2015)	Yes (2018)	Yes (2016)	No	No
Iceland	Yes (2018)	Yes (2019)	No	No	No
Finland	Yes (2019)	No	No	No	No
Canada	No	Yes (2011)	No	No	No

Table 1 Frontrunners on wellbeing / broad welfare.

Because infrastructure decisions are strongly linked to government decision-making, we classified as actual frontrunners in this study as countries that have both their indicators defined and at least one government budget approved where broader welfare played a significant role. We excluded the State of Vermont, as the government commitment towards genuine progress seems to have halted and the initial genuine progress strategy in 2014 was a one-off plan. This leaves us with four frontrunners that will be included in the remainder of this study: Bhutan, Scotland, New Zealand, and Wales.

Noticeably, two of the initial frontrunners, the states of Maryland and Vermont in the US, seem to have discontinued progress due to a change in political leadership. This could be a potential risk for other frontrunners as well, in particular for New Zealand and Wales. New Zealand and Wales' wellbeing plans are both introduced by a labor government and their wellbeing budgets have a strong emphasis on social welfare and income redistribution. These policies could be reversed in case of a change in political leadership and the question remains whether wellbeing economics as a whole might be discarded. In Scotland, the wellbeing ambitions are championed by a more centrist government, while in Bhutan the focus on gross national happiness is enshrined in the constitution. Thus these frontrunners seem to have a more stable wellbeing future.

### **Framework and indicators for happiness and wellbeing**

In 2008, the French government asked a committee, named the Stiglitz Commission, after its leader, to provide recommendations for shifting attention to wellbeing. Afterwards, the OECD asked a high-level expert group, again led by Joseph Stiglitz, to continue collecting recommendations that would help moving away from a focus on GDP<sup>4</sup>. They provided various recommendations, including suggestions for including measures around sustainability, inequality, and social capital. They recommended involving citizens in the development of indicators. They argue against using a composite indicator for wellbeing<sup>4</sup>. In contrast, they recommend developing a dashboard with a wide variety of indicators. There is still disagreement on whether to use a composite index of national wellbeing among wellbeing scientists<sup>5</sup>.

Initiatives like the above have not resulted in convergence around a single wellbeing framework. The four frontrunners are all using their self-developed framework and indicators to measure wellbeing. We found that none of the frontrunners uses a wellbeing framework that is well known and well-tested in the scientific literature. Bhutan's approach is the only one that ends up in a composite, aggregated outcome. Bhutan is also the only frontrunner that is able to track progress on a local scale, while other frontrunners use national-level indicators. Some countries collect subjective data. Bhutan's Gross National Happiness Index is collected through surveys with a representative sample of the population. One of the outcomes is an overview of the population that is deemed unhappy, narrowly happy, extensively happy, and deeply happy. Other frontrunners are measuring a myriad of factors.

Table 2, Table 3, and Table 4 provide the indicators that are used by at least two of the frontrunner countries in our sample of frontrunners. There are three indicators that are used in all four frontrunner countries, and they are all in the social domain: mental health, level of education, and safety. The subdomain with the most shared indicators is 'social capital', with five shared indicators. The importance of social indicators in the frameworks of frontrunner countries differs from academic indicators such as the Genuine Progress Indicator (GPI)<sup>6</sup> that have fewer indicators that are linked to the social domain.

## Society

Health	Psychological wellbeing	Education	Social capital	Democratic engagement	Security	Culture
Life expectancy at birth (NZ, SC, WL)	Mental health (BT, NZ, SC, WL)	Level of education (BT, NZ, SC, WL)	Volunteer activities (BT, NZ, WL)	Quality / effectiveness of public services (BT, SC, WL)	Feeling safe (BT, NZ, SC, WL)	Participation in a cultural activity (BT, SC, WL)
(reported) Health status (BT, NZ)	Loneliness (NZ, SC, WL)		Family wellbeing (BT, NZ, VT)	Trust in government (NZ, SC)		Local language speakers (BT, NZ, WL)
Physical activity (SC, WL)	Life satisfaction (BT, NZ)		Social network support (NZ, SC)	Influence over local decisions (SC, WL)		
Child physical and social development (SC, WL)			Sense of belonging to community (BT, WL)			
			Satisfaction with local area (SC, WL)			

Table 2 Most popular (19) social Wellbeing indicators in frontrunner countries<sup>7-11</sup>. Bhutan (BT), New Zealand (NZ), Scotland (SC) and Wales (WL).

## Environment

Air quality and climate	Energy	Waste and recycling	Natural capital
Greenhouse gas emissions (NZ, SC, WL)	Share of renewable energy (NZ, SC, WL)	Waste generated (NZ, SC, WL)	Biodiversity (NZ, SC, WL)
Air quality, e.g. NOx, particulate matter (NZ, WL)		Water quality (NZ, SC, WL)	Healthy ecosystem area (SC, WL)
			Soil quality (NZ, WL)

Table 3 Most popular (8) environmental Wellbeing indicators in frontrunner countries<sup>7-11</sup>. Bhutan (BT), New Zealand (NZ), Scotland (SC) and Wales (WL).

## Economy

Economic conditions	Employment	Housing	Incomes
Productivity (NZ, SC, WL)	Employment rate (NZ, SC, WL)	Housing quality (BT, NZ)	Disposable income (BT, NZ, WL)
Investment in R&D (NZ, SC)	Job satisfaction (BT, WL)		Financial wellbeing, e.g. purchasing power (NZ, SC)
Net fixed assets per capita (BT, NZ)	Not in education, employment or training (NEET) rate (NZ, WL)		Material and social deprivation, e.g. food insecurity (SC, WL)
Percentage of businesses which are innovation-active (SC, WL)	Contractually secure work (SC, WL)		Gender pay gap (SC, WL)

Table 4 Most popular (13) economic Wellbeing indicators in frontrunner countries<sup>7-11</sup>. Bhutan (BT), New Zealand (NZ), Scotland (SC) and Wales (WL).

## Implications of broad welfare aims on infrastructure decisions in the frontrunner countries

Broad welfare and wellbeing considerations can be included in all stages of the policy cycle, i.e. in agenda setting, policy formulation, implementation, monitoring, and evaluation<sup>12</sup>. As shown in Table 1, most frontrunners so far remain within the agenda setting stage. However, a few countries have now moved forward towards including broad welfare and wellbeing within policy formulation. It's a good first step to discuss the need to go beyond GDP (e.g. agenda setting), it is a more substantial step to move towards dedicating the country's financial resources to the new approach. In this section, therefore, we will analyse how the four frontrunners have implemented broad welfare and wellbeing aims within their government budgeting process. We specifically investigate the implications of these wellbeing budgets on infrastructural investment. We define the budgeting process in the broader sense here, also including the evaluation and monitoring of the budgets, which is also affected by a shift towards wellbeing as described later.

Budgets in the frontrunner countries that go beyond GDP (e.g. wellbeing or happiness budgets) typically include a combination of traditional budget categories, traditional budget categories presented within a wellbeing framework (e.g. healthcare and education), and newly-introduced categories. Bhutan has the longest history of budgets that focused on improving the country's Gross National Happiness, and we have analysed budgets starting from the year 2008. New Zealand and Scotland had three budgets so far that focused on their respective wellbeing goals, while Wales had one. In these frontrunner countries, the previous budget focused on financials has been replaced by a wellbeing-focused budget, and it is therefore difficult to calculate exactly what fraction of the budget is now directed towards wellbeing aims. Through the analysis of the frontrunners' wellbeing budgets, we identified eight key themes linked to the role of infrastructure in contributing towards progress towards happiness and wellbeing.

### **1. Decarbonizing the economy**

The frontrunners from the Wellbeing Economy Alliance are focused on decarbonisation in their infrastructural investments for improving wellbeing. Scotland is the most active and is investing in low-carbon transport infrastructure such as electric vehicle (EV) charging infrastructure, rail network expansion and electrification and bus priority infrastructure to increase the attractiveness of bus transport in cities<sup>13-15</sup>. The country is also investing in infrastructure for low-carbon heat networks, agricultural transformation and carbon capture and storage. New Zealand uses a more market-based approach for its decarbonisation aims, for example by expanding its emission trading scheme. The 2020 Wellbeing budget included a commitment to reintroduce forestry in its emission trading scheme to make it possible for forest owners to earn carbon credits<sup>16</sup>. New Zealand is also investing in rail infrastructure to reduce freight transport and has introduced a Low Emission Transport Fund aimed at funding the diffusion of low-emission transport technologies. Wales committed to investments in EV infrastructure in its first Wellbeing budget<sup>17</sup>.

Bhutan is the only frontrunner that has already become carbon negative, i.e. it absorbs more carbon emissions from the atmosphere than it produces. One of Bhutan's Gross National Happiness pillars is to conserve the country's ecological diversity and resilience. To achieve this, the country nationalized its forests in 1969 and five years later included in its constitution that at least 60% of its land should be covered by forests in perpetuity<sup>18</sup>. Bhutan's actual forest cover was estimated at 71%<sup>19</sup>, acting as a major carbon sink. Carbon emissions have been kept low through the consolidation and expansion of the hydropower infrastructure, utilizing the low-carbon energy carrier that is abundantly available<sup>20</sup>. As of 2019, Bhutan is also focusing on rural decarbonisation through laying the infrastructure to accommodate solar and electric pumps<sup>21</sup>.

## ***2. Switching to green infrastructure to improve liveability, biodiversity and adaptation to climate change***

Scotland is investing in its 'Active Travel' program, aiming to make towns and cities friendlier and safer places through walking and cycling infrastructure<sup>13-15</sup>. It also invests in infrastructure to improve local economic activity in its towns and cities through its 'Town Centre Fund'<sup>13</sup>. New Zealand is investing in Auckland's City Rail Link with the aim of reducing traffic congestion in the city's central business district<sup>22</sup>. Wales is investing in its metro and rail infrastructure with the aims of promoting modal shifts, decarbonisation and improved access to jobs, services, education and leisure for all<sup>17</sup>. The Welsh Government also invests in infrastructure for its 'Active Travel' program, similar to that in Scotland<sup>17</sup>.

Scotland is committed to improving its natural infrastructure, for example through enabling the creation of woodlands across the country to achieve climate goals<sup>13-15</sup>. The Welsh Government will invest in biodiversity through the restoration of natural areas and ecosystems. It will also improve the management and connectivity in its national forest<sup>17</sup>. Both Scotland and Wales are investing in infrastructure resilience to the impacts from climate change. Scotland is mainly focused on the resilience of its trunk road network against a changing climate and impacts from flooding and storms<sup>14</sup>, while Wales is focused on investments aimed at coastal risk management against climate change and sea-level rise<sup>17</sup>.

Growth of the urban population, especially in Bhutan's capital city of Thimphu, puts pressure on the availability of safe drinking water and the functioning of waste services. To that extent, the government decided to invest in water treatment and groundwater infrastructure<sup>23</sup>. The 2013 budget saw an increased focus on the development of 'sustainable urban infrastructure', such as wastewater treatment, water supplies, sewer networks, roads, city buses and vegetable markets<sup>21,24,25</sup>. In the 2015 budget, the Bhutanese Government started investing in construction technologies that take into account the potential impacts of natural disasters<sup>26,27</sup>.

## ***3. Digitalization***

Scotland is the most pronounced in its digital infrastructure investments. The country will invest in digital infrastructure to provide superfast broadband internet access and mobile coverage (4G and 5G) to all its citizens<sup>14,15</sup>. It will also invest in digital health care infrastructure, for example through its 'Near Me' health service that enables online video consulting<sup>15</sup>. New Zealand's focus on digitization in its Wellbeing budget is mainly focused on developing the social infrastructure to improve the digital skills of the population<sup>28</sup>. Bhutan's approach to digitization is least advanced and focuses on the implementation of its national ICT infrastructure, for example through the provision of free internet access at schools and hospitals<sup>20,29</sup>.

## ***4. Decreasing socio-economic inequalities by improving regional accessibility and opportunities***

Frontrunners Scotland and New Zealand are both focusing infrastructure investments on regional development. Scotland works with Regional Growth Deals that aim to support long-term development in regional economies<sup>13,14</sup>. New Zealand will, supported by its 'Provincial Growth Fund', invest in its railway and ferries infrastructure, with the aim of unlocking regional economic opportunities, meanwhile reducing emissions and traffic congestion and preventing car accidents<sup>22</sup>. Scotland is also aiming to improve regional opportunities through investments in road infrastructure<sup>13</sup>, regional manufacturing through its 'National Manufacturing Institute'<sup>13,14</sup>, and a

Rural Tourism Infrastructure Fund<sup>14,15</sup>. Wales' first Wellbeing budget did not include specific investments in regional development.

In Bhutan, the topography, e.g. mountains, makes it difficult and expensive to promote regional industrial development. The Bhutanese government promotes the development of basic infrastructure as a means to reduce costs for the private sector to settle and initiate industrial development<sup>23,29</sup>. Rural electrification<sup>20</sup> and rural water supply schemes<sup>30</sup> are examples of infrastructure provision that promote both citizens' wellbeing and potential for industrial and agricultural development. In the 2015 budget, increased emphasis was directed towards improving the "regional and seasonal spread of tourism"<sup>26</sup>. Access to road networks is a major challenge for rural farmers and the government has focused on building and improving access to rural communities<sup>20</sup>. The development and improvement of national highways and bridges are seen as highly important for sustaining the country's (economic) development<sup>23,27</sup>. Accessibility was also improved through the expansion of airport<sup>24,26</sup> and helicopter<sup>26</sup> infrastructure in regional communities.

### ***5. Non-physical infrastructure for delivering social care and third-sector services***

Scotland is making investments in social infrastructure to reach its goals of eradicating child poverty. Investments will be made in employment support for parents, educational projects, neighbourhood programs, financial health checks and food funding on schools<sup>13</sup>. The Scottish government will also invest in infrastructure for early learning, childcare and elective care<sup>13,14</sup>. Through its Third Sector Resilience Fund, the growth of social enterprises in the third sector will be enabled<sup>15</sup>. In its Wellbeing Budget, New Zealand includes a ten-year plan to invest in schools and other educational infrastructure such as learning support and early learning packages<sup>16,22,28</sup>. The current school funding system will be replaced by a system focused on equity that will help target resources to children that grow up in disadvantaged circumstances<sup>28</sup>. Social infrastructure will be upgraded and extended, among others in terms of family violence services, access for disabled people and support services for regional communities<sup>16</sup>. The Government of Wales is investing in social infrastructure for its 'Foster Wales' campaign, a program aimed at providing care homes for the most vulnerable children<sup>17</sup>. Wales is also investing in mental health infrastructure, for example through increased support for frontline non-clinical services, all age crisis support, memory assessment services and school-based counselling<sup>17</sup>. Additional funding will be available for the third sector and local volunteering initiative to help support the most vulnerable people in the community<sup>17</sup>. Funding will also be available for the promotion of the Welsh language, for example through language institutions and events<sup>17</sup>.

Bhutan's constitution requires the government to provide free education to all its citizens. The government aims to reach its goal through investment in educational infrastructure including schools, accommodation, teachers and scholarships<sup>20,21,25,31</sup>. The 2019 budget saw a prioritization of healthcare through the "Healthier Nation" program which focused on providing access to equitable quality healthcare<sup>21</sup>. The program consisted mostly of health infrastructure to pursue health promotion and disease prevention. Technical and vocational training infrastructure is developed as well as special programs aimed at providing youth with employment and entrepreneurial skills<sup>21,25,27,31</sup>.

## **6. Reducing the ecological footprint of the economy through circular economy**

Scotland focuses on local investments to improve the recycling infrastructure<sup>15</sup>. Wales will also invest in building out its recycling infrastructure with a special emphasis on addressing social inequalities through the extension of ‘repair cafes’, where people can take things to be repaired or access items for reuse<sup>17</sup>. New Zealand’s Three Waters Reform Program will upgrade and improve the drinking water, wastewater and stormwater infrastructure. This will be facilitated through the transfer of water assets to multi-regional water service entities<sup>28</sup>. Bhutan’s rural investments include a focus on developing the renewable natural resources infrastructure, for example through using agricultural waste as a clean biomass energy source<sup>20,24</sup>.

## **7. Implementing broader and well-balanced governance structures, performance indicators and accountability frameworks**

Scotland has developed a ‘National Infrastructure Mission’ to prioritize infrastructure investments in the country with the aim to improve economic growth and productivity<sup>13</sup>. Through the mission, the annual investment in infrastructure will increase by 1% of GDP each year until 2026. Investments will take into account low-carbon and inclusive growth goals. The Mission will be financed through a combination of capital expenditure, financial transactions, revenue financed investment and a Growth Accelerator<sup>13</sup>. Through the Growth Accelerator, the Scottish Government funds local governments’ infrastructure investments given that they meet agreed outcomes such as job creation in low-income neighbourhoods<sup>13</sup>. The country is also continuing its development of a national investment bank that will be responsible for long-term (infrastructural) investments<sup>13,14</sup>.

New Zealand has set up an Infrastructure Commission to produce an infrastructure pipeline and develop a long-term infrastructure strategy for the country together with local stakeholders<sup>22</sup>. The country has also switched from a single-year to a multi-year allowance for capital allowance, which helps the government to prioritize longer-term investments<sup>22</sup>. Wales is emphasizing the importance of community assets in which third sector organizations can purchase and improve community assets and infrastructure to provide local access to a range of social, educational and wellbeing services<sup>17</sup>. The Welsh Government will also focus on a National Procurement Service to prioritize procurement from local businesses<sup>17</sup>.

One of the challenges for infrastructure development in Bhutan is the narrow revenue base of the country and the limited resources available to finance the increasing demand for infrastructure. With the exception of hydro-power infrastructure, most of the other infrastructural projects are not self-financing<sup>29</sup>. Bhutan’s economy and infrastructure is highly dependent on state-owned enterprises<sup>23</sup>. A large part of the Bhutanese economy is owned and controlled by the government through the Druk Holding and Investments (DHI) Company. Large infrastructural projects, e.g. Education City, land reclamation and special economic zones, are often financed through DHI Infra Limited<sup>23</sup>. As the country has now provided basic infrastructure access to all communities, industry and initiative make it possible to reach Gross National Happiness goals<sup>32</sup>. The 2019 budget saw an introduction of the ‘Common Minimum Infrastructure’ policy that has the goal to reduce differences in per capita endowment of basic infrastructure<sup>21</sup>. The policy allocates resources to local government units with less access to minimum quality infrastructure.



***8. Improving the quality, availability and affordability of housing to reduce commuting times, transportation costs and emissions, reduce poverty and increase quality of life***

Housing is considered to be part of the infrastructure in the frontrunner countries, both housing itself and its implications for other infrastructure such as public transport and energy. Scotland will invest in housing infrastructure by delivering 50,000 affordable homes by 2021, the most of them for social rent<sup>13</sup>. The country is also using innovative government guarantees, loans, grant recycling and private funding to stimulate the development of new housing construction<sup>13</sup>. New Zealand is investing in transition housing infrastructure to increase the supply of long-term and relocatable transitional housing places<sup>22</sup>. It also presented its Housing Acceleration Fund to stimulate infrastructural and large-scale housing projects<sup>28</sup>. Wales will implement a Housing Support Grant to address homelessness both through preventive action and the rapid rehousing of homeless people<sup>17</sup>. The Bhutanese government's focus on housing infrastructure mainly targets the provision of housing for government workers through the National Housing and Development Corporation Limited<sup>27</sup>.

**Conclusions**

The aim of this research was to learn from international frontrunners in terms of going beyond GDP by analysing what is happening in practice in those countries. The goal is to enable Dutch infrastructure agencies to learn from the experiences that have already been gained there. Our results show that Bhutan, Scotland and New Zealand are the global frontrunners in terms of going "beyond GDP", i.e. these countries are measuring and steering towards progress in terms of wellbeing or happiness. Wales follows behind these three frontrunners. There are also several other countries that are exploring a similar path. The frontrunners are all using their self-developed framework and indicators to measure wellbeing. Some overlap exists between the indicators of wellbeing, with only three indicators being measured by all four frontrunners. The switch to a focus on wellbeing has several implications in terms of infrastructure. Eight key themes are identified including the focus on decarbonisation and digitization, decreasing socio-economic inequalities, strengthening social services infrastructure, enabling the circular economy, longer term planning, switching to green urban infrastructure and improving housing.

## **A comparative analysis: going beyond GDP in the Netherlands**

### ***Identification as frontrunner***

The Netherlands was considered as one of the potential frontrunners in terms of going beyond GDP, as described in Table 1. In 2015 a parliamentary commission obliged the government to start monitoring and reporting progress in terms of broader welfare<sup>33</sup>. The report is used annually to evaluate the performance of the government in terms of promoting wellbeing, sustainability and equality<sup>34</sup>. The government's statistical office developed a monitor for broad welfare indicators, complementing other indicators focused on the sustainable development goals<sup>35</sup>. The Netherlands presented its first annual budget in 2020 which included a reference to its broader welfare ambitions. However, the budget remained in essence a financial-economic report<sup>36</sup>. The country is still investigating how to integrate the monitor for broad welfare into its policy making processes<sup>37,38</sup>.

### ***Framework and indicators***

The Dutch statistical office has developed a monitor for broad welfare that includes 64 national indicators, all of which are already being monitored<sup>39</sup>. In some other frontrunner countries, like New Zealand and Iceland, there are still a significant number of wellbeing indicators for which no data is available. The country is also measuring progress towards the Sustainable Development Goals (SDGs) through an additional 181 indicators. The Netherlands, like Bhutan, has also been able to monitor broad welfare on a regional and local level (through a set of 40 indicators)<sup>40</sup> and has developed a subjective wellbeing index<sup>41</sup>. Finally, the Rabobank and University of Utrecht have developed a composite Wellbeing Index<sup>42</sup>. A similar approach to develop a composite index of wellbeing has been ongoing in Canada<sup>43</sup>. So far, the Dutch government has favoured the non-composite approach of measuring broad welfare. The Netherlands can thus be seen as one of the frontrunners in terms of measuring progress towards broad welfare in a comprehensive way.

### **Implications of broad welfare aims on infrastructure decisions**

With regards to decarbonisation, all four frontrunner countries have a strong focus on maintaining or increasing their forest area and thereby contributing to natural carbon capture processes. The forest cover in the Netherlands has increased slightly over the last twenty years, from 362 thousand hectares in 1990 to 365 thousand hectares in 2017<sup>44</sup>. Given a total land area of 3.4 million hectares in 2017<sup>45</sup> that roughly equates to 11% of forest cover. The forest cover is similar in the United Kingdom at 13%, while New Zealand has a forest cover of 37% and Bhutan 71%<sup>46</sup>. Although it is positive that the Netherlands has been able to conserve its relatively low stock of forest cover, the country does not seem to have achieved this through the reduction of forest-based consumption. The Netherlands was found to be the country with the highest per capita deforestation footprint in foreign territories<sup>47</sup>. This negative impact has also been captured in the Dutch broad welfare monitor that assesses the country's impact on welfare outside of its borders<sup>39</sup>. Other decarbonisation infrastructure plans in the frontrunner countries are already a priority in the Netherlands:

- While the country does not have significant hydropower resources, it has access to Norwegian hydropower through NorNed, the world's longest high-voltage subsea direct current cable<sup>48</sup>
- The Netherlands is the best performing country in the EU in terms of EV readiness and it has the highest number of public charging stations<sup>49</sup>

- Like other frontrunners, the Netherlands is actively engaged in the expansion of rail networks, low-carbon heat networks, agricultural transformation, carbon capture and storage, and bus priority infrastructure.

With regards to digitization, the Netherlands has a highly developed IT infrastructure that is likely already on par or more advanced as compared to the frontrunner countries.

With regards to decreasing socio-economic inequalities by improving regional accessibility and opportunities, the Netherlands has a higher population density as compared to the frontrunner countries and might not have some of the major accessibility challenges. The Netherlands presented a National Growth Fund in 2020 in response to the COVID-19 pandemic<sup>50</sup>. However, the Dutch Growth Fund is not specifically focused on decreasing socio-economic inequalities. So far, most of the money has been spent on infrastructure investments in the most developed parts of the Netherlands (the “Randstad”)<sup>51</sup>. Both Scotland and New Zealand have dedicated funding for regional development projects. The Netherlands seems to have a challenge with the regional spread of tourism and might learn from the frontrunners how infrastructure could address this issue. Bhutan’s approach of taking control of where tourists are allowed to go is likely not attainable nor desirable, but Scotland’s Rural Tourism Infrastructure Fund might provide some inspiration. This Fund helps regional tourism destinations to improve their infrastructure to be better able to handle higher visitor numbers.

With regards to growing the importance of non-physical infrastructure for delivering social care and third-sector services, there seems to be potential for the Netherlands to learn from frontrunners. For example in terms of the social infrastructure required for technical and vocational training, early learning and childcare, third sector services, mental health and culture.

With regards to reducing ecological and material footprint of economy by enabling transition to circular economy, the infrastructural plans of the frontrunner countries are far from ambitious and the Netherlands might have to develop its own plans. There might be potential to learn from Bhutan and use more of the Dutch agricultural waste as a clean biomass energy source, reducing some of the demand for imported biomass in the process.

With regards to implementing broader and well-balanced governance structures, performance indicators and accountability frameworks, the Netherlands might learn from some of the frontrunners in terms of the changes they made in how they approach infrastructure planning and investments. In the Netherlands, infrastructure planning and investments are the responsibility of the Ministry of Infrastructure and Water Management. The national budget for infrastructure investments is determined on an annual basis as part of the country’s national budgeting process. Scotland has developed a national investment bank responsible for long-term infrastructure investments, while also prioritizing infrastructure through its National Infrastructure Mission. New Zealand has appointed a special Infrastructure Commission to develop a long-term infrastructure strategy and projects pipeline in collaboration with local stakeholders. New Zealand is also switching to a multi-year capital allowance in its budget to stimulate longer term investments. Finally, Bhutan’s ‘Common Minimum Infrastructure’ policy is an interesting tool to dedicate resources to local governments with less access to minimum quality infrastructure.

With regards to switching to green infrastructure in towns and cities to improve liveability, biodiversity and adaptation to climate change, the Netherlands has some specific challenges and characteristics that are different from the frontrunner countries. These include the country’s Delta

Works and dikes infrastructure to protect the low-lying areas from the ocean, highly-dense road network, advanced waterways infrastructure and limited land availability in dense urban centres. Scotland and Wales are focusing on extending walking and cycling infrastructure to promote active travel. Dutch cities are already frontrunners in terms of cycling infrastructure in particular. The frontrunner countries are developing their natural infrastructure through the restoration or creation of natural areas and ecosystems. The Netherlands may be required to invest in its natural infrastructure as a means to increase its natural capital.

With regards to improving the quality, availability and affordability of housing to reduce commuting times, transportation costs and emissions, reduce poverty and increase quality of life, the Netherlands possibly has even more urgent housing concerns, i.e. a shortage of some 300.000 houses, as compared to the frontrunner countries. The Netherlands might explore some of the housing infrastructure policies that are being implemented in Scotland and New Zealand. Scotland uses a combination of government guarantees, loans, grant recycling and private funding to stimulate construction of new houses. New Zealand has embraced a Housing Acceleration Fund to stimulate infrastructural and large-scale housing projects.

### Recommendations

- Establish cooperation with Scotland to learn more about their pathway to go beyond GDP

Overall we judge Scotland to be the frontrunner from which the Netherlands might learn the most in terms of their progress in going beyond GDP. Scotland has a relatively bipartisan approach to its wellbeing ambitions. In fact, the country's national performance framework and indicators have existed for almost 15 years now. Scotland's infrastructure investments focused on improving wellbeing have been the most comprehensive. Finally, Scotland is likely the most similar frontrunner to the Netherlands in terms of their location in Europe, level of (infrastructure) development, (Anglo-Saxon) culture, and being a trading nation with a strong port infrastructure. We would thus recommend the Netherlands to learn more about Scotland's actual wellbeing plans, progress and challenges.

- Consider adding social capital indicators within the current broad welfare tool

The Netherlands measures progress towards 31 out of the 40 common indicators in the frontrunner countries. Most missing indicators are in the societal domain and include: child physical and social development; sense of belonging to community; satisfaction with local area; influence over local decisions; participation in a cultural activity; local language speakers; and access to the natural environment. Missing indicators in the economic domain include: the not in education, employment or training rate (NEET); and contractually secure work.

- Explore the introduction of a subjective broad welfare index

Recent methodological progress has made it easier to measure subjective wellbeing<sup>5</sup>. In that regard, Bhutan's approach of sampling their population and asking them directly about their subjective wellbeing could be an approach to give more attention, in comparison to more objective wellbeing indicators<sup>52</sup>. The Netherlands has an impressive total of 64 broad welfare and an additional 181 SDG indicators, most of them objective measures. But statistics do not always coincide with how people actually experience things. A complimentary subjective index could thus be a useful cross-verification measure of progress experienced by the country's citizens<sup>4</sup>. The Netherlands might thus benefit from further developing and using its subjective wellbeing index<sup>41</sup>. There is also the risk of

trying to control the outcomes of many indicators at the same time through policy. That can lead to unintended consequences. That applies in particular to the Netherlands because it has the highest number of indicators of all potential frontrunners. An argument could be made for a focus on indicators and policies that enable the conditions under which people in societies can improve their own welfare and wellbeing. The Stiglitz Commission concluded that wellbeing frameworks and indicators would benefit from co-development with the general public to improve legitimacy<sup>4</sup>. For the Netherlands, it might be advised to use public consultation to reduce and consolidate the current oversupply of broad welfare and sustainability indicators. We should be aware of the possibility that governments desperate urge to increase people's welfare and wellbeing might have a negative effect as well, as their freedom might become limited in the process<sup>52,53</sup>.

- Develop systematic understanding about the interactions between the economic, environmental and social system in the Netherlands (and impact abroad).

With regards to the frontrunners, a gap seems to remain in place in the intermediary space between wellbeing aims and government action. We did not find evidence for most wellbeing goals for how the governments believe that their actions will lead to desired effects. Carbon reductions seem to be the most obvious and easy-to-quantify and measure goals. A causal understanding of the country's economic, environmental and social systems is required to evaluate how broad welfare policies might lead to beneficial outcomes. The Netherlands might distinguish itself as a frontrunner if it can develop a formal approach to understand what (infrastructural) policies lead to desired outcomes and what trade-offs are likely to occur. The Dutch government already emphasized the potential complexities and trade-offs that are going to be involved in their plans to increase broad welfare<sup>36</sup>.

- Explore expanding NGinfra's role for integrated infrastructure decisions to improve broad welfare

There are often interlinkages and sometimes competition between different infrastructure providers in a country. To go beyond merely financial-economic performance indicators, investment decisions to promote broader welfare need to be taken in an integrated way. An example is the "Betuweroute", a railway infrastructure project that was started in 1998 to connect the Port of Rotterdam to a European-wide freight rail network. The shipping sector did not consider this necessary, because they were able to carry out the freight transport all the way to the transfer station near Arnhem where the ProRail trains now transport the containers onto German trains. Using the inland waterways would prevent environmental damage, because the railway line from the Maasvlakte had a heavy environmental impact due to its cutting through many natural areas. Because of environmental litigation and resistance from local residents, among other causes, the project became approximately twice as expensive as budgeted, while the shipping infrastructure was already there. If the decision would have been made according to broad welfare principles, one could wonder whether we would have the "Betuweroute" today. Another example would be the current discussions regarding the expansion of Schiphol and Lelystad Airport. Economic interests seem to clash again with environmental impacts and concerns from local citizens. It is unclear from frontrunners how a complex investment decision like airport or rail expansion should be evaluated from a broad welfare perspective. Better tools and methods are needed to weigh the positive and negative outcomes on different broad welfare domains and indicators. This might be related to the specific situation of the Netherlands with its high population density and limited availability of land that make competing interests more probable.

Thus, for integrated infrastructure decisions you must have a sincere cooperation of the providers so that they can weigh broad welfare comprehensively without financial interest. The Netherlands seems to be the frontrunner in terms of the involvement and cooperation of infrastructure providers in contributing towards broad welfare ambitions. The Netherlands should explore how it can further strengthen, support, and involve this bottom-up collaboration of infrastructure providers.

- Apply broad welfare principles to upcoming decision making process regarding the Dutch housing problem

The quality, availability, and affordability of housing has a major influence on wellbeing. Given the large shortage of housing in the Netherlands, addressing this problem is a major concern for policy makers. Investing in new housing, either through public or private initiative, will have long-term implications for other infrastructure sectors. It would thus be recommended to perform a forward-looking multi-dimensional analysis to explore different alternatives and to evaluate potential implications in terms of broad welfare. For example, the location of the new housing could create synergies in terms of addressing regional inequality, adaptation to sea-level rise, and integration with public transport and decarbonized energy networks.

- Create financial incentives for the conservation and creation of forests

Changes in forest cover in the Netherlands seem to be very elastic to government policy and financial incentives<sup>44</sup>. In that regard, the Netherlands might learn from New Zealand's approach of including forestry in its national carbon emission trading scheme, giving forest owners the ability to earn carbon credits. This could provide a financial stimulus for the conservation and/or growth of forest cover in the Netherlands, and would increase the country's carbon capture capacity. The Netherlands will also have to address its high impact level on deforestation in foreign territories. This might be complicated by the need to use foreign-produced biomass to achieve the country's goals in terms of reducing carbon emissions from energy use and agriculture.

- Restructure the National Growth Fund by dedicating a fraction of the funding specifically to investments to improve regional accessibility and opportunities

The Dutch National Growth Fund is currently mainly being used for infrastructure investments in the high-performing urban areas such as the "Randstad"<sup>51</sup>. Funding proposals for these projects are likely to be more competitive, e.g. in terms of financial indicators such as ROI, and more accessible to lobbying networks. Three out of four frontrunners have recognized this 'success to the successful' archetype and have therefore dedicated and earmarked particular funding to focus on regional investment. Scotland is doing this through 'Regional Growth Deals', New Zealand through a 'Provincial Growth Fund', and Bhutan through its 'Common minimum infrastructure' policy.

- Evaluate whether any type of national-level infrastructure entity could contribute towards the longer term strategic repositioning of the Dutch economy towards broad welfare

Three out of the four frontrunners have attempted to obtain longer term infrastructure investment out of the annual budgeting process that is usually more prone to favour investments with short-term benefits. Bhutan uses a state-owned investment company ("DHI Infra Limited") to finance most of its large infrastructural projects. Scotland has established a national investment bank and a national infrastructure mission to prioritize infrastructure investments in the country with the aim to improve economic growth and productivity. In line with Scotland's infrastructure mission, it included a Growth Accelerator that funds local governments' infrastructure investments given that they meet

agreed outcomes, such as job creation in low-income neighbourhoods. The country has also set up a National Manufacturing Institute so as to develop long-term manufacturing capabilities that could benefit regional economies. New Zealand has set up an Infrastructure Commission to produce an infrastructure pipeline and has switched to multi-year capital allowance to prioritize long-term investments in critical infrastructure. The Netherlands could further analyse whether any of these initiatives in the frontrunner countries could bring benefits to Dutch broad welfare ambitions as well.

- Emphasize and treat social infrastructure, e.g. education, healthcare, and third-sector services, as being part of the nation's critical infrastructure

The number of indicators within the social domain is by far the largest for the frontrunner countries as compared to environmental and economic indicators. This emphasizes the importance of a country's social infrastructure as a way of being able to provide wellbeing for its citizens. The Netherlands should further investigate whether the various policies and initiatives in terms of social infrastructure in the frontrunner countries entail a different approach as compared to what is usually seen as the "verzorgingsstaat (welfare state)". Health, mental health, education, volunteer activities, the quality of public services, safety and participation in cultural activities were all deemed important indicators for happiness and wellbeing in the frontrunner countries. Several investments are made within the frontrunner countries to improve the social infrastructure and social outcomes. Wales, for example, is focused on developing an (online) mental health infrastructure. This mental health infrastructure includes increased support for frontline non-clinical services, all age crisis support, memory assessment services and school-based counselling. Scotland is developing infrastructure to reduce child poverty, for example through employment support for parents, educational projects, neighbourhood programs, financial health checks and food funding in schools. Infrastructure for early learning and third-sector services is a priority in both Scotland, New Zealand and Wales. Wales is also experimenting with the transfer of asset ownership to third-sector organizations. Bhutan has launched its "Healthier Nation" program in 2019 to develop infrastructure to promote health and disease prevention.

- Become a frontrunner on the circular economy infrastructure by starting a dedicated, inter-sectoral infrastructure company

Within the frontrunner countries, there is a lack of comprehensive indicators and investments to promote the growth of the circular economy. The amount of waste generated and the water quality are the only common indicators that seem related to circular ambitions. The Netherlands could utilize its position and reputation as a trading country to become a global leader in terms of the processing, storage and trade of agricultural, industrial and household waste resources. The infrastructure that would be required would be diverse and could include pipelines (e.g. biogas), storage, transport and technology. One avenue would be to follow Bhutan's example by developing a clean biomass infrastructure linked to waste from the Netherlands' large agricultural sector.

- Evaluate further cross-border infrastructure investments to import renewable energy

The limited availability of land and the environmental concerns linked to wind farms on the North Sea will likely make it difficult for the Netherlands to reach its carbon reduction targets without compromising on other domains of broad welfare. Cross-border infrastructure expansion might give the country access to higher volumes of low-carbon energy. For example, connections with Norway, Denmark and Germany would provide access to electricity produced from hydro, solar and wind power. Even more ambitious cross-continent energy infrastructure could be considered, such as the Desertec plan to bring large-scale solar energy from the African Sahara to Europe<sup>54</sup>.



## References

1. Heijne, S. & Noten, H. *Fantomgroeï: Waarom we steeds harder werken voor steeds minder*. (Business Contact, 2020).
2. NGinfra. Verbond van Brede Welvaart. (2021). Available at: <https://www.nginfra.nl/verbond-brede-welvaart/>. (Accessed: 1st September 2021)
3. Coscieme, L. *et al.* Overcoming the myths of mainstream economics to enable a new wellbeing economy. *Sustain.* **11**, 4374 (2019).
4. Stiglitz, J. E., Fitoussi, J.-P. & Durand, M. *Measuring what counts: The global movement for well-being*. (The New Press, 2019).
5. Fleurbaey, M. Beyond GDP: The quest for a measure of social welfare. *J. Econ. Lit.* **47**, 1029–1075 (2009).
6. Kubiszewski, I. *et al.* Beyond GDP: Measuring and achieving global genuine progress. *Ecol. Econ.* **93**, 57–68 (2013).
7. Treasury of New Zealand. Measuring wellbeing: the LSF Dashboard. *Information and Services* (2019). Available at: <https://www.treasury.govt.nz/information-and-services/nz-economy/higher-living-standards/measuring-wellbeing-lsf-dashboard>. (Accessed: 23rd April 2021)
8. Treasury of New Zealand. Introduction to Our country. *Living Standards Framework - Dashboard* (2021). Available at: <https://lsfdashboard.treasury.govt.nz/wellbeing/>. (Accessed: 16th June 2021)
9. Government of Scotland. National Outcomes. *National Performance Framework* (2021). Available at: <https://nationalperformance.gov.scot/index.php/national-outcomes>. (Accessed: 16th June 2021)
10. Government of Wales. Well-being of Wales: national indicators. *Statistics* (2019). Available at: <https://gov.wales/well-being-wales-national-indicators>. (Accessed: 13th April 2021)
11. Royal Government of Bhutan. *A Compass Towards a Just and Harmonious Society*. (2016).
12. Exton, C. & Shinwell, M. Policy use of well-being metrics: Describing Countries' Experiences. *OECD Stat. Work. Pap.* (2018). doi:10.1787/D98EB8ED-EN
13. Government of Scotland. *Scottish Budget: 2019-2020*. (2019).
14. Government of Scotland. *Scottish Budget: 2020-2021*. (2020).
15. Government of Scotland. *Scottish Budget: 2021-2022*. (2021).
16. New Zealand Government. *Wellbeing Budget 2020 - Rebuilding Together*. (2020).
17. Government of Wales. *Draft Budget 2021-22*. (2020).
18. Royal Government of Bhutan. *National Forest Policy of Bhutan*. (2009).
19. Royal Government of Bhutan. *National Forest Inventory Report: Stocktaking Nation's Forest Resources*. (2018).
20. Royal Government of Bhutan. *National Budget Financial Year 2009-10*. (2009).

21. Royal Government of Bhutan. *National Budget Financial Year 2019-20*. (2019).
22. New Zealand Government. *The Wellbeing Budget*. (2019).
23. Royal Government of Bhutan. *National Budget Financial Year 2011-12*. (2011).
24. Royal Government of Bhutan. *National Budget Financial Year 2013-14*. (2013).
25. Royal Government of Bhutan. *National Budget Financial Year 2021-22*. (2021).
26. Royal Government of Bhutan. *National Budget Financial Year 2015-16*. (2015).
27. Royal Government of Bhutan. *National Budget Financial Year 2017-18*. (2017).
28. Government of New Zealand. *Wellbeing Budget 2021: Securing Our Recovery*. (2021).
29. Royal Government of Bhutan. *National Budget Report & Budget & Appropriation Bill: Financial Year 2008-09*. (2008).
30. Royal Government of Bhutan. *National Budget Financial Year 2014-15*. (2014).
31. Royal Government of Bhutan. *National Budget Financial Year 2016-17*. (2016).
32. Royal Government of Bhutan. *National Budget Financial Year 2012-13*. (2012).
33. Voortman et al. *Motie Voortman c.s. over het betrekken van de conclusies uit de Monitor Brede Welvaart bij toekomstig beleid - Parlementair onderzoek Breed welvaartsbegrip*. (Tweede Kamer der Staten-Generaal, 2016).
34. Universiteit Leiden. *Towards the Wellbeing Economy. Symposium* (2019). Available at: <https://www.universiteitleiden.nl/en/events/2019/12/symposium-towards-the-wellbeing-economy>. (Accessed: 19th July 2021)
35. Government of the Netherlands. *Monitor Brede Welvaart & de SDG's*. (2021).
36. Government of the Netherlands. *Miljoenennota*. (2021).
37. Government of the Netherlands. *Monitor Brede Welvaart en SDG's 2021 en de Vijfde Nationale SDG rapportage 'Nederland Ontwikkelt Duurzaam'*. (2021).
38. Wiebes, E. & Hoekstra, W. *Betreft De Monitor Brede Welvaart en de beleidscyclus*. (2019).
39. Centraal Bureau voor de Statistiek (CBS). *Monitor Brede Welvaart & de Sustainable Development Goals*. (2020). Available at: <https://www.cbs.nl/nl-nl/publicatie/2020/21/monitor-brede-welvaart-de-sustainable-development-goals-2020>. (Accessed: 4th August 2021)
40. Centraal Bureau voor de Statistiek (CBS). *Regionale Monitor Brede Welvaart toont grote verschillen stad en platteland*. (2020). Available at: <https://www.cbs.nl/nl-nl/nieuws/2020/49/regionale-monitor-brede-welvaart-toont-grote-verschillen-stad-en-platteland>. (Accessed: 4th August 2021)
41. CBS. *De Persoonlijke Welzijnsindex. De ontwikkeling van een index voor subjectief welzijn. Methoden* (2015). Available at: <https://www.cbs.nl/nl-nl/onze-diensten/methoden/onderzoeksomschrijvingen/aanvullende-onderzoeksbeschrijvingen/de-persoonlijke-welzijnsindex-de-ontwikkeling-van-een-index-voor-subjectief-welzijn>. (Accessed: 2nd September 2021)

42. Rijpma, A., Moatsos, M., Badir, M. & Stegeman, H. *Netherlands beyond GDP: A Wellbeing Index*. (2017).
43. University of Waterloo. Canadian Index of Wellbeing. *What we do* (2020). Available at: <https://uwaterloo.ca/canadian-index-wellbeing/what-we-do/framework>. (Accessed: 29th April 2021)
44. Schelhaas, M.-J., Arets, E. & Kramer, H. Het Nederlandse bos als bron van CO2. *Vakblad Natuur, Bos en Landschap* (2017).
45. The World Bank. Land area (sq. km) - Netherlands. *Data* (2017). Available at: <https://data.worldbank.org/indicator/AG.LND.TOTL.K2?locations=NL>. (Accessed: 10th August 2021)
46. The World Bank. Forest area (% of land area) - Netherlands, Bhutan, United Kingdom, New Zealand | Data. *Data* (2017). Available at: <https://data.worldbank.org/indicator/AG.LND.FRST.ZS?locations=NL-BT-GB-NZ>. (Accessed: 10th August 2021)
47. WWF. *Stepping up? The continuing impact of EU consumption on nature worldwide*. (2021).
48. TenneT. NorNed. *Our Grid* (2008). Available at: <https://www.tennet.eu/our-grid/international-connections/norned/>. (Accessed: 11th August 2021)
49. LeasePlan. *What's next in EVs LeasePlan's EV Readiness Index*. (2021).
50. Government of the Netherlands. Nationaal Groeifonds. *Topics* (2020). Available at: <https://www.rijksoverheid.nl/onderwerpen/nationaal-groeifonds>. (Accessed: 11th August 2021)
51. Government of the Netherlands. *Commissie Nationaal Groeifonds*. (2021).
52. Burns, G. W. Gross National Happiness: A Gift from Bhutan to the World. *Posit. Psychol. as Soc. Chang.* 73–87 (2011). doi:10.1007/978-90-481-9938-9\_5
53. Hayek, F. A. *The Constitution of Liberty: The Definitive Edition*. (The University of Chicago Press, 1960).
54. Lilliestam, J. & Ellenbeck, S. Energy security and renewable electricity trade—Will Desertec make Europe vulnerable to the “energy weapon”? *Energy Policy* **39**, 3380–3391 (2011).