Development towards a Sustainable Society
The Netherlands 1975 – 2008

including a comparison with Finland

2008

SSI, the compass to sustainability

Development towards a Sustainable Society
The Netherlands 1975 - 2008

A sustainable society is a society

- that meets the needs of the present generation,
- that does not compromise the ability of future generations to meet their own needs,
- in which each human being has the opportunity to develop itself in freedom, within a well-balanced society and in harmony with its surroundings.

The earth offers enough for everyone's need, not for everyone's greed.
Mahatma Gandhi

Development towards a Sustainable Society
The Netherlands 1975 – 2008

Including a comparison with the developments
in Finland over the same period

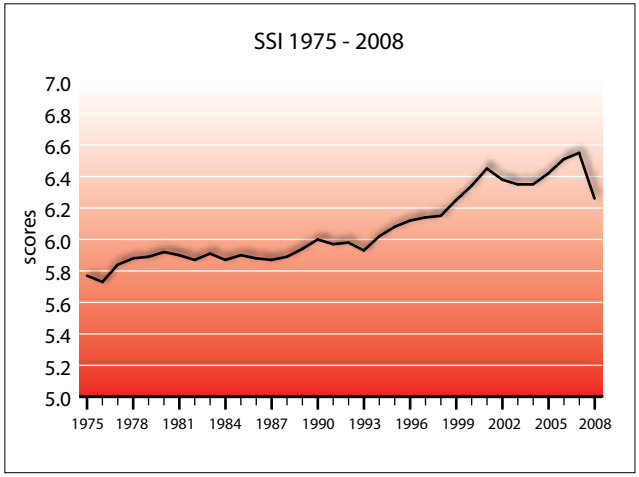
With a foreword of

Sauli Rouhinen

Secretary General National Commission on Sustainable Development, Finland

Geurt van de Kerk
Arthur Manuel

Sustainable Society Foundation



www.sustainablesocietyindex.com

Published by Uitgeverij De Vijver

Design and layout: Krekdesign, De Bilt, The Netherlands
www.krekdesign.nl

Printed on FSC labelled paper
ISBN 978-90-76224-26-8

Contents

There is a huge distance between standard measures of important socio economic variables like growth, inflation, inequalities etc… and widespread perceptions. […] Our statistical apparatus, which may have served us well in a not too distant past, is in need of serious revisions.

Amartya Sen, Joseph Stiglitz and Jean-Paul Fitoussi

Better measures lead to better policies.

Foreword

In the Finnish Ministry of the Environment we hardly noticed the results of the first Environmental Sustainability Index, ESI. Published on the World Economic Forum in Davos it raised some attention by the economic journals – especially when compared to the competitiveness. Surprisingly Finland was at the top on both sustainability and competitiveness. Even more surprising – for us – was that Finland ranked first in the two next issues of the ESI as well, thus in all three years 2002, 2003 and 2005. Of course we were anxious to know our ranking in the next update of the ESI. However, that next update never came. That really is a loss, since we appreciated the ESI, not only for ranking Finland on top, but also for its transparency.

So we were pleased to learn about the Sustainable Society Index, SSI, when it was presented in 2006, even though it ranked Finland only on position 6 in 2006 and on position 4 in the update in 2008. We realized that, especially after the recent redesign of the SSI, it might be a valuable tool for monitoring developments towards sustainability. Thus Statistics Finland decided to do a study to calculate all 24 indicators across the years, from 1975 to 2008. And we welcomed the decision of the Sustainable Society Foundation to do the same for The Netherlands. The results of the latter study are presented here, with a short comparison with the results of Finland.

It appears that The Netherlands has certainly made some progress on the way towards sustainability, however little. It also appears that an increase in Human Wellbeing is not necessarily detrimental to Environmental Wellbeing.

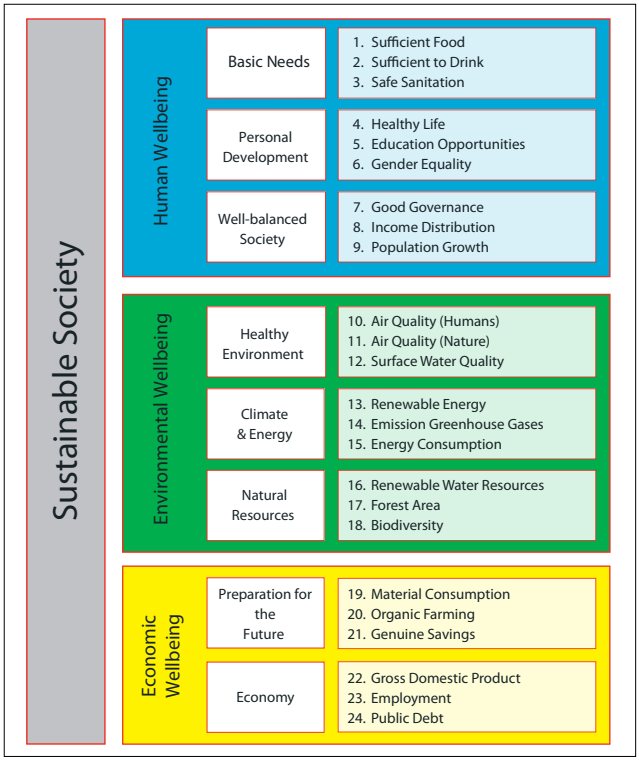
The results clearly show which indicators need most attention in the coming years. That will help politicians to formulate a sustainable development strategy and to set new and realistic targets for each indicator.

The comparison with Finland reveals that Finland is further on the way towards a sustainable society than the Netherlands. However, the latter has reduced the gap between the scores of the SSI for our two countries over the period studied.

We in Finland are very keen on measuring our performance with respect to sustainability. From our own experience we have learned the importance of the use of sustainable development indicators for defining a sustainable development strategy. We have been cooperating with the Global Footprint Network on ecological footprint accounting. Now, we are very happy to be able to cooperate in developing the Sustainable Society Index. The SSI is very faithful to the core idea of sustainable development. I hope that this benchmark study is a beginning of continuous usage of SSI in Sustainable Development policy and strategy processes nationally, regionally and globally.

Sauli Rouhinen,
Environment Counsellor,
Ministry of the Environment, Finland
Secretary General,
Finnish National Commission on Sustainable Development

In 2006 the Sustainable Society Index, SSI, was presented. Two years later the first update, SSI-2008, has been published. The SSI shows at a glance the level of sustainability of 151 assessed countries. For the purpose of the next update, SSI-2010, the SSI has been thoroughly evaluated. This resulted in a redesign of the structure of the SSI. The SSI integrates Human, Environmental and Economic Wellbeing, built up by 8 categories and 24 indicators.



Early 2010 Finland decided to assess its development with respect to sustainability over time, based on the redesigned SSI. That provoked a similar study for The Netherlands. The results are presented in this report.

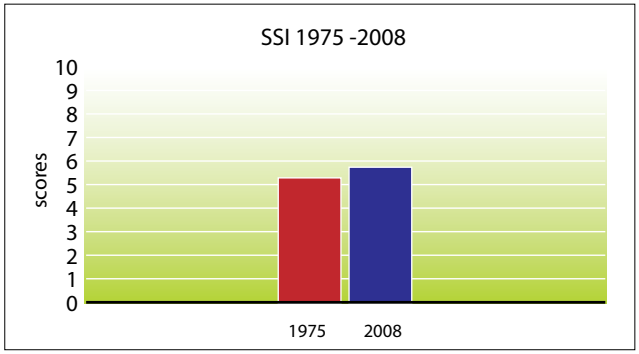
Overall conclusion

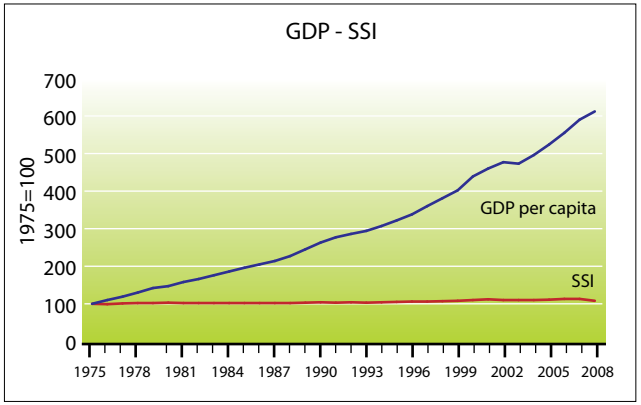
Between 1975 and 2008 The Netherlands has become a very rich country. However, during these years, it made little progress on the way to a sustainable society. The SSI-score grew by 0.5 points to 6.26 on a scale from 0 to 10[1].
Human Wellbeing already was on a high level and further improved its score to 8.76.
Environmental Wellbeing has improved its score significantly to 4.22, though still a low level, not even halfway towards sustainability.
Economic Wellbeing slightly increased its score to 5.55, just over halfway towards sustainability.

In spite of its richness, The Netherlands has paid little attention to the transition towards sustainability. While GDP per capita increased by more than 500%, the SSI score has risen by a mere 8% over the years 1975 – 2008. Thus the huge increase in wealth has hardly been used for progress on the way to a sustainable society.

[1] All scores are calculated on a scale from 0 to 10.

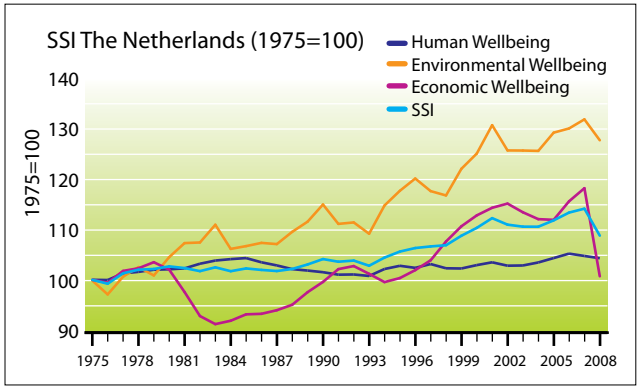
SSI

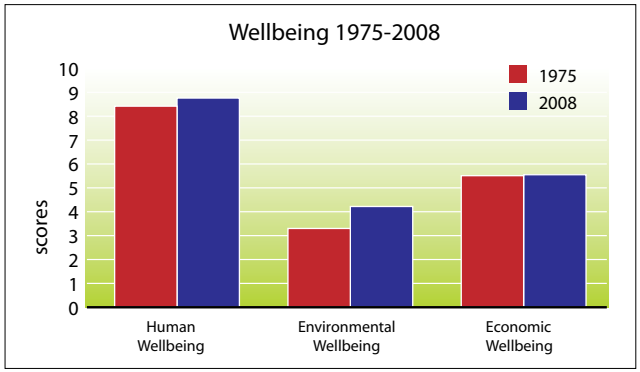




1. SSI scores grew by nearly 0.5 points to a score of 6.26 in 2008.
2. The small increase of SSI sharply contrasts to the huge increase in GDP per capita in the same period. The considerable increase in wealth has not been used for a substantial increase of the level of sustainability.
3. While income per capita grew by more than 500%, the increase of the SSI is a mere 8%. At this pace it will take more than 250 years to achieve full sustainability.

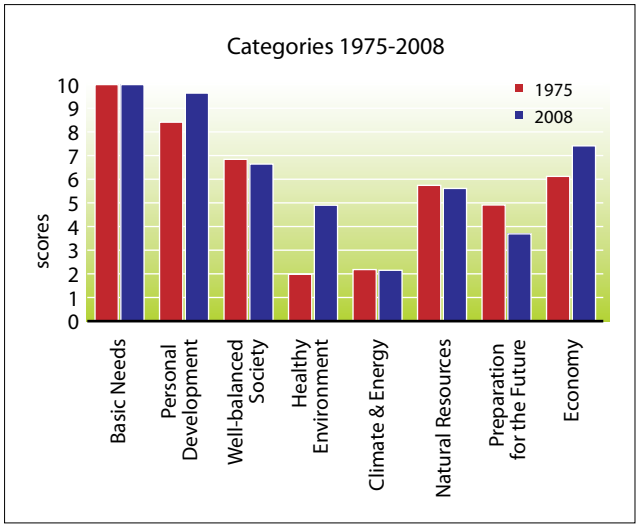
Wellbeing





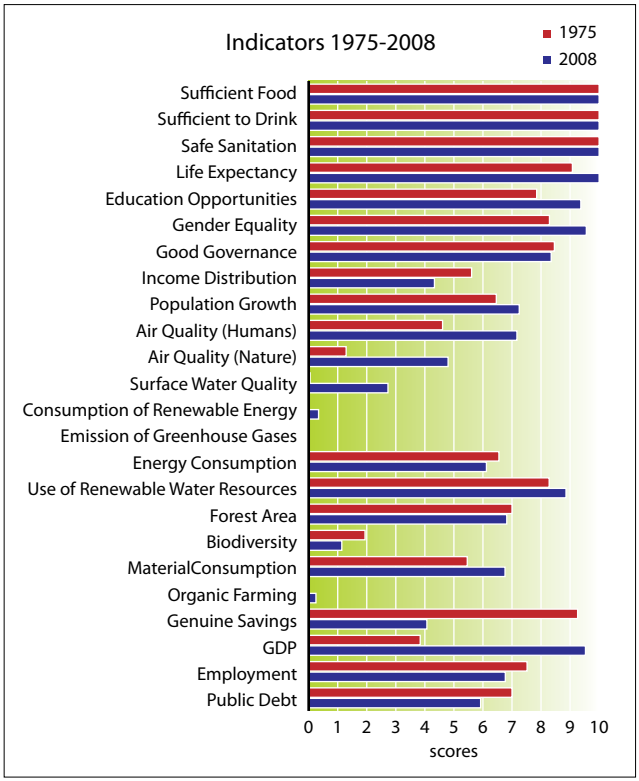
1. Of the three wellbeing clusters, Environmental Wellbeing grew fastest, by 28% over 1975 – 2008. However, with a score of 4.22 in 2008, it is still on a low level.
2. Human Wellbeing grew by 4%, achieving a score of 8.76 in 2008.
3. Economic Wellbeing grew by less than 1% to 5.55 in 2008. The rise of Economic Wellbeing until 2007 was almost nullified in 2008, due to the sharp fall of Genuine Savings.
4. Apparently it is possible to achieve an improvement in Human and Economic Wellbeing, without this being detrimental to Environmental Wellbeing.

Categories



1. Over the years 1975 – 2008 three categories increased their scores:
   - Healthy Environment, showing by far the largest increase
   - Economy
   - Personal Development.
2. One category, Basic Needs, stayed even at the maximum level of 10.
3. Four categories had to face a decrease:
   - Climate & Energy, be it very little
   - Natural Resources
   - Well-balanced Society
   - Preparation for the Future.
4. The score of Climate & Energy is very low.
5. Preparation for the Future, which decreased its score most of all, is only at one-third on the way towards sustainability.
6. Healthy Environment, with the largest increase, still is at a low level.

Indicators

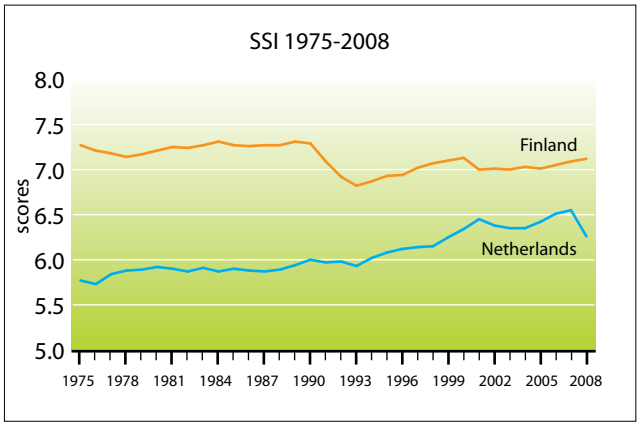


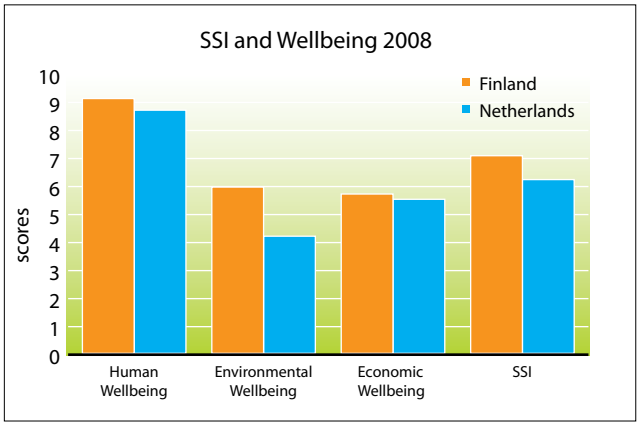
1. Of the 24 indicators
   - 12 increased their score
   - 4 stayed even
   - 8 declined.
2. By far the largest increase was for GDP, by more than 500%.
3. Genuine Savings, which was at a high level from 1975 – 2007, fell sharply in 2008.
4. In the range of Human Wellbeing 4 indicators have achieved the maximum score of 10 and 4 a score between 7 and 10. The only laggard is Income Distribution, with a score under 5.

5. Concerning Environmental Wellbeing, the indicator Use of Renewable Water Resources scores high, Air Quality (humans) and Forest Area show scores above average, while the other indicators score low to very low. Particularly Biodiversity, Consumption of Renewable Energy and Emission of Greenhouse Gases have dramatic low scores.
6. With respect to Economic Wellbeing Gross Domestic Product increased most of all indicators, achieving a high score in 2008. Genuine Savings fell from a high score between 1975 and 2007 to below average in 2008. Development of Organic Farming is only in its initial stage with a score of just above 0. The other three indicators related to Economic Wellbeing score around 6 to 7.

Finland

The overall picture is that Finland is more advanced on the way towards a sustainable society than The Netherlands. The score of the SSI of Finland in 2008 is 7.12, compared to 6.26 for The Netherlands.





Finland scores better on all three wellbeing clusters, particularly on Environmental Wellbeing.
6 of the 8 Finnish categories score higher than the Netherlands' ones. Exceptions are Economy where The Netherlands show a slightly higher score and Basic Needs where both countries have equal scores.

On 12 of the 24 indicators Finland scores better. The Netherlands has higher scores for 8 indicators, whereas 4 indicators show equal scores for both.

The comparison may stimulate both countries to further improve their scores and set policy accordingly.

Part I

Introduction

1

January 2010 Statistics Finland decided to calculate the Sustainable Society Index – SSI – across the years, for the period 1975 – 2008, thus covering a period of more than 30 years. So far, the SSI measured the state of the art with respect to the level of sustainability for two years, 2006 and 2008. Thus developments over time could be presented for only two years. Since the assessment of developments over time is a most worthwhile and very important aspect, we decided to retro-calculate the SSI for The Netherlands, also for the period 1975 – 2008. This report presents the results of this study. We have presented bare facts and figures. These clearly show the state of the art of all main aspects of sustainability, as well as the developments over time. We have not investigated why developments are as they are. Here is a wide range of opportunities for further research.

Framework of the SSI

2

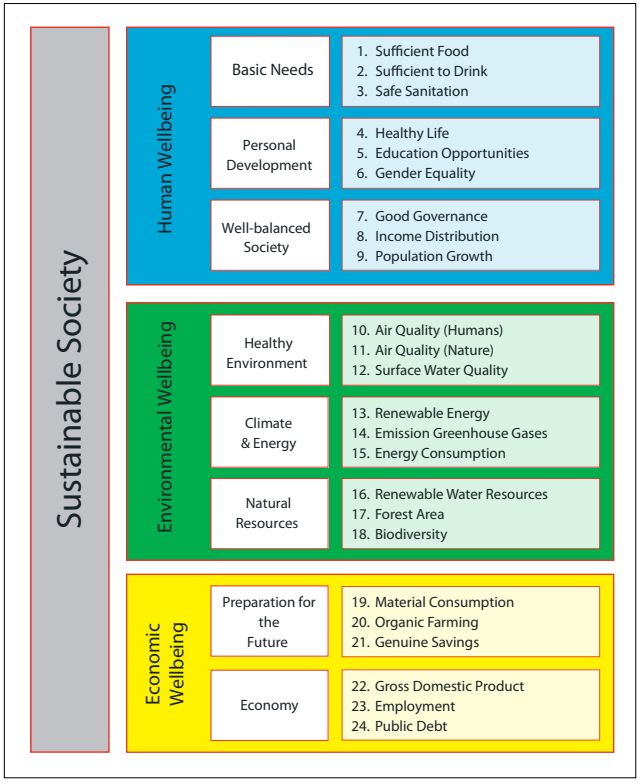
The SSI has been developed to offer a simple and transparent instrument to measure the level of sustainability of a country or a region. Based on the (extended) Brundtland definition it measures sustainability in its broad sense. In 2006 the first edition of the SSI, SSI-2006, was presented. The SSI received a warm welcome by many people, varying from politicians, to scientists, students, NGOs and interested public. It is appreciated because it integrates quality of life and environmental sustainability and is nevertheless simple and easy to understand. It presents at a glance the distance to sustainability of a society, for no less than 151 countries. The first of two-yearly updates, SSI-2008, was published in 2008. By the end of this year the second update, SSI-2010, will follow.

> A sustainable society is a society
> - that meets the needs of the present generation,
> - that does not compromise the ability of future generations to meet their own needs,
> - in which each human being has the opportunity to develop itself in freedom, within a well-balanced society and in harmony with its surroundings.
>
> *Brundtland + definition of sustainability*

Since the launch of the SSI, we gained valuable experiences with its use and received many suggestions. Also taking into account recent global developments, particularly those stimulated by the Stiglitz-Sen-Fitoussi report, we have evaluated the current SSI, which resulted in a redesign[2].

[2] A short note on the evaluation and redesign of the SSI can be downloaded from the website www.sustainablesocietyindex.com

The new structure of the SSI is shown below.



Redesigned Structure of the SSI

The redesigned SSI comprises the three Wellbeing clusters (Human Wellbeing, Environmental Wellbeing and Economic Wellbeing). Each cluster consists of 2 or 3 categories. Categories comprise in total 24 indicators, 3 for each category.

3

The time series for The Netherlands, as well as the ones for Finland, are based on the new structure of the SSI. That offers opportunities for comparisons with future results and with other countries. Thus the definition of each indicator has to be the same for these time series and for the future SSI calculations. However, we had to make several concessions due to lack of data, for those indicators where it was impossible to collect the same data as required for the future developments. And even then, we had to overcome quite some problems:

- Many data are not available for the whole time series. It was particularly difficult to find data for the years before 1990.
- During the period 1975 – 2008 the way of calculating of quite a number of data has been changed, thus causing a break in the series.

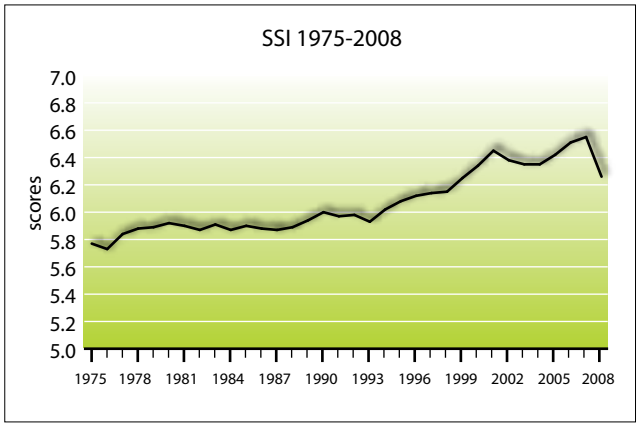
In Part II a short explanation has been given per indicator: description of the content of the indicator, used source(s), calculation methodology and used formula.

The main sources for the received data are:

- Statistics Netherlands – CBS Statline
- Netherlands Environmental Assessment Agency – PBL
- Environmental Data Compendium
- Helpdesk Water – RWS
- Eurostat
- World Bank
- WHO-Unicef Joint Monitoring Programme.

We received extensive support from many people whom we have asked for information and data.

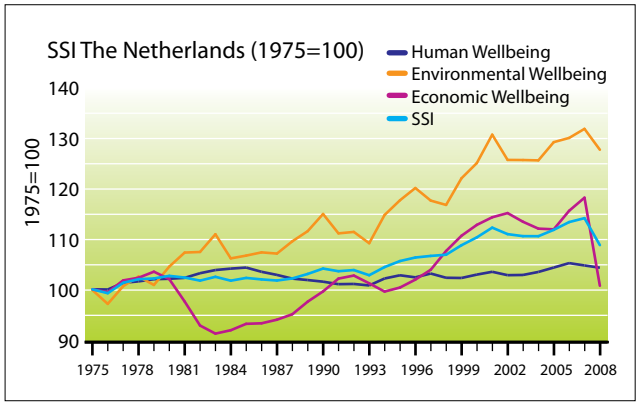
4.1 SSI

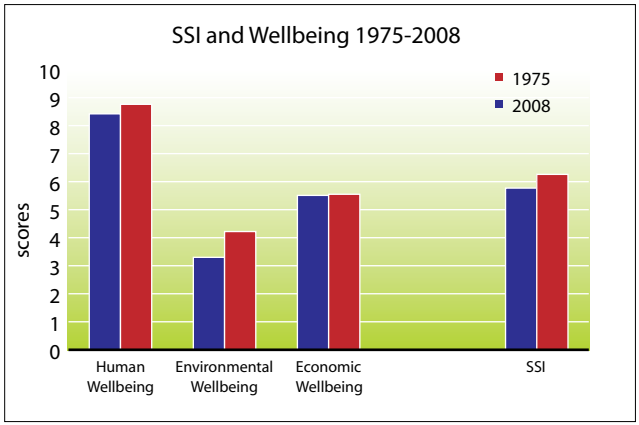


Note: the vertical scale only runs from 5.0 to 7.0.

The overall score of the SSI amounted to 5.77 in 1975. It increased from 1975 – 2008 by nearly 0.5 points to 6.26, that is 8.3%. The distance to full sustainability is 3.74. That means that at the actual pace it will take more than 250 years, 265 years to be precise, to achieve full sustainability.

4.2 SSI and Wellbeing clusters





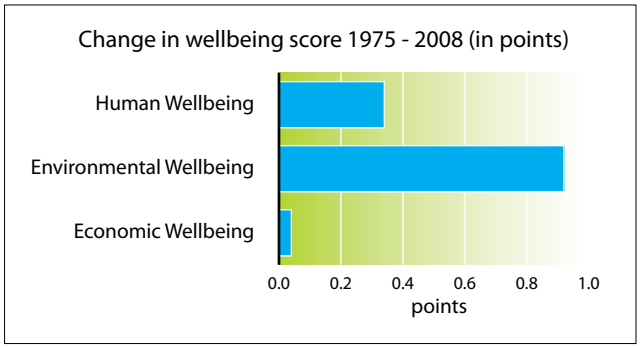
All three clusters of Wellbeing have contributed to the increase. Environmental Wellbeing contributed by far the most, due to a growth of 0.92 points. Human Wellbeing grew by 0.34 and Economic Wellbeing by a mere 0.04 points.

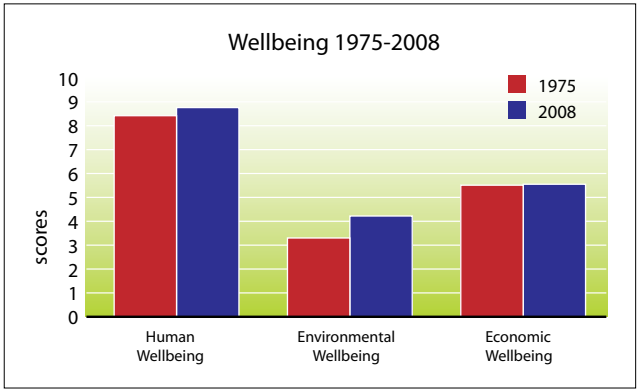
The figure above shows the growth in percentage of all three wellbeing clusters, starting with 1975=100. The largest relative growth is achieved by Environmental Wellbeing, growing by 28% over the period 1975-2008. Human Wellbeing has increased by 4% and Economic Wellbeing by 0.7%. This resulted in the already mentioned growth of the SSI by 8% in 34 years.

From 2007 to 2008 the SSI was in decline, due to a – larger or smaller – decline of all three wellbeing clusters. The largest decline was caused by Genuine Savings (Indicator 21), falling from 9.33 to 4.07, by Surface Water Quality (Indicator 12), falling from 3.99 to 2.73 and Public Debt (Indicator 24), which decreased from 6.64 to 5.92, all in just one year.

Note that the above mentioned changes are for 2007 to 2008 and thus differ from the changes over the years 1975 to 2008. The latter will be presented in chapter 4.5.

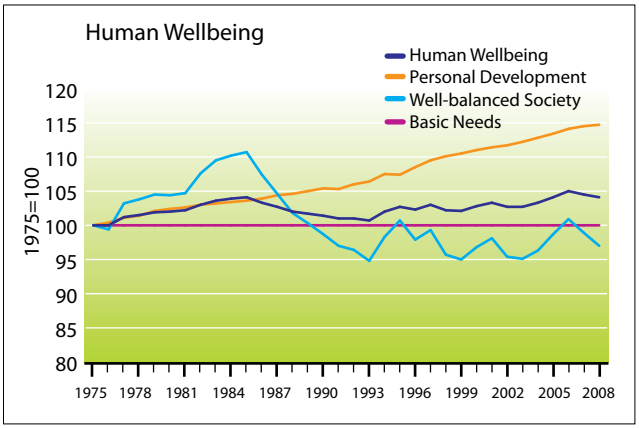
4.3 Wellbeing clusters and categories





As already has been said the scores of all three Wellbeing clusters have increased. Human Wellbeing, already on a high level, grew by 0.34 points. The score of Environmental Wellbeing increased with 0.92 and Economic Wellbeing with 0.04.

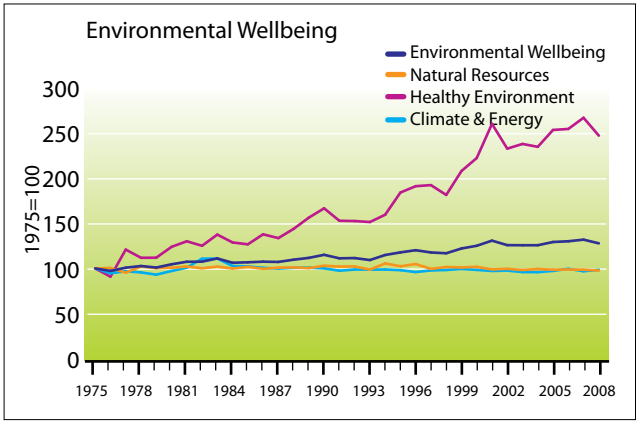
Human Wellbeing



The overall score of Human Wellbeing fluctuates, with an upward trend. This is completely due to the increase of category Personal Development, which shows a steady rise. Well-balanced Society fluctuates heavily, ending up with an overall decrease across the period 1975 – 2008. Basic Needs stayed even on the maximum score of 10. Personal Development also has a high score of 9.64 and thus a distance to target of 0.36. Well-balanced Society is lagging behind these two with a score of 6.64 and thus a distance to target of 3.36. This results in a distance to target for Human Wellbeing of 1.24.

Development 1975 – 2008				
	Basic Needs	Personal Development	Well-balanced Society	Human Wellbeing
Score 1975	10.0	8.41	6.84	8.42
Score 2008	10.0	9.64	6.64	8.76
Change in points	0.00	1.23	- 0.20	0.34
Change in %	0.0	14.7	- 3.0	4.1
Distance to target in 2008	0.00	0.36	3.36	1.24

Environmental Wellbeing

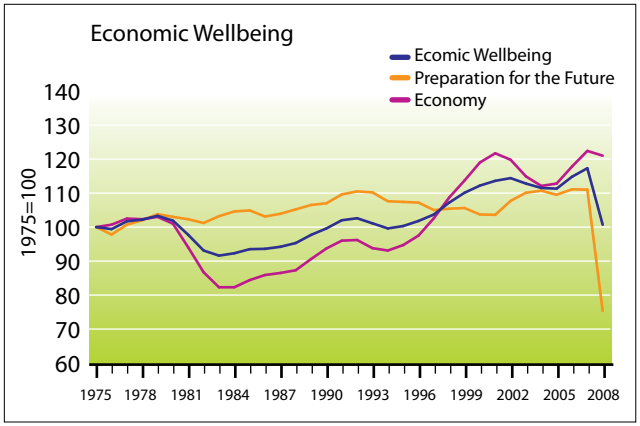


Note: the vertical scale of this figure differs from the previous, as well as the next ones.

The increase of Environmental Wellbeing is completely the result of the large increase of category Healthy Environment, by no less than nearly 150%. The two other categories, Climate & Energy and Natural Resources hardly changed, even ending up with a slight decrease over the assessed years.
The actual level of the scores of the categories in the cluster Environmental Wellbeing is low. The distance to target is large, especially for category Climate & Energy, with a distance of 7.85 points. The two other categories are just under or over halfway towards sustainability.
The overall level of the Environmental Wellbeing cluster is 4.22 points, resulting in a distance to target of no less than 5.78 points.

Development 1975 – 2008				
	Healthy Environm.	Climate & Energy	Natural Resources	Environm. Wellbeing
Score 1975	1.98	2.18	5.74	3.30
Score 2008	4.90	2.15	5.61	4.22
Change in points	2.92	- 0.03	- 0.13	0.92
Change in %	147.1	- 1.5	- 2.3	27.8
Distance to target in 2008	5.10	7.85	4.39	5.78

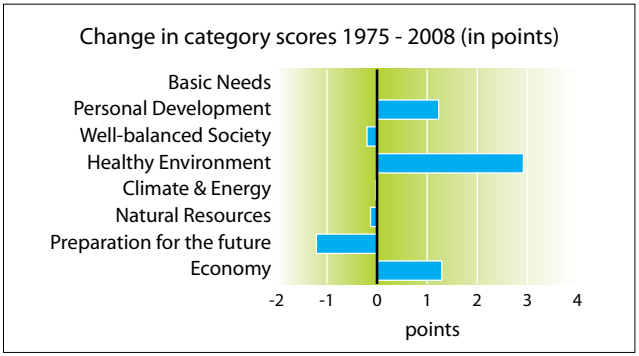
Economic Wellbeing

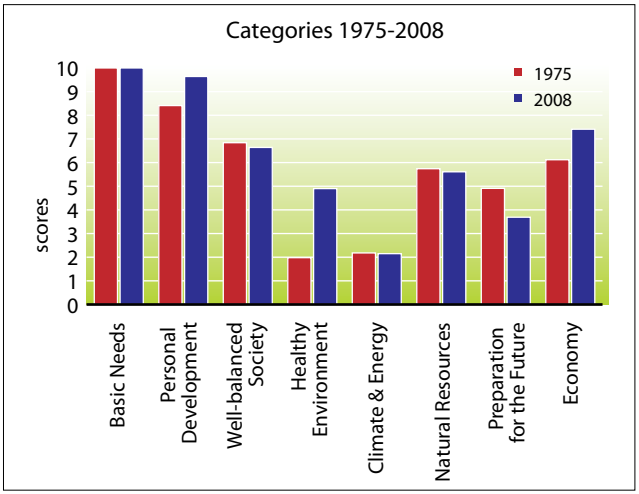


The Economic Wellbeing cluster, scoring 5.55 points in 2008, is just over halfway towards sustainability. The increase of the score of Economic Wellbeing until 2007 has almost been nullified in 2008. It resulted in a positive change over the total assessed period 1975 – 2008 of only 0.04 points. This was caused by the decrease in the score of the category Preparation for the Future, which was not compensated by the increase of the category Economy.

Development 1975 – 2008			
	Preparation for the Future	Economy	Economic Wellbeing
Score 1975	4.91	6.12	5.51
Score 2008	3.69	7.41	5.55
Change in points	- 1.21	1.29	0.04
Change in %	- 24.7	21.0	0.67
Distance to target in 2008	6.31	2.59	4.45

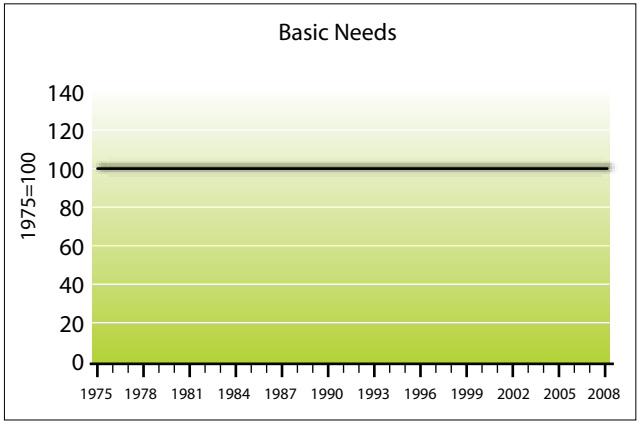
4.4 Categories and Indicators





The scores of three out of the total of 8 categories have increased over the assessed period: Healthy Environment, Personal Development and Economy. Basic Needs stayed even at the maximum level of 10. The scores of four categories have decreased: three showed a small decrease, whereas Preparation for the Future decreased by over 1 point.

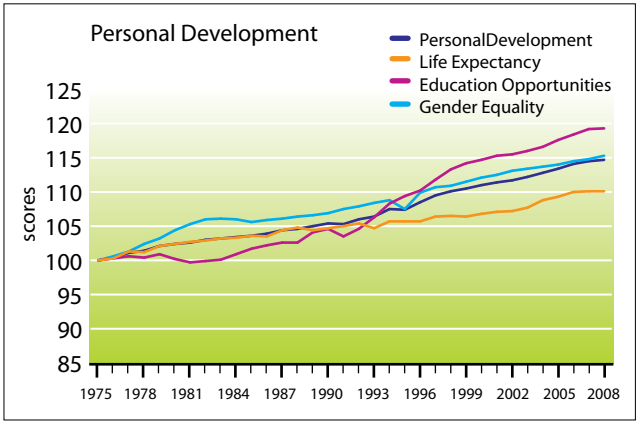
I. Basic Needs



Already in 1975 all three indicators of Basic Needs had achieved the maximum level and stayed at that level over the assessed period. This resulted in a steady score of 10 both for the indicators and for the category Basic Needs, without any changes.

Development 1975 – 2008				
	Sufficient Food	Sufficient to Drink	Safe Sanitation	Basic Needs
Score 1975	10.0	10.0	10.0	10.0
Score 2008	10.0	10.0	10.0	10.0
Change in points	0.00	0.00	0.00	0.00
Change in %	0.0	0.0	0.0	0.0
Distance to target in 2008	0.00	0.00	0.00	0.00

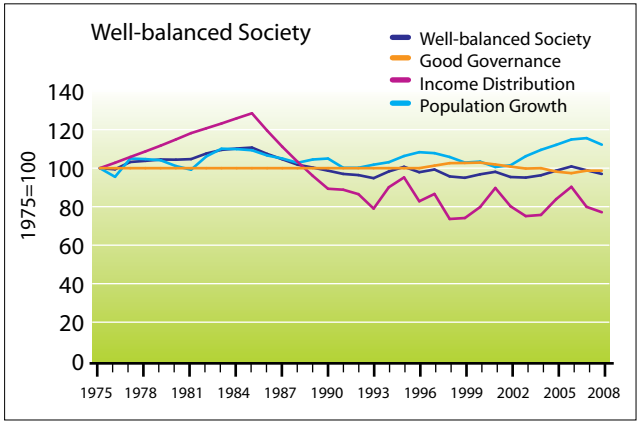
II. Personal Development



The figure clearly shows that all three indicators show a steady increase, resulting in a steady and considerable increase of this category. The score in 2008, 9.64, was just below the sustainable maximum.

Development 1975 – 2008				
	Life Expectancy	Education Opportu-nities	Gender Equality	Personal Develop-ment
Score 1975	9.08	7.85	8.29	8.41
Score 2008	10.00	9.37	9.56	9.64
Change in points	0.92	1.52	1.27	1.23
Change in %	10.1	19.3	15.3	14.7
Distance to target in 2008	0.00	0.63	0.44	0.36

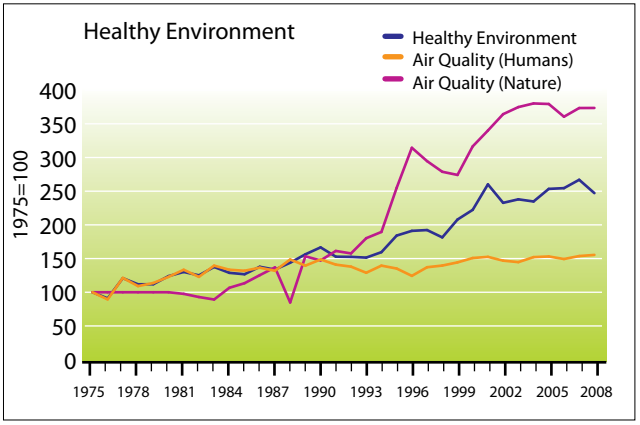
III. Well-balanced Society



The picture of Well-balanced Society is quite different from the previous ones. The score of one indicator (Population Growth) slightly increased, the two others saw a decrease of 0.1 and 1.3 points respectively.

Development 1975 – 2008				
	Good Governance	Income Distribution	Population Growth	Well-balanced Society
Score 1975	8.46	5.61	6.46	6.84
Score 2008	8.35	4.33	7.25	6.64
Change in points	- 0.11	- 1.28	0.79	- 0.20
Change in %	- 1.3	- 22.9	12.2	- 3.0
Distance to target in 2008	1.65	5.67	2.75	3.36

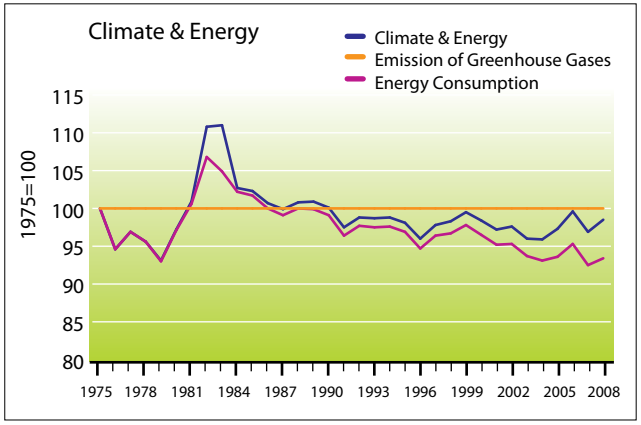
IV. Healthy Environment



All three indicators making up category Healthy Environment, have considerably increased the score. Thus the score of the category also increased substantially.
As can be understood from the table below, the exceptionally strong growth of Surface Water Quality prevented it from being included in the same figure as the other two indicators.

Development 1975 – 2008				
	Air Quality (humans)	Air Quality (nature)	Surface Water Quality	Healthy Environment
Score 1975	4.61	1.29	0.05	1.98
Score 2008	7.17	4.80	2.73	4.90
Change in points	2.56	3.52	2.68	2.92
Change in %	55.4	273.5	5214.9	147.1
Distance to target in 2008	2.83	5.20	7.27	5.10

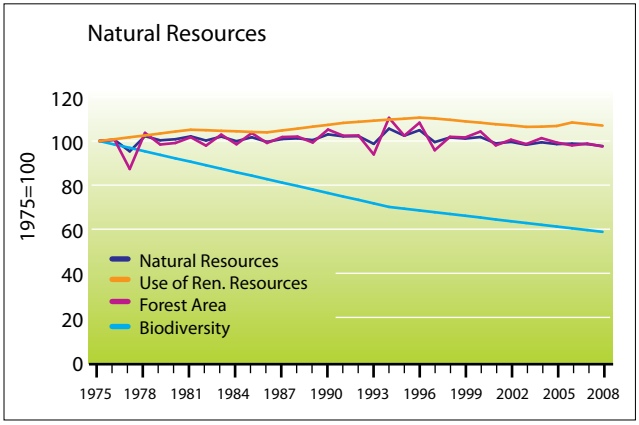
V. Climate & Energy



The category Climate & Energy is performing badly. Its already low score of 2.18 points in 1975 has slightly further decreased to 2.15 points. The small increase of Consumption of Renewable Energy was more than wiped out by a decrease of Energy Consumption. Emission of Greenhouse Gases stayed at the minimum level of 0. The growth of Consumption of Renewable Energy, starting at 0.00 in 1975, could not be presented in the figure.

Development 1975 – 2008				
	Cons. of Renewable Energy	Emission of Greenhouse Gases	Energy Consumption	Climate & Energy
Score 1975	0.00	0.00	6.55	2.18
Score 2008	0.34	0.00	6.12	2.15
Change in points	0.34	0.00	- 0.43	- 0.03
Change in %	….	….	-6.6	- 1.5
Distance to target in 2008	9.66	10.00	3.88	7.85

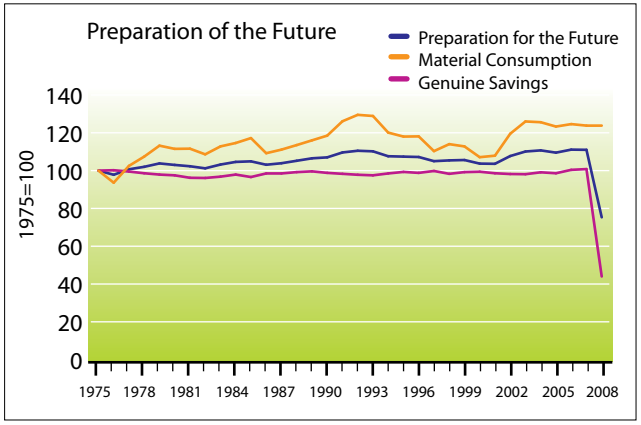
VI. Natural Resources



The result of the category Natural Resources slightly declined, mainly due to a further loss of biodiversity. Forest Area, measured as described in Part II, slightly decreased. The increase of Use of Renewable Water Resources was insufficient to compensate the decreases of the other two indicators.

Development 1975 – 2008				
	Use of Ren. Water Resources	Forest Area	Biodiversity	Natural Resources
Score 1975	8.28	7.00	1.94	5.74
Score 2008	8.86	6.82	1.14	5.61
Change in points	0.58	- 0.18	- 0.80	- 0.13
Change in %	7.0	- 2.5	- 41.2	- 2.3
Distance to target in 2008	1.14	3.18	8.86	4.39

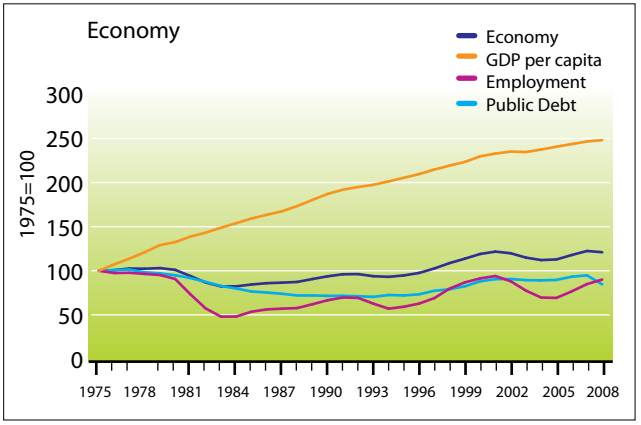
VII. Preparation for the Future



Preparation of the Future showed an improvement until 2007. The figure clearly shows the large fall of Genuine Savings in 2007, which resulted in a decline of the whole category.
The growth of Organic Farming, starting at 0.00 in 1975, could not be presented in the figure.

Development 1975 – 2008				
	Material Consumption	Organic Farming	Genuine Savings	Preparation for the Future
Score 1975	5.46	0.00	9.26	4.91
Score 2008	6.76	0.25	4.07	3.69
Change in points	1.30	0.25	- 5.18	- 1.21
Change in %	23.8	….	- 56.0	- 24.7
Distance to target in 2008	3.24	9.75	5.93	6.31

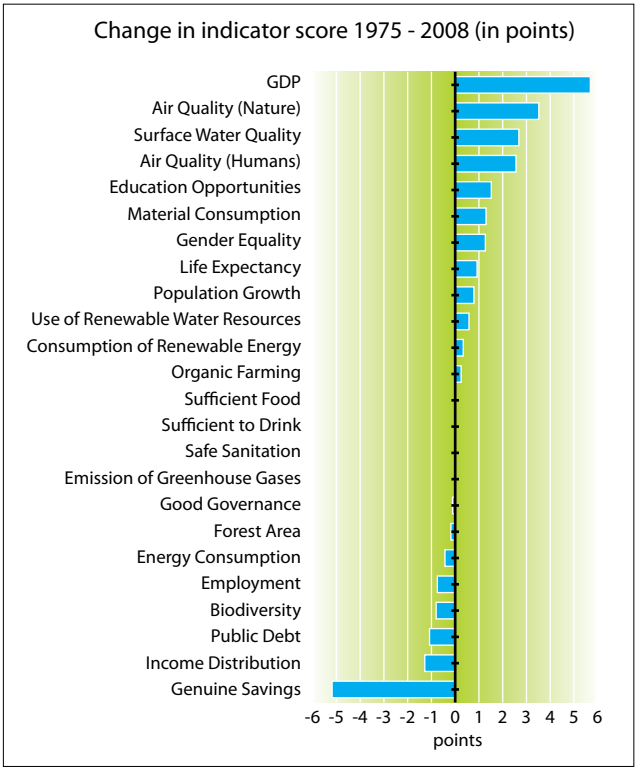
VIII. Economy



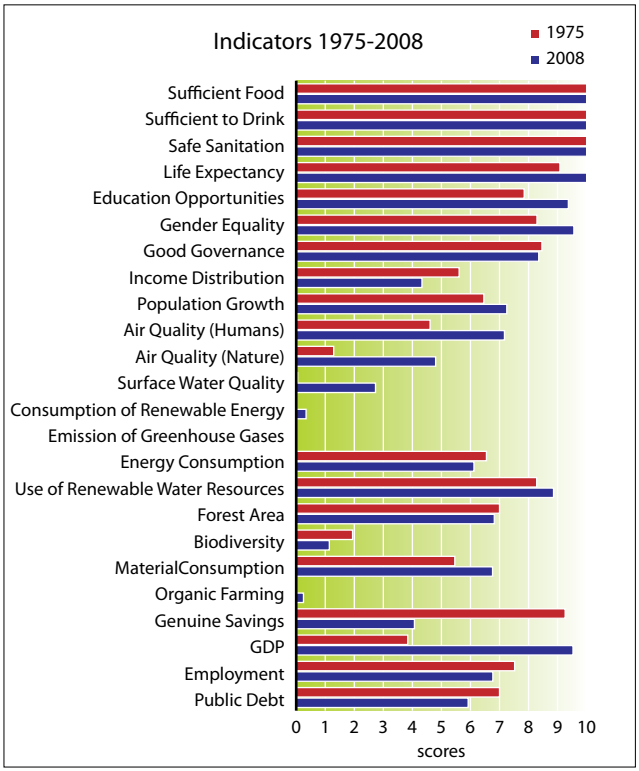
The sharp rise of the score of GDP per capita by no less than 5.7 points more than compensated the decrease of the other two indicators, Employment and Public Debt. Thus the category Economy also increased, by over 1 point.
Note: the score of GDP per capita has risen by 150% since 1975, whereas the actual value of GDP per capita has risen by more than 500% in the same period.

Development 1975 – 2008				
	GDP	Employment	Public Debt	Economy
Score 1975	3.84	7.52	7.00	6.12
Score 2008	9.53	6.77	5.92	7.41
Change in points	5.69	- 0.75	- 1.08	1.29
Change in %	148.1	- 10.0	- 15.4	21.0
Distance to target in 2008	0.47	3.23	4.08	2.59

4.5 Indicators



12 indicators, that is 50%, show an increase of their score over the period 1975 – 2008, 4 stayed even and 8 were in the decline. Remarkable is the large decrease of Genuine Savings, in just one year, from 2007 to 2008.



4 of the 24 indicators, all in the field of Human Wellbeing, received the maximum score of a sustainable 10.
5 more indicators score between 8 and 10, 3 of these also in the Human Wellbeing realm, plus GDP per capita and, not surprisingly in a wet country with big rivers, Use of Renewable Water Resources.
Furthermore, there are 6 indicators with scores between 6 and 8.
Finally, no less than 8 indicators score lower than a mediocre 5.
The lowest scores are received by Service Water Quality, Biodiversity, Consumption of Renewable Energy, Organic Farming and Emission of Greenhouse Gases.

Aggregation and weighting

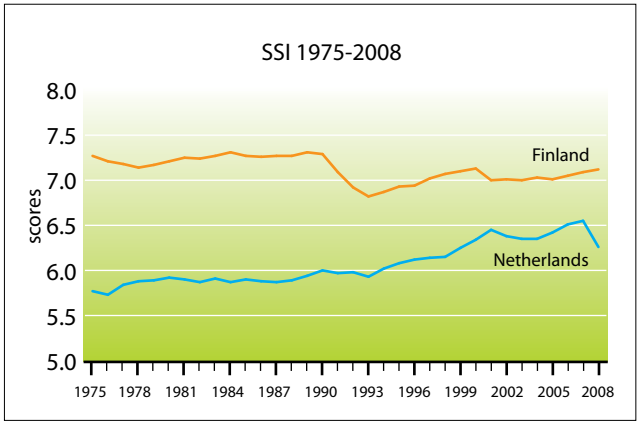
5

The calculation of the scores of each indicator is described in Part II. To calculate the scores of the categories, each comprising 3 indicators, all indicators have been allocated the same weight. The same applies for the aggregation of the 8 categories into the three wellbeing elements, as well as for final aggregation into one single figure for the SSI. Since there is no sound scientific base for giving different weights to indicators/categories/wellbeing elements, we are approaching this question by collecting expert opinions with respect to the weighting. Results of this exercise can be expected within a couple of months. Thus for the time being, all aggregated data are unweighted.

The idea of aggregation is not supported by everyone. Objections are loss of information and the possibility of trade-offs. We fully understand these objections. Nevertheless, we have aggregated the scores, finally into one overall score for the SSI, since this offers an adequate way of communication. To avoid any possibility of trade-offs, we have presented the aggregated data as well as all underlying data, as the reader already may have seen.

SSI

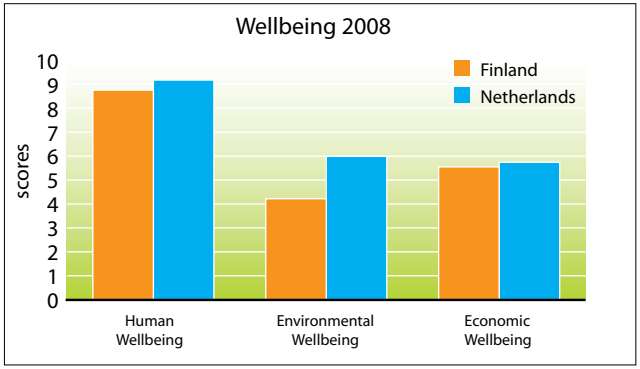
The score of the SSI of Finland is rather constant with a slight overall decline between 1975 and 2008. The level is always higher than the one of the SSI of The Netherlands. In 1975 the difference between the two was 1.50 points. In 2008 the gap has declined to 0.87 points.



Note: the vertical scale only runs from 5.0 to 8.0.

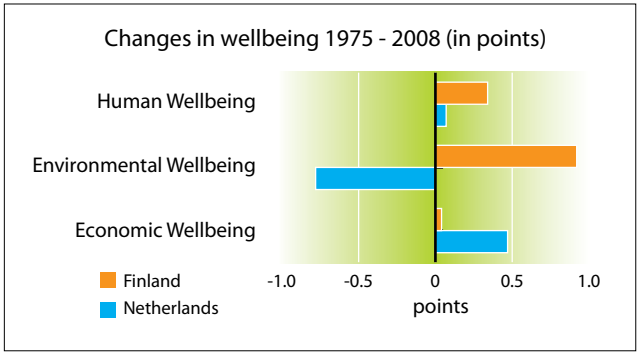
Wellbeing

All Finnish wellbeing clusters score higher than those of The Netherlands. The difference is largest for Environmental Wellbeing.



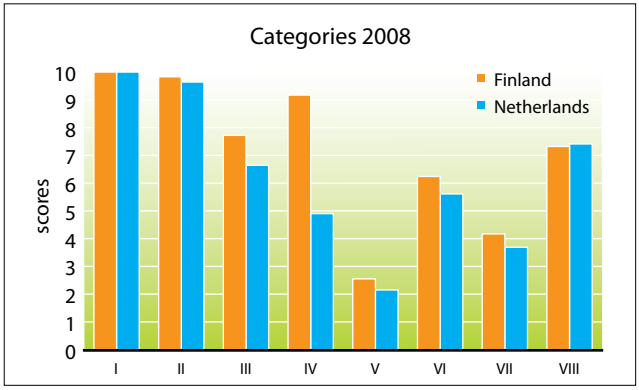
Looking at the changes over time, it appears that there is a significant difference in development between Finland and The Netherlands. This applies above all for Environmental Wellbeing, where The Netherlands shows quite an increase and Finland a decrease of about equal measure.

The decrease in Environmental Wellbeing for Finland is mainly due to a sharp decline of the score of Natural Resources, which is the result of a decrease of the scores of Forest Area and Biodiversity. The increase of the score of Environmental Wellbeing of The Netherlands is the result of a huge increase in Healthy Environment, where all three indicators show substantial increases.



Both other wellbeing clusters show increases of the scores for the two countries, though in very different measure. For Finland Economic Wellbeing has grown much more than Human Wellbeing, for The Netherlands it is just the other way round.

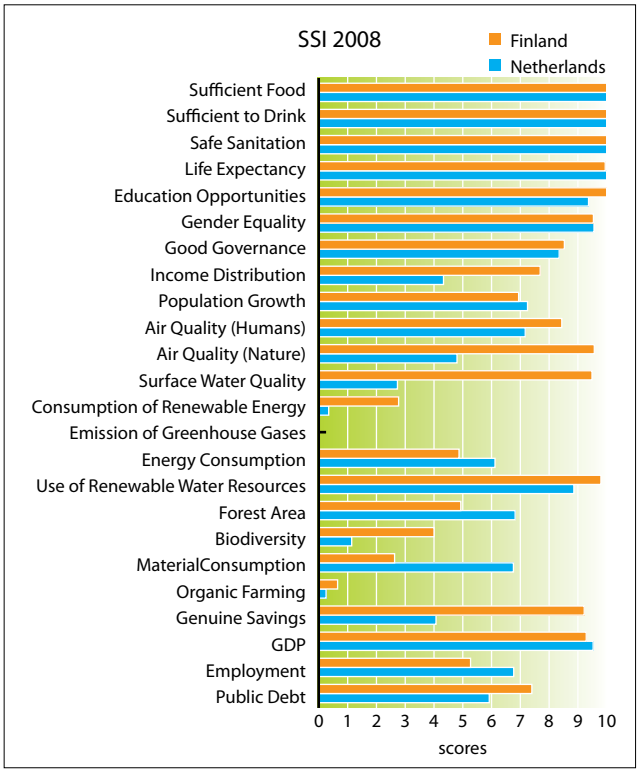
Categories

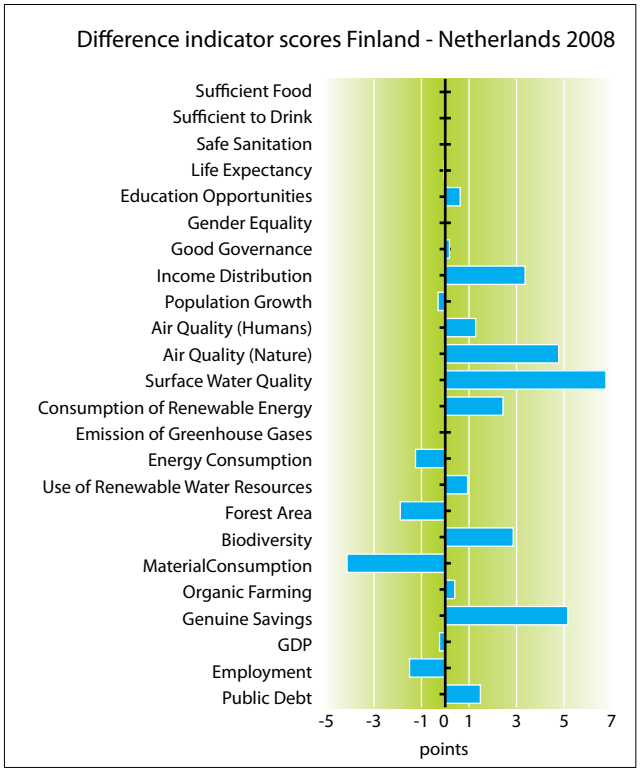


All Finnish categories score higher than the Netherlands' ones, except Economy. Basic Needs has the same, maximum level for both countries.

Indicators

The first figure below shows the scores of all 24 indicators, the second one the differences between the two countries. Finland scores higher for 12 indicators, 4 indicators have equal scores and 8 indicators of Finland are lower than of The Netherlands, Life Expectancy and Gender Equality only very little.





Overall conclusion

The overall picture is that Finland is further on the way to a sustainable society. However, the gap between the SSI-scores of the two countries has been reduced.

The comparison of the results may stimulate both countries to adjust their policies in order to improve their scores.

Conclusions

1. Between 1975 and 2008 The Netherlands has become a very rich country. However, during these years, it made little progress on the way to a sustainable society. The SSI-score grew by 0.5 points to 6.26 on a scale from 0 to 10.
   Human Wellbeing already was on a high level and further improved its score to 8.76.
   Environmental Wellbeing has improved its score significantly to 4.22, though still a low level, not even halfway towards sustainability.
   Economic Wellbeing slightly increased its score to 5.55, just over halfway towards sustainability.
   In spite of its richness, The Netherlands has paid little attention to the transition towards sustainability. While GDP per capita increased by more than 500%, the SSI score has risen by a mere 8% over the years 1975 – 2008. Thus the huge increase in wealth has hardly been used for progress on the way to a sustainable society.
2. All indicators need attention, even the ones which already have achieved the level of sustainability. Not only to stay at that level, but also to be aware of what is behind the statistics, what is not represented in the statistics, are people lagging behind in spite of all statistics?
3. Special attention is required for transition towards sustainability. In spite of the huge increase of wealth over the last 30 years, hardly any progress has been made with respect to sustainability.
4. With respect to individual indicators, special attention is required for indicators with (very) low scores:
   - Emission of Greenhouse Gases
   - Organic Farming
   - Renewable Energy
   - Biodiversity
   - Surface Water Quality.
5. Furthermore special attention should be paid to indicators which are in the decline
   - Genuine Savings
   - Income Distribution
   - Public Debt
   - Biodiversity
   - Employment
   - Energy Consumption.
6. The comparison between Finland and The Netherlands reveals that Finland is further on the way to a sustainable society. Finland scores better on 12 indicators, The Netherlands on 8 indicators. 4 indicators show equal scores for both countries. The comparison may stimulate both countries to adjust their policies in order to improve their scores.
7. To be effective, sustainable development indicators must be an integral part of the strategy process and of policy measures.

Acknowledgements

8

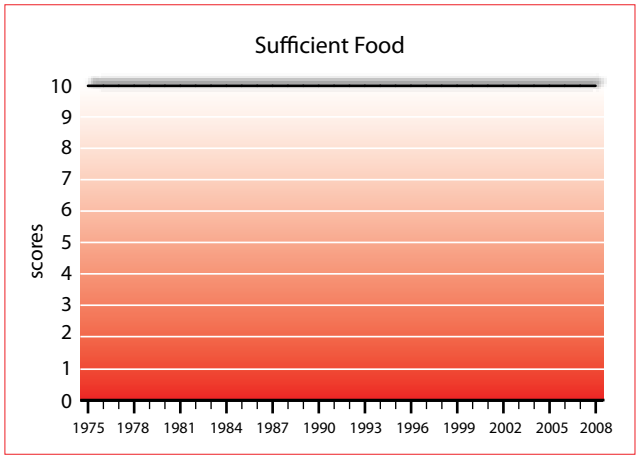
This study would not have been undertaken if Jukka Hoffrén, Head of Research of Statistics Finland had not taken the initiative to investigate developments with respect to sustainability in Finland along the lines of the SSI. We are very thankful to him. His decision means a lot for the further development of our work. The Finnish study has been realised by Elina Kekkonen. She did an excellent job, which also helped us for our study.

Many people have contributed in some way or another, varying from advice, collecting data, interpreting results, checking and correcting the various drafts, to giving any kind of support whenever needed. All in different ways, at different moments and in different measures and intensity. Nevertheless, they cannot be held responsible for mistakes in this report. The responsibility for the contents of this report lies solely with the authors.

We would like to thank Sabrina Barker, Brent Bleys, Viktoria Bolla, Frits Bos, Laurens Brandes, Ed Buijsman, Roel Delahaye, Lex van Deursen, Peter Ekamper, Paul Fischer, Eric Goewie, Bob Goudzwaard, Aldert Hanemaaijer, Jean-Paul Hettelingh, Arjen van Hinsberg, Kelly Hodgson, Rutger Hoekstra, Guus den Hollander, Wim Kessels, Wim Langendijk, Algie Lefeber, Anouschka van der Meulen, David Moore, Patrick Nuvelstijn, Peter van Puijenbroek, Paul Ruyssenaars, Alex de Sherbinin, Ronald Spoor, Tanja Srebotjnak, Aart Sterkenburg, John van Tol, Peter van de Ven, and Teo Wams.

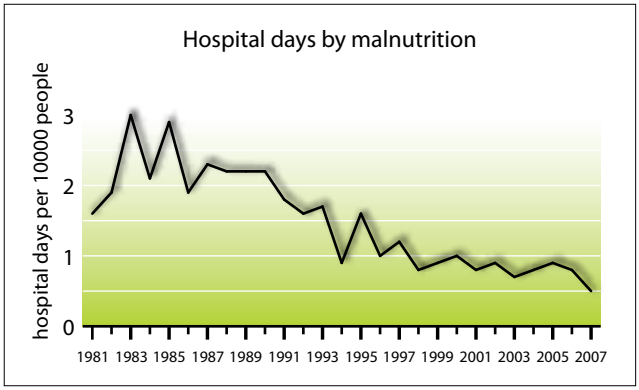
Note: the score of each indicator is presented in a graph, on a vertical scale from 0 to 10. A few indicators are presented with a different vertical scale, in order to better show the developments. For some indicators additional graphs have been plotted. These latter graphs may also have a different vertical scale, in order to show differences across the years more clearly.

Indicator 1
Sufficient Food

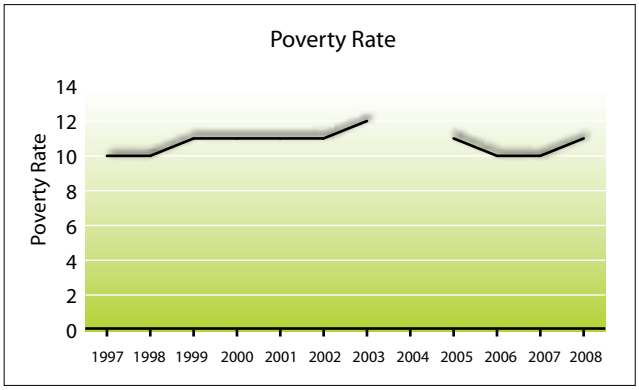


Indicator: number of undernourished people in % of total population
Source: CBS Statline
Target: 0%
Formula: F(X) = (100-X)/100*10
range of validity 0≤X≤100

Score 1975: 10.0
Score 2008: 10.0
Change 1975-2008: 0 points / 0%
Distance to target in 2008: 0 points



Source: CBS Statline

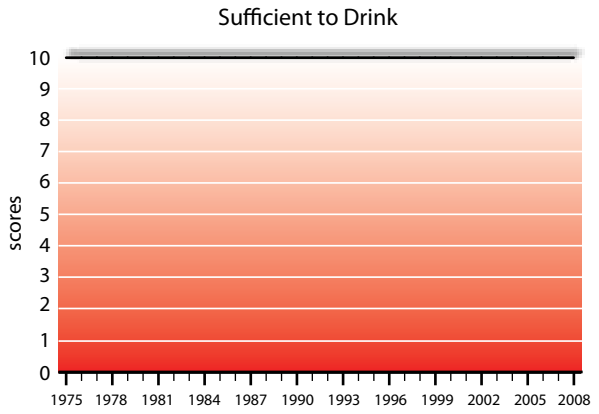


Source: Eurostat

According to statistics, no undernourished people live in The Netherlands. That results in a, constant, maximum score of 10 for this indicator.
Zooming in on components related to this indicator shows that the number of hospital days due to malnutrition per 10,000 people decreased substantially in the period 1981 – 2007. Another significant component, Poverty Rate (the share of persons with an equivalised disposable income below the risk-of-poverty threshold, which is set at 60 % of the national median equivalised disposable income after social transfers), has been rather constant during the past decade.

Indicator 2

Sufficient to Drink



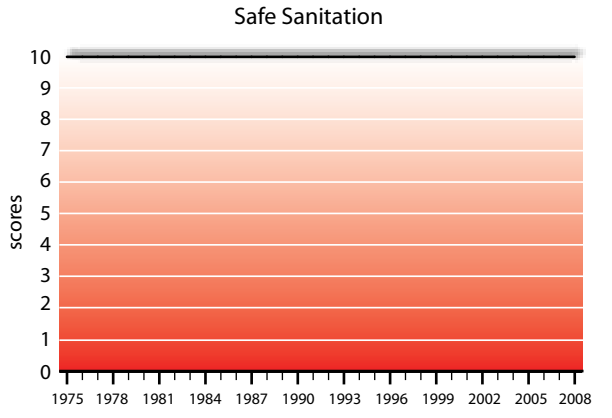
Indicator: number of people as % of the total population with sustainable access to an improved water source
Source: WHO-Unicef Joint Monitoring Programme
Target: 100%
Formula: F(X) = X/100*10
range of validity 0≤X≤100

Score 1975: 10.0
Score 2008: 10.0
Change 1975-2008: 0 points / 0%
Distance to target in 2008: 0 points

The statistics of WHO – Unicef Joint Monitoring Programme for Water Supply and Sanitation fixes the percentage of people connected to an improved water source at 100. Thus Indicator 2 receives a sustainable 10 across the years 1975 – 2008.

Indicator 3

Safe Sanitation

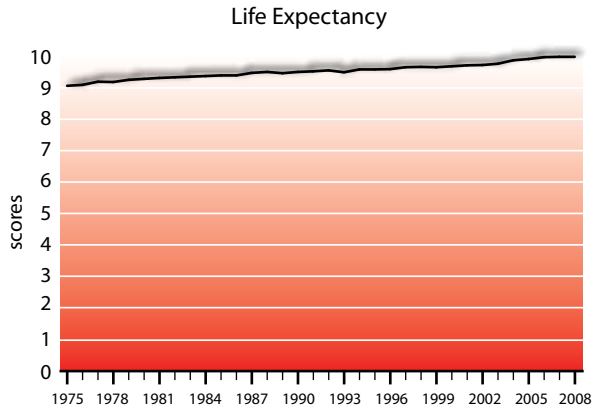


Indicator: number of people as % of the total population with sustainable access to improved sanitation
Source: WHO-Unicef Joint Monitoring Programme
Target: 100%
Formula: F(X) = X/100*10
range of validity 0≤X≤100

Score 1975: 10.0
Score 2008: 10.0
Change 1975-2008: 0 points / 0%
Distance to target in 2008: 0 points

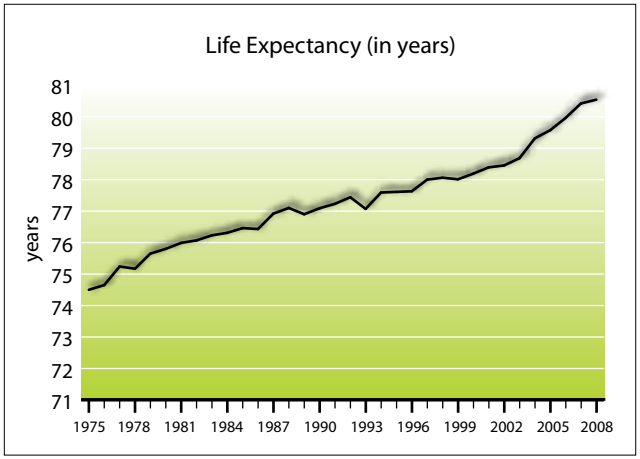
The statistics of WHO – Unicef Joint Monitoring Programme for Water Supply and Sanitation fixes the percentage of people with sustainable access to improved sanitation at 100. Thus Indicator 3 receives a sustainable 10 across the years 1975 – 2008.

Indicator 4
Healthy Life



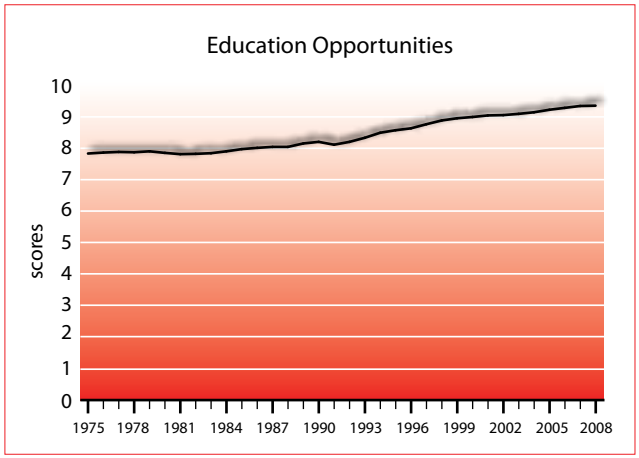
Indicator: life expectancy at birth (males and females) in years
Source: CBS Statline and Eurostat
Target:
Formula: F(X) = (X-20)/60*10
range of validity 20≤X≤80
F(X) = 10 for X >80

Score 1975: 9.08
Score 2008: 10.0
Change 1975-2008: 0.92 points / 10.1%
Distance to target in 2008: 0 points



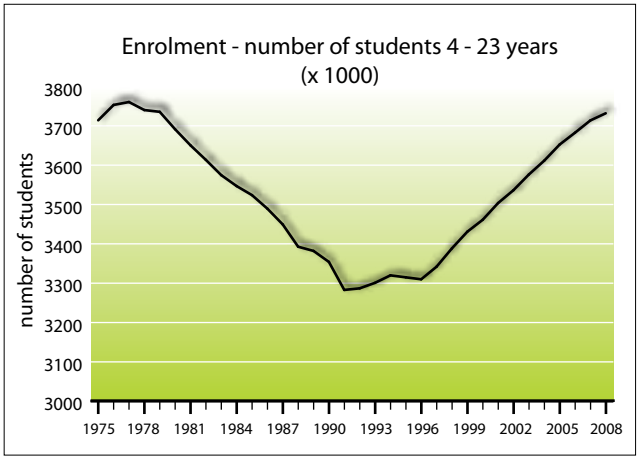
In the framework of the SSI, Indicator 4 is Healthy Life, expressing the life expectancy at birth in number of healthy life years (HALE – Health Adjusted Life Expectancy). However, since HALE figures, calculated by WHO, are available for 2002 only, we have replaced this indicator by Life Expectancy at birth, thus without adjustments for loss of healthy years.
Eurostat presents Life expectancy data from 1985 onwards for the total population. CBS data go back in time much further, though only for males and females separately. Nevertheless out of these data an approximation could be made of data for the period 1975 – 1984.
For the calculation of HALE scores for all 151 countries in the SSI-2008, we have given a healthy life expectancy of 80 years a score of 10. We have used the same formula for life expectancy at birth for the period 1975 – 2008. With a life expectancy above 80 in 2007 and 2008, The Netherlands receives a score of 10.

Indicator 5
Education Opportunities



Indicator: combined gross enrolment ratio for primary, secondary and tertiary schools
Source: CBS Statline
Target: 100%
Formula: F(X) = X/100*10
range of validity 0≤X≤100

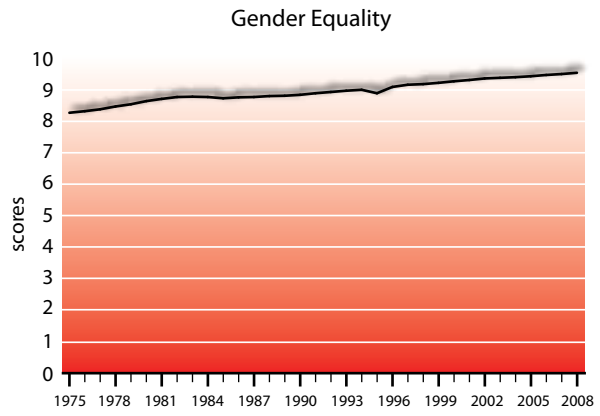
Score 1975: 7.85
Score 2008: 9.37
Change 1975-2008: 1.52 points / 19.3%
Distance to target in 2008: 0.63 points



In consultation with education experts, the indicator has been calculated based on population data for people from 4 to 23 years. If the calculation would have been based on the number of people from 4 to 21 years, the scores would have been higher, but would show the same trend. Unesco presents other data, however, again showing the same trend.
The number of enrolled people decreased sharply between 1975 and 1991, in line with the decrease of total population of 4 – 23 years.

Indicator 6

Gender Equality

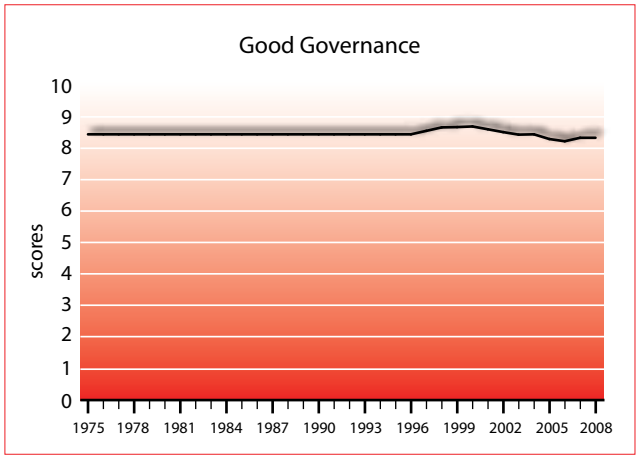


Indicator: Gender Related Development Index
Source: UNDP
Target: 1
Formula: F(X) = X*10
range of validity 0≤X≤1

Score 1975: 8.29
Score 2008: 9.56
Change 1975-2008: 1.27 points / 15.3%
Distance to target in 2008: 0.44 points

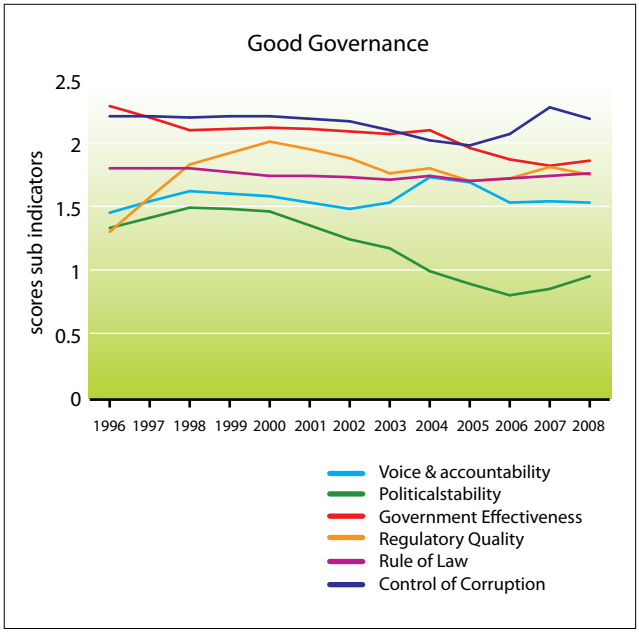
Gender Equality is expressed by the Gender Related Development index – GDI, developed by UNDP. The GDI is published almost yearly since 1993. It comprises differences between female and male with respect to life expectancy, knowledge (school enrolment ratio and literacy rate) and a decent standard of living, expressed by earned income. Since GDI data for the years before 1993 are lacking, we have calculated these using the correlation between GDI and female students as a percentage of total students. This correlation could be expressed in a very simple formula. This calculation led to very exact results for the years 1993 – 2008, apart from 1995. Thus we may assume the results for the previous years will reflect reality to a great extent.

Indicator 7
Good Governance



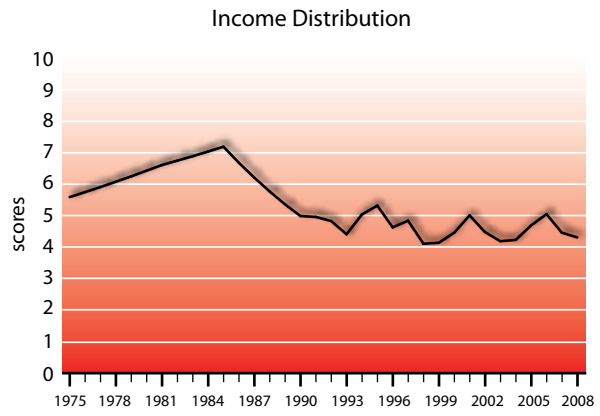
Indicator: the average of the values of the six Governance Indicators of the World Bank
Source: World Bank
Target: 6 * 2.5 = 15
Formula: F(X) = (X+15)/30*10
range of validity -15≤X≤15

Score 1975: 8.46
Score 2008: 8.35
Change 1975-2008: - 0.11points / - 1.3%
Distance to target in 2008: 1.65 points



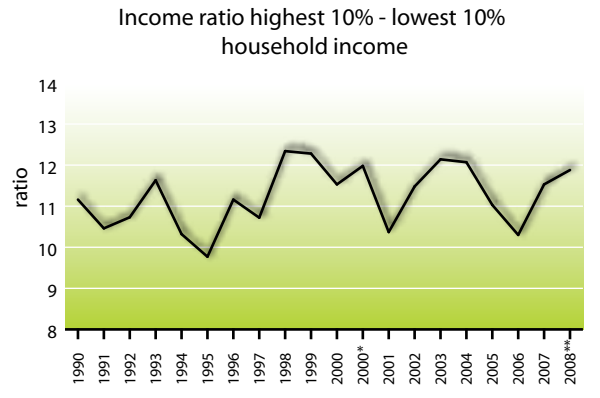
Good Governance is based on the data published by the World Bank with respect to six major issues: Voice and Accountability, Political Stability, Government Effectiveness, Regulatory Quality, Rule of Law and Control of Corruption. The value of each issue varies from -2.5 to +2.5. For the SSI these six issues have been integrated into one indicator, expressing the level of Good Governance.
The World Bank started publication of Good Governance data in 1996, until 2002 biennially, from then on annually. No data are available before 1996. Since we couldn't find or develop an adequate proxy for Good Governance, all years before 1996 received the score of 1996.
The detailed graph shows the underlying values of the six sub-indicators. It appears that during the years 1996 – 2008, political stability is quite lagging behind the other five sub-indicators.

Indicator 8
Income Distribution



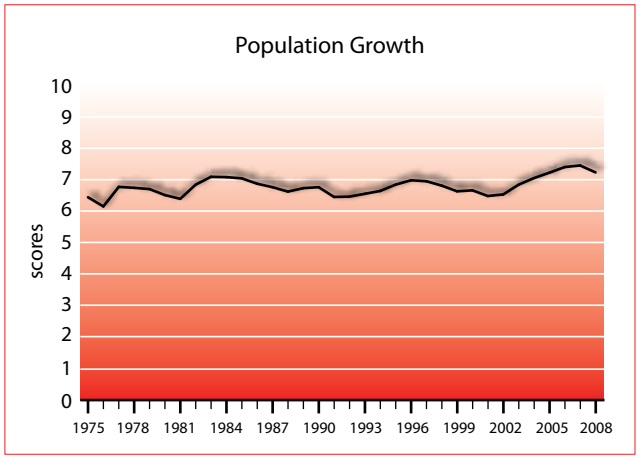
Indicator: ratio of income of the richest 10% to the poorest 10% of the households
Source: CBS Statline
Target: lowest value of all countries for SSI-2006, i.e. 4.5 for Japan
Formula: F(X) =EXP(-0.1*(X-4.5))*10
range of validity 4.5≤X

Score 1975: 5.61
Score 2008: 4.33
Change 1975-2008: - 1.28 points / - 22.9%
Distance to target in 2008: 5.67 points



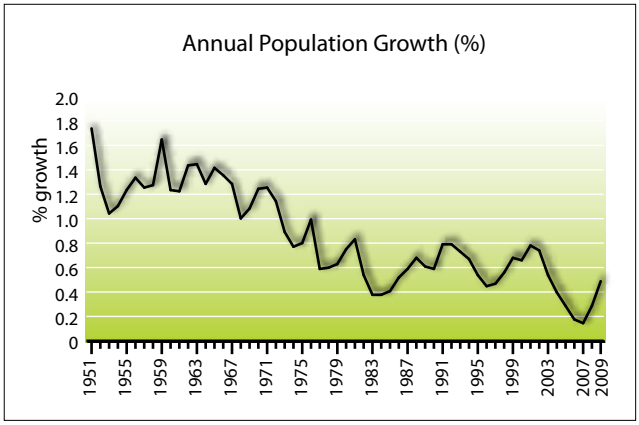
Data for private household income are available annually from 1990 onwards. Before 1990 only data for 3 years are available. Thus the missing data had to be imputed. Data reflect the not-standardized income a private household can spend.
The income ratio fluctuates quite a lot around 11. There appears to be a slight upward trend since 1990, thus a downward trend for the score of this indicator. The ratio is 11.9 in 2008.

Indicator 9
Population Growth



Indicator: annual growth, in %, of total population
Source: CBS Statline
Target: lowest growth percentage of all SSI countries for SSI-2006, i.e. -1.5
Formula: F(X) =(1-(X+1.5)/6.5)*10
range of validity -1.5≤X≤5

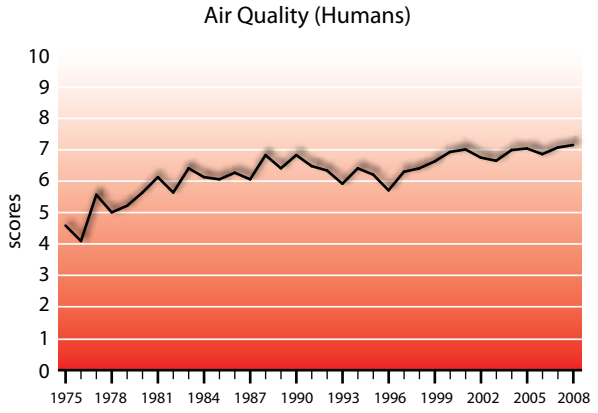
Score 1975: 6.46
Score 2008: 7.25
Change 1975-2008: 0.79 points / 12.2%
Distance to target in 2008: 2.75 points



Population growth is a highly political issue. However, from the perspective of sustainability a decrease of the total population is preferable. Therefore the target for this indicator has been set at the value of the lowest growth percentage of all countries, included in the SSI. This value is -1.5%, being the average percentage of growth of Estonia for the years 2000 – 2050. The calculation formula is developed such that this value receives a score of 10. A growth percentage of 5 receives a score of 0. Since 1950 the annual population growth of The Netherlands shows a steady decline, fluctuating around the downward trendline. This results in a slightly increasing score of this indicator.

Indicator 10

Air Quality (humans)



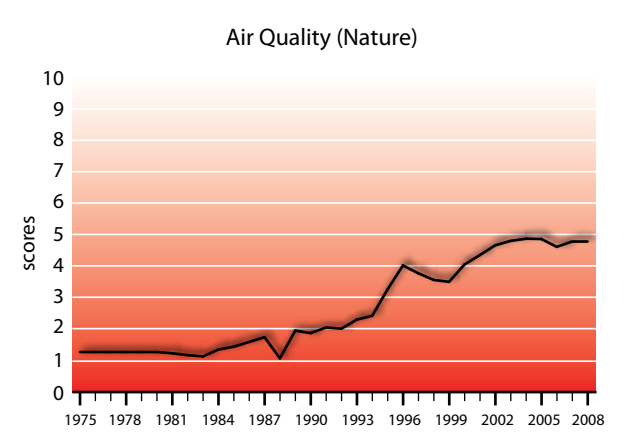
Indicator: concentration of PM10
Source: PBL/RIVM
Target: 40 µg/m3 has been defined as a limit
Formula: F(X) = - 0.1*X + 10
range of validity X>=0

Score 1975: 4.61
Score 2008: 7.17
Change 1975-2008: 2.56 points / 55.4%
Distance to target in 2008: 2.83 points

PM10 data have been used as a proxy for air quality in its effects on humans. PM10 data are available since 1994, from regional, city and street stations. For this study city data have been used. For years before 1994 TSP (Total Suspended Particulate matter) data are available, though for Rotterdam only. TSP data have been converted to PM10 by the formula PM10 = 0.7*TSP. All data are averages and thus don't show the distribution of values.
The limit of 40 µg/m^3, defined by politics, certainly doesn't mean there is no effect on human health if the PM10 concentration is below that limit. Therefore the calculation formula has been developed so that this limit results in a indicator score of 6.
In 2008 the concentration of PM10 was 28.3 µg/m^3, quite below the target of 40 µg/m^3.

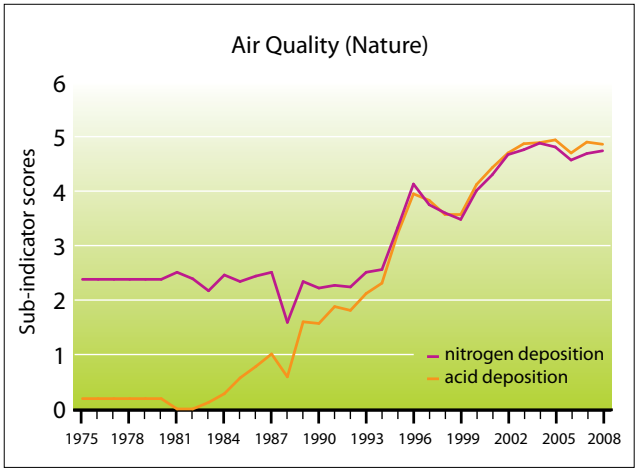
Indicator 11

Air Quality (nature)



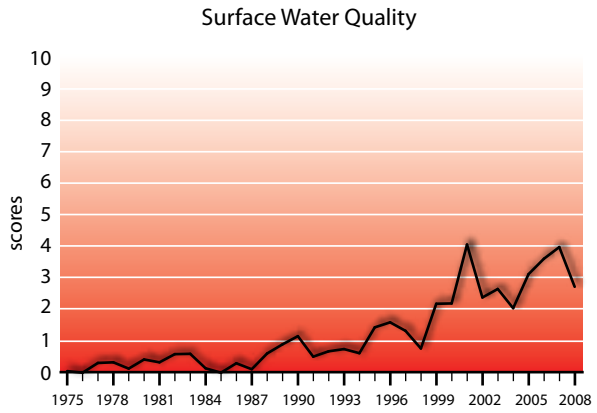
Indicator: amount of acid and nitrogen depositions
Source: PBL
Target: Acid deposition: 2300 mol per ha in 2010
Nitrogen deposition: 1650 mol per ha in 2010
Formula: $F(X_1) = -4/2300 * X_1 + 10$ range of validity $0 \leq X_1 \leq 5750$
$F(X_2) = -4/1650 * X_2 + 10$ range of validity $0 \leq X_2 \leq 4125$
$F(X) = (F(X_1) + F(X_2))/2$

Score 1975: 1.29
Score 2008: 4.80
Change 1975-2008: 3.52 points / 273.5%
Distance to target in 2008: 5.20 points



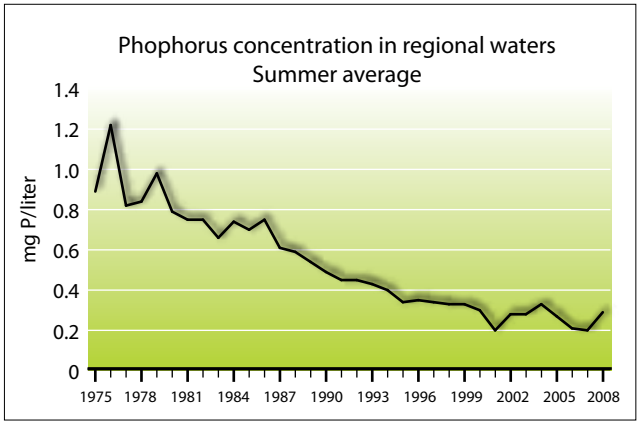
In consultation with experts it has been decided that deposition data best reflect the state of the art of Air Quality in its effects on nature. Therefore data of acid depositions and nitrogen depositions have been used. These data are available since 1981. Data for previous years have been imputed.
The targets, defined by politics, certainly don't mean there is no effect on nature if depositions are below the targets. Therefore the calculation formula has been developed so that the target results in a sub indicator score of 6.
The scores of indicator 11 have considerably increased, though are still on a low level. The level of acid depositions amounted to 2930 mol per ha in 2007 (target 2300 in 2010); the level of nitrogen depositions was 2190 mol per ha in 2007 (target 1650 mol per ha in 2010). Thus both sub indicators presumably will not achieve the target in 2010. Across the years, the scores of the two sub-indicators have converged to about the same level.

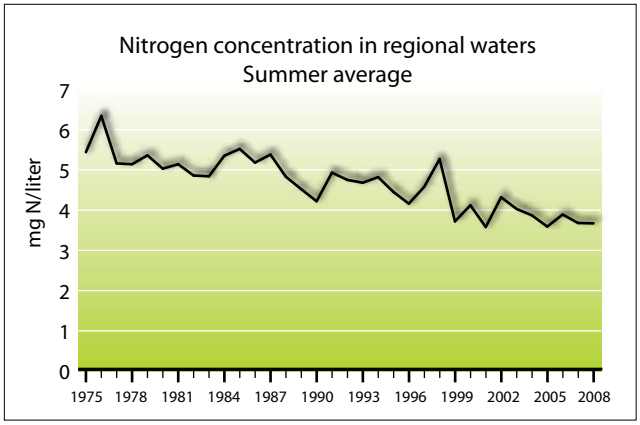
Indicator 12
Surface Water Quality



Indicator: concentration of Phosphorus and Nitrogen in regional waters
Source: RWS, Water Department
Target: maximum acceptable risk has been defined on 0.15 mg/liter P and 2.2 mg/liter N
Formula: $F(X_1) = -26.667 * X_1 + 10$ range of validity $0 \leq X_1 \leq 0.375$
$F(X_2) = -1.818 * X_2 + 10$ range of validity $0 \leq X_2 \leq 5.5$
$F(X) = (F(X_1) + F(X_2))/2$

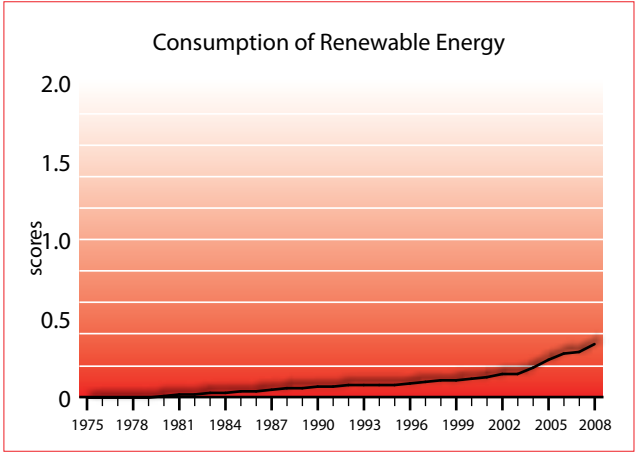
Score 1975: 0.05
Score 2008: 2.73
Change 1975-2008: 2.68 points / 5214.9%
Distance to target in 2008: 7.27 points





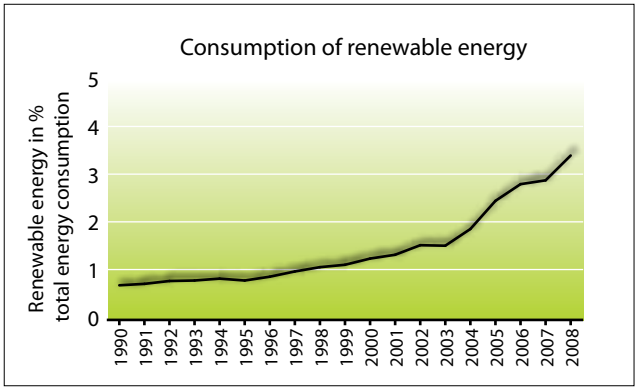
To reflect surface water quality, the concentration of phosphorus and nitrogen in regional waters have been used. It is determined largely by the influx in the great rivers as well as by the inland use of P and N. To measure both influences we have used the concentration in regional waters. Concentration data for regional waters are available since 1985. For years before 1985 data had to be imputed, using the data of the concentration in great rivers. All data are summer averages.
The defined maximum acceptable risk certainly doesn't mean that below this level the situation is perfect. Therefore the calculation formula has been developed so that this value results in a sub indicator score of 6.
Both the phosphorus and nitrogen concentrations have decreased considerably. Nevertheless, both values are still above the defined limits.

Indicator 13
Renewable Energy



Indicator: consumption of renewable energy in % of total energy consumption
Source: CBS Statline
Target: 20% in 2020 (EU target), finally 100%
Formula: F(X) = X/100*10

Score 1975: 0.00
Score 2008: 0.34
Change 1975-2008: 0.34 points / -- %
Distance to target in 2008: 9.66 points



	Total energy consumption (in PJ)		Renewable energy consumption (in PJ)	
	Total	Increase	Total	Increase
1990	2723		18	
2000	3065	342	38	19
2008	3334	269	113	75

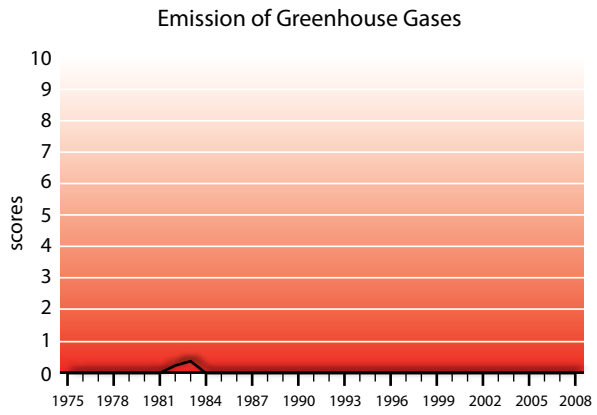
The past few years show a considerable increase of renewable energy. However, this doesn't even compensate the increase in total energy consumption.

Renewable energy comprises wind and solar energy, hydropower, biomass, heat pumps and thermal storage.

Data for Renewable Energy Consumption are derived from CBS Statline. They are available from 1990 onwards. Previous data have been imputed.

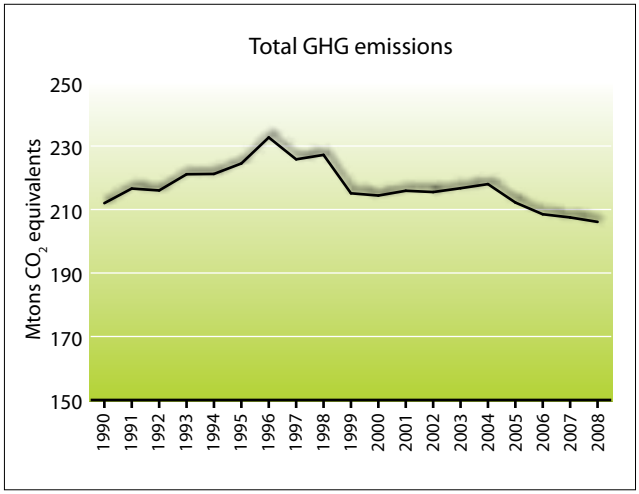
Indicator 14

Emission of Greenhouse Gases



Indicator: emission of CO_2 per capita
Source: IEA
Target: ≤ 2 ton CO_2 per capita per year
Formula: F(X)=(10-X) for 0≤X≤10
F(X)=0 for X>10

Score 1975: 0.00
Score 2008: 0.00
Change 1975-2008: 0.0 points / -- %
Distance to target in 2008: 10.00 points



Many data for emission of greenhouse gases, most of them slightly different or even more than that, are available. For this study IEA data have been used, since these are available for the whole time series and they are very close to the IPCC data. These data comprise CO_2 emissions from fuel combustion. No other greenhouse gases are included.

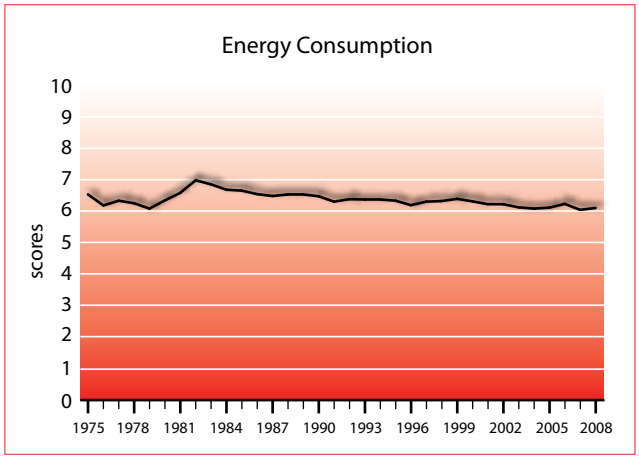
The same calculation formula has been used as for the SSI-2006. This formula is developed in such manner that achieving the target of 2 ton CO_2 per capita per year results in a score of 8, thus countries with even lower emission rates can be rewarded. Moreover the formula doesn't have to be adjusted as soon as new views should require adjustments of the target.

Except for two years, 1982 and 1983, CO_2 emissions in The Netherlands were above 10 metric tons per capita, which resulted in a score of 0 for this indicator.

The total GHG emissions (CO_2, CH_4, N_2O and F) were in 2008 206 Mton CO_2 equivalents, which is more than 3% below the 213 Mton in the Kyoto base year 1990. According to the Kyoto Protocol a further reduction by 6 Mton must be realised.

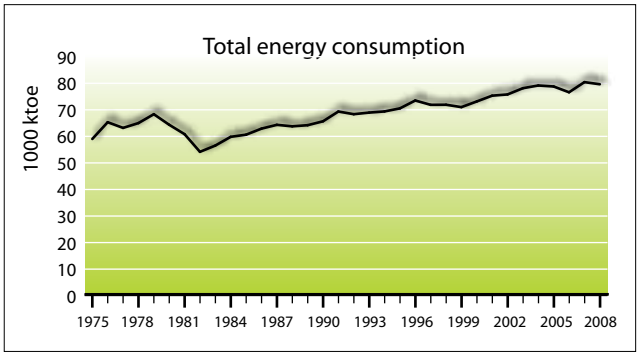
The EU target is 20% less emissions in 2020 compared to the base year 1990.

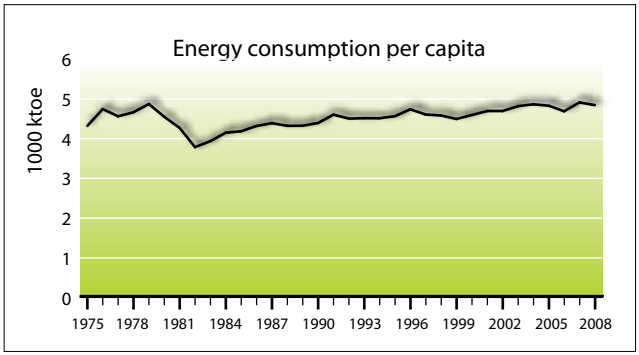
Indicator 15
Energy Consumption



Indicator: energy consumption per capita
Source: World Development Indicators / CBS
Target: EU target: 20% less energy consumption in 2020
Formula: F(X)=(1-(X-171)/(12209-171))*10
range of validity 171≤X≤12209
F(X)=0 for X>12209

Score 1975: 6.55
Score 2008: 6.12
Change 1975-2008: -0.43 points / - 6.6%
Distance to target in 2008: 3.88 points



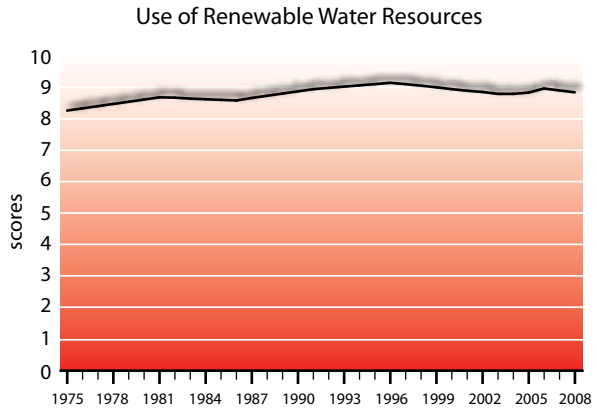


Energy consumption is measured in kg oil equivalent (kgoe) per capita. Data are retrieved from World Development Indicators and for 2008 from CBS.
The calculation formula is the same as will be used for the SSI worldwide. That means that the country with the lowest energy consumption per capita (Bangladesh, 171 kgoe) receives a score of 10 and the country with the highest energy consumption per capita (Iceland, 12209 kgoe) receives a score of 0. The extreme of Qatar, with an energy consumption of 19466 kgoe per capita, has been neglected for the calculation.

The total energy consumption in The Netherlands has increased by one third since 1975. This is more or less in pace with the population increase. Thus the per capita consumption stayed rather on the same level, with a slight upward trend.
PBL reports an average annual saving of energy of 1.1% per year over 1995 – 2007. This is caused by an increase of energy efficiency (" doing the same with less energy"). Nevertheless the total energy consumption has increased in this period. The target of yearly energy saving is 2% for the period 2011 – 2020.

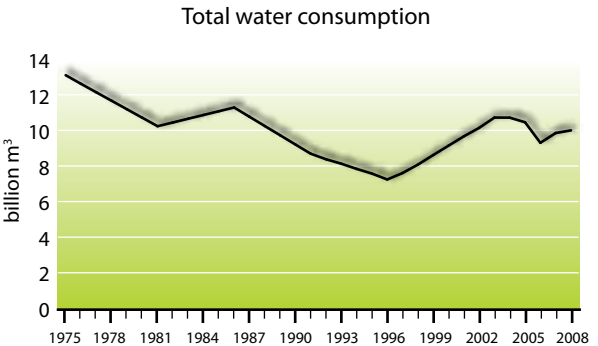
Indicator 16

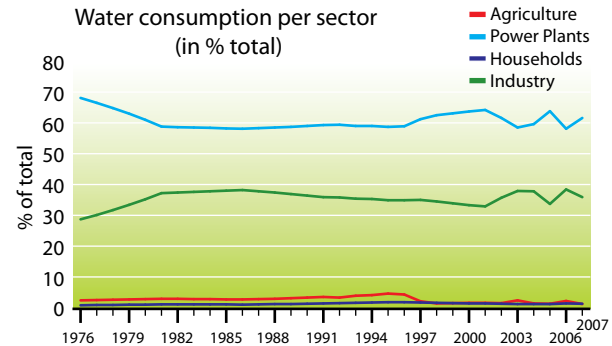
Renewable Water Resources



Indicator: water consumption per year as percentage of the total available renewable water resources
Source: CBS Statline/Vewin
Target:
Formula: F(X)=(100-X)/10
range of validity 0≤X≤100

Score 1975: 8.28
Score 2008: 8.86
Change 1975-2008: 0.58 points / 7.0%
Distance to target in 2008: 1.14 points

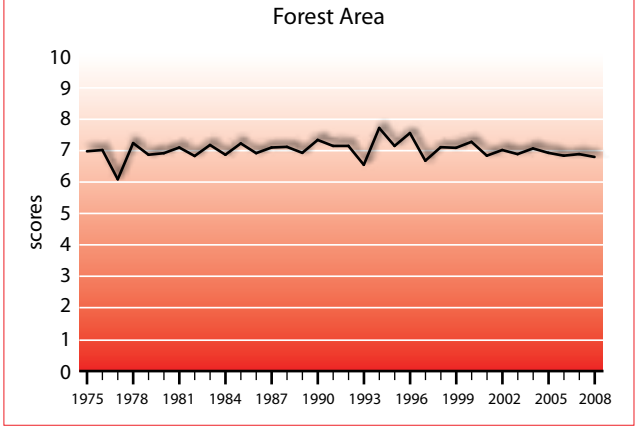




Surprisingly, for this indicator fewest data could be found. Data series for water consumption across the years are way from complete, thus many data had to be imputed. With respect to the total amount of renewable water resources we had to make the assumption that this amount is constant over time. So for this element of the calculation we have used the data of 2006 for all years from 1975 to 2008. The reliability of the results is quite low.

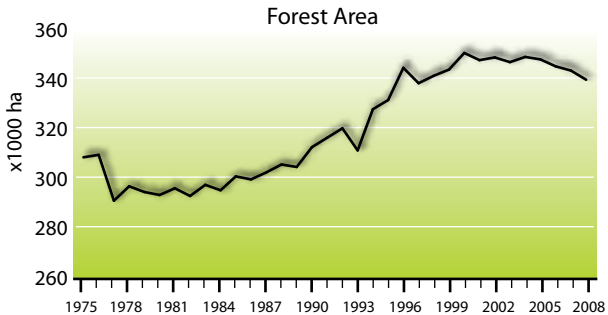
According to the data, total water consumption has decreased by about a fourth since 1975, resulting in an increase of the score of this indicator by nearly 0.6 points.

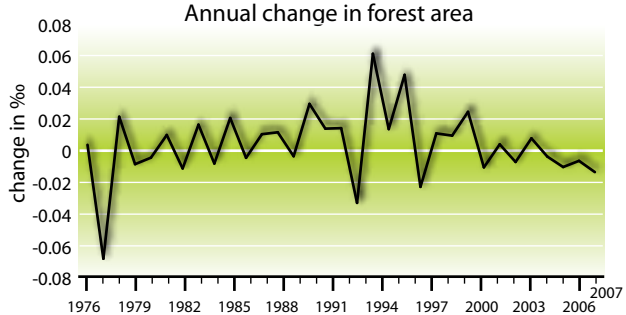
Indicator 17
Forest Area



Indicator: annual change in forest area in ‰ of world forest area
Source: CBS Statline
Target:
Formula: F(x)=(10*X+7)^2*(-20*X+19)/11^3*10
range of validity -0.7 ≤ x ≤ 0.4
F(x)=0 for X < -0,7
F(x)=10 for X > 0.4

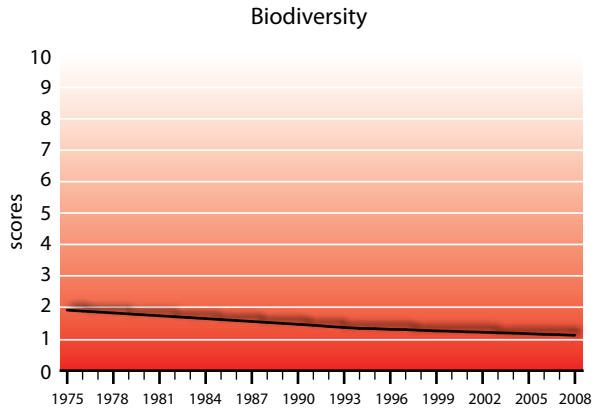
Score 1975: 7.00
Score 2008: 6.82
Change 1975-2008: - 0.18 points / - 2.5%
Distance to target in 2008: 3.18 points





The calculation of this indicator is based on the change in forest area as a ‰ of the world forest area. It seems obvious to determine as sustainability value the present situation. That would mean that a constant forest area would result in a score of 10. However, it is very questionable whether the present situation reflects sustainability. To answer that question one has to know how much area should be allocated for nature. The Brundtland Commission suggested to reserve 12% of the world area for nature and biodiversity. By now it already appears to be less than 12%. Therefore the calculation formula is defined such that a constant forest area results in a score of 7, an increase over 0.4‰ in a 10 and a decline over 0.7‰ in a score of 0.
The forest area increased by 10% since 1975. However, the annual change shows a decrease and is negative for the last few years. This results in a slight decrease of the indicator score since 1975.

Indicator 18
Biodiversity

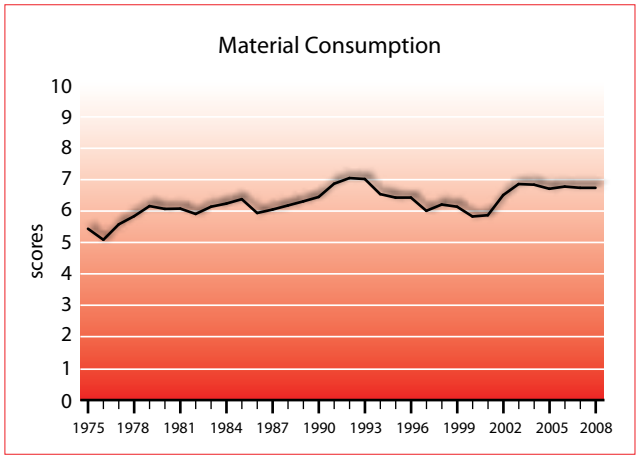


Indicator: actual biodiversity in % of original biodiversity
Source: Sustainability Monitor 2009
Target: 100, i.e. original biodiversity
Formula: F(X) = X/10
range of validity $0 \leq X \leq 100$

Score 1975: 1.94
Score 2008: 1.14
Change 1975-2008: - 0.80 points / - 41.2%
Distance to target in 2008: 8.86 points

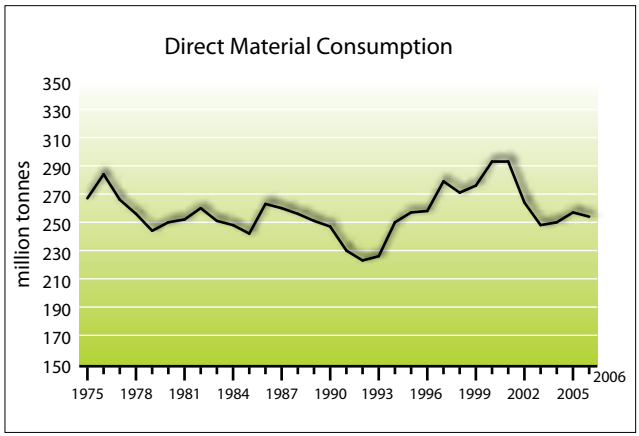
The actual biodiversity is expressed in % of the original biodiversity. The original biodiversity receives a score of 10. Complete loss of biodiversity results in a score of 0. The target, internationally agreed in 2002, is to achieve a significant reduction of the rate of biodiversity loss. Since "a significant reduction" cannot be quantified, for the calculation of this indicator the original biodiversity has been set as target.
For the years 1976 to 1993 data are lacking and thus had to be imputed. In 1975 the actual biodiversity was just below 20% of the original biodiversity. By 2008 this figure was further decreased to about 11%.

Indicator 19
Material Consumption



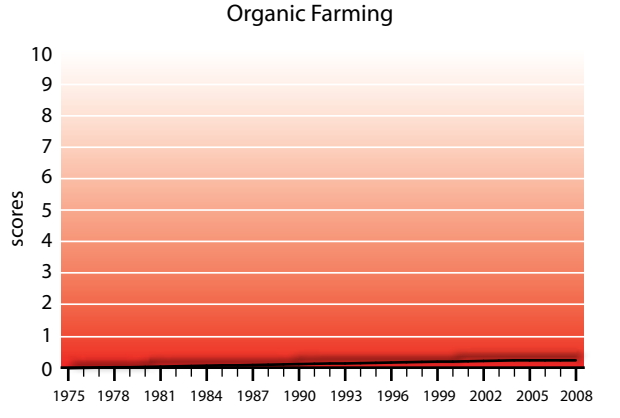
Indicator: Direct material consumption per capita
Source: The weight of nations (WRI) and CBS
Target:
Formula: F(X) = -10/30.5*X + 363/30.5
range of validity 5.8≤X≤36.3

Score 1975: 5.46
Score 2008: 6.76
Change 1975-2008: 1.30 points / 23.8%
Distance to target in 2008: 3.24 points



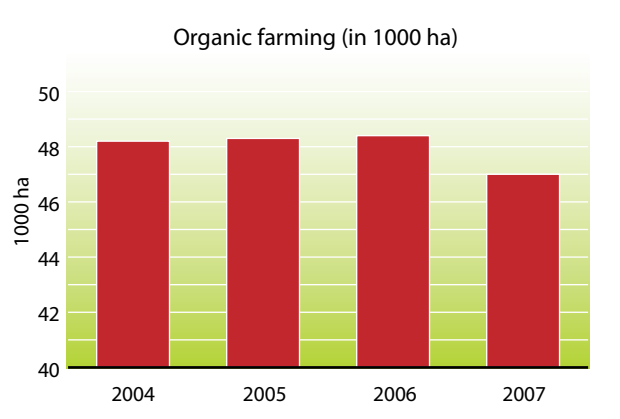
Due to the lack of appropriate scientific insights, we have given the minimum EU-15 value of DMC per capita for 1970 a score of 10 and the maximum value a score of 0. The minimum value (Portugal) is 5.8 tonnes per capita, the maximum (Finland) is 36.3 tonnes per capita. Thus the formula is F(X) = -10/30.5*X + 363/30.5.
Since data for 2007 and 2008 are not yet available, these have been imputed.
DMC fluctuated quite a lot across the years. It slightly decreased from 267 million tonnes in 1975 to 254 tonnes in 2006. The decrease per capita was larger: from 19.6 tonnes in 1975 to 15.6 tonnes in 2006.

Indicator 20
Organic Farming



Indicator: area used for organic farming as a percentage of total agricultural area.
Source: FiBL, IFOAM and Biologica
Target:
Formula: F(X) = X/10
range of validity 0≤X≤100

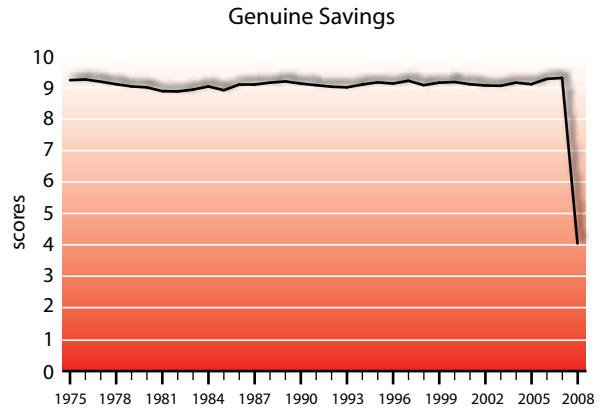
Score 1975: 0.00
Score 2008: 0.25
Change 1975-2008: 0.25 points / -- %
Distance to target in 2008: 9.75 points



Data about the area used for organic farming are available for the last few years only. So most of the data have been imputed and are quite weak. As a starting point we have assumed that the score for 1975 is 0. Notwithstanding the huge lack of data, it is clear that organic farming is still in the initial stages. According to the collected data it even seems to be decreasing. However, one year is not sufficient to build a trend.

Indicator 21

Genuine Savings



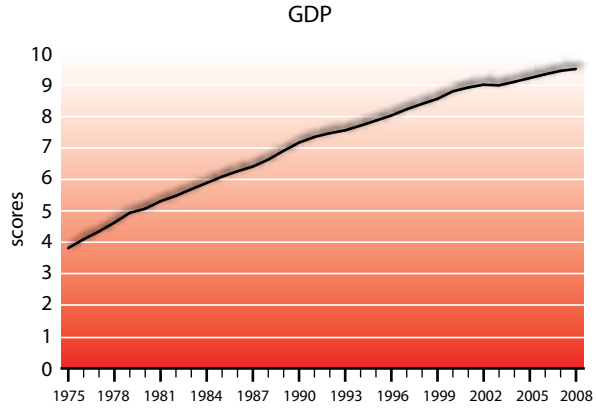
Indicator: Genuine savings in % GNI
Source: World Bank
Target:
Formula: F(X) = 10*ATAN(0,25*P5)/PI()+5
range of validity -∞<X<∞

Score 1975: 9.26
Score 2008: 4.07
Change 1975-2008: -5.18 points / - 56.0%
Distance to target in 2008: 5.93 points

Genuine Savings, or Adjusted Net Savings, expresses a country's ability to sustain wellbeing over years. It measures the true rate of savings after taking into account investments in human capital, depletion of natural resources and damage caused by pollution. We have used the data of savings including particulate emission damage.
The indicator is calculated by a formula, where a GS value of 0 results in a score of 5.
Until 2007 the scores for this indicator are quite high. However, 2008 shows a sharp fall of the savings to a small negative figure of -1.2, resulting in a score of 4.07.

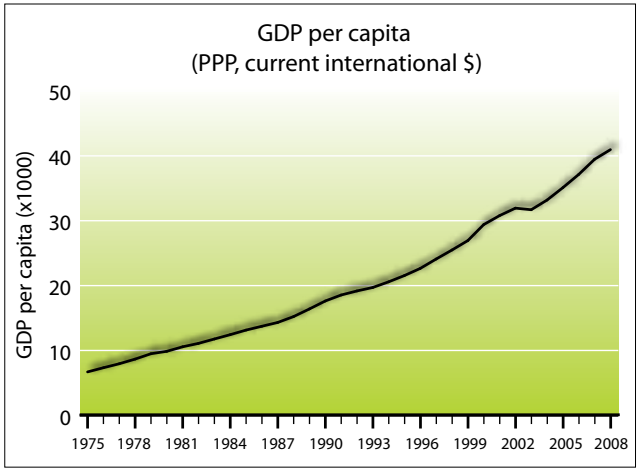
Indicator 22

GDP – Gross Domestic Product



Indicator: Gross Domestic Product per capita, PPP, current international $
Source: World Bank
Target:
Formula: F(X)=10*(1.01-EXP(-0.00007*X))
range of validity 0≤X

Score 1975: 3.84
Score 2008: 9.53
Change 1975-2008: 5.69 points / 148.1%
Distance to target in 2008: 0.47 points

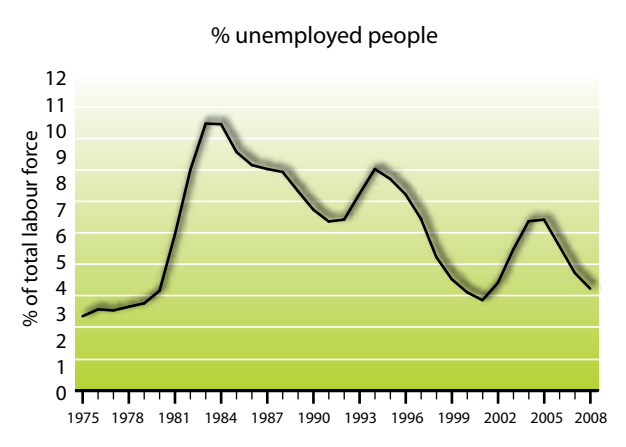


To show not only the developments over time, but also enable comparison across countries, for this indicator GDP per capita – expressed in Purchasing Power Parity, current international dollars – has been used. How to calculate the indicator scores? The common opinion of experts is that the marginal profit of an increase of GDP per capita is decreasing rapidly with an increase of GDP. The Human Development Report states that 'achieving a respectable level of human development does not require unlimited income.' For the calculation of the Human Development Index the maximum value of GDP per capita is fixed on 40,000$. In line with these views we have used an exponential formula which achieves an asymptote around 40,000$.
The value of GDP per capita for 2008 is just above 40,000$, resulting in a score of nearly 10, to be precise: 9.53.

Indicator 23
Employment

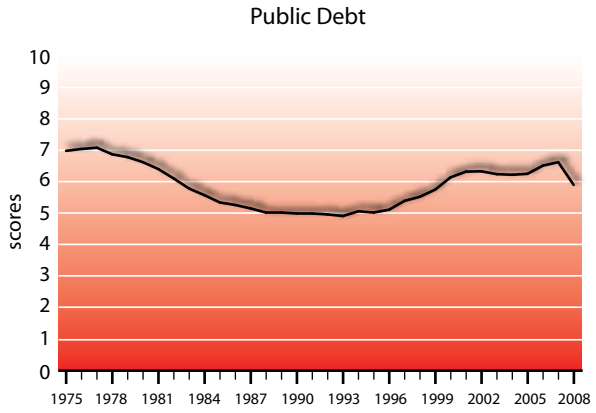
Indicator: number of unemployed people as a percentage of total labour force
Source: CBS Statline
Target:
Formula: F(X)= EXP(-0,1*X)*10
range of validity 0≤X

Score 1975: 7.52
Score 2008: 6.77
Change 1975-2008: - 0.75 points / - 10.0%
Distance to target in 2008: 3.23 points



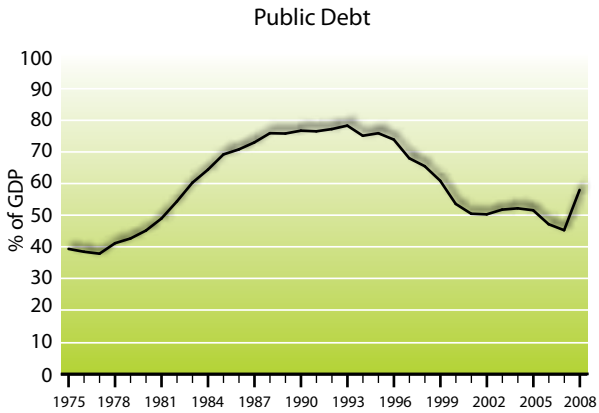
The indicator expresses the number of unemployed people, male and female, as a percentage of the total labour force. To calculate the scores of indicator an exponential formula has been developed, expressing the decreasing marginal effect of an increase in unemployment.
The scores fluctuate, not surprisingly, quite a lot across the years. The overall trend over the assessed period is slightly downwards. However, since 1983 the trend is upwards.

Indicator 24
Public Debt



Indicator: the level of public debt as percentage of GDP
Source: CBS and CPB
Target:
Formula: F(X)= EXP(-0,009*X)*10
range of validity 0≤X

Score 1975: 7.00
Score 2008: 5.92
Change 1975-2008: -1.08 points / - 15.4%
Distance to target in 2008: 4.08 points



Public Debt presents the possibility to freely allocate budget to the required issues, without being hampered by yearly interest payments and redemptions. Public Debt does not include ecological debts.
The exponential calculation formula is developed such that a value of Public Debt of 0% receives a score of 10 and a value of 60% (the maximum value allowed for an EU country) a score of 6.
The values of Public Debt fluctuate over time, varying from 40 to 80%. The overall trend of the indicator scores is slightly downward, due to the upward trend of the percentage of public debt.

Annex 1

Rationale of Indicators

	Indicator	Rationale
1	Sufficient Food	Condition for the development of an individual
2	Sufficient to Drink	Condition for the development of an individual
3	Safe Sanitation	Condition for the prevention and spreading of diseases that would severely hamper a person's development
4	Healthy Life	Condition for development of each individual in a healthy way
5	Education Opportunities	Condition for a full and balanced development of children
6	Gender Equality	Condition for a full and balanced development of all individuals and society at large
7	Good Governance	Condition for development of all people in freedom and harmony, within the frame-work of (international) rules and laws
8	Income Distribution	Fair distribution of prosperity is a condition for sustainability
9	Population Growth	Limitation of population pressure on earth is a condition for sustainability
10	Air Quality - humans	Condition for human health
11	Air Quality - nature	Condition for ecological health
12	Surface Water Quality	Condition for ecological health
13	Renewable Energy	Measure of sustainable use of renewable energy resources in order to prevent depletion of fossil resources
14	Emission of GHGs	Measure of main contribution to climate change, causing irreversible effects
15	Energy Consumption	Measure for level of energy consumption and saving to prevent emission of GHGs and depletion of fossil resources
16	Renewable Water Resources	Measure of sustainable use of renewable water resources in order to prevent depletion of resources
17	Forest Area	Preservation of forest area is a condition for sustainability
18	Biodiversity	Condition for perpetuating the function of nature, in all its aspects
19	Material Consumption	Measure of the use and depletion of material resources
20	Organic Farming	Measure for progress of transition to sustainability
21	Genuine Savings	Measure for the true rate of savings, to enable the possibility to sustain wellbeing over years
22	Gross Domestic Product	(Inadequate) measure for (the growth) of the economy
23	Employment	Access to the labour market is a condition for wellbeing for all people
24	Public Debt	Measure of a country's ability to make independent decisions with respect to budget allocation

Annex II

Abbreviations

CBS – Centraal Bureau voor de Statistiek, Statistics Netherlands
CPB – Centraal Planbureau, Netherlands Bureau for Economic Policy Analysis
DMC – Direct Material Consumption
EU – European Union
FiBL – Forschungs Institut für Biologische Landwirtschaft – Research Institute for Organic Agriculture
GDI – Gender Related Development Index
GDP – Gross Domestic Product
GNI – Gross National Income
GS – Genuine Savings
IEA – International Energy Agency
IFOAM – International Federation of Organic Agriculture Movements
IPCC – International Panel on Climate Change
PBL – Planbureau voor de Leefomgeving, Netherlands Environmental Assessment Agency
PM10 – Particulate Matter (particles of 10 micrometers or less)
RIVM – Rijksinstituut voor Volksgezondheid en Milieu, National Institute for Public Health and the Environment
RWS – Rijkswaterstaat, Directorate-General of Public Works and Water Management, Ministry of Transport, Public Works and Water Management
SSF – Sustainable Society Foundation
SSI – Sustainable Society Index
TSP – Total Suspended Particulate matter
UNDP – United Nations Development Programme
Vewin – Vereniging van waterbedrijven in Nederland – Association of Dutch Water Companies
WHO – World Health Organization
WRI – World Resources Institute