



Sustainable Society Index, SSI

Evaluation and Redesign

June 2010

Summary

In 2006 the Sustainable Society Index, SSI, was launched. The SSI shows at a glance the level of sustainability and the distance to full sustainability of a country. The SSI comprises only 22 indicators and has been calculated for 151 countries. In 2008 the first of biennial updates has been presented.

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.

The new structure of the SSI, now with 24 indicators, is shown below.

Figure 1 Redesigned structure of the SSI

1. History

The SSI shows at a glance the level of sustainability of each of 151 countries and the distance to complete sustainability. It is based on the well-known Brundtland definition, to which we added a third sentence, to emphasize that Quality of Life and Environmental Sustainability are integrated. Or, depending on one's preference, Human Wellbeing and Environmental Wellbeing. The extended Brundtland definition runs as follows:

- 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 SSI measures the extent to which every human being

- is able to develop itself in a healthy manner and to obtain a proper education,
- lives in a clean environment,
- lives in a well-balanced and safe society,
- uses non-renewable resources in a responsible manner so that future generations are not left empty-handed and
- contributes to a sustainable world.

The SSI, comprising no more than 22 indicators clustered into 5 categories was published in 2006 for the first time. In 2008 the first of the two-yearly updates has been presented. The figure below shows the actual structure of the SSI.

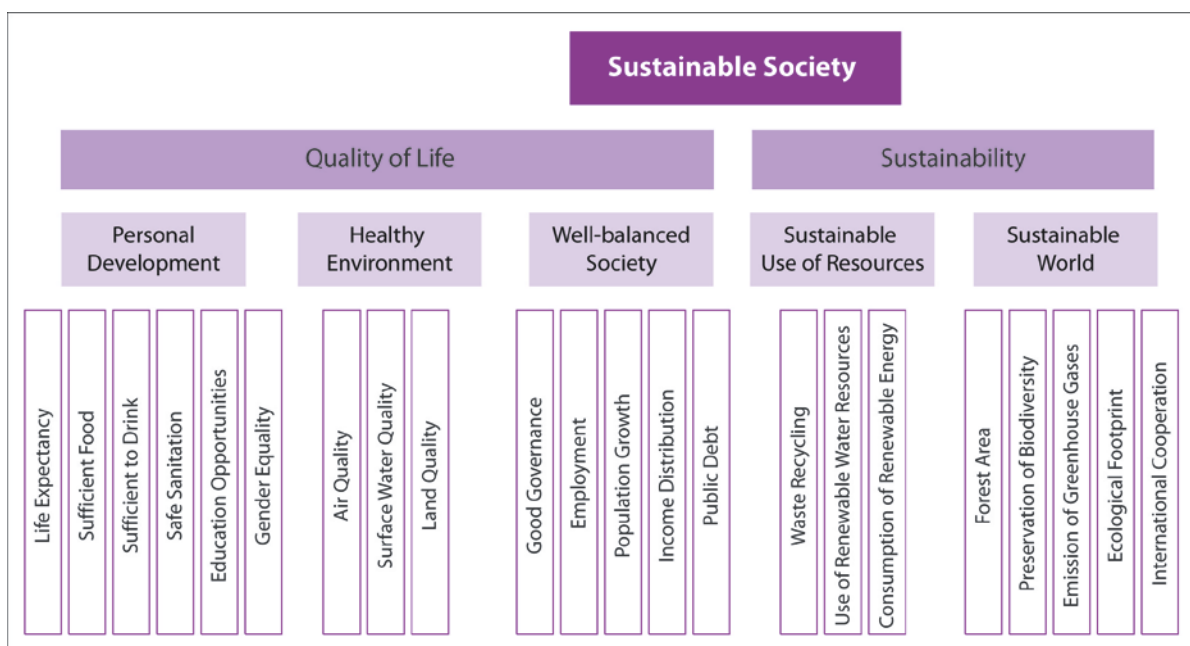


Figure 2 Actual set up of SSI-2006 and SSI-2008

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 possibilities of comparison between countries are valued, as well as the possibilities to analyse the background data and to give one's own weights to indicators and categories. All data are available for free on our website www.sustainablesocietyindex.com.

2. Evaluation

In the course of 2009 we decided to evaluate the findings so far. Eventually this led to a redesign of the structure which is now being used for the ongoing work on the 2010 update.

The main inputs of our evaluation of the SSI consisted of:

- our own experiences with working with the SSI-2006 and SSI-2008.
- the experiences in our project "Romania, on its way to a sustainable society".
- remarks and comments from many people, both experts and laymen.
- recent developments worldwide with respect to sustainable development, particularly the necessity of a better measure of economic progress (Beyond GDP) and the focus on climate change.

3. Indicators

As outlined below, 4 indicators have been deleted from the current framework:

- Land Quality
- Waste Recycling
- Ecological Footprint
- International Cooperation

and 6 indicators have been introduced bringing the total from 22 to 24:

- Air Quality – nature
- Energy Consumption
- Material Consumption
- Organic Farming
- Genuine Savings
- Gross Domestic Product..

3.1 Data availability

We encountered serious problems with the availability of data. The main problems concern:

- **Air Quality:** data, retrieved until now from the Environmental Sustainability Index (ESI), will not be updated. However, the Environmental Performance Index (EPI) will probably be updated every 2 years. The EPI comprises two indicators for Air Quality: one expressing the effects on humans and one the effects on nature. We will include both in the redesigned SSI.
- **Land Quality:** the GLASOD data used for SSI-2006 were replaced by the improved data from the GLADA project for SSI-2008. These data are supposed to better reflect the actual situation, but are nevertheless still criticised. Since no updates can be expected soon, we have to delete Land Quality.
- **Waste Recycling:** the actual data from UN Habitat will not be updated and no other worldwide data are available. There is no proxy either, so we have to delete this indicator – until data become available again.
- **Biodiversity:** until now, we have used the National Biodiversity Index from the Convention on Biological Diversity. However, this indicator will be updated only once every ten years. So we will replace it by data about endangered species, which will be updated on a continual

basis and published yearly by IUCN and data about the protected area per country, published yearly by World Database on Protected Areas (UNEP-WCMC).

- **International Cooperation:** Data about the signing and ratification of many international agreements are yearly updated. However, data about the implementation of the agreements are not available. That decreases the value of this indicator, which is a reason to delete it.

3.2 Overlap between indicators

The largest overlap between the indicators of the current SSI is between Emission of Greenhouse Gases and Ecological Footprint, EF. The latter is determined for over 50% by emission of greenhouse gases. The main reason to adopt EF as one of the indicators for the current SSI was that EF is – to some extent – a proxy for the level of material use and thus for the level of depletion of resources. Until now no other adequate worldwide data for material consumption are available, in spite of a lot of research in this field. Some alternatives are available, but none of them fits well. Thus we finally decided to use as a proxy, not the Ecological Footprint itself, but the Ecological Footprint minus the Carbon Footprint. That diminishes the overlap between indicators and enables to include at least a kind of measure of consumption.

3.3 Inclusion of new indicators

6 new indicators are included in the new set up of the SSI:

- **Air Quality – nature**
The inclusion of this indicator has already been mentioned above, in paragraph 3.1.
- **Energy Consumption**
In the new category Climate & Energy we have, beside the indicators Renewable Energy and Emission of Greenhouse Gases, introduced a third indicator: Energy Consumption, to express the increase or decrease of the level of energy consumption. Energy saving is an important issue for the near future.
- **Material Consumption**
The inclusion of this indicator has been outlined above, in paragraph 3.2.
- **Organic Farming**
Several indicators can be taken into account to express the transition of a country's economy to a sustainable situation. Since for Organic Farming data are available which will be updated annually, this indicator has been added to the SSI.
- **Gross Domestic Product**
An increasing number of people is aware of the limitations of Gross Domestic Product (per capita) as an indicator to measure progress on the way towards sustainability. The Stiglitz-Sen-Fitoussi report of September 2009 emphasizes the necessity to develop a new measure for this purpose. The Index for Sustainable Economic Welfare (ISEW) and the Genuine Progress Indicator (GPI) are good candidates to replace GDP in this respect. However, until now ISEW and GPI are available for a few countries only. The Stiglitz report also suggests Household Income as an interesting indicator. Again, no data are available for this indicator for a large number of countries. And another suggestion, the use of Net Domestic Product as an indicator to measure a country's progress, also fails due to lack of available data. Therefore, we have no choice but to include GDP per capita – **for the time being** – as an indicator.

- **Genuine Savings**

Other than ISEW and GPI which measure actual economic wellbeing, Genuine Savings (GS) or Adjusted Net Savings (ANS) as it is called also, measures the true rate of savings in an economy after taking into account investments in human capital, depletion of natural resources and damage caused by pollution. It is based on the notion that savings are essential for sustainability. Thus this indicator fits very well in the category Preparation for the Future.

The rationale of all 24 indicators is given in the Annex.

4. Calculation

4.1 Reliability of data

The reliability of data is a serious concern. One is inclined to assume published figures to be correct and reliable. However, this is certainly way too optimistic. Particularly when producing time series one is confronted with many irregularities and impossibilities in the data. This problem will decrease over time, since the importance of sound statistical data is now generally recognized. For example, the Stiglitz report also calls for increasing efforts by countries and statistical offices.

4.2 Calculation methodology

The current SSI is built up from five categories with different numbers of indicators: one category comprises six indicators, two consist of five indicators and two of three. That results in unintended different weights when calculating the overall index (following our current calculation methodology). It would be better to have an equal number of indicators in each category. In the redesigned SSI all 8 categories comprise three indicators.

We are now in the process of receiving expert opinions with respect to the weighting of indicators, categories and wellbeing dimensions. This will result in a methodological framework to aggregate indicators into categories, then into wellbeing dimensions and finally into one overall figure for the SSI.

4.3 Aggregation

Many people support the aggregation of indicators and categories into one single figure: the overall index; many others strongly object to aggregation, since it is adding up apples and oranges. Nevertheless, we will continue to aggregate all scores into one single score for the overall index, in order to show at a glance the sustainability level of a country. This is a strong communication tool to the public at large. Of course we realise the objections one may have. One of the main objections is possible trade-off between the indicators. However, since all 24 indicators, must receive a score of 10 (on a scale of 0 to 10) to achieve full sustainability, a trade-off will not be sufficient to achieve full sustainability.

For those who object to the aggregation and are only interested in the underlying figures, we present all available data. Thus the user may make its own choice: focus on the overall index or on the underlying figures. Or on both.

5. Redesign of the SSI

Having studied the main findings carefully, we have developed various alternative designs for the revised SSI. Though no framework will be perfect, we have decided on a setup, which is even more balanced and transparent than the current one:

I. Human Wellbeing, with 3 categories

- Basic Needs
- Personal Development
- Well-balanced Society

II. Environmental Wellbeing, with 3 categories

- Healthy Environment
- Climate & Energy
- Natural Resources

III. Economic Wellbeing, with 2 categories

- Preparation for the future
- Economy.

The structure of the redesigned SSI is shown in the following figure.

Figure 3 Structure of the redesigned SSI

The dimension Economic Wellbeing is introduced to measure

- the transition of the economy to sustainability,
- the possibility to sustain wellbeing over the years to come,
- the contribution of the economy to the actual wellbeing of a society.

It can be considered as the safeguard to wellbeing.

Once the work on the 2010 update will be completed, all information will be available for free on our website www.sustainablesocietyindex.com. In order to show developments over time, the SSI-2006 and SSI-2008 will be recalculated, based on the new structure of the SSI

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Annex: Rationale for each indicator

	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 framework 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, essential for sustainability
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