

EEB BRIEFING DOCUMENT:

**IDEAS FOR OVERCOMING THE
LIMITATIONS OF GDP AS A PROGRESS
INDICATOR**

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The European Environmental Bureau (EEB)

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Written by: Pendo Maro
Editor responsible: John Hontelez

European Environmental Bureau (EEB)

34 Boulevard de Waterloo | B-1000 Brussels | Belgium

Tel.: +32 2 289 1090 | **Fax:** +32 2 289 1099

Email: info@eeb.org

Websites: www.eeb.org, www.chemicalreaction.org, www.newngoforum.org,
www.participate.org, www.zeromercury.org, www.green10.org

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BRIEFING: Beyond GDP indicator?

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Introduction

This Briefing was originally prepared as background document for the EEB's Seminar on "Reviewing the EU Sustainable Development Strategy (EU SDS) on November 16/17 2007. This final version was produced after the event, including some changes due to the discussion held at that seminar. The aim is to brief members and participants on some selected indicators, their pros and cons and their potential for use in measuring well being or sustainability. It does not aim at presenting a conclusion on specific indicators, but rather serve as an information tool and discussion document.

The European Commission and others have sparked a high-level debate on 'beyond GDP', and held a conference on 19-20 November. The Commission wants to know how best to measure progress, and how the various indices might be integrated into the decision-making process and publicly debated. This is a salient but hardly novel debate for the green movement. Since the 1970s, environmental NGOs have advocated replacing Gross Domestic Product (GDP) as the main indicator of progress, and alternatives now exist. But GDP remains unchallenged in day-to-day discussions on society's progress, and industry in particular has clung to it to measure successful economic policies and reform. So are we being misled? Surely GDP cannot be an acceptable measure of progress if our economic growth is destroying the environment and harming our quality of life? If we are to take sustainable development (SD) seriously, we must at least complement GDP with strong signals on the progress or decline of our natural resource base, our quality of life, and fairness in society. These signals should be easy to understand and result in action to address the problems. EEB is following this discussion and developing its own response. What issues are at stake and what might be the best indicator beyond GDP?

Given below is a discussion on the merits and shortcomings of GDP as a measure of social well being. Following that we have given a summary of selected indicators and their pros and cons; and some suggestions on the way forward.

Why question GDP?

Gross Domestic Product (GDP) is a standard indicator used to measure a country's economic performance and is often seen as an indicator of well-being. A country's GDP is defined as the market value of all final goods and services it produces over a given period¹ (Box 1). It equates to total consumer, investment and government spending, plus the value of exports, but minus imports². GDP is widely used, and most countries provide regular information on their GDP.

But GDP was never intended to measure well-being. Its key flaw is that it fails to distinguish between costs and benefits, productive activities and destructive ones, or sustainable and unsustainable practices. For example, GDP regards pollution and natural resource depletion as an economic gain, while social activities like care for the elderly and children get a zero rating. Natural and 'man-made' disasters, crime and accidents, are seen as positive contributors to GDP since they generate production, but do not add to society's well-being. GDP is not adjusted to account for harm resulting from industrial, household and vehicle emissions, or waste disposal. Instead, it is assumed that all monetary transactions add to social well-being. But we can't assume things are improving just because more money is being spent!

Indicators usually chart progress towards pre-set goals, which can be measured by reliable, and easily understood indicators using accessible data. The EU Sustainable Development Strategy (SDS) is the Union's over-arching goal, and is meant to govern all its policies and activities.³ So is GDP the best way to assess sustainable development, economic prosperity, social equity and cohesion, and environmental protection? Probably not. But GDP continues to drive key policy decisions, so politicians often push policies which are predicted to boost GDP. For example, the EU's Lisbon Strategy for growth and jobs stresses the need to raise investment in research & development, to at least 3% of GDP⁴. This has endeared 'growth and jobs' to many politicians, and thus the EU's overarching goal has largely achieved only secondary importance. So we need to find some complementary indicators which can best capture a nation's well-being, reflecting the three sustainable development dimensions, social, environment and economy.

¹ http://en.wikipedia.org/wiki/Gross_Domestic_Product

² <http://www.investorwords.com/2153/GDP.html>

³ Council of the European Union. Renewed EU Sustainable Development Strategy; No. 10117/06. Brussels, 9 June 2006. Article 1, page 2.

⁴ The 2000 Lisbon European Council set out a ten-year strategy to make Europe "the most competitive and dynamic knowledge-based economy in the world capable of sustainable economic growth with more and better jobs and greater social cohesion" by 2010. Presidency Conclusions Lisbon European Council, 23 and 24 March, 2000

Box 1: Definitions

GDP

- The value of all goods and services produced within a nation in a given year.
www.dlhoffman.com/publiclibrary/factbook96/wfb-note.htm
- The market value of a country's output attributable to factors of production located in the country's territory.
highered.mcgraw-hill.com/sites/0072973714/student_view0/glossary.html
- a measure of an economy's economic performance. It is the market value of all goods and services produced within the boundaries of a country.
oregonstate.edu/instruct/anth370/gloss.html
- the dollar value of all goods and services produced in the economy over an interval such as a quarter or a year.
www.ontariobudget.ca/english/glossary.html
- The total final output of goods and services produced within a country's territory by residents and nonresidents of that country.
450.aers.psu.edu/glossary_search.cfm
- Gross domestic product is a measure of the size of the economy of a particular territory. It is defined as the total value of all goods and services produced within that territory during a specified period (most commonly, per year).
Source: "[Gross Domestic Product](#)" at [Wikipedia, the Free Encyclopedia](#).

Social well being

Social well being can mean a number of things to different people. It can be described as being happy, having a good quality of life, fulfillment, prosperity, being healthy and able to pursue a healthy lifestyle, mental and physical well being, being able to achieve personal goals – work and leisure activities, etc. It is linked to having access to health and social services, access to education, access to dignified well paying work; equity, rights to a clean and healthy environment, equal justice under the law, respect of human rights and participation in community and political issues/process, etc.

http://www.nacn.org/health/baseline_report/health_and_social_wellbeing.htm
<http://onlinedictionary.datasegment.com/word/well-being>

Efforts towards 'beyond GDP' indicator

Indicators concerning economic development can be divided into three main categories.⁵ These are indicators 'adjusting' GDP, indicators 'replacing' GDP and indicators 'supplementing' GDP. The first group is using GDP as the basis but adjusts it with monetised environmental and social factors. Indicators 'replacing' GDP assess progress and well being by using variables such as sustainable use of resources, social developments and/or average satisfaction. The third group complements GDP with environmental and/ social information. For examples see Box 2.

It is worthwhile to note that there is a distinction between indicators for measurement, indicators for reporting, indicators for analysis, for policy development and indicators for the press/public. Therefore, although some indicators may not be very good measurement tools, they may, however, serve as excellent communication or public participation tools. Others may be good for policy-making but not very suitable for analysis, etc. One should not transfer criticism of an instrument at one level to another as the criticisms may no longer hold⁶. The pros and cons given below refer generally to indicators as tools for measurement.

Box 2: Examples

Indicators 'adjusting' GDP:

- Measure of Economic Welfare (MEW)
- Sustainable Economic Welfare (ISEW)
- Genuine Progress Indicator (GPI)
- Green GDP or Green National Accounting
- Genuine Savings Indicator

Indicators 'replacing' GDP:

- Human Development Index (HDI)
- Ecological Footprint (EF)
- Happy Planet Index (HPI)
- Environmental Sustainability Index (ESI)

Indicators 'supplementing' GDP:

- 'Satellite accounts' set up from environmental and economic accounting data, to complement GDP data. E.g System of Economic Environmental Accounts (SSEA) and National Accounting Matrix including Environmental Accounts (NAMEA)
- Sustainable Development Indicators (SDI).

⁵ Goossens, Y., Makipa A. and Wuppertal Institute. 2007. Policy Department Economic and Scientific Policy. Alternative progress indicators to Gross Domestic Product (GDP) as a means towards sustainable developments, October.

⁶ Patrick Ten Brinck, (IEEP), November 5, 2007.

In 1934 Simon Kuznets, a chief architect of GDP, was among the first to point out that GDP is not the best measure of a nation's well-being. Ever since, the quest for other indicators which capture well-being, social and environmental dimensions, has been underway.

The '**Measure of Economic Welfare**', developed by Nordhaus and Tobin in the 1970s, is based on GDP figures (in fact Gross National Product⁷), adjusted to include the value of leisure, the underground economy, and deductions such as natural resource degradation. But MEW does not take reflect changes in environmental quality, changes in the natural resource base or personal consumption inequities.

The '**Index of Sustainable Economic Welfare**', devised by Daly and Cobb in the 1980s, uses the same consumption data as GDP, but makes adjustments for income distribution inequality and costs of crime and environmental measure such as the depletion of non-renewable resources, loss of farmland from soil erosion and urbanisation, loss of wetlands and the cost of air and water pollution and long-term environmental damage like global warming. One of ISEW's key weakness is its reliance on data which aren't readily available in developing countries, eg on annual changes in air and water pollution. But its major achievement is revealing that GDP growth does not necessarily increase society's well-being.

The '**Genuine Progress Indicator**', a variant of ISEW, developed in the 1990s by a US body; Redefining Progress uses a different methodology to ISEW. Both are 'green' GDP accounting systems. GPI is being developed as an alternative to GDP and uses the same basic data as GDP, which are adjusted to reflect income distribution and the social costs of inequality. The non-market economy and non-monetised activities like volunteer time, parenting and housework are factored in. And defensive spending (eg burglar alarms) and the degradation and depletion of natural resources for existing and future generations, is subtracted. Application of GPI has shown that over time, GDP growth may be linked to reduced societal well-being. GPI falters as a measure of sustainable economic welfare in its theoretical foundations, components and calculation method. It is said to be inconsistent in its choice of components which contribute to economic welfare or sustainable development. Several of its calculation methods have been challenged: valuing depletion of non-renewable resources, the cumulative cost of long-term environmental damage, adjustments of personal income inequality, and deduction of defensive spending. These shortcomings are being tackled and the latest GPI (2006) has already used updated methodology⁸.

The '**Human Development Index**' combines three indicators: longevity, knowledge and standard of living. To measure the first, HDI uses life expectancy at birth figures. For knowledge, it uses adult literacy and mean years at school. On standard of living, it uses GDP per person, adjusted for purchasing distribution. Developed in 1990 by Amartya Sen and Mahbud ul Had, it has since been used by the UN Development Programme

⁷ The main difference between GDP and GNP is that GDP measures all production within a country's borders, by whoever happens to be working there; GNP measures the production of all citizens of a country, wherever they happen to be working. (http://www.chinadaily.com.cn/bizchina/2006-09/27/content_697807.htm)

⁸ <http://www.rprogress.org/publications/2007/GPI%202006.pdf>

(UNDP). HDI reflects societal well-being better than most other indicators. But it does not reflect environmental degradation or inequalities within countries and between sexes, and depends on data which are not always available, particularly in low-income countries, (eg on life expectancy, literacy and education). HDI is also redundant as a development indicator: if there is a major and positive correlation between HDI and any of its components, it offers few extra insights into inter-country development levels⁹.

The '**Ecological Footprint**' was developed by WWF and the Global Footprint Network. It measures the use and over-exploitation of natural resources like forests and fisheries, grass and croplands. It compares the planet's 'carrying capacity' with human consumption. Since the mid-1980s, our footprint has exceeded the world's carrying capacity. The unit of measurement is the 'global hectare'. While 1.8 global hectares per person are available worldwide, Europeans each use 4.9 global ha and North Americans twice that. A country's footprint can be much larger than its bio-capacity because the footprint reflects a country's consumption and global environmental impact. For example, a Chiquita banana plantation in Costa Rica does not contribute to Costa Rica's footprint, but to the footprints of countries where the bananas are eaten. National footprint accounts are an ecological accounting system which calculate a nation's ecological footprint and bio-capacity. National consumption is computed by adding imports to, and subtracting exports from, national production. A country has an 'ecological reserve' if its footprint undercuts its biological capacity. If not, it has an ecological overshoot. Review of the methods of assessing ecological footprints will be completed in 2008. The 'Living Planet Report 2004' cannot therefore be directly compared with the 2006 or later versions. A potential drawback is that it does not necessarily calculate well-being in terms of distribution of income inequality or other social factors like employment, health, or education levels. Another potential shortcoming is from an environmental perspective. Nuclear energy's environmental impact cannot easily be converted into the ecological footprint's metric, so its costs are not necessarily included in the footprint calculation.

The World Bank devised the '**Genuine Savings Indicator**' to assess national sustainability. It correlates certain values to GDP figures. Spending on depletion of natural resources, pollution and nett foreign borrowing are deducted, while educational spending is added. The Bank works out these figures for most countries, and presents them as a percentage of GNI (gross national income). GSI has been criticised for its dubious treatment of exogenous shocks and population growth, an inappropriate way to calculate natural capital depreciation caused by resource extraction, and inadequate accounting for environmental pollution. For example, estimating the cost of natural resource depletion hinges on doubtful figures, and damage by local and air pollutants is omitted. Using GDP data as the starting point has also been criticised for fear of justifying increasing GDP/economic growth as the core measure of progress and development. But some see GSI as a good start in measuring sustainability, with scope for future improvement.

The New Economics Foundation introduced the '**Happy Planet Index**' in 2006. It shows how ecologically efficiently human well-being is delivered. It is allegedly the first index to combine environmental impact with human well-being. HPI is calculated by dividing 'happy life years' by 'carbon footprint' and adjusting the equation by adding two constant terms on both sides of the equation. 'Happy life years' uses data from life expectancy,

⁹ <http://www.unipv.it/deontica/ca2004/papers/bagolin.pdf>

life satisfaction (from responses to the question “all things considered, how satisfied are you with your life as a whole these days?”), and the carbon footprint (based on data on ecological footprint in the Global Footprint Network’s ‘Living Planet Report 2006’). HPI methodology changed slightly this year to exclude areas covered by forests and global hectares under food production. The ecological footprint for each country was also reduced to its carbon footprint, adding one-third of the footprint from nuclear energy as a further embodied cost. So 2007’s HPI cannot be directly compared with last year’s. The European HPI covering a 40-year period shows that Europe has become less efficient in translating resource use into well-being. The Scandinavian countries are the most efficient, and achieve Europe’s greatest well-being at quite a low environmental cost. Nations with strongly market-led economic models are least efficient on the index. The main policy conclusion is that people should not be afraid of reducing demand as they are just as likely to lead satisfied lives irrespective of consumption levels.

The United Nations (UN) proposed in 1993 that countries set up ‘**Satellite accounts**’, which should be based on integrated environmental and economic accounting, to complement conventional national accounts data. National accounts data are made up of integrated sets of macroeconomic accounts which are developed based on internationally agreed concepts, definitions, and classifications and accounting rules. The national accounts data is often used for economic analysis and decision-making. These data are generally available, consistent and regular. Environmental accounts (EA) can help us monitor and understand our natural assets base and how it is changing. For example, they can be used as a tool to analyse the link between our consumption and production patterns and the level of natural resources degradation. The European Environment Agency (EEA), Eurostat and others are working on and co-ordinating the compilation of EA in EU Member States in different sectors.

Which indicator to choose?

As we can see, each indicator has both strengths and shortcomings, and efforts are afoot to improve some of them. The challenge is finding an indicator which both appeals to politicians and improves how we currently measure progress, to incorporate sustainable development’s various dimensions. Do we need several indicators side-by-side to represent social, environmental and economic dimensions, or do we need a single aggregated indicator? Although GDP can measure economic growth, it is not a good indicator of other aspects of sustainable development. The Commission’s Sixth Environmental Action Programme notes that policy-makers need an indicator which measures progress, wealth and well-being to incorporate social and environmental costs and benefits. According to the SDS: “to ensure both comprehensive and in-depth coverage of the complexity of sustainable development, the indicators are to be developed at the appropriate level of detail to ensure proper assessment of the situation with regard to each particular challenge.” These challenges are climate change and clean energy, sustainable transport, consumption and production, conservation and management of natural resources, public health, social inclusion, demography and migration, global poverty and sustainable development challenges.

Discussion:

In the discussion on the way forward we take the basic assumption that everyone in the environmental movement agrees that focussing on GDP does not help to measure or promote (environmentally) sustainable development. Also, those policies that are predominantly led by the desire to increase GDP can be bad for the environment.

From that starting point, in our view, the key questions for discussion are:

1. How important is it to move away from, or supplement, GDP as main indicator for economic development?
2. Is there currently one strong alternative available that can deliver both sufficiently reliable information and a strong signal guiding policy choices?
3. Is the answer to the second question is no, is there a combination of alternatives that together might be as powerful as the current GDP indicator, while still being useful in communication and policy incentive?
4. Are there good national examples, countries that have introduced, instead or next to GDP, one or more development indicators with a high public and political profile?
5. How to make the shift, who to mobilise, who can be our partners?
6. What role can the EU play in such a process?

A Suggestion to start with:

In order to kick off a discussion we had suggested the seminar to focus on the following indicators as complimentary to GDP: Genuine Progress Indicator (GPI), Human Development Indicator (HDI), and 'satellite accounts'. In terms of the first two indicators, criticism on the deficiencies of the valuation of natural resource depletion are valid and could mainly be explained in terms of the non-monetary value of natural resources to ecological functioning and human well-being. Notwithstanding these criticisms, the indicators above can best capture the environment and/or social dimensions of sustainable development, they have been around for a while and their methodologies are constantly being improved and updated. Also, they contain information that can easily attract the attention of politicians – such as inequality of income distribution, education (knowledge), volunteer work and degradation of natural resources and how our natural resource bases are changing in relation to human use. As such they could potentially be best complementary indicators to GDP, capturing the three dimensions of sustainable development to a better extent than GDP alone and than the other indicators discussed in this briefing.

In essence, these indicators could be grouped in the following complementary manner in order to capture the three SDS dimensions. The possible combinations are described below:

- **GPI + GDP:** GPI strives to capture both the environment and social dimensions, thus together with GDP, could form the three dimensions of SDS
- **HDI + GDP + EA 'satellite accounts':** HDI deals mainly with the social dimension, therefore, an environmental component would have to be included if it is to be used to complement GDP. A possible additional indicator could be EA 'satellite accounts' containing environmental accounts. On the other hand, 'satellite accounts', if based on a system of social and environmental aspects of

human activities and wellbeing, could be used solely in combination with GDP.
Thus:

- **'satellite accounts' describing environmental and social aspects of human activities + GDP**

Although the 'Ecological Footprint' and 'Happy Planet' indicators could be used as communication tools to raise public awareness and interest, they would be much more difficult to 'sell' to politicians – hence risking sidelining the environment and social dimensions further. A single aggregate indicator could also have a similar effect to marginalize important information needed for policy-making, as can be seen with the current GDP debate. As such instead of 'replacing' GDP, we would rather focus on supplementing it with other indicators so that the three dimensions of SDS are adequately captured.

Conclusions drawn by EEB Workshop after the Seminar:

- A general support for Commission' initiative towards 'beyond GDP' indicator
- A general support to raise awareness on the shortcomings of GDP as a measure of social welfare
- Emphasis should be on finding supplementary indicator to GDP not replacing it
- Focus should not be on one single indicator but on a combination of indicators which reflect better the social and environment components
- It was acknowledged that there was no perfect indicator, but there are many indicators available
- The main cause of inertia was lack of political will to move forward with suitable supplementary indicators to GDP
- It was decided that our focus should be on trying to identify suitable indicators at the appropriate level, that best convey desired messages and that are relevant for political decision-making
- We need to be flexible in our choices of indicators for communicating with general public – appropriate indicator for relevant audience
- There is a need to involve the investor community in this discussion – we should focus attention on them.

Please send written comments to:
Pendo.maro@eeb.org