Commission on the Measurement of Economic Performance and social Progress

SURVEY OF EXISTING APPROACHES TO MEASURING SOCIO-ECONOMIC PROGRESS[*]

1. INTRODUCTION

GDP shortcomings, as an index for measuring socio-economic progress, feature again prominently in the public debate, following years of benign neglect. Such criticisms are almost as old as the concept itself and national accountants have repeatedly warned about limitations of GDP as a welfare indicator. At the end of the day, it is essentially a measure of economic activity, and more specifically of economic activities leading to monetary transactions. As a result, GDP suffers from two major weaknesses: (a) being a monetary aggregate, it pays little or no attention to distributional issues and to elements of human activity or well-being for which no direct or indirect market valuation is available; (b) it is measuring productive flows and, as such, ignores the impact of productive activities on stocks, including stocks of natural resources.

These criticisms first culminated during the mid-seventies with worries about ecological limits to growth and an increasing concern over the relative weights to be given to economic and social aspects of human progress, for developed as well as for developing countries. Some early initiatives took place at that time, in particular the attempt by Nordhaus and Tobin (1973) to develop a measure of economic welfare (MEW), based on GDP, but correcting GDP for its most evident limitations.

Following these early moves, interest in alternatives approaches to GDP temporarily fell, with other pressing but more traditional problems taking centerstage, such as stagflation or rapid increase in unemployment rates and the GDP-targeted policies needed to address them. The Nordhaus-Tobin experiment itself provided some arguments in favor of maintaining GDP primacy, since its conclusion was that, despite its limits, it remained a good indicator of the overall direction of socio-economic progress.

Nonetheless, interest in alternatives or complements to GDP resumed progressively during the 90s. Emblematic of this new trend was the creation of the United Nations « human development index » (HDI) that combines GDP with measures of health (proxied by life expectancy) and educational achievement. This very simple index only synthesizes a limited amount of information. It is also more relevant for comparisons of developing countries than for comparisons of more advanced countries but it remains one of the few indexes that are regularly compiled and widely disseminated by international organizations to allow systematic cross-country comparisons. It also played a large role in raising the profile of important non-economic dimensions of the quality of life. In the same vein, the 1992 UN Summit in Rio de Janeiro brought the notion of Sustainable Development into the policy debate ("Agenda 21"), with positive consequences for the promotion of sustainable development indicators[1].

[*] Document prepared at INSEE by Cédric Afsa, Didier Blanchet, Vincent Marcus, Pierre-Alain Pionnier and Laurence Rioux and, at OECD, by Marco Mira d'Ercole, Giulia Ranuzzi and Paul Schreyer. Given the short delay that has been available for its preparation, this document is essentially a survey of surveys. Among the many reviews that have been already published or that are available on the net, we have more specifically relied on Boarini, Johansson and Mira d'Ercole (2006), Matthews (2006), Gadrey and Jany-Catrice (2007), Breys (2006), Kulig et al. (2007), on Blanchet, Simon and Sylvander (2007), and Bovar et al. (2008). This first version is intended to be evolutive, to be enriched by remarks from commission members and from additional bibliographical work.

[1] Looking at the results of this survey the correlation between the development of measures of socio-economic progress and the launch of political processes is quite clear (Agenda 21, MDGs, sustainable development, etc.).

This was later followed by a number of more local or country-specific initiatives, often stemming from individual researchers. According to Gadrey and Jany-Catrice (2007) the number of synthetic indicators of social progress was equal to 2 in 1990 (the HDI and the "kids count index"), climbed to about ten in 1990 and to about thirty in 2001-2002. In France, interest in this type of measures has been rekindled by Méda (1999).

This growing interest may reflect a combination of objective as well as societal factors. A first one probably lies with the increasingly visibility of some of the adverse consequences of economic activity on the environment (e.g. climatic change).

A second factor for large European countries is the end of the "catching up" period, the so-called "*30 glorieuses*", where GDP growth was substantial. The period of lower and less regular economic growth that followed was accompanied by higher perceived economic insecurity, in the form of greater exposure to unemployment, poverty and bad work conditions. Decades of rapid and easy economic growth with many winners and few losers seem durably behind us, and this may have progressively led to a re-assessment of the goals of human progress. Changes in goals necessarily go along with changes in indicators.

In some countries such as France, wariness concerning GDP has also been fueled by an increasing mistrust in official statistics. This started with the strong divergence between price indexes and perceived inflation that appeared during the transition to the Euro. Mistrust then moved to other "official" statistics such as household's disposable income or unemployment figures. One aspect of this discrepancy is the difficulty for individuals to link macro- aggregates with micro-perceptions. Macro aggregates are usually computed as the sum or mean of very large numbers of upward and downward changes that individuals observe at micro-level. People may increasingly fail to link with such macro-aggregates, with GDP the most emblematic of them. This matches with the fact that GDP cannot account for distributional changes to which individuals may be very sensitive.

On the academic side, the latest dimension of this overall trend is the growing interest from economists in direct measures of well-being. Again, this topic is not new. Seminal work by Easterlin on the discrepancy between continuous economic growth and stable subjective life satisfaction in the US was almost contemporaneous to the Nordhaus-Tobin paper (Easterlin, 1974). But interest in this "Easterlin paradox" and more generally in the economic analysis of subjective satisfaction variables has gone through an impressive boom over the last years[2]. A central message from such literature is that the relation between subjective well-being and monetary income is only partial. This new interest for direct measurement of life satisfaction or happiness has been brought to the public debate by authors such as Layard (Layard, 2006).

In such a context, the purpose of this survey is to provide an overview of the main tools that have been proposed until now to better measure socio-economic progress or well-being. The focus is mainly on developed countries, without ignoring indicators that are better suited for developing countries.

The point of departure of this review will be GDP and related concepts from national accounts. Despite its limitations as a measure of welfare, GDP remains the most widely used proxy for well-being; it is however not the sole index that is proposed by the System of National Accounts (SNA). Section 2 will revisit GDP definition and assess other SNA indicators that may be used as complements or alternatives to GDP for assessing economic well-being.

From this point of departure, we explore alternative approaches starting from the closest to standard "official" statistics, and moving progressively towards the most remote from this standard approach.

[2] Kahneman and Krueger (2006) identified only 4 papers on this topic in 1991-1995 and more than 100 over the 2001-2005 period. According to Clark, Frijters and Shields (2006) this figure climbed to 173 papers for the 2003 -2006 period.

Section 3 discusses dashboards assembling various sets of elementary statistics or indicators. In fact, the idea that economic performance and social progress cannot be reduced to the sole measurement of GDP is obvious to all statisticians. Developping satellite accounts as well as social statistics has been their main answer to such a problem. In France, this trend started during the 1960s (Delors, 1971) with a view to develop social indicators sets to monitor social progress exactly in the same way as national accounts were used to monitoring economic performance (Perret, 2002). These data are now feeding scores of government and international dashboards that follow-up policy strategies.

Such developments strongly suggest that official statisticians are quite far from devoting exclusive attention to GDP measurement. But the richness of these dashboards is also their limit. Users often need more synthetic indexes allowing for comprehensive assessment of social trends and cross-country comparisons.

Section 4 will examine one way of building such synthetic indexes. One approach that remains in the spirit of national accounts, consists in producing indexes of "corrected" GDP, purged from elements that do not contribute to well-being and complemented by monetary evaluations of welfare enhancing items not included in GDP such as health, life expectancy and leisure.

This approach has the advantage of being a natural extension of national accounts practices, but it is technically demanding.

A second approach, presented in Section 5, is easier to implement. It consists in building composite indexes that combine elementary sub-indexes in a more or less arbitrary fashion. The HDI is the archetype of such indicators. Because they are easy to construct this category of indexes represents a large share of well-being indicators currently on offer. Their weakness lies with the arbitrary of the weighting procedures used to aggregate elementary components.

The last approach to measuring social progress, described in Section 6, is based on subjective measures of well-being. This literature generally focuses on interpreting the immediate information conveyed by such measures. It seldom leads to indexes of well-being. But there are exceptions and a survey of alternative measures of well-being would not be complete without a discussion of this approach. Furthermore, even when subjective measures of well-being are not deemed adequate to provide a comprehensive measure of social progress, they can often be incorporated in composite indexes.

No general conclusion to this survey has been proposed at this stage.

Two annexes present factsheets describing the main characteristics of indexes or approaches that have been brought together for the preparation of this survey. Annex 1 is devoted to indexes, dashboards or other initiatives undertaken by international organizations (OECD, United Nations, European Commission, World Bank). Annex 2 is devoted to indicators stemming for academic and/or more national initiatives. Both annexes are not exhaustive, particularly the second one.

2. STANDARD NATIONAL ACCOUNTS APPROACHES

2.1 GDP and its limits

Gross domestic product (GDP) is, by definition, an aggregate measure of production. It is equal to the sum of the gross value added of all resident institutional units engaged in production (plus any taxes, and minus any subsidies, or products not included in the value of their outputs). The notion of

production considered by the System of National Accounts[3] (SNA 93) and taken into account for the calculation of GDP is very large. It includes (a) the production of all individual or collective goods or services that are supplied to units other than their producers, (b) the own-account production of all goods that are retained by producers for their own-final consumption or gross capital formation, (c) the own-account production of housing services by owner-occupiers, and (d) the production of domestic and personal services produced by employing paid domestic staff.

From a perspective of economic welfare, four main limits can be identified to this concept that will be detailed successively[4]:

- the exclusion of many household activities that are productive in an economic sense
- the problems concerning the measurement of non market output and its aggregation with market production
- the fact that GDP is an aggregate
- the fact that it is only a measure of flows.

2.1.1 Many household activities are excluded from GDP despite their contribution to economic welfare,

This definition of production used by the SNA[5] includes market activities as well as the goods and services provided for free or at subsidized prices by the government or NPISHs[6] and part of the household own-account production. The reasons why many domestic and personal services (cleaning of the dwelling occupied by the household, preparation and serving of meals, instruction of children, care of sick, infirm or old people, transportation of members of the household and their goods) are excluded from GDP, although their consumption contributes to economic welfare, are summarized as follows by the SNA (§ 6.21 and 6.22):

- The own-account production of services within households is a self-contained activity with limited repercussions on the rest of the economy.
- As the vast majority of household domestic and personal services are not produced for the market, there are no suitable market prices that can be used to value such services. It is not only difficult to value the outputs of these services but also the associated incomes and expenditures which can be added to the values of real monetary transactions.
- Imputing values for the own-account production of services would yield values that would not be equivalent to monetary values. Indeed, if the incomes associated to own-account production were really available in cash, they would certainly modify household consumption.

2.1.2. The inclusion of non-market activities in GDP and the calculation of volume indices for non-market output are sources of difficulty.

The inclusion in GDP of individual and collective goods and services delivered by government is both a strength and a weakness of National Accounts. On the one hand, this production certainly contributes to the welfare of a country. On the other hand, its measure in National Accounts is subject to two criticisms. The first concerns the double counting of (part) of this production, the second concerns its valuation.

[3] The System of National Accounts, 1993 (SNA 93) was produced jointly by the OECD, the United Nations Statistical Division, the International Monetary Fund, the World Bank and the Commission of the European Communities.

[4] It is also important to note that, although the conceptual framework developed by national accountants is quite comprehensive, its concrete implementation depends on the amount of resources assigned to national statistical offices and the overall data availability.

[5] In this section we will make reference to the "core" set of national accounts. Satellite accounts and other extensions are treated in section 3.

[6] NPISHs : Non profit institutions serving households.

Goods and services produced by government are included in final consumption and in GDP at a value equal to the sum of the related costs. A traditional criticism, going back at least to Nordhaus and Tobin (1973), is that part of government purchases should be regarded as intermediate rather than final consumption. Items like police or national defense should be treated as "necessary overhead cost of a complex industrial nation-state" to avoid overestimating value added in National Accounts.

The second criticism about the calculation of non-market production concerns the valuation at current and at constant prices. National Accounts are confronted to the difficulty that generally no market prices for this production exist. By convention, the value of production at current prices is equal to the sum of the related costs (intermediate consumption, plus compensation of employees and consumption of fixed capital). Unlike market production where prices can be interpreted as reflecting both the marginal costs of production and the marginal utility for consumers, there is no reason to believe that valuation of non-market production by its cost also reflect a consumer perspective.

The absence of market prices also implies that no deflator is available to value the volume of non-market production. National accountants have three possibilities to deal with this difficulty:

- When a product with similar characteristics is available on the market, they can use this price deflator.
- When non-market products do not have any equivalent in the market sector, national accountants can calculate a price deflator for each component of the total cost and compute the volume of production as the sum of the deflated inputs. Such a method is called an input method.
- An alternative consists in valuing the volume of the output by using relevant indicators of output (e.g. : the number of pupils for education services). Such a method is called an output method.

While a number of countries including the United States rely on input methods to evaluate their non-market production at constant prices, others (some member states of the European Union, Australia) are moving to output methods to value non-market education and health services. Differences can be significant. In his 2005 *Review on the measurement of government output*, Atkinson noted that, between 1995 and 2003, "the difference, for the United Kingdom, between the input method (used by the United States) and the output method used by the United Kingdom [accounted] for nearly half the difference between the two countries' published growth rates" (2.75% per year for the UK; 3.25% per year for the US).

2.1.3. GDP is an aggregate measure that does not address the issue of distribution between individuals.

The distribution of resources between individuals is a crucial determinant of welfare. Unfortunately, while detailed breakdowns exist for firms, National Accounts only publish aggregate economic data for households. These aggregates are then simply divided by the number of individuals or households in an economy (e.g. : GDP per capita). Distributional issues are not taken into consideration.

2.1.4. GDP is a measure of flows that does not measure the stock of wealth in an economy.

The capacity to consume, now or later, is not only linked to the flow of income at each period. It also depends on the stock of wealth at the disposal of economic agents. Moreover, the flow of income is not the only factor that influences the evolution of the stock of wealth. Revaluations (due to variations of asset prices), consumption of fixed capital and other volume changes (changes in assets that are not due to economic transactions, such as destructions due to natural disasters or wars, discoveries of natural assets…) also affect the stock of wealth.

2.2. Other indicators linked to welfare produced by National Accounts

These limits constitute some of the main reasons for looking for complements or alternatives to GDP when trying to measure welfare. But, before moving to data or indicators that are outside the usual field of National Accounts, we must recall that other SNA concepts are better measures of national standard of living or economic well-being than GDP. They are important either for themselves or as potential components or points of departure for alternative indexes. We shall discuss indicators correcting for relations with the rest of the world, for capital consumption, and indicators centered on household's resources.

2.2.1. Adjustments for the relations with the rest of the world: gross national income (GNI) and gross disposable income (GDI) of the economy

As a measure of the value added produced by resident institutional units, GDP (or GDP per capita) is an imperfect proxy of the income at their disposal. Yet, this income determines how much economic agents can consume immediately or invest for future consumption. For example, in countries where an important part of production is due to non- resident workers who bring back their wage in their own country at the end of the month, the difference between gross domestic product and gross national income can be substantial.

The same is true with property income (dividends, interest, etc.) arising from domestic production that are transferred to non-resident owners of domestic productive units. Increasing globalization of economies may give a growing importance to this issue.

Formally, gross national income (GNI) is defined as GDP less net taxes on production and imports, less compensation of employees and property income payable to the rest of the world plus the corresponding items receivable from the rest of the world. At this stage, other current transfers to and from the rest of the world also have to be taken into account. These include payments of taxes on income and property, social contributions, and social benefits. These adjustments lead to the gross disposable income of the economy.

2.2.2. Adjustments for the consumption of fixed capital: net national income (NNI) and net disposable income (NDI) of the economy

In order to get a better measure of the economic resources available to individuals for present and future consumption, a further adjustment is necessary, reflecting that part of the production is devoted to the renewal of productive capital[7]. This adjustment leads to net national income (NNI), which is defined as the difference between GNI and the consumption of fixed capital. The same definition holds for net disposable income (NDI).

Weitzman (1976) showed how in an inter-temporal model net national income could be given a rigorous economic welfare interpretation. Weitzman's paper spawned a body of literature on welfare economics, sustainable resource use and accounting (see for example Weitzman 1997). However, the bulk of this literature has remained on a theoretical level with few empirical implementations. Diewert (2005) has also repeatedly advocated the use of net rather than gross measures in the context of developing welfare-related measures of income.

According to Boarini *et al.* (2006), levels of NNI per capita are systematically below levels of GDP per capita, indicating that the latter overstate the level of economic resources that contribute to well-being. However, the ranking of OECD countries based on NNI per capita is similar to that based on

[7] In practice, the superiority of NNI on GNI for the evaluation of the available economic resources must be relativized because consumption of fixed capital is subject to measurement uncertainties.

GDP per capita, with exceptions for Iceland, Ireland and the United Kingdom. Likewise, the growth rates of real GDP and of real NNI per capita are generally similar for the whole economy[8].

2.2.3. Specific indicators for the household sector: disposable income, final consumption expenditure and actual final consumption

The well-being of individuals is typically better linked to their current and future consumption of economic resources rather than to economy-wide measures of production and income.

Households' disposable income is a good approximation of their receipts available for consumption. It includes all income (compensation of employees, plus social transfers and net property income) less current transfers paid. Such transfers include employers' social insurance contributions, employees' social insurance contributions, taxes on income, regular taxes on wealth, regular inter-household cash transfers and regular cash transfers to charities.

Moreover, national accounts distinguish two notions of consumption for households:

- Final consumption expenditure, which consists in expenditures, including imputed expenditures, incurred by resident households on individual consumption goods and services.
- Actual final consumption, which is the value of the goods and services consumed by households, whether by purchase or by transfer from government units or NPISHs (e.g. : education and health services). It is derived from their final consumption expenditure by adding the value of social transfers in kind receivable[9]. Such a notion is particularly useful for international comparisons due to institutional differences between countries.

According to Boarini *et al.* (2006), there is wide variation in the gap between the different household measures (disposable income or consumption per capita) and GDP per capita among OECD countries. However, there is a strong cross-correlation between levels of household measures and GDP per capita. The ranking of countries is similar for all these indicators.

The difference are starker when looking at the growth rates of GDP per capita and of measures of household resources.

2.3.4. Balance sheets allow to value the stock of wealth in an economy.

Additional indicators relevant to the assessment of living conditions are provided through balance sheets. These balance sheets disaggregate national wealth in many types of assets (non financial assets, such as fixed assets, stocks, land, subsoil assets; financial assets, such as currency, securities, loans, shares…). Variations of national wealth are also distinguished between flows, revaluations, consumption of fixed capital and other volume changes. National balance sheets are sometimes available for various institutional sectors (e.g. households, non-financial enterprises). These elements provide measure of welfare that complement those based of flow accounts.

In 2003, the United Nations, the European Commission, the International Monetary Fund and the OECD finalised a Handbook on Integrated Environmental and Economic Accounting. While this handbook proposes a number of accounting frameworks, it also proposes methodologies for correcting national accounts aggregates for environmental degradation and resource depletion. The handbook does not provide empirical results and is limited to the environmental and resource aspects of correcting GDP.

[8] Beyond differences in nominal terms between GDP and NNI, there is an implicit "terms-of-trade" effect between the two aggregates in real terms because NNI is deflated by the price index for domestic final demand rather than by the price index for GDP.

[9] The same adjustment can be applied to household disposable income. Thus, there is only one definition of household saving in National Accounts.

3. DASHBOARDS OR SETS OF INDICATORS

Even if National Accounts provide us with a larger number of indicators than the sole GDP, these indicators cannot pretend to summarize adequately all aspects of living conditions. The most direct way of providing a more extensive description of these living conditions and of social progress is through dashboards (or sets) of indicators. Historically, the development of these sets of indicators embodied the recognition that assessing social progress, as distinct from economic performance, required some specific measurement tools. Further, these indicators sets immediately reflect the multidimensional nature of the notion of "progress".

Dashboards of indicators developed for measuring progress have a long tradition. At the national level, the reports of the *US President's Research Committee on Social Trends* (1993) represented one of the most comprehensive efforts to assess social trends. Internationally, the OECD initiated an ambitious statistical program on social indicators in the 1970s. These developments witnessed the implications to the official statistical community into these early efforts to measure social progress, at a time when the concepts of social and environmental limits to growth were starting to permeate political discussions. By the mid1980s, however, official statistical work on measuring social progress was significantly cut-back, as the political agenda was shifting back to more traditional economic issues. Also, much of the enthusiasm that had supported the social indicator movement in earlier years began to fade as citizen groups realized that availability of indicators did not, by itself, mobilize public opinion and policy action.

Dashboards of indicators to measure progress have come back to life in the 1990s. While several examples of these indicator sets are included in Annex 1, they all typically refer to descriptive measures of *average* conditions of people living in different countries, with indicators covering a large number of domains. Recent initiatives on indicator sets share some specific characteristics that differentiate them from earlier developments. First, these initiatives have often a strong environmental focus, within the broader agenda of sustainable development. Second, these developments are often more participatory, developed at the local level by groups that use indicators as part of a strategy aimed to mobilize action on specific issues. Third, these indicator sets are often specifically tailored to the needs of policy makers.

Indicators sets differ in a variety of ways. Most of these initiatives refer to individual countries (and to localities within them) as developed either by citizen and research groups (as in the case of the *Calvert-Henderson Quality of Life Indicators* for the United States)[10] or as part of the official statistical system (as in the case of the ABS reports on *Measures of Australia's Progress*).[11] Other initiatives are however international, typically used to monitor how a range of political commitments are followed through with specific actions. Examples of this second category are provided by several initiatives undertaken under the *aegis* of the UN system, whose indicators (although presented as being relevant for the entire community of nations) are typically tailored to the needs and priorities of the poorer countries.[12] A similar development, however, also extended to developed countries, as in the case of the indicator sets agreed by countries members of the European Union to monitor different types of strategies (e.g. the EU Sustainable Development Strategy agreed in Gothenburg in 2001; and the revised social protection and social inclusion processes adopted in the aftermath of the Nice 2000 Council). The OECD also relies on indicators sets to regularly monitor the performance of OECD

[10] The dimensions of life covered by the Calvert-Henderson Quality of Life indicators include: education, employment, energy, environment, health, human rights, income, infrastructure, national security, public safety, re-creation and shelter.

[11] *Measures of Australia's Progress*, currently released every 3-years with the latest issue in 2006, presents indicators in four main areas (1 individuals; 2 the economy and economic resources; 3 the environment; 4 living together) and for selected dimensions under each (1.1 health; 1.2 education and training; 1.3 work; 2.1 national income; 2.2 economic hardship; 2.3 national wealth; 2.4 housing; 2.5 productivity; 3.1 natural landscape; 3.2. air and atmosphere; 3.3. ocean and estuaries; 4.1. families, communities and social cohesion; 4.2. crime; 4.3. demography, government and citizenship).

[12] Examples include the indicator sets supporting the Millennium Development Goals and national sustainable development strategies.

countries in a number of fields (social conditions, *Society at a Glance;* environmental conditions, *Key Environmental Indicators;* economic conditions, *Going for Growth;* key economic, social and environmental indicators, *Factbook)*. The indicators presented in these reports (typically drawing from more specialized reports) either respond to a communication function or are explicitly agreed by countries as part of a policy strategy.

Dashboards of indicators have both advantages and drawbacks. On the positive side, these indicators typically highlight large differences between average measures of economic performance and social conditions, and this in terms of both levels of various social indicators and how they change over time. These differences are especially evident when considering countries with medium- to high- levels of per capita income.[13] Despite differences in their make-up, these indicator sets also highlight a large degree of overlap as to the dimensions that are regarded as most relevant to assess social progress and quality of life. Indirectly, these sets have also spurred improvements in the quality (e.g. in terms of timeliness, consistency and comparability) of those indicators that are more critical for any assessment of social conditions.

Dashboards of indicators, however, also have obvious limits. Apart from the fact of not being well-grounded in a theory of what makes up a "good life", the most obvious of these limits is that these selections are inevitably *ad hoc*, and partially contingent on the conditions of a specific place and time. Secondly, and as important, collections of different indicators do not allow a parsimonious representation of quality of life and social progress. This limit is sometimes addressed through "headline" indicators, established as subset of the broader selection, used to respond to a communication function. Another approach used to address this limit (described in a latter section) is to "weight" the various indicators – although this inevitably introduces an element of arbitrariness and does not to avoid risks of double counting. Lastly, the descriptive indicators included in dashboards, while useful to highlight areas where progress is either lacking or insufficient, say very little on what should be done to address these problems or the policy trade-offs.[14]

4. CORRECTED GDP AND EXTENDED NA

The richness of information given by dashboards is both their strength and their weakness. Providing large sets of indicators minimizes information losses and avoids mono-dimensional judgements on welfare comparisons over time or across countries. But there remains a strong demand for summary statistics gathering all these information in a single number allowing rapid analysis of variations in well-being across countries and over time.

One stream in the literature tries to do so in ways that retain consistency with national accounts. These attempts all start from standard GDP or other associated SNA indicators and try to correct them for additional aspects. This approach requires monetary evaluations of all these elements that we want to subtract from, or add to, standard GDP. This approach can be labelled "corrected GDP" or "extended accounts". This section also reviews indexes built in the same spirit and devoted to the measurement of sustainability.

4.1. Corrected GDP

A first example of this approach was proposed by Nordhaus and Tobin in 1973. The starting point of their welfare measure is not GDP but rather household consumption. This indicator is corrected is two

[13] This is the conclusion of an analysis of the correlation between 16 indicators of social outcomes and GDP per capita, presented in OECD (2006).
[14] A useful review of the experience with indicator sets to assess social progress is provided by Cobb (2000).

steps. The first step derives a Measure of Economic Welfare (MEW) by subtracting from total private consumption a number of components that do not contribute positively to welfare (such as commuting or legal services) and by adding monetary estimates of activities that contribute positively to welfare (such as leisure or work at home). The second step converts the MEW in a « sustainable measure of economic welfare » (SMEW) that takes into account changes in total wealth. The relation between the MEW and the SMEW is similar to that between GNP and NNP in standard national accounts: the SMEW measures the level of MEW that is compatible with preserving the capital stock, given the definition of the capital stock retained by the builders of the index.

To convert the MEW into the SMEW, an estimate of total public and private wealth is computed that includes reproducible capital, non reproducible capital (limited to land and net foreign assets), educational capital (based on the cumulated cost of years spent into education by people belonging to the labour force) and health capital, based on a method of permanent inventory with a depreciation rate of 20% per year.

Nordhaus and Tobin provided an evaluation of this SMEW for the US over the 1929-1965 period, compared to GNP that, at that time, was the indicator privileged by National Accounts. Two major conclusions emerged :

- Levels of SMEW were significantly higher than those of GNP, due to the large positive contribution of leisure.
- Consistent messages were delivered by both GNP and the SMEW when considering the overall direction of socio-economic progress, even if the magnitudes differed. Over the period considered, growth for the SMEW was about two thirds of total GNP growth. The conclusion by Nordhaus and Tobin was that GNP growth remained an adequate guide for policy.

Nordhaus and Tobin were cautious to present their work as being no more than a point of departure. Some further initiatives took place during the 1980s such as the Economic Aspect of Welfare index (EAW) proposed by Zolotas (1981). The issue was then reopened in the late 80s by Daly and Cobb (1989) who proposed the index of sustainable welfare (ISEW), further refined by Cobb and Cobb (1994). The ISEW has much in common with the MEW or the SMEW but with two important additions:

- An evaluation of natural resources depletion, measured as the investment necessary to generate a perpetual equivalent stream of renewable substitutes
- The distribution of income: Nordhaus and Tobin had themselves acknowledged in their paper that this was one of the dimensions missing from their index.

On the other hand, the ISEW does not include any monetary evaluation of leisure time, because of the difficulty of doing so.

The ISEW can be summed up with the following simple formula:

$$ISEW = C_{adj} + P + G + W - D - E - N$$

where

C_{adj} = consumer spending adjusted for inequality[15]
P = public expenditures excluding defensive expenditures
G = growth in capital and net change in international position
W = non monetarised contributions to welfare
D = defensive private expenditures
E = costs of environmental degradation

[15] The correction consists in multiplying by 1 minus the Gini coefficient: if there is no inequality, total household consumption is entirely taken into account. On the opposite, if ressources were concentrated in the hands of a single individual, the contribution of aggregate consumption to global welfare would be valued at zero.

N = depreciation of the environmental capital base.

A very similar indicator has been proposed since 1995 by the non-governmental organisation "redefining progress", the Genuine Progress Indicator (GPI) (see for instance Talberth, Cobb and Slattery, 2006). ISEW and GPI are often presented as alternative names for the same index. According to Bleys (2005) and Matthews (2006), versions of the ISEW and/or the GPI have been produced for the US, Canada, Australia, Austria, Chile, Germany, Italy, the Netherlands, Scotland, Sweden and the UK, Poland, a list to which we add Bleys' own evaluation for Belgium (Bleys, 2007).

As a general rule, messages delivered by these two indexes are quite different from the one that resulted from Nordhaus and Tobin's seminal paper. The levels of these indexes are lower than the MEW, due to the exclusion of leisure time and they are also lower than GDP, due to the incorporation of natural resource depletion and of income distribution. The magnitude of the gap varies across countries: Bleys (2005) and Gadrey and Jany-Catrice (2007) show that the gap between the ISEW and GDP is much higher for UK and the US than for Sweden, essentially due to different levels of income inequality. Even more important, growth of the ISEW and the GPI is much less than that of GNP or even declining. This led Max-Neef (1995) to argue in favour of a so-called "threshold hypothesis" according to which GDP growth contributed to welfare only up to a certain level, beyond which GDP and welfare move in opposite directions (for a counterargument, see Neumayer, 2000).

To our knowledge there is no application of either the ISEW or the GPI for France. On the other hand, the recent work by Fleurbaey and Gaulier (2006, 2007) can be related to the Nordhaus-Tobin tradition. Their approach is based on an explicit link between the index-bulding strategy and social choice theory. The principle consists in starting from the notion of « equivalent income ». When individuals differ along non-income dimensions, reference levels for these dimensions are chosen; this allows computing the « equivalent income » i.e. the monetary income that, associated to reference conditions, would make these people indifferent between these reference conditions and their actual position. Equivalent incomes within each countries are then aggregated according to a social choice function of the CES type. The correction to the simple average of equivalent incomes that is brought by this social choice function is of the same kind as the one applied to total household consumption in the ISEW and GPI approaches (i.e. multiplication by one minus the Atkinson-Kolm index). An important difference is that this procedure first aggregates the various dimensions of well-being for different individuals before aggregating across all individuals, while most other approaches typically combine dimensions of well-being that are already aggregated across individuals.

Data limitations imply that this methodology can be applied only to a restricted set of non monetary aspects of living conditions, and with various simplifications. In addition to inequality, the non monetary dimensions that are taken into account are leisure, unemployment risk, healthy life expectancy, household composition and environmental sustainability. No time series evaluations are provided. The index however allows comparison of living standards across OECD countries in 2004: this index leads to a ranking of countries that is significantly different from the one based on GDP, even if final results keep some correlation with GDP.

Another index partially based on corrected GDP and which has been constructed for a significant number of developed countries has been proposed by Osberg and Sharpe (see e.g. Osberg and Sharpe, 2002). But their approach also relies on the methodology of composite indicators and will therefore be presented in the next section.

4.2. Indexes dedicated to the measurement of sustainability

Mention shall also be made here of indexes that remain in the spirit of accounting approaches, but that are centred on the question of sustainability rather than welfare. The first one is the "genuine savings indicator" compiled by the World Bank. Genuine savings is a broader concept of savings than in traditional National Accounts including natural resources or capital and simple measures of human capital. The bottom line is that nations have to maintain or enhance their total resource base or capital stock to be on sustainable development paths in the longer term. Genuine savings or adjusted net savings are defined as net savings (net gross savings minus consumption of fixed capital) plus education expenditures minus the consumption of natural resources (fossil energy, mineral resources and forest) and the monetary evaluations of damages resulting from CO_2 emissions. It is a monetarized index whose main strength is its large geographical coverage. In 2005 the World Bank published the report "Where is the Wealth of Nations? Measuring Capital for the 21st Century", which presents data for Genuine Savings (GS) for some 140 countries. According to these estimates some 30 of the mostly developing countries exhibit negative genuine savings and are thus reducing their resource basis for the future.

The second index is the Ecological Footprint proposed by Wackernagel and Rees (1995) and sponsored by Redefining Progress (the association already mentioned in conjunction with the GPI and the WWF). We classify this index in this category of extended account approaches despite the fact that its results are not expressed in monetary terms. The reason for such a classification is that this indicator shares with accounting approaches the idea of reducing heterogeneous elements to one common measurement unit. The common unit used by the Ecological Footprint is the surface of habitable land requested to support current standards of living of the various countries. The ecological footprint was estimated to be more than 9 hectares by inhabitant in 2003 for North America and 5 in the European Union, both far in excess of the actual bio-capacities of the two geographical zones.

These indexes devoted to the measurement of sustainability raise the interesting question of how far we should try to integrate information on well-being and sustainability. Basically, one can consider the two separate notions: a high level of current well-being can be achieved at the price of lower sustainability; while conversely higher sustainability today may imply lower current well-being. This consideration underscores the importance of separate measures for these two concepts.

According to Neumark (2004), this means that indexes that combine the two dimensions in one single number lead to a large loss of information. Neumark argues in favour of presenting the two types of information simultaneously, *i.e.* a measure of well-being completed by the information on whether this level of well-being is sustainable or not. He illustrates his approach by a table combining information on sustainability (based on the Genuine Savings index, GS) with information on well-being (based on one of the composite indexes that will be presented in the next section, the Human Development Index). Neumark also suggest that the same strategy could be applied to other kinds of well-being indicators, including indexes of the "corrected GDP" type.

The conclusion that derives from such an exercise is that current levels of well-being are generally sustainable in developed countries, but are not in many developing countries. This result stems from the fact that the GS is only an index of "weak" sustainability, i.e. sustainability under the assumption that the accumulation of producible physical capital and of human capital can compensate for losses in natural non reproducible resources. This gives a bias in favour of high-income countries, where high levels of financial savings and of investment in human capital more than offset the depletion of the national stock of exhaustible resources. The concept of "strong" sustainability rather requires the full preservation of the total stock of natural resources: according to this criterion, no country in the world would probably be considered as being on a sustainable path.

The bias of the GS to the advantage of developed countries and its focus on the "weak" version of sustainability are some of the criticisms that have been directed at this indicator. Another limit is its country-by-country approach to sustainability, which neglects the importance of preserving natural

resources at a global level (for a review of these criticisms, see e.g. Everett and Wilks, 1999). The ecological footprint can be considered as providing a better view on the relative responsibility of developed countries in the global depletion of world natural resources.

Finally, it is worth to note that a joint initiative has been launched in 2005 by UNECE, OECD and Eurostat to provide a theoretical and conceptual framework on sustainable development indicators, and to better structure the work on these indicators in countries. The group will produce its final report in June 2008.

5. COMPOSITE INDEXES

To fill the needs of users for a comprehensive index allowing a synthetic analysis of trends is social conditions within countries and comparisons between countries, there is an alternative procedure that has proved much easier to implement and less demanding than pricing and valuation within the NA framework. The called "composite indicators approach" presented in this section consists in aggregating several elementary indexes to encompass a broad spectrum of dimensions affecting what the indicator wants to measure (human development, well-being, environmental sustainability, etc.). Unlike the "corrected GDP" indicators, this approach does not provide a unified way of measuring heterogeneous dimensions of well-being. The distinctive features of these indicators relate to the domains covered, the normalisation methodology used, and the weights used for aggregation[16]. In the following paragraphs, we present the detailed principles underlying the construction of the Human Development Index and of other indicators built on the same ideas, and then present more rapidly more recent initiatives and extensions.

The most well-known composite indicator is the Human Development Index (HDI) proposed by the United Nation Development Programme (UNDP) in 1990. To balance comparisons between countries based on GDP per capita in PPP (purchasing power parities), the UNDP extended the analysis to health and educational achievement, regarded as two major ingredients of development and progress. Health outcomes are measured by life expectancy at birth, in years. Educational achievement is measured through the average of adult literacy rate (2/3) and student enrolment rate at first-, second- and third- level (1/3). These three dimensions – economic prosperity (GDP), health (life expectancy) and education –, are attributed equal in importance in the overall index.

Once these three dimensions have been selected, the question is how to aggregate dollars, years and percentages. The HDI methodology is based on re-scaling each dimension relative to its most likely range of variation (but it could have been set from historically observed values). Maximum and minimum values for life expectancy are set at 85 and 25 years, respectively, so that the re-scaled index of life expectancy is *e.g.* 0.916 for an observed level 80 years[17]. The educational index is scaled along the full range available for a percentage, namely [0; 100]. Finally, GDP per capita in PPP (in log) is scaled relatively to a minimum of 100 $ and a maximum of 40 000 $. For countries whose GDP per capita exceeds the 40 000 $, their GDP index is set to 1. The Log function is adopted to characterize the assumed decreasing effect of GDP on and well-being as GDP increases.

The HDI index leads to a country-ranking that differs significantly from one based on GDP. For instance, the USA has the 2nd highest GDP per capita in 2005 but stand in 12th position in terms of HDI. Conversely, France jumps from 17th to 10th. Probably more robust, differences in HDI between developed countries are usually very small, while the HDI provides substantial changes in

[16] For more details on methodological issues see OECD-JRC (2005) "Handbook on Constructing Composite Indicators: Methodology and User Guide". For a survey of composite indices measuring country performances see Bandura (2006).
[17] The formula for the scaled index related to health, *I_h*, is given by : *I_h* = (Life Expect. -Min) / (Max-Min) = (80-25)/(85-25)=0.916

international ranking for middle and low-income countries : countries such as Madagascar, Ecuador or Georgia improve their rank by more than 20 in the HDI comparison.

During the 1990's, several academic works extended that methodology to broader aspects of development and welfare, aiming at contrasting social trends with GDP growth. The Index of Social Health for the USA (elaborated by M. and M-L Miringoff since 1987 and quite well-known since 1996, Miringoff et al., 1999) aims to provide a comprehensive view of social health looking at problems that affect Americans at various stages of their life—childhood, youth, adulthood, and the elderly—as well as problems that affect all ages. This ISH is based on sixteen social indicators, grouped by ages : infant mortality, child poverty, child abuse, teenage suicide, teenage drug abuse, high school dropouts, unemployment, wages, health insurance coverage, poverty among the elderly, out-of-pocket health costs among the elderly, homicides, alcohol-related traffic fatalities, food stamp coverage, affordable housing, and income inequality. This index highlights the growing divergence from GDP since 1970.

Similar approaches were applied in Canada (Personal Security Index, available since 1998) and France (BIP40, available since 2002) to develop indexes of social conditions. In the case of Canada, the Personal Security Index includes a slightly different set of variables, while in the case of France the BIP40 includes a substantially broader set of variables, from workplace conditions to health inequalities, housing expenditures and education failures. The main findings are similar to those highlighted by the ISH for the United States: for example, the BIP40 in France has risen steadily since 1980 (implying larger inequalities and worse social outcomes) with some short-term fluctuations linked to business cycle (mostly due to unemployment reduction).

Since the early 2000's, researchers from Yale and Columbia[18] applied the same methodology to focus on environmental matters and sustainability issues through an "Environmental Sustainability Index" (ESI) and an "Environmental Performance Index" (EPI) (Estes et al., 2005). The ESI aggregates 76 variables into 21 intermediate indicators, such as air and water quality (e.g. SO2 and Nox emissions per populated land area…), waste reduction (e.g.: waste recycling rates…), and Greenhouse Gas Emissions (e.g. emissions per GDP…). The EPI is a reduced form of ESI, based on 16 indicators (outcomes), and is more policy oriented: as such, values are scaled according to pre-established policy targets, instead of sample observed data.

The Index of Economic Well-Being (IEWB) developed by L. Osberg and A. Sharpe (Osberg and Sharpe, 2002) is a mix of different approaches. The index covers simultaneously current prosperity (based on measures of consumption), sustainable accumulation, and social topics (reduction in inequalities and protection against "social" risks). Environmental issues are addressed by considering the costs of CO2 emissions per capita. Consumption flows and wealth accumulation (defined broadly, to include R&D stock, a proxy for human capital, and the costs of CO2 emissions) are evaluated according to National Accounts methodology. Inequality is monitored with a Gini index and a measure of poverty intensity (Sen-Shorrocks-Thon index). Finally, four key social risks are identified, namely unemployment, illness, single parent poverty and old-age poverty. Their costs are estimated as the probability of being in that condition times the financial compensation provided by the welfare system. For instance, unemployment risk is evaluated by multiplying the unemployment rate by the average income replacement rate for unemployed people. Normalisation of each dimension is handled as usual through linear scaling over the historical range of values observed for all the countries considered by Osberg and Sharpe (nine OECD countries) and aggregation relies on equal weights. Among the countries considered, Norway has the highest level of economic well-being, followed by Italy, Germany, Sweden and France. The four Anglo-Saxon countries trail back, with Canada in eighth place and the United States in last place. Jany-Catrice and Kampelmann (2007) revised the Index of Economic Well-Being (IEWB) for France with enhanced data over a larger time period. Their results confirmed the divergence between GDP and IEWB since the end of the 1980's, largely due to the lack of improvement in reducing inequalities and improving economic security.

[18] http://www.yale.edu/esi

The production of this type of indexes is currently flourishing, as social and environmental statistics become more easily available and the methodology remains simple. But the *ad hoc* nature of the selection of dimensions entering the aggregate index, and the lack of normative basis for the weights are serious limits of this approach (Accardo and Chevalier, 2005). Building on household's surveys where the question of well-being preferences and ranking are introduced could be fruitful, as illustrated in the next section. As a first attempt towards this, we shall evocate the only index (to our knowledge) tackling this shortcoming, namely the Canadian personal security index. The relative importance of the three dimensions of the index (economic security, health security, physical safety) was based on a survey where people were asked to select the most important element within those three. The corresponding frequencies were used as weights for the three dimensions entering the overall index (0.55 for health, 0.35 for economic security, and 0.10 for physical safety).

6. SUBJECTIVE APPROACHES

A last type of approach to measuring social conditions is based on measures of subjective well-being (SWB). As individuals are the most interested in their own well-being, one can consider that they are the best judges of their quality of life. As a result, "it is a straightforward strategy to ask them about their well-being" (Frey and Sutzter, 2002). This strategy has the advantage of not requiring a unified definition of well-being. Taking the answers to this question as proxies for subjective well-being, it is then possible to define indicators based on the mean, the median, or the variance of the distribution. Some authors advocate the use of this type of indices to complement standard GDP measures (Diener, 2000 and 2006, Kahneman and Krueger, 2004 and 2006). Nevertheless, indicators based exclusively on subjective data are rare, and only few combine subjective and objective measures.

6.1. A growing interest by economists

Psychologists have measured individual well-being by using subjective questions since the late 1960s. The interest by economists in life satisfaction is more recent but growing very rapidly (Kahneman and Krueger, 2006). Both psychologists and economists use the same type of questions to evaluate subjective well-being. These questions most commonly ask people: "All things considered, how satisfied are you with your life in general (or with your present job or business, or with your health …?)". Individuals respond on an ordinal scale, ranging from 1 to *n*, where 1 means "totally unhappy" and *n* means "totally happy". The two domains most widely explored are the relationship between happiness and income on the one hand, and happiness and employment status on the other hand.

6.2. Validity and reliability

How well do happiness scores measure utility? The subjective well-being approach is valid under three conditions that ensure that comparison between answers is possible. First, that the respondents are able to evaluate their life on a numerical scale and have no difficulty in answering. Second, that they understand the question in a similar way. Third, that they use the same scale.

To what extent are these conditions satisfied? Some studies (van Praag, 1991) suggest that people sharing the same language understand questions in the same way. On the opposite, differences in culture and language probably affect the way people answer, and this may question the validity of subjective well-being indicators in cross-national comparisons. For example, countries of Northern Europe report higher satisfaction scores than those of Southern Europe, and this is true for all satisfaction domains (general satisfaction with life, satisfaction with job security, satisfaction with income) while Latin American countries consistently report higher levels of subjective well-being than other countries with similar GDP per capita .

Other research reports that the reliability of SWB measures is lower than that found for common microeconomic variables. An easy way to test reliability is to ask the same question twice to the same individuals within a short period of time, for example two weeks apart. The test-retest correlation coefficient between the two answers is significantly smaller for subjective well-being (0.6) than for education or personal income (0.9) (Krueger and Schkade, 2007). Note however that if the errors are random rather than structural, the measurement instrument is not systematically biased. The order of questions is also found to affect the answers that are given[19].

All in all, most studies conclude that measures of SWB contain a great deal of validity (Diener, 1994, Diener et al., 1999, Layard, 2005, Kahneman and Krueger, 2006).

6.3. Evidence in cross-sections

On micro-surveys and over a short period of time, subjective well-being is found to be correlated with objective variables. This result, that remains true when unobserved heterogeneity is controlled for, suggests that subjective well-being can be fruitfully applied to the understanding of economic behaviour.

6.3.1. Subjective well-being and income

In cross-sections of people at a given time, well-being is found to be positively correlated with money income. Ferrer-i-Carbonnel (2005) relates general satisfaction with life and income using micro-panel data drawn from the GSOEP. Each individual is compared to a reference group that contains all the individuals with a similar education level, the same age bracket, and living in the same region. The main results are the following. Income has a small but significant effect on individual well-being. The impact of income on individual well-being is larger for the poorer. Increases in family income accompanied by identical increases in the income of the reference group do not lead to significant changes in well-being. The larger an individual's own income is in comparison with the income of the reference group, the happier the individual is. The comparison effects are asymmetric: poorer individuals' well-being is negatively influenced by the fact that their income is lower than that of their reference group, while richer individuals do not get happier from having an income above the average.

6.3.2. Satisfaction in other domains

Beyond general satisfaction with life, individuals are able to distinguish between various domains of life and to evaluate their satisfaction for each of these: job, health, housing, leisure, social life…

Among these domains, job satisfaction has been the most widely explored. A number of studies have shown that job satisfaction is a strong predictor of job quits. The analysis of job satisfaction can also be used for economic policy choices. One example is the relation between satisfaction with job security and the two labour market institutions designed to protect workers against labour market risk: employment protection legislation and unemployment insurance benefits. After controlling for selection into job types, Clark and Postel-Vinay (2007) find that workers feel most secure in permanent public sector jobs and least secure in temporary jobs. Furthermore, workers feel more secure in countries where UI benefits are more generous and less secure in countries where jobs are more protected.

Finally happiness data have been used to calculate the monetary equivalents of noise pollution (Van Praag and Baarsma, 2005), climate change Welsch (2006), terrorism (Frey, 2007).

[19] In one survey, for example, individuals were asked the following two questions: (1) "How happy are you?" and (2) "How many dates did you have in the last month?" (Kahneman, 1999). If the happiness question was asked first, the correlation between the two answers was 0.12. If the dates question preceded the happiness question, the correlation was 0.66.

6.4. No correlation between happiness and income in the long run

In the long run and at the macro level, happiness and subjective well-being are not correlated with income or GDP. This finding is known as the Easterlin paradox, since it has been first pointed out by Easterlin (1974, updated in 1995). He shows that, in spite of a 30% increase in the American GDP per head, the share of individuals that declare to be "very happy" in the General Social Survey did not increase between 1972 and 1993. This result is confirmed by Blanchflower and Oswald (2004) who find no increase in the average satisfaction index in the US and UK from 1970 to 1999. Raising the income of all does not increase the happiness of all in the long run. This paradox is not specifically an US phenomenon and generalizes to developed countries. However it does not hold for developing or transition economies (see *e.g.* Senik, 2004 and 2005).

This finding casts doubt on the value of indicators based on subjective data. A valuable subjective indicator should move in the long run when objective conditions (money income, but also life expectancy, leisure time, housing quality, etc.) significantly improve.

Several explanations have been proposed to account for the "Easterlin paradox" (Clark et al., 2007):

- Life satisfaction is reported on a bounded scale.
- Once an individual income rises above a certain threshold, the main driver of higher well-being are friends or a good family life rather than income.
- Norms and aspirations change over time. Aspirations change with the information and situation reached by individuals. Oswald (1997), using the same database than Easterlin but restricted to a shorter period of time (1946-1957), finds that the share of individuals declaring themselves as being happy increases over time. The explanation is that, on a short period of time, individuals have not fully revised their aspirations.
- Richer people spend more time in activities that are associated with higher tension and stress such as work, shopping, childcare activities, and active leisure (Kahneman et al., 2006).

6.5. Applications

Subjective measures of life-satisfaction have only rarely been used to build summary indicators of well-being. An exception is the Inequality-Adjusted Happiness (IAH) produced by Veenhoven and Kalmijn. This indicator is based on the mean and the variance of the distribution of questions on satisfaction with life as whole. The index gives equal weights to the utilitarian and egalitarian viewpoints.

Subjective well-being may also enter synthetic indicators that combine subjective and objective measures from a number of domains. Such indicators are also rare. One exception is the Advanced Quality Of Life index proposed by Diener (1995). This indicator includes both subjective/qualitative indicators and objective/quantitative indicators (physicians per capita, savings rate, per capita income, subjective well-being, college enrolment rate, income inequality, and environmental treaties signed). This index is particularly relevant for developed countries (while the Basic QOL Index, based on quantitative indicators, is more relevant for developing countries).

Another example is the Happy Life Expectancy index developed by Veenhoven (1990). The HLE index aims to be a proxy measure of well-being in nations. It combines estimates of life-expectancy (objective measure) with subjective life satisfaction (subjective measure), in the form of the product of two variables. The index has been computed for 48 nations in the early 1990's. It varies between 32 and 62 in this set of nations. Thus it has some discriminative power. Moreover the ranking of nations seems to be realistic as developed countries are among the first ones. Lastly correlations with various characteristics that are currently seen as required for a good life (education level, self-perceived freedom, physical safety, etc.) give sensible results.

But there are some defects too. First, East-European countries such as Bulgaria, Russia, Latvia, Lithuania, Romania and others are among the worst ranked nations. Even if such a global ranking is

not surprising, the lack of dispersion within that group of countries questions the discriminatory power of the index. More importantly, some statistical relationships with national characteristics are unexpected and hard to interpret. For example the HLE index is positively and significantly correlated with the unemployment rate. Last, the index may be inadequate to measure evolution of well-being over time at least in developed countries. If average satisfaction does not change over time notably due to comparison effects, this means that the long-term growth of Happy Life Expectancy index rests on the increase in life expectancy only.

We shall conclude by quoting here another index proposed by Cornilleau (2005). Though not based on subjective data, it is in the spirit of Easterlin's seminal indicator and its "relative income" interpretation: individual well-being does not depend on the absolute level of (individual) income but on the ratio of income to that of other people. According to Cornilleau, each person is endowed with an initial level of well-being proportional to the relative income of his native family. Next, well-being evolves as income per capita. Consequently, the evolution of social well-being is driven not only by the rate of economic growth but also by the evolution of inequalities in income distribution. In other words when economic growth stalls (and keeping life expectancy constant), reducing inequalities is the alternative way to increase well-being.

These last two indicators share the same property. They implicitly (Veenhoven) or explicitly (Cornilleau) take into account a "relative income hypothesis". Both indicators raise the issue of a long-term stabilization. This is in sharp contrast for example with "adjusted GDP" indexes which correlate with economic growth over time unless GDP is systematically and substantially corrected each period.

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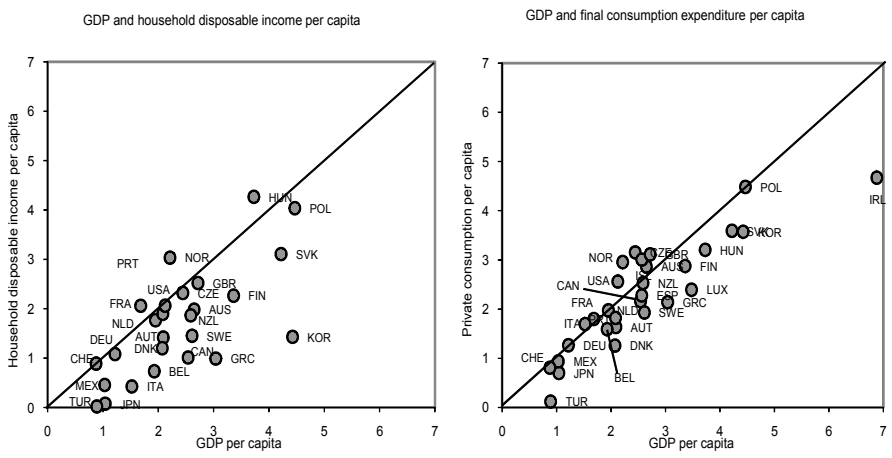
ANNEX 1 . FACTSHEETS ON INITIATIVES RELATED TO THE MEASUREMENT OF SOCIAL PROGRESS UNDERTAKEN BY INTERNATIONAL ORGANISATIONS

Although most measures of social progress are the results of initiatives of academics and non-government organisations, inter-governmental agencies (IGOs) have also undertaken in recent years a number of initiatives bearing on this issue. This annex presents summary "factsheets" pertaining to a number of them. It covers work undertaken by the OECD, the UN system, the European Commission and the World Bank. For each initiative covered, the factsheet provides information on the initiating agency, the nature of work (e.g. conference, one-off analysis and recurrent statistical reports), the dimensions covered and indicators used, as well as an example of how these measures are presented. While the selection is necessarily partial, it provides a broad-range overview of the type of work pursued by IGOs that might inform the work of the Commission.

The initiatives covered in this Annex differ in terms of scope and objective. In only two instances (the *Human Development Index* developed by the UNDP, and the *Genuine Savings* measure pioneered by the World Bank) these initiatives have led to the development of a synthetic indicator that purports to provide a comprehensive measure of social conditions in various countries. In a few other cases, the factsheets relate to one-off initiatives related to the broad agenda of measuring progress or well-being (the OECD review of '*alternative measures of well-being*', and the recent conference on "*Beyond GDP*" jointly organised by the EU, the OECD, the Club of Rome and the WWF) or to ongoing projects that have not yet delivered concrete results (the work of the UNECE-OECD-EUROSTAT working group on '*sustainable development indicators*', and the OECD Global Project on *'measuring the progress of societies'*).

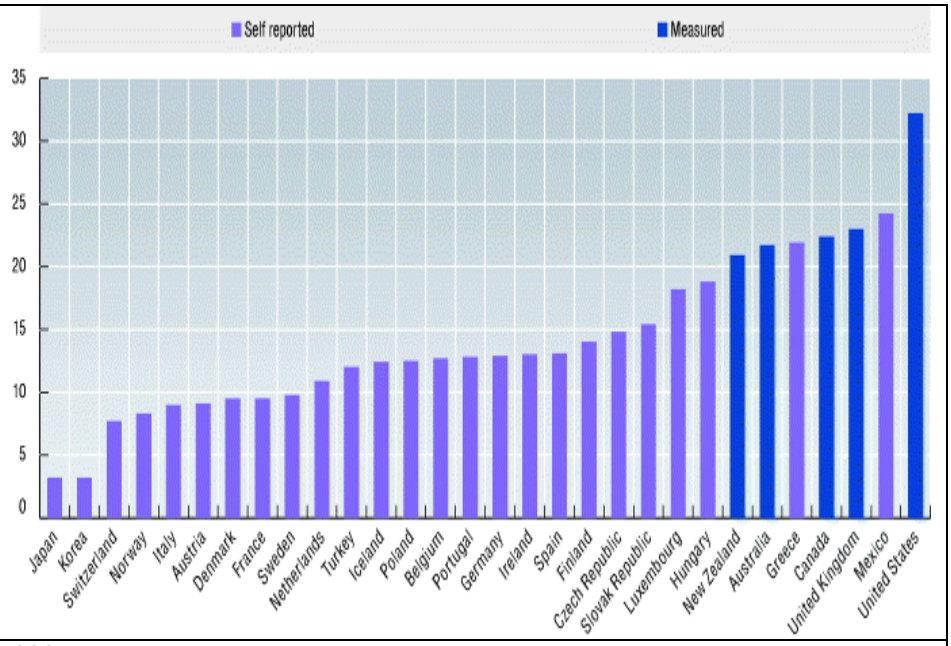
Most of the factsheets presented below refer to indicator-work pertaining to the various dimensions that make up the broad notion of social progress: economic, social, environmental and governance indicators. While not leading to a single synthetic measure of social progress, these initiatives identify those dimensions that have a claim to be critical for any assessment of social progress and quality of life in industrialised countries. These initiatives differ, however, in terms of purpose (e.g. monitoring policies, communication functions), coverage and other important dimensions.

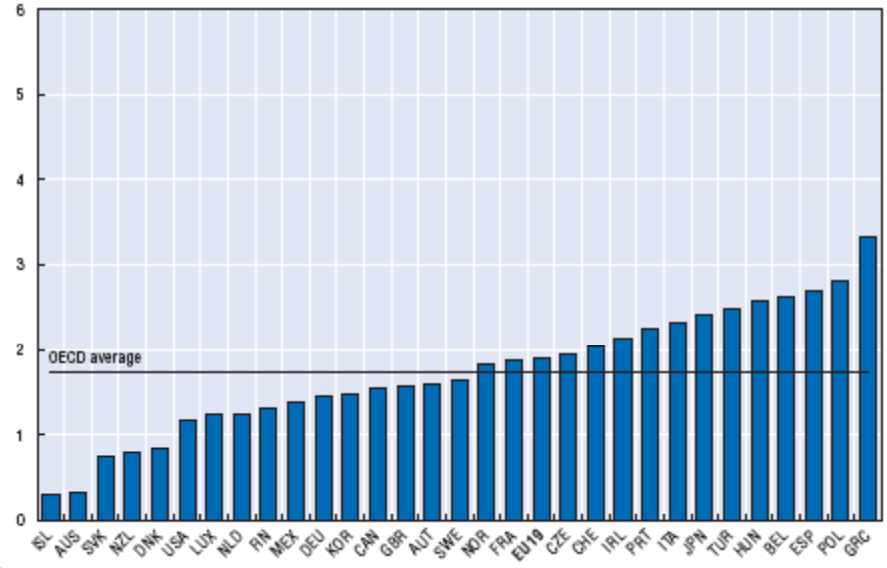
Organisation/name	OECD – Alternative Measures of Well-being
Product	One-off Working Paper released in 2006, plus special chapters in OECD reports *Going for Growth* and *Society at a Glance* and *Statistical Brief.*
Objective	To assess whether GDP per capita is an adequate proxy as a measure of well-being or whether other indicators – used as substitutes or complements to GDP per capita – are more suitable for that purpose
Type of indicator	Set of indicators
Scope/dimensions	Comparative evidence based on 4 approches to the measurement of well-being: 1. Measures of economic resources based on national accounts, both for the economy as a whole and for the household sector; 2. Measures that extend national accounts aggregates to other dimensions that contribute to well-being (i.e. leisure time, household size and income inequality); 3. Measures of social outcomes and how they relate to GDP per capita; 4. Subjective measures of happiness and life satisfaction
Indicators	1. Economy as a whole: GDP, NDP, NNI per capita. Household sector: Household disposable income, consumption expenditure per capita, final and "actual" (i.e. including services provided by governments and non-profit institutitons). 2. GDP per capita adjusted for leisure time of workers (relative to the US); household disposable income adjusted for changes in household size; "equally distributed" household disposable income for different coefficients of aversion to inequalities. 3. 16 indicators of social outcomes in the fields of self-sufficiency, equity, health and social cohesion; synthetic index of well-being based on these social indicators. 4. Survey measures of mean happiness and satisfaction with life as a whole from various surveys (ISSP, World Values Survey).
Geographical coverage	OECD countries
Example	**Real annual growth in household's disposable income, real final consumption expenditure and real GDP per pacita, 1994-2003** 
Published since	One-off research published in 2006 and 2007
Reference	http://www.oecd.org/dataoecd/13/38/36165332.pdf (DELSA WP) http://www.oecd.org/dataoecd/26/61/36967254.pdf (Statistical Brief)

Organisation/name	Global Project on Measuring the Progress of Societies. The OECD hosts this project. Participants include the World Bank, European Commission, United Nations and some of its regional agencies, UNDP, regional development banks, academics, NGOs, and private secor.
Product	World Forums and other initiatives
Objective	To raise citizens awareness of what constitute progress for their

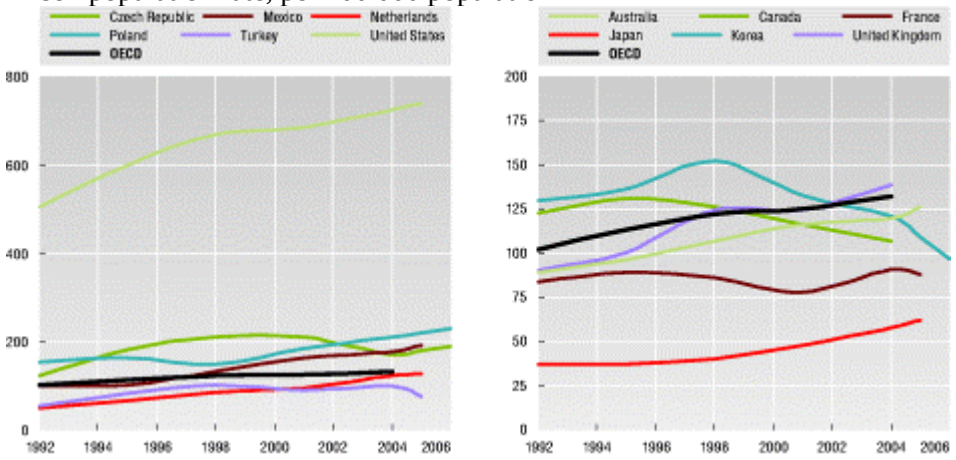
	society in an effort to widen debate and understanding towards a more holistic assessment of progress and well-being This should lead to increased accountability among policy-makers and a better functioning democracy.
Scope/dimensions	*Advocacy*: encourage societies to to engage citizens in a dialogue about what progress means for them and how it can be measured. *Develop best practices*: aimed at those who want to measure progress or aspects thereof (with special attention paid to developing indicators in emerging such as good governance and social cohesion). *Develop new ICT tools*: to bring the evidence to citizens and ensure that statistics are transformed into knowledge and policy.
Geographical coverage	Global
Example	**Istanbul Declaration** In June 2007, the OECD, in collaboration with other international organizations, organized the second World Forum on "Measuring and Fostering the Progress of Societies". Some 1200 people, from over 130 countries attended the Forum in Instambul. The conference led to the *Istanbul Declaration*, signed by the European Commission, the Organisation of the Islamic Countries, the OECD, the United Nations, UNDP, UNICEF, UNESCO, the United Nations Fund for Partnership, the World Bank, and several other organizations. The Declaration calls for action to identify what "progress" means in the 21st century and to stimulate international debate, based on solid statistical data and indicators, on both global issues of societal progress and how societies compare. In particular, the Declaration calls for actions to: • Encourage communities to consider for themselves what "progress" means in the 21st century. • Share best practices on the measurement of societal progress and increase the awareness of the need to do so using sound and reliable methodologies. • Stimulate international debate, based on solid statistical data and indicators, on both global issues of societal progress and comparisons of such progress. • Produce a broader, shared understanding of changing conditions, while highlighting areas of significant change or inadequate knowledge. • Advocate investment in building statistical capacity, especially in developing countries, to improve the availability of data and indicators needed to guide development programs and report on progress toward international goals, such as the Millennium Development Goals.
Running since	2004 (first World Forum, Palermo); a third World Forum will be held in Korea in late 2009.
Reference	www.oecd.org/oecdworldforum

Organisation/name	OECD – Factbook – Economic, Environmental and Social Statistics
Product	Factbook
Objective	To provide a global overview of economic, social and environmental trends based on OECD statistics,.
Type of indicator	Set of indicators
Scope/dimensions	1. Population 2. Macroeconomic trends 3. Economic Globalisation 4. Prices 5. Energy 6. Labour market 7. Science and technology 8. Environment 9. Education 10. Public finance 11. Quality of life 12. Special focus 2007: migration
Indicators	1. Evolution of the population; regional population; ageing societies; elderly population by region. 2. Size of GDP; national income per capita; regional GDP; evolution of GDP; household saving; investment rates; inflation; steel production; labour productivity; multi-factor productivity; value added by activity; evolution of value added by activity; small and medium-sized enterprises. 3. Share of trade in GDP; trade in goods; trade in services; trading partners; balance of payments; FDI flows and stocks; activities of multinationals. 4. Consumer price indices (CPI); producer price indices (PPI); long-term interest rates; rates of conversion; effective exchange rates. 5. Primary energy supply; energy supply and economic growth; energy supply per capita; electricity generation; renewable energy; energy production; oil production; oil prices. 6. Employment rates by gender; employment rates by age group; part-time employment; self-employment; hours worked; unemployment rates; long-term unemployment; regional unemployment. 7. Expenditure on research and development; researchers; patents; size of the ICT sector; investment in ICT; computer and internet access by households; exports of information and communications equipment, telephone access. 8. Water consumption; fisheries; emission of carbon dioxide; municipal waste. 9. International student assessment; tertiary attainment; expenditure on tertiary education; public and private education expenditure. 10. Government deficits; government debt; social expenditure; agricultural support estimates; government support for fishing; official development assistance; total tax revenue; taxes on the average worker. 11. Life expectancy, infant mortality; obesity; public and private health expenditure; tourism: hotel nights; recreation and culture; youth inactivity, income inequality; prison population; road network; road motor vehicles and road fatalities. 12. trends in inflows of foreign nationals; immigration by category of entry; inflows of asylum seekers trends in migration; immigrant population; immigrant population by region of origin and gender; educational outcomes for children of immigrants; education attainment of immigrants; migration of the highly educated; employment rate of the foreign-and the native-born; remittances.
Geographical coverage	OECD member countries and selected non-member countries.
Example	**Obesity** Percentage of population aged 15 and above with a BMI greater than 30, 2004 or latest available year

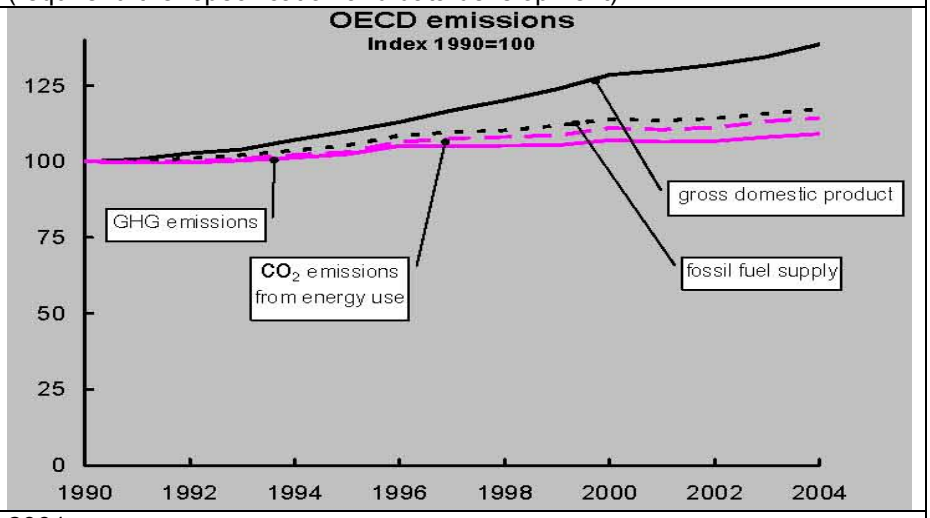
	
Published since	2005
Reference	http://puck.sourceoecd.org/vl=909004/cl=14/nw=1/rpsv/factbook/

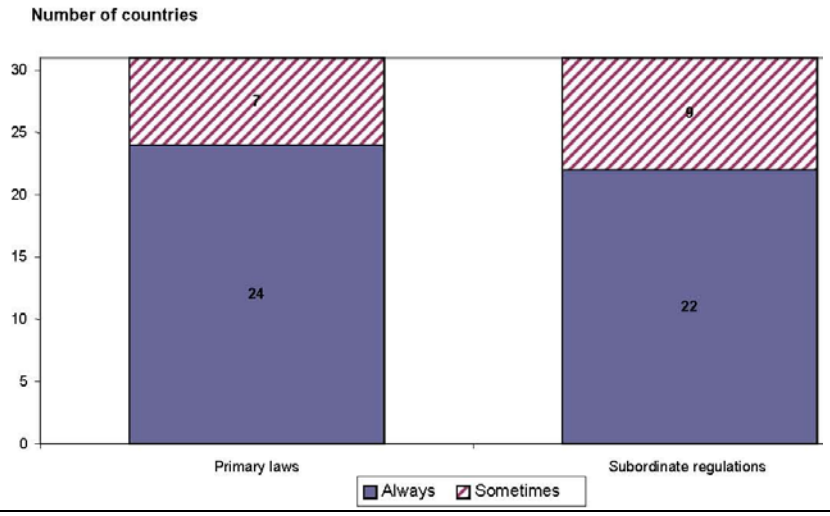
Organisation/name	OECD Economics Department – Structural Indicators
Product	*Going for Growth Economic Policy reforms*
Objective	Benchmark country performance in responding to country specific recommendations aimed at improving labour productivity and labour use
Type of indicator	Set of structural policy indicators
Scope/dimensions	Five structural priorities: 1. Product market regulation; 2. Human capital; 3. Labour markets, overall; 4. Labour taxes; 5. Labour market policies.
Indicators	Structural Policy Indicators (based on 2008 edition) *Product market regulation:* extent of public ownership; regulatory burden on business procedures; barriers to entrepreneurship; barriers to entry; barriers to foreign direct investment; regulations (transport, energy, post and telecommunications, retail distribution, professional services); producer support estimate to agriculture; importance of external trade tariffs; public investment. *Human capital*: educational attainment (upper secondary, tertiary); educational achievement (lower secondary); health expenditure. *Labour markets, overall:* minimum wages, minimum cost of labour; net income replacement rates for unemployment. *Labour taxes*: average and marginal tax wedge on labour; implicit tax on continued work; implicit tax on returning to work. *Labour market policies*: income support for disability and sickness; indicator of employment protection legislation.
Geographical coverage	OECD member countries
Example	**Resstrictiveness of regulatory burden on business procedures** Indiator scale of 0-6 from least to most restrictive 
Published since	2005
Reference	http://www.oecd.org/document/58/0,3343,en_2649_33733_40157242_1_1_1_1,00.html

Organisation/name	OECD, Directorate for Employment, Labour and Social Affairs – social indicators
Product	*Society at a Glance: OECD Social Indicators*
Objective	Provide quantitative evidence on whether our societies are getting more or less equal, healthier, and cohesive.
Type of indicator	Set of indicators
Scope/dimensions	1. *General context*

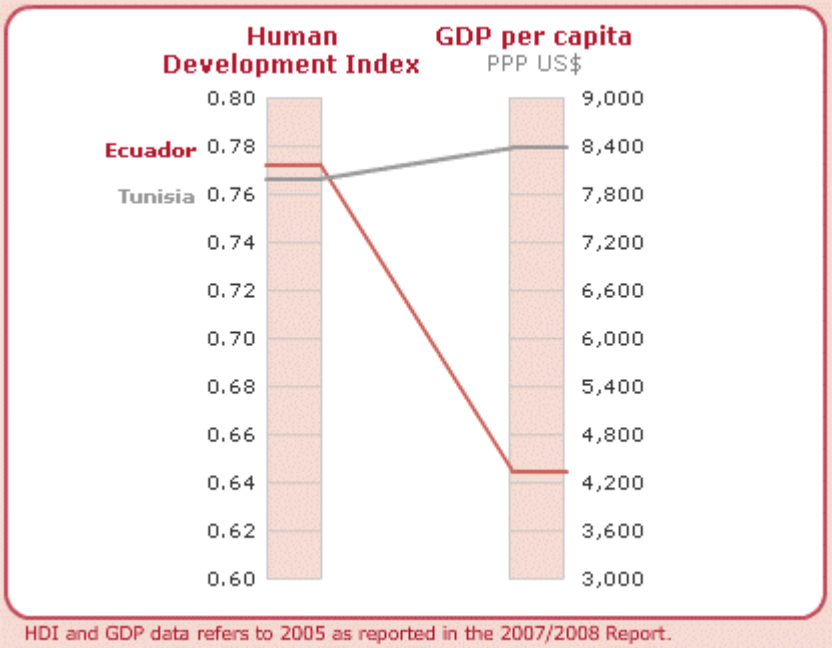
	2. *Self-sufficiency* (labour market, education). 3. *Equity* (income distribution, poverty). 4. *Health* (health outcomes and policies). 5. *Social cohesion* (crime, suicides, volunteering, life-satisfaction)
Indicators	Indicators vary by issue. Sample based on the 2006 report: *General Context*: National Income per capita; Age-dependency Ratios; Fertility Rates; Migration; Marriage and divorce *Self-sufficiency*: Employment; Unemployment; Mothers in paid Employment; Childcare costs; Tax Wedge on Labour; Out-of-work benefits; Students' performance. *Equity:* Material deprivation; Earnings Inequality; Gender Wage Gaps; Intergenerational Mobility; Public Social Spending; Total Social Spending; Poverty Persistence; Housing Costs; Old-Age Pension Replacement Rates *Health:* Life expectancy; Health Care Expenditure; Low birth Weight; Sick-related Absences from work; Long-term Care Recipients; Health Inequalities *Social cohesion:* Voting; Prisoners; Suicides; Work Accidents; Strikes; Trust in Political Institutions; Life Satisfaction.
Geographical coverage	OECD member countries
Other observations	*Society at a Glance* resumes the OECD Social Indicator Programme that stared in the 1970s). Moreover social indicators may be represented along a two-dimensional classification: 1) "nature" of the indicators (social context, social status, societal responses); 2) "policy field" covered (self-sufficiency, equity, health and social cohesion)
Example	**A larger share of OECD population is in prison** Prison population rate, per 100 000 population 
Published since	2000 (bi-annual); last issue 2006.
Reference	www.sourceoecd.org/societyataglance

Organisation/name	OECD Environment Directorate – Environmental Indicators
Product	*Key Environmental Indicators*
Objective	Tracking environmental progress, support of policy evaluation, information of the public
Type of indicator	Set of indicators
Scope/dimensions	Pollution issues and natural resources and assets
Indicators	**Pollution issues** 1. Climate Change: CO2 emission intensities, index of greenhouse gas (GHG) emissions 2. Ozone layer: indices of apparent consumption of ozone-depleting substances 3. Air quality: SOx and NOx emission intensities 4. Waste generation: municipal waste generation intensities

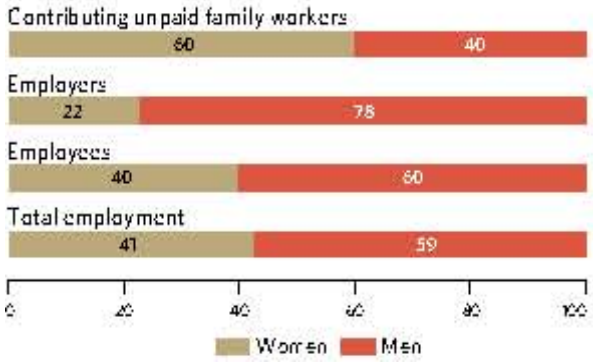
	5. Freshwater quality: wasterwater treatment connection rates **Natural resources and assets** 6. Freshwater resources: intensity of use of water resources 7. Forest resources: intensity of use of forest resources 8. Fish resources: intensity of use of fish resources 9. Energy resources: intensity of energy use 10. Biodiversity: threatened species
Geographical coverage	OECD countries
Other observations	Distinction is made between available indicators and medium term indicators (require further specification and data development)
Example	
Published since	2001
Reference	www.oecd.org/environment

Organisation/name	OECD Directorate for Public Governance and Terrirorial Development – Governance Indicators
Product	*Government at a Glance (forthcoming)*
Objective	Help member countries to better assess, plan and measure their public sector reform agenda.
Type of indicator	Set of Indicators
Scope/dimensions	• Sector efficiency and institutional effectiveness (insights into results of service provision via different institutional and managerial arrangements). • Observed relationships (what changes in public sector processes are associated with changes in public sector results). • Absorptive capacity (the impact on productivity of softer budget constraints following significant increases in sector expenditures).
Indicators	The indicators have not been defined yet. The project will encompass six categories of variables: revenues; inputs; public sector processes; outputs; outcomes; and antecedents or constraints that contextualize government efficiency and effectiveness.
Geographical coverage	OECD member countries
Other observations	*Government at a Glance* will comprise measures of both the market and non-market activities of government and government-owned enterprises. The public sector includes what the SNA recognises as general government and the government owned part of the (quasi-) corporate sector. However, experimentally, it also pays attention to other activities undertaken outside of core governmental structures that are partly funded through taxation or other public sector revenues.
Example	**Public consultations in OECD countries when developing draft regulations** 
Published since	2009 (forthcoming)
Reference	gov.contact@oecd.org

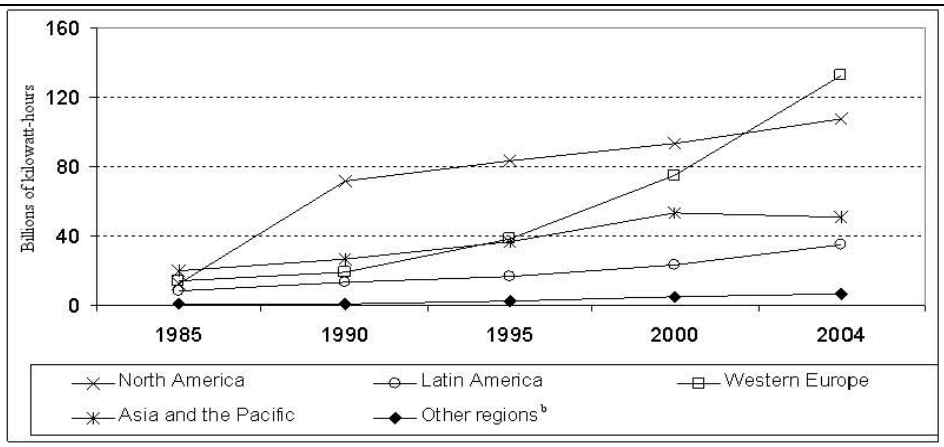
Organisation/name	United Nations Development Program – Human development index
Product	*Human development index*
Objective	Global assessment of country achievements in different areas of human development
Type of indicator	Synthetic indicator
Scope/dimensions	Longevity, Knowledge, Standard of living

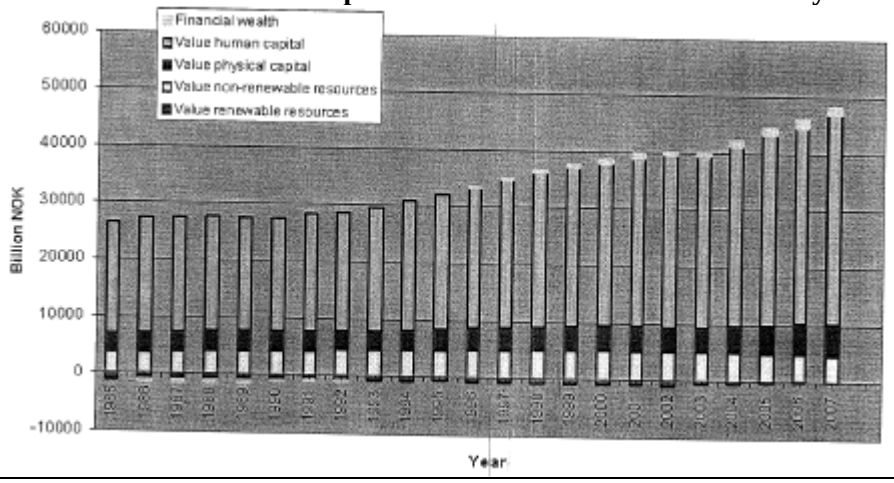
Indicators	-life expectancy at birth -adult literacy -combined gross enrolment in primary, secondary and tertiary level education, -gross domestic product (GDP) per capita in Purchasing Power Parity US dollars
Geographical coverage	175 countries
Other observations	Several indicators coexist: HDI and GDI (gender-related development index)
Example	
Published since	1990
Reference	http://hdr.undp.org/en/statistics/data/

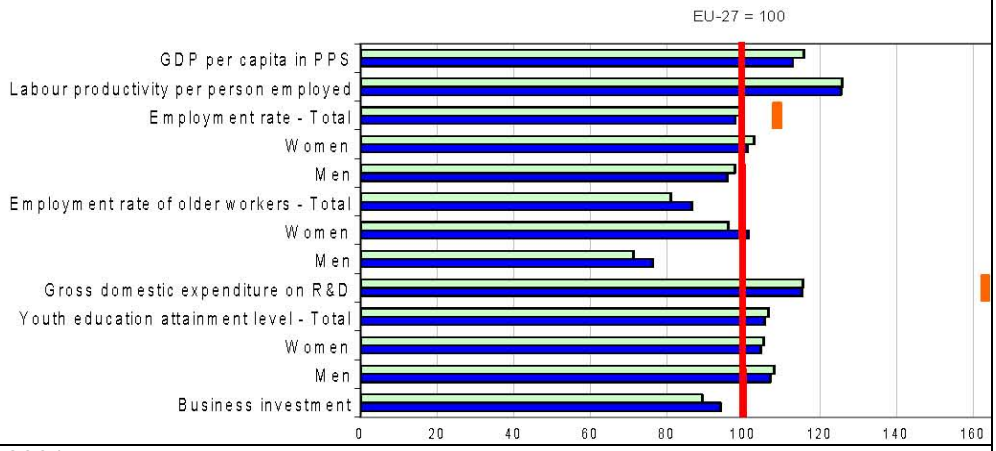
Organisation/name	United Nations – Millennium Development Goals
Product	A universal framework for development
Objective	8 main goals to be achieved by 2015: 1. Eradicate extreme poverty and hunger 2. Achieve universal primary education 3. Promote gender equality and empower women 4. Reduce child mortality 5. Improve maternal health 6. Combat HIV/AIDS, malaria and other diseases 7. Ensure environmental sustainability 8. Develop a global partnership for development
Type of indicator	Set of indicators
Scope/dimensions	Poverty, hunger, education, gender equality, health, environment, development
Indicators	*Eradicate extreme poverty and hunger*: Proportion of population below $1 (PPP) per day; poverty gap; share of poorest quintile in national consumption; growth rate of GDP per person employed; employment-to-population ratio; share of employed people living below $1 (PPP) per day; share of own-account and contributing family workers in total employment; prevalence of underweight children under-five years of age; share of population below minimum level of dietary energy consumption. *Achieve universal primary education*: Net enrolment ratio in primary education; proportion of pupils starting grade 1 who reach last grade of primary; literacy rate of 15-24 year-olds, women and men. *Promote gender equality and empower women*: Ratios of girls to boys in primary, secondary and tertiary education; share of women in wage employment in the non-agricultural sector; proportion of seats held by women in national parliament. *Reduce child mortality*: Under-five mortality rate; infant mortality rate; proportion of 1 year-old children immunised against measles *Improve maternal health*: Maternal mortality rate; proportion of births attended by skilled health personnel; contraceptive prevalence rate; adolescent birth rate; antenatal care coverage (at least one visit, at least four visits); unmet need for family planning. *Combat HIV/AIDS, malaria and other diseases*: HIV prevalence among population aged 15-24 years; condom use at last high-risk sex; proportion of population aged 15-24 years with comprehensive correct knowledge of HIV/AIDS; ratio of school attendance of orphans to school attendance of non-orphans aged 10-14 years; proportion of population with advanced HIV infection with access to antiretroviral drugs; incidence and death rates associated with malaria; proportion of children under 5 sleeping under insecticide-treated bednets and Proportion of children under 5 with fever who are treated with appropriate anti-malarial drugs; incidence, prevalence and death rates associated with tuberculosis; proportion of tuberculosis cases detected and cured under directly observed treatment short course. *Ensure environmental sustainability*: Proportion of land area covered by forest; CO2 emissions (total, per capita and per $1 GDP); consumption of ozone-depleting substances; proportion of fish stocks within safe biological limits; proportion of total water resources used; proportion of terrestrial and marine areas protected; proportion of species threatened with extinction; proportion of population using an improved drinking water source; proportion of population using an improved sanitation facility; proportion of urban population living in slums. *Develop a global partnership for development*: Net ODA (total and to LDC), as percentage of OECD/DAC donors' gross national income; proportion of total bilateral, sector-allocable ODA of OECD/DAC donors to basic social services (basic education, primary health care, nutrition,

	safe water and sanitation); proportion of bilateral ODA of OECD/DAC donors that is untied; ODA received in landlocked developing countries as a proportion of their gross national incomes; ODA received in small island developing states as a proportion of their gross national incomes; proportion of total developed country imports (by value and excluding arms) from developing countries and LDC admitted free of duty; average tariffs imposed by developed countries on agricultural products and textiles and clothing from developing countries; agricultural support estimate for OECD countries as a percentage of their GDP; proportion of ODA provided to build trade capacity; number of countries that have reached their HIPC decision-points and HIPC completion points (cumulative); debt relief committed under HIPC and MDRI Initiatives; debt service as a percentage of exports of goods and services; proportion of population with access to affordable essential drugs on a sustainable basis; telephone lines/cellular subscribers/internet users per 100 population.
Geographical coverage	189 countries
Example	**Share of women in total employment by job status, 1990-2005, world** 
Published since	2000
Reference	http://mdgs.un.org/unsd/mdg/

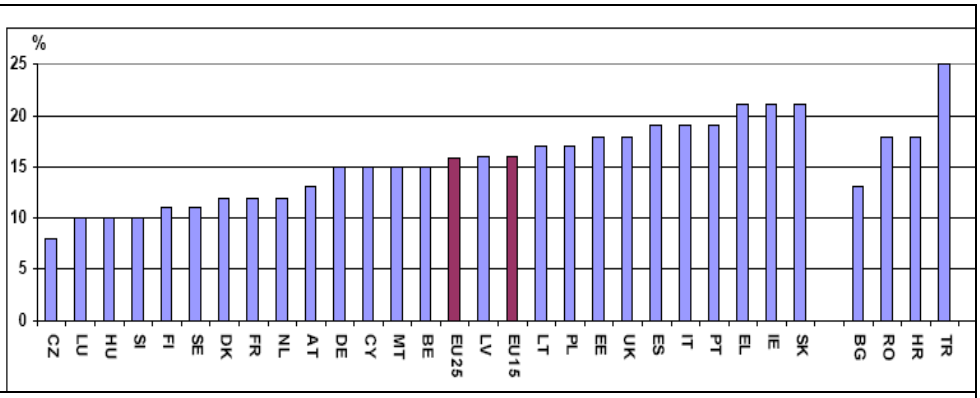
Organisation/name	United Nations Division for Sustainable Development – Sustainable Develeopment Indicators
Product	CSD Sustainable Development Indicators
Objective	Increase focus on sustainable development and assist decision-makers at all levels to adopt sound national sustainable development policies.
Type of indicator	Set of Indicators
Scope/dimensions	1. Poverty; 2. Governance; 3. Health; 4. Education; 5. Demographics; 6. Natural hazards; 7. Atmosphere; 8. Land; 9. Oceans, seas and coasts; 10. Freshwater; 11. Biodiversity; 12. Economic development; 13. Global economic partnership; 14. Consumption and production patterns.
Indicators	1. Poverty: proportion of population living below national poverty line; ratio of share in national income of highest to lowest quintile; proportion of population using an improved sanitation facility; share of household without electricity or other modern energy services; proportion of urban population living in slums. 2. Governance: percentage of population having paid bribes; number of intentional homicides per 100,000 population. 3. Health: under-five mortality rate; life expectancy at birth; percent of population with access to primary health care facilities; immunization against infectious childhood disease; nutritional status of children; morbidity of major diseases such as HIV/AIDS, malaria, tuberculosis. 4. Education: gross intake ratio to last grade of primary education; net enrolment rate in primary education; adult secondary (tertiary) schooling attainment level; adult literacy rate. 5. Demographics: population growth rate; dependency ratio. 6. Natural hazards: percentage of population living in hazard prone areas. 7. Athmosphere: carbon dioxide emissions; consumption of ozone depleting substances; ambient concentration of air pollutants in urban areas. 8. Land: arable and permanent cropland area; proportion of land area covered by forests. 9. Oceans, seas and coasts: percentage of total population living in coastal areas; proportion of fish stocks within safe biological limits; proportion of marine area protected. 10. Freshwater: proportion of total water resources used; water use intensity by economic activity; presence of faecal coliforms in freshwater. 11. Proportion of terrestrial area protected, total and by ecological region; change in threat status of species 12. Economic Development: GDP per capita; investment share in GDP; debt to GNI ratio; employment-population ratio; labor productivity and unit labor costs; share of women in wage employment in the non-agricultural sector; internet users per 100 population; tourism contribution to GDP. 13. Global economic partnership: current account deficit as a percentage of GDP; net Official Development; assistance (ODA) given or received as a percentage of GNI. 14. Consumption and production patterns: material intensity of the economy; annual energy consumption total and by main user category; intensity of energy use, total and by economic activity; eneration of hazardous waste; waste treatment and disposal; modal split of passenger transportation
Geographical coverage	The 53 CSD Member states
Other observations	The 50 core indicators listed above are part of larger set of 96 indicators of sustainable development.
Example	Electricity from renewable energy sources (excluding Hydropower), 1985-2004

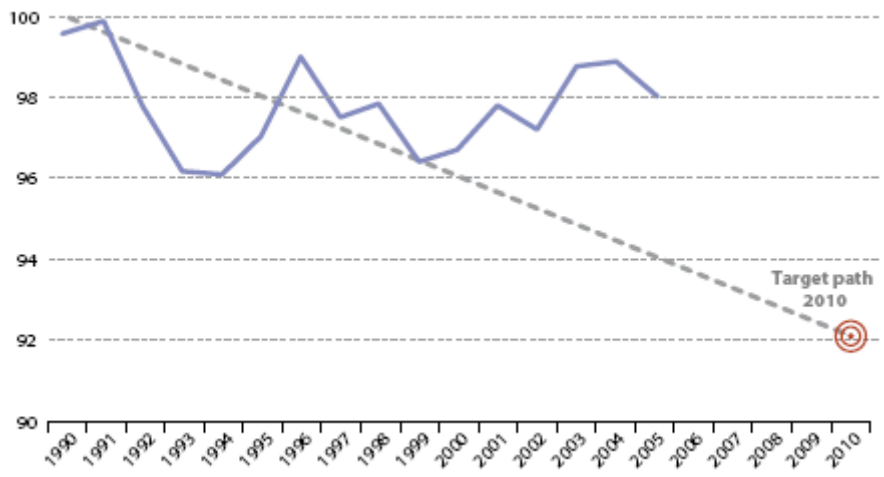
	
Published since	1996
Reference	http://www.un.org/esa/sustdev/index.html

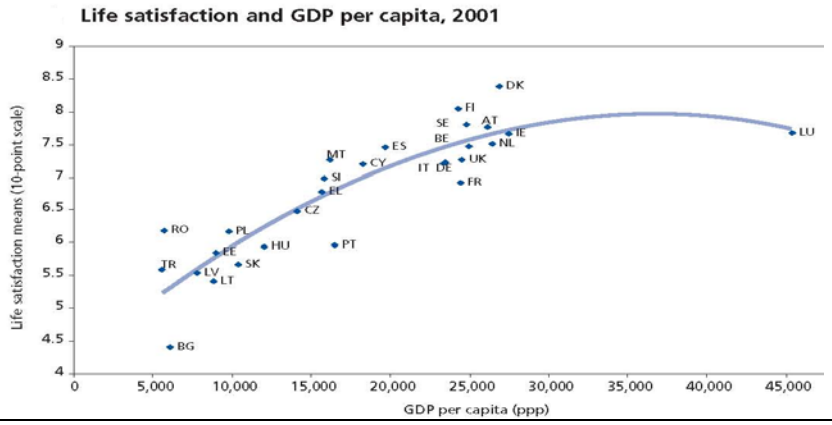
Organisation/name	UNECE-OECD-EUROSTAT Working Group on Sustainable Developent Statitics, (established by the Conference of European Statisticians in 2005)
Product	Report to the CES with recommendations
Objective	To provide a theoretical and conceptual framework on sustainable development indicators, and to better structure the work on these indicators in countries.
Type of indicator	Monetary and physical indicators of assets per capita
Scope/dimensions	Produced capita;human capital; natural capital; social capital
Indicators	***Monetary indicators (5)***: real per capita economic wealth (EW) decomposed on: real per capita produced capital real per capita human capital real per capita natural capital real per capita social capital (place holder) ***Physical indicators (10):*** climate air quality water quantity/quality ecological integrity biological diversity soil productivity educational attainment health status non-market benefits of social capital social capital (place holder)
Geographical coverage	
Other observations	Capital framework – sustianble development (non-declining per capita well-being) requires maintaining all types of capital giving rise to consumption possibilities
Example	**Evolution on different components of economic wealth in Norway** 
Published since	2008, forthcominmg
Reference	*"Statitistics for Sustainable Development: A Framework for Sustainable Development Indicators"*

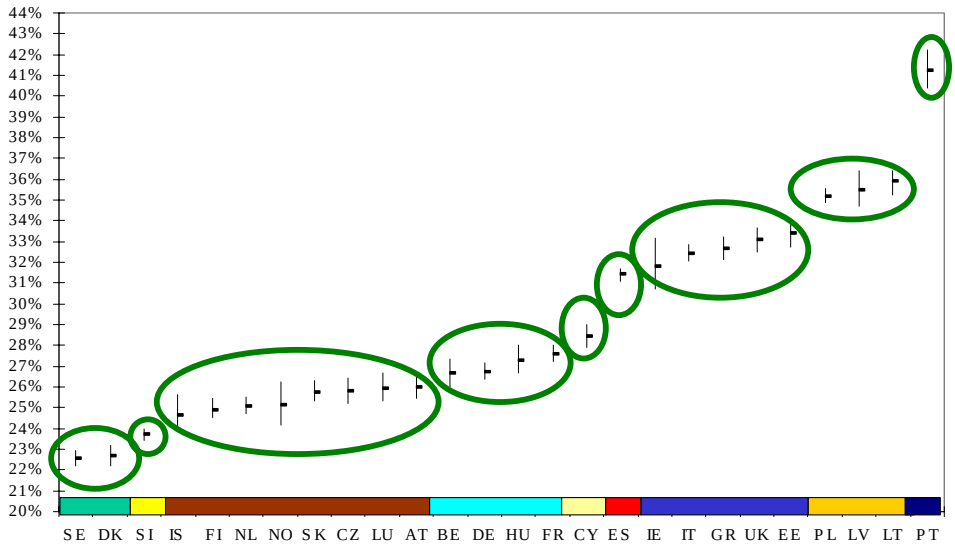
Organization/name	European Union – Structural Indicators
Product	Annual Progress Report to the European Council
Objective	To monitor the Lisbon Strategy for Growth and Jobs, which sets Europe's strategic goal "*of becoming the most competitive and dynamic knowledge-based economy in the world capable of sustainable economic growth with more and better jobs and greater social cohesion*"
Type of indicator	Set of indicators
Scope/dimensions	Six domains: 1) General Economic Background; 2) Employment; 3) Innovation and Research; 4) Economic Reform; 5) Social Cohesion; and 6) Environment. The Structural Indicators, maintained by Eurostat, consists of over 100 indicators. Based on this, a short list was agreed to allow for a more concise presentation and a better assessment of achievements over time.
Indicators	1.*General Economic Background*: GDP per capita in PPS; Labour productivity per person employed. 2. *Employment*: ; Employment rate (total, women, men); Employment rate of older workers (total, women, men). 3. *Innovation and Research*: ; Gross domestic expenditure on R&D; Youth education attainment level (total, women, men). 4. *Economic Reform*: Comparative price levels; Business investment 5. *Social Cohesion*: At-risk-of-poverty rate after social transfers (total, women, men); Dispersion of regional employment rates (total, women, men); Long-term unemployment rate (total, women, men). 6. *Environment*: Total greenhouse gas emissions; Energy intensity of the economy; Volume of freight transport relative to GDP.
Geographical coverage	EU Member States
Example	**Performance of France in 2006 relative to EU-27** 
Published since	2001
Reference	http://ec.europa.eu/regional_policy/sources/docgener/evaluation/evalsed/sourcebooks/themes_policy/themes/social_inclusion/index_en.htm

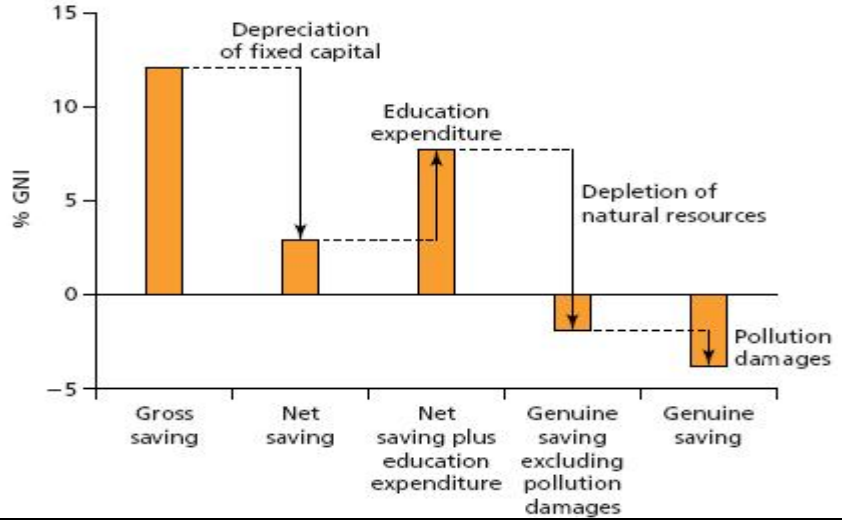
Organisation/ name	European Union – Social Indicators
Product	Common indicators for the social protection and social inclusion process
Objective	To monitor countries progress towards the objectives agreed by Heads of State and Government on poverty and social exclusion, pensions, health and long-term care
Type of indicator	Set of indicators
Scope/dimensions	1) poverty and exclusion 2) pensions 3) health and long temr care
Indicators	Overarching and context information **14 Overarching indicators**: 1a) *At-risk-of-poverty* (rate and threshold); 1b) *Intensity of poverty* (poverty gap based on median income of the poor); 2) Income inequalities (interquintile share ratio); 3) *Health outcome* (disability free life expectancy at birth, at 45, at 65; 4) *Education and human capital* (share of persons aged 18 to 24 who have only lower secondary education); 5) *Access to labour market* (proportion of people living in jobless households); 6) *Financial Sustainability of social protection systems* (projected total public expenditures on pensions, health care, long-term care, education and unemployment transfers, current and projected change in GDP share); 7) *Pensions adequacy* (Median equivalised income of people aged 65 and over as a ratio of income of people aged 0-64; aggregate pension replacement ratio); 8) *Inequalities in access to health care* (unmet care needs, definition yet to be agreed); 9) *Improved standards of living resulting from economic growth* (at-risk-of-poverty rate anchored in 2005, possibly replaced or supplemented in future by material deprivation or consistent poverty); 10) *employment of older workers* (possibly replaced or supplemented by "average exit age from the labour market"); 11) *in-work poverty risk* (peole classified as employed who are at risk of poverty); 12) *labour force participation rate* (15-64, by age and sex); 13) *regional disparities* (standard deviation of regional employment rates divided by national average); 14) Other on health (spaceholder). **12 Context indicators**: 1) GDP growth; 2) rates of employment, unemployment, long term unemployment; 3) Life expectancy at birth and at 65; 4) Old age dependency ratio, current and projected; 5) Distribution of population by household types (incl. collective households); 6) Public debt, current and projected, % of GDP; 7) Current social protection expenditure, by function, gross and net; (8) Jobless households by household types; 9) Making work pay indicators (unemployment trap, inactivity trap, low-wage trap). **Complemented** by more detailed indicators for the: i) *stremelined social inclusion portfolio* on poverty and social exclusion (11 primary, 3 secondary and 11 context indicators); ii) *streamlined pension portfolio* on adequacy, sustainability and adaptability of pension systems (11 primary, 11 secondary, 5 context indicators); and iii) *health and long-term care portfolifo* (list not yet agreed).
Geographical coverage	EU Member States
Other observations	Adopted in 2006 to replace the Laeken indicators of December 2001
Example	**At risk of povert rate, total population, 2003**

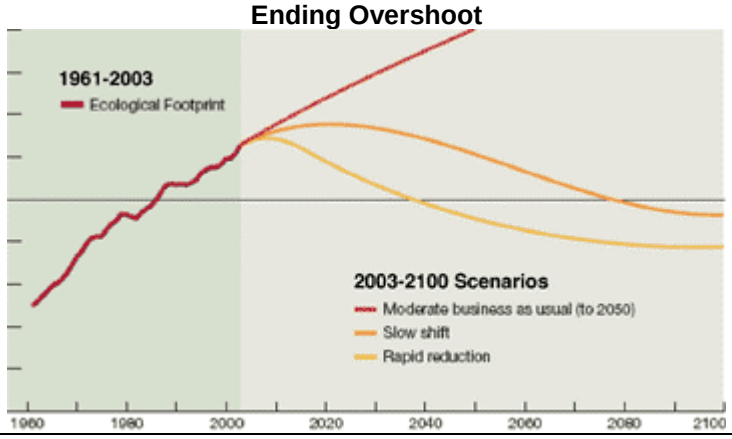
	
Published since	Since early 2000s, with revisions introduced alongside changes in the EU policy process
Reference	http://ec.europa.eu/employment_social/spsi/common_indicators_en.htm

Organisation/ name	European Union – Sustainable Development Indicators
Product	*Progress Report on the Sustainable Development Strategy 2007* (Communication from the EU Commission to the Council and European Parliament) *Measuring progress towards a more sustainable Europe* (EUROSTAT 2007 monitoring report)
Objective	To monitor the EU Sustainable Development Strategy (adopted by the European Council in Gothenburg in 2001, renewed in June 2006) aimed at "*finding synergies between economic development, social cohesion and protection of the environment*"
Type of indicator	Set of indicators
Scope/dimensions	1) Climate change and clean energy 2) Sustainable transport 3) Sustainable consumption and production 4) Conservation and management of natural resources 5) Public health 6) Social inclusion, demography and migration 7) Global poverty and sustainable development challenges
Indicators	**11 healdine indicators** (across the 7 themes): 1) GDP per capita (subtheme *Socioeconomic development*); 2) Greenhouse gas emissions (subtheme *Climate change and energy*); 3) Consumption of renewable (subtheme *Climate change and energy*); 4) Energy consumption of transport (subtheme *Sustainable transport*); 5) Resource productivity (subtheme *Sustainable consumption and production*); 6) Common birds (subtheme *Natural resources*); 7) Fish catches (subtheme *Natural resources*); 8) Healthy life-years (subtheme *Public health*); 9) Risk of poverty (subtheme *Social inclusion*); 11) Employment rate of older workers (subtheme *Demographic changes*); 12) Official development assistance (subtheme *Global partnership*)
Geographical coverage	EU Member States
Example	EU-15 greenhouse gas emissions and Kyoto target (% of base year emissions) 
Published since	2007
Reference	http://ec.europa.eu/environment/eussd/; http://ec.europa.eu/sustainable/docs/estat_2007_sds_en.pdf

Organisation/name	European Foundation for the Improvement of Living and Working Conditions – Indicators of Living and Working Conditions
Product	Several types of reports
Objective	To provide information, advice and expertise – on living and working conditions, industrial relations and managing change in Europe – for key actors in the field of EU social policy on the basis of comparative information, research and analysis.
Type of indicator	Set of Indicators
Scope/dimensions	Employment and working conditions; work-life balance; industrial relations and partnership; social cohesion.
Indicators	• The European Undustrial Relations Observatory (EIRO) • The European Working Conditions Observatory (EWCO) • The Europeaan Quality of Life Surveys (EQLS) • The European Monitoring Centre on Change (EMCC) • The European Restructuring Monitor (ERM) • National Outreach Centres (NOCs) set up in 10 countries as communication relays for the Foundation (network to be extended to cover all member states over the next few years).
Geographical coverage	EU Member States
Other observations	The Foundation's target audience are employers, EU policymakers, governments, trade unions.
Example	
Published since	1975
Reference	http://www.eurofound.europa.eu/

Organisation/name	European Union – European Observatory on the Social Situation and Demography
Product	Four annual reports prepared by multi-disciplinary networks of independent experts established in 2005.
Objective	To analyse social and demographic trends in the EU and to assist the Commission in its duty to report on the social situation
Type of indicator	Set of indicators
	None explicit
Scope/dimensions	Separate reports covering four dimensions: 1. Demography (coord. by *Netherlands Interdisciplinary Demographic Institute*); 2. Social inclusion and income distribution (*Applica*); 3. Social capital (*London School of Economics*); 4. Health status and living conditions (*London School of Economics*)
Indicators	Indicators used differ across dimensions, as well as across various annual reports. Main types of indicators used in 2006 annual reports: 1. *Demography*: indicators of population size and growth, actual and desired fertility, union formation, age strudture of population, migration, educational attainment, attitudes to family and gender issues. 2. *Social inclusion and income distribution*: indicators of income inequality and poverty, deprivation and social exclusion, for tot. population and selected groups 3. *Social capital*: indicators of trust, participation and social cohesion, creation of a composite index of social capital and analysis of its correlation with other variables. 4. *Health status*: indicators of mortality, cronic diseases, mental health, communicable diseases, socioeconomic inequalities in health, underlying factors.
Geographical coverage	EU member countries (as well as Norway and Iceland)
Example	**Gini indices of income inequality in 2005 and 95% confidence intervals** 
Published since	2005
Reference	http://ec.europa.eu/employment_social/spsi/european_observatory_en.htm

Organisation	World Bank Genuine Saving (Adjusted Net Saving)
Product	*Where is the Wealth of Nations? Measuring Capital for the XXI Century*.
Objective	To measure the savings in an economy after taking into account investments in human capital, depletion of natural resources and damage caused by pollution
Type of indicator	Monetary indicator
Scope/dimensions	Natural resources, pollutants, and human capital
Indicators	- Gross National Saving - Consumption of Fixed capital - Human Capital Investmant - Rent from Energy Depletion - Rent from Metals and Minerals - Rent from Net Forest Depletion - Damages from Carbon Dioxide Emissions
Geographical coverage	Global
Other observations	How to calculate Adjusted net saving 
Example	**Genuine Saving Rates in countries with different income levels** 
Published since	1998
Reference	http://go.worldbank.org/VLJHBLZP71

Organisation/authors	European Commission, European Parliament, Club of Rome, OECD, WWF – Beyond GDP Conference.
Product	Beyond GDP Conference and associated initiatives
Objective	Identify which indices are most appropriate to measure progress, and how these can best be integrated into decision-making and public debate.
Scope/dimensions	Progress, true wealth, and well-being.
Indicators	Some of the indicators whose relevance for measuring progress of societies was discussed at the conference were: - Adjusted GDP - Environmental accounts - Quality of life measures - Human Development Index - Ecological Footprint - Genuine Savings
Geographical coverage	EC Member States
Example	The *Ecological Footprint* measures one aspect of environmental sustainability: the use and possible overexploitation of biological resources (e.g. forests, fisheries, grass, croplands). It estimates the 'carrying capacity' of the planet and compares it with human consumption, using the 'global hectare' as unit of measurement. Since the mid-1980s humanity's footprint is larger than the planet's carrying capacity. While 1.8 global hectares per person are available world-wide, Europeans use 4.9 global hectares per person and North Americans use twice that amount. The Ecological Footprint methodology is used by green NGOs and by local authorities. An international campaign by the Global Footprint Network seeks to have national governments adopt this metric as an official statistic. **Ending Overshoot** 
Published since	2007
Reference	http://www.beyond-gdp.eu/index.html

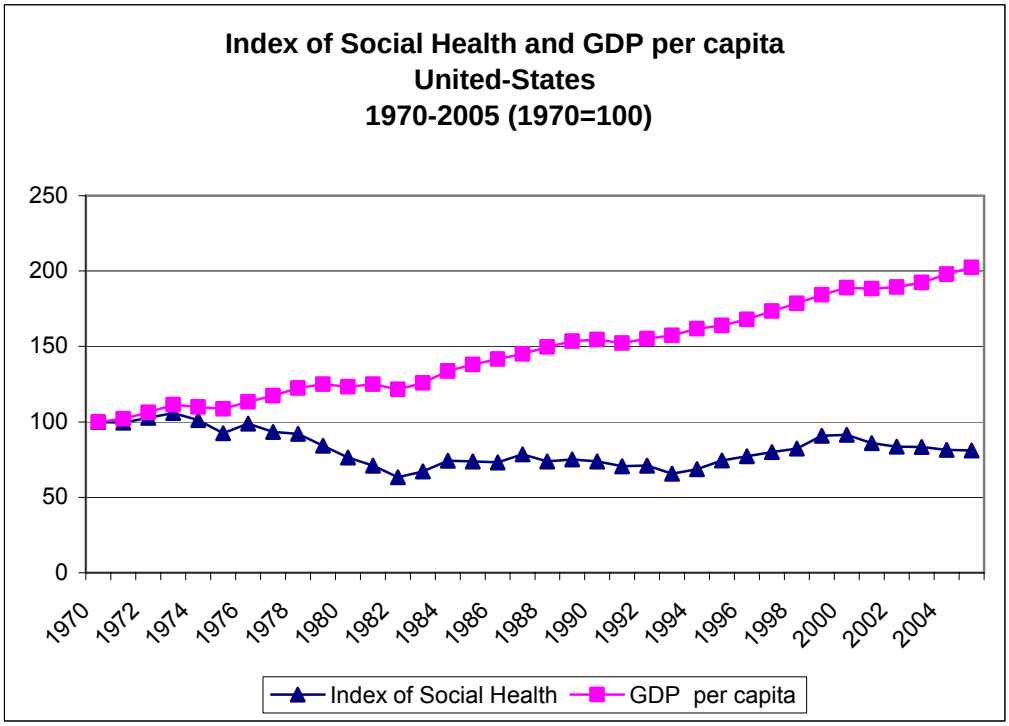
ANNEX 2 . FACTSHEETS ON SOME SYNTHETIC INDICATORS RESULTING FROM ACADEMIC AND/OR NATIONAL INITIATIVES

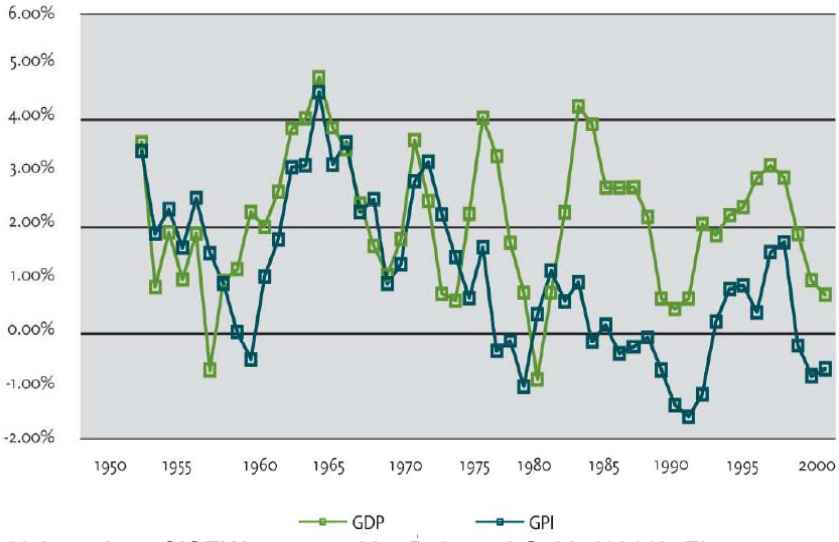
This Annex uses the same mode of presentation as Annex 1 for presenting some of the most well-known indicators stemming from academic or non governmental initiatives. These factsheets also present research works of French origin or focusing on the French case that can be related to this strand of literature.

Organisation/authors	Nordhaus and Tobin (1973)
Product	MEW (measure of economic welfare) and SMEW (sustainable measure of economic welfare)
Objective	Proposing a measure of economic welfare complementing GDP
Type of indicator	Corrected GDP
Scope/dimensions	For the MEW : Private household consumption, net of expenditures that are considered as not directely contributing to welfare (commuting, financial services, private health and education expenditures, expenditures on durables goods), and augmented by the share of public expenditures that contribute to welfare (e.g. only one part of public health expenditures, exclusion of military expenditures), by an estimate of the flow of services derived from capital goods and a valorisation of leisure and non-market activities. For the SMEW : MEW corrected for changes in reproductible capital, some elements of non reproductible capital (land and foreign assets), health and educational capital.
Indicators	
Geographical coverage	US only
Other observations	Ommitted elements are inequality and depletion of exhaustible resources
Example	Gross National Product and MEW, Various Years, 1929–65 (*billions of dollars, 1958 prices*)

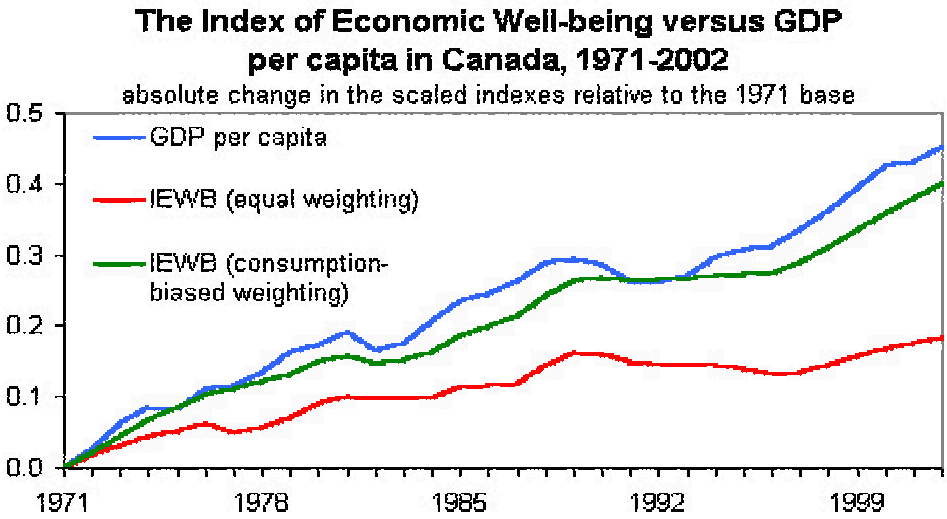
	1929	1935	1945	1947	1954	1958	1965
1. Gross national product	203.6	169.5	355.2	309.9	407.0	447.3	617.8
2. Capital consumption, NIPA	−20.0	−20.0	−21.9	−18.3	−32.5	−38.9	−54.7
3. Net national product, NIPA	183.6	149.5	333.3	291.6	374.5	408.4	563.1
4. NIPA final output reclassified as regrettables and intermediates							
a. Government	−6.7	−7.4	−146.3	−20.8	−57.8	−56.4	−63.2
b. Private	−10.3	−9.2	−9.2	−10.9	−16.4	−19.9	−30.9
5. Imputations for items not included in NIPA							
a. Leisure	339.5	401.3	450.7	466.9	523.2	554.9	626.9
b. Nonmarket activity	85.7	109.2	152.4	159.6	211.5	239.7	295.4
c. Disamenities	−12.5	−14.1	−18.1	−19.1	−24.3	−27.6	−34.6
d. Services of public and private capital	29.7	24.2	31.0	36.7	48.9	54.8	78.9
6. Additional capital consumption	−19.3	−33.4	−11.7	−50.8	−35.2	−27.3	−92.7
7. Growth requirement	−46.1	−46.7	−65.8	+5.4	−63.1	−78.9	−101.8
8. Sustainable MEW	543.6	573.4	716.3	858.6	961.3	1,047.7	1,241.1

Published since	One shot estimation for the 1929-1965 period
Reference	Nordhaus, W. et Tobin, J. (1973) Is Growth Obsolete ? in *The Measurement of Economic and Social Performance, National Bureau of Economic Research*, 1973.

Organisation/authors	M & M. L Miringoff, Institute for Innovation in Social Policy
Product	Index of Social Health (ISH)
Objective	assessment of social progress
Type of indicator	Composite indicator (linear scalar normalisation on full sample range)
Scope/dimensions	Per age : children, youth, adults, elderly, all ages
Indicators	Different indicators per dimensions. - children : infant mortality, child abuse, child poverty - youth : teenage suicide, teenage drog abuse, high-school dropouts - adults : unemployment, average weekly earnings, health insurance coverage - elderly : persons 65 and over in poverty, out-of-pocket health cost ages 65 and over - all ages : homicides, alcohol-related traffic fatalities, food stamp coverage, affordable housing, income inequality (Gini) Equal weighting of elementary indicators.
Geo. Coverage	United States, application to Canada (Brink & Zeesman)
Other observations	
Example	
Published since	1987, annually. Covering 1970-2005
Reference	http://iisp.vassar.edu/ish.html

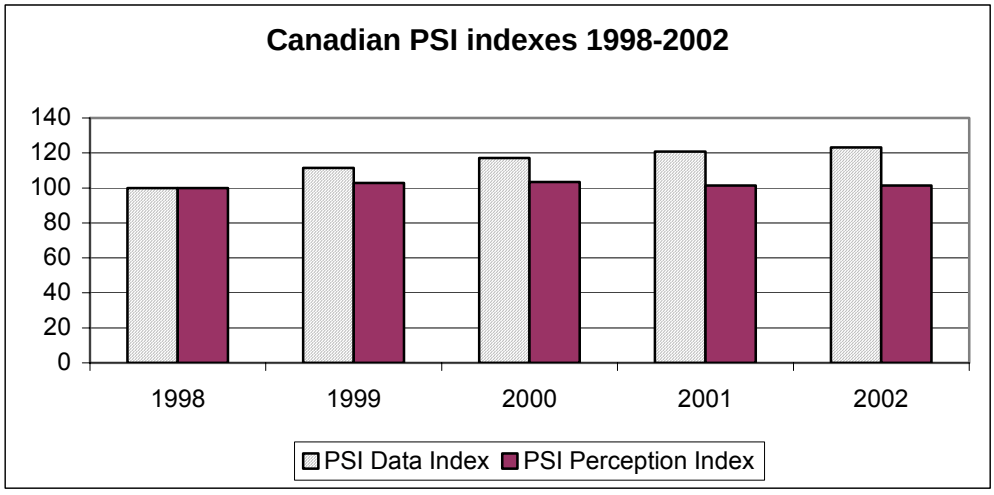
Organisation/authors	Daly, Cobb and Cobb for the first version of the ISEW. *Redefining progress* (NGP) for the GPI.
Product	ISEW (index of sustainable well-being) and GPI (Genuine Progress Indicator)
Objective	Global indexes of sustainable well-being in the tradition of Nordhaus and Tobin (1974). Compared to Nordhaus and Tobin, the ISEW does not take into account the valuation of leisure but takes into account inequality and the depletion of natural resources. The GPI is a variant of the ISEW promoted by the Redefining Progress association
Type of indicator	Corrected GDP
Scope/dimensions	(For the GPI) - Consumption, inequality, - Value of housework and parenting, higher education, volunteer work - Services of consumer durables, some public infrastructures (highways…) - Loss of leisure time, costs of underemployment, of consumer durables, of commuting, of household pollution abatment, of auto accidents - Costs of water, air and noise pollution - Loss of wetlands, farmland, primary forests - Resource depletion, CO2 damage, ozone depletion - Net capital investment and net foreign borrowing
Indicators	
Geographical coverage	Initially developed for the US. Known other applications or ISEW and/or GPI to Canada, Australia, Austria, Chile, Germany, Italy, the Netherlands, Scotland, Sweden, Thailand, the UK, Belgium..
Other observations	
Example	FIGURE 5: GDP and GPI Per Capita Rates 1950-2004 Rolling three-year averages 
Published since	Initial version of ISEW proposed by Daly and Cobb (1989). First version of GPI in 1995.
References	Cobb and Cobb (1994) *The green national product : a proposed index of sustainable economic welfare*, University of America Press, Washington DC. http://www.rprogress.org for the GPI.

Organisation/authors	Lars Osberg & Andrew Sharpe, Center for the Study of Living Standards
Product	Index of Economic Well-Being
Objective	global assessment of country achievements in terms of economic well-being
Type of indicator	composite indicator (monetary and non-monetary mix). Linear scalar normalisation on full sample range from 1970
Scope/dimensions	Consumption flows, stock of wealth, equality, social risks.

	Equally weighting or [Consumption : 0.4, Stock : 0.10 , equality and risks : 0.25 each]
Indicators	- Real total consumption per capita, adjusted for government spending and unpaid domestic labour - Real capital stock + real R&D stock + natural ressources stock + human capital stock - net foreign debt - real costs of CO2 emissions - (3/4) poverty rate * poverty intensity rate + (1/4) Gini coefficient for disposable income - (expected) costs for 4 risks : unemployment, illness, single parent poverty, old-age poverty Elementary indicators weighting to 1 (exceptions in brackets above).
Country coverage	Selected OECD countries : France, Italy, Australia, USA, UK, Canada, Germany, Norway, Sweden
Other observations	
Example	
Published since	1998. Covering 1971-2002 for Canada and USA, 1980-2001 for others
Reference	http://www.csls.ca/iwb.asp

Organisation/authors	Canadia Council on Social Development (CCSD)
Product	2 PSI (Personal Security Index) : Data Index (objective) and Perception Index (subjective)
Objective	Overview of factors impacting security in a broad sense and assessment of evolutions
Type of indicator	Composite indicator. linear scalar normalisation on pre-sample range (1994-1998).
Scope/dimensions	Economic security (job and financial security) (w=35) health security (protection against threats of diseases and injuries) (w=55) Physical safety (feeling safe from violent crime and theft) (w=10) Weights derived from a survey with a dedicated question about the most important dimension (w(*d*)= % respondents choosing *d* as the most important).
Indicators	

	Objective	Subjective
Eco	Disposable income	Income adequacy to needs
	Poverty gap	Fear of job loss within 2 years
	Long-term unemployment	Confidence in finding a job within 6 months if unemployed
	Unemployed receving insurance benefits (%)	Confidence in Gov. income security programms to sustain revenues
	Average level of assistance (% poverty line)	Counting on family or friends in case of financial distress
	Ratio debt / disposable inc.	Sustainability relying on personal savings only
Health	Potential years of life lost	State of health
	Workplace injuries rate	Stressful life
	Motor vehicle accident injury rate	Confidence in access to health care services
Safety	Violent crime	Risk of violent crime in neighbourhood
	Property crime	Risk of property crime in neighbourhood

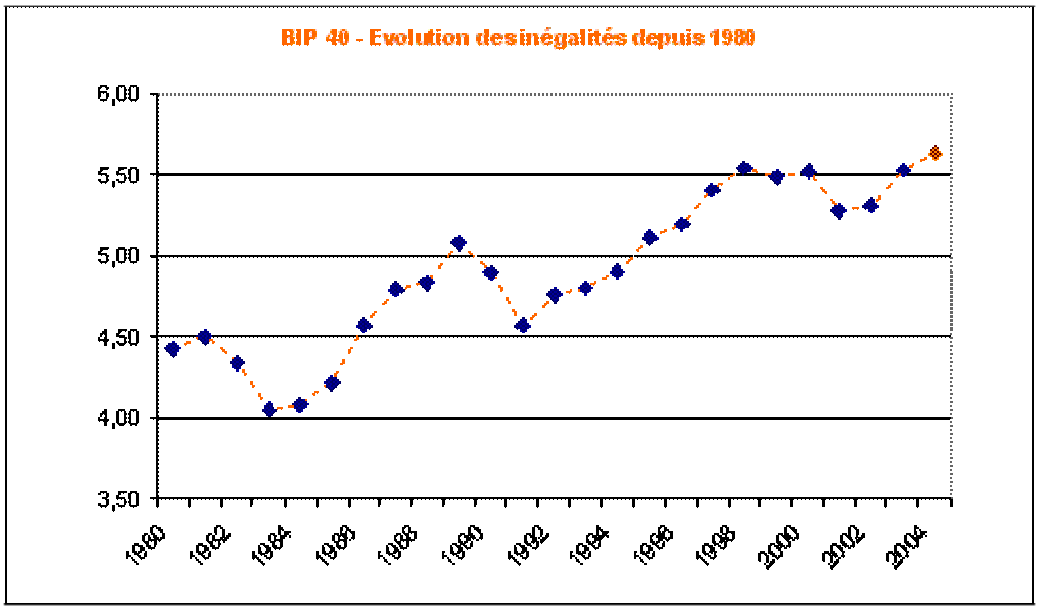
Geographical coverage	Canada
Other observations	Index can be calculated at the regional level for intra-regional comparisons.
Example	
Published since	1998, annual.
Reference	http://www.ccsd.ca/pubs/2003/psi/index.htm

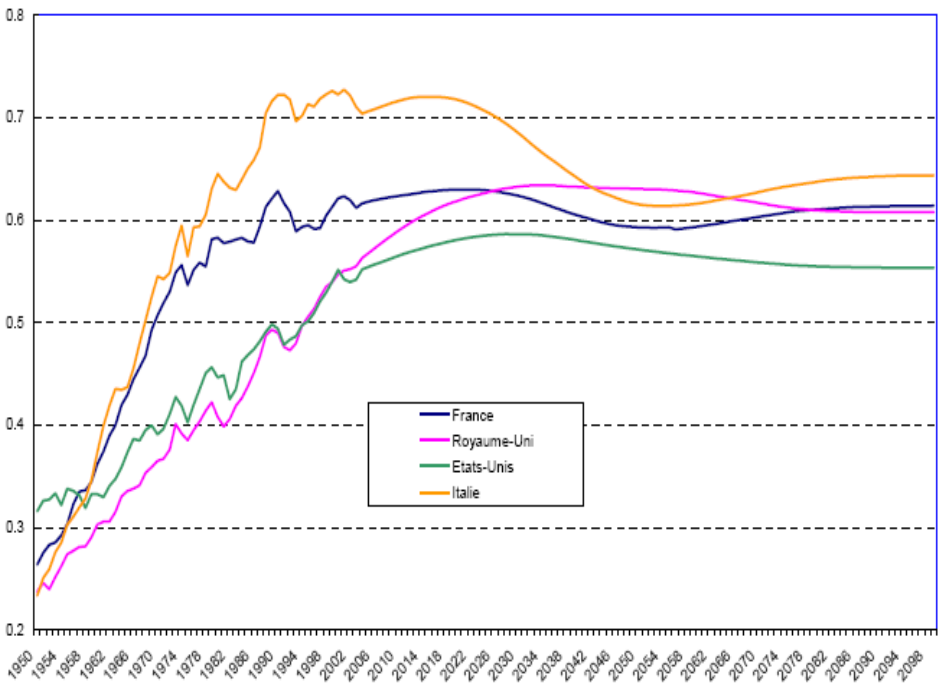
<table>
<tr><td>Organisation/authors</td><td>New Economics Foundation - Friends of the Earth</td></tr>
<tr><td>Product</td><td>Happy Planet Index</td></tr>
<tr><td>Objective</td><td>Assessing a country ability for supporting good and long lives, whilst respecting the environmental resource limits</td></tr>
<tr><td>Type of indicator</td><td>Index mixing subjective and quantitative data
Derived from seminal Happy Life Index by R. Veenhoven (1990's) adjusted for Environmental sustainability matters</td></tr>
<tr><td>Scope/dimensions</td><td>Satisfaction, Life expectancy, Environmental sustainability</td></tr>
<tr><td>Indicators</td><td>$$HPI = \frac{\text{Life satisfaction x Life expectancy}}{\text{Ecological Footprint} + \alpha} \times ß$$</td></tr>
<tr><td>Geographical Coverage</td><td>All countries (178).</td></tr>
<tr><td>Other observations</td><td>Also calculate on-line at the indivual level, based on individual consumption.</td></tr>
<tr><td>Example</td><td>
<table>
<tr><th>Country (selection)</th><th>Rank</th></tr>
<tr><td></td><td></td></tr>
<tr><td>Vanuatu</td><td>1</td></tr>
<tr><td>Colombia</td><td>2</td></tr>
<tr><td>Costa Rica</td><td>3</td></tr>
<tr><td></td><td>...</td></tr>
<tr><td>Autriche</td><td>61</td></tr>
<tr><td>France</td><td>129</td></tr>
<tr><td>USA</td><td>150</td></tr>
<tr><td></td><td>...</td></tr>
<tr><td>Burundi</td><td>176</td></tr>
<tr><td>Swaziland</td><td>177</td></tr>
<tr><td>Zimbabwe</td><td>178</td></tr>
</table>
</td></tr>
<tr><td>Published since</td><td>2006.</td></tr>
<tr><td>Reference</td><td>http://www.happyplanetindex.org/index.htm</td></tr>
</table>

Organisation/authors	R. Veenhoven and W. Kalmijn, Erasmus University Rotterdam
Product	*Inequality-Adjusted Happiness* (*IAH*)
Objective	International comparison of "Societal Performance"
Type of indicator	Index mixing level and dispersion of happiness
Scope/dimensions	The index should reflect a combination of utilitarian (average happiness) and egalitarian (equality in happiness) principles
Indicators	- general population surveys in which people are asked how happy they are with their life; - estimates of mean *m* and standard deviation *s* of the distribution of the happiness ratings; - computation of a formula involving *m* and *s* with equal weights given to the utilitarian and egalitarian wiewpoints.
Geographical Coverage	95 countries
Other observations	IAH may be applied to cross-sectional analysis as well as comparisons over time-
Example	

Country (selection)	IAH
Australia	66
Canada	69
France	58
Germany	64
Italy	61
Japan	55
Korea (South-)	49
Luxembourg	68
Norway	67
Portugal	60
Spain	59
UK	64
USA	67

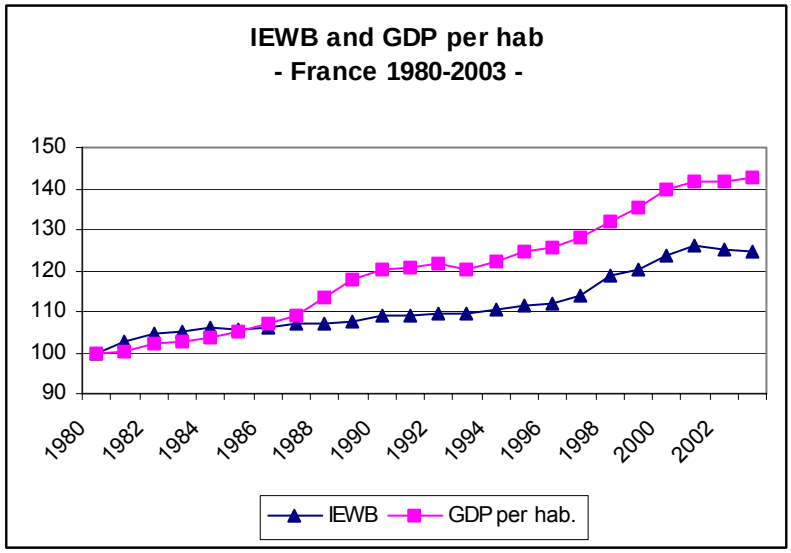
Published since	2005, covering 1973-2004
Reference	http://www2.eur.nl/fsw/research/veenhoven/Pub2000s/2005c-full.pdf

Organisation/authors	Réseau d'alerte sur les inégalités (RAI) / Inequalities watch Network
Product	BIP40
Objective	Global assessment of poverty and inequalities to counterbalance the preeminence of GDP and Paris stock Index (CAC40)
Type of indicator	Composite indicator, linear scalar normalisation on full sample range (from 1980). Linked to seminal work by Miringoff *Index of Social Health*
Scope/dimensions	Living conditions, income, employment and working conditions, education, health, justice. Weights : income, employment :1/4 , others : 1/8.
Indicators	Numerous indicators per dimensions. Selection displayed below : - living conditions : ratio of rent index to consumption price index, share of financial aids in total expenditures for dwellings - income : wages share in VA, average minimum disposable income (% mean) - employment : unemployment rate, under-employment rate (person employed aiming at working more) - education : college drops-out, inequalities in french and mathematics results - health : Life expectancy, differential between white and blue collars - justice : detention rate, share of provisionnal detention Different weights for each indicators within each dimension.
Geographical coverage	France. Closely linked to Index of social insecurity (Institut pour un développement durable) in Belgium
Other observations	upwards == deteriotation of inequalities and social conditions
Example	
Published since	2002, bi-annual release, covering 1980-2004
Reference	http://www.bip40.org

Organisation/authors	G. Cornilleau, OFCE
Product	
Objective	Normative indicator mixing absolute and relative dimensions of standard of living
Type of indicator	Specific type : correction of GDP incorporating a priori conceptions concerning norms of living standards
Scope/dimensions	Economic growth, inequality
Indicators	For each cohort, well being at birth is evaluated in relative terms, by comparison with the current income of the 9th percentile of the population. After that, well-being within each cohort is assumed to evolve according to the growth rate of income per capita. These cohort-specific indexes of well-being are then reaggregated for each time period t. By construction, the index converges to a constant level when income distribution and economic growth both stabilize. The index is computed retrospectively since 1950 using economic growth rates from Penn World Tables, demographic data taken from the Human Mortality Database and income distributions taken from Bourguignon and Morrisson (AER, sept 2002). Some projections until 2050 are given under the assumption of stabilized economic growth rates and inequality levels.
Geographical coverage	France, Italy, US and UK
Other observations	The index is presented as normative. The main message is that, when economic growth stops accelerating, the only way to improve well-being is to reduce inequality.
Example	Graphique 8 : Stabilisation de la croissance économique à 2 % par an dans tous les pays 
Published since	One shot experimental work. Not intended for regular publication.
Reference	"Croissance économique et bien-être matériel", *Revue de l'OFCE*, n° 96, January 2006

Organisation/authors	M. Fleurbaey & G. Gaulier (Paris V / CEPII)
Product	Index of Living standards
Objective	International comparion of living standards without usual shorcomings of GDP
Type of indicator	Corrected GDP
Scope/dimensions	Net National Income per capita adjusted for elements of well-being, both

<table>
<tr><td></td><td>individual (leisure, healthy life) and collective (inequalities, sustainability), in terms of equivalent incomes (or willingness to pay)-</td></tr>
<tr><td>Corrections for</td><td>Leisure (hours worked)
Employment uncertainty (unemployment insurance)
Healthy Life years (additional 1 year of healthy life)
Household’s size
Inequalities : overweighting the poor (average income minus Kolm-Atkinson index)
Sustainability : cost of natural resources depletion, weighted by share of national consumption in total consumption + cost of GHG emissions</td></tr>
<tr><td>Geographical Coverage</td><td>24 OECD countries</td></tr>
<tr><td>Other observations</td><td>-</td></tr>
<tr><td>Example</td><td>
<table>
<tr><td>Country (selection)</td><td colspan="2">Rank</td></tr>
<tr><td></td><td>GDP per capita</td><td>Living standards</td></tr>
<tr><td>Australia</td><td>13</td><td>19</td></tr>
<tr><td>Canada</td><td>10</td><td>14</td></tr>
<tr><td>France</td><td>17</td><td>8</td></tr>
<tr><td>Germany</td><td>18</td><td>19</td></tr>
<tr><td>Italy</td><td>18</td><td>11</td></tr>
<tr><td>Japan</td><td>15</td><td>4</td></tr>
<tr><td>Korea</td><td>23</td><td>22</td></tr>
<tr><td>Luxembourg</td><td>1</td><td>1</td></tr>
<tr><td>Norway</td><td>4</td><td>2</td></tr>
<tr><td>Portugal</td><td>24</td><td>24</td></tr>
<tr><td>Spain</td><td>20</td><td>16</td></tr>
<tr><td>UK</td><td>12</td><td>13</td></tr>
<tr><td>USA</td><td>3</td><td>7</td></tr>
</table>
</td></tr>
<tr><td>Published since</td><td>One-off research published in 2006. Data provided for 2004.</td></tr>
<tr><td>Reference</td><td>http://www.cepii.fr/francgraph/publications/lettre/resumes/2006/let260.htm</td></tr>
</table>

Organisation/authors	Florence Jany-Catrice, Stephan Kampelmann (CLERSE-CNRS)
Product	Index of Economic Well-Being (France)
Objective	assessment of France achievements in terms of economic well-being
Type of indicator	Composite indicator. Derived from the Index of Economic Well-Being by Osberg-Sharpe, with enhanced data from national sources (# OCDE) and slight adjustments (correction to household's income distribution taken into account imputed rents and returns on assets)
Scope/dimensions	Consumption flows, stock of wealth, equality, social risks
Indicators	- real total consumption per capita, adjusted for government spending and unpaid domestic labour - real capital stock + real R&D stock + natural ressources stock + human capital stock - net foreign debt - real costs of CO2 emissions - (3/4) poverty rate * poverty intensity rate + (1/4) Gini coefficient for disposable income - (expected) costs for 4 risks : unemployment, illness, single parent poverty, old-age poverty
Country coverage	France
Other observations	
Example	
Published since	One-off research in 2007. Covering 1980-2003.
Reference	*Revue Française d'économie*, vol XXII, juillet 2007.

Organisation/authors	G. Ponthière, Université de Liège
Product	
Objective	International comparison of living standards
Type of indicator	Corrected GDP . Based on theoretical background from Usher model (1973, 1980).
Scope/dimensions	Household's final consumption per capita adjusted for elements of well-being : leisure, healthy life and economic exclusion (unemployment risk)
Indicators	
Geographical coverage	France and US, over 1970-2003.
Other observations	Increasing gap between US and FR consumption since 1990 confirmed with adjusted consumption, but qualified. Estimation of consumption gap significantly affected by the set of national preferences used to compare countries.
Example	
Published since	One shot experimental work. Not intended for regular publication.
Reference	"L'écart de niveaux de vie s'est-il creusé entre les Etats-Unis et la France ?'', *Revue française d'économie, vol XXII,* July 2007.