

# Alternative Welfare Measures: Overview and Case Study for India

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**Abstract:** *This paper outlines the different objections that have been put forward throughout the years to the use of the Gross Domestic Product (GDP) as a welfare measure. It is shown that some of the problems raised are even aggravated in developing countries. Three different approaches to alternative measurement of welfare are discussed. The first one involves extending the existing national accounts in order to arrive at a welfare measure that is theoretically sounder. A second approach evaluates the access to certain basic goods (education, health care, ...) by the study of a set of social indicators. The third approach targets mental states more directly by means of survey data on reported subjective well-being. The Index of Sustainable Economic Welfare (ISEW), an indicator derived from the first type of approach, is discussed to a greater length. A case study presenting the available data on the different types of alternative welfare measures is performed for India. This study reveals that economic growth is contributing substantially to human welfare.*

## Introduction

Two of the most widely used welfare measures are Gross Domestic Product (GDP) and GDP per capita. Although they were not originally designed to measure welfare, these indicators have become normative benchmarks for economic and even social performance. The figures of their growth rates are often the centre of political debate, as politicians tend to hide behind poor economic growth in times of depression or as they claim that the occasional strong economic growth is a direct result of their policy. Furthermore GDP per capita is sometimes used to rank individual countries by state of development or welfare.

But looking at these economic indicators might just not be the same as measuring actual welfare since GDP only measures the value of marketed goods and services produced and consumed in an economy. The implicit assumption needed is that all economic growth adds to welfare, without making a distinction between the desirable and the undesirable, or between costs and gains (Cobb, Halstead and Rowe, 1995). Economic growth has become desirable by definition.

Yet today people around the world experience more and more the negative consequences of economic growth: environmental degradation, stress, congestion, health-related problems, ... These insights have led Goodwin (1997) to conclude that there exist different worldviews when it comes to the appraisal of economic growth, ranging from 'all economic growth contributes to well-being' to 'some economic growth may detract from well-being'. Within this context, Offer (2000) suggests that there might exist a curvilinear relationship between economic welfare and human welfare, in which economic growth contributes more to human welfare in countries with a low standard of living.

The use of GDP as a welfare measure has been criticized since the early development of its underlying framework, the national accounts. Kuznets (1941), one of the founding fathers of the system of national accounts, expressed his concerns on this topic and highlighted four ambiguous terms in the definition of national income. These ambiguities make that, contrary to popular belief, GDP is not a value-free tool.

Criticism was also initiated by the social and the environmental movements: claims for the inclusion of natural capital in the national accounts and for adopting social indicators such as life expectancy and literacy rate as complements to the economic indicators, have grown through the years. A final category of criticism is of a more technical and methodological nature. It includes for instance the call for an equal treatment of similar expenditures

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by different agents within the national accounting framework.

England (1997) reviews the needs that have come forward from these different critiques on the GDP as a welfare measure: it is necessary ...

- to specify the distinction between intermediate and final output
- to distinguish between 'goods' and 'bads' in consumption expenditures
- to account for asset depreciation in a comprehensive manner, including both manufactured and natural assets
- to divide net output between consumption and capital accumulation
- to take account of non-marketed goods and services (e.g. household services)
- to take account of the welfare implications of various forms of social inequality

Some of the problems specified earlier are even aggravated in developing countries. The omission of household services is an instance of this, since these services account for a larger part of the total economy in developing countries than they do in developed countries. Another problematic issue in developing countries is the process of data gathering: Ravallion (2003) finds that the per capita private consumption derived from the national accounts deviates significantly from the mean household income based on national sample surveys. In India, the ratio of the latter to the former is as low as 0,6 (Ravallion, 2003).

Accepting the shortcomings of GDP and stating that this measure was never intended to be used as a welfare indicator is not the right way out, since this will not stop GDP from being used in this way. Alternative measures exist already and they should be more supported by media, international organisations and policy makers. But as long as these alternative measures lack widely acceptance as comprehensive indicators of welfare, GDP will be filling the role of welfare measure by default.

Offer (2000) distinguishes three different approaches to the 'alternative' measurement of welfare. The first one involves extending the existing national accounts, in order to incorporate non-marketed goods and services and to allow for other adjustments (positive or negative) as well. A second approach starts from the idea that access to certain goods constitutes a precondition of welfare. This access is evaluated by the study of a set of social indicators. The last approach targets mental states directly, by means of survey data on self-reported subjective well-being and by research on the dynamics of hedonic experience.

Diener and Suh (1997) argue that it is necessary to use both social indicators and subjective well-being measures for the evaluation of a society, since these measures add substantially to the regnant economic indicators that are now favoured by policy makers. They claim that each approach to measuring welfare contains information that is not contained in the other measures.

The different approaches that were outlined by Offer (2000) will be analysed in the next section. One specific welfare measure, the Index of Sustainable Economic Welfare, will be highlighted in the third section, while the last section will give a review of the available data for India.

## **Alternative Welfare Measures**

This section starts with a short summary of Veenhoven's findings on subjective welfare measures, after which social indicators such as the Human Development Index and the Index of Social Progress are briefly discussed. Finally the process of extending the existing economic accounts will be reviewed.

### ***Subjective Welfare Measures***

The basic premise of subjective welfare research is that in order to understand the welfare of an individual, it is important to directly measure the individual's cognitive and affective reactions to his or her whole life (Diener and Suh, 1997). The important distinction with the other approaches is that subjective welfare measures are primarily concerned with the respondent's own internal judgement of welfare.

In separating subjective measures from the objective ones, Veenhoven (2002) makes a distinction between

substance and assessment. Substance relates to the question of what is being measured, while assessment refers to the actual process of collecting the data. We say that measures are objective when they are concerned with things which exist independent of subjective awareness and when the measurement is based on explicit criteria and performed by external observers. Subjective indicators measure subjective substances (like identity, happiness and trust) using subjective appraisal techniques such as self-reporting.

Veenhoven (2004) continues by dividing human well-being into four categories using a matrix that separates inner qualities from outer qualities vertically and life chances from life results horizontally. The four categories that appear in this matrix are: 'living in a good environment', 'being able to cope with life', 'being of worth for the world' and 'enjoying life'. For each of these categories indicators (objective and subjective) have been developed throughout the years to measure the progress made. An example of a subjective measure of the category 'enjoying life' is simply asking people how much they enjoy their life as a whole. Such questions can be framed in several ways, using different keywords and response formats.

Veenhoven (2004) rejects any attempt to aggregate objective measures of different categories into one single index (in order to get a picture of general well-being), since this process involves adding apples to oranges: there is no sense in combining 'chances' and 'outcomes'. He also claims that all these attempts are incomplete as they are limited to only a few aspects of well-being.

According to Veenhoven (1996), the most comprehensive measure of well-being is how long and happily people live. This can be measured by combining data on length of life from civil registration with data on satisfaction with life as assessed in surveys. A simple measure, the Happy Life Expectancy (HLE) can be calculated by multiplying life expectancy with life satisfaction. Data on happy life years are available for 67 countries in the 1990s (the number of countries covered continues to expand) and can be found on the World Happiness Database<sup>2</sup>.

Veenhoven (2004) calls for the development of subjective welfare measures in developing countries, since there is a clear information deficit. Surveys on aspirations, needs and satisfactions of citizens could enrich the public policy debate and add to the quality of available information in these countries. Since these surveys are relatively cheap and of high value, the conduction should start as soon as possible (Veenhoven, 2004).

### ***Social Indicators***

Land (1999) defines social indicators as statistical time series "... used to monitor the social system, helping to identify changes and to guide intervention to alter the course of social change".

The social indicator movement emerged in the 1960s and was inspired by the idea that real welfare was not fully captured by economic indicators alone. After blooming in the 1970s, when several leading countries and international organisations published series of social indicators, the interest slowly waned during the 1980s. But now the movement has entered a new era with the development of summary social indicators. The purpose of these indicators is to summarize indicators from different domains into a single index in order to get an idea of the progress of a country in terms of social conditions both over time and compared to other countries (Sharpe, 1999).

Two summary indices are discussed here: the Human Development Index and the Index of Social Progress.

#### **Human Development Index**

The Human Development Index (HDI), developed by the United Nations Development Programme (UNDP) is probably the best known composite index of social and economic well-being. The index was calculated for the first time in 1990.

The HDI keeps track of three dimensions that are considered important for human well-being (with between brackets the indicator or indicators used):

- a long and healthy life (life expectancy at birth)
- knowledge (adult literacy rate and gross enrolment ratio)

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<sup>2</sup> <http://www2.eur.nl/fsw/research/happiness/>

- a decent standard of living (GDP per capita – purchasing power parities US\$)

Before the HDI itself is calculated, an index needs to be created for each of these dimensions. To calculate these indices, minimum and maximum values (goalposts) are chosen for each underlying indicator. Performance in each dimension is subsequently expressed as a value between 0 and 1. The HDI is then simply the average of the three dimension indices.

More recently, UNDP has developed some additional indices in order to reflect gender inequalities and poverty. The Human Poverty Index (HPI) measures deprivations in the three basic dimensions of human development as captured in the HDI. Two alternative indices exist: HPI-1 tracks poverty in developing countries, while HPI-2 is designed to measure deprivation in developed countries. In addition to the three basic dimensions, HPI-2 also captures social exclusion.

Gender inequalities are highlighted in the Gender-related Development Index (GDI) and the Gender Empowerment Measure. In the GDI methodology, differences in achievement (as represented by the standard dimension indices) between men and women are penalized. Focusing on women's opportunities rather than their capabilities, the GEM captures gender inequality in three important areas: political participation, economic participation and power over economic resources.

All the indices appear annually in the Human Development Report. The latest edition (UNDP, 2004) can be found on the UNDP website<sup>3</sup>.

### **Index of Social Progress**

Estes (1984) developed another multidimensional index for measuring social well-being: the Index of Social Progress (ISP). This index was originally designed to serve as a reliable tool for assessing shifts in the capacity of nations to provide for the basic needs of their populations and to facilitate the analysis of welfare-relevant data at regular intervals.

The updated methodology (Estes, 1997) for the Weighted Index of Social Progress (WISP) aggregates 46 social indicators into 10 sub-indices before arriving at the final index. The subcategories of the ISP are: education, health status, women status, defence effort, economy, demography, geography, political participation, cultural diversity and welfare effort. The statistical weights for the exercise are derived through a two-stage varimax factor analysis in which each indicator and sub-index is analysed for its relative contribution toward explaining the variance associated with changes in social progress over time (Estes, 1997). The latest effort (Estes, 2003) provides WISP-scores in the year 2000 for 163 countries.

Estes (1997) claims that the WISP is a more comprehensive, valid and reliable instrument for assessing changes in social development over time than any of the other indices on national and international progress, such as the GDP and the HDI. Yet Osberg (2001) is afraid that the high complexity of the WISP calculation is limiting clear comparison with the other measures.

### ***Extended Accounts***

We can distinguish between two reasons for extending the conventional economic accounts. First, some changes are made in order to facilitate critiques on the methodology, such as the lack of taking capital depreciation into account (which has led to the calculation of the Net National Product) or the absence of natural capital stocks and flows (facilitated by the creation of complementary environmental satellite accounts such as the SEEA).

The second reason for extending the accounts is to provide a welfare measure that is theoretically more sound. Extended welfare accounts usually start out with the core of the System of National Accounts (SNA) and make adjustments on consumption and capital accounts: typically some commodities and services, which are not seen as final goods but as 'regrettable necessities', are eliminated. Finally, these accounts impute a value to sources of welfare from outside the market (such as household services).

In the remainder of this subsection, an historical overview of the most important contributions to the extension

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<sup>3</sup> <http://hdr.undp.org/reports/>

of economic accounts is given. It will discuss the Measure of Economic Welfare, the Economic Aspects of Welfare, the Index of Sustainable Economic Welfare and the Genuine Progress Indicator.

### **Measure of Economic Welfare**

One of the earliest efforts (Nordhaus and Tobin, 1972) resulted in the Measure of Economic Welfare (MEW), a comprehensive measure of the annual real consumption of households. In the MEW-index, consumption includes all goods and services, marketed or not, valued at market prices or at their equivalent in opportunity costs to consumers. Collective consumption is also included (as far as these expenditures are not considered as instrumental expenditures), and allowance is made for negative externalities: environmental damage, disamenities of congestion and urbanisation, ...

The corrections can be divided into three categories:

- reclassification of GNP final expenditures
- imputations for capital services, leisure and non-market work
- disamenities of urbanisation

The study was undertaken to answer the following question: how good are measures of output for evaluating the growth of economic welfare? Nordhaus and Tobin (1972) conclude: "Is growth obsolete? We think not. Although GNP and other national income aggregates are imperfect measures of welfare, the broad picture of secular progress which they convey remains after correction of their most obvious deficiencies". Daly and Cobb (1989) disagree with these findings, claiming that the relatively close association between growth of per capita GNP and MEW disappears when the results are more carefully examined. They find that, when looking at specific time intervals or when adjusting some of the assumptions, the GNP is not a good proxy for welfare at all.

### **Economic Aspects of Welfare**

A second attempt was made by Zolotas (1981) whose welfare measure, the Economic Aspects of Welfare (EAW), was constructed to depict the full range of actual changes in a society's quantifiable well-being, regardless of whether or not these changes were the outcome of market transactions. The EAW-index also takes the private consumption expenditures as its starting point, while various other magnitudes are added or deducted according to whether they are positively or negatively related to economic welfare.

Negative adjustments are made for expenses on consumer durables, advertising, the depletion of natural resources, the rapid growth and the rising social cost of environmental pollution, the cost of commuting and private health and education outlays. Positive corrections include services from the stock of public capital, services from durable consumer goods, household services, leisure time and public sector services (relating mainly to expenditure on education and health).

Zolotas (1981) finds that his hypothesis, namely that the economic aspects of social welfare are a diminishing function of economic growth in industrially mature societies, is confirmed by his empirical results: the EAW-index rises at a lower rate than GNP. This is because the items deducted from private consumption grew faster than GNP during the same period. The results even overestimate the actual level of economic welfare, since the damage costs are higher than they are made to appear by the inadequacy of available data (Zolotas, 1981).

The EAW differs from the MEW-index by more sharply focusing on the current flow of goods and services and by largely ignoring capital accumulation and the issue of sustainability (Daly and Cobb, 1989). The EAW-measure also addresses the issue of environmental damages more directly than the index of Nordhaus and Tobin, where there is only an imputation for urban disamenities.

### **The Index of Sustainable Economic Welfare and the Genuine Progress Indicator**

Building upon the earlier efforts, Daly and Cobb (1989) constructed the Index of Sustainable Economic Welfare (ISEW). Like the other welfare indices, the ISEW starts with the personal consumption expenditures and adjusts this figure for such factors as income distribution, net capital growth, resource depletion, environmental damage and the value of unpaid household labour. The index was later revised by Cobb and Cobb (1994) and some parts of the

methodology were updated.

In 1995, Redefining Progress<sup>4</sup> elaborates further on the ISEW-framework to arrive at a new index for measuring economic welfare: the Genuine Progress Indicator (GPI). This measure adds a number of new categories to the ISEW: the value of volunteer work, costs of crime and family breakdown, loss of leisure time, cost of underemployment and cost of ozone depletion. The GPI has already been compiled in the United States (Anielski and Rowe, 1999 – Venetoulis and Cobb, 2004) and in Australia (Hamilton and Denniss, 2000).

The ISEW will be discussed to a greater length in the following section.

## **Index of Sustainable Economic Welfare**

Daly and Cobb (1989) claim that as GNP does not come close enough to measuring economic welfare, its continued use as if it were a significant indicator of economic well-being is an “egregious instance of the fallacy of misplaced concreteness”. In order to offer an alternative, they have created the Index of Sustainable Economic Welfare (ISEW), based on earlier research in the field of extending the economic accounts.

England (1997) considers the ISEW as the only effort so far to integrate all critiques on the GDP when used as a welfare measure (see the introduction of this paper) into one accounting scheme. The index touches the welfare effects of both macro-economic activity and social inequality, and takes into account the effects of economic growth on the environment.

In what follows, we will discuss the theoretical underpinnings of the ISEW, look more closely into its methodology, review the results of international studies and investigate the strengths and weaknesses of the index.

### ***Theory***

A combination of four elements can be thought of as essential in the theoretical framework underlying the ISEW:

- Hicksian income
- extension of the capital concept
- inclusion of non-market flows
- defensive expenditures

The central criterion for defining the concept of income has been well stated by Hicks (1939): “we ought to define a man’s income as the maximum value which he can consume during a week, and still expect to be as well off at the end of the week as he was at the beginning”. The same basic idea of income holds at the national level and for annual time periods (Daly and Cobb, 1989). It’s worth to note that the central defining characteristic of income is sustainability, as the total capital stock should be kept intact.

Another important aspect of measuring sustainable economic welfare is the extension of the capital concept. When reviewing the different interpretations of capital, Fisher (1965) found that they generally had three elements in common:

- capital has a productive capacity
- capital generates dividends for the future
- capital only includes factors that themselves have been produced in the economic system

These factors are today still functioning as a guideline for the classification of capital. In this sense, only man-made goods, such as machinery and buildings, will classify as capital. But when the third condition is relaxed, a broader definition of capital will emerge (Stymne, 2000). This would allow the capital concept to be extended in order to include natural capital and human capital.

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<sup>4</sup> <http://www.rprogress.org/>

A third issue is the inclusion of non-market flows such as household labour and environmental degradation (Jackson et al, 1997). This allows for externalities to be incorporated in the ISEW-framework.

Finally, the concept of 'defensive expenditures' (expenditures that are made to offset a decrease in welfare), which was introduced by Leipert (1989), can be used to distinguish 'goods' from 'bads' when consumption expenditures are to be evaluated. Common examples of defensive expenditures include: locks and security systems, hospitals bills from auto accidents, personal water filters, ...

### ***Methodology***

Daly and Cobb (1989) first described the ISEW in their influential book 'For the Common Good: Redirecting the Economy Toward Community, the Environment, and a Sustainable Future'. The methodology was described in great detail and the index was compiled for the United States (1950-1986). Five years later, Cobb and Cobb (1994) revised the methodology, adding new items to it and incorporating new valuation methods. Their work became the foundation for the international research in measuring economic welfare.

In the following years, the ISEW was calculated in many countries: Germany (Diefenbacher, 1994), the Netherlands (Rosenberg et al, 1995), Sweden (Jackson and Stymne, 1996), the United Kingdom (Jackson et al, 1997), Austria (Stockhammer et al, 1997), Italy (Guenno and Tiezzi, 1998), Chili (Castaneda, 1999) and Poland (Gil and Sleszynski, 2003). In each country, minor adaptations were made to the original methodology in order to overcome problems with data availability or to pay attention to country-specific issues.

The basic methodology used to calculate the ISEW can be summarized as follows (Jackson et al, 1997):

$$\begin{aligned} \text{ISEW} = & \text{personal consumption} \\ & - \text{losses from income inequality} \\ & + \text{domestic labour} \\ & + \text{non-defensive public expenditures} \\ & - \text{defensive private expenditures} \\ & + \text{capital adjustments} \\ & - \text{costs of environmental degradation} \\ & - \text{depreciation of natural capital} \end{aligned}$$

Income inequality is factored in on the assumption that an additional and equal amount of money adds more to the welfare of a poor family than it does to a rich family. Inequalities should therefore not be considered separate from the magnitude of economic welfare (Daly and Cobb, 1989). In the original ISEW the Gini-coefficient is used to adjust personal expenditures to income inequality. Subsequent studies performed in other countries favour the use of the Atkinson-index (e.g. Jackson and Stymne, 1996), as it explicitly states the preference for an equal distribution of income.

The idea of including the production of services by members of a household is intuitively compelling, but the calculation of the imputation is not very straightforward (Daly and Cobb, 1989). Problems arise from the definition of household labour, its measurement and its valuation. The total number of hours spent on housework is derived through surveys on time use, while valuation is based on a shadow price (average wage rate of domestic workers).

Public expenditures are considered to be mainly defensive: only half of the expenditures on higher education and on health are considered to enhance welfare (Cobb and Cobb, 1994). Although this methodology is used in most of the international ISEW-studies, some exceptions exist, like for instance in the calculation of the GPI for Australia (Hamilton and Denniss, 2000).

Defensive private expenses are to be subtracted from the consumption base, since they have already been included. The ISEW (Cobb and Cobb, 1994) makes adjustments for: expenditures on health and education, costs of commuting, personal expenditures on pollution control and costs of car accidents.

Capital adjustments are needed in order to properly deal with consumer durables and to keep track of net capital

growth. Durable consumer goods should be regarded as a capital stock: it are the annual services delivered by this stock that matter and not so much the annual expenditures on these goods. In order to calculate the net capital growth, Daly and Cobb (1989) are advocates of the introduction of a 'growth requirement' that is defined as the growth of capital necessary to compensate for depreciation and population growth. Annual net capital growth equals the annual capital growth minus the growth requirement. Besides this calculation, Daly and Cobb also include a category (net investment position) that takes into account whether the source of capital can be sustained on the assumption that sustainability requires long-term national self-reliance.

The ISEW keeps track of environmental damage in two ways. First there are items that reflect the direct effects of water pollution, air pollution and noise pollution, based on estimates of emission trends and damage costs. A second category consists of estimates of long-term environmental damage from climate change and ozone depletion. These damages are assumed to be cumulative and directly related to energy consumption and consumption of CFCs respectively.

Natural capital and the availability of natural resources are also incorporated in the ISEW since current depletion impoverishes future generations. Daly and Cobb (1989) reject the idea of discounting the effects of resource depletion on the future and instead propose the view that "any reduction in economic welfare in the future below the level currently enjoyed should be counted as if the cost occurred in the present". In the ISEW, an estimate of the amount that would need to be set aside in a perpetual income stream in order to compensate future generations for the loss of services from non-renewable energy resources is deducted. In addition, the value of the loss of biological resources such as wetlands and farmland is factored in.

Human capital and the value of leisure are explicitly excluded from the ISEW-framework. Daly and Cobb (1989) recognize the importance of human capital in sustainable economic welfare, but the validity of measuring inputs such as expenditures on medical care or on schooling to derive meaningful estimates of the stock of human capital is questioned. The imputation for leisure is omitted "because of the dubious calculations involved in it and [because] it would outweigh all other components in a measure of welfare" (Daly and Cobb, 1989).

In practice, the ISEW is the result of a lengthy series of adjustments to the personal consumption expenditures. For a more detailed review of the methodology Cobb and Cobb (1994) or Jackson et al (1997) can be consulted.

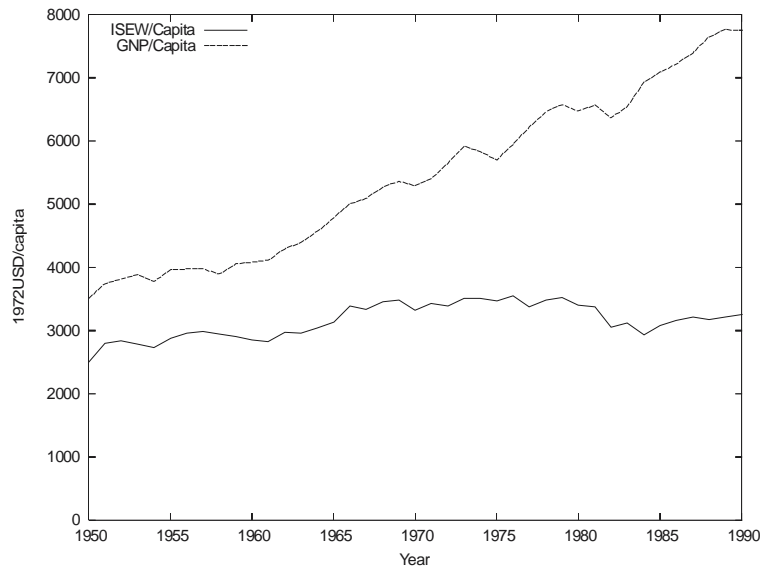
### ***Results***

A common finding among the series of international studies devoted to measuring economic welfare is the growing divergence between GDP per capita and ISEW per capita during the last two decades. In many countries this divergence can be explained by an increasing income inequality, rising costs of resource depletion and escalating long-term environmental costs. During the 1980s and 1990s economic welfare levels off or starts declining in most countries. Figures 1 to 4 present the findings of the ISEW or GPI studies in the United States, the United Kingdom, Sweden and Australia.

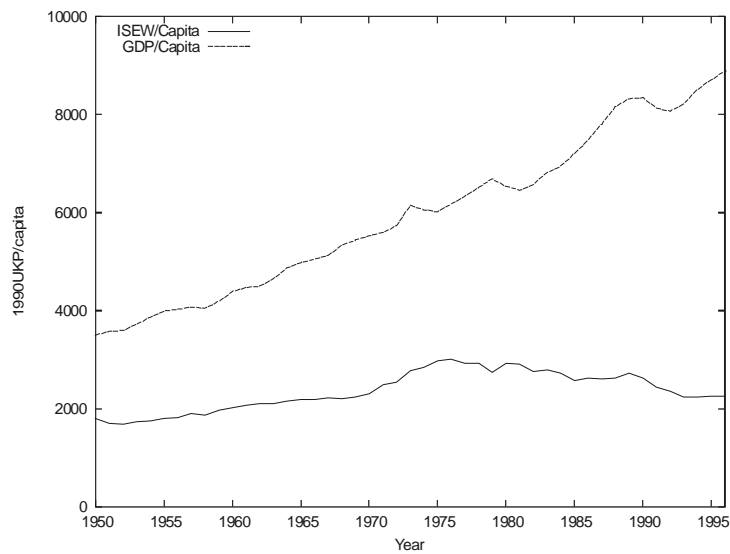
Max-Neef (1995) finds in these results a confirmation of his threshold hypothesis: "for every society there seems to be a period in which economic growth (as conventionally measured) brings about an improvement in the quality of life, but only up to a point – the threshold point – beyond which, if there is more economic growth, quality of life may begin to deteriorate".

All the evidence points to the fact that GDP or GDP per capita should not be used to measure welfare: economic growth does not always guarantee a rise in welfare.

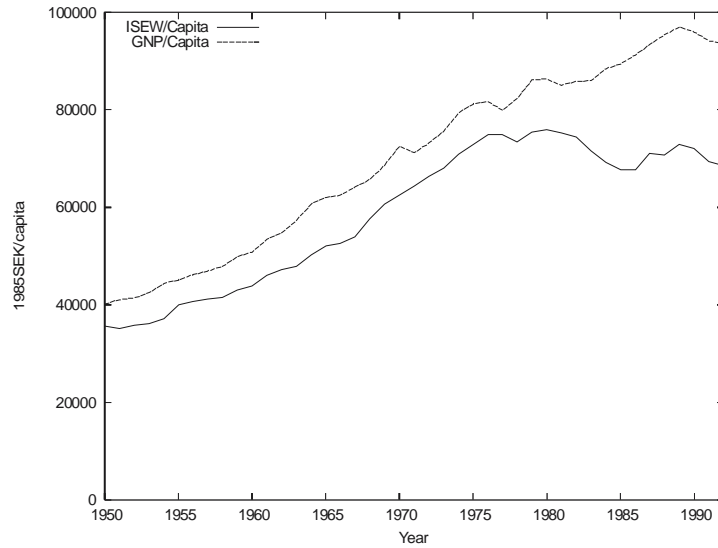




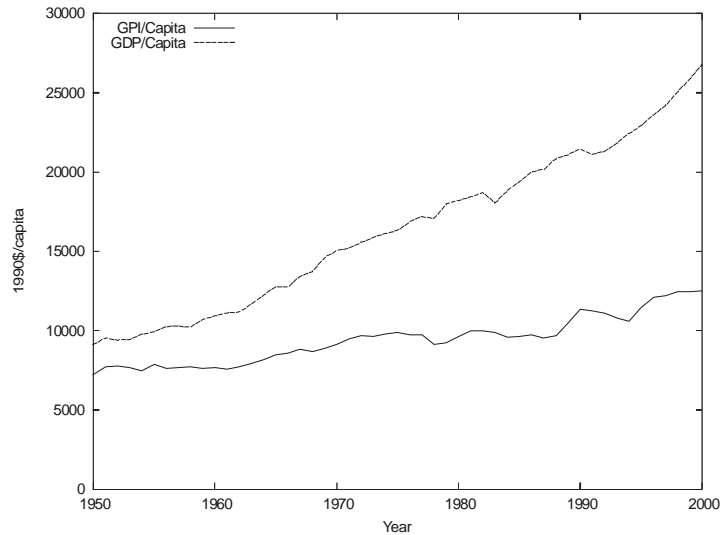
**Figure 1: United States**



**Figure 2: United Kingdom**



**Figure 3: Sweden**



**Figure 4: Australia**

### *Discussion*

Daly and Cobb (1989) consider the ISEW to have a high value for policy-making. They claim that policies governed by the index can truly stimulate economic welfare since the ISEW highlights policy areas that should receive most attention. These could be: reducing income inequality, investing more to sustain the economy into the future, taking measures to control environmental pollution, ... But Daly and Cobb also acknowledge the caveats and limitations of their index. Their most important concern is that the base of the ISEW relies on consumption. Although consumption is certainly a more appropriate measure of welfare than production, Daly and Cobb consider

it still to be questionable given the diminishing welfare returns of increases in consumption. They are also unhappy about the fact that the ISEW does not take any account of the relative level of wealth or consumption.

Neumayer (1999) argues that the ISEW lacks a sound theoretical foundation and that the index is arbitrary in the components it includes or excludes as contributors to welfare. Lawn (2003) offers a solution to the first critique by pointing out that the income concept of Fisher can be used as a theoretical foundation. Neumayer's second objection is refuted by Hamilton and Denniss (2000) who claim that the selection of adjustments within the ISEW-framework is a direct result of the process that identifies the deficiencies of the GDP as a measure of welfare.

According to Neumayer (1999), the authors of the ISEW commit the mistake of methodological inconsistency in two respects:

- the ISEW cannot at the same time function as both an indicator of current welfare and an indicator of sustainability: what affects current well-being need not affect sustainability and vice versa
- the index is not an indicator of strong sustainability, but one of weak sustainability, since the ISEW-framework allows for perfect substitution among different types of capital

Neumayer (2004) proposes the use of the Human Development Index in combination with the Genuine Savings indicator to solve the first inconsistency.

Neumayer (1999, 2000) and Crafts (2002) criticize the valuation methods of various items in the ISEW-framework, claiming that adjustments to their methodologies would remove the general finding of the studies on the index (decline in sustainable economic welfare during the past decennia). The two components that have attracted the greatest critique are non-renewable resource depletion and long-term environmental damage.

This sensitivity of the ISEW to the underlying assumptions within its framework and its valuation methods has led Neumayer (2000) to conclude that the threshold hypothesis, as defined by Max-Neef fails to materialize and that the growing gap between ISEW on the one hand and GDP on the other "might be an artifact of highly contestable methodological assumptions". Neumayer (1999) concludes that "[there remain] doubts about the policy relevance of an ISEW-measure that necessarily rests on arbitrary assumptions and can be shown to be invalid as a reliable indicator for welfare and sustainability". Although this might be too strong a conclusion, it should be noted that many other authors (e.g. Rosenberg et al, 1995) appreciate the ISEW more as a first step to a better measure for welfare than as an ideal indicator of national welfare.

Compiling an Index of Sustainable Economic Welfare is still a valuable exercise, given the importance of its underlying rationale (economic growth and welfare are different concepts) and the potential of the index as a communication tool. The ISEW offers an ideal way to make people understand the different effects that economic growth has on human welfare. The index is also praised because it provides an empirical translation of the critiques on the GDP as a welfare measure.

As there is no widespread consensus on the methodology of the ISEW, international acceptance is still some way off. Efforts at a national level are helpful in screening different welfare issues and their valuation methods. Compiling ISEWs allows for the start of a learning process, which can eventually lead to a methodology that is internationally agreed upon.

However, policy decisions should not be guided by one single indicator: neither the GDP nor the ISEW offer a complete picture of a society. For an exhaustive report on welfare, accompanying indicator systems would be necessary (Stockhammer et al, 1997). These might include the other alternative welfare indicators mentioned earlier in this paper (social indicators and subjective welfare indicators).

In the next section we will analyze India's progress during the last 40 years based on the indicators discussed in this paper.

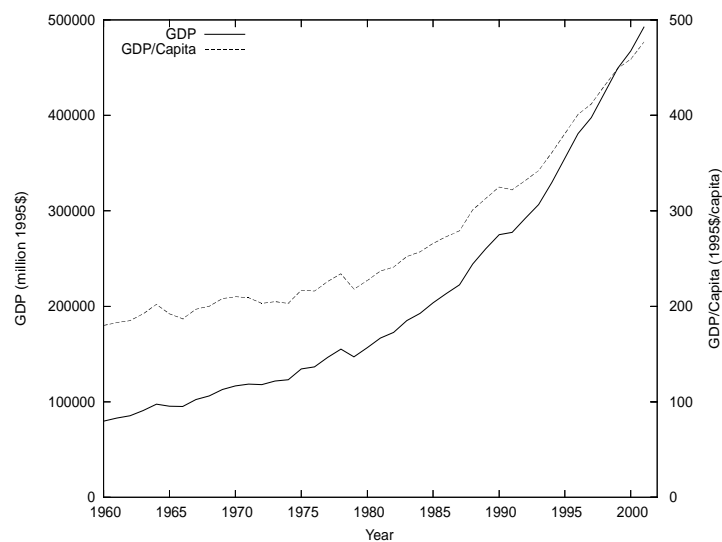
## **Case study for India**

When we look at the two most widely used welfare measures, the Gross Domestic Product (GDP) and the GDP per capita, India has scored quite well during the last four decades (see figure 5). The level of GDP went up by more

than 400% between 1960 and 2000, while GDP per capita more than doubled during the same period<sup>5</sup>. When we look at the annual percentage growth rate, we notice that, since the 1980s, India comes out better than many developed countries. These standard economic indicators show a very positive evolution, but how is this evolution reflected in the other types of indicators?

Examining some of the most prominent social indicators, we find a similar trend. Life expectancy at birth rose from 38,7 in 1952 to 63,9 in 2002. The adult illiteracy rate fell from 66,9% in 1970 to 43,5% in 1998, while gross enrolment ratios in secondary education increased 5% between 1990 and 1996<sup>6</sup>. These trends are also reflected in the Human Development Index (HDI), which rose from 0,411 in 1975 to 0,595 in 2002<sup>7</sup>. The Weighted Index of Social Progress (WISP) shows a positive evolution as well. The index almost doubled during the period under consideration: it went up from 19 in 1970 to 34 in 2000 (Estes, 2003). The trends of both the HDI and the WISP are depicted in figure 6.

These findings clearly indicate that the economic growth had a positive effect on these social indicators. It is safe to say that the increase in economic welfare contributes to overall human welfare in India. But there is still a long road ahead: India scores relatively low in comparison to other countries. In 2002 India ranked 127<sup>th</sup> in out of 177 countries on the HDI, while it ranked 111<sup>th</sup> out of 163 countries on the WISP two years earlier (Estes, 2003).

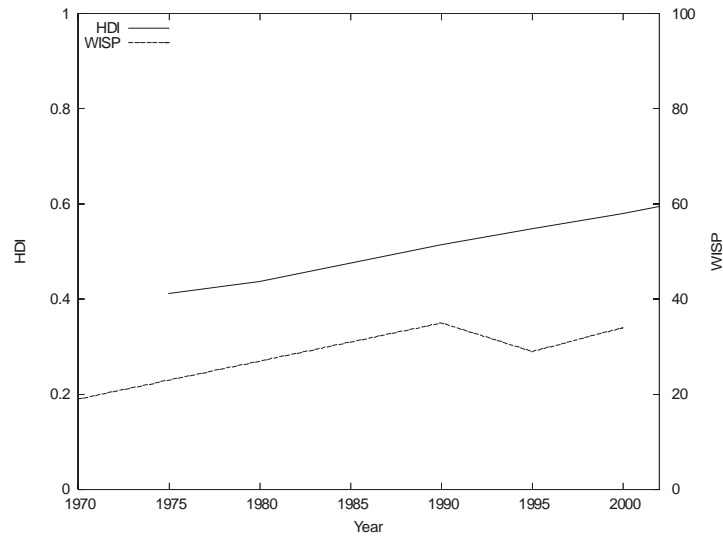


**Figure 5: Economic growth and growth in per capita GDP in India (1960-2002).**

<sup>5</sup> World Development Indicators 2004 CD-ROM (World Bank Group)

<sup>6</sup> UNEP Geo Data Portal – <http://geodata.grid.unep.ch/>

<sup>7</sup> UNDP Human Development Report Data – <http://hdr.undp.org/statistics/data/>



**Figure 6: Evolution of the Human Development Index and the Weighted Index of Social Progress for India.**

Looking at the available subjective welfare measures offers a second way to analyse the economic progress made. With an average Life Satisfaction of 5,7 points out of 10 and a Happy Life Years score of 35,7 India scores average compared to the other countries<sup>8</sup>. Unfortunately, there have not been many historical happiness assessments within India and the ones that have been conducted show opposite trends. This makes well-funded conclusions about the interaction between economic growth and subjective welfare impossible.

The case of alternative economic welfare measures is even worse. Neither the Index of Sustainable Economic Welfare nor the Genuine Progress Indicator have been compiled for India. Given the amount of time and data needed to construct an Index of Sustainable Economic Welfare or Genuine Progress Indicator, it is not that difficult to understand why these efforts are lagging behind. Data availability problems exist even in developed countries: the lack of historical time series of specific indicators needed for the exercise is a recurrent problem in these countries.

## Conclusion

A number of alternative approaches to measuring welfare have been developed during the past decennia. Each of these approaches has generated specific indicators to evaluate the welfare implications of the economic progress that was made. Unfortunately only a few of these alternative welfare measures have gained widespread acceptance (e.g. the Human Development Index). It is important that all alternative approaches are being supported, since they each contain information that is not captured by the other ones (Diener and Suh, 1997). Furthermore, the different indicators focus each on different aspects of human well-being, so that all of them are needed in order to obtain a complete picture of a society's progress.

In developed countries, it is not clear whether economic growth is still contributing to human welfare, and if so, to what extent. The analysis of the Index of Sustainable Economic Welfare suggests that there is a growing divergence between trends in economic growth and economic welfare. Yet the objections suggested by Neumayer (1999, 2000) shed doubts upon these results. There is, however, still a consensus that economic growth should no longer be the only policy objective, as people today not only experience the benefits of economic growth, but also the drawbacks (e.g. stress and environmental pollution). Alternative welfare measures, such as the ISEW, can be used to help people realize these drawbacks, as they incorporate more aspects of human well-being than just the economic sphere. National policies should be guided by a set of indicators, of which the GDP is only one. A mixture of all types of alternative measures (economic indices, social indicators and measures of subjective well-being) offers the best perspectives for policy-making.

<sup>8</sup> World Happiness Database – <http://www.eur.nl/fsw/research/happiness/>

The relationship between economic growth and human welfare is less complex in developing countries. According to Offer (2000), policies aimed at GDP growth can add significantly to human welfare in these countries, since the accompanying rise in standards of living allows for improvements in the social conditions of their populations (education, health services, ...).

As India has a relatively low GDP per capita, the process of economic growth comes with high increases in human welfare. This can be found in the case study performed in the previous section, as economic growth is translated into rises in the available alternative measures such as the Human Development Index and the Weighted Index of Social Progress. The benefits of the economic growth in India clearly outweigh the drawbacks. But India still has a long road ahead as many improvements are needed in the social and economic conditions of the country. Policy makers should however not just focus on the quantity of economic growth, as the quality of the growth is also important. The question as to whether the growth can be sustained into the future is essential in this regard.

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