

SUMMARY¹

In this report the Index of Sustainable Economic Welfare (ISEW) is compiled for Flanders for the period 1990-2015. The index is a comprehensive measure of economic welfare in that it measures the contribution of a country's or region's economy to the overall level of well-being of its citizens. In this regard, the ISEW can be regarded as an indicator for the economic dimension of well-being.

When analysing the level of sustainable economic welfare in a country or region, the ISEW considers both the benefits and the costs of economic activities. As such, the ISEW is clearly distinct from the Gross Domestic Product (GDP) or the Gross Regional Product (GRP) that count the market value of all final goods and services produced in an economy without distinguishing between activities that contribute to the overall level of well-being and activities that have a negative impact on well-being. In the broader 'Beyond GDP' debate, the ISEW is regarded as one of the most important alternatives to GDP when measuring economic welfare. The main advantage of the ISEW over other alternative indices is that it is calculated in monetary terms, so that it can directly be compared to the GDP. All components in the methodology of the ISEW are expressed in monetary terms using valuation methods from different types of literature - e.g. environmental economics for the valuation of environmental degradation or social economics for the valuation of household labour and the welfare losses from income inequalities.

The methodology of the ISEW takes the private consumption expenditures of a country or region as its starting point, as it is assumed that these consumption expenditures constitute the main benefits from economic activities. Next, a number of corrections are made to incorporate both positive and negative welfare effects: part of the public consumption expenditures and the value of household labour are added to the private consumption base of the ISEW, while the defensive part of private consumption expenditures and the welfare losses from income inequalities are deducted. Finally, one capital adjustment is made to adjust for durable consumer goods. Two other capital adjustments (net capital growth and changes in the net international investment position) were included in the previous studies on the ISEW for Flanders, yet the components are dropped in this study as they are not in line with the theoretical framework of the ISEW that is built on the income concept of Fisher (1906). Within the ISEW, the costs of economic activities are mainly due to the loss of ecosystem services that occur either through environmental degradation (water and air pollution, climate change, ozone layer depletion) or through the depletion of natural capital. The ISEW is calculated as the difference between the benefits and the costs of economic activities.

The ISEW for Flanders that is calculated in this report shows that the level of sustainable economic welfare per capita in the region did not increase between 1990-2015 as much as the Gross Regional Product (GRP) per capita. Over that period, the ISEW per capita increased by 33,8 % while the GRP per capita increased by 34,2 %. The evolution over time of both indices is, however, substantially different indicating that economic growth does not necessarily bring about increases in sustainable economic welfare. When the study period is divided into shorter time periods, one can see that the ISEW per capita grew steadily in the 1990s and the early 2000s at a rate that was more or less equal to the growth rate of the GRP per capita.

Between 2002 and 2006 the ISEW per capita dropped significantly as a result of an increase of the income inequalities in Flanders and, to a lesser extent, by the increase of the environmental costs (climate change and the use of non-renewable energy resources).

In 2008 the Flemish GRP per capita dropped slightly, yet this is not picked up by the ISEW per capita that increased in that year.

¹ Bleys (2013) can be consulted for a more detailed presentation in English of the ISEW for Flanders (note that this article presents ISEW data for Flanders only up until 2011).

The peak of the financial and economic crisis in 2009 translated in a drop of the GRP per capita by 3,4 %, while the impact on the ISEW per capita was much more modest as a result of the drop in the use of non-renewable energy resources that went hand in hand with the drop in economic activities. In 2010 the non-renewable energy use increased again (+6,4 %) due to the economic rebound so that the ISEW per capita dropped considerably in that year (-4,4 %).

Over the following years the use of non-renewable energy resources had dropped by 19,1 % between 2010 and 2015, resulting in an increase of the ISEW per capita. This increase could also be explained by the drop in income inequality in Flanders that led to a drop in the related welfare losses which outweighed the rising costs of climate change. In 2014 and 2015 the ISEW per capita increased by 5,0 % and 3,9 % respectively compared to its value in the previous year. This could largely be explained by (1) an increase in the value of household labour caused by an increase of the shadow price of domestic activities and (2) a decrease of the use of non-renewable energy resources and nuclear heat in particular. In 2014 a decrease in the costs of air pollution due to a drop of PM emissions led to an increase in the ISEW per capita, yet in 2015 the costs of air pollution went up again. The increase in the ISEW per capita in 2015 could also be related to the increases in private consumption expenditures and in non-defensive public expenditures. Globally, it should be noted that the short term costs of environmental degradation are decreasing in Flanders, mostly as a result of a drop in the emissions of air pollutants and improvements in the water quality in the region.

The trend over time of the ISEW in Flanders is quite different from the trend over time of the Gross Regional Product (GRP). The GRP increased steadily until 2007 and remained more or less stagnant since. The ISEW looks beyond the value of market transactions and takes into account non-market activities such as household labour, the distribution of incomes and the environmental impact of production and consumption. As a result, the ISEW can be stimulated using a wide range of (policy) options: reducing pollution levels, striving for a more equal distribution of incomes and so on. The more holistic approach of the ISEW is one of the main benefits of the index over the GDP. Since the start of the financial-economic crisis (2008) the ISEW per capita has increased by 10,6 %, while the GRP per capita decreased by 1,5 %. This is due to the fact that the ISEW does not only look at the benefits of economic activities, but also at the related costs. The strong increase in ISEW per capita since 2008 has led to an overall increase of the ISEW per capita during the study period (1990-2015) that is more or less equal to the increase in GDP per capita. Yet, it should be stressed that both indicators have evolved differently over time, and that in many of its intermediate periods the indicators had moved into a different direction – i.e. ISEW per capita had been decreasing while BRP per capita had been increasing, and vice versa.

This report includes an extensive review of the methodology used in the compilation of the ISEW for Flanders. The review reveals that the valuation methods for several ISEW components diverge between studies. For instance, the costs of climate change are estimated in some studies by accumulating emissions in the past, while other studies only look at the current emissions of carbon dioxide emissions. In some studies, both methods are combined. Over the past actualisations of this report, a number of methodological adjustments were carried out – e.g. a number of capital adjustments components were dropped, because they were not in line with the theoretical framework of the index, and the valuation method for non-renewable energy use was updated so that it makes use of a more recent estimate of the replacement costs (based on biofuels) and drops the fixed escalation factor.

No major methodological adjustments were made in this study. For a number of components, data were missing – notably data for private consumption expenditures and the use of non-renewable resources – so that estimates had to be used. This study also uses new data on the water quality of rivers in Flanders.

In the previous study (Bleys, 2016) a number of recommendations were made to improve some of the environmental components within the ISEW for Flanders. Part 2 of this study looks at a number of these recommendations in greater detail.

First, the ISEW for Flanders is related to the two possible interpretations of the index (current welfare versus cost-benefit analysis of the current economic activities). Next, a mapping was made of the different ecosystem services (Stevens et al., 2014) included in the monetary estimates of the environmental components. Finally, a number of explorative estimations were made for specific ISEW components: the value of lost agricultural area, the costs of the use of non-renewable energy resources and the value of the loss or gain of biodiversity.

The impact of these new estimates in the ISEW for Flanders on the index is rather limited when it comes to the new cost estimates for soil erosion (loss of farmlands) and of the biodiversity losses linked to changes in the forest area. The impact of using alternative estimates for the replacement costs of the use of non-renewable energy resources is, however, more substantial.

The proposed methodological adjustments can be regarded as improvements over the methodology that is currently used, mostly through the use of more recent cost estimates. At the same time, the adjustments still suffer from either a lack of region-specific data (e.g. production costs of energy production through the use of different renewable alternatives) or a lack of extended time series (e.g. impact of erosion on agriculture in Flanders and Flemish forest area). More information on the theoretical and methodological exploration can be found in part 2 of this study.

A problem with using the ISEW is that it is difficult to compare the results of ISEW compilations in different countries due to problems with data availability and personal choices from the researchers involved. This lack of comparability underlines the need for a widely accepted and internationally agreed upon methodology for the ISEW. In this "2.0" methodology, a number of updated valuation methods should be included, so that the monetary estimates in the index are made according to the latest available data and techniques. The process to arrive at such an updated methodology has been started. This study makes a contribution to this process by exploring new valuation methods for both the costs of water pollution and air pollution. Once a standardised methodology is agreed upon, the ISEW can be compiled for a series of countries or regions, allowing for a meaningful comparison of the results.