# Analysis of opportunities on the use of KNIs for international comparisons in the context of sustainable development (the case of Hungary)

Granted that the State Audit Office of Hungary (SAO) gives a true and fair view and evaluation of facts; moreover, taking into account the importance of indicators appropriate for measuring performance audit objectives, the role of supreme audit institutions in relation to key national indicators (KNIs) can be grouped into three areas:

- assistance with the enhancement of the system of KNIs;
- expansion of the scope of audits on new aspects of socio-economic development relevant to sustainability; and
- improvement of the conditions for audits – with special attention given to performance audits – with the help of indicators appropriate for measuring performance.

## Sustainability indicator systems of the European Union and the Hungarian Central Statistical Office

In compliance with its engagements to implement sustainable development, in 2001 the European Union decided to elaborate an EU-wide strategy, which was reinforced in 2006, along with the comprehensive objective aiming at the improvement of quality of life. In order to present the changes in sustainable development, Eurostat was given the task to prepare a monitoring report every second year. Eurostat has so far published four monitoring reports, in 2005, 2007, 2009 and 2011.These reports were compiled with a quantitative approach, so as to facilitate the evaluation of the fulfilment of sustainable development's strategic objectives.

The indicators serving as a basis for the report are continuously developed by Eurostat, which procedure is highly based on the methodology of the United Nations and OECD.

The indicator system of Eurostat is characterised by a theme-based structure: the 2011 report consists of eleven headline indicators grouped under ten sustainable development themes; while there are more than 100 indicators that further specify the headline indicators.

The Hungarian Central Statistical Office (HCSO) adopted Eurostat's sustainable development indicators amongst the first EU member states and published the corresponding indicators in respect to Hungary three times since then, for the last time in April 2011. HCSO – roughly following the Eurostat pattern – has published indicators on moving towards and moving away from the state of sustainability under ten themes.

The indicators of HCSO are set up in a three-level hierarchic system that serves as a basis for the evaluation of the state of sustainable development as well as for the follow-up of changes occurred. On the first level, headline indicators give a comprehensive overview of the main trends in the different fields. The second level consists of themes specifying the first level; its indicators explain the performance measured by the first-level indicators. The indicators of the third level provide opportunity for the more detailed examination of sub-themes.

The main structure and contents of the current indicator systems of Eurostat and HCSO are illustrated in **Table 1**. The table lists the headline indicators (making reference to the differences between the systems of Eurostat and HCSO), presents the sub-themes of HCSO headline indicators on the second level, and additionally indicates the total number of indicators by themes.

Table 1

**The structure of HCSO's system of sustainability indicators**
(with references to the Eurostat system)

| | Themes | Headline indicator(s) | Second level (HCSO sub-themes) | Total number of HCSO indicators |
|---|---|---|---|---|
| 1. | Socio-economic development | GDP per capita | Investment, productivity, employment | 24 |
| 2. | Sustainable consumption and production | Resource productivity | Solid waste; electricity consumption and production patterns | 25 |
| 3. | Social inclusion | At-risk-of-poverty ratio | Access to labour market, early school-leavers | 20 |
| 4. | Demographic changes | Employment rate of older workers (*Eurostat*) Dependency ratio (*HCSO*) | Life expectancy at age 65; old-age income adequacy; sustainability of public finances | 13 |
| 5. | Public health | Life expectancy at birth and healthy life expectancy | Health condition and health determining factors | 17 |
| 6. | Climate change and energy | Greenhouse gas emissions Share of renewable energy | Greenhouse gas emissions by sector; Energy dependency | 12 |
| 7. | Sustainable transport | Energy consumption of transport (relative to GDP) | Modal split of transports; social, environmental impacts | 11 |
| 8. | Natural resources | Farmland *(Eurostat: common)* bird index Conservation of fish stocks *(Eurostat only)* | Protected areas; Natural water assets; Land use | 13 |
| 9. | Global partnership | Official development assistance (*Eurostat*) | Global trade and resource management: imports and $CO_2$ emissions | 5 |
| 10. | Governance and public life | *(No headline indicator)* | Turnover at elections; Proportion of environmental taxes | 9 |

Source: The website of Eurostat and HCSO

In the latest, 2011 publication of HCSO 9 first-level, 30 second-level and 110 third-level, that is, altogether 149 indicators can be found. Each chapter begins with the presentation of the given theme's headline indicator, which is followed by the indicators of the second and third level. The main objective was to present the period 1995-2009; however, in specific cases – for example in cases of data collection of a different method – HCSO publishes different types of time series, too.

There are two themes of sustainability that might be of interest from SAIs' point of view: on one hand the overall, national-level audit of sustainable development; on the other hand a better substantiation of the usual audits by means of key indicators of sustainability.

**Auditing sustainable development**

Given that using the sustainable development approach is part of the decision-making procedure in more and more countries, while it is also a compulsory task for EU member states to elaborate sustainable development programmes; the audit of these development tendencies becomes an even bigger challenge in public auditing. There is an increase in the number of SAIs whose mandate covers regularity audits in this field, while others are mandated to carry out performance audits or both.

Country strategies (programmes, plans) on sustainable development include not only strategic objectives, but also cover the areas of implementation and measuring thereof, as well as reporting on the implementation and accountability. Similar strategies, specific programmes and reporting guidelines are prepared on the regional and local level, too.

According to these strategies, sustainable development is being audited on the national and regional level. In the course of national audits – based on international experience – special attention is paid to the evaluation of the reality of strategic objectives set, as well as to the verification of reliability of indicators measuring performance. Moreover, such themes as the sustainable development strategy's compliance with international standards, the expediency of the instruments used and the integration of the sustainable development dimension are also highlighted. As for the structure of indicators, the criteria formulated by OECD are essential for the SAIs:

- policy relevance (ease of interpretation),
- analytical soundness (clear and explicit specification of sustainable development objectives), and
- measurability (practicability instead of theoretical elegance).

In case the circumstances for the national or regional level auditing of the sustainable development strategy are not given, the activity of SAIs may aim at the specific sustainable development programmes (concerning industrial sectors, transportation, etc.). During these specific audits, further challenges might present themselves when creating the consistency of indicators and taking stock of organisational relations.

Besides the types of sustainable development audits outlined, such examinations and tests are also to be considered and methodologically substantiated that can use the opportunities provided by the available indicator systems for the objectives of the so-called *sustainability convergence analyses*.

**Sustainability convergence analysis**

Based on the analysis of sustainable development indicators, not only the improvement achieved can be measured but the international comparison of indicators also makes it possible to identify deficiencies – compared to the sustainable development performance of a group of reference countries, that is in case of Hungary the European Union – where changes are needed to speed up the convergence procedure. Currently, these areas identified – on the basis of the headline indicators and some detailed, analytical indicators – are primarily the following:

1. Under the theme *socio-economic development*, while on the basis of the headline indicator (the increase in the GDP per capita) the economy of Hungary did approach the European Community, we significantly lag behind in terms of differences in the stage of development within the country, employment and R+D expenditures. As to the GDP per capita, in 2006 the greatest *regional disparities* within the EU – after Latvia and Estonia – could be detected in Hungary. In 2009 the employment rate was lower by 9.6 percentage points in case of men and by 8.6 percentage points in case of women than the average of the 27 EU member states. As regards

the *R+D expenditures in the proportion of GDP,* Hungary is lagging behind the EU average by roughly 1 percentage point.

*Public debt in the proportion of GDP* is not listed among the indicators of socio-economic development, but under a different theme. Given that the sustainability of public finances is an important prerequisite to long-term sustainability, it is reasonable to reduce the present, rather high level of public debt – circa 80 percent of the GDP – under 60 percent.

2. Even though under the theme sustainable consumption and production the headline indicator of resource productivity, that is *GDP divided by domestic material consumption,* has gradually improved, numerically it only equals roughly half of the EU average. The situation is very similar also in case of organic farming. In this respect, a critical area is the appropriate treatment and purification of waste water and the disposal of waste.

3. In the field of social inclusion – based on the *at-risk-of-poverty rate* – the corresponding indicator was more favourable in 2008 in Hungary (12.4%) than the average of the 27 EU member states (16.5%). The circumstances that the rate of poverty is higher in the cluster of the population under 18 and that the proportion of *those participating in lifelong learning* in the cluster 25-64 years of age significantly lags behind the EU 27 average, present a challenge, though.

4. In respect of demographic changes, by 2008 the headline indicator *overall dependency ratio* (the ratio of younger and older persons compared to the working-age population) approached the EU 27 average (0.5), it is however higher than the corresponding figures of the Visegrád countries. On the basis of national calculations the ratio is projected to grow in the period until 2050, which means that the dependency burden on active working-age population is expected to increase. In Hungary, life expectancy at the age of 65 – a key indicator of sustainable development – was 13.7 years for men in 2009, while it was 17.6 years for women, which means a 3-year lag in comparison to the 2008 data of the 27 EU member states. *The number of migrants per thousand inhabitants* in Hungary – even in spite of its continuous increase – remains low, in 2010 it was 20 thousandth, significantly lower than in Austria (105 thousandth), Germany (87 thousandth) and the UK (70 thousandth).

5. In the field of *public health*, *life expectancy at birth* in Hungary in 2008 – despite the increase realised – was 7 years shorter for men and 5 years shorter for women than the EU 27 average. It is remarkable though, that while at birth men can expect a lifetime of 70 years and women can expect a lifetime of 78 years, women live only 75% of their lives in health, in opposition to men who live roughly 80% of their lives in health. As regards health, the high value of the indicator expressing the *ratio of regular smokers* is also an important factor: Considering the ratio of those over 14 years of age who smoke every day, after Poland Hungary ranks second in Europe.

6. In respect of climate change and energy, after the moderate increase in *greenhouse gas emission* between 1995-2006, there was a decrease in the following two years, due to the favourable structural changes concerning fuels and certain industrial sectors. However, in order to meet the Kyoto Protocol commitments, between 2008-2012 Hungary has to succeed in

reducing its emission by 6% on the average, in comparison to the 1985-1987 base value. As regards energy, the reduction of *dependence on energy imports* indicator is an important task. According to this indicator, in 2008 61% of the gross inland energy consumption was covered by import. The corresponding figure is lower in the EU 27 countries, only 55%.

7.  Under the theme sustainable transport, the importance of the headline indicator *energy consumption of transport relative to GPD* is stressed by the reduction of undesirable side effects, especially in case of greenhouse gas emission. In Hungary the value of the indicator increased by 11 percentage points between 2000-2007, while in the 27 EU member states there was a decrease of 4.5 (in Slovakia 9) percentage points. It is also an important difference that in Hungary the increase is mainly due to the fuel consumption of road transport, while in the EU 27 countries it was due to aviation and shipping.

8.  In relation to the theme natural resources, the value of the headline indicator *abundance and diversity of farmland birds* reflecting the sustainability of farming practices equalled circa 90% of the 1999 value of 100%, however dropped to 80% in 2009. The *ratio of native tree species* in the forests is roughly one half, the rest of them do not show resemblance to the original arbores cent vegetation.

9.  As to the theme global partnership the sub-indicator *share of imports in Hungary* showed a constant and significant growth until the outbreak of the financial and economic crisis. Due to the crisis however, the value of imports dropped to EUR 55 billion, which equals the 2005 level.

10. In the field of governance and public life, according to the sub-indicator *the share of environmental taxes within the tax system*, it can be concluded that in 2008 it amounted to 6.7%, which is higher than the EU average by 0.6 percentage points. In spite of this, in terms of sustainability it represents a challenge that the proportion of taxes imposed on energy is high in Hungary, it was 82% in 2009, and a significant part thereof is constituted by the excise duty of fuels. In order to dissolve this one-sidedness, it might be worth considering to introduce – instead of the tax charged only on energy – a tax serving several environmental aims, that – at the same time– is of a lower rate, which would be more favourable also in terms of the competitive position of Hungary.

**The better substantiation of audits with key sustainability indicators**

It is included in the sustainability strategy of SAO that greater attention should be paid to the approach of sustainable development in the course of audits and the indicators thereof should be applied. As an experiment, the management of SAO set the objective of applying sustainability indicators in the case of the following SAO audits:

- The evaluation of the system of subsidies funded from national and EU sources, facilitating the creation and preservation of jobs was concluded by the end of 2011;
- The audit on the public employment and employment-oriented training programmes was launched at the end of 2011.

In order to apply sustainability criteria, the following forms of cooperation are possible between the auditors carrying out the audits and the SAO analyst of key national indicators (hereinafter: the analyst):

- the analyst is involved in the elaboration of the audit programme;

- the analyst informs those involved in the audit about the international and national experience concerning the topic;
- consultation about the problems, which may arise in the course of the audit;
- the analyst is involved in the evaluation of results gained due to the application of sustainability indicators.

Of the two audits mentioned above, we can report on cooperation experience concerning the evaluation related to the creation and preservation of jobs. Indicators related to employment appear in two chapters of the set of sustainability indicators of the Hungarian Central Statistical Office (HCSO): in the subchapter 'Employment' within chapter 1 'Socio-economic development' and in the subchapter 'Access to labour market' within chapter 3 'Social inclusion'. The indicators of chapter 1, obviously, describe employment in terms of the sustainability of socio-economic development, while the latter indicators describe it as the condition for individual living, development and integration into society. The indicators (according to their serial number in the publication of HCSO) which can be applied in the SAO audit in question are the following:

- 1.18    Employment by age groups (in thousands of persons): the data demonstrate well the trough in 1996 as a result of the 'economic transition', the effect of raising the retirement age on age groups and the influence of the recent crisis.
- 1.19 Employment rate by age groups and sex: The data broken down by age groups reflect the changes in educational policy and the pension system; the data of women of child-bearing age reflect the birth rate and the lack of conditions, which would facilitate to bring up children and work simultaneously.
- 1.20 Employment rate by highest level of education: the positive effect of education on employment is evident. Within the average employment rate of around 50%, education raises the rate from 20% to nearly 75%, which is instructive from the aspect of the utilisation of funds.
- 1.21 Employment rate by regions: there is a difference of +5% and -7% from the national average between the regions with the best and the worst indicators, and this gap is not narrowing, which is also instructive in terms of the purpose and efficiency of utilisation of funds.
- 1.22 Atypical employment: employment in part time, at home or through telework, which can have a key role in the improvement of the employment rate of women: contrary to the 30% rate of EU, the rate of this type of employment is marginal in Hungary (around 5%), which offers an opportunity for the expedient utilisation of funds.
- 1.23 and 1.24 Unemployment rate by gender and by age groups: the term of unemployment is strongly limited, it refers only to the economically active population (to those who are at least searching for a job) and it depends strongly on the economic trends, thus, it is understandable that the unemployment rate of Hungary does not differ significantly from the EU average. The utilisation of resources facilitating job supply can result in a positive divergence from the trend. In terms of public policies, stratum indicators (e.g. young people, those near retirement age, women) may have a particular importance.
- 3.9 Persons living in jobless households by age-groups, i.e. where only economically inactive and/or unemployed people live: a specific strength of this indicator in terms of sustainability is that it is divided between

young people (up to the age of 17) and adults, because in case of the former – apart from the problem of hard living – a serious consequence is that they do not see any patterns of living from work. For employment programmes and applications, this type of indicator offers the objectives: the radical improvement of the 2009 rate of 15.6% of young people exceeding the rate of adults. A possible objective for the utilisation of EU funds is also to improve the rates worse than the EU average (in Hungary, it is 3 and 5 percentage points higher in case of young people and adults, respectively).

- 3.11 Total long-term unemployment rate: the version of unemployment rate which shows more serious social problems and it contains only those being unemployed for more than a year: both in case of men and women, the rate is around 4%, opposed to the rate of around 10% in case of the comprehensive indicator. It is remarkable that this rate is significantly worse (i.e. of 1-1.5 percentage points) in Hungary than the EU average.

Comparing the programme of the SAO audit and the content of the HCSO indicators mentioned above it can be concluded that the indicators can be a good measure for the SAO audit. A general problem of application is that the indicators of HCSO typically present a picture of macro-level trends, while in the framework of SAO audits the micro or medium-level influence of the utilisation of public funds and the public policy can be shown. However, from the aspect of the specific audit subject, the HCSO indicators are considerably articulated, detailed and subtle, thus it can be controlled with the help thereof whether subsidy systems are well-targeted in the direction of problem centres. Indicators can occasionally provide an opportunity for auditors to reveal employment programmes' deflection effect from the general trend or from crisis effect or the lack thereof (e.g. in case of the convergence of a region).

A further general methodological problem of the future application of indicators in audits might be that several factors are reflected within one indicator. Similarly, besides its main objective, a programme might have several positive external effects which can justify the crossing of topic boundaries in the course of audits (in our case, for example an opening towards education and childcare).

A peculiarity of the audit in question is that it covers the utilisation of EU funds as well. It can be expected from these programmes with reason that they narrow the gap between Hungary and the EU average, the control of which process might be facilitated by the EU figures presented in certain places in the publication of HCSO. It can be a general expectation from this audit and performance audits of a similar subject to break down indicators by factors of weak performance; to judge, to what extent failure can be attributed to 'subjective' error factors (of programme specification and implementation) and to objective reasons; and – for example – to assess whether employment in the market sector can be influenced to a certain extent by means of national and EU subsidies provided for public funds.