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**NATIONAL STATISTICAL OFFICES CONTRIBUTION TO THE WORK ON
SUSTAINABLE DEVELOPMENT INDICATORS**

Invited paper submitted by Statistics Sweden*

ABSTRACT

Sweden's approach to structuring Sustainable Development Indicators (SDIs) is based on the Brundtland Commission's definition and covers four integrated themes. The experience and conclusions from this work is covered in this paper.

The main part of this paper covers the advantages of the National Statistical Offices (NSOs) and the new challenges facing them in the work on SDIs.

INTRODUCTION

1. Statistics Sweden, together with the Swedish Environmental Protection Agency, compiled the first set of Sustainable Development Indicators in 2001¹. The Swedish approach seems to be unique and covers four themes focusing on the transition towards sustainability: efficiency, contribution and equality, adaptability, and values and resources for coming generations. Statistics Sweden is also an active member of the ESS Task Force on Methodological Issues for Sustainable Development Indicators (SDIs), which is working with the first set of SDIs for Europe².

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2. In the past, Statistics Sweden has also been involved in other national indicator initiatives such as the Green Key Figures³ and Indicators to follow up the national environmental goals of the year 2000⁴.

3. This paper will focus on the advantages of National Statistical Offices (NSOs) and the new demands on them.

SWEDEN'S APPROACH IN 2001

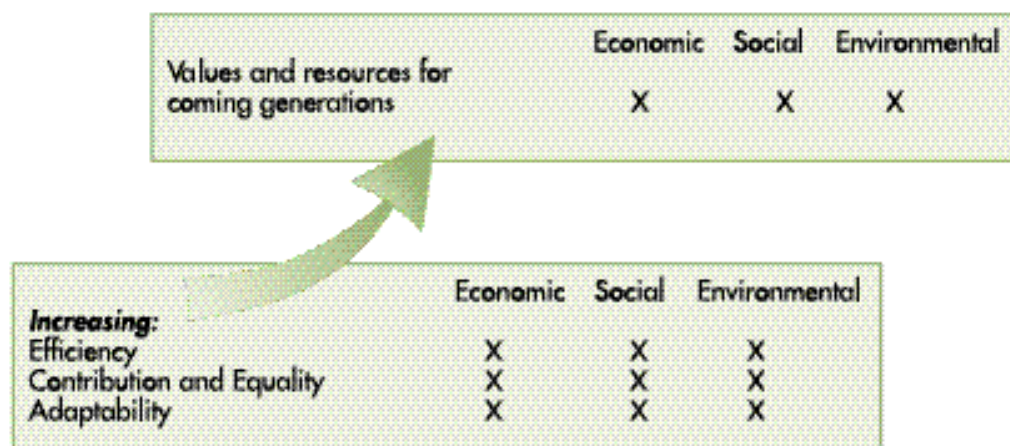
4. The work of the Brundtland Commission⁵ provides the background for the approach Sweden has chosen to structure the indicators. Sustainability indicators are generally designed to illustrate the economic, environmental and social dimensions of sustainable development. The structure for Sweden's indicators is based on four themes: efficiency, equality/participation, adaptability and values and resources for coming generations (Fig 1). Within these themes, the indicators encompass economic, environmental and social dimensions. This approach will serve as interdisciplinary and help avoid categorization. The aim is to bring into focus the different facets of the transition towards sustainability, rather than to serve as an assessment of the present state of sustainability.

- Indicators on efficiency focus on resource use from different perspectives. Resource productivity is undoubtedly one of the key issues in the transition to a sustainable society.
- Indicators on equality and participation encompass the distributional aspects of development, in terms of sharing both the burdens and benefits in different areas. Many of these indicators deal with traditional economic and social welfare issues; additional data reflect the interest in promoting changes in production and consumption patterns in a more sustainable direction.
- Indicators on adaptability illustrate actions today that will influence the situation in coming years. These indicators represent different views of the current composition of investments in relation to achieving greater flexibility and efficiency tomorrow.
- The last set of indicators focus on values and resources for coming generations, or what might be termed manoeuvrability. These indicators emphasise the economic, ecological and human resources passed on to future generations. Another way of viewing this theme is to say that it concerns the avoidance of debts that tie up (or deplete) resources that could be put to better use tomorrow.

5. The indicators are presented and discussed separately. The reader is left to make his/her own weighting of, for example, growth in GDP versus changes in levels of emissions or changes in resources spent on education or health care. Obviously, there are trade-offs as well as synergy effects within and among the variables composing the different indicators – especially over longer time periods.

6. Future reports on sustainability may proceed in a different, more analytical, direction if there is a demand for it. This would involve a more explicit analysis of dependencies among indicators as well as different schemes for weighting them as components of a type of meta-indicator.

Fig 1. Indicators of sustainable development



7. If the themes of efficiency, contribution and equality and adaptability increase, this will lead to protected values and resources for the coming generations.

NSO ADVANTAGES

8. The National Statistical Offices (NSOs) have several advantages over other agencies in working with Sustainable Development Indicators (SDIs).

9. The work on SDIs involves working within the three pillars: economical, ecological and social and the integration between these pillars. Official statistics involve statistics in all these dimensions. In many countries, the NSOs are responsible for producing statistics in all these fields. In the Swedish approach of 2001, 22 indicators out of 30 involved data originally from Statistics Sweden. The indicators that were not available concerned indicators 5, 13, 14, 21, 25, 26, 28 and 29 (see Fig. 2). In the countries where other bodies are responsible for certain fields of statistics, the overall responsibility does in most cases lie with the NSOs. This gives the NSOs a complete picture of sustainable development. The fact that the NSOs are not involved in policy-making concerning these areas ensures a certain amount of objectivity in the presentation. The objectivity is particularly necessary when the different dimensions are in conflict. That said, the problems should be viewed from all angles, and not only from the one side of sustainable development.

10. Quality aspects are very important for the work on SDIs, and the demand for quality is already high for official statistics. This will make it easy for the NSO to transfer the same quality demand to new statistics that need to be developed for the work on SDIs, since the same quality concepts could be used. At an international level, the quality concepts, e.g. Eurostat's Quality Concept and IMF's (International Monetary Fund) Data Quality Assessment Framework, are quite similar, and only minor differences exist. The use of similar quality concepts is important when making international comparisons.

11. NSOs in many countries already have considerable experience working with SDIs and their competence is valuable for the future. The experience on SDIs from international organizations such as Eurostat, OECD and the UN should also be kept in mind.

Fig 2. Sweden's core set 2001**Towards sustainability: Efficiency**

1. Total energy supply by GDP
2. GDP per hour worked
3. Waste
4. State of health; Expenditure on health
5. Proportion of pupils not qualifying for upper secondary schools

Towards sustainability: Contribution and Equality

6. Population by age group
7. Gross regional product
8. Passenger and freight transport
9. Disposable income per consumption unit
10. Women's salaries as percentage of men's salaries
11. Electoral participation
12. Ratio of the population exposed to violent crime or threat of violence
13. Enterprises with EMAS or ISO 14001 certification, certified eco-schools; area with certified forestry
14. Purchases of ecolabelled products and services

Towards sustainability: Adaptability

15. Primary energy supply mix
16. Investments in share of GDP
17. Newly started enterprises and bankruptcies
18. Level of education
19. Research and development expenditure in relation to GDP
20. Employment: Women and men by activity status
21. Organic farming, grazed pastures and hay meadows

Towards sustainability: Values and resources for coming generations

22. General Government and Central Government Net Debt in per cent of GDP
23. Share of GDP spent on health, education, welfare and social security
24. Direct Material Consumption
25. Quantities of chemicals hazardous to health and/or the environment
26. Prevalence of allergic asthma among school children
27. Protected area
28. Exploitation of Baltic herring
29. Extinct and endangered species
30. Emissions of carbon dioxide

12. The availability of official statistics is good. NSOs have built up systems and databases to make it easy for the users to access the statistics. The use of the Internet and webpages is well-advanced regarding accessibility to statistics. In many NSOs, the data is free of charge for the users. The system could be extended to include new statistics and could also be used to combine official statistics in new ways to meet the demand for SDIs. In addition, the system offers long time series for large amounts of data, which is an essential factor when analyzing sustainable development. However, there are still things that could be improved, and this will be discussed in the next section.

13. The analysis and knowledge of the data in the various dimensions of SDI is the domain of experts in the different fields. The separate analysis in the different fields is needed when analyzing the whole concept of sustainable development. As the NSO produces and responds to the greater part of the statistics involved, the expertise will be partly within the same office.

However, close cooperation with other actors in society is important for several reasons.

NEW CHALLENGES FOR NSOs

14. Even though NSOs have many advantages in taking the lead in the work on SDI, there is still room for improvement. The world is continuously changing, and the environment as well as the economy and society face new challenges, both positive and negative. In turn, these changes require new SDIs and data from the NSOs. Some examples are global partnership⁶, good governance⁷, and production and consumption patterns. In order to meet these demands, NSOs need to follow the development and build statistical systems that are easy to update and change. The need for long time series is an additional reason for building systems at a micro level, so that data can be easily compiled in new ways for new indicators. NSOs have good statistical systems today, but the systems need improvement. The new way of sustainable thinking will demand an exchange of skills and methods of compiling data other than by traditional methods.

15. Traditionally, statistical offices have organized the three areas of economy, welfare and ecology into different subject matter departments. Sometimes these areas are linked, but usually not. Each dimension or part of SDIs has been developed in different time periods and also by different disciplines and competences.

Statistics on economy

16. The main model that has affected the way the economy is observed is the national accounts system, where fast and consistent data on aggregates like GDP are needed as soon as possible. Data is mainly collected from enterprises and local units but sometimes individuals are involved. This sector has been developed since the 1940s.

Social statistics

17. This area is probably not so dominated by a single model. Instead, considerable efforts and resources have been used on standardization and harmonization of important estimates in the labour market survey (LFS) and the living condition survey (EU-SILC). The important statistical units are households and individuals. The survey model contains three objects: people, enterprises and geography. But the main object in the model is the individual who can be described in a regional or labour market dimension.

Environmental statistics

18. One of the most familiar models for environment statistics is the DPSIR model, but the area is complex. There are also other models.

19. The SDI concept gives us not only a requirement of consistent figures, but perhaps more importantly, a tool to link these areas together. One example is the Environmental Accounts that measure the link between the environment and the economy. To do this, the environmental statistics in environmental accounts have been structured the same way as the national accounts. Another example is the connection between environment and health, such as air pollution and respiratory diseases. As a result, more cooperation between the different areas of statistics will be needed, and NSOs should promote collaboration of cross-border projects. NSOs should

also learn from each other, and the experience with successful integrated work should be spread to others. In addition, international exchange at conferences and visits is valuable as harmonization work for international comparison.

20. The NSOs have experience in all areas of sustainable development, but the challenge will be to integrate this work into our organization. This is a challenge not for NSOs but on society as a whole. It is not easy to change the organization, since policies are often directed towards growth in economic issues.

21. Different needs for different countries should not be forgotten. SDIs vary between countries, depending on local circumstances. However, there are regions that have similar problems and cultural backgrounds, such as the Nordic countries or the East European countries. Cooperation between countries in these regions would undoubtedly lead to greater understanding of the issues at hand.

22. One of the difficult problems when handling sustainable development is the conflict between different areas. The goals for one area may be very different from those for other areas. The NSOs need to highlight these conflicts of goals, and spread the information to politicians, the general public, the mass media, etc.

23. The usefulness of SDIs is of great importance. A close interaction between the NSOs and the politicians and the general public early in the process of developing SDI is essential.

24. SDIs need to be put into some kind of framework, to make it possible to analyse the different areas. Perhaps an integrated framework is not always the right approach for all countries, and this may be too complicated when the indicators are supposed to be used locally.

CONCLUSIONS

25. The experience from all the information discussed in this paper can be summarized in a few short points:

- there is definite need for experienced statisticians, although this is not always realised and/or appreciated;
- close cooperation between subject matter experts and statisticians/data experts is of considerable importance;
- the demand on statistics is high;
- the NSO quality concepts are very useful;
- an advantage, leading to more efficient and coherent work methods, of the NSO is that a large amount of the necessary statistics is easily available in-house. In addition, the knowledge of where and how to find and use statistics from other (official) sources is generalised in the NSO.

REFERENCES TO OTHER WORK DONE IN THIS FIELD

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World Commission on Environment and Development (1987) *Our Common Future*

¹ Sustainable Development Indicators for Sweden – a first set 2001.

² For more information see website: <http://forum.europa.eu.int/Public/irc/dsis/susdevind/home>

³ Key indicators for ecologically sustainable development.

⁴ A system for the follow-up of the environmental quality objectives.

⁵ Our Common Future (1987).

⁶ Global partnership mainly refers to how industrial countries affect developing countries.

⁷ Good governance covers, among other things, questions on democracy.

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