

Accounting Frameworks for Sustainable Development: What Have We Learnt?

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Over the last decade, there has been an increasing attitude, both at the national and international level, to complement policy documents and statements with statistical information (for example, describing past and current tendencies in the economy, the society, etc.) and to set quantitative targets for the policy itself. This attitude has obliged statisticians to face new challenges and develop new concepts and new statistical data sets for meeting policy needs. On the other hand, media and the civil society are also demanding more information to assess current trends and evaluate results of various policies.

The case of Sustainable Development (SD) is no exception and several actions have been undertaken over the last decade by international and supranational organisations (UN, OECD, EU, etc.) to measure trends in economic, social and environmental phenomena related to SD. Well known measures of economic growth (i.e. gross domestic product in real terms) have been analysed in conjunction with several measures of social and environmental variables, in attempt to provide an overall evaluation of the sustainability of current trends both in developed and in developing countries.

In particular, the initiative launched several years ago by the United Nations Commission for Sustainable Development to design a set of SD indicators has been followed by similar attempts carried out by the OECD and, more recently, by the European Commission. These projects have a common aim to draw up lists of indicators able to inform policy makers and public opinion about changes in historical paths of economic, social and environmental phenomena, without trying to summarise this complexity in a single (composite) measure of sustainability¹. In addition, proposals have been put forward by research institutes, academics and a few international organisations to assess the overall “sustainability” of single countries’ positions and trends, helping both policy makers and public opinion (mainly through media) to assess past policies and design future actions.

All these developments have stimulated national statistical authorities and other data providers to design new theoretical frameworks and to enlarge the coverage of statistics, mainly on social and environmental phenomena. They have also contributed to the improvement of the quality and frequency of evidence-based policy debates, despite the fact that policy makers have never reached an agreement on a single set of indicators (or other measures) to be used for comparing countries’ performances. The difficulty in

1. See Hass and others (2002) for a review of these proposals and initiatives.

achieving an agreement reflects the difficulty in defining such a broad concept, the diversity of national approaches and policies to sustainable development and the lack of a theoretical foundation to some initiatives aimed to measure sustainability. Although long and accurate debates have taken place regarding the measurement of SD, no clear consensus has been reached on this issue². In particular, many users are still looking for a fully integrated view of economic, social and environmental domains and tools for evaluating overall trade-offs between different policy options; questions to which indicators alone are not able to provide fully satisfactory answers.

A possible way to, at least partially, overcome these problems is the development of accounting frameworks, encompassing economic, social and environmental phenomena. The OECD has been working on the measurement of SD since the 1980s and several publications have been devoted to illustrating the various options and efforts made by national and international bodies in this respect³. In particular, in September 1999, the first OECD workshop was organised on frameworks for measuring SD, where several approaches were analysed⁴. More recently, in the context of the “2001-2003 horizontal project on sustainable development” and to integrate the work already done in the area of economic, social and environmental indicators, the OECD decided to organise a second workshop on accounting frameworks in order to compare more concrete experiences already available in member countries and in other international organisations. Looking at the quantity and the quality of the papers presented to the workshop one could say that this initiative was very timely and useful, and the richness of contributions demonstrated the feasibility of these approaches.

The OECD workshop on “Accounting Frameworks for Sustainable Development”, organised by the Statistics Directorate in co-operation with other Directorates, was held on 14-16 May 2003. The meeting was attended by more than 70 experts, representing 19 OECD Member countries, 4 International Organisations and several OECD Directorates. Deputy Secretary General Berglind Ásgeirdóttir opened the meeting and chaired the final session on main conclusions of the workshop. During the three days, 22 papers were presented; (all available documents - including presentations - are available on the OECD web site www.oecd.org/std under Statistical Methodology - Publication and Documents - Events, Conferences, and Meetings).

What did we learn from this workshop? I was asked to answer this question during the final session. Therefore, what follows is my personal viewpoint and does not necessarily represent the consensus view of all participants, even if brief comments expressed by some delegates on my presentation allow me to say that, at least, no major disagreements were expressed in regards of these summary remarks.

As previously stated, the quality of papers was very good and I will not try to cover all aspects discussed during the workshop. Therefore, I will concentrate my remarks on the five following topics:

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2. The difficulty in agreeing on indicators is also, and mainly, due to the fact that the indicators chosen by different countries to measure SD are closely tied to their national plans and strategies.
 3. See OECD (1998), (2000), (2001a).
 4. See OECD (2001b). These approaches include developments of the traditional national accounts system, construction of synthetic measures of sustainability such as “genuine savings”, physical measures of material flows, and selections of indicators based on variants of the “pressure, state, response” model. The workshop also discussed a number of initiatives undertaken within the OECD to monitor trends in the sustainability of specific sectors and sub-national areas.

- The state of the art in accounting frameworks;
- Strengths and weaknesses of various approaches;
- Statistical/analytical issues;
- Institutional issues;
- Statistical policy recommendations for national statistical authorities and international organisations.

First of all, I would like to stress the importance, for analytical and policy purposes, of the increasing coverage of national accounts. Originally, national accounts were developed to deal with economic phenomena, but nowadays one has to recognise a clear tendency towards the extension of national accounts frameworks to other domains, such as environmental and social domains⁵. This extension has been done both in theoretical terms and in practice⁶. In this respect, a very important milestone, after the publication of the 1993 version of the System of National Accounts (SNA), was achieved in 2003 with the publication of the handbook on “Integrated Environmental and Economic Accounts (SEEA)”. On the other hand, the work undertaken in the context of the Leadership European Group on “Social Accounting Matrices” represents an important contribution to the practical inclusion of social aspects in national accounts.

The SEEA handbook (jointly published by the United Nations, the OECD, the International Monetary Fund, the European Commission and the World Bank) contains an overview of various ways to put into operation the original definition of SD proposed by the Brundtland Commission. In particular, three main approaches are identified (see United Nations and others, 2003):

- the three-pillar approach;
- the ecological approach;
- the capital approach.

The first approach must contain no single focus (or object) of sustainability, but instead all economic, social and environmental systems must be simultaneously sustainable in and of themselves. Central to the ecological view of SD is the notion that economic and social systems are sub-systems of the global environment. Therefore, it follows that sustainability in the economic and social spheres is subordinate to sustainability of the global environment. Finally, the capital approach borrows the concept of capital from economics, but broadens it in a variety of ways to incorporate more of the elements that are relevant to the sustainability of human development. In doing so, it takes concepts from the physical sciences (especially ecology and geography) and from the non-economic social sciences and integrates them within a framework based on capital.

Each of these views needs specific measurement tools. The SEEA and other methodological work done by international organisations and individual researchers represent important contributions. Equally important is the extensive work undertaken in several OECD countries to implement these approaches and provide policy makers and

5. It is worth noting that R. Stone proposed the development of an integrated social and economic set of accounts in 1948.

6. See, for example, E. Giovannini (1995).

public opinion with concrete tools to evaluate the interaction between economic, social and environmental phenomena. The workshop offered an impressive view of the relevance and the quality of this work: several experts were surprised by the number of projects carried out in several countries to implement “national accounts-type” frameworks. In a sense, *the first thing that I learned* from the workshop is that a large number of good practices are already available and that these practices are more numerous and advanced than expected when we planned the organisation of the workshop. These experiences were not very well-known at an international level and/or widely recognised as concrete ways for evaluating SD trend and policies. From this point of view, the workshop was an ideal opportunity to share experiences and to create a better network among experts in this field, confirming the key role that the OECD can play in this respect.

The second thing that I learned from the workshop is that there are various approaches to developing integrated national accounts-type frameworks (INATF). These approaches are characterised by different degrees of complexity, flexibility and cost. In particular, there are some limitations on the flexibility of extensive INATFs and the costs necessary to implement them are quite high. Clearly, a good design of the overall scheme (covering economic, environmental and social dimensions) is a necessary prerequisite for minimising costs, but the use of multiple classifications to capture specific phenomena can expand very quickly the breakdown of the accounts and, thus, the cost for estimating very detailed statistical figures. From this point of view it is worth noting that all experiences presented during the workshop tried to integrate two dimensions (economic-environmental, economic-social), but there were no approaches which aimed to integrate all the three domains at once.

On the other hand, one must recognise that INATFs were not originally developed to address SD policy issues. In particular, a “vision” of INATFs capable of encompassing all three dimensions of SD is not yet available. Nevertheless, it is quite clear that INATFs can (and should) be used for addressing SD issues. On the other hand, it is not completely clear if they can perform better than other approaches (i.e. indicators), if they are cost-efficient and if they can successfully meet user needs. To answer these questions it can be useful to try to draw a rough “quality profile” of various available approaches. In particular, the following table attempts to summarise my personal quality profile⁷, using quality dimensions used for developing the “Quality Framework for OECD Statistics”. I will refer here to three main approaches to statistics for sustainable development: the first includes large integrated national-“accounts-type frameworks and indicators” (input-output, environmental accounts, social accounting matrices, etc.); the second, here defined as “other accounting aggregates” includes simpler approaches aimed to measure the depletion of capital (genuine saving approach, footprint approach, etc.); and the third includes sets of “stand-alone indicators”. It is quite clear that these three tools are not completely independent. In particular, accounting frameworks and indicators sets can be seen as complementary and mutually supporting tools. For example, indicators can be calculated on the basis of data obtained from various types of sources (including accounting systems) and accounting frameworks can lead to the calculation of highly coherent indicators. However, in the following table I will try to highlight main differences among the three approaches, more than their linkages.

7. Under the heading “other accounting frameworks” I included an approach based on “genuine saving”, the “footprint” approach, etc.

Indicators	Integrated national accounts-type frameworks and indicators	Other accounting aggregates	Stand-alone
Relevance	++	++	+++
Accuracy	+++	+	++
Credibility	+++	+	++
Timeliness	++	++	+++
Accessibility	++	+++	++
Interpretability	++	++	++
Coherence	+++	+	+
Cost-efficiency	+	++	++

I do not have here the opportunity to explain all details of my personal evaluation and I do not want to give the impression that one must necessarily choose only one approach, but I would like to stress how some dimensions can be evaluated very differently by various groups of users. For example, the way in which the dimension of “relevance” is evaluated by different users can substantially vary according to their institutional roles. For example, I would say that an individual ministry would be much more interested in sectoral indicators of sustainability in order to check if its specific acts are pushing the country in the right direction. On the contrary, the prime minister’s office (and perhaps the Ministry of Treasury) would be more interested in using complex INATFs to simulate the overall impact of individual policies, in addition to indicators highlighting key trends/issues. Finally, public opinion would be more interested in “headline” indicators or other accounting frameworks able to summarise in “one number” (or in a few figures) the situation of the country *vis-à-vis* SD. In other words, the way in which institutions involved in SD issues are organised at the national level can strongly influence the direction of the statistical research and the implementation of theoretical models, as well as the use of statistical tools. Therefore, the *third thing that I learned* is that, looking at national experiences, there is a strong link between the way in which political responsibilities for SD are allocated to various bodies and the development of statistical tools for measuring SD trends and for evaluating SD policies. In particular, countries which invested more in developing complex INATFs are those where statistical systems are quite centralised and where national statistical offices have a strong role and reputation in terms of analytical studies.

Papers presented at the workshop made clear that there are several important statistical issues to be addressed to successfully implement frameworks for measuring SD. In particular, in terms of tools developed to evaluate the interaction between the economic and the environmental dimensions, the main issues concern the coherence between concepts and classifications adopted in national accounts and in “basic” statistics; the linkage between physical and monetary units, and the availability of basic information on environmental phenomena (an issue to which society has placed great importance in terms of concern for its sustainability). In the area of economic-social dimensions, it is quite clear that “Social Accounting Matrixes” were not precisely developed for analysing SD issues. Thus the most appropriate classifications to this purpose have still to be developed, as well as a consensus view on how to measure the human and social capital (and its distribution between social groups). In addition, the availability of basic information about the social dimension of sustainability is quite limited and new approaches should be developed to take into account the role of public services and services provided within households. In this respect, an interesting idea could be the development of accounts based on the time-use.

Several statistical/analytical issues still need to be addressed. For example, in some cases the role of subjective perceptions could be taken into account to complement “objective” measures of certain phenomena. The linkage between accounting frameworks and SD indicators should be reinforced (in particular, reinforcing the analytical soundness of some indicators), as well as the co-operation between statisticians and experts involved in the development of models to capture behaviours and predict future tendencies. Finally, it seems quite clear that input-output type statistics and general equilibrium-type models are complementary and that better accuracy and timeliness of the former can improve substantially the quality of results drawn from the latter.

In conclusion, *the fourth thing that I learned* is that a long list of statistical and analytical issues is still pending and that better identification of an international research programme in this area could greatly help both statisticians and analysts in their work. From my perspective, one of the priorities should be the design of a “minimum set of integrated accounts” capable of addressing the most relevant issues raised by policy makers and civil society in debates related to SD. In fact, today there are so many alternatives to developing accounting frameworks that it is not easy to identify the best way to proceed. Therefore, this proposal would help countries to focus their statistical efforts for SD purposes, minimising the amount of resources involved and improving the international availability of comparable data.

As previously mentioned, institutional arrangements can be fundamental in promoting statistical work, both at national and international levels. In particular, the institutional environment, directly or indirectly, influences (among other things) the consensus on the knowledge base to be developed through statistical tools, the division of labour among public bodies involved in statistical activities, the level of funding for statistical activities and the relationships between statistical agencies and public opinion. In this respect, policy makers and analysts have to understand that the involvement of statisticians from the early beginning in measurement issues is an asset, especially in domains (like SD) multidisciplinary in nature and characterised by a high degree of complexity. This is *the fifth thing that I learned* and I hope that this message can be clearly sent to experts working both at the OECD and in capitals.

In conclusion, considering the technical, institutional and organisational issues analysed during the workshop, I would like to suggest the following *recommendations to national statistical authorities*:

- To promote the development of a coherent statistical approach to SD, including both indicators and frameworks, each national authority should elaborate its own “strategic view” on statistics for SD, encompassing technical issues, organisational aspects and communication initiatives⁸. This strategy should be presented to and discussed with policy makers (both the government and the parliament) and other national data providers. In particular, the involvement of bodies (ministries, regions, etc.) other than the national statistical office is fundamental in decentralised statistical systems.
- SD is a long-term issue. Therefore, medium-long term investments in specific statistical domains must be carefully planned, but a roadmap with concrete intermediate deliverables should be established from the beginning. Policy makers

8. The SEEA could serve as a guide to countries wishing to elaborate such a view, at least as far as relationships between economy and environment are concerned.

and public opinion need more information on economic, social and environmental dimensions according to an integrated view, and they cannot accept to wait for years to have something (even provisional) from official statisticians.

- To meet the needs of different groups of users, both indicators and frameworks are useful and the overall planning should take into account the possible interaction between these tools. Indicators can be also very important for capturing the attention of policy makers and media, but accounting frameworks provide a much more solid and integrated structure and statistical base for evaluating existing trade-offs between various policies and deriving related indicators.
- The respective roles of national accountants (in charge of accounting frameworks) and other “sectoral” statisticians need to be clarified and the interaction between the two groups maximised, identifying specific targets for each of them. Both groups can bring a fundamental contribution to the understanding of SD issues, but they need to establish a continuous and fruitful technical and scientific dialogue, a behaviour that, in some national statistical systems, cannot be taken for granted.
- The interaction among national statistical offices (NSOs) of different countries should be increased, both at technical and strategic levels. In many instances, SD issues are multi-country in nature and the statistical description of these interactions must be agreed upon by various countries. This is not true only in the European Union context, but also in other areas of the world.
- National statistical offices should be more involved in analytical projects, including those devoted to building models. The partnership between NSOs, on one hand, academics and other researchers, on the other, can be very fruitful for all parties. For example, statisticians can better define analytical needs and develop more sophisticated tools able to meet them; analysts can devote more energy to learning about the reliability of available figures and adapt their tools to new statistics to be developed. In the case of SD, where several “dimensions” are involved, this dialogue is even more important than in other fields.
- Statisticians have to speed up the process of developing statistics for SD. There is also an increasing need to simplify the sets of indicators developed over the last decade and enhance the internal coherence and analytical soundness of available information. Statisticians must contribute to this effort, by improving the interpretability and accessibility of statistics for SD.

Similarly, I would like to identify the following *recommendations for international organisations*:

- International authorities should help national statistical offices to address:
 - technical issues, especially those concerning environmental and social accounts, and their harmonisation at international level;
 - the linkages between various economic, social and environmental dimensions;
 - relationships between indicators and accounting frameworks;
 - the design of an overall strategy for developing national account-type frameworks able to produce statistics that cover SD issues in a coherent and integrated way.

- International organisations should improve their co-ordination on the subject and should develop a first programme for collecting data produced through accounting frameworks for SD analyses. In addition, they could launch joint communication initiatives to inform policy makers and the media about new statistical developments in this area, as well as to promote the actual use of new statistical products in decision making and policy analysis.
- A better dialogue should be established at the international level between policy makers and statisticians, to help the former express clear and coherent needs, and the latter meet these needs developing and implementing new international standards.
- International organisations directly involved in policy analyses linked to SD issues should foster the dialogue between analysts and statisticians, and ensure that the latter are involved as appropriate in projects carried out for analytical and policy purposes.

From the OECD perspective, the Organisation should pursue these initiatives, in close consultation with member countries and other international organisations. The presentation to its stakeholders, in 2004, of main results achieved in the context of the horizontal project on sustainable development represents an ideal opportunity in this respect. In addition, the agreement just achieved with the Statistical Division of the United Nations, the Statistical Division of the UN Economic Commission for Europe and Eurostat to launch (in the context of the Conference of European Statisticians) a steering group on statistics for sustainable development, represents an important step toward a better co-operation at international level and can ensure an adequate follow-up to these conclusions.

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