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**INTEGRATING SOCIAL SOLIDARITY, ECONOMIC EFFICIENCY AND  
ENVIRONMENTAL RESPONSIBILITY – THE SWISS EXPERIENCE\***

Invited paper submitted by the Swiss Federal Statistical Office\*\*

**INTRODUCTION**

This paper presents the three actions that helped to equally incorporate the social, economic and ecological dimension in setting up the Swiss indicator system MONET: i) the development of a frame of reference, which states the objectives of sustainable development in practical terms using qualitative objectives (social solidarity, economic efficiency and environmental responsibility) and subsequently postulates; ii) the use of two approaches (thematic and procedural) to set up the indicator system's grid; and iii) the implementation of a participative process for selecting the indicators involving various specialists from the directly affected federal offices. Finally, the strengths and flaws of this provision we made will be discussed.

**FRAME OF REFERENCE**

1. The project to develop the Swiss indicator system MONET (Monitoring Nachhaltige Entwicklung) followed a systematic procedure in order to guarantee transparency and comprehensiveness and to minimize the risk of arbitrariness or one-sided influence of any one interest group. As experience gained in other countries has shown, a precise description of the regular framework is essential if the indicator system is to be specific and widely accepted. Our first step was therefore to choose a definition of "sustainable development" and to draw

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\* The present document was submitted after the 10-week deadline in order to include the latest statistical information.

\*\* Prepared by Andrea Scheller.

up an interpretation of the definition, which allowed us to subsequently set it down in practical terms.

2. We started with the Brundtland definition and interpreted it in the following way, establishing a relationship between meeting human requirements and environmental development:

Sustainable Development (SD) means ensuring dignified living conditions with regard to human rights by creating and maintaining the widest possible range of options for freely defining life plans. The principle of fairness among and between present and future generations should be taken into account in the use of environmental, economic and social resources. Putting these needs into practice entails comprehensive protection of biodiversity, in terms of ecosystem, species and genetic diversity, all of which are the vital foundations of life.

### Qualitative objectives

3. The next step is to define objectives for the issues, which will be observed using an indicator system for sustainable development. Many publications from industrialized countries relating to sustainable development reveal a predominance of environmental concerns, which should be understood against the background of their development. However, a broader interpretation has now taken over, which relates sustainable development to the fields of society, economy and environment. This understanding of sustainable development has also formed the basis of all Swiss Federal studies since 1992.

4. The three dimensions are often represented as independent pillars or columns or as a “magic triangle”. On the one hand, this is a sensible way of setting out which areas may be subsumed under the concept “sustainable development”. The data sources that are required to construct the individual indicators are also often classified in a similar way. On the other hand, one criticism is that this approach divides more than it unites and the division is artificial. It is therefore sometimes difficult to assign indicators clearly to one of the three dimensions. In any case, sustainable development should have more to do with the interfaces and interdependences between the columns than with the individual pillars.

5. This criticism may be countered by formulating qualitative objectives for all three pillars, which may then be applied to all the dimensions. For the MONET project we adopted the most up-to-date wording used by the Federal Council. This suggests that sustainable development includes the three objectives “social solidarity”, “economic efficiency” and “environmental responsibility”, which all apply in an overarching manner to society, the economy and the environment.

6. The three qualitative objectives are of equal importance. This is of considerable importance if it is to be ensured that the national indicator system is accepted and used by as many as possible of those involved. In any case, it is not to the three independent areas “society”, “economy” or “environment” that equal weight must be attached but rather to the

qualitative objectives, i.e. “social solidarity”, “economic efficiency” and “environmental responsibility”. This means e.g. that environmental protection measures have to be economically efficient and economic-political decisions have to be socially acceptable and ecological. Equal importance means in our case also that, in the long term, environmental, economic and social objectives cannot be achieved at the expense of the other objectives.

#### Postulates concerning sustainable development

7. So as to put the definition and qualitative objectives in practical terms, the next step entails the formulation of postulates of sustainable development. These ultimately constitute the frame of reference that will allow as consistent and transparent a choice of indicators as possible. In our opinion, in particular the formulation of postulates for the three qualitative objectives constitute our most innovative and valuable contribution to the sustainability debate.

8. The postulates are assigned by topic to the qualitative objectives and divided into 20 areas. Since the three areas of society, economy and environment are recorded as qualitative objectives and not as capital stocks, the postulates allow statements to be made not only in relation to stock sizes but also to the meeting of needs and the defining of processes (e.g. production or distribution). The postulates need to relate directly and unambiguously to the definition and qualitative objectives and must be of long-lasting and wide-reaching relevance. As they are designed to be applicable for a long period, they do not include any current measures or approaches.

9. Wherever possible, we adopted existing postulates, mostly based on sustainable development documents used by the federal administration. Postulates on ecological responsibility and economic efficiency were readily available. According to the relative lack of the social dimension in the sustainability discourse, the search for social solidarity postulates turned out to be more of a challenge. To draw them up we consulted in-house experts of living conditions statistics and made use of social reports. The resulting list includes seven social solidarity, seven economic efficiency and six ecological responsibility issues, each issue containing one to four postulates.<sup>1</sup>

#### **INDICATOR SYSTEM'S GRID**

10. The second action to guarantee that all three dimensions are taken into account refers to the indicator system's structure. It consisted of the development of an indicator typology that was apt also for social and economic indicators and of the choice of topics of relevance to sustainable development in Switzerland.

11. Unlike a simple list of indicators, an indicator system is based on a clearly defined structure, which provides a logical and systematic framework for the selection of indicators. In the MONET project, the system takes the form of a grid, the two axes of which combine two different approaches to sustainable development. The individual indicators must then be inserted into this grid.

### The two-dimensional grid

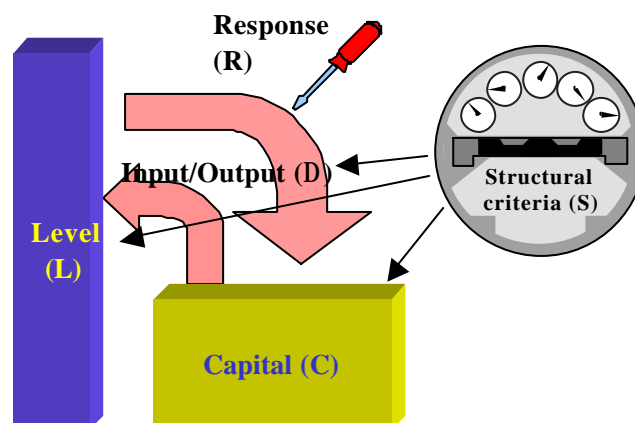
12. In existing indicator systems for sustainable development, a distinction may be drawn between those, which are structured by topic and those, which are structured by process: The thematic approach starts by asking the question as to which content is relevant with regard to sustainable development and should be illustrated with indicators. The procedural approach, in contrast, focuses on mechanisms and causal connections and attempts to record these in a model.

13. Both of the stated approaches are of importance in an indicator system and the intention in the MONET project is accordingly to combine them in a grid: the columns of the grid correspond to five different types of indicators, while the rows correspond to the topics to be illustrated. Structured in this manner, the indicator system is comparable with the system of the UN-CSD, which to some extent has such a two-dimensional structure.

### Type of indicator axis

14. The indicator classification developed for the MONET project describes the dynamics of the operations of relevance to sustainable development. The model has similarities with the “driving force-pressure-state-impact-response” model used in some indicator systems. Unlike the latter, however, it is not tailored to the requirements of environmental applications, but is also applicable to social and economic topics. This is particularly due to the following type of indicator, the structural criteria. They answer the question: “To what extent is the capital used in an equitable and efficient manner?” These indicators relate to the distribution of met needs and capital between various population groups and describe what environmental and economic (and social) resources have to be used to meet particular needs.

**Figure: Indicator typology**



15. Explaining the model at any more length would be beyond this paper’s scope. Thus, we’ll leave this section with some general statements on using such an indicator model: The model embraces various aspects which are relevant to sustainable development: the degree to which social needs are met (L), expenditure for that purpose (D), the current situation with regard to resources (C) and the level of efficiency and appropriateness of their use (S). Combining different types of indicators allows complex statements to be made on particular topics and prevents arbitrary assessment of developments. In practice, the indicators from one

topic, unlike in the above (ideal) model, frequently and especially do not display any clear causal associations. A causal relationship between the individual indicators of a topic area is therefore desirable, but not essential.

#### Topic axis

16. Sustainable development is an anthropocentric concept, thus it is obvious to choose individual and social fields of action and specify them as a list of topics. The political sphere, which after all addresses such issues, provides a useful starting point. However, it must be remembered that politics does not necessarily encompass all topics that are of relevance to sustainable development.

17. For pragmatic reasons, we brought our list of topics as far as possible into line with a classification (25 policy areas) used before with regard to Switzerland's sustainability strategy: firstly to ensure compatibility of MONET with efforts at the national level and, secondly, to simplify the selection and production of indicators as far as possible (the Government agencies which are to contribute data and expertise to the development of the indicator system are largely organized in accordance with these policy areas).

18. However, since MONET differs from the above-mentioned study in both its objectives and fundamental concepts, the policy areas cannot be adopted without making certain adjustments and additions. The following considerations were central to this process:

19. Objective: The purpose of the MONET project is not primarily to monitor current policies, but instead to provide a model of sustainable development that is as general and comprehensive as possible. The list of topics should thus not simply reflect current reality but also include topics, which are not (yet) on the political agenda.

20. Weighting of the dimensions: The definition and specification of sustainable development carried out for the MONET project is based on a division into three qualitative objectives (social solidarity, economic efficiency and environmental responsibility), which are of equal importance. When selecting the topics, care was taken to ensure that coverage of the dimensions is as uniform as possible. However, no attempt was made to assign the topics to particular dimensions, as this is not appropriate for many topics (e.g. energy, mobility).

21. Special features of the structure of the indicator system: the MONET system is structured so that certain aspects of sustainable development, such as "equality of opportunity" and "regional disparities", are integrated across all topics. These topics are modeled by the "structural criteria" (columns of the grid) and thus no longer need to appear in the list of topics.

22. The next figure lists the 26 topics of the MONET indicator system. The list of topics reflects the current approach and may be adjusted to new requirements. It is not possible to make a definitive judgment as to the topics, which are or will become relevant to sustainable development.

**Figure: List of topics**

|    |   |
|----|---|
| 1  | Social security and prosperity          |
| 2  | Health                                  |
| 3  | Subjective living conditions            |
| 4  | Housing                                 |
| 5  | Culture and leisure                     |
| 6  | Social cohesion and participation       |
| 7  | Development cooperation                 |
| 8  | Education and science                   |
| 9  | Information                             |
| 10 | Physical security                       |
| 11 | International trade and competitiveness |
| 12 | Domestic markets                        |
| 13 | Employment                              |
| 14 | Research, development and technology    |
| 15 | Production                              |
| 16 | Consumption                             |
| 17 | Mobility                                |
| 18 | Materials, wastes and immissions        |
| 19 | Soil                                    |
| 20 | Water                                   |
| 21 | Air                                     |
| 22 | Climate                                 |
| 23 | Land use                                |
| 24 | Biodiversity                            |
| 25 | Energy                                  |
| 26 | Forests                                 |

## SELECTION PROCESS

23. The last action to equally integrate social, economic and ecological aspects of sustainable development concerned the next step, which was to fill in the indicators on the grid. Since this task required specific knowledge of the various fields, and the federal offices directly affected were to be included, the process involved the participation of 13 working groups with over 80 specialists representing 20 federal offices. The experts we engaged in the process were statisticians and other specialists from the fields in question. Their task was to propose indicators for their field with which it would be possible to assess whether Switzerland was developing in line with our postulates. In order to avoid “horse-trading” and deviations from the course, we made the groups respect various prerequisites, for example the number of indicators per type and topic, the necessary relation to a postulate or international comparability.

24. Once the indicators proposed by the individual working groups had been entered into the common grid, we checked the consistency of the overall system. Among other things this involved improving the connection possibilities between indicators for different topics, as well as allotting indicators chosen by more than one group to one single topic. In addition, the

suitability of all the indicators was examined a second time and, if necessary, alternative suggestions were made.

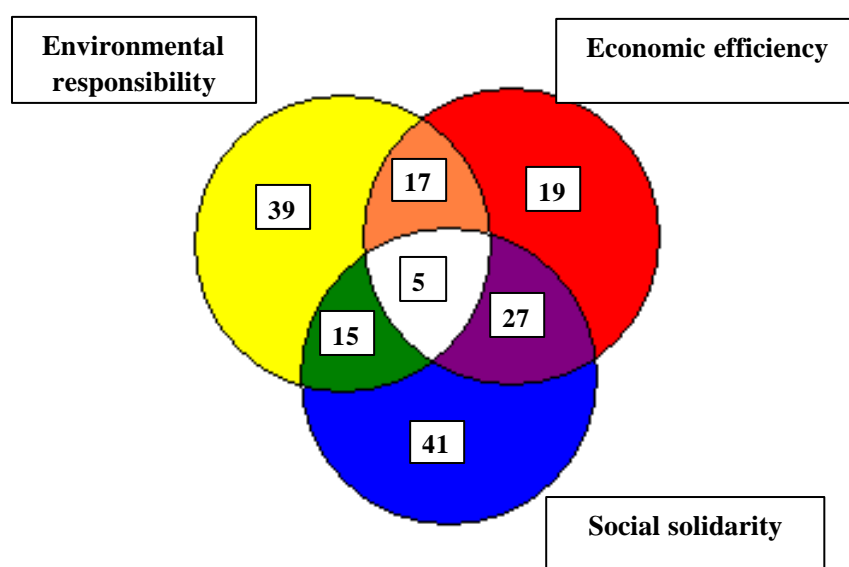
25. The revised set of indicators was then submitted to the individual working groups as well as to two advisory groups (again consisting of representatives of the social, economic and environment realm) for their views. The proposed modifications were carefully examined and taken into consideration as far as possible.

## RESULTS

26. A system including 163 individual indicators resulted from the selection process described above. The experts who made up the working groups also proposed a number of indicators which cannot be used at present owing to the lack of a measurement concept, the lack of data or for other reasons. They show gaps in statistics and need to be examined in more detail in feasibility studies. A total of around 135 indicators can already be produced.<sup>2</sup>

27. In this paper distribution in relation to the three qualitative objectives is particularly of interest, even if we were rather reluctant to make this classification. One single indicator may relate to more than one objective, as can be seen from the next figure. Social solidarity is the objective best taken into account with 88 indicators, while economic efficiency is the least covered objective with only 68. With 76 indicators, ecological responsibility is situated in the middle. The classification is not always clear, however, and should therefore be interpreted with caution.

**Figure: Distribution of indicators**



## **STRENGTHS AND FLAWS**

### Regulatory framework and grid

28. Although helpful, formulating a clear regulatory framework at the same time proved to be time-consuming: thanks to the interpretation of the definition of sustainability and in particular the postulates it was possible to reach a uniform understanding of what exactly should be measured. In this way the working groups were able to concentrate on selecting the individual indicators without first having to discuss at length the interpretation of the term “sustainable development”. In controversial areas in particular, the postulates were helpful in finding indicators that could be used to shed light on the important aspects of sustainable development.

29. In view of the degree of detail, the interpretation of sustainability and the wording of the postulates are unusual compared with other indicator projects. New territory was covered in particular with the wording of the postulates for economic efficiency and social solidarity. Individual postulates require more in-depth reflection, however.

30. Originally, drawing up the postulates was intended to help structure the individual topics. This deduction was not the possible, however, and instead the thematic structure of the federal policy regarding sustainable development was adopted with some slight modifications.

### The selection process

31. The selection of individual indicators by the working groups proved to be time-consuming, as well as very demanding for the project team. The procedure was worth the effort, however, since it was possible to include the necessary expert knowledge as well as the participation of interested parties. Moreover, it was a way of creating awareness of the concept of sustainable development and more specifically the MONET project among the fellow statisticians and in all concerned federal offices.

32. The selection procedure proposed by the project team (indicator grid, selection criteria) was well accepted, which meant that the working groups showed a high level of commitment and produced constructive suggestions. Discussions within the working groups also revealed varying degrees of understanding of the term “indicator”, however, as well as differing concepts of sustainable development. Reaching agreement was consequently a laborious process at times. Nevertheless, the result can be considered as generally acceptable.

33. It should be pointed out that the above remarks concerning participation and consensus refer only to the federal offices, which were directly involved. With very few exceptions, the working groups did not include representatives from the private sector. Owing to limited resources and time it was decided not to attempt a broader inclusion. Representatives of scientific circles and non-governmental organizations had the opportunity to comment on the set of indicators as part of the consultation process carried out in the advisory groups.

34. There are limits to the practical implementation of the indicator typology model. It should therefore be viewed as an orientation aid, not a “strait-jacket”. This means that it is



neither possible nor necessary to apply all five types of indicators in each topic area (indeed, in many cases it did not make any sense to do so). It proved also not possible to allocate every indicator unambiguously to one of the five types. However, this was not a reason for omitting an indicator from the system.

35. The strict conditions (grid, criteria, limited number of indicators per topic and type) played a major role in ensuring that the set of indicators was relatively well balanced in its topics and that the three qualitative objectives were covered to a similar extent. At the same time, however, they resulted in important and interesting indicators (e.g. structural criteria) sometimes being dropped in favour of less significant ones (e.g. input/output).

#### The set of indicators

36. The selection process, which lasted around six months, resulted in a set of indicators, which offers a mass of information. It is also especially noticeable that the indicators for social solidarity are well represented in comparison with indicator sets for sustainability used by other countries.

37. Although the large number of indicators, which was a result of the system's structure, could be seen as a problem there is the advantage that it represents a pool of sub-groups for specific applications. It includes flagship indicators, indicators that can be used for comparisons with other countries, or selections for specific questions.

38. The indicator system also has a number of aspects where there is room for improvement: Indicators that link several qualitative objectives or several topics are in the minority. The result is therefore a long list of indicators which, although interesting, are often isolated and do not link up with others.

39. The indicators for capital concern fairness vis-à-vis future generations and the structural criteria fairness within the present generation. For this reason they are of special importance in relation to assessing sustainability. And it was precisely with these two types of indicators that it was difficult to find suitable data for certain topics.

40. No indicators were selected for certain postulates, either because suitable data could not be found or because it was not considered to be sufficiently important.

41. Several indicators, which were considered appropriate by the working groups later proved to be unsuitable, of less use or controversial. A difficulty consequently arose owing to the fact that the list of indicators had to be edited and approved before the indicators' suitability could be verified in detail. Subsequent corrections are therefore essential.

42. In a few cases, the trend observed with individual indicators does not allow for any clear evaluation to be made in relation to sustainability, in particular regarding response indicators.

## CONCLUSION

43. To sum up: The endeavours undertaken to equally incorporate the social, economic and ecological dimension in setting up the Swiss indicator system MONET have been crowned with success. Firstly, they resulted in a well-balanced indicator system and secondly, they allowed us to integrate statisticians (and other specialists) from various fields and promote the concept of sustainable development. However, as mentioned above, there's room for improvement in many ways and although worthwhile, formulating a clear regulatory framework and the selection of individual indicators by expert working groups proved to be time-consuming.

## SOURCES

SFSO, SAEFL, ARE (publishers): Sustainable development in Switzerland – Indicators and comments, Neuchâtel 2004

SFSO, SAEFL, ARE (publishers): MONET final report – Methods and results, Neuchâtel 2004

For all information and documents on MONET see: <http://www.monet.admin.ch>

<sup>1</sup> The postulates may be downloaded

[http://www.bfs.admin.ch/bfs/portal/en/index/infothek/erhebungen\\_\\_quellen/blank/blank/monet/05.html](http://www.bfs.admin.ch/bfs/portal/en/index/infothek/erhebungen__quellen/blank/blank/monet/05.html)

<sup>2</sup> The list of indicators may be downloaded at

[http://www.bfs.admin.ch/bfs/portal/en/index/infothek/erhebungen\\_\\_quellen/blank/blank/monet/04.html](http://www.bfs.admin.ch/bfs/portal/en/index/infothek/erhebungen__quellen/blank/blank/monet/04.html);

the indicator data bank (in French and German) may be looked up here:

[http://www.bfs.admin.ch/bfs/portal/fr/index/themen/systemes\\_d\\_indicateurs/indicateur\\_de\\_developpement/thematique.html](http://www.bfs.admin.ch/bfs/portal/fr/index/themen/systemes_d_indicateurs/indicateur_de_developpement/thematique.html)

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