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Social Indicators for Development Planning

by Udo E. Simonis

1. Measuring is the basis for planning. Without knowing of what is, not much can be said about what should be. In recent years, social indicators have been the topic of many conferences, committees and academic studies. The "social indicator movement" has become an international enterprise. Like other scientific issues this one, too, has provoked heavy methodological controversies. Thus the recent discussion provides a wide spectrum of definitions, on the functions and character of social indicators, which makes it difficult to agree on the scope and limits of what is intended.

2. The research interest in social indica-

tors has been stimulated by two main factors: dissatisfaction with traditional economic indicators and accounts, and the felt need for an improved steering and planning capacity of society. The discussion about the negative side-effects of economic growth in the highly industrialized countries which began in the 1960's, made clear some of the deficiencies of the given economic accounts in their function as indicators for overall economic and social performance, especially the welfare of society. In the criticisms of Gross National Product (GNP) as a welfare measure, two general points were stressed: first, the growth process produces

certain social imperfections which impair the qualitative living conditions of the people, yet these welfare-impeding effects are not (or not sufficiently) registered by the national accounts; and second, welfare-augmenting structural changes and effects are not adequately reflected in the accounts. From a more specific, pragmatic point of view, three phenomena were thought to bear significant positive, respectively negative importance for welfare: social costs of production, public goods, and leisure. All three phenomena are not (or not sufficiently) registered by the traditional economic accounts.

3. Dissatisfaction with economic indicators and economic accounts for development planning in the developing countries included all the arguments given above, and added some others. Improvements in the subsistence sector of the developing countries may considerably improve the living conditions of a great number of people; however, these positive effects are not (or not adequately) registered by the traditional accounts. Furthermore, in a case where about 80% of the GNP flow to only 40% of the people (the higher income groups), and where the ratio between the highest and the lowest quintile in average is 55 to 5, or 11 to 1, increasing the GNP just means status quo to the relative position of the majority of people;

and in turn, an improved distribution may increase the welfare for many, but decrease the GNP for the few. Finally, there is an inclined bias in the national accounts in favour of industrial production, although the welfare of the majority of the people in the developing countries may very much depend on improvements in food and shelter, or other fields of basic human needs. It is therefore safe to say that the severe deficiencies of the GNP as a development indicator in developing countries are more than obvious.

4. The proposals which emerged from these criticisms in the economists' camp resulted from the re-consideration of distributional aspects, and of a few basic premises of the traditional accounting system: the boundary line for activities considered to be economic (market versus non-market activities), the way in which output is classified between consumption and investment, and the use of input costs to measure the amount of output — or, more pragmatically, from the inclusion of hitherto neglected spheres into the accounts. Regarding the macro-level, three directions of research can be differentiated:

— Revision of the national accounts as an instrument for measuring the input of resources;

- Extension of the national accounts as an instrument for measuring the welfare of society;
- Supplementing or substituting the (revised or extended) national accounts by other indicators and indicator systems.

Among the empirical studies on the revision and extension of the traditional economic accounts, some have led to far-reaching changes, others if implemented would go further and would not only mean a basic alteration of accounts, but could lead to quite different short-run as well as long-run economic and social policies and strategies of development planning.

5. Four such studies shall be mentioned here. Although not comprehensive of what is underway, they may give you an idea of what is intended:

5.1. *Degree of integration* (R. Jochimsen). Already in 1966, a German economist put forward the suggestion to combine a growth index and an equity index into one overall development index. Since the level of economic activities (GNP) may grow while at the same time the remuneration for equal factor inputs may differ widely (degree of integration - DOI and may even decrease, the question then is whether you have development or not. Assumed, the GNP index in one year increases by ten percent

(on a scale from 1.00 to 1.10) and the DOI index decreases by ten per cent (from 1.00 to 0.90). Is the result to be called "development"?

According to our traditional accounts and traditional planning, of course, it is; according to the new approach, the answer may be quite different.

There are various inherent problems in this approach: How to measure the degree of integration of factor (especially labour) input, what weights to give to the two indices in order to get the overall development index, etc.

5.2. *Redistribution with growth* (H. Chenery et al.). Recently, a joint study group of the University of Sussex and the World Bank suggested to use an Equal Weights Index (EWI), respectively Poverty Weight Index (PWI), for development planning purposes, both being developed from the traditional GNP index. This idea starts from the basic facts of distribution of income in most of the developing countries. When the ratio between the highest and the lowest quintile of income is about 55 to 5, then a development planning strategy based on an unqualified, unweighted GNP-index will lead to favour the higher and to dis-favour the lower income groups — with regards to the highest and lowest quintile just in the order of 11 to 1. Therefore, it is proposed to give equal weight (EWI) to all the various

income groups differentiated in the development planning process. Or, if the extent of income inequality over time has accumulated unequal distribution of wealth, it is suggested to use the PWI in development planning instead, giving more weight to the lower income groups.

There is a wide scope for using this kind of indices in development planning. Especially for those development planners being familiar with the traditional economic accounts it should be (fairly) easy to change to such kind of differentiated thinking. However, the problem is with the weights to be used. Since these weights may differ from one economist to the other, first a consensus must be reached on what weights to apply in practical planning.

5.3. *Clean GNP* (E. G. Dolan). During the time of heavy debate about the environmental pollution problems, another approach was being suggested which also may be relevant for practical development planning purposes. There are parts of the GNP of a nation which are produced by renewable resources and reusable waste, while other parts of GNP are produced by non-renewable resources and lead to non-reusable waste. The strategic proposal, therefore, is: maximize the first and minimize the second, or: maximize GNP 1, and minimize GNP 2!

Again, there are some problems to follow such kind of advise. Apart from the social and political factors involved, it may not be so easy to find out the "dirty" and the "clean" parts of GNP.

5.4. *Material Economic Welfare (MEW) or Net National Welfare (NNW)* Following the main ideas of Nordhuas/Tobin (1971) on subtracting the welfare-negative factors and adding the welfare-positive factors from/to the traditional national accounts, the Japanese Committee on NNW has done a remarkable job to substantiate this concept and to compare it with the GNP concept. All the aggregates in the national accounts are re-classified (consumption, investment), and new aggregates are brought into the picture, as e.g. leisure and house-work (with positive loading), and environmental disruption and urbanization costs (with negative loading), which together make what is called Net National Welfare (NNW). Having recalculated the traditional accounts for the period 1955 to 1970 it is shown that the ratio between the (new) NNW-index and the (old) NDP-index decreases in the case of Japan from 1.15 to 0.92. These findings indicate: Rapid GNP-growth had to be paid for by quite a quantity of welfare-impeding factors, especially high environmental disruption and urbanization

costs.

6. All the proposals regarding revision or extension of the traditional economic accounts and indices mentioned so far, rely upon stating all actual or imputed transactions in terms of money valuation, thus insisting that the formulation appropriate to economic activity is the relevant one for all social problems. Despite of the possible benefits, for many scholars, these approaches therefore do not go far enough. Bertrand Gross' phrase may be recalled, who once said, that the lack of qualitative considerations in economics provides the basis for "a new philistinism — an approach to life bared of the principle of using monetary units as the common denominator of all that is important in human life". A complementary step or an alternative step therefore is seen in devising social indicators, and especially non-monetary indicators.

7. Specific criticism regarding traditional accounting and planning among the non-economists is addressed to the deficit of empirical information regarding the state of society and the kind, direction and speed of social change in the various subsystems of society. The neglect of the interdependencies of economic and social processes may lead to disregarding the consequences of economic and technological

changes on society. These advocates of social indicators therefore pursue a comprehensive description of social systems and subsystems, especially of those not being reached by economic indicators.

8. The other stimulus to social indicator research is what has been called the "creation of steering and planning power" through increased and better information — or what sometimes also was named "crisis management". Out of the widening gap between the growing tasks of the political system and its capacity of conflict-solving and decision-making came a new, quasi political-administrative "theory" with Keynesian modifications: to master the problems of society without necessarily changing the structure of that society.

In this sense, social indicators may play a complementary or advocacy role, whereby the Keynesian leitmotiv is to be seen in the selection of the therapeutic instruments: In analogy to cyclical demand management via monetary and fiscal measures, the creation of informational power shall serve in the solution of social problems.

9. It's time now to say something about the expectations and the limitations of social indicators. The term social indicator has been coined in association to and at the same time

demarcation from the term economic indicator. In a narrow sense, the qualifying adjective social shall indicate that those aspects are to be considered which are not covered by economic indicators. In a wider sense, however, social indicator may include all relevant aspects of human behaviour and perceptions. This being so, the expectations and limitations differ widely, depending upon what meaning you give to the term *social indicator*. And here, unfortunately, no consensus has been reached regarding the nature, functions and the definition of a social indicator itself. The same is true for the question of how to construct and how to use social indicators for development planning. Instead, the meaning is very much confined or enlarged according to the direction and the special purpose of the analytical procedure. Some examples of these divergencies will be given later. However, the main types of definition and classification of social indicators should be mentioned now. There are at least three functions which may be differentiated:

- the information function, meaning that social indicators are measurements aimed at broadening the agenda of our concern, especially the goals of planning;
- the evaluative function, meaning that social indicators should measure output and the

actual performance of the social system;

- the normative function, meaning that social indicators should give a reading both on the current state and the past and future trends of society, whether regressive or progressive, according to some normative criteria.

More ambitious and at the same time more restrictive definitions require that the defining criterion for a social statistic to be a social indicator is membership in a social system model and a social theory. Here, the informative value and the significance of social indicators for the evaluation of social conditions and social change depend on the theoretical position within a social system concept.

10. Selection and classification, however, is one main problem in social indicator research. Apart from the differentiation according to the origin and character of data- objective or subjective indicators, hard or soft data, cardinal or ordinal indicators — and to the functions mentioned above, they are classified according to their relation to the concept they indicate i.e.: definitory, correlative, conclusive indicators. The discussion is in full swing with respect to the merits of "objective" and "subjective" indicators. There is a strong awareness that any situational approach to measurement needs to

be supplemented by valid readings of the human perception of that same situation.

However, most of the quantification work done so far, has been assessment of "objective" situations of the society or the individual. What is the common normal procedure? *First*, "components", "domains" or "aspects" are identified which are or are thought to be significant for "welfare" or "the quality of life", — such as for instance, food, health, housing, education, environment, working conditions and employment. *Second*, "objective" indicators or variables are chosen which may characterize the situation in each of the "components" selected. *Third*, these indicators are weighted and aggregated up to the level of the components or to the level of an overall index of "welfare" or "quality of life".

Although this is very much the predominant approach, in recent work, it is strongly criticized by some authors because of the discrepancies among various "subjective" perceptions of any "objective" reality. As is well known, subjective orientations can develop quite separately from changes in the more objective aspects of the living conditions — good working conditions versus dissatisfaction with work, being just one example. The OECD working party on social indicators after criticizing the objective

only-approach, promotes the idea of subjective measuring: The perceptions which individuals and groups have of fundamental aspects of their well-being are a necessary and important component of the social indicator program. This type of information reveals another dimension of reality and may also show up in objective factors which have not previously been recognized as significant. The well-being of individuals in many areas cannot be readily detected without recourse to the account of the individuals themselves. This may be particularly true for working conditions and health. In several other areas where there is a mixture of individual and collective ways of meeting needs, asking the individual himself is in some instances the only way to obtain relevant information.

To some authors, like P. d'Iribarne, these and other problems lead to the conclusion that the present conception of objective well-being is fairly meaningless, that objective indicators as currently constructed rest on implicit assumptions bearing little relationship to reality and are a poor reflection of the actual situations of individuals, groups, and the society as a whole.

These criticisms would appear to show that "objective" indicators for development

planning need to be supplemented by "subjective" indicators, that objective measurement has to be coordinated with subjective measurement.

On the other hand, many arguments against subjective measurement have been brought to the fore by the proponents of objective social indicators: The statement of an individual (entrepreneur, consumer) is not a reflection of his own particular situation but a product of his environment; direct questioning provokes defensive responses and is subject to coercive adaption; questions about dissatisfactions demand a "critical potential" which is usually not present; indicator research based on general statements of individuals reproduces ideological phenomena; it would be more rational to look into the possibilities of direct participation of the questionees in the planning process instead of organizing their "administrative replacement", etc.

11. The second main methodological problem of using social indicators for development planning purposes is the aggregation problem, which leads to various questions. There is, first, the "quality-quantity paradoxon". Secondly, there is the "theory-gap". Thirdly, there are specific "selection, aggregation, and weighting problems". In the following, a few

sentences will be said to each of these questions.

Social indicator research is basically quality-oriented ("welfare", "quality of life"); however, the premise is that this quality can be measured quantitatively. Since the flow and state of "welfare" or the "quality of life" are both rather comprehensive aggregates, the first step is to break them down into a number of components (and subcomponents) which, however, are still aggregates and not directly measurable. Each component covers a great many variables. As these are often too many to be manageable, a selection has to be made to choose those which would serve the purpose best.

The second question is whether the identification of the components and the selection of indicators have necessarily to be based on a social theory of development. There seems to be no unified body of social theory comparable to what exists in the field of economics.

L.A. Metzler in his review of the epoch-making Burns/Mitchell book on *Measuring Business Cycles* criticized its empiristic approach. He argued that statistical method should be governed by theory; the theory has to be established before empirical research is undertaken. Though the theoretical deficit of social indicator research is often deplored, this

criticism is not shared by all working in the field. Michalos says that just as it is not necessary to have a meaning analysis of quality of life, it is also not necessary to have a scientific theory in order to begin social reporting.

Although a unified body of social theory is not available, for selecting aggregating and weighting indicators, appropriate criteria have to be applied. Contrary to the field of business indicator research, a fair consensus on such appropriate criteria has not been reached so far. Consequently, in empirical studies, even on one and the same topic, selection, aggregation and valuation of social indicators differ widely. (Here, only a few of the studies undertaken can be shortly discussed; in the references at the end of this text, the main studies are being quoted.)

11.1 B.C. Liu in his study on quality of life in the United States, employs more than one hundred indicators. Each indicator was compiled from two or more data items, obtained from various published sources. These indicators were then compiled to form component indicators which, in turn, were combined into nine "quality of life indicators". Each component indicator was computed by taking the average of the several indicators included. Similarly, the nine "quality of life indicators"

are the average of the component indicators. Since nine indexes were compiled for all US states, the composite ranking by state was obtained by totaling up the nine indicators. Finally, an overall index is constructed on the assumption that each of the nine indicators developed should have equal importance in determining overall "quality of life".

11.2 The OECD program is limited in a different way. The main emphasis is on establishing a certain number of social indicators which together shall provide a meaningful perception on changes in overall welfare. This meant indicators of "well-being" perceived, not of means and causes. Thus the program does not directly aspire to provide analytical indicators of explanatory, predicative or evaluative utility. Furthermore, the aim is not on a single (weighted) index, but rather the minimal number of separate indicators. The first generation list includes, within 8 so-called primary goal areas, some 24 "fundamental social concerns" (with 56 sub-concerns and an open end of specific variables), selected according to three basic criteria:

- concerns which are of present or potential interest to member governments;
- fundamental human aspirations or concerns as opposed to means or instrumental

aspects of well-being;

— major, essential aspects of well-being.

Contrary to Liu and others, the Working Party of OECD starts with the presumption that, with a few exceptions, present statistical systems do not provide adequate measures as defined in the list of social concerns. Rejecting the idea of an overall development index the OECD program nevertheless seeks to achieve an overall perspective as to how "well-being" changes intertemporally and internationally. The question of the extent to which the concept should be based on objective or subjective data, on surveys of the perception of individuals as opposed to hard data, has been considered at length in the discussions. With the pragmatic approach taken, the most likely prospect is that the question will be determined on a case to case basis rather than on abstract principles; efforts will certainly be on an expansion of reliable, periodic household survey data.

11.3 The work of UNRISD (United Nations Research Institute of Social Development) on how to improve the methodological basis of development planning is, I suppose, well known so that not so much needs to be said here. In one of the UNRISD proposals a model of 73 indicators is developed which, however, consists of objective indicators only. This of course is

mainly due to the emphasis of the work of this institute, i.e. on international comparisons.

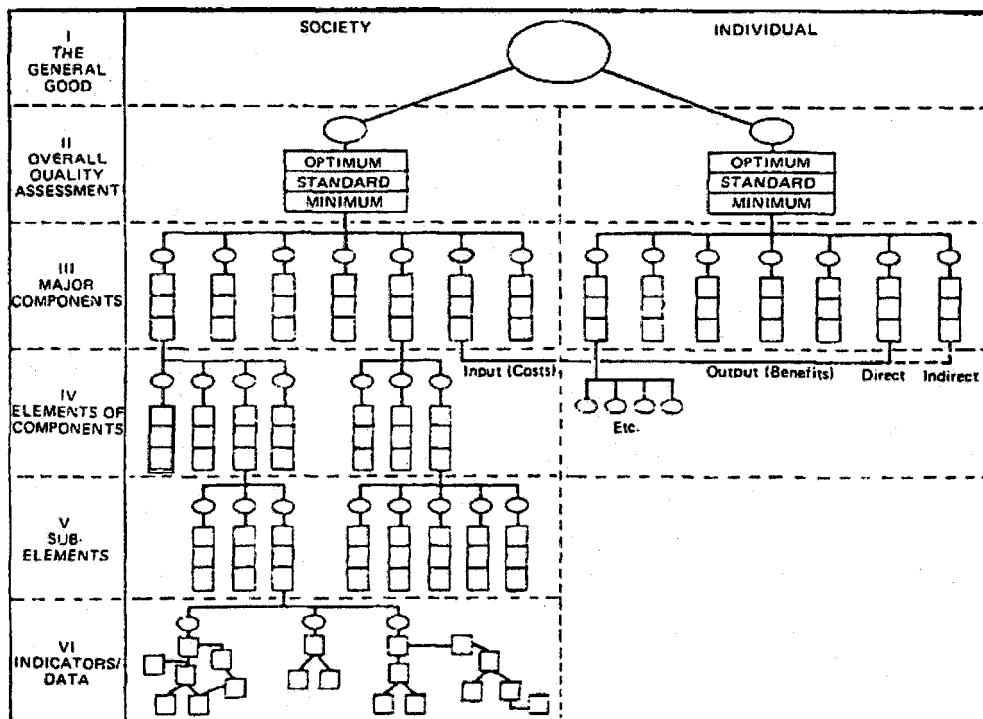
11.4 The Japanese Confederation of Labor, DOMEI, developed a model for national as well as international comparisons. This model altogether employs 72 indicators of which 19 are definitely economic indicators; 3 of them reflect the level of economic activities, 8 the stability of economic activities and 8 the distribution of the results of economic activities. Out of the 53 non-economic indicators, 41 are on the environmental situation whilst 8 are indicators on life valuation and 4 on satisfaction with working conditions, all of which belong to the type of objective indicators.

The DOMEI model has been filled with concrete data on development in Japan, and was also used for comparing the state of development internationally for one year. With this approach used, international ranking according to the traditional indicator of GNP per capita was changed quite considerably, Sweden and not the United States showing up as the most highly developed country in the world.

11.5 A fairly comprehensive social indicator model has been developed by the Stanford Research Institute but was, unfortunately, not filled with concrete data. The structure of this model can best be described gra-

phically (see Fig. 1), while some of its inherent problems should be discussed in a more general context, i.e. the context of aggregating and weighting social indicators.

Fig. 1 Social Indicator Model — Stanford Research Institute.



12. Regarding aggregation and valuation of social indicators, there is a great academic controversy. A main question has been, as to what level aggregation of indicators (sub-components and components) should be pursued, and especially whether it would be useful and advisable to aggregate the variables into a unitary "level of welfare" or "overall quality of

life index" — comparable to the GNP index. We shall discuss this question here only shortly, in presenting some of the arguments pro and contra aggregation.

One argument contra is that it is not necessary. Welfare or quality of life, it is said, can be a multiple set of numbers representing the respective numerical values of indicators (or

components); nothing more can or should be achieved, in view of the deficiencies of the GNP with respect to welfare measurement.

A second argument stresses the difficulty of the operation. In view of the great number of possible indicators and the problem to assess the relative significance of each indicator, the operation would be controversial; and as method, so result.

Because of these and other reasons, in many empiric studies the authors refrain from aggregation and prefer the inconvenience of using a more or less large set of figures; or if aggregation is done, it is often done by giving simply equal weight to all individual indicators selected or components built.

In presenting the case pro aggregation, the origin of the social indicator movement is recalled, which rested on the critical attitude toward the economic national accounts. If social variables are to be introduced as counterparts to economic variables it is thought necessary to work out social aggregates such as welfare or quality of life indices, as they alone can supersede economic aggregates such as the GNP.

A second argument pro aggregation is that although it is difficult, it is feasible, the main difficulty being the system of weights to be

applied to the various indicators (and components). It is said that proof of the possibility of a weighting system is supplied by the fact that such systems do exist: "In determining development strategies, in establishing planning targets, in solving problems arising out of the implementation of policies and plans, decisions are made which imply weighting the social aims against each other. These are facts of real life" (Drewnowski, 1974).

Theoretically speaking, the weighting of indicators (components and sub-components) must be derived from some form of preference function, which is recognized as being relevant for this purpose. In practice, a whole range of "solutions" to this problem is possible. Following Drewnowski, five main pragmatic ways of deriving weights from preferences may be differentiated and have been used in social indicator studies:

- system of weights derived from explicit social aims (as e.g. by agreement among policy makers at the national or regional level);
- system of weights derived from implicit social aims (as e.g. by "revealing" social aims from statements of intent or actual actions of authorities responsible for development);

- “conventional system of weights” (that is determining the weights by the maker of the index, including or excluding consultants and experts; the validity of the index then being dependent on the agreement of those using it);
- system of equal weights and a sliding scale system of weights (many authors are in favour of using equal weights between the indicators and components, which makes the index a simple average of indicators and components; a somewhat more complex type is a sliding scale system of weights, meant to express the principle of diminishing marginal utility);
- individual preferences (following the debate in welfare economics, the aggregation of social indicators on basis of individual preferences is not thought to be a practical proposition).

13. In the preceding paragraphs some general criticisms regarding the methodological problems of social indicators have been mentioned, which together may be put under two headings:

- lack of generally accepted indicator systems;
- lack of clarity in selecting, aggregating and weighting the indicators.

Social indicator systems developed so far differ widely in kind and character, and the number of indicators selected. In quantification work, sometimes the relative significance of the indicators used has not been clarified. Though in theory many proposals have been made for fairly sophisticated weighting, in practice fairly simple approaches have been preferred. With regard to statistical analysis, only the more simple methods were used in most studies, while more sophisticated methods (as factor analysis and spectral analysis) have not been systematically used. Precisely here is the point where fruitful conceptual exchange of knowledge can be carried out between economic analysis and social indicator research.

14. Only some of the proposed social indicator systems have been mentioned above, and only some of the methodological questions connected with them were discussed. However, this should be sufficient to finally discuss the general consensus-problem with its two main aspects: first, can a sufficient consensus be reached on an acceptable system of social indicators, and second, if a consensus is reached, does it alleviate or impede the political consensus on actual decisions to be made for development?

A German journal recently put the head-

line "quality of experts determines quality of life". The problem behind this statement is whether experts can and should decide about the nature and character of social indicator systems. As long as discussion on social indicators remains with the experts, the chances for a consensus may be great. At the same time, however, the chances for the system to be applied may decrease. Maybe the greatest chance is with less ambitious social indicator systems and in the direction of a minimum consensus.

The second aspect of the consensus problem is still pending. Social indicators do not by themselves eliminate social conflicts and contrasts of interests. With respect to government structure, for instance, a comprehensive social indicator system should improve the information base but would not automatically solve resort egoism and particularism. Social indicators may therefore involve rationalization at the level of information but not necessarily at the level of decision-taking.

15. Summarizing the presentation on social indicators given above, it should be clear that the present author is very much in favour of using social indicators for development planning purposes. The social indicator approach should definitely improve traditional national development planning. On the other

hand, there are a number of critical problems in recent social indicator research which should be thoroughly investigated. From a more pragmatic point of view, the main criticisms may be labeled as follows:

a) "reformist naiveté": This criticism is directed against the assumption that improved information per se might remove mountains, i.e. change vested modes of behaviour and social structures.

b) "descriptive approach": This criticism is directed against the theory gap in social indicator research and against the belief that "social weather charts" would make for better politics.

c) "dummy mobilisation": Acceleration of information may not expand the problem-solving capacity of the social, economic and political system but may overload it.

d) "elitism": This criticism claims that social indicator research would accelerate the concentration of intellectual power and promote elite preferences at the cost of all poorer organized groups and values in society.

All these (and other) criticisms may disclose the weak points of social indicator research and should not be belittled, although the social indicator movement today is still in its infancy. Nevertheless, social indicators are

very much needed since the foremost objectives of social indicator research are to widen the range of measurement and planning to non-monetary fields, to overcome narrow and unbalanced views of the state and movement of society, i.e. to broaden the agenda of our concern on human conditions by developing new, representative and integrated data into information systems which are the basis for better development planning.

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